

Harbor Point – Parcel 4 Mixed Use  
DETAILED DEVELOPMENT PLAN

*Honeywell Baltimore Works Site  
Baltimore, Maryland*

January 12, 2022

**Prepared By:** Harbor Point Parcel 4 Development, LLC  
Beatty Harvey Coco Architects, LLP  
GTA USA, LLC  
Morris & Ritchie Associates, Inc.  
RK&K

**Prepared For:** Environmental Protection Agency – Region III  
Maryland Department of the Environment

# TABLE OF CONTENTS

---

<b>1.0</b>	<b>Introduction</b>	<b>1</b>
<b>2.0</b>	<b>Project Team/Roles</b>	<b>2</b>
<b>3.0</b>	<b>Existing Environmental Remediation System (ERS)</b>	<b>4</b>
<b>3.1</b>	<b>Area 3 Soil Cap</b>	<b>4</b>
<b>3.2</b>	<b>Unaffected Portions of the ERS</b>	<b>5</b>
<b>4.0</b>	<b>Development Plan and Schedule</b>	<b>6</b>
<b>4.1</b>	<b>Scope of Project</b>	<b>6</b>
4.1.1	Parking Garage/Apartments	6
4.1.2	Linear Park	6
4.1.3	Hotel	7
<b>4.2</b>	<b>Schedule</b>	<b>7</b>
<b>5.0</b>	<b>Development Implementation Activities</b>	<b>7</b>
<b>5.1</b>	<b>Earthwork</b>	<b>7</b>
5.1.1	Non-Designated Area Excavations	7
5.1.2	Area 3 Excavations	8
5.1.3	Dewatering	8
5.1.4	Obstruction Removal	9
5.1.5	Fill Placement / Raised Grades	9
<b>5.2</b>	<b>Foundations</b>	<b>11</b>
5.2.1	Pile Selection	11
5.2.2	Pile Caps	12
5.2.3	Ground Floor Slabs	12
<b>5.3</b>	<b>Utilities</b>	<b>13</b>
5.3.1	Site Utilities (General)	13
5.3.2	Sanitary Sewer	13
5.3.3	Storm Drain	13
5.3.4	Domestic and Fire Water	14
5.3.5	Natural Gas	14
5.3.6	Electric and Telecommunications Conduits	14
5.3.7	Diesel Fuel Storage During Construction	14
<b>5.4</b>	<b>Roads, Streets, and Parking</b>	<b>14</b>
<b>6.0</b>	<b>Design Measures to Protect the ERS</b>	<b>14</b>
<b>6.1</b>	<b>Area 3 Soil Cap</b>	<b>14</b>
<b>6.2</b>	<b>Hydraulic Barrier</b>	<b>15</b>

<b>6.3</b>	<b>Multimedia Cap (Area 1)</b>	<b>15</b>
<b>6.4</b>	<b>Head Maintenance System</b>	<b>15</b>
<b>7.0</b>	<b><i>Engineering, Construction, and Environmental Controls and Monitoring</i></b>	<b>15</b>
<b>7.1</b>	<b>Construction Quality Assurance/Quality Control</b>	<b>15</b>
<b>7.2</b>	<b>Construction and Environmental Controls</b>	<b>17</b>
7.2.1	Air Monitoring and Dust Control	17
7.2.2	Erosion and Sediment Control and Stormwater Management	18
7.2.3	Stormwater Pollution Prevention	18
7.2.4	Spill Prevention and Response Plan	18
7.2.5	Optical Survey	19
7.2.6	Vibration Monitoring	19
7.2.7	Settlement Monitoring	19
7.2.8	Material Handling & Management Plan	19
<b>7.3</b>	<b>Progress Submissions and Reporting</b>	<b>20</b>
7.3.1	Documentation	20
7.3.2	Construction Completion Report	21
7.3.3	Unforeseen Modifications	21
<b>8.0</b>	<b><i>Project-Specific Health and Safety</i></b>	<b>21</b>
<b>9.0</b>	<b><i>Remedy Performance Monitoring During and After Construction</i></b>	<b>22</b>

**LIST OF APPENDICES**

**Appendix A Tables**

Table A – Area 3 Cap Function Analyses

**Appendix B Environmental Control Plans**

Material Handling and Management Plan (MHMP)  
Construction Air Monitoring Plan (CAMP)  
Spill Prevention and Response Plan (SPRP)  
Stormwater Pollution Prevention Plan (SWPPP)  
Health and Safety Plan (HASP) Guidance

## **Appendix C    DDP Drawings**

- C0.01 Site Constraints Plan
- C1.00 Existing Conditions Plan
- C2.00 Site Plan
- C4.00 Utility Composite Plan
- C4.20 Utility Profiles
- C5.00 Stormwater Management Plan
- C6.00 Erosion and Sediment Control Plan Ph 1
- C6.02 Erosion and Sediment Controls Details
- DA200 Water Plan and Profile
- DA201 Water Details and Notes
- DA300 Sanitary Plan
- DA310 Partial Exelon Garage Sanitary Piping Demolition Plan
- DA311 Partial Exelon Garage Sanitary Piping Plan
- DA312 Sanitary Details
- DA313 Sanitary Details
  
- A1.01 Level 1 Floor Plan (+14'-0")
- A1.02 Level 2 Floor Plan (+28'-0")
  
- S1.01N Foundation Plan – North
- S1.01S Foundation Plan – South
- S2.00 Typical Foundation Details
- S2.01 Typical Foundation Details
- S4.01 Pile Cap Plans
- S4.02 Pile Cap Plans
- S4.03 Pile Cap Plans
  
- EN1.01 Environmental Controls Plan
- EN1.02 Environmental Controls Details

## 1.0 INTRODUCTION

Harbor Point Parcel 4 Development, LLC (HPD) and its consultants have prepared this Detailed Development Plan (DDP) for the Harbor Point – Parcel 4 Mixed Use site, on the former AlliedSignal Baltimore Works Site (or “Site”), located in Baltimore, Maryland. This DDP pertains to the construction of the Harbor Point – Parcel 4 Mixed Use site (or “Project”), consisting of Phase 1: an 8-story podium on the western portion of the Project, containing a 1,292-car parking garage, retail spaces, and apartment units, with a 17-story apartment tower atop the southwestern portion of the podium. Phase 1 will also include a linear park constructed adjacently east of the garage/apartment building. In Phase 2, an 8-story hotel will be built on the eastern portion of the Project, east of the linear park.

The Site is located on a peninsula on the northeast shore of the Patapsco River of the Inner Harbor in the Fells Point section of Baltimore City. The Site consists of three Areas. Area 1 is the principal site of Honeywell’s (formerly AlliedSignal) Baltimore Works Facility which included chromium processing production and support buildings on an area that covered approximately 16 acres. Prior to acquisition by Honeywell, Areas 2 and 3 were used for various industrial and warehousing operations, including chrome ore storage (Area 2) and brass foundry casting, oil blending and storage, coating/plastics production, lumber storage, and foundry (Area 3). Areas 2 and 3 currently include the Thames Street Wharf Office Building, 1405 Point (apartments), and the Wills Wharf office/hotel, and their associated parking lots. The Site is surrounded by water on the north, west, and south and the Living Classrooms campus to the north.

