



RESPONSE ACTION PLAN

301 EAST CROMWELL STREET **Baltimore City, Maryland**

July 21, 2015

Submitted to:

Maryland Department of the Environment

Voluntary Cleanup Program
1800 Washington Boulevard, Suite 625
Baltimore, Maryland 21230
Attn: Mr. Jeffrey Harp

Prepared for:

301 East Cromwell Street, LLC

1000 Key Highway East
Baltimore, Maryland 21230

Attn: Mr. Marc Weller

Prepared by:

GEO-TECHNOLOGY ASSOCIATES, INC.

Geotechnical and Environmental Consultants

14280 Park Center Drive, Suite A
Laurel, Maryland 20707
(410) 792-9446 or (301) 470-4470
Facsimile (410) 792-7395
www.gtaeng.com

GTA Project No: 120896

GEO-TECHNOLOGY ASSOCIATES, INC.

GEOTECHNICAL AND
ENVIRONMENTAL CONSULTANTS

A Practicing GBA Member Firm



July 21, 2015

301 East Cromwell Street, LLC
1000 Key Highway East
Baltimore, Maryland 21230

Attn: Mr. Marc Weller

Re: Response Action Plan
301 East Cromwell Street
Baltimore City, Maryland

Dear Mr. Weller:

In accordance with our agreement dated March 16, 2015 and revised March 20, 2015, Geo-Technology Associates, Inc. (GTA) has prepared this Response Action Plan (RAP) for 301 East Cromwell Street ("subject property"), which is located south of East Cromwell Street and east of Port Covington Drive. This RAP has been prepared to address soil and groundwater contamination detected during prior evaluations in conjunction with site development.

An application for the subject property's acceptance into the Maryland Department of the Environment (MDE) Voluntary Cleanup Program (VCP) was submitted to the MDE on February 15, 2013. The subject property was accepted into the VCP by the MDE on December 18, 2014.

We appreciate the opportunity to be of assistance on this project. Should you have any questions regarding this information, or should you require additional information, please do not hesitate to contact our office at (410) 792-9446.

Sincerely,
GEO-TECHNOLOGY ASSOCIATES, INC.

Lisa M. DeRose
Environmental Scientist

Paul H. Hayden, P.G., L.R.S.
Vice President

120896

LMD/JWM/PHH

S:\Project Files\2012\120896 301 East Cromwell Street\Doc\RAP\ENV 120896 RAP.doc

cc: Mr. Jeffrey Harp / Maryland Department of the Environment

14280 Park Center Drive, Suite A, Laurel, MD 20707 (410) 792-9446 (301) 470-4470 Fax (410) 792-7395

◆ Abingdon, MD ◆ Baltimore, MD ◆ Laurel, MD ◆ Frederick, MD ◆ Waldorf, MD ◆ Sterling, VA ◆ Fredericksburg, VA ◆ Malvern, OH
◆ Somerset, NJ ◆ NYC Metro ◆ New Castle, DE ◆ Georgetown, DE ◆ York, PA ◆ Quakertown, PA ◆ Towanda, PA ◆ Charlotte, NC

Visit us on the web at www.gtaeng.com

EXECUTIVE SUMMARY

Geo-Technology Associates, Inc. (GTA) has prepared this Response Action Plan (RAP) for 301 East Cromwell Street (the “subject property”), as described herein. This *Executive Summary* is limited in scope and detail and is presented for the convenience of the reader. Please refer to the written report for details concerning the environmental condition of the subject property, as well as the scope and limitations of this RAP. Do not rely on this *Executive Summary* for any purpose except that for which it was prepared. Rely only on the full report for information about the findings, recommendations, and other concerns.

The subject property is comprised of 5.21 acres of fast land and 4.99 acres of riparian rights in the Middle Branch of the Patapsco River, south of East Cromwell Street and east of Port Covington Drive. The subject property currently consists of vacant, vegetated, fast land and two dilapidated piers extending south into the Patapsco River.

Historically, the subject property was developed prior to 1914 as part of a railroad yard complex, providing access to a coal unloading pier and a merchandise pier. The subject property was originally part of the larger CSX Port Covington Yards property. Between approximately 1971 and 1988, fill was placed in the Patapsco River, extending the southwestern portion of the property approximately 200 to 250 feet south into the Patapsco River. Bulkheads were installed along the shoreline after the fill was placed, and these bulkheads are currently in a state of disrepair. Prior to 1971, railroad tracks were removed from portions of the subject property, which were subsequently used for storage of truck trailers and shipping containers. By 1988, the railroad tracks had been removed and part of the central portion of the subject property was used for vehicle repairs and maintenance, which reportedly included a diesel fuel above-ground storage tank. The coal pier appeared in disrepair in 1988, and by 1994 both piers appeared unused. All land-based structures were removed prior to 1994, although the piers remain.

GTA understands that any remaining concrete foundations on the subject property are planned to be removed and a whiskey distillery complex is to be constructed. The whiskey distillery complex is proposed to include a two-story restaurant, a distillery, parking areas, stormwater management facilities, and waterfront space.

The bulkheads, piers, and shoreline areas located on the southern portion of the subject property are planned to be improved and redeveloped in the future. These areas are currently unstable and the bulkheads and piers are in a dilapidated state. This redevelopment will be included in an addendum to the RAP. This addendum will also include permitting for impacts to tidal wetlands and management of the excavation and capping of the shoreline.

In July 2012, GTA performed a Phase I ESA of the subject property. As part of the Phase I ESA, GTA reviewed MDE’s files including Voluntary Cleanup Program (VCP) files associated with the subject property and the overall CSX Port Covington Yards property. Based on the file review, limited soil and groundwater impacts were identified on the subject property. An application to the VCP for the overall Port Covington property was submitted on June 19, 2000, by the then-current owner, Starwood Ceruzzi PC, LLC. The overall property was accepted into the VCP on January 20, 2005, and a RAP was required to be prepared. However, prior to development of the RAP, the property was subdivided and Parcel B (containing the subject property) was not included in the RAP.

Struever Brothers Real Estate Development Corporation submitted a VCP application for Parcel B, which was accepted by MDE on November 18, 2003 with the requirement of a RAP. Parcel B would be further subdivided, and the subject property was designated Parcel 6B, and again excluded from the RAP. According to Ms. Barbara Brown, MDE VCP Case Manager for the Port Covington properties, a RAP for Parcel 6B was not submitted to the VCP.

The March 2001, Revised RAP for the overall Port Covington properties contained investigation work conducted between 1987 and 1997. According to the Revised RAP, TPH contaminated soil was discovered north of Pier 4 (part of the subject property). Three concrete pits containing lubrication oil with greater than 1,000 parts per million (ppm) of chlorinated compounds were discovered adjacent to Pier 4. According to the report, remediation of the area, including disposal of the oils as hazardous waste, excavation of the concrete pits, and post excavation sampling, was planned.

The Revised RAP also summarized a January 4, 2001, Site Investigation Report (SIR). According to the SIR, two soil samples and one groundwater sample were collected from the subject property. One semi-volatile organic compound (SVOC) was detected slightly above the MDE's Non-Residential Soil Cleanup Standard (NRCS). In addition, arsenic was detected above the Anticipated Typical Concentration (ATC) for eastern Maryland.

According to the Revised RAP approximately 5,000 cubic yards of hydrocarbon and metal-impacted soil, generated from the remediation of the off-site southern shoreline, was encapsulated with Portland cement and crushed to create a CR-6 material. The CR-6 material was then used to construct an access road on the overall Port Covington property, including the access road on the subject property. MDE approved the remediation generating the CR-6 material and the emplacement and use of the CR-6 material for the access-road.

An application for the subject property's acceptance into the MDE VCP was submitted to the MDE on February 15, 2013. The subject property was accepted into the VCP by the MDE on December 18, 2014, with the requirement that a RAP be prepared.

Because the subject property was historically part of the larger CSX Port Covington Yards property, and recognized environmental conditions (RECs) were identified in a previous Phase I ESA, and also to satisfy MDE requirements for review under the VCP, GTA performed a Limited Phase II ESA at the subject property that included the collection, field screening, and laboratory analysis of soil and groundwater samples from the subject property. GTA performed a test pit evaluation and installed five monitoring wells as part of the Limited Phase II ESA.

Soil samples collected at 10 locations across the site identified SVOCs at concentrations above the MDE's NRCS in several samples. Several identified and unknown VOC and SVOC Tentatively Identified Compounds were identified at estimated concentrations. Identified compounds were detected primarily in the vicinity of the former locations of the offices and substation, and in the assumed location of the former cable house. Eight Target Analyte List metals (arsenic, cadmium, total chromium, copper, iron, manganese, thallium, and vanadium) were detected in soil/fill at concentrations above their NRCS. The two samples exhibiting the highest concentrations of total chromium were submitted for speciation, and hexavalent chromium was not detected above the NRCS. Four soil samples collected from the CR-6/TPH

access road detected benzo(a)pyrene at a concentration above the NRCS. Arsenic was detected in four samples above the ATC for eastern Maryland.

Groundwater samples collected from five monitoring wells detected aluminum, total antimony, total arsenic, total cadmium, total and dissolved iron, total lead, total and dissolved manganese, and total and dissolved vanadium above their Groundwater Cleanup Standard (GCS) values. Based on GTA's Limited Phase II ESA data and historical information, MDE requested that a RAP be developed for the subject property.

This RAP has been prepared to establish a remedy for impacted soil and groundwater within the site boundary, which will be implemented in conjunction with the planned site development. The proposed remedies includes: execution of a deed prohibiting use of the groundwater beneath the site for potable purposes; construction observation for correct RAP implementation using appropriate health and safety measures during the planned construction; notification to MDE prior to future excavation activities; proper management of groundwater during dewatering activities (if necessary) and capping (e.g. asphalt, concrete, and MDE certified clean fill) to prevent direct contact exposure to impacted soil. The RAP has been prepared for MDE submittal so that a Certificate of Completion may be obtained following the implementation of the response actions proposed herein.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
1.0 SITE OVERVIEW.....	1
1.1 Introduction	1
1.2 Limitations.....	2
1.3 General Property Description	2
1.3.1 Structures and Land Use	2
1.3.2 <i>Site Setting</i>	3
1.4 Environmental Background	4
1.4.1 Facility History.....	4
1.4.2 Environmental Assessments.....	5
2.0 EXPOSURE ASSESSMENT	8
2.1 Current and Future Land Use/Occupants.....	8
2.2 Potential Contaminants of Concern	8
2.2.1 Soil	8
2.2.2 Groundwater.....	8
2.3 Exposure Pathway Evaluation	8
2.3.1 Direct Contact and Ingestion of Soil Contamination.....	9
2.3.2 Inhalation of Soil Contamination	10
2.3.3 Migration of Contamination to Ecological Receptors	11
3.0 CLEANUP CRITERIA	11
4.0 SELECTED TECHNOLOGIES AND INSTITUTIONAL CONTROLS.....	12
4.1 Corrective Actions for Specific Development Features.....	13
4.1.1 Proposed Buildings	13
4.1.2 Asphalt/Concrete Paved Areas.....	13
4.1.3 Landscaped Areas	14
4.1.4 Shoreline and Bulkhead Areas	15
4.2 Site-Wide Corrective Actions for Soils	15
4.2.1 Protection of Site Workers	15
4.2.2 SVOC and Metals Impacted Soil	15
4.2.3 Imported Fill Material Sampling and Analysis	16
4.2.4 Groundwater Contamination	17
4.2.5 Institutional Controls.....	18
4.2.6 Management of Clean Fill and Impacted Soils	18
4.3 Remediation Earthwork	20
4.3.1 General Activities Associated with Earthwork	20
4.3.2 Concrete Debris	20
4.3.3 Site Security	21
4.3.4 Air Monitoring Requirements	21
5.0 RISK MANAGEMENT	22
5.1 Cap Maintenance	22
5.2 Emergency Excavation	23
5.3 Planned Excavations.....	23
5.3.1 Reuse of Soils Within Landscaped Areas	24
5.3.2 Reuse of Soils Below Hardscape	24
6.0 PERMITS, NOTIFICATIONS, AND CONTINGENCIES	24
6.1 Permits.....	24
6.2 Site Contingency Plan.....	24
7.0 IMPLEMENTATION SCHEDULE	26
8.0 ADMINISTRATIVE REQUIREMENTS.....	27
8.1 Written Agreement	27
8.2 Zoning Certification.....	27
8.3 Public Participation.....	27
8.4 Performance Bond or Other Security.....	28

LIST OF APPENDICES

- Appendix A MDE VCP Acceptance Letter (*12 pages*)
- Appendix B Figures
- Figure 1 – Site Location Map
 - Figure 2 – Proposed Development Plan
 - Figure 3 – Topographic Map (*color*)
 - Figure 4 – Sample and Test Pit Location Plan (*color*)
 - Figure 5 – Capping Details (*color*)
 - Figure 6 – Designated Landscaped, Capped Areas, and Clean Fill Staging Area (*color*)
- Appendix C Tables
- Table 1 – Soil Analytical Results Summary (*11"x17", color*)
 - Table 2 – Groundwater Analytical Results Summary (*color*)
- Appendix D Concrete Sampling Plan (*1 page*)
- Appendix E Example Cap Inspection Form (*1 page*)
- Appendix F Zoning Certification (*1 page*)

RESPONSE ACTION PLAN

**301 EAST CROMWELL STREET
BALTIMORE, MARYLAND
JULY 21, 2015**

1.0 SITE OVERVIEW

1.1 Introduction

As requested by the Maryland Department of the Environment (MDE), Geo-Technology Associates, Inc. (GTA) has prepared this Response Action Plan (RAP) for the 301 East Cromwell property (“subject property”), located south of East Cromwell Street and east of Port Covington Drive in Baltimore, Maryland. During previous environmental evaluations, impacted soil and groundwater were identified above the applicable MDE criteria. This RAP has been prepared to establish a proposed remedy for the impacted soil and groundwater contamination in conjunction with the planned site development.

Prior to purchasing the property, 301 East Cromwell Street, LLC (“Client”) applied to the MDE Voluntary Cleanup Program (VCP) as an “Inculpable Person” (IP) for the subject property. The subject property was accepted into the VCP by the MDE on December 18, 2014. A copy of the MDE acceptance letter is included in *Appendix A*. The proposed future land use is Tier 2B (Restricted Commercial)”

This RAP has been prepared to establish a proposed remedy for impacted soil and groundwater contamination within the site boundaries. The proposed remedy for soil includes capping and off-site disposal of the impacted soil as needed for site grading purposes, construction observation for correct RAP implementation, and notification to MDE prior to future excavation activities. The proposed remedy for groundwater includes a deed restriction on the use of groundwater beneath the site for any purpose, health and safety measures during the planned construction, proper management of groundwater during construction dewatering activities (if necessary), and capping. The RAP has been prepared for MDE submittal so that a Certificate of Completion (COC) may be obtained following implementation of the proposed remedy.

1.2 Limitations

This RAP was prepared by GTA for 301 East Cromwell Street, LLC, under the terms and conditions of GTA's contract with 301 East Cromwell Street, LLC. GTA acknowledges that this document is being submitted to the MDE VCP and will be part of the public record, and that the MDE VCP is expected to use this report as part of its review process. However, use of this report by any third party is at their sole risk. GTA is not responsible for any claims, damages, or liabilities associated with third-party use.

1.3 General Property Description

1.3.1 Structures and Land Use

The subject property is comprised of 5.21 acres of fast land and 4.99 acres of riparian rights in the Middle Branch of the Patapsco River located south of East Cromwell Street and east of Port Covington Drive in Baltimore City, Maryland. The subject property currently contains vacant, vegetated fast land, and two dilapidated piers extending south into the Patapsco River. A *Site Location Map* for the subject property is presented as *Figure 1 (Appendix B)*.

According to the Baltimore City records of the Maryland Department of Assessments and Taxation (MDAT) and information provided by the current property owner, the subject property is comprised of 5.21 acres, identified on Baltimore City Tax Map 24 as Lot 11 in Block 1053. According to the MDAT records, Lot 11 is owned by 301 East Cromwell Street, LLC, and was purchased from SBER Port Covington, LLC, in August 2012. The MDAT records indicate that the land use for Lot 11 is commercial.

The subject property is proposed to be developed with a slab-on-grade building improvements, with a whiskey distillery complex that includes a processing/tasting/aging building, a distillery building, and a two-story restaurant. In addition, a loading area will be located east of the processing building and south of the distillery and an unloading area will be located east of the distillery building. A large visitor parking lot will be located on the western side of the whiskey distillery complex, and a smaller employee parking lot will be located on the eastern side. A main green area will be located on the northern portion of the site, north of the processing building and two stormwater management facilities will be located south of the

processing building and south of the large visitor parking lot. All of these features are included within the bounds of the RAP. Details regarding the proposed development for the subject property are presented as *Figure 2 (Appendix B)*. The shoreline including the bulkheads and the piers currently located on the subject property are planned to be redeveloped in the future. These areas will be addressed in an addendum to the RAP.

1.3.2 Site Setting

1.3.2.1 Topography

The topographic information on the USGS Topographic Quadrangle Map (Baltimore East, MD) for the site vicinity indicates that the ground surface elevation on the subject property ranges from approximately Mean Sea Level (MSL) to approximately five feet above MSL in the central portion of the subject property. The subject property and surrounding vicinity slope gently to the south toward the Middle Branch of the Patapsco River, which borders the subject property to the south. On-site drainage is directed to the southeast, toward the Patapsco River. A *Topographic Map* for the site and vicinity, based on the USGS Map, is presented as *Figure 3 (Appendix B)*.

1.3.2.2 Soils

According to the U.S. Department of Agriculture (USDA), Natural Resource Conservation Service internet website (reviewed on April 20, 2015), the site is underlain by Udorthents soils (42E).

