

CLEANUP ACTION PLAN
VOLUNTARY CLEANUP PROGRAM
BUZZARD POINT D.C UNITED SOCCER STADIUM
ANCILLARY DEVELOPMENT
WASHINGTON, D.C.

by Haley & Aldrich, Inc. McLean, Virginia

for McKissack & McKissack Washington, D.C.

File No. 40223-002 August 2015



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Attention: Mr. Mark Babbitt, P.E.

Subject: Cleanup Action Plan

Voluntary Cleanup Program

Buzzard Point D.C. United Soccer Stadium Ancillary Development

Washington, D.C.

#### Ladies and Gentlemen:

Haley & Aldrich, Inc., prepared this Cleanup Action Plan (CAP) for the Buzzard Point properties located in southwest Washington, D.C. (Site) selected to be redeveloped as the new D.C. United Soccer Stadium. This CAP supplements the Voluntary Cleanup Program application submitted to the District of Department of the Environment on 3 March 2015.

This CAP was prepared to summarize and document the investigation activities and analytical evaluations conducted at the Site and describe the recommended cleanup action and rationale for remediating soil in conjunction with Site redevelopment plans.

Please do not hesitate to call if you have any questions or comments

Sincerely yours,

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**Enclosures** 

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## 1. Introduction

This Cleanup Action Plan (CAP) was prepared by Haley & Aldrich, Inc., (Haley & Aldrich) for the Buzzard Point properties located in southwest Washington, D.C. ([Site]; Figure 1) selected to be redeveloped as the new D.C. United Soccer Stadium. This CAP supplements the Voluntary Cleanup Program (VCP) application submitted to the District of Department of the Environment (DDOE) on 3 March 2015 and approved on 28 July 2015.

The purpose of this CAP is to summarize and document the investigation activities and analytical evaluations conducted at the Site, describe the recommended cleanup action and rationale for remediating Site soil, and identify the potential need to mitigate possible vapor migration concerns in conjunction with Site redevelopment plans. Documented petroleum releases and reported chemical concentrations in soil and groundwater have contributed to the decision to enroll in the VCP and voluntarily cleanup the Site's soil during redevelopment with approval of this CAP.

The Site is divided into two parts to facilitate redevelopment as shown in Figure 2: Stadium Development, and Ancillary Development. Though recent environmental investigations targeted the Site as a whole, this CAP only applies to the Ancillary Development.

#### 1.1 PROPOSED DEVELOPMENT

As shown in Figure 2, the D.C. United Soccer Stadium development includes the construction of a stadium and ancillary support facilities. This CAP only applies to the Ancillary Development area as indicated above. As currently envisioned by the stadium design team, the Ancillary Development will most likely include concession space, merchandising space, and other soccer related entertainment venues. There will be no below grade building spaces. To facilitate the construction of the Ancillary Development foundations, there will be no excavations deeper than 10 feet below the existing ground surface.

## 1.2 SITE SETTING

The Site is in an area of Washington, D.C. referred to as Buzzard Point. The Site comprises approximately 13 acres. The Site consists of eight individual parcels located in the vicinity of Potomac Avenue, SW and 1<sup>st</sup> Street, SW. The Site is bounded by Potomac Avenue, SW and R Street, SW to the north, 2<sup>nd</sup> Street, SW to the west, T Street, SW to the south, and Half Street, SW to the east as shown in Figure 2.

The Ancillary Development consists of the following parcels: the eastern portions of Square 0661, Lots 0804, and 0805 (owned by Potomac Electric Power Company [PEPCO]) referred to as Parcels 5 and 6, respectively (Figure 2).

The Site is relatively flat with a gradual downward slope to the south and generally situated at an elevation of approximately 21 feet above mean sea level.



#### 1.3 SITE HISTORY

By 1944, the parcels that are currently owned by PEPCO were developed for residential use (Haley & Aldrich, 2014). In the late 1960s, two large aboveground storage tanks (ASTs) were installed at Parcel 6. By 1984, PEPCO converted Parcel 6 for electrical power management. Parcel 5 was reportedly used as a parking lot and Parcel 6 housed two large fuel oil ASTs. Parcels 5 and 6 are currently vacant.

The Site is currently used for parking, industrial warehouses, storage, and a salvage operation as described in the following section.

Historic Site usage includes vehicle fueling and storage, salvage operations, and electrical power management (former substation and power generation).

## 1.4 PHYSICAL SETTING

The Site geology and hydrology were evaluated based on a review of the Site investigations, available public information or references, and on experience and understanding of subsurface conditions in the Site area.

The Site and its vicinity are located within an urban area characterized by disturbed surface soils covered with structures and other impervious materials (pavement and concrete).

## 1.4.1 Topography

Topographically, the Site and its vicinity are relatively flat with a gradual downward slope to the south. The Site is at an elevation of approximately 21 feet above sea level.

#### 1.4.2 Hydrology

Surface water appears to flow from the Site in a southerly direction based on surface topography. Regional groundwater flow is anticipated to be tidally influenced based on the location of the Anacostia River, located approximately 0.1 mile east and 0.2 mile south, and the Potomac River, located approximately 0.3 mile to the west. Hydrogeologic investigations were not performed at the Site during previous investigations at each parcel; it is therefore unknown to what extent localized variations in groundwater depth and flow occur beneath the Site.

According to the Flood Insurance Rate Map, the Site is located within a floodplain. Potable water is supplied to the Site by the District of Columbia Water and Sewer Authority.

## 1.4.3 Geology

The Site is underlain by a surficial layer of fill soil and the underlying native soils consist of clay, sand, and gravel. Approximately 10 feet of fill material was encountered at the Site consisting of clayey sand and sandy lean clay with variable amounts of gravel, and small quantities of construction debris. Clays, sands, and clayey gravel were observed beneath the fill to a depth of approximately 35 feet bgs. Direct-push borings advanced during previous investigations at the Site did not encounter bedrock.



The Site is located within the Atlantic Coastal Plain physiographic province that is characterized by relatively thick seaward-dipping fluvial marine sediments of Cretaceous to recent geologic age. These deposits are typically laterally heterogeneous due to unconformities, facies changes, and variations in physical properties with age and burial depth. Paleozoic geologic age crystalline bedrock underlies the marine sediments. According to the 1958 USGS Geologic Map of Washington DC and Vicinity, the Site is underlain by the Quaternary geologic age Palmico Formation and recent alluvium.

#### 1.4.4 Hydrogeology

The Cretaceous Potomac aquifer extends under most of the Northern Atlantic Coastal Plain. The lower portion of this aquifer underlies the Site. The confining units of the aquifer consist primarily of silt and clay. The Potomac aquifer system is mainly composed of sand and gravel interbedded with clayey silt. The hydrogeology of the region is characterized by numerous water-bearing zones that may be perched and otherwise distributed in a heterogeneous manner. The water-bearing zones can either be confined or unconfined depending on the permeability of the sands, silts, clays, and gravels that may be present. The Site is located in the Salisbury Embayment and is southeast of the fall line that defines the western boundary of the Atlantic Coastal Plain.

According to a "Voluntary Cleanup Action Plan" prepared by Schnabel Engineering North, LLC, [Schnabel] for a property located approximately 0.2 mile northeast of the Site, perched water has been observed at the fill-clay interface at depths generally ranging from 10 to15 feet bgs (Schnabel, 2006). Haley & Aldrich made similar observations in the groundwater monitoring wells installed during Site investigations. This water level depth was also observed by Haley & Aldrich in the test borings drilled for the National Defense University facility at Fort McNair, immediately across 2<sup>nd</sup> Street, SW, and west of the Site.

Temporary groundwater monitoring wells installed during previous investigations conducted by Haley & Aldrich are shown in Figure 2. No production wells were observed on the parcels.



## 2. Background

Documented Site investigations began in 1990 and are summarized below. In general, the information summarized in this section has been presented in several documents over the past 25 years; key submittals that support the purpose of this CAP include:

- "Comprehensive Site Assessment, Potomac Electric Power Company, Buzzard Point Station, 1st and V Street" prepared by TPH Technology, Incorporated, (TPH Technology) dated 14 August 1993;
- "Corrective Action Plan, Remedial Specifications and Implementation Details, Buzzard Point Generation Station" prepared by TPH Technology, dated March 1995.
- "Phase II Environmental Site Assessment" prepared by Advantage Environmental Consultants, LLC, (AEC), dated June 10, 2005;
- "Report on ASTM Phase I Environmental Site Assessment and Limited Phase II Subsurface Sampling, Potomac Avenue & 1<sup>st</sup> Street SW,," prepared by Haley & Aldrich, dated 9 September 2014; and
- "Phase II Soil Investigation Report, Voluntary Cleanup Program, Potomac Electric Power Company Parcels at Buzzard Point, Square 0661, Lots 0804, 0805, and Square 0665, Lot 0024," prepared by Haley & Aldrich, dated 31 July 2015.

The Site investigations summarized in this section used a variety of soil and groundwater screening criteria (herein referred to as historical screening criteria). These criteria have since been refined based on the potential receptors and pathways associated with the redevelopment plans as described in Section 3.2.

PEPCO has been monitoring observation wells associated with leaking underground storage tanks (USTs) at these parcels since as early as the 1970s. In 1993, free phase (liquid) hydrocarbons were discovered in an observation well in the combustion turbine area. The Department of Consumer and Regulatory Affairs issued a written directive to PEPCO, and TPH Technology completed a comprehensive site assessment for leaking underground storage tank (LUST) case #93-051 (TPH Technology, 1993). The assessment included a shallow soil gas survey, installation of 11 groundwater monitoring wells, and soil and groundwater sample collection and analysis. Soil and groundwater analytical results indicated that total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations were elevated. A review of groundwater analytical results also indicated that naphthalene concentrations were elevated, suggesting a groundwater plume of free phase and dissolved phase hydrocarbons. The TPH Technology report also noted that approximately 2,717 gallons of liquid phase product was recovered from the parcel during the late 1980s (TPH Technology, 1993).

In 1995, TPH Technology prepared a corrective action plan following completion of the comprehensive site assessment to summarize the results of soil and groundwater assessment activities and describe the remedial action plans (TPH Technology, 1995). Based on a review of the results, TPH Technology estimated a larger product plume than initially suggested based on the initial petroleum release at approximately 17,200 square feet, representing 1,600 to 3,600 gallons of hydrocarbons.



In 1996, TPH Technology implemented their corrective action plan and installed a soil vapor extraction (SVE) system that operated from January 1996 to November 1999 and removed approximately 6,925 gallons of petroleum from groundwater. From May 2001 to April 2002, a portable high vacuum pump and treat system was also used to recover petroleum compounds.

In 2002, PEPCO requested that the SVE system be decommissioned and replaced by a passive remediation approach that consequently removed approximately 1,350 gallons of hydrocarbons.

In 2005, AEC conducted a Phase I environmental site assessment (ESA) at the SW Land Holder, LLC, parcel and noted that TPH and BTEX concentrations in groundwater at PEPCO exceeded the historical screening criteria except in three downgradient wells (AEC, 2005). Passive remediation with absorbent booms and monitoring was being conducted at that time.