This Project will be constructed just north of the 1405 Point building and east of the Exelon building. This Project occupies the final Harbor Point parcel that is located off the Area 1 cap. The site currently contains a surface parking lot that was constructed in 2003 for Cirque de Soleil and is currently used for temporary surface parking for nearby developments. The southeastern portion of the Project contains a sanitary sewer pump station, situated on the former 950 South Caroline Street parcel.

The principal contaminant of concern in Area 1 is hexavalent chromium (CrVI). An Environmental Remediation System (ERS) is maintained and operated by Honeywell International Inc. (Honeywell) to contain CrVI-impacted groundwater in Area 1 pursuant to the requirements of the Consent Decree by and between Honeywell, the U.S. Department of Justice, the United States Environmental Protection Agency (USEPA), and the Maryland Department of the Environment (MDE). The ERS consists of a Multimedia Cap (MMC), Hydraulic Barrier (HB), Head Maintenance System (HMS), a groundwater storage and transfer system, and the Outboard Embankment in Area 1; the layered soil cap (LSC) in Area 2; and the soil cap on the former Silver North and Silver South parcels in Area 3.

The overall Site development must not interfere with the efficacy of the corrective measures or Honeywell’s ability to comply with the performance standards defined in the Consent Decree; the Groundwater Gradient Monitoring Plan; the Surface Water Monitoring Plan; and the Environmental Media Monitoring Plan. This DDP describes the redevelopment improvements and the means and methods that will be implemented to meet the requirements established in the Consent Decree and its Work Plans, as amended, as well as the Owner/Developer covenants. Honeywell retains responsibility for

operating the ERS and monitoring environmental media to demonstrate continued attainment of Consent Decree performance criteria.

The Project will be the 5<sup>th</sup> and 6<sup>th</sup> buildings to be constructed on Harbor Point and the final buildings off the Area 1 cap. The present schedule anticipates construction starting in early 2022.

The Project will be constructed on pile foundations. The existing Area 3 soil cap containing at least 2 feet of clean fill, where disturbed, will be replaced with new capping materials (additional fill materials and impervious hardscaping) that will be as protective or more protective than the original Area 3 cap design. Parcel 4 borders the work done (as approved) in the Area 1, Phase 1 DDP and Construction Completion Report (Exelon). As part of this earlier work, the Hydraulic Barrier (HB) was augmented with steel sheeting. As such, there is no offset from pile driving needed to protect the barrier from vibration. None of the work for this phase will be on Area 1 or Area 2. No Head Maintenance System (HMS) components will be affected or modified; however, vibration and settlement monitoring will be performed in accordance with the Environmental Agreement, Exhibit C, Sections 4.5 and 5.5.4.

The two final infiltration wells from the original five-well system will be completed during the construction of Parcel 4. The infiltration well system was approved as a Minor Modification to the Area 1, Phase 1 DDP on July 31, 2017 by EPA and August 11, 2017 by MDE. Proposed locations of these wells coincide with those of the approved plan. The MDE Solid Waste Program will be notified at least three days prior to the anticipated start of drilling the additional infiltration wells.

The planned site utility systems include stormwater drainage, sanitary sewer, domestic water, natural gas, electric, and telecommunications. The majority of the Project's stormwater will be directed into an underground stormwater management system to control stormwater quantity and quality. This system will have the option of discharging to the infiltration well system east of Area 1 to facilitate recharge, or discharging to the municipal stormwater management system after being retained and treated in the system. The sewer connections will extend into the Project from Point Street, to the south. Other utilities will connect to the Project directly from the existing systems in the adjoining South Caroline Street.

This DDP follows a Conceptual Development Plan (CDP), dated March 16, 2020, which was approved by the USEPA on April 2, 2020, and by the MDE on June 15, 2020 (with comments).

## 2.0 PROJECT TEAM/ROLES

The stakeholders responsible for the preparation, review, and approval of this DDP are identified below.

### **Agencies:**

#### ***U.S. Environmental Protection Agency – Region III (EPA)***

Land, Chemicals & Redevelopment Division

Remediation Branch #1

1650 Arch Street

Philadelphia, PA 19103

Moshood Oduwole, Project Coordinator

(215) 814-3326

**Maryland Department of the Environment (MDE)**

1800 Washington Boulevard  
Baltimore, MD 21230  
Ed Dexter (Solid Waste Program)  
(410) 537-3376  
Richelle Hanson (Voluntary Cleanup Program)  
(410) 537-3493

**Consent Decree  
Respondent:****Honeywell**

115 Tabor Road, 4-D3  
Morris Plains, NJ 07950  
Eric Christodoulatos (Senior Remediation Manager)  
(973) 455-2877

**Owner/Developer:****Harbor Point Parcel 4 Holdings, LLC**

1300 Thames Street, Suite 10  
Baltimore, MD 21231  
Jonathan Flesher (Vice President)  
(443) 463-3937

**Architect:****Beatty Harvey Coco Architects, LLP**

1300 Thames Street, Suite 10  
Baltimore, MD 21231  
Todd Harvey (Partner in Charge)  
410-752-2759

**Geotechnical Engineer:****D.W. Kozera, Inc.**

1408 Bare Hills Rd, Suite 200  
Baltimore, MD 21209  
David Kozera, P.E. (Principal)  
(410) 823-1060

**Environmental Consultant:****GTA USA, LLC**

1414 Key Highway, Suite 201P  
Baltimore, MD 21211  
Samuel Stevenson (Lead Environmental Consultant)  
(443) 286-6562

**Civil Engineer:****RK&K**

700 East Pratt Street, Suite 500  
Baltimore, MD 20102  
Chris Krupinski, P.E. (Senior Project Engineer)  
(410) 771-3433

**Structural and  
Foundation Engineer:**

***Morris & Ritchie Associates, Inc. (MRA)***  
1220-C East Joppa Road, Suite 505  
Towson, MD 21286  
Jim Buckler, P.E.  
(410) 821-1690

### **3.0 EXISTING ENVIRONMENTAL REMEDIATION SYSTEM (ERS)**

The ERS consists of multiple components (collectively referred to herein as “ERS Components”), which are located throughout Harbor Point and are primarily associated with the containment of CrVI-impacted groundwater in Area 1. Two environmental capped areas (Area 2 and Area 3), unrelated to the CrVI-impacted groundwater, are located outside and east of Area 1. The only ERS Component directly affected by this Project is Area 3. The ERS Components that are proximate to this Project are shown on Drawing EN1.01. Additional information regarding the ERS Components is presented below.

#### **3.1 AREA 3 SOIL CAP**

Area 3, also referred to as "Silver North" and "Silver South", is capped with two feet of clean fill that overlies a visual warning layer (presumably orange construction safety fence material, non-woven geotextile, or both). The Consent Decree defines Area 3 as two isolated areas east of Wills Street, both north and south of Block Street (now Point Street). These areas are shown on Drawing EN1.01.