1.3.2.3 Geology and Hydrogeology

According to the Maryland Geological Survey *Geologic Map of Baltimore County and City, Maryland* (1976), the site vicinity is situated in the Coastal Plain Physiographic Province, which is which is generally characterized by interlayered sedimentary deposits from historic marine and estuarine environments. Specifically, the subject property is indicated to be underlain by the clay facies of the Arundel Formation, described as gray, brown, black, and red kaolinitic and illitic clays with quartz silt locally interbedded with quartz sand lenses and pods.

Hydrologically, the Coastal Plain is underlain by both unconfined and confined aquifers of unconsolidated sediments, which overlie consolidated bedrock and dip toward the southeast. Groundwater storage and movement are functions of the primary porosity of the sediments. Larger storage is provided by gravel and sand, with little to no storage provided by clay. Near-surface, unconfined aquifers typically consist of sediments of higher permeability and are recharged locally, primarily through precipitation that permeates through the unsaturated zone into the aquifer. The water table in unconfined aquifers is therefore highly variable, fluctuating with the seasons and with rates of precipitation. Variations in the groundwater surface and flow generally reflect the topography and relative locations of surface water features. Intermittent confining layers can locally alter the water table conditions. The deeper, confined aquifers are bound by confining layers above and below, creating an artesian system. Confined aquifers are recharged in areas where the formation crops out, generally in more remote areas to the west.

The groundwater flow direction in the site vicinity is assumed to mirror surficial topography. Accordingly, the groundwater flow direction in the immediate site vicinity of the site is assumed to be generally toward the southeast, toward the Middle Branch of the Patapsco River.

1.4 Environmental Background

1.4.1 Facility History

The subject property was initially developed as part of the larger railroad yard complex between 1914 and 1937. Prior to 1914 the subject property was vacant land. Between 1914 and 1937 a building containing three horizontal steam boilers (boiler house) was located on the western edge of the developed portion of the property, and another building housing a blacksmith was located on the northeastern portion of the property. Two piers, consisting of a coal unloading pier and a covered merchandise pier, were constructed prior to 1937. Prior to 1951, the boiler house with the three horizontal steam boilers was replaced with a larger structure containing four horizontal steam boilers. In addition, several small "shanties" and storage structures were constructed at various locations on the subject property. Before 1971, fill was

used to extend the southern portion of the subject property approximately 150 feet into the Middle Patapsco River. Between 1971 and 1988, additional fill material was placed on the subject property, extending the property an additional 50 feet to 100 feet for a total of approximately 200 feet to 250 feet.

Prior to 1971, the railroad tracks were removed from portions of the subject property and those areas were then used to store truck trailers and shipping containers. By 1974 the boiler house (with the four boilers) located on the northeastern edge of the property had been removed, and a "Thawing Shed" with a dirt floor was present approximately 75 feet to the southwest. By 1988 all the railroad tracks had been removed and the majority of the subject property was used for parking, and the central portion of the subject property was used for vehicle maintenance. The coal pier was in disrepair by 1988, and by 1994 both piers appeared to be out of use. By 1994, all above-ground structures (except for the two piers) were removed from the subject property.

Historically, the surrounding area was generally developed with commercial/industrial buildings by 1914. Prior to 1914, surrounding industrial uses included the Western Maryland Railway Port Covington Yards (overall property), which was located adjacently north of the subject property. The Pacific Molasses Co. Ltd., which was comprised of several aboveground storage tanks and structures, was present prior to 1937 and was located west of the subject property. The land occupied by the Pacific Molasses Co. Ltd., became vacant by 1964.

1.4.2 Environmental Assessments

In July 2012, GTA performed a Phase I ESA of the subject property. As part of the Phase I ESA, GTA reviewed MDE's files including VCP files associated with the subject property and the overall Port Covington Yards property. Based on the file review, limited soil and groundwater impacts were identified on the subject property. An application to the VCP for the overall Port Covington property was submitted on June 19, 2000, by the then-current owner, Starwood Ceruzzi PC, LLC. The overall property was accepted into the VCP on January 20, 2005, and a RAP was required to be prepared. However, prior to development of the RAP, the

property was subdivided and Parcel B (containing the subject property) was not included in the RAP.

Struever Brothers Real Estate Development Corporation submitted a VCP application for Parcel B, which was accepted by MDE on November 18, 2003 with the requirement of a RAP. Parcel B would be further subdivided, and the subject property was designated Parcel 6B, and again excluded from the RAP. According to Ms. Barbara Brown, MDE VCP Case Manager for the Port Covington properties, a RAP for Parcel 6B was not submitted to the VCP.

The March 2001, Revised RAP for the overall Port Covington properties contained investigation work conducted between 1987 and 1997. According to the Revised RAP, TPH contaminated soil was discovered north of Pier 4 (part of the subject property). Three concrete pits containing lubrication oil with greater than 1,000 parts per million (ppm) of chlorinated compounds were discovered adjacent to Pier 4. According to the report, remediation of the area, including disposal of the oils as hazardous waste, excavation of the concrete pits, and post excavation sampling, was planned.

According to the Revised RAP approximately 5,000 cubic yards of hydrocarbon and metal-impacted soil, generated from the remediation of the southern shoreline, was encapsulated with Portland cement and crushed to create a CR-6 material. The CR-6 material was then used to construct an access road on the overall Port Covington property, including the access road on the subject property (see *Figure 2, Sampling Location Sketch*). MDE approved the remediation generating the CR-6 material and the emplacement and use of the CR-6 material for the access-road.

The Revised RAP also summarized a January 4, 2001, Site Investigation Report (SIR). According to the SIR, two soil samples and one groundwater sample were collected from the subject property. One semi-volatile organic compound (SVOC) was detected slightly above the MDE's Non-Residential Soil Cleanup Standard (NRCS). In addition, arsenic was detected above the Anticipated Typical Concentration (ATC) for eastern Maryland.

An application for the subject property's acceptance into the MDE VCP was submitted to the MDE on February 15, 2013. The subject property was accepted into the VCP by the MDE on December 18, 2014, with the requirement that a RAP be prepared.

Because the subject property was historically part of the larger CSX Port Covington Yards property, recognized environmental conditions (RECs) were identified in a previous Phase I ESA, and to satisfy MDE requirements for review under the VCP, GTA performed a Limited Phase II ESA at the subject property that included the collection, field screening, and laboratory analysis of soil and groundwater samples from the subject property. GTA performed a test pit evaluation and installed five monitoring wells as part of the Limited Phase II ESA.

Soil samples collected at 10 locations across the site identified SVOCs at concentrations above the MDE's NRCS in several samples. Several identified and unknown VOC and SVOC Tentatively Identified Compounds were identified at estimated concentrations. Identified compounds were detected primarily in the vicinity of the former locations of the offices and substation, and in the assumed location of the former cable house. Eight Target Analyte List metals (arsenic, cadmium, total chromium, copper, iron, manganese, thallium, and vanadium) were detected in soil/fill at concentrations above their NRCS. The two samples exhibiting the highest concentrations of total chromium were submitted for speciation, and hexavalent chromium was not detected above the NRCS. Four soil samples collected from the CR-6/TPH access road detected benzo(a)pyrene at a concentration above the NRCS. Arsenic was detected four samples above the ATC for eastern Maryland. Iron, vanadium, copper, and cadmium were detected at concentrations slightly above their respective NRCSs

Groundwater samples collected from five monitoring wells detected aluminum, total antimony, total arsenic, total cadmium, total and dissolved iron, total lead, total and dissolved manganese, and total and dissolved vanadium above their Groundwater Cleanup Standard (GCS) values.

2.0 EXPOSURE ASSESSMENT

2.1 Current and Future Land Use/Occupants

The subject property currently contains vacant vegetated land with several concrete building improvements throughout the subject property. Two dilapidated piers extend from the subject property shoreline to the south into the Middle Branch of the Patapsco River. Proposed development plans include the construction of a whiskey distillery and restaurant complex. The planned use of the subject property includes “Tier 2B (Restricted Commercial)” as defined by the *MDE Voluntary Cleanup Program Guidance Document*, June 2008.

2.2 Potential Contaminants of Concern

2.2.1 Soil

Metals (specifically arsenic, cadmium, chromium, copper, iron, manganese, thallium, and vanadium) and SVOCs (specifically benzo(a)pyrene, benzo(b)fluoranthene, and dibenz(a,h)anthracene) have been detected in onsite soils above their NRCS. Therefore, the contaminants of potential concern (COPCs) in soil are metals and SVOCs.

2.2.2 Groundwater

Several metals (specifically total aluminum, total antimony, total arsenic, total cadmium, total and dissolved iron, total lead, total and dissolved manganese, and total and dissolved vanadium) have been detected in groundwater on the site, at concentrations above their GCSs. Therefore, the COPCs in groundwater are metals.

2.3 Exposure Pathway Evaluation

Based on the depth of groundwater and the planned capping that will cover the entire site, a direct contact exposure pathway will not exist between future occupants/workers and the groundwater contamination. In addition, a prohibition on the use of groundwater on the subject property for any purpose will be included in the deed restriction.

GTA acknowledges that potential future exposure risks exist at the site. A site-specific Human Health Risk Assessment has not been prepared for this site, since elimination of the identified exposure pathways to future occupants (adult/youth on-site workers and adult/youth visitors, and construction worker) is proposed. Potential risks to construction workers may exist

through direct contact/ingestion of impacted soil and through inhalation of dust. The identified exposure pathways and potentially exposed populations are summarized in the table below and discussed in the following *Sections*.

Potentially Exposed Populations

Media	Exposure Pathway	Potential Exposed Population	Contaminants
Surface Soil	Dermal Exposure	Adult On-Site Visitors, Adult On-Site Workers, Construction Worker Youth and Child Visitors	SVOCs and metals
	Incidental Ingestion	Adult On-Site Visitors, , Adult On-Site Workers, Construction Worker Youth and Child Visitors	SVOCs and metals
	Inhalation of Volatiles and Fugitive Dust	Adult On-Site Visitors, Adult On-Site Workers, Construction Worker Youth and Child Visitors	SVOCs and metals
Subsurface Soil	Dermal Exposure	Adult On-Site Visitors, Adult On-Site Workers, Construction Worker Youth and Child Visitors	SVOCs and metals
	Incidental Ingestion	Adult On-Site Visitors, , Adult On-Site Workers, Construction Worker Youth and Child Visitors	SVOCs and metals
	Inhalation of Volatiles and Fugitive Dust	Adult On-Site Visitors, Adult On-Site Workers, Construction Worker Youth and Child Visitors	SVOCs and metals
Groundwater	Dermal Exposure	Construction Worker	Metals
	Incidental Ingestion	None	None
	Inhalation of Volatiles	None	None

2.3.1 Direct Contact and Ingestion of Soil Contamination

Soil impacted by COPCs above the NRCS exists in areas of the subject property. COPC concentrations exceeding the NRCS have been detected at depths up to five feet bgs. The COPCs identified consist of SVOCs and metals.

There is a potential for site construction workers to come into contact with COPCs impacted soil. This contact is expected to be limited due to implementation of a site-specific Health and Safety Plan (HASP).

Based on current development plans, soil will be removed to enable capping (e.g., clean fill, asphalt, or concrete, etc.) across the subject property. This will act as a limiting alternative, which will eliminate the direct contact exposure risk to construction worker and future on-site worker and visitor populations. In addition, fill material is expected to be imported to the site to adjust grade or for capping prior to final construction. Excavation for installation of subsurface utilities may encounter impacted soil, which will be re-used on site beneath the cap or disposed off-site. These limitations will be recorded as a deed restriction in the land records for the subject property. The proposed remedies for the soil contamination (HASP, capping, soil removal, institutional, and engineering controls) are protective of human health because they are designed to prevent exposure to contamination. Under the current conditions, construction worker and future on-site worker and visitor populations at the subject property could be exposed to the COPCs; however, once this RAP is complete, the above-referenced populations will be protected. These proposed remedial strategies are further outlined in *Section 4.1* of this report.

2.3.2 Inhalation of Soil Contamination

The COPCs were detected above the NRCS in soil. During future construction activities, it is possible for this impacted soil to become airborne, with the potential that site construction workers may breathe this fugitive dust. The inhalation of fugitive dust is planned to be limited due to implementation of a site-specific HASP and construction practices that prevent dust generation (e.g. implementation of dust control methodologies).

Capping (e.g., soil, asphalt, or concrete) across the subject property will act as a limiting alternative, which will eliminate future exposure to inhalation of fugitive dust to future on-site worker and visitor populations. The proposed remedy for inhalation of fugitive dust (HASP and dust control methodologies) is protective of human health since exposure to contamination above regulatory limits will be prevented. Specific details associated with the dust control during construction are further described in *Section 4.3.4* of this RAP.

2.3.2 Exposure of Future Occupants to Groundwater Contamination

Groundwater has been impacted by COPCs above the GCS at the subject property. Based on the depth to groundwater observed during previous investigations and the planned

capping that will cover the entire site, a direct contact exposure pathway will not exist between future occupants and the groundwater contamination. A groundwater use prohibition will also be established for the site and recorded in the local land records.

Based on the observed depth to groundwater and construction/grading plans, dewatering of construction excavations is possible. If dewatering is required, site construction workers may come in contact with the groundwater during site development.

Specific details associated with the dewatering activities are further described in *Section 4.2.4* of this RAP. A HASP for construction workers will be developed, implemented and maintained on-site. Personnel will be made aware of the HASP. A copy of the HASP has been submitted under separate cover to MDE.

2.3.3 Migration of Contamination to Ecological Receptors

Typical ecological receptors to contamination include wetlands and surface water bodies. A surface water body (the Middle Branch of the Patapsco River) is part of the overall property and is located immediately adjacent to the site. Therefore, the Middle Branch of the Patapsco River is considered a potential on-site ecological receptor to the contamination. As discussed in *Sections 1.3.1, 4.1.4, and 5.0*, this portion of the subject property will be addressed in an addendum to the RAP. This portion of the subject property includes dilapidated bulkheads, piers, and unstable shoreline areas which are located on the southern portion of the subject property. This area is planned to be improved and redeveloped in the future. In addition, engineering controls (capping) will be established on the site as a limiting alternative. The engineering controls will provide continued future protection of the environment.

3.0 CLEANUP CRITERIA

Presented below is the soil and groundwater cleanup criteria selected for the site. The MDE NRCS, ATC, and/or GCS concentrations for COPC are referenced in the *MDE Cleanup Standards for Soil and Groundwater: Interim Final Guidance (Update No. 2.1)*; June 2008. The applicable cleanup criteria for the analytes of concern at the site are summarized in the table below.

Soil and Groundwater Cleanup Standards

Analyte (Soil)	MDE NRCS/ATC
<i>SVOCs</i>	
Benzo(a)pyrene	0.39
Benzo(b)fluoranthene	3.9
Dibenz(a,h)anthracene	0.39
<i>Metals</i>	
Arsenic	10
Cadmium	51
Chromium	310
Hexavalent Chromium	310
Copper	4,100
Iron	72,000
Manganese	2,000
Thallium	7.2
Vanadium	100
Analyte (Groundwater)	MDE GCS
<i>Metals</i>	
Arsenic	10
Cadmium	5.0
Chromium	100
Hexavalent Chromium	100
Copper	1,300
Iron	300
Manganese	50
Thallium	2.0
Vanadium	3.7

Soil and groundwater concentrations expressed in milligrams per kilogram (mg/kg) and milligrams per liter (mg/L), respectively, equivalent to parts per million (ppm).

4.0 SELECTED TECHNOLOGIES AND INSTITUTIONAL CONTROLS

This RAP presents proposed corrective actions to protect against exposure to contaminated soil and groundwater in conjunction with future site development. Potentially-complete exposure pathways have been identified between the contaminated soil and future occupants or users of the subject property. These exposure pathways will be eliminated through the preparation of a HASP; construction observation for correct RAP implementation using appropriate health, and safety measures during the planned construction; excavation and off-site disposal of impacted materials encountered during development activities; site-wide capping; and engineering and institutional controls (e.g. deed restrictions on use of groundwater and notifications prior to excavation). The engineering and institutional controls are summarized in the table below.

Engineering and Institutional Controls

ENGINEERING CONTROLS	INSTITUTIONAL CONTROLS
Permanent site capping requirements.	Restricted commercial use requirement (per the VCP land use definition). Soil disposal/excavation notification.
Soil excavation and off-site disposal.	Inspection and maintenance requirement for all site caps. One-Call system (Miss Utility) notification
Temporary dewatering of groundwater	MDE notification for contact with groundwater Groundwater use prohibition.
HASP generation and implementation for construction workers.	Groundwater use prohibition. MDE notification of transfer of property ownership.

Limiting alternatives to future potential exposure will be performed through placement of deed restrictions prohibiting the use of groundwater beneath the property and the restriction of soil excavation and cap maintenance. Additionally, future site improvements will be connected to municipal water and sewer services. A prohibition on the use of groundwater on the subject property for any purpose will be included in the deed restriction.

4.1 Corrective Actions for Specific Development Features

4.1.1 Proposed Buildings

The subject property is proposed to be developed with a slab-on-grade foundation, with a whiskey distillery complex that includes a processing/tasting/aging building, a distillery building, and a two-story restaurant. The buildings will include a concrete slab that will act as a cap, which will eliminate the direct contact exposure risk to future adult/youth on-site workers and adult/youth visitors, and construction worker. Details regarding the proposed development for the subject property are presented as *Figure 2 (Appendix B)*

4.1.2 Asphalt/Concrete Paved Areas

The impervious cover will consist of six inches of granular sub-base and four inches of asphalt or concrete over native material or clean fill, as required by the grading plan. Based on preliminary grading estimates, the re-use of on-site materials is anticipated. In areas where clean fill is required, the fill will be approved by the MDE and will meet non-residential standards. Details of the capping are illustrated in *Figure 5 – Capping Details in Appendix B*. A Clean Fill

Sampling Plan will be submitted for MDE approval, implemented, and the material accepted by MDE prior to the use of any fill on the property.