In 2010, the DDOE issued a "No Further Action" letter to PEPCO in reference to LUST case #93-051 stating that "the residual contamination left in place at this site does not pose a threat to human health and/or the environment" (DDOE, 2010). The DDOE acknowledged that no further remedial action is necessary at the parcel unless residually contaminated soil is removed, disturbed, or excavated.

In 2014, Haley & Aldrich conducted a Phase I and limited Phase II ESA. The Phase I identified known recognized environmental concerns ([RECs]; i.e., soil and groundwater petroleum impacts from historical operations) and suspect RECs (i.e, substation-related chemicals, former ASTs and associated piping, and adjacent property impacts). During the Phase II, soil and groundwater samples were collected from five locations identified as RECs (GTW-661-805-1, GTW-661-804-1, GTW-661-804-2, GTW-661-804-3, and GTW-661-24-1) shown in Figure 3 (Haley & Aldrich, 2014X). A review of soil analytical results indicated that gasoline range total petroleum hydrocarbons (TPH-GRO) and diesel range total petroleum hydrocarbons (TPH-DRO) concentrations exceeded the historical screening criteria (Haley & Aldrich, 2014). A review of groundwater analytical results indicated that benzene concentrations exceeded the historical screening criteria (Haley & Aldrich, 2014). The analytical results are provided in Tables 1 through 3.

In 2015, Haley & Aldrich conducted a supplemental Phase II ESA to attempt to delineate the extent of chemicals in soil and collect an additional round of groundwater samples for analysis from the existing temporary wells (locations GTW-661-805-1, GTW-661-804-1, GTW-661-804-2, GTW-661-804-3, and GTW-661-24-1) shown in Figure 2 (Haley & Aldrich, 2015). Forty-seven soil borings were advanced and soil samples were collected. A review of soil analytical results indicated that TPH-GRO, TPH-DRO, and several polycyclic aromatic hydrocarbon (PAH), volatile organic compound (VOC), and metals concentrations exceeded the soil screening levels (see Section 3.2; Haley & Aldrich, 2015). Soil sample locations and exceedances are shown in Figure 4. A review of groundwater analytical results indicated that benzene exceeded the groundwater screening level and reported detection limits for DBCP and ethylene dibromide exceeded the groundwater screening levels (see Section 3.2), though the results were reported as non-detect. The analytical results are provided in Tables 1 through 3.



## 3. Data Evaluation

The following sections summarize the data evaluation conducted for the Site.

#### 3.1 RECEPTORS AND POTENTIAL EXPOSURE PATHWAYS

The Ancillary Development portion of the Site is planned to be redeveloped as concession space, merchandising space, and other soccer related entertainment venues. Potential human receptors at the Site include the construction worker during redevelopment, and commercial workers, recreational visitors (i.e., stadium attendees) after redevelopment.

The construction worker may have potential exposure to soil via incidental ingestion of soil, dermal contact with soil, and inhalation of VOCs emanating from soil and non-VOCs as fugitive dust generated from soil. It is also assumed that the construction worker may have potential exposure to the perched water located beneath this portion of the Site via dermal contact with perched water and inhalation of volatilized VOCs from perched water during possible trenching activities.

Once redeveloped, this portion of the Site is assumed to be covered with impervious surface treatments (e.g., concrete and/or asphalt pavement, sidewalks, and concourses), building structures, imported fill, and landscaped areas. Commercial workers and recreational visitors will therefore have insignificant potential exposure to soil or groundwater. The commercial worker and recreational visitor may potentially be exposed to VOCs in indoor air due to subsurface vapor intrusion through the soil surrounding the foundations of the future on-Site buildings.

Groundwater beneath the Site will not be a source of potable water and therefore not used for drinking water or irrigation.

#### 3.2 SCREENING LEVELS

Based on the receptors and potential exposure pathways identified above, the following soil and groundwater screening levels were selected for the Site and this CAP.

Soil sample analytical results were compared to the following screening levels:

- DC Tier 0 Soil Standards from the Tier 0 Standards Final Rulemaking published at 40 DCR 7835, 7892 (12 November 1993), as amended by Final Rulemaking published at 46 DCR 7699 (1 October 1999); and
- Environmental Protection Agency (EPA) Regional Screening Level for Industrial Soil from the EPA Regional Screening Level Tables (May 2014).

As used in this CAP, "soil screening levels" are the lower of the above screening levels. Soil screening levels were compared to soil sample analytical results within the upper 10 feet of soil at the Site. Based on the redevelopment plans, the construction workers will not have potential contact with soil deeper than 10 feet bgs.



Groundwater sample analytical results were compared to the following screening levels:

- DC Tier 1 Risk-based groundwater screening levels for indoor and outdoor inhalation of the resident child (building occupant) from the Risk-Based Corrective Action Technical Guidance, Table 5-8 (June 2011);
- DC Tier 1 Risk-based groundwater screening levels for dermal contact of the construction worker from the Risk-based Corrective Action Technical Guidance, Table 5-8 (June 2011); and
- Environmental Protection Agency (EPA) regional maximum contaminant levels from the EPA Regional Screening Level (RSL) Summary Table (January 2015).

As used in this CAP, "groundwater screening levels" are the lower of the above screening levels. Construction workers will have no potential contact with groundwater, since the variable groundwater table is below 10 feet bgs and so a risk scenario for dermal contact for the construction worker is not a complete pathway. However, dermal contact has been included to address potential exposure to the perched water located beneath the Site during redevelopment.

#### 3.3 CHEMICALS OF POTENTIAL CONCERN

During the initial Site investigations, samples were collected and analyzed for select chemicals based on the confirmed or expected use of materials and chemicals historically or currently used at the Site. These chemicals and the associated analytical methodologies generally include:

- VOCs by EPA Method 8260;
- Semi-volatile organic compounds (SVOCs) by EPA Method 8270;
- TPH by EPA Method 8015;
- PCBs by EPA Method 8082; and
- Resource Conversation and Recovery Act (RCRA) or Target Analyte List metals by EPA 6010/7000 series.

Based on the findings of the Phase I and Phase II investigations, subsequent assessments evaluated and attempted to delineate chemical concentrations for select chemicals. The following summarizes the chemicals of potential concern (COPCs) in soil and groundwater based on the investigations conducted by Haley & Aldrich from 2013 to 2015 at the proposed Ancillary Development area.

## 3.3.1 VOCs in Soil

Four (4) soil samples were collected and analyzed for VOCs; VOCs were detected in 4 samples. The primary detected compounds were BTEX. Soil sample analytical results are provided in Table 2.

### 3.3.2 SVOCs and PAHs in Soil

Thirty-nine (39) soil samples were collected and analyzed for SVOCs; SVOCs were detected in 10 samples. The primary detected compounds were PAHs. Soil sample analytical results are provided in Table 1.



#### 3.3.3 TPH in Soil

Fifty-eight (58) soil samples were collected and analyzed for TPH; TPH was detected in 37 samples. Soil sample analytical results are provided in Table 1.

#### 3.3.4 Groundwater

Twenty-three (23) groundwater samples were collected and analyzed throughout the Site for VOCs, SVOCs, metals, and TPH. A review of groundwater analytical results indicated that antimony, arsenic, lead, benzene, and methylene chloride exceeded the groundwater screening levels. Reported detection limits for select VOCs and SVOCs exceeded the groundwater screening levels, though the results were non-detect. Groundwater exceedances from 2015 sampling are shown in Figure 5. Groundwater sample analytical results are provided in Table 2.

Groundwater beneath the Site will not be a source of potable water and therefore not used for drinking water or irrigation. Metals and VOC concentrations that exceed maximum contaminant levels therefore do not pose a threat to human health via the ingestion pathway and do not warrant groundwater remediation. The VOC concentrations in groundwater do not exceed the DC Tier 1 Risk-based groundwater screening levels for indoor and outdoor inhalation. The vapor intrusion pathway is further discussed in Section 5.3.

#### 3.4 AREAS OF POTENTIAL CONCERN

A review of the results of the previously described environmental investigations identified areas of potential concern (AOPCs) that represent areas with COPC concentrations in soil that may require remedial action to be protective of human health or groundwater quality. Note that the soil and groundwater analytical data were compared to the screening levels in lieu of performing a human health risk assessment. The screening levels were selected as conservative comparison levels based on the receptors and pathways identified for the Site. A chemical concentration exceedance of a screening level does not necessarily indicate a potential threat to human health or the environment (e.g., water quality). Metals concentrations detected at the Site may be within naturally occurring background concentrations, and if so, would also not pose an unacceptable threat to human health or the environment.

In general, the distribution of organic chemical concentrations in soil at the Site is coincident with former Site activities, including former fuel storage and distribution activities, substation-related equipment and maintenance, and waste collection areas.

The distribution of inorganic chemical concentrations in soil at the Site is prevalent and does not seem to be coincident with former Site activities. These concentrations could possibly be attributed to the fill material and/or may be within Site-specific background levels.

Delineation soil samples at the AOPCs did not define the extent of chemicals in soil above soil screening levels. Detailed AOPC locations are shown in Figure 4. The remedial approach described in Section 4 will address these AOPCs by:



- Excavating soil to a depth of approximately 10 feet bgs, as needed for construction (it is assumed that no soil with concentrations that exceed soil screening levels will remain in the upper 10 feet of the Ancillary Development area after completing excavation activities);
- Removing all potential sources (e.g., tanks, salvage material);
- Monitoring and sampling soil removed for profiling and off-Site disposition to a regulated facility;
- Monitoring and sampling soil remaining after excavation;
- Removing and treating, as necessary, perched water existing in the fill soil and stormwater (direct precipitation and runoff) entering excavation areas prior to discharge to the sanitary sewer; and
- Mitigating potential vapor intrusion risks during construction of the on-Site buildings.



## 4. Cleanup Action Plan

The AOPCs will be remediated during mass excavation necessary for stadium construction by removing soil containing chemical concentrations that exceed the soil screening levels for off-Site disposal. This remedial approach is based on the current understanding of Site conditions and the volumes of soil containing chemicals that require remediation.

#### 4.1 SOIL REMEDIATION

The Site soil will be remediated by excavation and off-Site disposal as part of the construction activities for the new stadium. Approximately 24,500 cubic yards of soil will be excavated during the redevelopment, including approximately 2,200 cubic yards of soil containing chemicals that exceed the soil screening levels. The mass excavation will also remove source areas such as subsurface structures and utilities encountered within the limits of the Ancillary Development. The AOPC footprint shown in Figure 3 is defined by exceedances of the soil screening levels. The footprint boundaries were developed by extending the boundary 20 feet laterally from the sample location with the exceedance, but still within the Ancillary Development boundary; since the AOPCs were not defined by the previous investigations.

#### 4.1.1 Pre-field Activities

The following pre-field activities will be performed prior to the start of redevelopment activities.

- The Site-specific Health & Safety Plan (HASP) will be updated to incorporate necessary health
  and safety procedures for the scope of work described in this section of the CAP. The HASP will
  be followed during field activities and appropriate monitoring will be conducted and hazards
  addressed, including the use of engineering controls and/or personal protective equipment.
- The redevelopment contractor's Stormwater Pollution Prevention Plan (SWPPP) will be implemented.
- A Site-wide grid system will be established to provide a location reference for collecting and documenting environmental data during mass excavation as described in Appendix A.