In 2007, the site was processed through the MDE Voluntary Cleanup Program (VCP), culminating with a regulatory closure via a No Further Requirements Determination (NFRD). The NFRD required that the existing caps (typically asphalt pavement) in Areas 2 and 3 as well as the entire Project footprint be maintained, and that soil excavation in the capped areas follow specific handling and disposal requirements. For the purposes of this DDP, areas of the Project that are outside Area 3 are identified as “non-designated areas”.

A new environmental cap is planned for the entire Project. Specifically, within Area 3, the new cap will be as protective or more protective than the original Area 3 cap design. A Function Analysis of the Area 3 cap is included as Appendix A. The remainder of the Project, which consists of non-designated areas, will also be capped as a result of this development.

Historical sampling and analysis data from the Project area (Area 3 and non-designated areas) have identified elevated concentrations of some parameters, mainly including metals (lead and chromium), petroleum, and some polycyclic aromatic hydrocarbons (PAHs). The more significant soil contamination was found on the eastern portion of the Project, which necessitated the Area 3 cap. Some groundwater sampling has also identified elevated total chromium concentrations, although the primary area with chromium impacts is west of the Project, on Area 1.



### 3.2 UNAFFECTED PORTIONS OF THE ERS

The ERS also includes various components that will not be affected by the proposed Site activities described herein. These other ERS components are described below.

ERS Component	Description
Multimedia cap (MMC) in Area 1	Located west of the Site, beyond Wills Street. No aspect of this development will affect the Area 1 or the MMC.
Layered Soil Cap (LSC) – Area 2	Located south of the Site, beyond Point Street. No aspect of this development will affect Area 2.
Hydraulic Barrier (HB)	Located west of the Site, within the Wills Street right-of-way. The HB was reinforced with driven sheet piles during prior projects. No aspect of this development will affect the HB.
Head Maintenance System (HMS)	The HMS encircles Area 1, along the HB, and includes components both inside and outside the HB. The closest components of the HMS are located within the Wills Street right-of-way. No aspect of this development will affect the HMS.
Groundwater Storage (Tank Room)	The Tank Room is located within the Exelon building, west of Wills Street and west of the Site. No aspect of this development will affect the Tank Room.
Transfer Station	The Transfer Station is located within the Exelon building, west of the Wills Street and west of the Site. No aspect of this development will affect the Transfer Station.
Outboard Embankment	The Outboard Embankment is located along the waterside perimeter of Harbor Point, with no areas proximate to the Site. No aspect of this development will affect the Outboard Embankment.
Monitoring Program	The Monitoring Program includes various measures to monitor the operation of the ERS (piezometers, environmental media sampling points, etc.). No aspect of this development will directly affect the Monitoring Program. The effects of pile driving on the hydraulic gradient across the HB will be monitored to determine if adjustments to pile driving, sequencing, or the HMS pumping rates will be necessary. Vibration monitoring within 50 feet of the HB may require alterations to pile driving.

## 4.0 DEVELOPMENT PLAN AND SCHEDULE

### 4.1 SCOPE OF PROJECT

#### 4.1.1 PARKING GARAGE/APARTMENTS

The mixed-use retail/apartment/garage building will occupy a footprint of approximately 72,000 square feet on roughly the western  $\frac{2}{3}$  of the Project. An 8-story parking garage will comprise the majority of the podium of the building, with perimeter retail and apartment units. The lowest portions of the building will abut the existing sheet piles that form the retaining walls for the adjoining Point Street and Wills Street ramps to the south and west. The existing sheet pile walls were not designed to be used as support of excavation structures. An evaluation of the existing sheet pile walls has been performed. Temporary supports consisting of walers and rakers are required to support the existing sheet pile walls during foundation excavation and installation. Design of the temporary bracing will be a delegated design item that will be designed and detailed as part of the contractor's support of excavation scope of work.

The lowest floor (Level 1) will be at a typical Elevation +14.0 (varying from Elevation +7.5 at the northeastern loading dock, to Elevation +11 to +11.5 at the northern and northeastern portions of the building, to Elevation +14.5 at the southern end of the building) and will include a parking garage, loading docks, retail units, and service and storage areas. The second floor (Level 2) will be at Elevation +28.0, matching the elevation of the adjoining plaza to the southwest, and will include additional parking and retail, the apartment lobby, and apartment units. Levels 3 through 8 will include additional parking and apartment units, with an amenity space, green roof, and roof pool terrace on Level 8.

Entry to Level 1 of the parking garage will be from Dock Street, to the north, and a connection also will be maintained from Level 1 into the existing plaza garage to the southwest, beneath Wills Street. The grades at both entry points were established during prior developments and will be maintained as they currently exist. A second parking garage entry will exist on Level 2, from Wills Street, at its existing grade near the plaza elevation.

A loading dock will be constructed on Level 1 at the northeastern corner of the building. The loading dock entry area will transition from Caroline Street, at Elevation +5.0, slightly downward to Elevation +4.5 at its lowest surface grade, then upward to Elevation +7.0 to +8.0.

An additional 17 levels of apartments will rise above the southwestern portion of the podium. The building will include roughly 1,292 parking space, 310 apartment units, and 15,584 gross square feet of retail.

#### 4.1.2 LINEAR PARK

Also during Phase 1 of the Project, a linear park will be constructed east of the garage/residential building, in a north-south orientation. The linear park will include sidewalks and other hardscape, seating areas, and planting beds. The typical grade along the linear park will be Elevation +14 to +15, and grades will drop slightly from the Point Street ramp at its southern end, and then drop again to meet South Caroline

Street at its northern end. An underground stormwater management system will be constructed beneath the linear park.

### **4.1.3 HOTEL**

As a planned second phase of the Project, an 8-story, triangular-shaped, 132-key hotel will be constructed on roughly the eastern ½ of the Project. The lowest floor (Level 1) will be at Elevation +14.0 and will include hotel lobby and restaurant. Levels 2 through 8 will include hotel rooms. The existing underground vaults associated with the sanitary pump station will remain adjacently east of the hotel.

Note that detailed plans regarding the hotel are currently under development by the project team. Foundation types, excavation depths, final capping conditions, and similar aspects of Phase 2 of this Project are expected to be similar to those of Phase 1 of this Project, and also generally consistent with construction designs and techniques used elsewhere at Harbor Point. Once these development details have been established, they will be incorporated into an Addendum to this DDP, for review and comment by Honeywell and the Agencies.

## **4.2 SCHEDULE**

The approximate project milestones for Phase 1 of this Project are listed below:

- Detailed Development Plan (i.e., the DDP) – Submit to Agencies: November 4, 2021
- Agency Approval of the DDP: February 1, 2022
- Commence foundation construction, Phase 1: February 15, 2022
- Start of intrusive activities, Phase 1: February 15, 2022
- End of intrusive activities, Phase 1: December 1, 2022
- Phased occupancy: Garage: Mid-2023. Apartments: Late 2023. Hotel: Early 2025

## **5.0 DEVELOPMENT IMPLEMENTATION ACTIVITIES**

### **5.1 EARTHWORK**

#### **5.1.1 NON-DESIGNATED AREA EXCAVATIONS**

As indicated on Drawing EN1.01, the majority of the Project is located in non-designated areas, outside the formal Areas 1, 2, and 3. Excavations in these areas will be performed to construct the lowest parking garage level, to construct pile caps, and to install utilities. The majority of these excavations are expected to be down to Elevation +3.0 to +9.0. The deepest excavation for the garage/residential building will be for the north elevator pile cap, which will require an excavation down to Elevation -1.0.