Clean fill must be transported directly from the source facility and not stockpiled at a third party storage yard.

4.1.3 Landscaped Areas

Pervious capping will include the landscaped areas and areas to be covered by stone. These areas will be capped with a minimum of two feet of clean fill. The thickness of the cap can be increased as an option to accommodate the planting of different species in order to ensure the minimum clean fill requirements and accommodate the plant's root ball. If needed, the clean fill thickness will be increased to three feet to accommodate a plant's root ball. The pervious capping will eliminate the direct contact exposure risk to future occupants or users of the site. Based on preliminary grading estimates, the re-use of on-site materials is anticipated, with MDE-approved clean fill that meets residential soil standards used where necessary to reach final grade. A total of at least two feet of certified clean fill material above a marker barrier will be placed in areas of pervious capping. A Clean Fill Sampling Plan will be submitted for MDE approval, implemented, and the material accepted by MDE prior to the use of any fill on the property.

Both the pervious and impervious capping will be underlain by a marker barrier, as shown on *Figure 6, Designated Landscaped and Capped Areas* included in *Appendix B*. The marker barrier will not be placed beneath building improvements. The marker barrier will be placed between the native site soil and clean fill. The marker barrier will consist of a geotextile fabric meeting the Maryland State Highway Administration specification 921.09; under Maryland application class SD Type I, woven, monofilament. Specifications for soil and asphalt marker fabric are presented, along with general details for the impervious and pervious capping, on *Figure 5*. The property owner is responsible for ensuring the proper implementation of all recorded deed restrictions and land use controls, and maintenance requirements for site caps to reduce the risk to public health and the environment.

Specifications for the marker fabric are presented on *Figure 5*. It should be noted that utilities may be installed in these areas prior to capping. Excavated materials generated during utility installation that are not used as backfill will either be placed elsewhere onsite beneath a capped area or removed from the site for disposal.

Specific details regarding soil disposal are presented in *Sections 4.2.6, 5.3.1, and 5.3.2*. Documentation of these activities will be submitted to MDE VCP within monthly RAP Implementation Progress Reports and the RAP Completion Report.

4.1.4 Shoreline and Bulkhead Areas

The bulkhead, piers, and shoreline areas located on the southern portion of the subject property are planned to be improved and redeveloped in the future. These areas are currently unstable and the bulkheads and piers are in a dilapidated state. This redevelopment will be included in an addendum to the RAP. These areas are depicted on *Figure 6, Designated Landscaped and Capped Areas* included in *Appendix B*. This addendum will also include permitting for impacts to tidal wetlands and management of the excavation and capping of the shoreline.

4.2 Site-Wide Corrective Actions for Soils

4.2.1 Protection of Site Workers

Soil containing COPCs above the cleanup criteria in *Section 3.0* is present throughout the site. A HASP will be implemented to reduce direct contact exposure of construction workers to the impacted soil during construction. Standard construction practices for dust control will be utilized to limit worker exposure to contaminants borne on dust and windblown particulates. On-site construction monitoring will be provided during earthwork activities to ensure that the soil is handled properly and document onsite activities.

4.2.2 SVOC and Metals Impacted Soil

SVOC and metal impacted soil has been identified at the subject property. Excavated materials generated during building improvements and utility installation are anticipated to be utilized elsewhere onsite beneath a capped area or removed from the site for disposal. In the

event that soil will need to be transported off-site, the likely offsite disposal facilities proposed for receiving contaminated soil are as follows:

Soil Safe, Inc. (Soil Safe)
16001 Mattawoman Drive
Brandywine, Maryland 20613-3027
(301) 782-3036
<http://www.soilsafe.com/>
Point of Contact: Amy Ralston

Or

Clean Earth Inc. (Clean Earth)
6250 Dower House Road
Upper Marlboro, Maryland 20772
(215) 734-1400
www.cleanearthinc.com
Point of Contact: Paula Cross

Use of either facility as an off-site disposal facility is contingent on the soil sampling. If on-site soils are determined to be hazardous in a waste disposal scenario or have COPC concentrations above the levels in the facilities permit, the soil will be excavated, live loaded, and transported to the selected licensed waste disposal facility. Additional/alternate disposal facilities may also be utilized. Information regarding these facilities will be provided to MDE prior to the transport of impacted soil offsite.

4.2.3 Imported Fill Material Sampling and Analysis

Currently the subject property is close to the proposed grade needed for construction. However, clean imported fill will be needed for utility fills and may be needed for site grading. Such fill material will be sampled, with analytical results submitted for approval by MDE VCP, prior to being transported to the site. Work plans for sampling fill material source areas will be submitted to the VCP for review and approval at least one week prior to proposed soil sample collection and analysis. The Work Plan will include number and location of samples and sample analyses. No soil will be transported onsite for use as fill material without prior written approval by the VCP project manager and soil transported onsite for use as fill material will meet MDE NRCS and/or cleanup criteria in *Section 3.0*. Documentation of the imported fill sampling

activities will also be summarized within monthly RAP Implementation Progress Reports and the RAP Completion Report.

4.2.4 Groundwater Contamination

The planned site development includes connection to a public water supply; therefore, groundwater use by future occupants will not occur. Based on the depth to groundwater, direct contact between future occupants and the contaminated groundwater is not anticipated. As a limiting alternative, the site will be capped with hardscape surfaces such as concrete walkways, stone/brick pavers, and asphalt.

A groundwater use prohibition will be established for the site and recorded in the local land records. The proposed remedy for the groundwater contamination (groundwater use prohibition) is protective of human health since contact with the contaminated groundwater will be prevented.

Based on the depth to groundwater and details associated with future construction, direct contact and incidental ingestion between construction workers and the contaminated groundwater is not anticipated. If groundwater is encountered, this Section describes the methods for temporary dewatering to remove, dispose of, or discharge waters that may enter the excavation areas during the installation of the proposed utilities and utility connections.

It is anticipated that the installation of utilities and utility connections at the site will require temporary dewatering to reduce the amount of perched groundwater infiltration into the utility trenches. During recent test pitting activities pockets of perched water were identified which are not believed to represent to true groundwater table. If temporary dewatering is necessary, fluids entering trenches or excavations in-use will be removed and will be relocated to another trench or excavation using a hose and pump. Due to the temporary dewatering anticipated, groundwater will not be discharged to the ground surface, or surface water, and will not be treated on site.

4.2.5 Institutional Controls

Institutional controls will be listed on the Certificate of Completion issued by the MDE VCP for the successful completion of RAP activities onsite. These institutional controls will include the maintenance of the cap, soil excavation restrictions, restrictions on the use of groundwater beneath the property, and any other restrictions the department deems necessary based on implementation of the approved RAP. A restriction on maintenance and excavation through the cap will be recorded in the local land records. The future owners and occupants will act as an independent third party that will notify MDE of any request for excavation at the site.

The proposed remedies for the soil and groundwater contamination are protective of human health since the remedies are designed to prevent exposure to contamination.

4.2.6 Management of Clean Fill and Impacted Soils

This section will outline how the MDE approved clean fill materials will not intermix with existing impacted site soils. In addition, the general strategy and methods of segregation, excavation, and sequence of construction to ensure approved materials are not co-mingled with existing site soils are presented.

Part of the proposed construction work is to regrade the subject property to remove impacted soil from the subject property or relocate impacted soil and replace with MDE certified clean material. To this effort the Contractor will establish a “Clean Fill Staging Area”. This area is presented on *Figure 6 – Designated Landscaped, Capped Areas, and Clean Fill Staging Area* located in *Appendix B*. The “Clean Fill Staging Area” will consist of a sub-grade layer of clean fill (e.g. stone dust or soil) over lain by geo-textile fabric. Once this is established, this area can stage clean fill. The Clean Fill Staging Area will be labeled with truck and equipment traffic having one way in and one way out. Equipment cannot enter the Clean Fill Staging Area until bulk soil is removed from the equipment including the tires or tracks. An on-site field technician will inspect the decontamination of the equipment prior to entering the Clean Fill Staging Area. The field technician will also keep account of which piece of equipment is eligible to enter the Clean Fill Staging Area on a day to day basis. This information will be kept in a daily log. It is

anticipated that contaminated non-hazardous material will be direct loaded into trucks and removed from the site.

In general, construction will begin on the eastern portion of the site and gradually move to the west until the project is complete. Once subgrade is achieved, marker fabric will be placed and clean fill will be placed above the marker fabric. A field technician is anticipated to be on-site during the majority of soil moving activities.

There will also be a designated Vehicle Maintenance Area. Vehicle maintenance (e.g. oil and hydraulic oil change, greasing of equipment, etc.) will only be performed in this location. Fueling of vehicles may occur outside of the Vehicle Maintenance Area, but will not be performed in areas that have already had MDE certified clean fill placed. The location of the Vehicle Maintenance Area will be identified prior to placement of the MDE certified clean fill.

Impacted soil by COPCs is located throughout the subject property. Excavated materials generated during utility installation and related construction activities that is not used as backfill will either be placed elsewhere onsite beneath a capped area or removed from the site for disposal.

If soil is not used on-site, impacted soil will direct loaded into trucks. If the impacted soil will not be used on-site, the impacted soil will be loaded into dump trucks and will be transported to an off-site disposal facility (see *Section 4.2.2*). A summary of the daily tonnage and the manifests for impacted soil and imported clean fill will be submitted along with the RAP Completion Report.

Prior to off-site disposal the impacted soil will be characterized to evaluate contamination levels relative to disposal scenarios at some time during the subject property's redevelopment. This is expected to include collecting composite soil samples at a frequency established by the facilities being considered for disposal. It is expected that the primary analytical methods will be determined at the time of sample collection. Additional analysis and profiling of the soils may be required, depending on requirements of the designated disposal facility.

During any future excavation activity that breeches a site cap, a HASP must be in place outlining appropriate measures to protect worker health and safety. Excavated material must be disposed in accordance with applicable local, State, and federal laws and regulations or placed back beneath the existing cap and marker fabric. As discussed in *Section 4.2.3*, if clean fill is needed for utility fills or site grading, the fill material will be sampled and submitted to the MDE VCP prior to being transported to the site.

4.3 Remediation Earthwork

During redevelopment activities earthwork is likely to be required. The following guidelines should be followed to protect the health of construction workers and prevent spread of contamination.

4.3.1 General Activities Associated with Earthwork

There is a potential for site construction workers to come into contact with the COPC. This contact is expected to be limited due to implementation of a site-specific HASP. Soil removal in areas to be capped (e.g., clean fill, asphalt, or concrete, etc.) across the subject property will act as a limiting alternative, which will eliminate the direct contact exposure risk to construction worker and future resident, on-site worker, and visitor populations.

Contaminated soil encountered during construction may be disposed off-site at a regulated facility, or re-used on site beneath the marker barrier of the proposed cap. Documentation of disposed materials must be provided to the MDE following construction. Clean fill documentation must be provided to the MDE prior to its use on the property.

4.3.2 Concrete Debris

Concrete debris located on-site is planned to be properly crushed and re-purposed for use on-site. The crushed concrete will only be used as fill underneath the marker fabric. Prior to movement and crushing of the on-site concrete a Concrete Sampling Plan will be implemented and the results reviewed and approved by the MDE. The Concrete Sampling Plan is located in *Appendix D*. Once MDE has approved the concrete for reuse onsite, then the concrete can be excavated, relocated, and crushed. Crushed concrete will not be re-purposed in areas that come in contact with surface water or groundwater. Location of the re-purposed concrete will be

documented in the RAP Completion Report. In addition, a City grading permit will be obtained and filling, grading, and site stabilization of the site will be carried out in accordance with the Sediment and Erosion Control plan in place for the site.

4.3.3 Site Security

Applicable Occupational Safety and Health Administration (OSHA) regulations must be followed during the implementation of this RAP. Excavations resulting from redevelopment work must be secured with perimeter fencing if they are to be left open for more than one workday. Any breaches to the fence required by construction activities must be promptly re-secured. A site-specific HASP must be developed, implemented, and maintained on-site. The HASP must itemize environmental risks, such as dust inhalation and the potential for encountering contaminated soil. All personnel must be made aware of the HASP. The HASP must be submitted to the MDE prior to the commencement of work.

The site is currently surrounded by a locked 6-foot high chain-linked fence. In addition, bi-lingual neon “No Trespassing” signs are posted surrounding the site.

4.3.4 Air Monitoring Requirements

Air monitoring requirements must be included in the site-specific HASP. The OSHA permissible exposure limit (PEL) for Particulates Not Otherwise Regulated (PNOR)/nuisance dust is 15 mg/m³. A conservative level of PNOR/nuisance dust of 12 mg/m³ will be used as the action level to determine the need to implement dust suppression techniques. Dust suppression techniques will use Best Management Practices (BMPs) and will likely consist of water application on a routine basis determined by day to day weather conditions.

If the 12 mg/m³ OSHA PEL is exceeded, operations must be shut down and additional dust suppression BMPs will be applied (e.g. additional wetting or misting, water truck application, etc.) until dust levels are reduced to below the 12 mg/m³ action level. Operations may only be resumed once dust has been reduced indicating that dust concentrations are below the 12 mg/m³ action level. However, as a conservative measure, air monitoring must be

conducted during intrusive operations involving soil excavation, grading, and soil relocation operations.

In order to document COPC concentrations in the dust generated during intrusive operations, three dust sample events will be collected during initial site grading and building improvement excavation activities. A minimum of three samples should be collected. One sample should be collected from within the immediate vicinity of the earthwork, one from the center of the work area, and one from the boundary of the work area downwind of the earthwork. The samples should be collected over an 8-hour period using pumps and a filter assembly and should be analyzed for the COPC. The results of the analysis will be compared to the OSHA PEL. An exceedance of the PEL will require additional dust control measures and additional monitoring and/or confirmation sampling. If no COPCs are detected in the dust samples at a concentration above the PEL, the sampling will be discontinued until the next sampling event activity commences, with approval from MDE CHS. Dust control measures will be implemented in accordance with local regulations/permits and BMPs.

5.0 RISK MANAGEMENT

The proposed remedies include concrete, brick/stone pavers, clean fill material, or fencing, which will require periodic maintenance activities.

5.1 Cap Maintenance

Physical maintenance requirements will include maintenance of the capped areas to prevent degradation of the cap and unacceptable exposure to the underlying soil. Annual inspections of the cap will be conducted each year in the spring, targeting April. The property owner will be responsible for onsite cap maintenance inspections, performing maintenance to the cap, and maintaining all cap inspection records. Maintenance records will include, at a minimum, the date of the inspection, name of the inspector, any noted issues, and subsequent resolution of the issues. A Cap Inspection Form is included in *Appendix E*.

An action level for each proposed capping material is summarized below and are included in the Cap Inspection Form included in *Appendix E*. If this action level is reached, cap

maintenance is required. If cap maintenance is required, the property owner will have 60 days to complete the appropriate maintenance required.

CAPPING MATERIAL	ACTION LEVEL
Pavement	When the Pavement Condition Index (PCI) has exceeded 3.
Sidewalks/curbs	When 3 of the 4 conditions (sound, deteriorated, cracked, root intrusion) for either sidewalks or curbs are observed.
Landscaped areas	When either the trees or shrubs have been classified as “Dead” and when the integrity of the cap has been compromised.

5.2 Emergency Excavation

MDE must be verbally or electronically notified within 24 hours following the discovery of unplanned emergency conditions at the subject property which will penetrate the cap, and must be provided with written documentation within 10 days of the repair. In addition, MDE must be provided written notice a minimum of five business days prior to planned activities at the site that will penetrate the cap, with the repairs completed within 15 days, and written documentation submitted to MDE within 10 days of the repair. Written notice of planned excavation activities must include the proposed date(s) for the excavation, location of the excavation(s), health and safety protocols (as required), clean fill source and documentation (as required), and proposed characterization and disposal requirements (as required). The property owner will maintain on-site records of the yearly inspections and will include information on any repairs to the capping. The property owner or occupants will be required to notify MDE in writing of any proposed construction or excavation activities that breach any site cap. These notification requirements and appropriate contact information must be included in the RAP for each future development area.

5.3 Planned Excavations

MDE will be provided written notice a minimum of five business days prior to planned activities at the site that will penetrate the cap, with the repairs completed within 15 days, and written documentation submitted to MDE within 10 days of the repair. The property owner will provide written notice of planned excavation activities, including the proposed date(s) for the

excavation, location of the excavation(s), health and safety protocols (as required), clean fill source and documentation (as required), and proposed characterization and disposal requirements (as required).

In order to ensure that the site is returned to a condition that complies with the Cleanup Criteria outlined in *Section 3.0*, potentially impacted soil encountered during intrusive activities should be managed as described in the following sections.

5.3.1 Reuse of Soils Within Landscaped Areas

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

5.3.2 Reuse of Soils Below Hardscape

All soil that is excavated from below hardscape such as building slab or parking areas must be reused on-site as backfill below an appropriate engineering control such as hardscape or two feet of clean soil cover underlain by geotextile marker fabric.

6.0 PERMITS, NOTIFICATIONS, AND CONTINGENCIES

6.1 Permits

The property owner must comply with federal, State and local laws and regulations by obtaining necessary approvals and permits to conduct activities and implement this RAP or activities specified in the RAP.

6.2 Site Contingency Plan

In the event that the future soil and/or groundwater COPCs exceed their designated cleanup criteria or safe concentrations and/or cannot be controlled during the RAP implementation

process or contamination and/or exposure risks/pathways not previously identified are identified, the following contingency measures will be taken:

- Notify MDE within 24 hours.
- Postpone implementation of the RAP.
- Evaluate new site conditions identified.
- Amend RAP to address new site conditions identified.