## 4.1.2 Environmental Monitoring

Environmental monitoring will be performed during excavation to screen soils for potential chemical impacts not identified during environmental investigation activities. Demolition and excavation activities covered under this CAP include, but are not limited to:

- Removing concrete and asphalt surface pavements;
- Removing former building foundations, which may include, but is not limited to former building pads, footings, and piles;
- Removing other subsurface structures if encountered, which may include, but is not limited to sumps, clarifiers, and drains;
- Removing subsurface utilities;



- Earthwork activities, including soil removal, grading and recompacting; and
- Conducting limited dewatering to control water seepage of perched water into open excavations, if necessary.

The redevelopment contractor shall communicate with the environmental consultant on a daily basis to indicate the locations where the contractor will be excavating soil, removing surface pavements, building foundations, other subsurface structures, and subsurface utilities prior to their removal. The environmental consultant will conduct environmental field screening of exposed soils during these activities to look for indications of chemical impacts. Examples of such indications may include elevated photoionization detector measurements, soil discoloration, or odors. Detailed procedures regarding the environmental field screening process are provided in Appendix A.

If environmental field screening indicates the potential presence of chemical impacts during Site redevelopment activities, the environmental consultant will screen and direct the affected soil for segregation to and assess the nature and extent of the chemicals once the excavation is complete.

Potential chemical assessment will include a review of historical documents and investigation data to assess whether the area had previously been investigated. Depending on the results of the historical document and data review, a further assessment may be conducted, including samples collected for laboratory analysis to characterize the soil. Additional sampling and laboratory analysis to delineate the extent of chemicals may also be conducted. Detailed procedures regarding the soil assessment process are provided in Appendix A.

If the redevelopment contractor needs to stockpile soil identified as containing chemical impacts, the contractor will stockpile the associated soil separately from soil that has not been identified as containing chemical impacts during the assessment process.

In general, the following steps will be followed for slabs and surface pavement removal and mass excavation:

- 1) The redevelopment contractor will remove surface pavements, building foundations, and other subsurface structures and subsurface utilities and excavate the soil pursuant to their contract.
- 2) The environmental consultant will field screen exposed soils during pavement removal and mass excavation for the potential presence of chemical impacts.
  - a) If no potential chemical impacts are identified, the redevelopment contractor will continue pavement removal and/or mass excavation activities.
  - b) If potential chemical impacts are identified, the environmental consultant will complete the assessment activities. The redevelopment contractor may be required to cordon off the area with cones, barricades, caution tape, or other measures to prevent equipment and personnel from disturbing the area containing potential chemical impacts.
  - c) If the assessment indicates that the area does not require further action, the environmental consultant will notify the redevelopment contractor that the area is "cleared" and access restrictions from the area will be removed.



d) If the assessment indicates that the area requires further action, the environmental consultant will coordinate the activities as described in Appendix A. This generally includes delineation of the area followed by excavation, segregation, and soil disposal.

If a previously unidentified subsurface structure is encountered (e.g., buried process equipment, sumps, vaults, etc.), the environmental consultant will evaluate the structure to assess whether it may be considered an UST in accordance with UST regulations. If the structure is identified as a UST, the UST will be removed following the procedures outlined in Appendix B. If the structure is not considered to be a UST, the soil will be screened beneath the structure and samples may be collected for VOC, SVOC, and metals analysis.

## 4.1.3 Construction Dewatering

If water is encountered during mass excavation and local dewatering is necessary, the redevelopment contractor will be responsible for the localized dewatering activities and treatment of the water generated, if needed, prior to discharge to the D.C. municipal separate stormwater sewer system (MS4). Dewatering may be required to remove perched water and stormwater that enters the excavation area. Once water has entered the excavation, it may be impacted by the COPCs in soil. Once treated, the water will be discharged to MS4. The redevelopment contractor shall be responsible for complying with DDOE's requirements to discharge to the MS4, which includes permit and permit compliance, developing a sampling work plan and characterizing the representative water that will be dewatered and discharged, treatment, and monitoring during discharge through sample collection.

The environmental consultant will be responsible for monitoring the effects of the localized dewatering. The environmental consultant may monitor water levels through the installation and development observation wells, establishing baseline water levels, and/or collecting water samples. If monitoring indicates that chemicals in water are migrating off-Site, mitigation measures to limit the migration will be implemented that may include an impervious barrier such as sheet piling or a water recharge gallery to create a hydraulic mound of groundwater between the chemically impacted-water and the open excavation.

## 4.1.4 Soil Management

The redevelopment contractor may encounter soil during pavement removal and mass excavation that contains more than one type of chemical or chemical groups. Based on available data and the results of environmental field screening, soil containing different chemical groups will be segregated and placed in separate containers and/or stockpiled separate from the contractor's non-hazardous waste soil stockpiles in accordance with the SWPPP.

The environmental consultant will provide direction for segregating excavated soil. Based on the environmental investigations at the Stadium Development portion of this Site, it is possible that the soil may be classified in the following disposal categories (current data suggests only Class 1 soil exists at the Ancillary Development):

• Class 1: Soil that has no restriction on disposal or special requirements for transportation with TPH levels up to 25,000 milligrams per kilogram (mg/kg) and total chemical concentrations below the Toxicity Characteristic Leaching Procedure (TCLP) hazardous waste levels;



- Class 2: Soil with total chemical concentrations above TCLP hazardous waste levels and therefore characterized as RCRA hazardous waste; and
- Class 3: Soil with TPH levels greater than 25,000 mg/kg not acceptable for local non-hazardous waste receiving facilities.

If further soil assessment indicates the removed soil would be classified as Class 2 or Class 3 soil, the environmental consultant will assist with profiling the stockpile.

Each segregated soil stockpile for off-Site disposal will be sampled for waste profiling as described in Appendix C. The environmental consultant will collect the soil samples, submit the samples to the selected laboratory, profile the waste, and assist with coordinating the waste disposal.



## 5. Post-Remediation Activities

The following post-remediation activities may be conducted at the Site.

#### 5.1 CONFIRMATION SAMPLE COLLECTION

Bottom confirmation soil samples will be collected and analyzed for the chemical constituents at AOPCs that require remediation to document possible residual chemical concentrations. One sample will be collected for every 400 square feet of excavation bottom at the AOPC. Sidewall confirmation soil samples may also be collected at the Ancillary Development boundary at AOPCs or areas with indications of chemical presence. Analytical results from these samples will be provided to the Site developer and DDOE for their use and information.

Soil grab samples will be collected and placed in certified-clean sample jars provided by the laboratory. Disposable nitrile gloves will be worn while sampling and changed between each sample collection to prevent cross-contamination. Samples will be placed in a cooler with ice and submitted to a laboratory for analysis under standard chain of custody procedures.

Final excavation areas and confirmation soil sample locations will be surveyed by a licensed surveyor and presented in a closure report prepared by the environmental consultant and submitted to the DDOE once the mass excavation and a post-remediation human health risk assessment is complete, if applicable.

#### 5.2 DATA EVALUATION

Confirmation soil sample analytical results within the upper 10 feet of the Site's soil, if collected, will be compared to the selected soil screening levels. If soil sample concentrations near the excavation subgrade exceed the soil screening levels, a human health risk assessment may be conducted to identify if additional excavation, remediation, or mitigation is warranted. Potential receptors will not have direct contact with soil deeper than 10 feet bgs, since soil excavation deeper than 10 feet is not planned at the Site. The building and paved areas will also act as a barrier to infiltrating water, so that residual chemical concentrations at this depth will not likely impact groundwater quality due to contaminant leaching. Soil deeper than 10 feet bgs with concentrations that exceed soil screening levels will therefore require no further remediation.

### 5.3 VAPOR INTRUSION MITIGATION

A soil gas survey may be conducted at the Site by the Site developer after the remediation activities to evaluate the potential for vapor intrusion into indoor air from VOCs in soil or groundwater. If a potential human health risk from possible vapor intrusion is identified, mitigation measures such as a vapor barrier or mitigation system shall be considered during the design of the stadium and installed during construction.



## 6. Limitations

All recommendations are based solely on existing Site conditions at the time of performance of services. Haley & Aldrich is unable to report on, or accurately predict events that may impact the Site following preparation of this document, whether naturally occurring or caused by external forces. The recommendations provided by Haley & Aldrich are based solely on the scope of work conducted and the sources of information referenced in this document. Services hereunder were performed in accordance with our agreement and understanding with, and solely for the use of McKissack & McKissack and their client, Government of the District of Columbia Office of the Deputy Mayor for Planning and Economic Development. Any additional information that becomes available concerning this Site should be provided to Haley & Aldrich so that any further recommendations may be reviewed and modified as necessary. Haley & Aldrich is not responsible for the subsequent separation, detachment, or partial use of this document. No warranty or guarantee, whether expressed or implied, is made with respect to the recommendations expressed in this report. Any reliance on this report by a third party shall be at such party's sole risk.



## References

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- 8. TPH Technology, Incorporated, 1995. Corrective Action Plan, Remedial Specifications and Implementation Details, Buzzard Point Generating Station, Half & S Streets, SW, Washington, DC. DC Lust Case# 93-051. 10 March.

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TABLE 1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AND EXCEEDANCES - SVOCs AND TPH
BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT
WASHINGTON, D.C