The utilities for Phase 1 of the Project will be located mainly through non-designated areas, as deep as Elevation -5.0 within the Project limits, and as deep as Elevation -8.0 outside the Project limits, in Caroline

Street. The majority of the utility connections will be made in the vicinity of the loading dock at the northeastern portion of the Project.

The construction of the Project constitutes a net export with regard to cut and fill. Excavated materials will be evaluated for beneficial reuse as fill where needed, and excess soils or those considered unsuitable for reuse will be removed from the Project.

Excavations will be performed with machine and labor methods in a controlled manner to appropriately manage and segregate materials with different environmental and geotechnical characteristics, to the extent such differences are apparent in the field. The handling of the excavated materials is discussed in the Material Handling and Management Plan (MHMP). Excavated soils that exhibit evidence of suspected contamination (e.g., with staining, discoloration, odors, etc.), will be segregated in accordance with the MHMP. These identification and segregation tasks will be overseen by an environmental technician, with prior experience and site-specified training for the types of contamination that may be encountered, under the direction of the Environmental Consultant. The MHMP will also include provisions for segregation, stockpiling, characterizing, manifesting, transporting, and disposing of hazardous wastes, if encountered during the excavation activities. A planned Controlled Staging Area for excavated soils during Phase 1 construction is shown on Drawing EN1.01. This Controlled Staging Area will also be used for temporary staging of clean soils, whether generated by on-site earthwork or from importation. This Controlled Staging Area may be relocated one or more times during construction, due to the tight spatial constraints on the Project.

### **5.1.2 AREA 3 EXCAVATIONS**

As indicated on Drawing EN1.01, Area 3 intersects the eastern portion of the Project, mainly beneath the western portion of the future Phase 2 hotel, along with minor areas of the adjoining sidewalks, planting beds, and linear park. The only portions of Phase 1 of this Project that will directly affect Area 3 will be the installation of sewer lines and a manhole on the southern portion of Area 3, the installation of a stormwater line across the northern tip of Area 3, and construction of easternmost portion of the linear park.

Aside from these areas of Phase 1 of this Project, the Area 3 cap will remain in place. During Phase 2 of this Project, construction of the hotel will entail intrusive activities in Area 3. Note that the easternmost portion of the site, which is part of the hotel portion of the project, was formerly the 950 South Caroline Street parcel acquired by the developer and was not part of the 27-acre site subject to the 1989 Consent Decree.

Excavations in Area 3 will be similar to those required for construction in the non-designated areas: to construct the lowest hotel level, to construct pile caps, and to install utilities. These excavations are expected to be to depths that will be similar to those required for the construction in Phase 1 and will be discussed in more detail in a forthcoming addendum to this DDP.

### **5.1.3 DEWATERING**

The majority of the planned excavations will not extend below the historical high water table (Elevation +3.0) and will not require dewatering. Localized excavation dewatering is expected to construct several

piles caps that will be as deep as Elevation -1.0, and limited areas of utility installation. These activities reflect a short-term construction condition. The excavation dewatering activities will be of short duration and will require only small-scale lowering of the water table. The dewatering will be kept to a minimum duration in order to minimize the effects on the HMS in Area 1. Dewatering is not expected to be necessary in other areas of the Project construction activities, except if significant rainfall occurs while excavations for pile caps and utilities remain open. In such situations, dewatering of open excavations will be necessary.

Prior environmental data have indicated total chromium-impacted groundwater in areas east of Area 1, although no consistent occurrence of CrVI-impacted groundwater. The primary area with chromium impacts is west of the Project, on Area 1. As a contingency, water collected from the Project construction activities, whether resulting from groundwater infiltration or rainfall events, will be handled as either “Contact Water” or “Non-Contact Water”, pursuant to the MHMP. This water will be pumped out of a shallow temporary sump and stored in temporary frac tanks for testing to determine if it meets discharge criteria for the applicable MDE discharge permit. If the results exceed the permit criteria, the water will be managed as a waste requiring off-site transport and disposal. Surface water runoff will be diverted away from the excavations using diversion berms during construction, to minimize dewatering quantities. MDE-approved erosion and sediment control procedures will be followed in areas of open excavations (see Section 7.2.2).

#### **5.1.4 OBSTRUCTION REMOVAL**

Obstructions, such as remnant concrete floor slabs, footings, asphalt, etc., may be encountered during subgrade construction activities for the Project, although the frequency of encountering obstructions is expected to be relatively low compared to other portions of the Site. These obstructions will be removed at pile locations, and where they interfere with pile cap geometry. Pre-drilling or pit excavations may be used to proactively evaluate whether obstructions are present in pile driving areas. When possible, obstructions that do not interfere with construction will be left in place below the future structures, subject to the approval of the geotechnical engineer. Any excavated debris or removed obstructions will be evaluated for potential contaminants in accordance with the MHMP.

Dynamic hoe-ram or spud driving may be used to demolish obstructions encountered during pile driving. Excavation and removal will be used where necessary and will be performed with a sequence and process organized to protect against dust generation and cross-contamination of the cover soil. For deeper obstructions or obstructions that cannot be removed, the pile/pile cap layout will be redesigned as necessary.

Abandoned groundwater wells exposed during the excavation that present an open annulus (i.e., wells not previously abandoned in place) will be properly abandoned in-place or removed, as required, following Maryland’s COMAR 26.04.04.11 – Abandonment Standards.

#### **5.1.5 FILL PLACEMENT / RAISED GRADES**

The building structures of the Project buildings will be pile-supported so that future settlement is mitigated.

The construction of the Project constitutes a net export project with regard to cut and fill. Establishing sub-grade for the Project will initially involve cutting 5,000 to 6,000 cubic yards of soil to construct a tower crane pad, the pile caps, the grade beams, and the underground stormwater management structures. Roughly half of that cut soil volume will then be needed to backfill around pile caps and grade beams, and establish subgrade for the building and linear park. The estimated net export volume for the Project is 2,700 cubic yards, assuming cut materials are suitable for reuse. Fill placement should follow the recommendations of the geotechnical engineer. Typically, this involves placing fill in controlled, compacted lifts and compacted to 95% of the maximum dry density as determined by the Modified Proctor Test. In accordance with Baltimore City requirements, the top 12 inches of pavement subgrade shall be compacted to 97% of the maximum dry density as determined by the Modified Proctor Test.