Notified departments will include:

MDE Voluntary Cleanup Program
Land Management Administration
Land Restoration Program
1800 Washington Boulevard
Baltimore, Maryland 21230
(410) 537-3493
Attention: Administrator

In addition to the above, if there is evidence of an oil discharge at the subject property, it must be reported within two hours as specified in COMAR 26.10.08.01, to the Oil Control Program (OCP) (410-537-3442) or, if after normal business hours, to the 24-hour Spill Reporting Hotline (1-866-633-4646). The MDE will be verbally notified within 48 hours (72 hours in writing) of changes (planned or emergency) to the RAP implementation schedule, previously undiscovered contamination, and citations from regulatory entities related to health and safety practices. Notifications shall be made to the VCP project manager and/or VCP Chief at 410-537-3493.

Emergency conditions that cause imminent and substantial endangerment to human health and the environment will require abeyance of the VCP process until the emergency condition has been addressed.

The MDE must be provided with documentation and analytical reports generated as a result of any unidentified contamination. The property owner or prospective property owner understands that previously undiscovered contamination may require an amendment to the RAP.

7.0 IMPLEMENTATION SCHEDULE

The VCP project manager will be notified in writing within 5 calendar days of RAP implementation activities, and monthly RAP Implementation Progress Reports will be submitted to the VCP project manager during the implementation of this RAP. The monthly RAP Implementation Progress Reports will discuss activities that occurred in the preceding month as well as provide anticipated activities for the upcoming monthly time period. The VCP project manager will be verbally notified within 48 hours and must be notified in writing within 72 hours of any changes (planned or emergency) to the RAP implementation schedule. These changes will be documented in an updated RAP implementation schedule and included in the monthly RAP Implementation Progress Reports.

The proposed schedule to implement the RAP is presented below. The VCP may request a new implementation schedule if RAP activities have not begun within 12 months of the participant receiving approval of this RAP.

RAP Implementation Schedule

RESPONSE ACTION ACTIVITY	TENTATIVE SCHEDULE*
RAP Review/Approval	June 2015
Public Participation Period	May 2015 (30 days)
Submit and maintain RAP security (Letter of Credit, Performance Bond, etc.)	10 Days after receiving RAP approval and annually thereafter (dependent on type of RAP security)
MDE RAP Kickoff Meeting	July 2015 (beginning)
Submit Clean Fill Sampling Plan for MDE approval	July - August 2015
Clean Fill Sampling	July - August 2015
Begin Submittal of Monthly RAP Progress Reports	July - August 2015
Begin Earthwork and Mass Grading	July-September 2015
Utilities, final grading	July-August 2015
Begin Construction	September - November 2015
Complete Construction	November 2016
RAP Completion Report to MDE	December - January 2016

(*) = The tentative schedule presented above is subject to change beyond the Applicant's control. Deviations from this proposed schedule will be communicated to MDE.

It should be noted that the construction schedule is highly contingent on the site development team, which is currently under consideration for the proposed development. Once selected, GTA will review the above RAP Implementation Schedule with the site development team and will submit a revised schedule to the MDE VCP. As requested, the revised schedule

will be more specific with regards to site development methodology, duration of soil exposure, and auger cast pile and utility installation timing.

8.0 ADMINISTRATIVE REQUIREMENTS

8.1 Written Agreement

If the RAP is approved by the MDE, the participant agrees, subject to the withdrawal provisions of Section 7-512 of the Environment Article, to comply with the provisions of the RAP. Participant understands that if he fails to implement and complete the requirements of the approved RAP and schedule, the MDE may reach an agreement with the participant to revise the schedule of completion in the approved RAP or, if an agreement cannot be reached, the Department may withdraw approval of the RAP.

8.2 Zoning Certification

301 East Cromwell, LLC certifies that the subject property meets all applicable provisions and zoning requirements, as required by Section 7, Subtitle 5 of the Environmental Article, *Annotated Code of Maryland*. A certified statement from 301 East Cromwell, LLC is included as *Appendix F*.

8.3 Public Participation

301 East Cromwell, LLC submitted an MDE-approved RAP public notice to *The Baltimore Daily Record*, a weekly newspaper with coverage that includes Baltimore, Maryland.

301 East Cromwell, LLC held a public informational meeting on the proposed RAP at BCFD Locust Point Fire House, at 1000 E. Fort Avenue, Baltimore, Maryland 21230 on June 1, 2015 at 6:00 P.M. The site history, detected on-site contamination, planned future use of the site, and a description of the proposed remedies were presented at the meeting.

During the 30-day public comment period after publishing the public notice, a property sign was placed along East Cromwell Street. This sign depicted the same information provided in the public notice outlined above. The sign was removed following the 30-day public comment

period. Documentation of the sign placement and legibility was provided to the MDE for approval.

8.4 Performance Bond or Other Security

As required by the VCP, 301 East Cromwell, LLC will provide either a Performance Bond or Letter of Credit in the amount of \$10,000 to MDE covering the cost of securing and stabilizing the property. The site is currently surrounded by a locked 6-foot high chain-linked fence. In addition, bi-lingual neon “No Trespassing” signs are posted surrounding the site. Securing and stabilizing the property includes the following activities:

ACTION ACTIVITY	ESTIMATED COST
<ul style="list-style-type: none">• Restrict access to contaminated portions of the property with fencing (approximately 1,500 linear feet);•	\$2,500
<ul style="list-style-type: none">• Notification signage every 200 feet (8 signs);	\$200
<ul style="list-style-type: none">• Seed, grass, and straw across the site to prevent dust generation;	\$2,000
<ul style="list-style-type: none">• Where applicable, abandon monitoring wells, dismantle and dispose of treatment systems, and backfill open excavations	\$2,500
<ul style="list-style-type: none">• Back fill any void spaces from the removal existing concrete foundations or excavations	\$3,800

301 East Cromwell, LLC understands that the obligation for the performance bond or other security remains in effect for the subject property and does not become void until issuance of the final Certificate of Completion for the subject property, or 16 months after withdrawal of this application from the VCP. 301 East Cromwell, LLC acknowledges that failure to maintain the performance bond or other security for the property will result in the withdrawal of the application from the VCP.

******* END OF REPORT *******

APPENDIX A

MDE VCP ACCEPTANCE LETTER



MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Baltimore MD 21230

410-537-3000 • 1-800-633-6101 • www.mde.maryland.gov

Martin O'Malley
Governor

Robert M. Summers, Ph.D.
Secretary

Anthony G. Brown
Lieutenant Governor

December 18, 2014

CERTIFIED MAIL

Marc Weller
301 East Cromwell Street, LLC
PO Box 151389
Chevy Chase, Maryland 20825

Re: Voluntary Cleanup Program Application
301 East Cromwell Street Property
Baltimore, Maryland 21230

Dear Mr. Weller:

The Voluntary Cleanup Program ("VCP") of the Maryland Department of the Environment ("Department") has finished its evaluation of the VCP application package submitted for the 301 East Cromwell Street property located at 301 East Cromwell Street in Baltimore City, Maryland. The Department accepts the 5.21-acre property into the VCP and confirms the inculpable person status of 301 East Cromwell Street, LLC for this property pursuant to Title 7, Subtitle 5 of the Environment Article, Annotated Code of Maryland.

A response action plan ("RAP") must be developed, approved by the Department, and implemented to address risk to human health and the environment resulting from potential exposure to elevated concentrations of polycyclic aromatic hydrocarbons (PaHs) in the soil and elevated concentrations of metals in the soil and groundwater beneath the property.

Please note that if you wish to use any of the on-site concrete building slabs and structural support bases from the property as fill material or if you wish to dispose of the concrete at any location other than an authorized disposal facility, this material must be evaluated by the Solid Waste Program (SWP) of the Land Management Administration. If you wish to transport the concrete material to a recycling facility, the SWP may require analytical sampling of the concrete prior to transportation. Please contact the SWP to discuss all regulatory and sampling requirements.

Submission of the proposed RAP and implementation of all statutory requirements must occur within 18 months of receipt of this letter. The guidelines for preparation of the proposed RAP have been enclosed and the statutory requirements can be found in Section 7-508 of the Environment Article. Simultaneously with submission of the proposed RAP to the Department for review and approval, you must comply with the public participation requirements by posting a sign at the property and publishing a

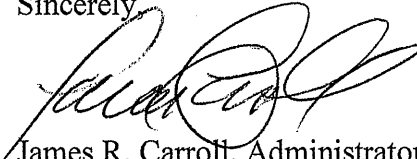
notice in a daily or weekly newspaper of general circulation in the geographic area where the participating property is located. Both notices for the proposed RAP must include the date and location of the public informational meeting. A summary of the public participation requirements, as well as a template for the public notice in the newspaper and the sign on the property, has also been enclosed. You are requested to forward a draft of the sign and newspaper notice for the proposed RAP to the VCP for review and approval prior to publication and posting at the property. Please contact the project manager to discuss development of the proposed RAP and the exact date for submitting the proposed RAP, and draft public notice language, to the Department for review and approval.

Upon satisfactory implementation and completion of the requirements set forth in the approved RAP and any subsequent addendums, the Department will issue a Certificate of Completion for the property, which must be recorded in the land records of Baltimore City within 30 days following receipt.

In accordance with the provisions of Section 7-506(g)(1) of the Environment Article, you are requested to inform the Department in writing, within 30 days of receipt of this letter, whether 301 East Cromwell Street, LLC intends to proceed as a participant in the VCP. If the Department does not receive the notice of intent to proceed within the 30-day period, the application for participation in the VCP shall be deemed withdrawn pursuant to Section 7-506(g)(2) of the Environment Article.

If you have any questions regarding the requirements, development of the proposed RAP or other aspects of the program, please contact Mr. Jeffrey Harp or me at 410-537-3493.

Sincerely,



James R. Carroll, Administrator
Land Restoration Program

Enclosures

cc: Mr. Paul H. Hayden, Geo-Technology Associates, Inc.
Mr. Jeffrey Mutter, Geo-Technology Associates, Inc.
Mr. Horacio Tablada
Mr. Art O'Connell
Ms. Barbara H. Brown
Mr. Jeffrey Harp



Maryland Department Of The Environment Voluntary Cleanup Program

Attachment Seven Template for Public Notice of a Response Action Plan

PUBLIC NOTICE OF A RESPONSE ACTION PLAN AND PUBLIC INFORMATIONAL MEETING

(Name of the Property)

The property located at *(address of the property)* in *(city/town)*, Maryland has been accepted into Maryland's Voluntary Cleanup Program. A proposed response action plan (RAP) has been submitted to the Maryland Department of the Environment (MDE) for approval. *(Briefly summarize the property's contaminants of concern and affected media.) (Briefly summarize the proposed RAP and how it will address the property's contamination issues.)*

This RAP is based upon future use of the property for *(industrial/commercial/residential)* purposes.

Participant: *(Participant's Name)*
(Participant's Address)

Contact: *(Name of Participant's Contact Person)*
(Telephone Number of Participant's Contact Person)

Eligible Property: *(Name/ Legal Description of Eligible Property)*
(Address of Eligible Property)

Public Informational Meeting: *(Date and Time of Meeting)*
(Location of Meeting)

Any person wishing to request further information or make comments regarding the proposed RAP must do so in writing. Comments or requests should be submitted to the attention of the Voluntary Cleanup Program project manager, *(Project Manager's Name)*, at the Maryland Department of the Environment, 1800 Washington Boulevard, Suite 625, Baltimore, Maryland 21230; telephone 410-537-3493.

All comments and requests must be received by the Department in writing no later than *(insert due date, which is 30 days after the initial publication date of the notice of proposed Response Action Plan or 5 days after the date of the public meeting, whichever is later)*.



Maryland Department Of The Environment Voluntary Cleanup Program

Section Six Response Action Plan

The RAP contains a specific remedial approach and schedule for addressing environmental concerns at a property not eligible for a NFRD. The decision to conduct a RAP for a property can be made voluntarily by the participant early in the application process or by MDE at the time the property is accepted into the VCP.

It is the participant's responsibility to develop the RAP and comply with the public participation requirements. The role of MDE is to ensure that the plan is protective of human health and the environment, available for public review and comment, adequate to address the environmental concerns at the property, and properly implemented and completed to the satisfaction of the Department.

Once MDE verifies that a RAP has been successfully implemented and completed, a COC (see Section 7) will be issued to the participant stating that the plan has achieved the applicable cleanup criteria at the property.

6.1 NOTICE OF INTENT TO PROCEED

After an application has been approved for the VCP and the participant has been notified that a RAP must be developed, the participant must notify MDE in writing within 30 days whether the participant intends to proceed with or withdraw from the program. If the participant fails to provide the required notification within 30 days, the application will be considered withdrawn. See Section 1.7 for more information about the VCP withdrawal provisions.

6.2 RAP DEVELOPMENT ASSISTANCE

The proposed RAP must focus on constructing a remedial strategy that addresses all environmental concerns at the site, is protective of human health and the environment, ensures the health and safety of the workers implementing the plan, and has a clearly defined schedule for implementation and completion.

To assist with RAP development, participants may review previously approved RAPs for other VCP properties that may be relevant to the participant's site. MDE also recommends that participants meet with VCP staff early in the development process to get feedback on the RAP approach and discuss any questions. The VCP project manager can help participants with both of these activities.

6.3 RAP SUBMISSION AND REVIEW

At the time the proposed RAP is submitted to MDE, the 75-day review period will begin provided the following have also been completed:

- Publication of a notice of the proposed RAP, including the date and location of the public informational meeting, in a local newspaper of general circulation (see Section 6.4.1); and
- Posting at the eligible property a notice of intent to conduct a RAP at the property (see Section 6.4.2).

Please note that publication of the first newspaper notice and posting of the notice of intent to conduct a RAP at the property should be completed at the same time the proposed RAP is submitted to MDE.

On or before the end of the 75-day review period, MDE shall inform the participant in writing whether the RAP has been approved or rejected. If the proposed RAP is rejected, MDE shall state the modifications necessary to receive approval.

6.4 RAP PUBLIC PARTICIPATION REQUIREMENTS

MDE will receive written comments from the public for 30 days after publication of the first newspaper notice and placement of a notice on the property or five days after the public informational meeting, whichever is later.

MDE will hold a public informational meeting at the expense of the participant on the proposed response action plan within 40 days after publication of the first newspaper notice. MDE will attend the meeting and accept written public comments on the proposed plan for five days after the meeting, or 30 days after publication and posting of the public notice, whichever date is later.

The following sections describe the public participation requirements associated with the RAP process.

6.4.1 Newspaper Notice

The notice for the proposed RAP must be published once a week for two consecutive weeks in a daily or weekly newspaper of general circulation where the eligible property is located. Attachment 7 provides a template for the content of the notice.

All newspaper notices must be reviewed by MDE prior to publication. The participant must submit documentation confirming that the selected newspaper's circulation coverage area includes the property and vicinity as well as proofs of publication from the newspaper.

6.4.2 Property Sign

The participant shall post a notice of the proposed response action plan at the property. The participant must submit photographs, either digital or print, documenting that the sign is located in an area with high visibility and traffic volume. In addition, the participant must provide a close-up photograph showing the text of the sign. A template for the sign is provided in Attachment 7. The text of the posted notice must be reviewed by MDE prior to placing the sign on the property. The posted notice must:

- Be located in an area of the property with the greatest visibility and highest volume of traffic;
- Contain the same information as the newspaper notice;
- Be no smaller than six (6) feet wide by four (4) feet high; and

- Remain standing, and its printed message maintained in a legible condition, for the full 30-day public comment period.

6.4.3 Public Informational Meeting

MDE shall hold a public informational meeting on the proposed response action plan at the expense of the participant within 40 days after publication of the notice in a newspaper of general area circulation. During the public informational meeting, the participant should present the history of the property, the contamination determined to be present at the property, a description of the proposed response action plan, and future development plans for the property.

The participant is responsible for all costs associated with the meeting, which shall take place in a public building at a location and time that are readily accessible and convenient to the majority of citizens living near the property.

6.5 PROPOSED RAP PREPARATION

The proposed RAP must meet the requirements outlined in Section 7-508 of the Environment Article, Annotated Code of Maryland. It should be prepared in the following format and, at a minimum, must include the information described below.

MDE may request any additional information or provisions it determines necessary to achieve the cleanup criteria or protect public health or the environment as set forth in Section 7-508 of the Environment Article, Annotated Code of Maryland.

A. Site Overview: This section of the RAP must provide a brief description of the property and a summary of the site history. It should identify the specific areas of the site requiring remediation and provide a map clearly delineating each area. This section should summarize the proposed response actions, including the applicable future land use category (see Section 1.6.1), each proposed remedial technology, and each proposed land use control.

B. Additional Investigatory Information: Any post-Phase II investigatory work completed or proposed must be summarized in this section. This includes any additional monitoring or sampling data that may be collected after approval of the VCP application for the purpose of selecting the appropriate remedial actions. Types of additional information include further sampling for source or plume delineation or additional investigation completed as part of a remediation pilot study.

C. Exposure Assessment: Information presented in the exposure assessment should include:

- Current and future use as defined by the VCP land use definitions (see Section 1.6.1);
- All media of concern, including fate and transport assumptions and the rationale for excluding any medium;
- Potentially exposed populations, based on current and future use, including specific subpopulations such as children or the elderly;
- A discussion of all potential exposure pathways and complete exposure pathways (i.e., pathways for which a contaminant, receptor and contact are present), and the rationale used to determine whether an exposure pathway is complete; and

- Ecological receptors.

D. Cleanup Criteria: A proposed RAP must demonstrate achievement of the appropriate cleanup criteria selected by the participant and the protection of public health and the environment (see Section 4).