Location			DP-048	DP-048	DP-049	DP-049	DP-050	DP-050	DP-051	DP-051	DP-051	DP-052
Sample Date		EPA Regional	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015
Sample Name	DC Tier 0 Soil	Screening Level for	DP-048-SO-050-01	DP-048-SO-100-01	DP-049-SO-050-01	DP-049-SO-100-01	DP-050-SO-050-01	DP-050-SO-100-01	DP-051-SO-050-01	DP-051-SO-100-01	DP-051-SO-100-02	DP-052-SO-050-01
Sample Type	Standards <sup>1</sup>	Industrial Soil <sup>2</sup>	Primary	Duplicate	Primary							
Sample Depth Interval (ft bgs)		industrial 5011	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10	9.5 - 10	4.5 - 5
oumpie Deptii interval (it 250)			1.5 5	3.3 10	1.3 3	3.3 10	1.3 3	3.3 10	1.3 3	3.3 10	3.3 10	1.3 3
Semi-Volatile Organic Compounds (mg/kg)	mg/kg	mg/kg										
1,2,4-Trichlorobenzene	-	110	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	-	9300	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	-	11	-	-	-	-	-	-	-	-	-	-
1-Methylnaphthalene	-	73	-	-	-	-	-	-	-	-	-	-
2,2'-oxybis(1-Chloropropane)	-	22	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	-	82000	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	-	210	-	-	-	-	-	-	-	_	-	-
2,4-Dichlorophenol	-	2500	-	-	-	-	-	-	-	_	-	-
2,4-Dimethylphenol	-	16000	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	-	1600	-	-	-	-	-	-	-	_	-	-
2,4-Dinitrotoluene	-	7.4	-	-	-	-	-	-	-	_	-	-
2,6-Dinitrotoluene	-	1.5	-	-	-	-	-	-	-	_	-	-
2-Chloronaphthalene	_	93000	_	_	_	_	< 0.18	_	_	_	_	< 0.18
2-Chlorophenol	_	5800	_	_	_	_	-	_	_	_	_	-
2-Methylnaphthalene	_	3000	_	_	_	_	< 0.22	_	_	_	_	< 0.21
2-Methylphenol	_	41000	_	_	_	_	-	_	_	_	_	-
2-Nitroaniline	_	8000	_	_	_	_	_	_	_	_	_	_
2-Nitrophenol	_	-	_	_	_	_	_	_	_	_	_	_
3&4-Methylphenol	_	_	_	_	_	_	_	_	_	_	_	_
3,3'-Dichlorobenzidine	_	5.1	_	_	_	_	_	_	_	_	_	_
3-Nitroaniline	_	-	_	_	_	_	_	_	_	_	_	_
4,6-Dinitro-2-methylphenol	_	66	_	_	_	_	_	_	_	_	_	_
4-Bromophenyl phenyl ether	_	-	_	_	_	_	_	_	_	_	_	_
4-Chloro-3-methylphenol	_	82000	_	_	_	_	_	_	_	_	_	_
4-Chloroaniline	_	12	_	_	_	_	_	_	_	_	_	_
4-Chlorophenyl phenyl ether	_		_	_	_	_	_	_	_	_	_	_
4-Nitroaniline	_	120	_	_	_	_	_	_	_	_	_	_
4-Nitrophenol	_	-	_	_	_	_	_	_	_	_	_	_
Acenaphthene	_	45000	_	_	_	_	< 0.15	_	_	_	_	< 0.14
Acenaphthylene	_	-	_	_	_	_	< 0.15	_	_	_	_	< 0.14
Aniline	_	410	_	_	_	_	-	_	_	_	_	-
Anthracene	_	230000	-	_	_	_	< 0.11	_	_	_	_	< 0.11
Benzo(a)anthracene	_	2.9	_	_	_	_	< 0.11	_	_	_	_	0.068 J
Benzo(a)pyrene	_	0.29	_	_	_	_	< 0.15	_	_	_	_	0.065 J
Benzo(b)fluoranthene	_	2.9	_	_	_	_	< 0.11	_	_	_	_	0.087 J
Benzo(g,h,i)perylene	_		_	_	_	_	< 0.15	_	_	_	_	0.041 J
Benzo(k)fluoranthene	_	29	_	_	_	_	< 0.11	_	_	_	_	< 0.11
Benzoic acid	_	3.30E+06	_	_	_		-	_	_	_	_	- 0.11
Benzyl Alcohol	_	82000	_	_	_	_	_	_	_	_	_	_
bis(2-Chloroethoxy)methane	_	2500	_	_	_		_	_	_	_	_	_
bis(2-Chloroethyl)ether	_	1	_	_	_		_	_	_	_	_	_
bis(2-Ethylhexyl)phthalate	_	160	_	_	_	<u> </u>	_	_	_	_	_	_
Butyl benzylphthalate	_	1200	_	_	_	_		_	_	_	_	_
Chrysene		290			_	<u> </u>	< 0.11	_	-	_		0.075 J
Dibenz(a,h)anthracene		0.29	_	_	_	_	< 0.11	_	-	_	-	< 0.11
Dibenzofuran	-	1000	_	_	_	_	- 0.11	_	_	_	_	- 0.11

WASHINGTON, D.C

Location		EDA Docional	DP-048	DP-048	DP-049	DP-049	DP-050	DP-050	DP-051	DP-051	DP-051	DP-052
Sample Date	DC Tier 0 Soil	EPA Regional	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015
Sample Name	Standards <sup>1</sup>	Screening Level for	DP-048-SO-050-01	DP-048-SO-100-01	DP-049-SO-050-01	DP-049-SO-100-01	DP-050-SO-050-01	DP-050-SO-100-01	DP-051-SO-050-01	DP-051-SO-100-01	DP-051-SO-100-02	DP-052-SO-050-01
Sample Type		Industrial Soil <sup>2</sup>	Primary	Duplicate	Primary							
Sample Depth Interval (ft bgs)			4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10	9.5 - 10	4.5 - 5
Diethyl phthalate	-	660000	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate	-	82000	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate	-	8200	-	-	-	-	-	-	-	-	-	-
Fluoranthene	-	30000	-	-	-	-	< 0.11	-	-	-	-	0.11
Fluorene	-	30000	-	-	-	-	< 0.18	-	-	-	-	< 0.18
Hexachlorobenzene	-	1.4	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	-	30	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	-	4900	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	-	58	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	-	2.9	-	-	-	-	< 0.15	-	-	-	-	0.043 J
Isophorone	-	2400	-	-	-	-	-	-	-	-	-	-
Naphthalene	-	17	-	-	-	-	< 0.18	-	-	-	-	< 0.18
Nitrobenzene	-	22	-	-	-	-	-	-	-	-	-	-
N-Nitrosodimethylamine	-	0.045	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	0.33	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	-	470	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	-	4	-	-	-	-	-	-	-	-	-	-
Phenanthrene	-	-	-	-	-	-	0.086 J	-	-	-	-	0.052 J
Phenol	-	250000	-	-	-	-	-	-	-	-	-	-
Pyrene	-	23000	-	-	-	-	0.037 J	-	-	-	-	0.11
Total Petroleum Hydrocarbons (mg/kg)	mg/kg	mg/kg										
Gasoline Range Organics (C6-C10)	100	-	0.97 J	< 2.5	< 2.6	< 2.8	< 2.8	< 2.8	< 2.6	< 2.9	< 2.4	< 2.6
Diesel Range Organics (C9-C44)	100	-	18.9 J	84.4	5.39 J	< 36.3	404	< 38.1	< 36.6	21.5 J	69.7	163

## NOTES

Bold where detected; highlighted where exceeds

Results reported in mg/kg

mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

-- = screening level not available/sample not analyzed

< = not detected at the indicated reporting limit

J = estimated value

SVOCs = semi-volatile organic compounds

TPH = total petroleum hydrocarbons

1. DC Tier 0 Standards from the Tier 0 Standard Final Rulemaking published at 40 DCR 7835, 7892 (November 12, 1993); as amended by Final Rulemaking published at 46 DCR 7699 (October 1, 1999)

2. United States Environmental Protection Agency (EPA) Regional Screening Level (RSL) Summary Table (January 2015)

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AND EXCEEDANCES - SVOCs AND TPH
BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT
WASHINGTON, D.C

Location	Г		DP-052	DP-056	DP-056	DP-056	DP-057	DP-057	DP-057	DP-057	DP-060	DP-060
Sample Date		EPA Regional	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015
Sample Name	DC Tier 0 Soil	Screening Level for	DP-052-SO-100-01	DP-056-SO-010-01	DP-056-SO-050-01	DP-056-SO-100-01	DP-057-SO-010-01	DP-057-SO-050-01	DP-057-SO-100-01	DP-057-SO-100-02	DP-060-SO-010-01	DP-060-SO-050-01
	Standards <sup>1</sup>	Industrial Soil <sup>2</sup>							Primary	Duplicate		
Sample Type		industriai Soii	Primary	Primary	Primary 4.5 - 5	Primary	Primary	Primary	9.5 - 10	9.5 - 10	Primary	Primary 4.5 - 5
Sample Depth Interval (ft bgs)	<del>                                     </del>	+	9.5 - 10	0.5 - 1	4.5 - 5	9.5 - 10	0.5 - 1	4.5 - 5	9.5 - 10	9.5 - 10	0.5 - 1	4.5 - 5
Semi-Volatile Organic Compounds (mg/kg)	mg/kg	mg/kg										
1,2,4-Trichlorobenzene	-	110	_	_	_	_	_	_	_	_	_	_
1,2-Dichlorobenzene	_	9300	_	_	_	_	_	_	_	_	_	_
1,3-Dichlorobenzene	_	3300	_	_	_	_	_	_	_	_	_	_
1,4-Dichlorobenzene	_	11	_	_	_	_	_	_	_	_	_	_
1-Methylnaphthalene	_	73	_	_	_	_	_	_	_	_	_	_
2,2'-oxybis(1-Chloropropane)	_	22	_	_	_	_	_	_	_	_	_	_
2,4,5-Trichlorophenol	_	82000	_	_	_	_	_	_	_	_	_	_
2,4,6-Trichlorophenol		210	_	_		-		-	_		-	_
2,4-Dichlorophenol		2500	- -	-	_	-	_	-	-	_	-	-
2,4-Dimethylphenol	_	16000		-	_	-	_	-	-	_	-	
2,4-Dinternylphenol	_	1600	- -	-	_	_	_	-	-	_	-	-
	=			-	-	-	-	-		-	-	
2,4-Dinitrotoluene 2,6-Dinitrotoluene	_	7.4 1.5	-	-	-	_	_	-	-	_	-	-
2-Chloronaphthalene	-	93000	-	- 0.20		- 0.10	- 0.20	- 0.10		- 0.10	- 0.20	
· ·	-	5800	-	< 0.20	< 0.19	< 0.19	< 0.20	< 0.19	< 0.20	< 0.18	< 0.20	< 0.20
2-Chlorophenol	-		-	-	-	-	-	-	-	0.22	-	-
2-Methylnaphthalene	-	3000	-	< 0.24	< 0.23	< 0.23	< 0.24	0.11 J	< 0.24	< 0.22	< 0.24	< 0.23
2-Methylphenol	-	41000	-	-	-	-	-	-	-	-	-	-
2-Nitroaniline	-	8000	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-	-	-	-	-	-	-	-
3&4-Methylphenol	-	-	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	-	5.1	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	=	-	-	-	-	-	-	-	-	-	-	=
4,6-Dinitro-2-methylphenol	=	66	-	-	-	-	-	-	-	-	-	=
4-Bromophenyl phenyl ether	=	-	-	-	-	-	-	-	-	-	-	=
4-Chloro-3-methylphenol	-	82000	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	-	12	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	-	120	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	-	45000	-	< 0.16	< 0.15	< 0.15	< 0.16	< 0.15	< 0.16	< 0.15	< 0.16	< 0.16
Acenaphthylene	-	-	-	< 0.16	< 0.15	< 0.15	< 0.16	< 0.15	< 0.16	< 0.15	< 0.16	< 0.16
Aniline	-	410	-	-	-	-	-	-	-	-	-	-
Anthracene	-	230000	-	< 0.12	< 0.11	0.047 J	< 0.12	0.059 J	< 0.12	< 0.11	< 0.12	< 0.12
Benzo(a)anthracene	-	2.9	-	< 0.12	< 0.11	0.33	0.046 J	0.10 J	< 0.12	< 0.11	< 0.12	< 0.12
Benzo(a)pyrene	-	0.29	-	< 0.16	< 0.15	0.18	< 0.16	< 0.15	< 0.16	< 0.15	< 0.16	< 0.16
Benzo(b)fluoranthene	=	2.9	-	< 0.12	< 0.11	0.28	< 0.12	0.075 J	< 0.12	< 0.11	< 0.12	< 0.12
Benzo(g,h,i)perylene	=	-	-	< 0.16	< 0.15	0.074 J	< 0.16	< 0.15	< 0.16	< 0.15	< 0.16	< 0.16
Benzo(k)fluoranthene	-	29	-	< 0.12	< 0.11	0.11	< 0.12	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12
Benzoic acid	-	3.30E+06	-	-	-	-	-	-	-	-	-	-
Benzyl Alcohol	-	82000	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	-	2500	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	-	1	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate	-	160	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate	-	1200	-	-	-	-	-	-	-	-	-	-
Chrysene	-	290	-	< 0.12	< 0.11	0.32	< 0.12	0.099 J	< 0.12	< 0.11	0.042 J	< 0.12
Dibenz(a,h)anthracene	-	0.29	-	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12
Dibenzofuran	-	1000	-	-	-	-	-	-	-	-	-	-

BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT WASHINGTON, D.C

Location			DP-052	DP-056	DP-056	DP-056	DP-057	DP-057	DP-057	DP-057	DP-060	DP-060
Sample Date	DC Tier 0 Soil	EPA Regional	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/10/2015
Sample Name		Screening Level for	DP-052-SO-100-01	DP-056-SO-010-01	DP-056-SO-050-01	DP-056-SO-100-01	DP-057-SO-010-01	DP-057-SO-050-01	DP-057-SO-100-01	DP-057-SO-100-02	DP-060-SO-010-01	DP-060-SO-050-01
Sample Type	Standards <sup>1</sup>	Industrial Soil <sup>2</sup>	Primary	Duplicate	Primary	Primary						
Sample Depth Interval (ft bgs)			9.5 - 10	0.5 - 1	4.5 - 5	9.5 - 10	0.5 - 1	4.5 - 5	9.5 - 10	9.5 - 10	0.5 - 1	4.5 - 5
Diethyl phthalate	-	660000	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate	-	82000	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate	-	8200	-	-	-	-	-	-	-	-	-	-
Fluoranthene	-	30000	-	< 0.12	< 0.11	0.78	0.16	0.39	< 0.12	< 0.11	0.048 J	0.042 J
Fluorene	-	30000	-	< 0.20	< 0.19	< 0.19	< 0.20	< 0.19	< 0.20	< 0.18	< 0.20	< 0.20
Hexachlorobenzene	-	1.4	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	-	30	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	-	4900	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	-	58	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	-	2.9	-	< 0.16	< 0.15	0.088 J	< 0.16	< 0.15	< 0.16	< 0.15	< 0.16	< 0.16
Isophorone	-	2400	-	-	-	-	-	-	-	-	-	-
Naphthalene	-	17	-	< 0.20	< 0.19	< 0.19	< 0.20	< 0.19	< 0.20	< 0.18	< 0.20	< 0.20
Nitrobenzene	-	22	-	-	-	-	-	-	-	-	-	-
N-Nitrosodimethylamine	-	0.045	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	0.33	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	-	470	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	-	4	-	-	-	-	-	-	-	-	-	-
Phenanthrene	-	-	-	< 0.12	< 0.11	0.11	< 0.12	0.21	< 0.12	< 0.11	< 0.12	< 0.12
Phenol	-	250000	-	-	-	-	-	-	-	-	-	-
Pyrene	-	23000	-	< 0.12	< 0.11	0.61	0.12	0.33	< 0.12	< 0.11	0.056 J	0.040 J
Total Petroleum Hydrocarbons (mg/kg)	mg/kg	mg/kg										
Gasoline Range Organics (C6-C10)	100	-	< 2.9	< 2.8	< 2.8	< 2.5	< 2.8	110	< 2.7	< 2.7	< 2.8	< 2.6
Diesel Range Organics (C9-C44)	100	-	21 J	5.37 J	6.93 J	631	78.9	5,050	10.7 J	10.3 J	18.9 J	49.2

## NOTES

Bold where detected; highlighted where exceeds

Results reported in mg/kg

mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

-- = screening level not available/sample not analyzed

< = not detected at the indicated reporting limit

J = estimated value

SVOCs = semi-volatile organic compounds

TPH = total petroleum hydrocarbons

1. DC Tier 0 Standards from the Tier 0 Standard Final Rulemaking published at 40 DCR 7835, 7892 (November 12, 1993); as amended by Final Rulemaking published at 46 DCR 7699 (October 1, 1999)

2. United States Environmental Protection Agency (EPA) Regional Screening Level (RSL) Summary Table (January 2015)

SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AND EXCEEDANCES - SVOCs AND TPH BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT WASHINGTON, D.C

L	ı	1								I	I	
Location		EDA Danianal	DP-060	DP-062	DP-062	DP-062	DP-069	DP-069	DP-070	DP-070	DP-071	DP-071
Sample Date	DC Tier 0 Soil	EPA Regional	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015
Sample Name	Standards <sup>1</sup>	Screening Level for	DP-060-SO-100-01	DP-062-SO-010-01	DP-062-SO-050-01	DP-062-SO-100-01	DP-069-SO-050-01	DP-069-SO-100-01	DP-070-SO-050-01	DP-070-SO-100-01	DP-071-SO-050-01	DP-071-SO-100-01
Sample Type		Industrial Soil <sup>2</sup>	Primary									
Sample Depth Interval (ft bgs)			9.5 - 10	0.5 - 1	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10
Semi-Volatile Organic Compounds (mg/kg)	mg/kg	mg/kg										
1,2,4-Trichlorobenzene	-	110	_	_	_	-	-	-	_	_	_	_
1,2-Dichlorobenzene	_	9300	_	_	_	-	-	-	_	_	_	_
1,3-Dichlorobenzene	_	-	_	_	_	-	-	-	_	_	_	-
1,4-Dichlorobenzene	_	11	_	_	_	-	-	-	_	_	_	_
1-Methylnaphthalene	_	73	_	_	_	-	_	_	_	_	_	_
2,2'-oxybis(1-Chloropropane)	_	22	_	_	_	-	-	-	_	_	_	_
2,4,5-Trichlorophenol	_	82000	_	_	_	-	-	-	_	_	_	_
2,4,6-Trichlorophenol	_	210	_	_	_	-	_	_	_	_	_	_
2,4-Dichlorophenol	_	2500	_	_	_	-	_	_	_	_	_	_
2,4-Dimethylphenol	_	16000	_	_	_	-	_	_	_	_	_	_
2,4-Dinitrophenol	_	1600	_	_	_	_	_	_	_	_	_	
2,4-Dinitrotoluene	_	7.4	_	_	_	_	_	_	_	_	_	
2,6-Dinitrotoluene	_	1.5	_	_	_	_	_	_	_	_	_	_
2-Chloronaphthalene	_	93000	< 0.20	< 0.20	< 0.20	< 0.20	_	_	_	_	_	1 _
2-Chlorophenol	_	5800	- 0.20	- 0.20	- 0.20		_	_	_	_	_	1 [
2-Methylnaphthalene	_	3000	< 0.24	< 0.23	< 0.23	< 0.24	_	_				
2-Methylphenol		41000	- 0.24	- 0.23	- 0.23	₹0.24	-	-	-	_	_	1
2-Nitroaniline	_	8000	_	-	-	-	-	-	-	_	_	1
2-Nitrophenol	_	-	-	-	-	-	-	-	-	_	_	1
3&4-Methylphenol	_	_	-	-	-	-	-	-	-	_	_	1
3,3'-Dichlorobenzidine	_	5.1	-	-	-	-	-	-	-	_	_	1
3-Nitroaniline	_	5.1	-	-	-	-	-	-	-	_	_	1
4,6-Dinitro-2-methylphenol	_	66	-	-	-	-	-	-	-	_	_	_
4-Bromophenyl phenyl ether	_	-	-	-	-	-	-	-	-	_	_	1
4-Chloro-3-methylphenol	_	82000	-	-	-	-	-	-	-	_	_	
4-Chloroaniline	_	12	-	_	-	-	-	-	-	_	_	_
4-Chlorophenyl phenyl ether	_	-	-	_	-	-	-	-	-	_	_	-
4-Nitroaniline	_	120	-	_	-	-	-	-	-	· -	_	_
4-Nitrophenol	_	120	-	_	-	-	-	-	-	· -	_	_
Acenaphthene	_	45000	< 0.16	< 0.16	< 0.16	< 0.16	-	-	-	· -	_	_
Acenaphthylene	_	43000	< 0.16	< 0.16	< 0.16	< 0.16	-	-	-	· -	_	_
Aniline	_	410	- 0.16	- 0.16	- 0.16	- 0.16	-	-	-	· -	_	
Anthracene	_	230000	< 0.12	< 0.12	< 0.12		-	-	-	· -	_	
Benzo(a)anthracene	-	2.9	< 0.12	< 0.12	< 0.12	< 0.12 < 0.12	-	-	-	-	-	-
Benzo(a)pyrene	_	0.29	< 0.12	< 0.12	< 0.12	< 0.12	-	-	-	_	_	
Benzo(b)fluoranthene	_		< 0.12	< 0.12	< 0.12	< 0.12	-	-	-	_	_	
Benzo(g,h,i)perylene	-	2.9	< 0.12	< 0.12	< 0.12	< 0.12	-	-	-	-	-	-
Benzo(k)fluoranthene	-	29	< 0.16	< 0.16	< 0.16	< 0.16	-	-	-	-	-	-
Benzoic acid	_	3.30E+06					-	-	-	-	-	-
	-		-	-	-	-	-	-	-	-	-	-
Benzyl Alcohol bis(2-Chloroethoxy)methane	_	82000 2500	-	_	-	-	-	-	-	-	_	-
	-		-	-	-	-	-	-	-	_	-	-
bis(2-Chloroethyl)ether	-	1	-	_	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate	-	160	-	-	-	-	-	-	-	_	-	-
Butyl benzylphthalate	-	1200	-	0.12	0.12	-	-	-	-	-	-	-
Chrysene	-	290	< 0.12	< 0.12	< 0.12	< 0.12	-	-	-	-	-	-
Dibenz(a,h)anthracene	-	0.29	< 0.12	< 0.12	< 0.12	< 0.12	-	-	-	-	-	-
Dibenzofuran	-	1000	-	-	-	-	-	-	-	-	-	_