To the extent possible, soils that are excavated from the Project will be evaluated for beneficial reuse where fill is needed. Based on the previously collected environmental data, the majority of the soils within the Project footprint, to the planned excavation depths, do not contain environmental impacts that would be considered unsuitable for placing below the buildings or the linear park, particularly given the environmental caps that are planned for the final site condition. Therefore, unless differing conditions are observed during construction and warrant a different approach, the general cut/fill sequence will be as follows (and discussed in more detail in the MHMP):

1. pavement cuts will be transported off-site for appropriate disposal or recycling,
2. soil cuts for the pile caps and grade beams will be stockpiled in the Controlled Staging Area, pursuant to the MHMP, or will be transported for off-site disposal,
3. stockpiled soils will be reused as fills where needed, such as around completed pile caps and grade beams, or to establish sub-grade under the building and the linear park, or will be transported for off-site disposal if not considered environmentally and geotechnically suitable, and
4. soil cuts for utilities will be transported for off-site disposal.

Note that the majority of Phase 1 of this Project will not involve disturbance of Area 3, aside from limited areas of utilities. The majority of Phase 2 of the Project will impact Area 3 and will be discussed in more detail in a forthcoming Addendum to this DDP.

The planned reuse of these soils is discussed in more detail in the MHMP. Specifications regarding the reuse of these materials and the placement procedures (e.g., moisture content, gradation, lift thicknesses, compaction, etc.) will be assessed by the geotechnical engineer. Prior to reuse as structural fill, materials generated from on-site excavations will be sorted to remove deleterious materials, such as organics, wood, etc. Unsuitable materials will be segregated and disposed off-site. Fill subgrades will be proof-rolled to identify any loose, soft, wet, or otherwise unsuitable subgrade. Any surficial materials identified as unstable or unsuitable will be undercut to a stable stratum as recommended in the field by the geotechnical engineer and backfill with controlled, compacted fill.

Aside from construction aggregates, it is not expected that off-site fill materials will be needed. If it becomes necessary to import fill soils, the MHMP establishes analysis and approval requirements. The Project construction will occur east of the Plaza Parking Garage, and no fill placement or significant loading

will occur on Area 1 or the immediate vicinity of the HMS; therefore, settlement of remedy features is not anticipated. However, vibration and settlement monitoring will be performed in accordance with the Environmental Agreement, Exhibit C, Sections 4.5 and 5.5.4.

## 5.2 FOUNDATIONS

Foundations for the parking garage/mixed use structure comprising Phase 1 of this Project are similar to those installed beneath the adjacent Thames Street Wharf (TSW), 1405 Point, and Wills Wharf buildings, using driven, closed-end (conical tip), concrete-filled, steel pipe piles. Piles will be placed in groups for concrete pile caps and shear wall foundations.

The foundations and buildings will be constructed utilizing methods that re-establish a cap over the site. Over the majority of the Project, the final cap will be more effective than the prior cap, because permanent structures are being built.

On the western portion of the Project, some piles will be driven at locations within 30 feet of the HB. The entire eastern section of the HB was previously augmented with sheet piles during prior development activities, so that pile driving could occur within 30 feet of the HB.

### 5.2.1 PILE SELECTION

The piles for the mixed-use garage/residential building will be driven pipe piles. The mixed-use garage/residential building is situated entirely in non-designated areas, outside Area 3.

The pipe piles will be 16-inch or 18-inch OD end, ½-inch thick wall steel pipe (ASTM A52, Grade 3, 45 ksi yield) with conical tips. Conical tips will be cast iron. Conical tips and pipe splices will be seal welded. The driven foundation piles shall be driven from existing grade, and cut off after local excavation for pile cap construction. The driven foundation piles will be filled with 4,000 psi structural concrete after they are cut off. The concrete fill enhances the structural pile bending capacity, and will prevent infiltration of groundwater inside the pipe shell. Tension pipe piles will be reinforced with steel, as noted in the DDP Drawings. If fresh concrete settles after placement, the depression at the top of the pile will be filled with epoxy grout to promote bearing over the full pile area. If problems arise during pile driving, such as encountering an obstruction that prevents driving the pile to the design depth the pile/pile cap layout will be redesigned.

The closed-end conical tips will promote pile bearing at higher elevations, and will reduce the downward transport of material by pile penetration compared to open end pipes or flat plat tips. The driven piles will displace ground surrounding the pile shaft, which will remold the soils and increase horizontal ground pressure adjacent to the shaft. The horizontal ground pressure will increase pile capacity due to shaft friction. The combined remolding and increased ground pressure at the pile shaft will reduce the ability of water to move along the pile shaft. Refer to previous documentation prepared by Mueser Rutledge Consulting Engineers (MRCE) for the TSW building, which cites the published study Pile Type for Contaminated Site (Boutwell, et al, 2004), for additional information.

Piles shall be driven from existing grade, with only local removal of surface materials (pavement and subgrade, as needed) to facilitate pile installation. Piles are planned to be driven without pre-drilling. Surface water will be diverted away from driven piles using soil berms.

**5.2.2 PILE CAPS**

Pile caps will be constructed of cast-in-place concrete and will vary in thickness from 3’-6” to 6’-0”. Shear wall foundations are essentially large pile caps with high moment capacity for wind and seismic load resistance. Pile caps will be formed, and will contain reinforcing steel for cap performance and for floor slab and column connections. If needed, and at the contractor’s option, AASHTO No. 57 stone will be placed below the pile caps, in contact with the pile shafts. The pile cap excavations will be backfilled with clean material below the structure design elevation.

The bottom of the majority of the pile caps will be at roughly Elevation +4.5 or higher. At the following locations, the pile caps are thicker and/or are positioned deeper, such that the bottoms of the pile caps will extend below the historical high water table of Elevation +3.0.

Building	Pile Cap Description	Pile Cap Bottom
Mixed-Use Garage/Residential Building	Northeast Elevator	Elevation -1.0
	Northeast Stair	Elevation +1.5
	South Tower Elevator	Elevation +0.5
	Southeast Elevator	Elevation +1.75

At these isolated locations below the historical high water table, the pile caps will be protected with waterproof membrane as a contingency to prevent building exposure to CrVI-impacted water. During construction, water that collects in pile cap excavations (either groundwater seepage or stormwater) will be collected and managed as Contact Water in accordance with the MHMP.

**5.2.3 GROUND FLOOR SLABS**

The ground floor slabs will typically be constructed of a 5-inch thick concrete slab on grade, with welded wire fabric reinforcement, over 6 inches of sub-base material. In some areas, the concrete slab will be thicker, such as around slab perimeters, retaining walls, thickened slabs, etc. At a minimum, the final cap profile throughout the proposed structures will be comprised of a 5-inch thick concrete slab on grade and 6 inches of sub-base material. In areas of the pile caps and grade beams, the final cap thickness will be greater.

In all areas of the building, the structure will comprise a final cap that will be more effective than the existing cap required by the 2007 NFRD.

Perimeter foundation drain piping will be installed outside the building and will convey water to the stormwater management system for the building. A trench drain will be situated at the loading dock and will discharge to the stormwater management system.



## **5.3 UTILITIES**

### **5.3.1 SITE UTILITIES (GENERAL)**

The site utility systems include storm drains, sanitary sewer, domestic water, natural gas, electricity, and telecommunications. The utilities will extend directly into the Project from South Caroline Street and Point Street. Drawings C4.00 and C4.20 show the planned utilities connecting between the Project and the existing utilities adjacent to the Project.