E. Selected Technologies and Land Use Controls: Discuss each land use control and selected technology that will be used to address contaminated media at the site:

- Provide the rationale for selecting the remedial technology and demonstrate the applicability and effectiveness of the selected technology in protecting public health and the environment;
- Clearly indicate any proposed deed restrictions, or land use controls to address a risk to public health or the environment or to meet the RAP objectives;
- Discuss the appropriateness of each selected technology based on site-specific conditions (e.g. geology, hydrogeology, type of contaminant, medium, area of concern);
- Demonstrate the applicability and effectiveness of the selected technologies to significantly reduce the toxicity, mobility, or volume of contamination at the site;
- Provide supporting documents such as design tests, pilot tests, case studies, and literature surveys;
- Discuss additional work that may be necessary to develop a remedial design (e.g. pump tests, or any other pilot tests which have not yet been conducted); and
- Propose post-remediation requirements if they are needed to achieve the remedial objectives and maintain the selected cleanup criteria (e.g. post-confirmatory samples, maintenance, long-term monitoring).

F. Evaluation Criteria for the Selected Technology: The RAP must establish evaluation criteria to define specific conditions that must be met for MDE to issue the COC. In addition, in certain cases, a RAP must propose criteria (e.g. action levels) that would trigger contingency measures if site conditions change or the approved response actions are not effective.

Criteria for COC (Project Completion): The RAP must establish project completion goals or objectives that must be achieved prior to issuance of the COC. These project completion goals must be based on the cleanup criteria (see Section 4) and may include other objectives or conditions, such as decreasing source area concentrations, steady-state plume conditions, or a change in receptors (e.g. municipal water extended to downgradient residences to replace domestic wells). In addition, the completion of fate and transport modeling after confirmatory sampling or a groundwater monitoring program may be required as one criterion for issuing the COC.

Criteria for Contingency Measures: In certain cases, the RAP must propose contingency measures that must be implemented if site conditions change or the proposed response actions are not effective. The RAP must specify criteria, such as specific action levels, that will trigger the contingency measures if contaminant concentrations increase or other conditions change. Initial contingency measures may include notifying MDE and collecting confirmatory samples. Based on site specific circumstances, further contingency measures may include preparing a RAP addendum to outline more frequent groundwater sampling, installation of additional monitoring wells or other site investigation, modeling, residential well sampling, or other active remediation options.

Action Levels: A RAP may include proposed action levels that will trigger contingency measures when exceeded. The action levels must be established to ensure that changing site conditions (e.g. increasing contaminant concentrations) do not pose a threat to potential on-site and off-site receptors. Since VCP authority does not extend to off-site issues, MDE encourages close cooperation between the applicant and the OCP or CHS Enforcement/Fund Lead Site Assessment Division.

As an example, for on-site receptors, a groundwater action level could be set based on vapor intrusion modeling to calculate the concentration of contaminants of concern that would pose an unacceptable health risk considering the site's future use scenario. The vapor intrusion modeling would provide a basis for establishing an on-site action level to trigger contingency measures if exceeded.

For off-site receptors (e.g. domestic wells), appropriate action levels would be MCLs at the downgradient monitoring wells and other values derived from fate and transport groundwater modeling. The appropriate action levels will be established in consultation with the CHS Enforcement/Fund Lead Site Assessment Division or the OCP.

Establishing Action Levels: MDE's remedial action standards have been set at a carcinogenic value of 1.0×10^{-5} and noncarcinogenic HQ value of 1. An exceedance of either of these remedial action standards represents an unacceptable risk to human health. Contingency plan trigger levels generally should be set for carcinogens between 1.0×10^{-6} and 1.0×10^{-5} and for noncarcinogens between a HQ of 0.1 and 1. The resulting action levels will then be below MDE's remedial action standards to account for the presence of multiple contaminants and to trigger appropriate contingency measures before site conditions reach unacceptable levels.

G. Proposed Response Actions: This section must include a plan for all work necessary to perform the proposed RAP, including long-term monitoring and maintenance of the site, if necessary. The following items must be considered during preparation of the work plan:

Reporting Requirements: The work plan must outline notification and reporting time frames for sampling and report submittal. All analytical reports and documentation generated as a result of an approved RAP must be submitted to MDE for review. This includes manifests for off-site disposal of contaminated solid or hazardous material.

Maintenance: A detailed maintenance plan is required to ensure that future conditions at the site do not compromise the integrity of any physical maintenance controls, which must be visually inspected on a periodic basis.

Excavations and Clean Fill: All excavated material must be disposed in accordance with applicable local, State and federal laws and regulations. The source of backfill material must be documented, and MDE may require laboratory analysis to certify its cleanliness.

Asbestos, Lead, Oil: Any demolition activities at the site must be performed in accordance with all applicable federal, State, and local regulations regarding asbestos containing material and lead based paint. To ensure compliance with asbestos regulations, State law requires notification of the Division of Asbestos Licensing & Enforcement of MDE at 410-537-3200 at least ten days

prior to beginning demolition. Please contact the Environmental Lead Division of MDE at 410-537-3825 regarding regulations concerning demolition activities and lead based paint. Please contact the OCP of MDE at 410-537-3442 for guidance on the proper abandonment and removal of storage tanks.

H. Permits, Notifications, and Contingencies: The participant must comply with all local, State, and federal laws and regulations by obtaining all necessary approvals and permits to conduct the activities pursuant to an approved RAP.

- An approved RAP does not negate or otherwise affect any other provision of law requiring a person to report a release or a threat of a release of a controlled hazardous substance on a site.
- MDE must be notified immediately of any previously undiscovered contamination, changes to the RAP schedule, previously undiscovered storage tanks and other oil-related issues, and citations from regulatory entities related to health and safety practices.
- The work plan must outline procedures for amending the RAP in the event of unexpected conditions such as encountering free product, buried tanks, or other issue not contemplated in the work plan.

I. Implementation Schedule: The RAP must provide a detailed schedule for all work necessary to perform the proposed action, including post-remediation requirements (e.g. long-term monitoring). The proposed plan must specify the dates and time frames for implementing and completing each phase of the work.

- For the project tasks in the proposed plan, the implementation schedule shall list the start-complete time frames in days from RAP approval (e.g. "30 days from RAP approval"). Upon RAP approval, the schedule should be finalized with actual anticipated dates for each phase of work.
- MDE encourages the use of Gantt charts and flow charts to present the implementation schedule and track the on-going project.
- During implementation of the RAP, MDE must be notified in writing of all requested changes to the schedule.

J. Administrative Requirements: This section of the RAP must include the following items (see Section 6.6 for details):

Written Agreement: A written agreement that if the RAP is approved, the participant agrees to comply with the provisions of the plan.

Zoning Certification: A certified statement that the eligible property meets all applicable zoning requirements.

Bond or other Security: A proposal to file a performance bond or other security with MDE within ten days after receiving approval of the RAP. The performance bond or other security amount will be determined by the participant and approved by MDE as necessary to secure and stabilize the property if the RAP is not completed.

6.6 ADMINISTRATIVE REQUIREMENTS

6.6.1 Written Agreement

Section 7-508 of the Environment Article, Annotated Code of Maryland, requires that the RAP shall “include a written agreement that if the response action plan is approved, the participant agrees, subject to the withdrawal provisions set forth in Section 7-512 of this subtitle, to comply with the provisions of the plan.” The following language is approved as meeting this requirement:

WRITTEN AGREEMENT

“If the response action plan is approved by the Maryland Department of the Environment, the participant agrees, subject to the withdrawal provisions of Section 7-512 of the Environment Article, to comply with the provisions of the response action plan. Participant understands that if he fails to implement and complete the requirements of the approved plan and schedule, the Maryland Department of the Environment may reach an agreement with the participant to revise the schedule of completion in the approved response action plan or, if an agreement cannot be reached, the Department may withdraw approval of the plan.”

Revised 4/10/05

6.6.2 Zoning Certification

Section 7-508 of the Environment Article, Annotated Code of Maryland, requires that the participant develop a RAP that includes a “certified written statement that the property meets all applicable county and municipal zoning requirements.” The following language is approved as meeting this requirement:

CERTIFIED STATEMENT FOR COUNTY AND MUNICIPAL ZONING REQUIREMENTS

“The participant hereby certifies that the property meets all applicable county and municipal zoning requirements.

The participant acknowledges that there are significant penalties for falsifying any information required by MDE under Title 7, Subtitle 5 of the Environment Article, Annotated Code of Maryland, and that this certification is required to be included in a response action plan for the Voluntary Cleanup Program pursuant to Title 7, Subtitle 5 of the Environment Article, Annotated Code of Maryland.”

(Include participant’s signature and date)

Revised 3/5/07

6.6.3 Performance Bond or other Security

The proposed RAP must include a proposal for a performance bond or other security to secure and stabilize the property if necessary. The obligation of the performance bond or other security must be available for use by MDE upon notification to the participant by MDE. The performance bond or other security must be filed with MDE within ten days following approval of the RAP.

The performance bond or other security, such as a surety bond, letter of credit, escrow account, environmental insurance or other mechanism approved by MDE, must provide, to the benefit of MDE, an obligation to satisfy MDE’s requirements to secure and stabilize the property if necessary. That obligation exists until a COC is issued or, if the participant withdraws, until 16

months after the date of withdrawal. Please see Attachment 8 for the approved template for the performance bond.

Securing and stabilizing the property includes activities necessary to:

- Post appropriate warnings and notices about conditions on the property;
- Restrict access to contaminated portions of the property;
- Prevent exposure to contaminated soil, water or contaminants prior to continuing implementation of a RAP;
- Prevent dust or other movement of contaminated soil or contaminants off the property prior to continuing implementation of a RAP;
- Where applicable, abandon monitoring wells, dismantle and dispose of treatment systems, and backfill open excavations;
- Prevent and abate any other dangerous conditions prior to continuing implementation of a RAP; and
- Maintain the above-referenced measures in effective working order.

Before taking action to secure and stabilize the property, MDE will notify the participant at the participant's last known address on file with MDE that:

- Upon the participant's withdrawal, the site was not secured and stabilized to a level determined by MDE to be protective of public health and the environment, and state requirements for securing and stabilizing the property; or
- MDE has deemed the participant withdrawn, the reasons for that decision, and setting forth the requirements for securing and stabilizing the property; and if activities to secure and stabilize the property are not completed within ten days, the bond or other security will be forfeited to MDE to perform the necessary activities.

If the recipient anticipates being unable to file the performance bond or other security within ten days of approval of the RAP, a request for an extension must be filed with MDE. The performance bond or other security must be filed with MDE prior to the performance of any work under the approved RAP at the property.

Templates for the administrative requirements, including the written agreement, zoning certification, or performance bond, are also available online at <http://www.mde.state.md.us/> or by contacting the project manager at 410-537-3493.

6.6.4 Health & Safety Plan

A detailed Health and Safety Plan must be available prior to the implementation of an approved RAP. At a minimum, the plan should reference key regulations that may apply to project activities (i.e. applicable sections of the OSHA regulations, 29 CFR 1910 (General Industry – Hazardous Waste Site Operations, Excavations, Personal Protective Equipment, Respiratory Protection) and 29 CFR 1926 (Construction)). The Health and Safety Plan should include, but not limited to, the following:

- Appropriate PPE and monitoring devices that must be utilized by workers to ensure that all worker protection requirements are met, and the rationale for the PPE selected;

- Site control measures that will be maintained during RAP implementation to restrict access (e.g. security guards, warning fences);
- Dust abatement or suppression methods; and
- Compliance by all on-site workers with OSHA guidelines for managing contaminated material regardless of their characterization as hazardous or non-hazardous. The remedial contractor must possess the necessary certification for the transportation of any controlled hazardous substance.

6.7 RESPONSE ACTION PLAN REVIEW AND APPROVAL

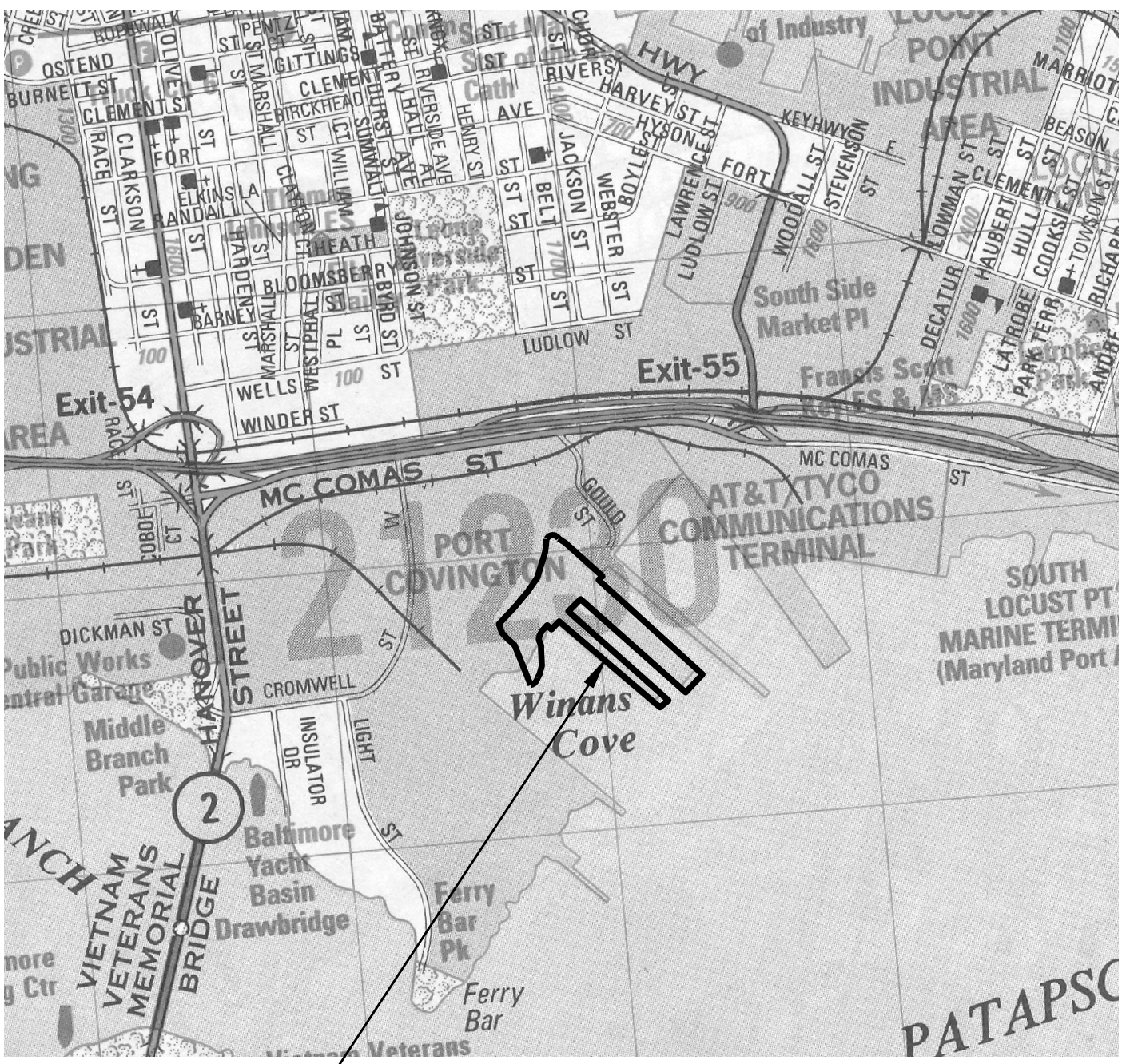
At or before the end of the 75-day review period, and after public notice requirements have been satisfied and any public comments received for the property have been considered, MDE will notify the participant in writing whether the RAP has been approved or rejected.

If RAP modifications are necessary, the participant may resubmit the plan within 120 days after receipt of notification by MDE. If the participant fails to resubmit the plan within 120 days, MDE shall consider the application withdrawn in accordance with Section 7-512 of the Environment Article.

Within 30 days following receipt of a resubmitted plan, MDE will notify the participant whether the plan is approved. Upon approval, MDE will notify the participant in writing that no further action will be required to accomplish the objectives set forth in the approved plan other than those actions described in the plan.