WASHINGTON, D.C

Location			DP-060	DP-062	DP-062	DP-062	DP-069	DP-069	DP-070	DP-070	DP-071	DP-071
Sample Date	DC Tier 0 Soil	EPA Regional	07/10/2015	07/10/2015	07/10/2015	07/10/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015
Sample Name	Standards <sup>1</sup>	Screening Level for	DP-060-SO-100-01	DP-062-SO-010-01	DP-062-SO-050-01	DP-062-SO-100-01	DP-069-SO-050-01	DP-069-SO-100-01	DP-070-SO-050-01	DP-070-SO-100-01	DP-071-SO-050-01	DP-071-SO-100-01
Sample Type	Standards	Industrial Soil <sup>2</sup>	Primary									
Sample Depth Interval (ft bgs)			9.5 - 10	0.5 - 1	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10
Diethyl phthalate	-	660000	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate	-	82000	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate	-	8200	-	-	-	-	-	-	-	-	-	-
Fluoranthene	-	30000	< 0.12	< 0.12	< 0.12	< 0.12	-	-	-	-	-	-
Fluorene	-	30000	< 0.20	< 0.20	< 0.20	< 0.20	-	-	-	-	-	-
Hexachlorobenzene	-	1.4	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	-	30	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	-	4900	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	-	58	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	-	2.9	< 0.16	< 0.16	< 0.16	< 0.16	-	-	-	-	-	-
Isophorone	-	2400	-	-	-	-	-	-	-	-	-	-
Naphthalene	-	17	< 0.20	< 0.20	< 0.20	< 0.20	-	-	-	-	-	-
Nitrobenzene	-	22	-	-	-	-	-	-	-	-	-	-
N-Nitrosodimethylamine	-	0.045	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	0.33	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	-	470	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	-	4	-	-	-	-	-	-	-	-	-	-
Phenanthrene	-	-	< 0.12	< 0.12	< 0.12	< 0.12	-	-	-	-	-	-
Phenol	-	250000	-	-	-	-	-	-	-	-	-	-
Pyrene	-	23000	< 0.12	< 0.12	< 0.12	< 0.12	-	-	-	-	-	-
Total Petroleum Hydrocarbons (mg/kg)	mg/kg	mg/kg										
Gasoline Range Organics (C6-C10)	100	-	< 2.9	< 2.9	< 2.4	< 2.8	< 3.0	< 2.9	< 2.9	< 2.9	< 2.8	< 2.9
Diesel Range Organics (C9-C44)	100	=	5.1 J	< 37	10.9 J	8.69 J	5.32 J	4.53 J	< 38.9	5.94 J	< 38.1	< 38.2

## NOTES

Bold where detected; highlighted where exceeds

Results reported in mg/kg

mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

-- = screening level not available/sample not analyzed

< = not detected at the indicated reporting limit

J = estimated value

SVOCs = semi-volatile organic compounds

TPH = total petroleum hydrocarbons

1. DC Tier 0 Standards from the Tier 0 Standard Final Rulemaking published at 40 DCR 7835, 7892 (November 12, 1993); as amended by Final Rulemaking published at 46 DCR 7699 (October 1, 1999)

2. United States Environmental Protection Agency (EPA) Regional Screening Level (RSL) Summary Table (January 2015)

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AND EXCEEDANCES - SVOCs AND TPH
BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT
WASHINGTON, D.C

Location			DP-072	DP-072	DP-072	DP-072	DP-073	DP-073	DP-073	DP-074	DP-074	DP-074
Sample Date		EPA Regional	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015
Sample Name	DC Tier 0 Soil	Screening Level for	DP-072-SO-010-01	DP-072-SO-010-02	DP-072-SO-050-01	DP-072-SO-100-01	DP-073-SO-010-01	DP-073-SO-050-01	DP-073-SO-100-01	DP-074-SO-010-01	DP-074-SO-010-02	DP-074-SO-050-01
· ·	Standards <sup>1</sup>	Industrial Soil <sup>2</sup>										
Sample Type		industriai Soii	Primary	Duplicate	Primary	Primary	Primary	Primary	Primary	Primary	Duplicate	Primary
Sample Depth Interval (ft bgs)			0.5 - 1	0.5 - 1	4.5 - 5	9.5 - 10	0.5 - 1	4.5 - 5	9.5 - 10	0.5 - 1	0.5 - 1	4.5 - 5
Semi-Volatile Organic Compounds (mg/kg)	mg/kg	mg/kg										
1,2,4-Trichlorobenzene	-	110	-	_	_	_	_	_	_	_	_	_
1,2-Dichlorobenzene	_	9300	-	_	_	_	_	_	_	_	_	-
1,3-Dichlorobenzene	_	-	-	_	_	_	_	_	_	_	_	-
1,4-Dichlorobenzene	_	11	-	_	_	_	_	_	_	_	_	-
1-Methylnaphthalene	_	73	-	_	_	_	_	_	_	_	_	-
2,2'-oxybis(1-Chloropropane)	_	22	-	_	_	_	_	_	_	_	_	-
2,4,5-Trichlorophenol	_	82000	-	_	_	_	_	_	_	_	_	-
2,4,6-Trichlorophenol	_	210	_	_	_	_	_	_	_	_	_	_
2,4-Dichlorophenol	_	2500	_	_	_	_	_	_	_	_	_	-
2,4-Dimethylphenol	_	16000	-	_	_	_	_	_	_	_	_	_
2,4-Dinitrophenol	_	1600	-	_	_	_	_	_	_	_	_	_
2,4-Dinitrophenor	_	7.4	-	_	_	_	_	_	_	_	_	-
2,6-Dinitrotoluene	_	1.5	-	_	_	_	_	_	_	_	-	-
2-Chloronaphthalene	_	93000	< 0.20	< 0.19	< 0.19	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
2-Chlorophenol	_	5800	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	_	3000	< 0.24	< 0.23	< 0.23	< 0.24	< 0.24	< 0.24	< 0.23	< 0.24	< 0.23	< 0.24
2-Methylphenol	_	41000	-	- 0.23	- 0.23		- 0.24		- 0.23	- 0.24	- 0.25	-
2-Nitroaniline	_	8000	_	_	_	_	_	_	_	_	_	_
2-Nitrophenol	_	-	_	_	_	_	_	_	_	_	_	_
3&4-Methylphenol	_	_	_	_	_	_	_	_	_	_	_	_
3,3'-Dichlorobenzidine	_	5.1	_	_	_	_	_	_	_	_	_	_
3-Nitroaniline	_		_	_	_	_	_	_	_	_	_	_
4,6-Dinitro-2-methylphenol	_	66	_	_	_	_	_	_	_	_	_	_
4-Bromophenyl phenyl ether	_	-	_	_	_	_	_	_	_	_	_	_
4-Chloro-3-methylphenol	_	82000	_	_	_	_	_	_	_	_	_	_
4-Chloroaniline	_	12	_	_	_	_	_	_	_	_	_	_
4-Chlorophenyl phenyl ether	_	-	_	_	_	_	_	_	_	_	_	_
4-Nitroaniline	_	120	_	_	_	_	_	_	_	_	_	_
4-Nitrophenol	_	-	_	_	_	_	_	_	_	_	_	_
Acenaphthene	_	45000	< 0.16	< 0.16	< 0.15	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
Acenaphthylene	_	-	< 0.16	< 0.16	< 0.15	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
Aniline	_	410	-	-	-	-	-	-	-	-	-	-
Anthracene	_	230000	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
Benzo(a)anthracene	_	2.9	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
Benzo(a)pyrene	_	0.29	< 0.16	< 0.16	< 0.15	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
Benzo(b)fluoranthene	_	2.9	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
Benzo(g,h,i)perylene	_	-	< 0.16	< 0.16	< 0.15	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
Benzo(k)fluoranthene	_	29	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
Benzoic acid	_	3.30E+06	-	- 0.12	- 0.12	-			- 0.12	- 0.12		-
Benzyl Alcohol	_	82000	- -	_	_	_	_	_	_	_	_	- -
bis(2-Chloroethoxy)methane	_	2500	-	_	_	_	_	_	_	_	_	<u>-</u>
bis(2-Chloroethyl)ether	_	1	-	_	_	_	_	_	_	_	_	<u>-</u>
bis(2-Ethylhexyl)phthalate	_	160	-	_	_	_	_	_	_	_	_	_
Butyl benzylphthalate	_	1200	- -	_	_	-	_	_	_	_	_	<u>-</u>
Chrysene	_	290	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
Dibenz(a,h)anthracene		0.29	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
Dibenzofuran	_	1000	-	- 0.12	- 0.12	- 0.12	- 0.12	- 0.12	- 0.12	- 0.12	- 0.12	- 0.12
Discrizoraran		1000	<u> </u>	_					_	_		-

WASHINGTON, D.C

Location			DP-072	DP-072	DP-072	DP-072	DP-073	DP-073	DP-073	DP-074	DP-074	DP-074
Sample Date	DC Tier 0 Soil	EPA Regional	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015
Sample Name	Standards <sup>1</sup>	Screening Level for	DP-072-SO-010-01	DP-072-SO-010-02	DP-072-SO-050-01	DP-072-SO-100-01	DP-073-SO-010-01	DP-073-SO-050-01	DP-073-SO-100-01	DP-074-SO-010-01	DP-074-SO-010-02	DP-074-SO-050-01
Sample Type	Standards	Industrial Soil <sup>2</sup>	Primary	Duplicate	Primary	Primary	Primary	Primary	Primary	Primary	Duplicate	Primary
Sample Depth Interval (ft bgs)			0.5 - 1	0.5 - 1	4.5 - 5	9.5 - 10	0.5 - 1	4.5 - 5	9.5 - 10	0.5 - 1	0.5 - 1	4.5 - 5
Diethyl phthalate	-	660000	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate	-	82000	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate	-	8200	-	-	-	-	-	-	-	-	-	-
Fluoranthene	-	30000	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
Fluorene	-	30000	< 0.20	< 0.19	< 0.19	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Hexachlorobenzene	-	1.4	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	-	30	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	-	4900	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	-	58	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	-	2.9	< 0.16	< 0.16	< 0.15	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
Isophorone	-	2400	-	-	-	-	-	-	-	-	-	-
Naphthalene	-	17	< 0.20	< 0.19	< 0.19	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Nitrobenzene	-	22	-	-	-	-	-	-	-	-	-	-
N-Nitrosodimethylamine	-	0.045	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	0.33	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	-	470	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	-	4	-	-	-	-	-	-	-	-	-	-
Phenanthrene	-	-	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
Phenol	-	250000	-	-	-	-	-	-	-	-	-	-
Pyrene	-	23000	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
Total Petroleum Hydrocarbons (mg/kg)	mg/kg	mg/kg										
Gasoline Range Organics (C6-C10)	100	-	< 2.9	< 2.8	< 2.9	< 2.8	< 2.9	< 2.8	< 3.0	< 3.0	< 2.9	< 2.8
Diesel Range Organics (C9-C44)	100	-	5.56 J	8.37 J	5.46 J	5.03 J	< 38.6	< 39.3	< 39.3	< 39.3	< 39	< 39

## NOTES

Bold where detected; highlighted where exceeds

Results reported in mg/kg

mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

-- = screening level not available/sample not analyzed

< = not detected at the indicated reporting limit

J = estimated value

SVOCs = semi-volatile organic compounds

TPH = total petroleum hydrocarbons

1. DC Tier 0 Standards from the Tier 0 Standard Final Rulemaking published at 40 DCR 7835, 7892 (November 12, 1993); as amended by Final Rulemaking published at 46 DCR 7699 (October 1, 1999)

2. United States Environmental Protection Agency (EPA) Regional Screening Level (RSL) Summary Table (January 2015)

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AND EXCEEDANCES - SVOCs AND TPH
BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT
WASHINGTON, D.C