The planned utilities in Phase 1 of this Project will not affect Area 1, Area 2, the MMC, the HB, or the HMS. All utilities will be constructed in a “clean” utility corridor for future maintenance or repair, by over-excavating the utility trench, lining the trench with geotextile, and installing the utility with clean backfill material, as shown on Drawing EN1.02.

If any suspect contaminated materials are encountered while excavating for utilities, the materials will be handled in accordance with the MHMP.

### **5.3.2 SANITARY SEWER**

Sanitary sewer will be extended from the existing sewage pumping station located adjacently southeast of the Project (northwest of the intersection of South Caroline Street and Point Street), westward along Point Street, then north into the structure. An existing sanitary sewer line crosses the southwestern corner portion of the Project, providing the sewer connection from the Exelon building to the sanitary sewer main located in Point Street, to the south. A manhole (identified as SMH6) is also located in this area of the Project. Manhole SMH6 and the segment of this sewer line that crosses the Project will be demolished, and a new sewer line will be installed adjacently west of the Project, in and beneath and floor of the plaza garage. This new sewer line will connect to the existing sewer line located in Point Street, tying in at manhole SMH5, such that the rerouted sewer lines will be located outside the Project footprint.

### **5.3.3 STORM DRAIN**

Pursuant to an approved Minor Modification to the Area 1, Phase 1 DDP, the two final infiltration wells from the original five-well stormwater infiltration system will be completed during the construction of Parcel 4. Pursuant to the approved plan, these infiltration wells will be able to receive stormwater that is generated from the Project. The well locations are depicted on Drawing EN1.01. These two wells will be connected to the existing, functioning three-well system, which automatically directs stormwater (if available in the system) to the infiltration wells, if called for by the HMS. The MDE Solid Waste Program will be notified at least three days prior to the anticipated start of drilling the additional infiltration wells.

The majority of the Project’s stormwater (from the building roofs and linear park) will be directed into an underground stormwater management system to control stormwater quantity and quality. The system will consist of various stormwater retention structures (e.g., Contech Stormfilters and/or other similar types of structures), installed beneath the linear park. This system will provide the option of discharging to the infiltration well system east of Area 1 to facilitate recharge, or discharging to the municipal stormwater management system after being retained and treated in the system.

Stormwater runoff from the perimeter of the project will be collected in catch basins and into the existing stormwater drainage systems located in the adjoining roadways. These systems outfall into the existing 30-inch storm drain system located in South Caroline Street, which subsequently outfalls into the Harbor to the north of South Caroline/Dock Street intersection.

#### **5.3.4 DOMESTIC AND FIRE WATER**

Water supply lines will extend to the buildings directly from the existing 12-inch water main located in South Caroline Street.

#### **5.3.5 NATURAL GAS**

Natural gas supply lines will extend to the buildings directly from the public main located in South Caroline Street.

#### **5.3.6 ELECTRIC AND TELECOMMUNICATIONS CONDUITS**

Electric and telecommunications conduits will be extended to the buildings directly from South Caroline Street.

#### **5.3.7 DIESEL FUEL STORAGE DURING CONSTRUCTION**

Fuel storage for construction equipment will be performed in accordance with regulations for containment and management. Construction equipment will be re-fueled within secondary containment as described in the Spill Prevention and Response Plan (SPRP).

### **5.4 ROADS, STREETS, AND PARKING**

No new roads will be constructed for this Project. Connections into the new parking garage will be made from the existing roads and Plaza parking garage. The loading dock for the mixed-use garage/residential building will be accessed directly from South Caroline Street.

## **6.0 DESIGN MEASURES TO PROTECT THE ERS**

The Project development activities during Phase 1 are situated on non-designated areas, with minor utility and linear park construction activities that affect Area 3.

### **6.1 AREA 3 SOIL CAP**

Phase 1 of this development footprint is situated west of Area 3, and will be covered by the future parking garage and linear park. The hotel that is planned for Phase 2 will be constructed on and east of Area 3. The structures will serve as the future cap in the majority of the Project footprint. Any utility corridors located in Area 3 will be constructed as indicated on Drawing EN1.02.

Throughout construction activities involving soils, air monitoring and dust controls will be performed to assess and mitigate exposure, as discussed in Section 7.2.1.

## **6.2 HYDRAULIC BARRIER**

The perimeter hydraulic barrier (soil bentonite wall) effectively increases the efficiency for Honeywell to maintain its inward gradient obligation. The entire eastern length of the HB was preemptively repaired previously, by driving steel sheet piles to augment the HB, and installing an additional 15-foot wide reinforced concrete bridge slab above the HB. These preemptive repairs enabled the driving of piles closer to the HB than previously allowable. For this Project, the closest piles to the HB will be approximately 16-18 feet away.

## **6.3 MULTIMEDIA CAP (AREA 1)**

The MMC was designed to protect against stormwater infiltration and human exposure. The Project does not directly affect Area 1 and the MMC.

## **6.4 HEAD MAINTENANCE SYSTEM**

No design changes to the HMS are necessary for this Project, and no impacts to the HMS operation are anticipated as part of the Project construction activities.

# **7.0 ENGINEERING, CONSTRUCTION, AND ENVIRONMENTAL CONTROLS AND MONITORING**

## **7.1 CONSTRUCTION QUALITY ASSURANCE/QUALITY CONTROL**

The contract drawings and specifications will identify work items that require contractor Quality Control (QC) and items that require developer/owner Quality Assurance (QA). The Contractor will be required to prepare CQC/CQA Work Plans for operations that encounter the Environmental Remediation System (ERS). The Work Plan system will allow the Contractor to determine detailed means and methods for developer approval, and for the developer to control the work that protects the MMC and other ERS elements. QA/QC activities include inspections, testing, monitoring, and reporting.

The Contactor's CQC team and the Developer's CQA team will be comprised of the positions listed below.

- **Project Manager:** The Contractor's project manager is responsible for overall implementation and management of QC activities.
- **CQC Manager:** The Contractor's CQC Manager will report to the project manager. The CQC manager will perform and/or oversee all CQC activities; coordinate CQC activities with the developer; and maintain copies of all CQC records and test results. The CQC Manager should not have any duties other than CQC.
- **CQC Laboratory:** The laboratory is an entity independent of the owner, developer and contractor located either on or off-site that is responsible for conducting tests on materials (i.e., soil, water, and air) to document conformance with the contract plans and specifications.

- Developer Field CQA Inspectors: Inspectors will report to the Developer’s CQA Manager and will inspect major construction activities for conformance with the Contract Plans and Specifications. Inspectors will visually observe imported materials for conformance with the specifications; obtain QC samples; observe CQC sampling; observe CQC testing; record observations; and prepare daily reports.