APPENDIX B

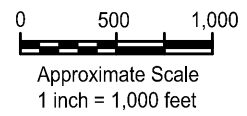
FIGURES



Approximate Subject Property Boundary

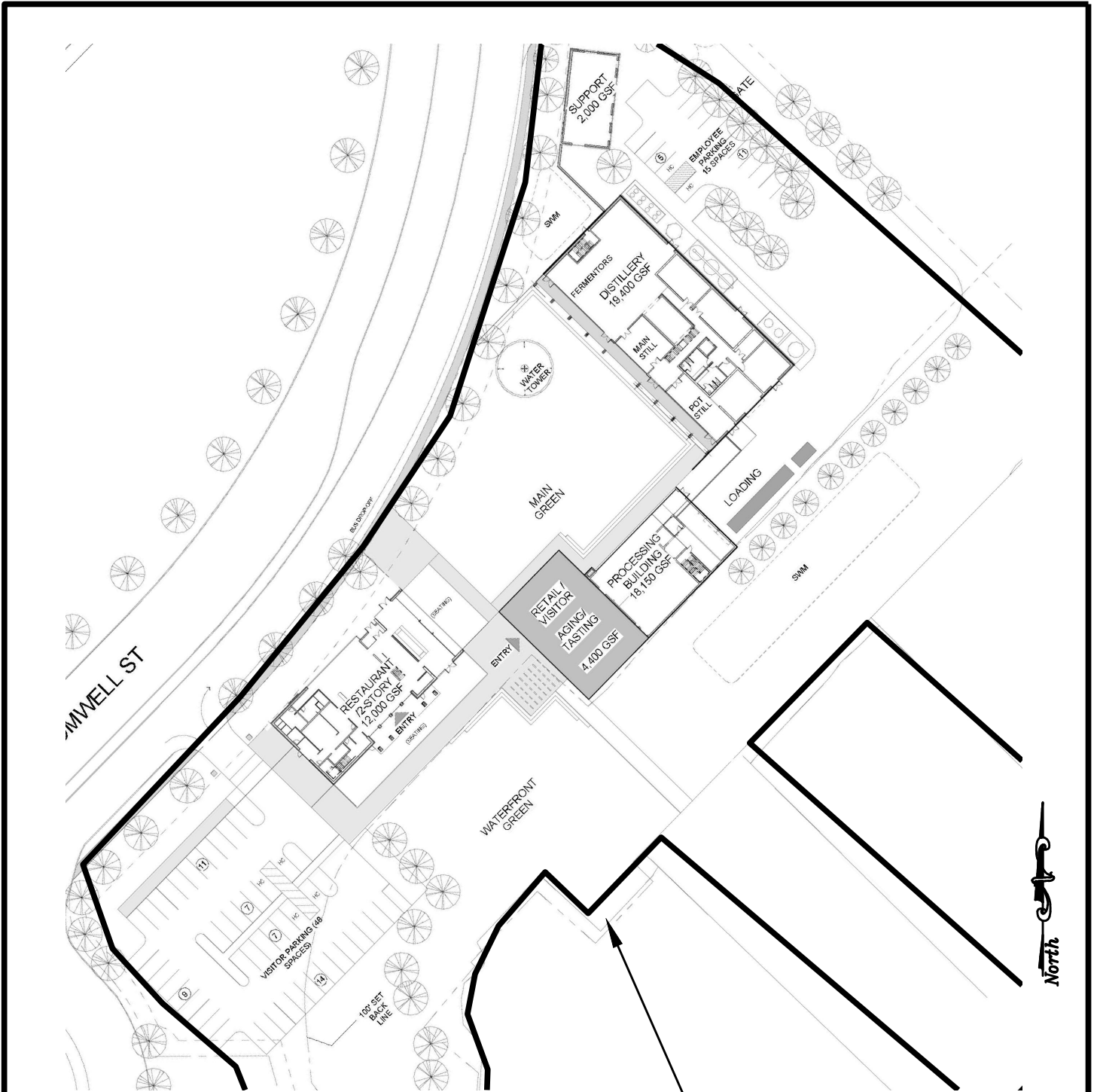
Notes

Map Copyright © ADC The Map People, (800) 829-6277
 Permitted Use Number 21006238



GEO-TECHNOLOGY ASSOCIATES, INC.
 GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
 14280 PARK CENTER DRIVE, SUITE A
 LAUREL, MARYLAND 20707
 (410) 792-9446 OR (301) 470-4470
 FAX: (410) 792-7395
 www.mragta.com
 © Geo-Technology Associates, Inc.

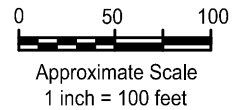
301 EAST CROMWELL STREET
 CITY OF BALTIMORE, MARYLAND
SITE LOCATION MAP



Approximate Subject Property Boundary

Notes

1. Base image obtained from a Schematic Design prepared by Ayers Saint Gross and dated December 22, 2014.



GEO-TECHNOLOGY ASSOCIATES, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

14280 PARK CENTER DRIVE, SUITE A
 LAUREL, MARYLAND 20707
 (410) 792-9446 OR (301) 470-4470
 FAX: (410) 792-7395
 www.mragta.com
 © Geo-Technology Associates, Inc.

301 EAST CROMWELL STREET

CITY OF BALTIMORE, MARYLAND

PROPOSED DEVELOPMENT PLAN

PROJECT: 120896

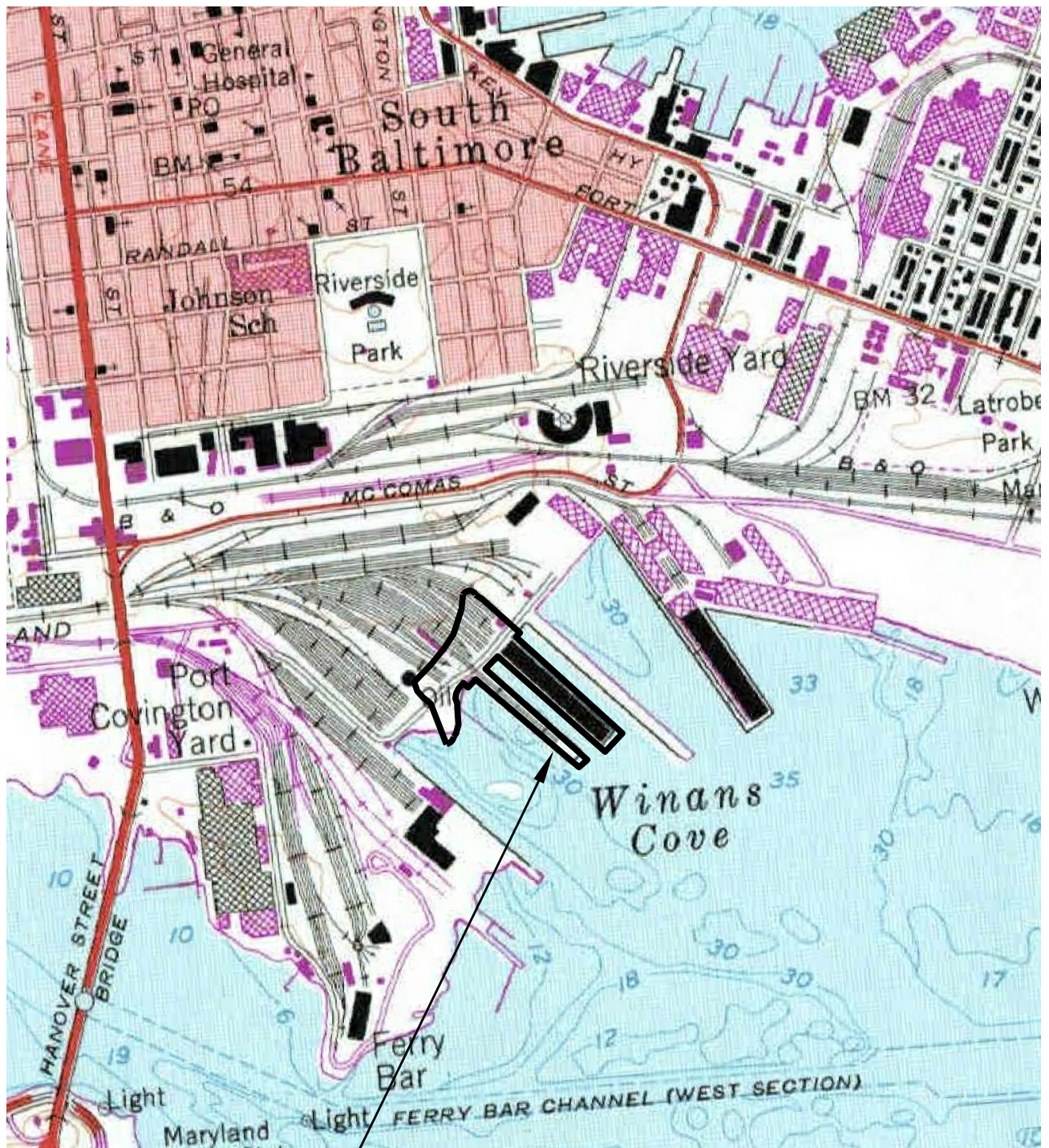
DATE: FEBRUARY 2015

SCALE: 1" = 100'

DESIGN BY: LMD

REVIEW BY: PHH

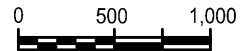
FIGURE: 2



Approximate Subject
Property Boundary

Notes

1. Based on the USGS Baltimore East, MD 7.5 Minute Quadrangle Map.
2. Copyright 2013 MyTopo, Inc.



Approximate Scale
1 inch = 1,000 feet



GEO-TECHNOLOGY ASSOCIATES, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

14280 PARK CENTER DRIVE, SUITE A
LAUREL, MARYLAND 20707
(410) 792-9446 OR (301) 470-4470
FAX: (410) 792-7395
www.mragta.com
© Geo-Technology Associates, Inc.

301 EAST CROMWELL STREET

CITY OF BALTIMORE, MARYLAND

TOPOGRAPHIC MAP

PROJECT: 120896

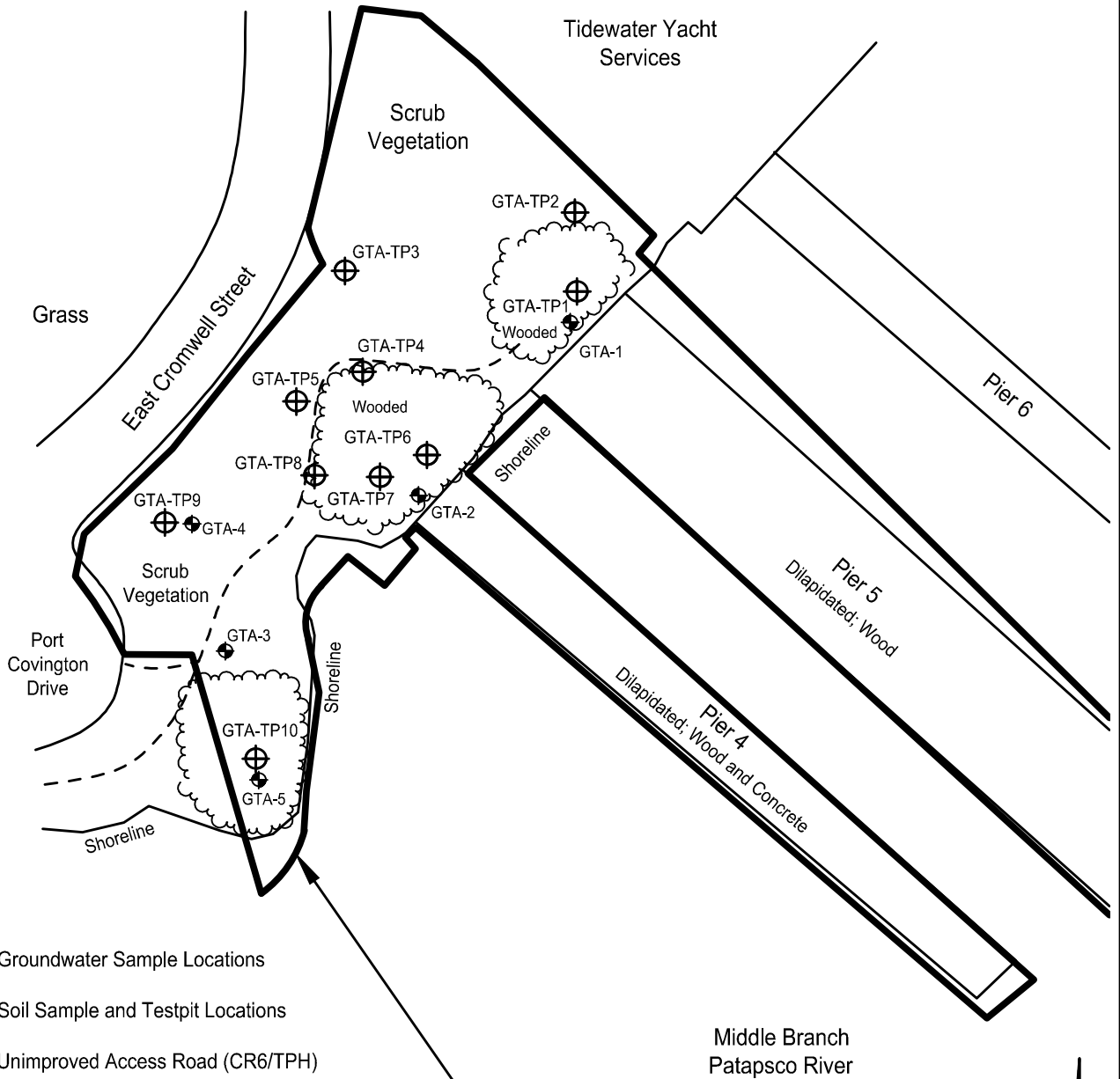
DATE: FEBRUARY 2015

SCALE: 1" = 1,000'

DESIGN BY: LMD

REVIEW BY: PHH

FIGURE: 3



Legend

- GTA-5 Groundwater Sample Locations
- GTA-TP1 Soil Sample and Testpit Locations
- Unimproved Access Road (CR6/TPH)
- Treeline

Notes

1. Based on a 2014 aerial photograph and site observations.
2. Property boundaries and site conditions are approximate.

Approximate Subject Property Boundary

0 100 200

Approximate Scale
1 inch = 200 feet

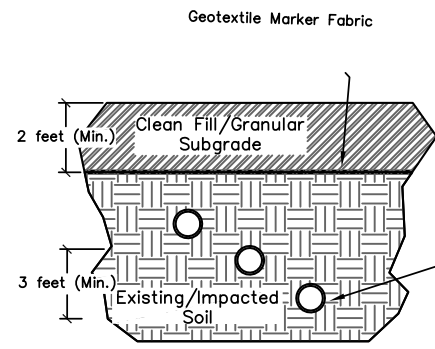


**GEO-TECHNOLOGY ASSOCIATES, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS**

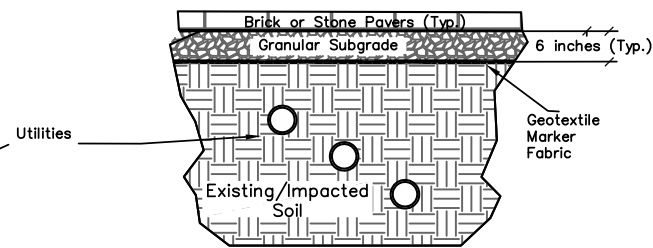
14280 PARK CENTER DRIVE, SUITE A
LAUREL, MARYLAND 20707
(410) 792-9446 OR (301) 470-4470
FAX: (410) 792-7395
www.mragta.com
© Geo-Technology Associates, Inc.

301 EAST CROMWELL STREET
CITY OF BALTIMORE, MARYLAND

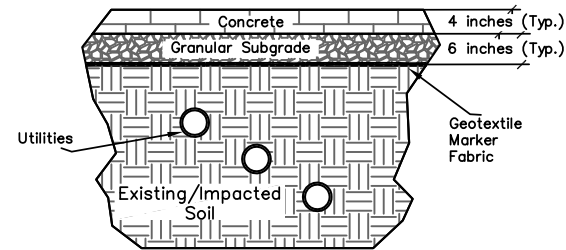
**SAMPLE AND TESTPIT
LOCATION PLAN**



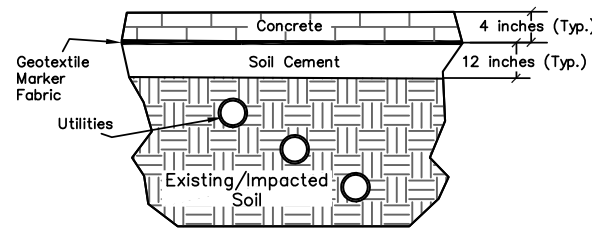
LANDSCAPED AREA (SOIL/STONE)
Typical Section



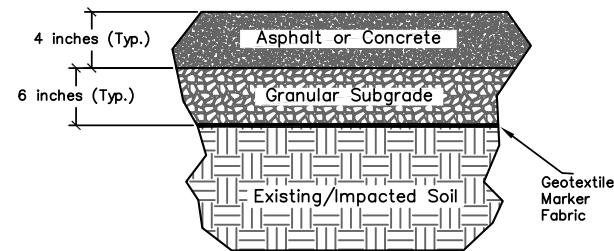
HARDSCAPED AREA (STABLE SOIL)
Typical Section



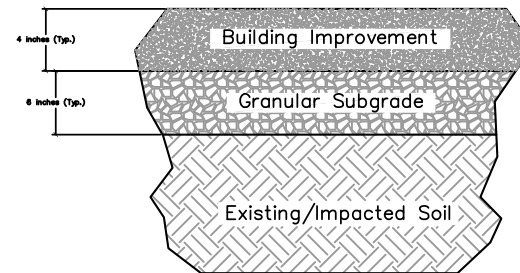
HARDSCAPED AREA (STABLE SOIL)
Typical Section



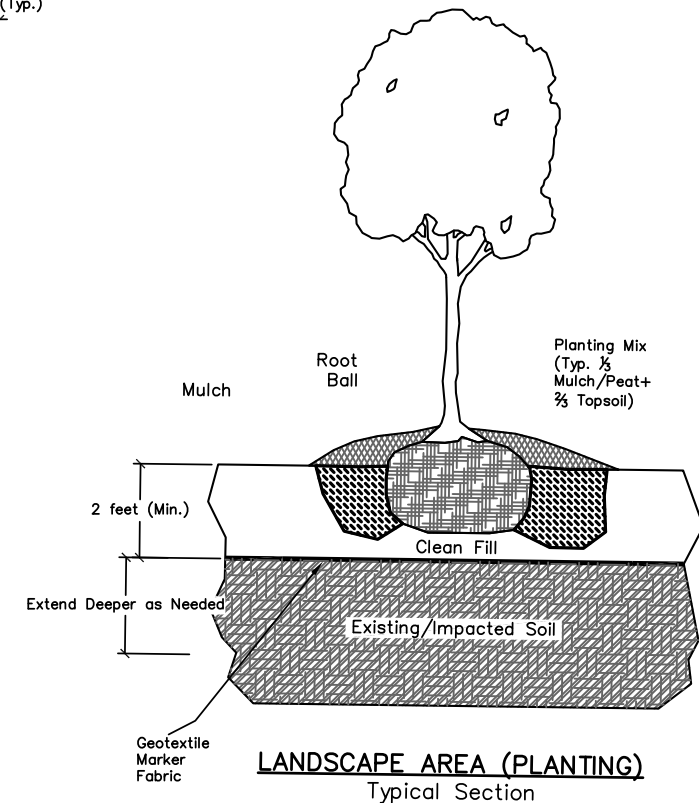
HARDSCAPED AREA (SOFT SOIL)
Typical Section



PAVED AREA (STABLE SOIL)
Typical Section



BUILDING SLAB
Typical Section



LANDSCAPE AREA (PLANTING)
Typical Section

Notes

1. Depth/width of utility trench will vary.
2. Details are not for construction.
3. Details are provided for informational purposes only and are subject to final design.
4. Granular subgrade beneath asphalt/concrete is MDE approved clean stone/fill.