HPD will provide resident QA field staff to manage, inspect, and monitor construction on a daily basis throughout soil-related construction activities. Specific QA activities are summarized below:

- Inspect the work to confirm that construction complies with the Contract Documents and Specifications. Primary work elements that will be inspected include but are not limited to the following:
  - exposure, removal, or repair of any component of the Area 3 cap,
  - vibration and settlement monitoring of the HMS components (vaults, wells, piezometers, and junction boxes) when driving piles within 50 feet of those features, and
  - other construction activities that directly affect the ERS.
- Prepare daily construction reports to document the work, including photographs with date/time stamps;
- Attend progress meetings;
- Review construction submittals to confirm compliance with the design;
- Collect and coordinate QA sampling and testing;
- Review QA/QC test results, including soil compaction, concrete testing, and testing of other construction materials and completed portions of the Project;
- Document materials management activities, including on- and off-site operations. Confirm that hazardous, non-hazardous, and clean materials are managed separately, profiled appropriately, and verify waste manifest procedures. The quantity of waste materials (i.e., water and soil) removed from the site will be documented;
- Verify conformance with the project control plans, such as the CAMP and MHMP; and
- Confirm that vibration and settlement monitoring of the HMS components is being performed appropriately during construction activities.

Honeywell, or its designee, has the right to review and comment on Contractor’s Work Plans, inspect the work, conduct inspections with EPA and MDE, submit required reports to the Agencies, and participate in progress meetings with the Agencies during construction. Honeywell, or its designee, will also have the right to issue a Stop Work notification for work that may significantly impact the ERS in a manner that is not consistent with this DDP. A Stop Work notification may be issued immediately upon learning of the potential for any significant impact to the ERS. Agency field inspectors will be personally notified at the time a Stop Work notification is issued to Contractors in the field. EPA and MDE Project Coordinators will be contacted by telephone and/or electronic mail. The Stop Work procedures will include the following:

- *Stop Work Notification*: written notification to stop work with a description of the issue and requirements (requirements may include time frames and/or actions associated with mitigating further impacts on the ERS);

- *Stop Work Compliance Response*: written response that describes the planned corrective measures to address the issues described in the Stop Work Notification and a schedule for implementation; and
- *Stop Work Completion*: written notification that the corrective measures have been completed, including a description of any deviations from the Compliance Response.

Specifically, Honeywell will independently inspect the work, coordinate with the resident QA staff regarding construction activities and QA/QC results, and document the activities, accordingly. Honeywell will communicate with the developer and QA staff and document any deficiencies, potential changes, and corrective actions required to meet the performance function of the ERS and the intent of this DDP. As noted above, Honeywell may review any submittals, test results, changes, or other engineering or QA/QC documentation issued for the Project.

## **7.2 CONSTRUCTION AND ENVIRONMENTAL CONTROLS**

### **7.2.1 AIR MONITORING AND DUST CONTROL**

A project-specific Construction Air Monitoring Plan (CAMP) has been prepared as part of this DDP and is reflective of the previously established air monitoring protocols implemented for the Thames Street Wharf, Exelon, Point Street, and Wills Wharf construction activities. The CAMP provides a description of the methods to be utilized for real-time particulate and weather data collection, air sample collection, laboratory analytical methods, and reporting demonstrating the effectiveness of the dust control measures implemented during intrusive activities.

Air monitoring will be implemented at the initiation of ground surface penetration and will continue through the completion of all intrusive activities, restoration of the caps, removal of all controlled soil and debris, and completion of surface cleanup activities following the removal of controls materials from the Project.

Best management practices for soil/debris handling that reduce dust generation and prevent excavation spoil deposition onto the adjacent surfaces will be implemented. These practices may include limited the size of the exposed soil area at a given time; reducing the amount of time excavated surfaces remain exposed; restricting work on dry/windy days; covering soil stockpiles with plastic, tarps, or fabric; and erecting particle-capturing barrier fences. The potential for dust emissions will be further controlled by misting with potable water during excavation and obstruction removal activities as needed to keep exposed soil surfaces moist. The potable water misting operation is also an effective means to control and/or intercept the migration of airborne particulates.

Dust control measures will be implemented during intrusive activities. If real-time aerosol monitoring detects the unlikely occurrence of particulate concentrations above Site-specific action level at the work zone limits, additional dust control measures will be implemented.

### **7.2.2 EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT**

Erosion and sediment control during construction will be addressed with conventional best management practices, which include silt fence/super silt fence, perimeter berms/swales, stabilized construction entrances, and inlet protection. Prior to the initiation of any intrusive activities, the erosion and sediment controls and stormwater management features will be installed in accordance with the permit drawings to be prepared and submitted to the City of Baltimore under separate cover, and in accordance with the General Permit to Discharge Storm Water associated with Construction Activities, to be submitted to MDE Water Management Division under separate cover.

Materials brought on-site for the construction entrance and truck wash must meet clean fill requirements (i.e., no recycled material).

Runoff water collected in temporary storage areas will be pumped to nearby portable 21,000-gallon double-walled, closed-top containers (“Frac” tanks). Further discussion on water handling and disposal is provided in the MHMP.

### **7.2.3 STORMWATER POLLUTION PREVENTION**

A Stormwater Pollution Prevention Plan (SWPPP) has been prepared, outlining the controls for erosion, sediment, and stormwater during construction.

Contact Water and Non-Contact Water handling, testing, and proper disposal procedures are described in the MHMP.

### **7.2.4 SPILL PREVENTION AND RESPONSE PLAN**

A project-specific Spill Prevention and Response Plan (SPRP) has been prepared to meet the requirements of construction for this development phase.

In general, liquids shall be handled in a manner such that contaminated material will be contained on the construction site and not allowed to flow onto on-site areas where existing environmental protections will not be disturbed, onto completed work, or off the Project as surface water discharge. Liquids include groundwater, seeps, decontamination liquids, liquids generated from subsurface dewatering activities, liquid that may have come in contact with site soils beneath the existing environmental protections exposed by the work, or liquids that may have come in contact with other potentially contaminated material.

Direct discharge of collected liquids to the storm sewer will not be allowed until appropriate characterization has been performed, including testing, pursuant to an MDE NPDES HT Permit. No discharge of collected liquids to the municipal wastewater system will occur. Proper disposal of captured and stored liquids will be performed in accordance with the MHMP.

Surface water monitoring will continue during and following construction per the approved EMMP. Currently, 18 monitoring locations and two background locations are sampled quarterly by Honeywell at low tide and analyzed for total dissolved chromium. This Project does not involve changes to the EMMP procedures.

### **7.2.5 OPTICAL SURVEY**

Due to the Project footprint lying entirely east of the HB, no modifications to the Optical Survey program are necessary.

### **7.2.6 VIBRATION MONITORING**

Vibrations caused by pile driving will be monitored at the HMS components (vaults, wells, piezometers, and junction boxes) using seismographs, when driving piles within 50 feet of the HMS components.

Seismographs will record maximum peak particle velocities in three mutually perpendicular planes and its associated zero-crossing frequencies. Seismographs will be equipped with a wireless broadband modem which enables remote communication with the seismograph and allows automatic alerts to designated field personnel when vibrations exceed the pre-established threshold value.

Based on site-specific vibration data collected during the test pile program, it was determined that production piles will induce vibrations on structures within 50 feet of pile driving. A “threshold value” of 1.0 in/sec and a “limiting value” of 2.0 in/sec shall be established for the HMS structures. These values reflect the “vibration standard” of 2.0 in/sec established in the Honeywell Construction Requirements, as well as those used during the recent Area 1 construction activities. Where limiting values are exceeded, performance of the structure will be observed and evaluated, and performance of utilities may be tested. Peak particle velocities above the limiting values may be permitted if structure/utility performance is deemed acceptable. In the unlikely event that the particle velocities exceed the limiting value of 2.0 in/sec, one of several mitigating measures would be implemented, including reducing the hammer energy by controlling the fuel setting, pre-drilling before pile installation, or substituting an alternative pile type for the driven pipe pile.

### **7.2.7 SETTLEMENT MONITORING**

No changes to the existing settlement monitoring systems are proposed.

Due to the proximity to the ERS of pile driving on the western portion of the Project, settlement monitoring of the HMS components (vaults, wells, piezometers, and junction boxes) will be performed when driving piles within 50 feet of the HMS components.

The settlement monitoring will start with a baseline survey of the HMS components located within 50 feet of any planned driven piles, performed within two weeks or less of driving those piles within 50 feet. The HMS components will then be re-surveyed on a weekly basis during pile driving within 50 feet.

### **7.2.8 MATERIAL HANDLING & MANAGEMENT PLAN**

The Material Handling & Management Plan (MHMP) addresses the handling and management of solids (asphalt, stone aggregates, concrete and wood debris, and soil) and liquids (stormwater and groundwater) that may be encountered during the intrusive activities at the Project. Additional provisions for the proper handling of fuels and other controlled liquids are provided in the project-specific Spill Prevention and Response Plan (SPRP).

## 7.3 PROGRESS SUBMISSIONS AND REPORTING

### 7.3.1 DOCUMENTATION

As described in Section 7.1, the Contractor’s QC staff and Developer’s field inspection/QA engineer will prepare field records to document construction, QC, and QA activities. Weekly reports will be prepared to summarize the major work activities, work approvals, construction issues, and corrective actions. Digital construction photographs will be included in weekly progress reports in and posted on the Project website for public access. A schedule update will be prepared monthly. From a geotechnical perspective, field staff will document the following elements:

1. Pipe pile driving records; and
2. Fill compaction testing.

From an environmental perspective, field staff will document the following:

1. Perimeter real-time air monitoring data;
2. Source(s) of clean fill/aggregates, type of material, and documentation used to certify that the material is suitable and “clean” for on-site use;
3. Waste characterization laboratory analytical results;
4. Waste profile and facility acceptance of all materials to be transported and disposed off-Site;
5. Waste manifests;
6. Approved work plans; and
7. Approved material submittals.

Collectively, the geotechnical, environmental, and QA field staff will prepare the daily and weekly logs. At a minimum, the logs will identify the following:

- weather conditions,
- work performed,
- list of all construction equipment and where each piece was used,
- sources and estimate volumes (in tons or truck loads) of soil moved and managed on-site;
- changed conditions,
- QA elements and deficiencies,
- monitoring results,
- corrective actions,
- design and construction modifications, and
- other relevant design or construction activities.

Honeywell’s Engineer will review weekly progress reports and monthly schedule updates. The weekly and monthly reports will also be distributed to MDE and the USEPA. The weekly report will summarize the results of daily logs and visual inspections, any deficiencies and corrective actions, design changes, QA/QC activities, and work progress.



### **7.3.2 CONSTRUCTION COMPLETION REPORT**

A Construction Completion Report will be prepared and submitted to USEPA, MDE, and Honeywell. The report will be assembled and submitted upon completion of construction, construction-related monitoring, and receipt of all QA/QC test results. The report will document construction activities, compliance with the DDP, and any modifications. Specifically, the report will include the following information:

- construction activities;
- QA/QC documentation;
- documented deviations from the DDP;
- as-built drawings related to the ERS components;
- construction photographs;
- monitoring data;
- selected correspondence; and,
- other relevant construction and design information related to the modifications or restoration of the ERS.

### **7.3.3 UNFORESEEN MODIFICATIONS**

During the course of construction, if field conditions or construction activities warrant a modification to the elements presented in this DDP or the Consent Decree Work Plans, HPD and Honeywell will notify USEPA and MDE. Any such modifications will be submitted to USEPA and MDE for review and approval. No modifications will be implemented until approved by USEPA and MDE, unless an emergency situation exists.

## **8.0 PROJECT-SPECIFIC HEALTH AND SAFETY**

GTA has prepared a Health and Safety Plan (HASP) Guidance for the project. The purpose of the HASP Guidance is to establish general personal protection standards and safety practices and procedures to be used as guidelines for the work at the Site. The HASP Guidance is not intended to be and shall not be used as a contractor-specific HASP. Contractors will be required to prepare their own HASPs that meet or exceed the requirements specified in the guidance plans.

Also, these documents are not intended to be inclusive of all health and safety issues that may be encountered at the Site, such as those associated with general construction activities. Rather, these documents are solely intended to provide guidance to contractors by identifying environmental issues and constraints that contractors at a minimum should include in their own HASPs.

Contractors will be required to prepare and implement and comply with their own HASP in accordance with all applicable federal, state and local regulations and standards of care. All contractor-prepared HASPs will be approved by the General Contractor, or its designee, prior to their personnel mobilizing to the Site.

## **9.0 REMEDY PERFORMANCE MONITORING DURING AND AFTER CONSTRUCTION**

As discussed previously in Section 3.2, all ERS components will remain operable and accessible during and following construction. This will allow Honeywell to meet the requirements of currently established monitoring programs.

This Project does not entail alterations or disruptions of the ERS, or the related Surface Soil Monitoring Plan (SSMP), Groundwater Gradient Monitoring Plan, or Environmental Media Monitoring Plan.

# **DDP APPENDIX A**

## **TABLES**

**TABLE A  
AREA 3 CAP FUNCTION ANALYSIS**

<b>Current Conditions</b>			<b>Final Development Cap</b>	
<b>Cap Layer Description</b>	<b>Material Description</b>	<b>Interim Cap Function</b>	<b>Areas Outside of Structures</b>	<b>Below or Adjacent to Foundation on Piles</b>
<b>Clean Soil Cover</b>	Minimum two feet of clean fill (much of Area 3 has been further capped with asphalt pavement and sub-base aggregate)	Protection against erosion and provide physical separation from underlying contaminated materials	Remove for construction and replace to original design or greater	Remove for construction and replace with building foundations/floor slabs
<b>Visual Warning Layer</b>	Bright orange synthetic grid (safety fence)	Provide visual indication that potentially contaminated materials exist below warning layer	Remove for construction and use geotextile below clean fill cover	Remove for construction and use geotextile below clean fill cover

# **DDP APPENDIX B**

## **ENVIRONMENTAL CONTROL PLANS**

**Material Handling and Management Plan (MHMP)**

**Construction Air Monitoring Plan (CAMP)**

**Spill Prevention and Response Plan (SPRP)**

**Stormwater Pollution Prevention Plan (SWPPP)**

**Health and Safety Plan (HASP) Guidance**