Geotextile Marker Fabric Specifications

The geotextile marker fabric should be nonwoven pervious sheet of polypropylene material. Add stabilizers and/or inhibitors to the base material, as needed, to make the filaments resistant to deterioration by ultraviolet light, oxidation, and heat exposure. Re grind material, which consists of edge trimmings and other scraps that have never reached the consumer, may be used to produce the geotextile. Post-consumer recycled material may be used. Geotextile shall be formed into a network such that the filaments or yarns retain dimensional stability relative to each other, including the edges. Geotextiles shall meet the requirements specified in Table 1. Where applicable, Table 1 property values represent minimum average roll values in the weakest principal direction. Values for Apparent Opening Size (AOS) represent maximum average roll values.

TABLE 1
MINIMUM PHYSICAL REQUIREMENTS FOR MARKER GEOTEXTILE

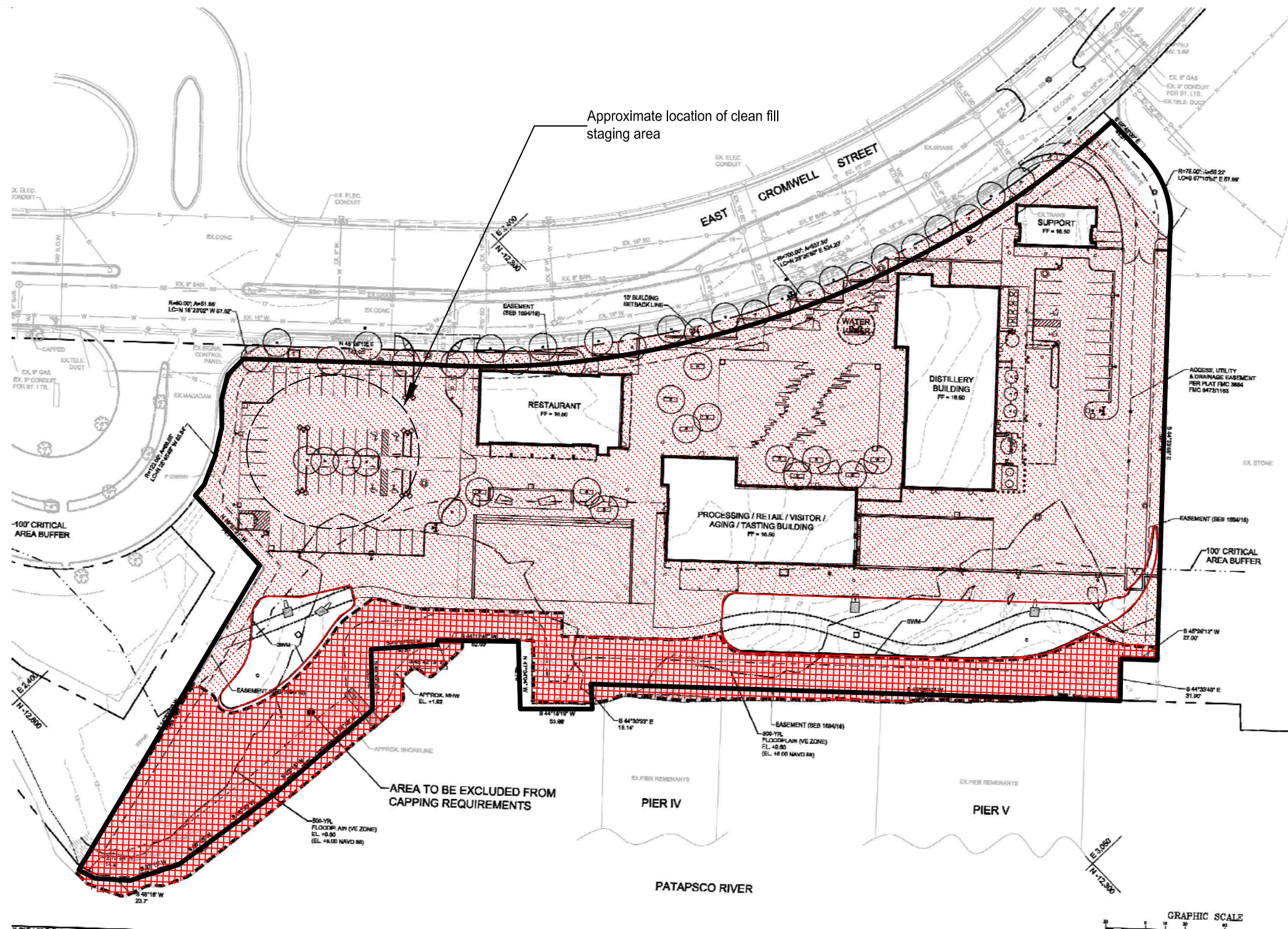
PROPERTY	UNITS	ACCEPTABLE VALUES	TEST METHOD
Grab Strength	lbs	205	ASTM D 4632
Seam Strength	lbs	195	ASTM D 4884
CBR Puncture	lbs	300	ASTM D 4833
Trapezoid Tear	lbs	80	ASTM D 4533
Apparent Opening Size	U.S. sieve	80	ASTM D 4751
Permittivity	Sec -1	1.1	ASTM D 4491
Ultraviolet Degradation	Percent	70 at 500 hrs	ASTM D 4355



GEO-TECHNOLOGY ASSOCIATES, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
 14280 PARK CENTER DRIVE, SUITE A
 LAUREL, MARYLAND 20707
 (410) 792-9446 OR (301) 470-4470
 FAX: (410) 792-7395
 www.mragta.com
 © Geo-Technology Associates, Inc.

301 EAST CROMWELL STREET
 BALTIMORE CITY, MARYLAND

CAPPING DETAILS



Legend

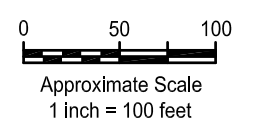
- Approximate area to be covered by Geotextile Marker Fabric
- Approximate bulkhead and shoreline areas (to be included in RAP addendum)

Notes

1. Base image obtained from a Schematic Design prepared by Ayers Saint Gross and dated February 13, 2015 (most current plan).
2. Property boundaries and site features are approximate.

TABLE 1
MINIMUM PHYSICAL REQUIREMENTS FOR MARKER GEOTEXTILE

PROPERTY	UNITS	ACCEPTABLE VALUES	TEST METHOD
Grab Strength	lbs	160x160	ASTM D 4632
Mullen Burst	psi	350	ASTM D 3786
CBR Puncture	lbs	75	ASTM D 4833
Trapezoid Tear	lbs	75	ASTM D 4533
Apparent Opening Size	U.S. sieve	30	ASTM D 4751
Permittivity	Sec-1	0.05	ASTM D 4491
Ultraviolet Degradation	Percent	80 at 500 hrs	ASTM D 4355



Geotextile Marker Fabric Specifications

The geotextile marker fabric should be nonwoven pervious sheet of polypropylene material. Add stabilizers and/or inhibitors to the base material, as needed, to make the filaments resistant to deterioration by ultraviolet light, oxidation, and heat exposure. Re-grind material, which consists of edge trimmings and other scraps that have never reached the consumer, may be used to produce the geotextile. Post-consumer recycled material may be used. Geotextile shall be formed into a network such that the filaments or yarns retain dimensional stability relative to each other, including the edges. Geotextiles shall meet the requirements specified in Table 1. Where applicable, Table 1 property values represent minimum average roll values in the weakest principal direction. Values for Apparent Opening Size (AOS) represent maximum average roll values.

	GEO-TECHNOLOGY ASSOCIATES, INC. GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 14280 PARK CENTER DRIVE, SUITE A LAUREL, MARYLAND 20707 (410) 792-9446 OR (301) 470-4470 FAX: (410) 792-7395 www.mragta.com © Geo-Technology Associates, Inc.	301 EAST CROMWELL STREET BALTIMORE CITY, MARYLAND DESIGNED LANDSCAPED AREAS, CAPPED AREAS, AND CLEAN FILL STAGING AREA
	PROJECT: 120896 DATE: MARCH 2015 SCALE: 1" = 100' DESIGN BY: LMD REVIEW BY: PHH FIGURE: 6	

APPENDIX C

TABLES

Table 1
Soil Analytical Results Summary
301 East Cromwell Street

Analyte	Sample Identification																			Soil Standards (mg/kg)		
	GTA-TP1	GTA-TP1	GTA-TP2	GTA-TP2	GTA-TP3	GTA-TP3	GTA-TP4	GTA-TP4	GTA-TP5	GTA-TP5	GTA-TP6	GTA-TP6	GTA-TP7	GTA-TP7	GTA-TP8	GTA-TP8	GTA-TP9	GTA-TP9	GTA-TP10	GTA-TP10	NRCS	ATC Eastern
	0-1'	4-5'	0-1'	4-5'	0-1'	4-5'	0-1'	4-5'	0-1'	4-5'	0-1'	4-5'	0-1'	4-5'	0-1'	3-4'	0-1'	4-5'	0-1'	4-5'		
SVOCs																						
1-Methylnaphthalene	0.021J	--	--	0.060J	0.039J	0.130J	0.180J	--	0.049J	0.120J	0.190J	0.022J	0.320	--	0.100J	--	0.260	0.140J	0.320	0.260	NE	NE
2-Methylnaphthalene	--	--	--	--	--	0.130J	0.210	--	--	0.230	0.250	--	0.380	--	0.130J	--	0.480	0.170J	0.370	0.320	410	NE
Acenaphthene	--	--	--	--	0.78J	--	--	--	--	0.740	0.360	--	0.880	--	--	--	--	0.150J	--	0.310	6,100	NE
Acenaphthylene	--	--	--	--	0.80J	--	--	--	--	--	0.370	--	0.890	--	--	--	--	--	--	0.260	6,100	NE
Anthracene	0.110J	--	--	0.110J	0.140J	--	0.180J	--	0.170J	0.740	0.810	--	0.750	--	0.220	--	--	0.600	0.140J	0.310	31,000	NE
Benzo(a)anthracene	0.480	0.240	0.340	0.310	0.650	0.210	0.560	--	0.630	0.480	2.2	0.170J	2.8	--	0.550	0.130J	0.150J	4.9	0.410	1.0	3.9	NE
Benzo(a)pyrene	0.420	0.180J	0.180J	0.240J	0.650	0.120J	0.470	--	0.520	0.320	1.8	0.090J	1.4	--	0.400	--	0.140J	4.2	0.310	1.6	0.39	NE
Benzo(b)fluoranthene	0.360	0.200	0.220	0.200J	0.670	0.160J	0.480	--	0.570	0.360	1.9	0.110J	1.9	--	0.430	--	0.180J	5.3	0.330	1.2	3.9	NE
Benzo(g,h,i)perylene	0.310	0.120J	--	0.110J	0.390	--	0.300	--	0.300	0.180J	0.990	--	0.860	--	0.250	--	0.210	2.4	0.330	1.3	3,100	NE
Benzo(k)fluoranthene	0.330	0.210	0.200J	0.230J	0.680	0.150J	0.470	--	0.520	0.350	2.0	0.110J	1.7	--	0.390	--	0.130J	4.3	0.320	1.2	39	NE
Bis(2-Ethylhexyl)phthalate	--	0.130J	--	--	--	--	0.340	--	2.2	0.290	0.290	0.160	0.190J	0.120J	0.250	0.130J	--	0.600	0.150J	0.200J	200	NE
Butyl benzyl phthalate	0.047J	0.064J	--	--	--	--	0.055J	--	0.044	--	0.047J	--	8.7	--	--	--	--	--	0.087J	0.078J	NE	NE
Chrysene	0.460	0.200J	0.250	0.270	0.590	0.140J	0.490	--	0.600	0.450	2.1	0.140J	2.0	--	0.490	0.110J	0.100J	5.9	0.320	0.990	390	NE
Dibenz(a,h)anthracene	0.130J	--	--	--	0.170J	--	0.120J	--	0.150J	--	0.510	--	0.390	--	0.120J	--	--	1.2	0.110J	0.590	0.39	NE
Dibenzofuran	--	--	--	--	--	--	0.099J	--	--	0.700	0.260	--	0.500	--	0.087J	--	0.088J	0.089J	0.150J	0.170J	100	NE
Diethyl phthalate	0.120J	2.7	--	1.5	0.400	--	--	--	--	--	--	--	0.860	--	0.220	2.2	--	--	--	--	82,000	NE
Di-n-butyl phthalate	--	0.100J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10,000	NE
Di-n-octyl phthalate	--	--	--	--	--	--	--	--	0.370	--	--	--	--	--	--	--	--	--	--	--	NE	NE
Fluoranthene	0.700	0.230	0.530	0.590	0.760	0.250	0.720	--	0.810	1.5	2.6	0.280	8.3	--	0.900	--	0.140J	4.4	0.440	0.980	4,100	NE
Fluorene	--	--	--	--	--	--	--	--	--	1.0	0.300	--	0.680	--	--	--	--	--	--	0.099J	4,100	NE
Indeno(1,2,3-cd)pyrene	0.260	0.110J	--	0.100J	0.370	--	0.280	--	0.290	0.140J	0.990	--	0.850	--	0.240	--	0.180J	2.4	0.250	1.2	3.9	NE
Naphthalene	--	--	--	0.290	--	0.110J	0.200J	--	--	0.210	0.550	--	0.170J	--	0.160J	--	0.240	0.210	0.260	0.270	2,000	NE
Phenanthrene	0.350	0.120J	0.290	0.380	0.370	0.230	0.610	--	0.500	2.7	2.3	0.86J	8.3	--	0.660	0.096J	0.210	0.720	0.690	0.910	31,000	NE
Pyrene	0.940	0.300	0.440	0.480	0.970	0.230	0.850	--	1.0	1.1	3.4	0.220	8.3	--	0.830	--	0.180J	7.5	0.610	1.5	3,100	NE
PCBs																						
All PCBs	--	--									--	--									varies	NE
VOCs																						
Acetone	0.023	--	--	--	0.098	--	0.046	--	0.017	0.031	0.048	0.015	0.120	0.018	0.026	0.030	0.044	--	--	--	92,000	NE
Benzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0013J	--	0.0011J	--	52	NE
Chloromethane	--	0.0076	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.028	--	0.014	--	NE
Methyl Acetate	--	--	--	--	0.10	--	--	--	--	--	--	0.0094	--	0.020	--	--	--	--	--	--	NE	NE
TPH-DRO	17.5	20.8	31.8	25.5	23.4	29.5	39.6	15.0	34.1	28.8	53.4	12.2	72.0	4.57	32.8	12.8	86.8	93.4	91.3	138	620	NE
Total Metals																						
Aluminum	5,900	43,100	3,300	3,200	6,100	5,800	10,300	3,600	8,600	7,300	7,700	11,200	3,400	6,200	9,500	4,500	6,100	6,100	8,800	4,800	100,000	11,000
Antimony	1.04J	--	0.859J	--	1.29J	2.08J	6.24	--	6.18	0.978	2.33J	0.957J	2J	--	7.48	3.8	1.05J	1.37J	1.61J	1.3	41	6.0
Arsenic	9.02	14.2	8.01	4.87	8.8	12.6	32.5	8.04	38.3	13.9	120	15.3	23.6	3.46	39.7	14.7	17.6	19.9	17.8	34.3	1.9	3.6
Barium	93.8	224	48.3	107	66.6	50.6	169	26.9	140	33.4	215	76.1	160	41.2	154	59.5	195	176	355	177	20,000	73
Beryllium	0.574	0.783	0.408	0.363J	0.613	0.405	4.72	0.348	2.48	0.35	1.17	0.449	0.746	0.268J	3.07	0.699	0.8	0.656	0.831	0.603	200	0.66
Cadmium	1.37	7.11	0.68	0.385	1.69	0.56	40.9	0.73	43.7	0.93	5.79	1.17	3.55	0.222J	51.2	1.21	5.97	13.2	12.7	13.5	51	0.73
Calcium	21,200	23,500	4,000	8,100	22,900	1,600	67,500	3,100	86,800	3,000	15,300	2,000	2,000	219	79,800	3,000	23,700	50,900	46,300	38,100	NE	1,300
Total Chromium	22.9	752	11.5	8.15	25.9	10.88	58.8	38.2	65.7	19.7	28.5	22.2	30.5	12.2	111	9.54	66.6	167	311	300	310	28
Cobalt	6.89	20	6.01	5.8	11.2	5.88	23.3	15.5	22	3.79	95	5.32	14.3	3.06	26.5	11.4	29	36.1	29.1	286	NE	11
Copper	23.7	68.6	13.2	56	33.5	1,500	2,300	44	2,800	38	151	31.2	40.9	15.2	4,200	57	406	2,400	415	624	4,100	12
Iron	21,100	35,600	21,500	9,200	25,500	14,600	76,500	18,000	69,800	25,500	30,800	28,500	39,700	11,100	69,200	28,800	39,800	70,700	84,200	77,200	72,000	15,000
Lead	48.3	112	52.6	58.2	56.1	229	746	40.5	686	38.3	183	83.3	162	18.3	837	175	484	478	721	566	1,000	45
Magnesium	4,500	32,600	771	585	6,000	664	9,200	939	15,100	757	4,600	1,600	798	588	6,400	270	7,100	9,000	12,300	14,000	NE	1,500
Manganese	1,700	3,900	234	118	658	86.9	989	274	1,700	162	3,600	109	3,900	68.5	883	222	2,100	2,700	3,000	3,200	2,000	480
Mercury	0.075	0.24	0.117	0.071	0.072	0.215	0.185	0.271	0.239	0.067	0.258	0.097	0.123	0.141	0.217	0.053	0.371	0.485	0.42	0.335	31	0.51
Nickel	19.2	433	11.6	13.2	34	13	123	15.7	127	9.86	79.5	13.1	25.9	4.8	140	18.6	72.1	89.1	191	220	2,000	13
Potassium	676	549	500	408	1,100	460	814	360	777	621	3,700	747	379	320	621	485	473	493	616	507	NE	720
Selenium	1.51	1.75	2.25	1.42	2.14	1.8	6.02	1.62	5.38	2.52	11.6	2.9	3.13	1.16	5.59	3.72	2.54	3.86	5.46	4.79	510	2.2
Silver	--	--	--	--	--	1.17	--	--	--	--	3.04	--	--	--	--	--	--	--	--	--	510	0.94
Sodium	113	126	46.1	109J	61.2J	46J	314	44J	169	73.5J	269	60.1J	127	68.6J	199	151	642	154	536	300	NE	520
Thallium	--	3.9	--	--	--	--	--	0.464J	--	--	45.8	--	2.54	--	--	--	--	--	--	--	7.2	3.9
Vanadium	61.7	145	21.5	13	42.1	20.3	63.7	122	77.6	30.4	140	40.4	105	19	62.9	18.4	75.2	128	106	132	100	30
Zinc	199	1,100	72.7	78.6	235	199	2,000	97.8	1,600	55.9	579	133	373	21.7	1,800	80.6	960	1,200	1,200	1,200	31,000	63
Cyanide	0.197J	0.316	0.425	0.626	0.541	0.424	1.03	0.047J	0.911	0.352	0.279J	0.649	0.446	0.494	1.08	0.351	0.055	1.09	0.66	0.205J	2,000	NE

Samples collected January 13 and 14, 2014

Notes:

-- = Not detected at or above the laboratory's reporting limit
NA = Not applicable
NE = MDE standard not established.
J = Indicates estimated value, result is less than the adjusted reporting limit but greater than zero.
D = Result is from diluted sample run

Results in milligrams per kilogram (mg/kg), or parts per million (ppm)
ATC = Anticipated Typical Concentrations/Reference Levels for soils in Eastern Maryland (MDE Interim Final Guidance, August 2001).
NRCS = MDE Non-Residential Cleanup Standards
Shaded and bold values represent exceedance of MDE NRCS and/or ATC.
Blank Cell = Not analyzed
Spiked sample recovery not within control limit for (aluminum, arsenic, cadmium, chromium, cobalt, copper, lead, nickel, potassium, sodium, and vanadium)

Table 2
Groundwater Analytical Results Summary
301 East Cromwell Street

Analyte	Sample Identification					Groundwater Standards(mg/L)
	GTA-1	GTA-2	GTA-3	GTA-4	GTA-5	Type I and II Aquifers
VOCs						
All VOCs	--	--	--	--	--	varies
TPH-DRO	0.0613	--	--	--	--	0.047
SVOCs						
Diethyl phthalate	--	0.0027J	--	--	--	2.9
All SVOCs	--	--	--	--	--	varies
Total Metals						
Total Aluminum	0.176	0.275	0.302	0.677	6.43	0.050
Dissolved Aluminum	0.0103J	0.0143J	--	--	0.0218J	
Total Antimony	--	--	--	--	0.00964J	0.006
Dissolved Antimony	--	--	--	--	--	
Total Arsenic	--	--	--	--	0.0149	0.010
Dissolved Arsenic	--	--	--	--	--	
Total Barium	0.0354J	0.112	0.059	0.0366J	0.160	2.0
Dissolved Barium	0.0217J	0.107	0.0471J	0.342J	0.0375J	
Total Beryllium	--	--	--	--	0.00132J	0.004
Dissolved Beryllium	--	--	--	--	--	
Total Cadmium	--	--	--	--	0.00534	0.005
Dissolved Cadmium	--	--	--	--	--	
Total Calcium	124	116	112	42.5	62.2	NE
Dissolved Calcium	101	112	129	47	42.1	
Total Chromium	0.0037J	0.00236J	0.00151J	0.01057	0.0657	0.10
Dissolved Chromium	0.00621	0.00504	--	0.00633	0.00408J	
Total Cobalt	--	--	--	0.0209	0.0149J	NE
Dissolved Cobalt	--	--	--	0.0219	--	
Total Copper	--	--	--	0.0795	0.301	1.3
Dissolved Copper	--	--	--	--	--	
Total Iron	2.59	2.93	6.2	3.6	52.2	0.300
Dissolved Iron	2.45	1.8	4.8	2.5	0.823	
Total Lead	--	0.00303J	0.00895	0.0144	0.429	0.015
Dissolved Lead	--	--	--	--	--	
Total Magnesium	55.8	23.8	46.4	16.3	418	NE
Dissolved Magnesium	43.1	22.6	54	17.8	435	
Total Manganese	1.79	1.36	0.655	0.442	2.05	0.05
Dissolved Manganese	1.71	1.28	0.751	0.511	0.577	
Total Mercury	--	--	--	--	--	0.002
Dissolved Mercury	--	--	--	--	0.000671	
Total Nickel	0.01	--	--	0.0162	0.0577	0.073
Dissolved Nickel	0.00467J	0.00625J	--	0.0198J	0.00420J	
Total Potassium	20.9	11.2	8.3	5.9	15.7	NE
Dissolved Potassium	17.2	10.8	9.7	5.8	15.2	
Total Selenium	--	--	--	--	0.00766J	0.05
Dissolved Selenium	--	--	--	--	--	
Total Silver	--	--	--	--	--	0.10
Dissolved Silver	--	--	--	--	--	
Total Sodium	569	53.5	26.5	70.6	85.4	NE
Dissolved Sodium	122	50.8	30.8	76.1	83.5	
Total Thallium	--	--	--	--	--	0.20
Dissolved Thallium	--	--	--	--	--	
Total Vanadium	0.0457	0.0346	0.0156J	0.013J	0.0923	0.0037
Dissolved Vanadium	0.0441	0.0319	0.0171J	0.0115J	0.0141	
Total Zinc	0.0113J	0.016J	0.0302	0.128	1.22	5.0
Dissolved Zinc	0.01015J	0.0285	0.0176	0.102	0.0176J	
Total Cyanide	--	--	0.004J	--	0.005	0.20
Dissolved Cyanide	--	0.003J	--	--	0.004	

Sample collected January 16, 2014.
Only detected compounds are shown.

Notes:

- = Not detected at or above the laboratory's reporting limit
- NE = MDE standard not established.
- Results in milligrams per liter (mg/L), or parts per million (ppm)
- Shaded Cell = result in exceedance of MDE's groundwater Clean-up Standard.
- J = Indicates estimated value, result is less than the adjusted reporting limit but greater than zero.
- MDE Cleanup Standard = Groundwater Cleanup Standard (GCS) for Type I and II Aquifers (MDE Interim Final Guidance Update No. 2.1, June 2008).

APPENDIX D

CONCRETE SAMPLING PLAN

Appendix D
Concrete Sampling Plan
301 East Cromwell Street
Baltimore, Maryland

Below-grade concrete structures, assumed to be associated with former buildings on the subject property, are planned to be excavated, sampled, and re-used on-site. These concrete structures are located primarily in the eastern, southeastern, and central portions of the property (see *Figure D1, Former Structure Locations*).

Soil impacted by contaminants of potential concern has been detected in various locations on the subject property. Contact with impacted soil and/or previous processes within the associated structures could have caused contamination of the below-grade concrete structures. Therefore, to determine suitability of the concrete for re-use on site, GTA and a representative from the Voluntary Cleanup Program will first evaluate the concrete structures for gross visual staining beyond normal staining caused by aging and contact with the soil on site. Areas with gross visual staining will be the focus of the following sampling methodology. Special attention should be paid to the three concrete pits previously identified as being used for chlorinated lubrication oil.

Based on *Figure D1* and observations of still-existing concrete foundations and other below-grade structures, the concrete to be evaluated encompasses approximately 5,000 to 6,000 square feet. Each existing structure will be overlaid with a 7-foot by 7-foot grid, and an approximately 1" cube of concrete will be removed and crushed into an aliquot of granular medium for each grid element. Aliquots for every 20 grid elements will be combined into one composite sample to be submitted for laboratory analysis (collecting each aliquot throughout the entire thickness of the concrete would provide a more representative sample for the entire waste profile).

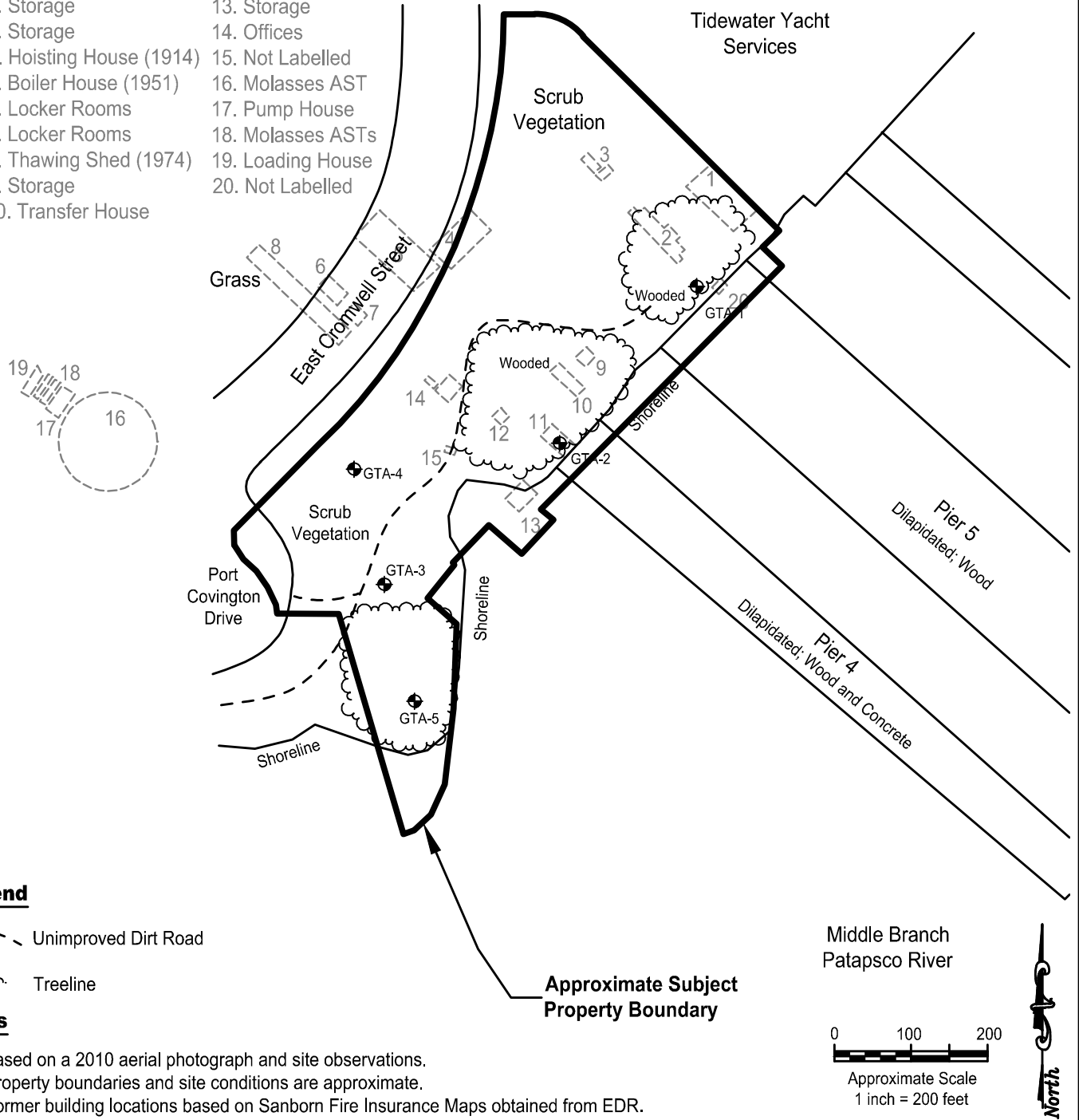
The concrete samples will be placed into clean, laboratory-provided containers, stored in an iced cooler, and transported to GTA's contract laboratory, under Chain of Custody documentation. The samples will be submitted for analysis of Resource Conservation and Recovery Act (RCRA) Metals, PAHs and PCBs. If heavy oily staining is present, then samples should also be analyzed for VOCs. If chromium is identified then hexavalent chromium speciation must be performed. If analytical results identify the potential to fail the toxicity characteristic, TCLP samples must be analyzed to determine appropriate disposal requirements.

Laboratory sample analyses will be compared to the MDE's Cleanup Standards for soil, and the TCLP analyses will be compared to the United States Environmental Protection Agency's hazardous waste Regulatory Levels. Concrete exhibiting concentrations above the regulatory comparison values will be segregated and disposed off-site at an appropriate facility(ies). Concrete exhibiting concentrations below the appropriate regulatory comparison value will be re-used as fill at various locations (to be determined during construction activities) on the subject property. Concrete material meeting the non-residential cleanup criteria may be used without additional restriction at the property (no placement in areas that come in contact with surface water or groundwater). Concrete material that exceeds the non-residential standards

must be placed in designated areas beneath the site cap or disposed off-site depending on the sampling results. Final location(s) of concrete re-used during construction will be included in the Completion Report.

Key to Former Structures:

- | | |
|------------------------------------|----------------------------------|
| 1. Offices and General Repair Shop | 11. Cable House w/concrete floor |
| 2. Storage | 12. Substation |
| 3. Storage | 13. Storage |
| 4. Hoisting House (1914) | 14. Offices |
| 5. Boiler House (1951) | 15. Not Labelled |
| 6. Locker Rooms | 16. Molasses AST |
| 7. Locker Rooms | 17. Pump House |
| 8. Thawing Shed (1974) | 18. Molasses ASTs |
| 9. Storage | 19. Loading House |
| 10. Transfer House | 20. Not Labelled |



Legend

- - - Unimproved Dirt Road
- ~~~~~ Treeline

Notes

1. Based on a 2010 aerial photograph and site observations.
2. Property boundaries and site conditions are approximate.
3. Former building locations based on Sanborn Fire Insurance Maps obtained from EDR.



GEO-TECHNOLOGY ASSOCIATES, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

14280 PARK CENTER DRIVE, SUITE A
 LAUREL, MARYLAND 20707
 (410) 792-9446 OR (301) 470-4470
 FAX: (410) 792-7395
 www.mragta.com
 © Geo-Technology Associates, Inc.

301 EAST CROMWELL STREET
 CITY OF BALTIMORE, MARYLAND

**FORMER STRUCTURE
 LOCATIONS**

APPENDIX E

EXAMPLE CAP INSPECTION FORM

CAP INSPECTION FORM

Location:	Date/Time:
Inspector:	Weather:

PAVEMENT

Overall Condition	
--------------------------	--

Specific Areas of Note (use PCI, below, and attach sketches/ photographs, as needed)

Area	PCI	Comments

Pavement Condition Index (PCI)

Response?	PCI	Characterization	Description
Optional	1	New, crack-free surface	Black in color, smooth texture
	2	Oxidation has started	Short hairline cracks start to develop. Dark gray color.
	3	Oxidation in advanced state	Hairline cracks are longer and wider. Gray in color.
Required	4	Oxidation complete	Crack area 1/4" wide and crack lines have found base faults.
	5	Moisture penetrating through 1/4" cracks. Loose material (stone and sand) evident.	Texture of surface becoming rough. Preventive maintenance.
	6	Cracks widen and join.	Cracks and shrinkage evident at curb and gutter lines.
	7	Potholes develop in low spots.	Gatoring areas begin to break up. Overall texture very rough.
	8	Potholes developing.	Pavement breaking up.
	9	Heaving due to excessive moisture in base.	Distorts entire surface.
	10	General breakup of surface.	

SIDEWALKS/CURBS

	Sidewalks	Curbs and Gutters
Overall Condition		
Check all that apply	<input type="checkbox"/> Sound <input type="checkbox"/> Cracked <input type="checkbox"/> Root Intrusion <input type="checkbox"/> Deteriorated When 3 of the 4 are checked, action is required.	<input type="checkbox"/> Sound <input type="checkbox"/> Cracked <input type="checkbox"/> Root Intrusion <input type="checkbox"/> Deteriorated When 3 of the 4 are checked, action is required.
Other Comments		

LANDSCAPED AREAS

Overall Condition	When trees or shrubs have been classified as "dead", action is required.
Check all that apply	<input type="checkbox"/> Sound <input type="checkbox"/> Erosion <input type="checkbox"/> Healthy Plant Condition <input type="checkbox"/> Mortality <input type="checkbox"/> Animal Burrows
Trees	<input type="checkbox"/> Healthy <input type="checkbox"/> Poor Health <input type="checkbox"/> Dead <input type="checkbox"/> Fallen <input type="checkbox"/> Other _____
Shrubs	<input type="checkbox"/> Healthy <input type="checkbox"/> Poor Health <input type="checkbox"/> Dead <input type="checkbox"/> Fallen <input type="checkbox"/> Other _____
Vent Risers and Piping at Light Poles	<input type="checkbox"/> Good Condition <input type="checkbox"/> Cracked <input type="checkbox"/> Broken/ Damaged <input type="checkbox"/> Other _____

RESPONSE ACTIONS

Responses Required	
Work Completed (Description, Date, Contractor, etc.)	
List Attached Photographs/Sketches	

APPENDIX F

ZONING CERTIFICATION

CERTIFIED STATEMENT RE: COUNTY AND MUNICIPAL ZONING REQUIREMENTS

“The participant hereby certifies that the property meets all applicable county and municipal zoning requirements.

The participant acknowledges that there are significant penalties for falsifying any information required by MDE under Title 7, Subtitle 5 of the Environmental Article, Annotated Code of Maryland, and that this certification is required to be included in a response action plan for the Voluntary Cleanup Program pursuant to Title 7, Subtitle 5 of the Environmental Article, Annotated Code of Maryland.”

301 East Cromwell Street, LLC
Marc Weller
Manager

Date