Location			DP-074	DP-075	DP-075	DP-075	DP-076	DP-076	DP-077	DP-077	DP-090	DP-090
Sample Date		EPA Regional	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/15/2015	07/15/2015
Sample Name	DC Tier 0 Soil	Screening Level for	DP-074-SO-100-01	DP-075-SO-010-01	DP-075-SO-050-01	DP-075-SO-100-01	DP-076-SO-050-01	DP-076-SO-100-01	DP-077-SO-050-01	DP-077-SO-100-01	DP-090-SO-050-01	DP-090-SO-100-01
Sample Type	Standards <sup>1</sup>	Industrial Soil <sup>2</sup>	Primary									
Sample Depth Interval (ft bgs)		illuustriai 3011	9.5 - 10	0.5 - 1	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10
Sample Depth Interval (it bgs)			9.5 - 10	0.5 - 1	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10
Semi-Volatile Organic Compounds (mg/kg)	mg/kg	mg/kg										
1,2,4-Trichlorobenzene	-	110	-	_	_	_	_	_	_	_	_	_
1,2-Dichlorobenzene	_	9300	_	_	_	_	_	_	_	_	_	_
1,3-Dichlorobenzene	_	-	_	_	_	_	_	_	_	_	_	_
1,4-Dichlorobenzene	_	11	_	_	_	_	_	_	_	_	_	_
1-Methylnaphthalene	_	73	_	_	_	_	_	_	_	_	_	_
2,2'-oxybis(1-Chloropropane)	_	22	_	_	_	_	_	_	_	_	_	_
2,4,5-Trichlorophenol	_	82000	_	_	_	_	_	_	_	_	_	_
2,4,6-Trichlorophenol	_	210	_	_	_	_	_	_	_	_	_	_
2,4-Dichlorophenol	_	2500	_	_	_	_	_	_	_	_	_	_
2,4-Dimethylphenol	_	16000	_	_	_	_	_	_	_	_	_	_
2,4-Dinitrophenol	_	1600	-	_	_	_	_	_		_	_	_
2,4-Dinitrophenol	]	7.4	-		]	_	]			]	]	-
2,6-Dinitrotoluene	]	1.5	-	-		-		-			_	_
2-Chloronaphthalene	_	93000	< 0.19	< 0.19	< 0.20	< 0.20	< 0.19	< 0.18	< 0.19	< 0.18	_	_
2-Chlorophenol	_	5800		- 0.19	- 0.20	- 0.20	- 0.19	- 0.16	- 0.13	V 0.16	_	_
2-Methylnaphthalene	_	3000	< 0.23	< 0.23	< 0.24	< 0.24	< 0.23	< 0.22	< 0.22	< 0.22		
2-Methylphenol		41000	- 0.23		- 0.24		V 0.25			V 0.22	-	-
2-Nitroaniline	-	8000	-	-		-	_	-	-	_	-	-
2-Nitrophenol	_	8000		-	-	-	_	-	-	_	-	-
3&4-Methylphenol	-	-	-	-	-	-	-	-	-	-	-	1
3,3'-Dichlorobenzidine	_	5.1	-	-	-	-	_	-	· -	_	-	-
3-Nitroaniline	_	1	-	-	-	-	_	-	· -	_	-	1
	-	- 66	-	-	-	-	-	-	-	-	-	1
4,6-Dinitro-2-methylphenol	-	00	-	-	-	-	-	-	-	-	-	1
4-Bromophenyl phenyl ether	_	92000	-	-	-	-	_	-	· -	_	-	1
4-Chloro-3-methylphenol 4-Chloroaniline	-	82000 12	-	-	-	-	-	-	-	-	-	1
4-Chlorophenyl phenyl ether	-	1	-	-	-	-	-	-	-	-	-	1
	-	120	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	-	120	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	-	45000	-	0.45	0.16	0.16	0.46	- 0.45	0.45	0.45	-	-
Acceptable	-	45000	< 0.16	< 0.15	< 0.16	< 0.16	< 0.16	< 0.15	< 0.15	< 0.15	-	-
Acenaphthylene	-	- 410	< 0.16	< 0.15	< 0.16	< 0.16	< 0.16	< 0.15	< 0.15	< 0.15	-	-
Anthropen	-	410	- 0.13	- 0.11		- 0.12		- 0.11	- 0.11	- 0.11	-	1
Anthracene	-	230000	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	-	1
Benzo(a)anthracene	-	2.9	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	-	-
Benzo(a)pyrene	-	0.29	< 0.16	< 0.15	< 0.16	< 0.16	< 0.16	< 0.15	< 0.15	< 0.15	-	-
Benzo(b)fluoranthene	-	2.9	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	-	-
Benzo(g,h,i)perylene	-	-	< 0.16	< 0.15	< 0.16	< 0.16	< 0.16	< 0.15	< 0.15	< 0.15	-	-
Benzo(k)fluoranthene	-	29	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	-	-
Benzoic acid	-	3.30E+06	-	-	-	-	-	-	-	-	-	-
Benzyl Alcohol	-	82000	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	-	2500	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	-	1	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate	-	160	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate	-	1200	-	-	-	-	-	-	-	-	-	-
Chrysene	-	290	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	-	-
Dibenz(a,h)anthracene	-	0.29	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	-	-
Dibenzofuran	-	1000	-	-	-	-	-	-	-	-	-	-

WASHINGTON, D.C

Location			DP-074	DP-075	DP-075	DP-075	DP-076	DP-076	DP-077	DP-077	DP-090	DP-090
Sample Date	DC Tier 0 Soil	EPA Regional	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/13/2015	07/15/2015	07/15/2015
Sample Name	Standards <sup>1</sup>	Screening Level for	DP-074-SO-100-01	DP-075-SO-010-01	DP-075-SO-050-01	DP-075-SO-100-01	DP-076-SO-050-01	DP-076-SO-100-01	DP-077-SO-050-01	DP-077-SO-100-01	DP-090-SO-050-01	DP-090-SO-100-01
Sample Type	Standards	Industrial Soil <sup>2</sup>	Primary									
Sample Depth Interval (ft bgs)			9.5 - 10	0.5 - 1	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10
Diethyl phthalate	-	660000	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate	-	82000	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate	-	8200	-	-	-	-	-	-	-	-	-	-
Fluoranthene	-	30000	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	-	-
Fluorene	-	30000	< 0.19	< 0.19	< 0.20	< 0.20	< 0.19	< 0.18	< 0.19	< 0.18	-	-
Hexachlorobenzene	-	1.4	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	-	30	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	-	4900	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	-	58	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	-	2.9	< 0.16	< 0.15	< 0.16	< 0.16	< 0.16	< 0.15	< 0.15	< 0.15	-	-
Isophorone	-	2400	-	-	-	-	-	-	-	-	-	-
Naphthalene	-	17	< 0.19	< 0.19	< 0.20	< 0.20	< 0.19	< 0.18	< 0.19	< 0.18	-	-
Nitrobenzene	-	22	-	-	-	-	-	-	-	-	-	-
N-Nitrosodimethylamine	-	0.045	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	0.33	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	-	470	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	-	4	-	-	-	-	-	-	-	-	-	-
Phenanthrene	-	-	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	-	-
Phenol	-	250000	-	-	-	-	-	-	-	-	-	-
Pyrene	-	23000	< 0.12	< 0.11	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11	< 0.11	-	-
Total Petroleum Hydrocarbons (mg/kg)	mg/kg	mg/kg										
Gasoline Range Organics (C6-C10)	100	-	< 2.8	< 2.8	< 2.8	< 2.9	< 2.8	< 2.7	< 2.9	< 2.8	< 2.9	< 2.7
Diesel Range Organics (C9-C44)	100		< 39.2	< 38.8	< 39	< 39.4	< 36.8	< 35.2	< 37.4	< 36.5	5.46 J	7.55 J

## NOTES

Bold where detected; highlighted where exceeds

Results reported in mg/kg

mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

-- = screening level not available/sample not analyzed

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SVOCs = semi-volatile organic compounds

TPH = total petroleum hydrocarbons

- 1. DC Tier 0 Standards from the Tier 0 Standard Final Rulemaking published at 40 DCR 7835, 7892 (November 12, 1993); as amended by Final Rulemaking published at 46 DCR 7699 (October 1, 1999)
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TABLE 1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AND EXCEEDANCES - SVOCs AND TPH
BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT
WASHINGTON, D.C

	1	T			1			1		1
Location			DP-091	DP-091	DP-092	DP-092	DP-092	DP-093	DP-093	DP-093
Sample Date	DC Tier 0 Soil	EPA Regional	07/15/2015	07/15/2015	07/15/2015	07/15/2015	07/15/2015	07/15/2015	07/15/2015	07/15/2015
Sample Name	Standards <sup>1</sup>	Screening Level for	DP-091-SO-050-01	DP-091-SO-100-01	DP-092-SO-010-01	DP-092-SO-050-01	DP-092-SO-100-01	DP-093-SO-050-01	DP-093-SO-100-01	DP-093-SO-100-02
Sample Type	Standards	Industrial Soil <sup>2</sup>	Primary	Duplicate						
Sample Depth Interval (ft bgs)			4.5 - 5	9.5 - 10	0.5 - 1	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10	9.5 - 10
Semi-Volatile Organic Compounds (mg/kg)	mg/kg	mg/kg								
1,2,4-Trichlorobenzene	-	110	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	-	9300	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	-	11	-	-	-	-	-	-	-	-
1-Methylnaphthalene	-	73	-	-	-	-	-	-	-	-
2,2'-oxybis(1-Chloropropane)	-	22	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	-	82000	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	-	210	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	-	2500	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	-	16000	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	-	1600	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	-	7.4	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	-	1.5	-	-	-	-	-	-	-	-
2-Chloronaphthalene	-	93000	-	-	< 0.99	< 0.20	< 0.96	< 0.18	< 0.19	< 0.18
2-Chlorophenol	-	5800	-	-	-	-	-	-	-	-
2-Methylnaphthalene	-	3000	-	-	31	3.8	25	< 0.22	< 0.23	< 0.22
2-Methylphenol	-	41000	-	-	-	-	-	-	-	-
2-Nitroaniline	-	8000	-	-	-	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-	-	-	-	-	-
3&4-Methylphenol	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	-	5.1	-	-	-	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	66	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	-	82000	-	-	-	-	-	-	-	-
4-Chloroaniline	-	12	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	-	120	-	-	-	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-	-	-	-	-	-
Acenaphthene	-	45000	-	-	< 0.79	< 0.16	1.1	< 0.15	< 0.15	< 0.14
Acenaphthylene	-	-	-	-	0.69 J	< 0.16	< 0.77	< 0.15	< 0.15	< 0.14
Aniline	-	410	-	-	-	-	-	-	-	-
Anthracene	-	230000	-	-	0.31 J	< 0.12	< 0.58	< 0.11	< 0.12	< 0.11
Benzo(a)anthracene	-	2.9	-	-	< 0.59	< 0.12	< 0.58	< 0.11	< 0.12	< 0.11
Benzo(a)pyrene	-	0.29	-	-	< 0.79	< 0.16	< 0.77	< 0.15	< 0.15	< 0.14
Benzo(b)fluoranthene	-	2.9	-	-	< 0.59	< 0.12	< 0.58	< 0.11	< 0.12	< 0.11
Benzo(g,h,i)perylene	-	-	-	-	< 0.79	< 0.16	< 0.77	< 0.15	< 0.15	< 0.14
Benzo(k)fluoranthene	-	29	-	-	< 0.59	< 0.12	< 0.58	< 0.11	< 0.12	< 0.11
Benzoic acid	-	3.30E+06	-	-	-	-	-	-	-	-
Benzyl Alcohol	-	82000	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	-	2500	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	-	1	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate	-	160	-	-	-	-	-	-	-	-
Butyl benzylphthalate	-	1200	-	-	-	-	-	-	-	-
Chrysene	-	290	-	-	< 0.59	< 0.12	< 0.58	< 0.11	< 0.12	< 0.11
Dibenz(a,h)anthracene	-	0.29	-	-	< 0.59	< 0.12	< 0.58	< 0.11	< 0.12	< 0.11
Dibenzofuran	-	1000	-	-	-	-	-	-	-	-

SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AND EXCEEDANCES - SVOCs AND TPH BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT WASHINGTON, D.C

Location			DP-091	DP-091	DP-092	DP-092	DP-092	DP-093	DP-093	DP-093
Sample Date	DC Tier 0 Soil	EPA Regional	07/15/2015	07/15/2015	07/15/2015	07/15/2015	07/15/2015	07/15/2015	07/15/2015	07/15/2015
Sample Name	Standards <sup>1</sup>	Screening Level for	DP-091-SO-050-01	DP-091-SO-100-01	DP-092-SO-010-01	DP-092-SO-050-01	DP-092-SO-100-01	DP-093-SO-050-01	DP-093-SO-100-01	DP-093-SO-100-02
Sample Type	Standards	Industrial Soil <sup>2</sup>	Primary	Duplicate						
Sample Depth Interval (ft bgs)			4.5 - 5	9.5 - 10	0.5 - 1	4.5 - 5	9.5 - 10	4.5 - 5	9.5 - 10	9.5 - 10
Diethyl phthalate	-	660000	-	-	-	-	-	-	-	-
Dimethyl phthalate	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate	-	82000	-	-	-	-	-	-	-	-
Di-n-octyl phthalate	-	8200	-	-	-	-	-	-	-	-
Fluoranthene	-	30000	-	-	< 0.59	< 0.12	< 0.58	< 0.11	< 0.12	< 0.11
Fluorene	-	30000	-	-	4	0.43	3.2	< 0.18	< 0.19	< 0.18
Hexachlorobenzene	-	1.4	-	-	-	-	-	-	-	-
Hexachlorobutadiene	-	30	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	-	4900	-	-	-	-	-	-	-	-
Hexachloroethane	-	58	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	-	2.9	-	-	< 0.79	< 0.16	< 0.77	< 0.15	< 0.15	< 0.14
Isophorone	-	2400	-	-	-	-	-	-	-	-
Naphthalene	-	17	-	-	10	1	6.6	< 0.18	< 0.19	< 0.18
Nitrobenzene	-	22	-	-	-	-	-	-	-	-
N-Nitrosodimethylamine	-	0.045	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	0.33	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	-	470	-	-	-	-	-	-	-	-
Pentachlorophenol	-	4	-	-	-	-	-	-	-	-
Phenanthrene	-	-	-	-	7	0.87	5.2	< 0.11	< 0.12	< 0.11
Phenol	-	250000	-	-	-	-	-	-	-	-
Pyrene	-	23000	-	-	0.29 J	< 0.12	0.30 J	< 0.11	< 0.12	< 0.11
Total Petroleum Hydrocarbons (mg/kg)	mg/kg	mg/kg								
Gasoline Range Organics (C6-C10)	100	-	< 2.9	< 2.7	240	150	320	< 2.8	< 2.7	< 2.7
Diesel Range Organics (C9-C44)	100	-	8.03 J	7.02 J	6,370	1,860	8,650	4.83 J	9.27 J	11.1 J

## NOTES

Bold where detected; highlighted where exceeds

Results reported in mg/kg

mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

-- = screening level not available/sample not analyzed

< = not detected at the indicated reporting limit

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- 1. DC Tier 0 Standards from the Tier 0 Standard Final Rulemaking published at 40 DCR 7835, 7892 (November 12, 1993); as amended by Final Rulemaking published at 46 DCR 7699 (October 1, 1999)
- 2. United States Environmental Protection Agency (EPA) Regional Screening Level (RSL) Summary Table (January 2015)

Location			DP-057	DP-092	DP-092	DP-092
Sample Date		EPA Regional	07/10/2015	07/15/2015	07/15/2015	07/15/2015
Sample Name	DC Tier 0 Soil	Screening Level for	DP-057-SO-050-01	DP-092-SO-010-01	DP-092-SO-050-01	DP-092-SO-100-01
Sample Type	Standards <sup>1</sup>	Industrial Soil <sup>2</sup>	Primary	Primary	Primary	Primary
Sample Depth Interval (ft bgs)			4.5 - 5	0.5 - 1	4.5 - 5	9.5 - 10
Volatile Organic Compounds (mg/kg)	mg/kg	mg/kg				
1,1,1,2-Tetrachloroethane	-	8.8	-	-	-	-
1,1,1-Trichloroethane	-	36000	< 0.058	< 0.60	< 0.12	< 1.5
1,1,2,2-Tetrachloroethane	-	2.7	< 0.058	< 0.60	< 0.12	< 1.5
1,1,2-Trichloroethane	-	5	< 0.087	< 0.89	< 0.18	< 2.2
1,1-Dichloroethane	-	16	< 0.087	< 0.89	< 0.18	< 2.2
1,1-Dichloroethene	-	1000	< 0.058	< 0.60	< 0.12	< 1.5
1,1-Dichloropropene	-	-	-	-	-	-
1,2,3-Trichlorobenzene	-	660	< 0.29	< 3.0	< 0.60	< 7.3
1,2,3-Trichloropropane	-	0.11	-	-	-	-
1,2,4-Trichlorobenzene	-	110	< 0.29	< 3.0	< 0.60	< 7.3
1,2,4-Trimethylbenzene	-	240	-	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	-	0.064	< 0.29	< 3.0	< 0.60	< 7.3
1,2-Dibromoethane (Ethylene Dibromide)	-	0.16	< 0.23	< 2.4	< 0.48	< 5.9
1,2-Dichlorobenzene	-	9300	< 0.29	< 3.0	< 0.60	< 7.3
1,2-Dichloroethane	-	2	< 0.058	< 0.60	< 0.12	< 1.5
1,2-Dichloroethene (total)	-	-	< 0.058	< 0.60	< 0.12	< 1.5
1,2-Dichloropropane	-	4.4	< 0.20	< 2.1	< 0.42	< 5.1
1,3,5-Trimethylbenzene	-	12000	-	-	-	-
1,3-Dichlorobenzene	-	-	< 0.29	< 3.0	< 0.60	< 7.3
1,3-Dichloropropane	-	23000	-	-	-	-
1,3-Dichloropropene	-	8.2	< 0.058	< 0.60	< 0.12	< 1.5
1,4-Dichlorobenzene	-	11	< 0.29	< 3.0	< 0.60	< 7.3
1,4-Dioxane	-	23	< 5.8	< 60	< 12	< 150
2,2-Dichloropropane	-	-	-	-	-	-
2-Butanone (Methyl Ethyl Ketone)	-	190000	< 0.58	< 6.0	< 1.2	< 15
2-Chlorotoluene	-	23000	-	-	-	-
2-Hexanone	-	1300	< 0.58	< 6.0	< 1.2	< 15
2-Phenylbutane (sec-Butylbenzene)	-	120000	-	-	-	-
4-Chlorotoluene	-	23000	-	-	-	-
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	-	56000	< 0.58	< 6.0	< 1.2	< 15
Acetone	-	670000	0.12 J	< 21	< 4.3	< 53
Benzene	0.005	5.1	< 0.058	< 0.60	< 0.12	< 1.5
Bromobenzene	-	1800	-	-	-	-
Bromodichloromethane	-	1.3	< 0.058	< 0.60	< 0.12	< 1.5
Bromoform	-	290	< 0.23	< 2.4	< 0.48	< 5.9
Bromomethane (Methyl Bromide)	-	30	0.024 J	< 1.2	< 0.24	< 2.9
Carbon disulfide	-	3500	< 0.58	< 6.0	< 1.2	< 15
Carbon tetrachloride	-	2.9	< 0.058	< 0.60	< 0.12	< 1.5
Chlorobenzene	-	1300	< 0.058	< 0.60	< 0.12	< 1.5
Chlorostone	_	630	< 0.29	< 3.0	< 0.60	< 7.3
Chloroform (Trichloromethano)	-	57000	< 0.12	< 1.2	< 0.24	< 2.9
Chloroform (Trichloromethane)	_	1.4	< 0.087	< 0.89	< 0.18	< 2.2
Chloromethane (Methyl Chloride)	_	460	< 0.29	< 3.0	< 0.60	< 7.3
cis-1,2-Dichloroethene	-	2300	< 0.058	< 0.60	< 0.12	< 1.5
cis-1,3-Dichloropropene	-	-	< 0.058	< 0.60	< 0.12	< 1.5
Cyclohexane	-	27000	< 1.2	< 12	< 2.4	< 29
Cymene (p-Isopropyltoluene)	_	-	- 0.050	- 0.00		- - 1 F
Dibromochloromethane	-	3.2	< 0.058	< 0.60	< 0.12	< 1.5

WASHINGTON, D.C.

Location			DP-057	DP-092	DP-092	DP-092
Sample Date	DC Tier 0 Soil	EPA Regional	07/10/2015	07/15/2015	07/15/2015	07/15/2015
Sample Name	Standards <sup>1</sup>	Screening Level for	DP-057-SO-050-01	DP-092-SO-010-01	DP-092-SO-050-01	DP-092-SO-100-01
Sample Type	Standards	Industrial Soil <sup>2</sup>	Primary	Primary	Primary	Primary
Sample Depth Interval (ft bgs)			4.5 - 5	0.5 - 1	4.5 - 5	9.5 - 10
Dibromomethane	-	98	=	=	-	-
Dichlorodifluoromethane (CFC-12)	-	370	< 0.58	< 6.0	< 1.2	< 15
Diisopropyl ether	-	9400	-	-	-	-
Ethylbenzene	0.04	25	< 0.058	0.6	0.16	1.0 J
Hexachlorobutadiene	-	30	-	-	-	-
Isopropylbenzene	-	9900	< 0.058	0.40 J	0.12	0.71 J
m,p-Xylenes	-	-	< 0.12	2.2	0.61	3.5
Methyl acetate	-	1.20E+06	< 0.23	< 2.4	< 0.48	< 5.9
Methyl cyclohexane	-	-	0.084 J	1.1 J	0.28 J	2.2 J
Methyl Tert Butyl Ether	-	210	< 0.12	< 1.2	< 0.24	< 2.9
Methylene chloride	-	1000	< 0.29	< 3.0	< 0.60	< 7.3
Naphthalene	-	17	-	-	-	-
n-Butylbenzene	-	58000	-	-	-	-
n-Propylbenzene	-	22000	-	-	-	-
o-Xylene	-	2800	0.098 J	1.1 J	0.3	1.6 J
Styrene	-	35000	< 0.12	< 1.2	< 0.24	< 2.9
tert-Butylbenzene	-	120000	-	-	-	-
Tetrachloroethene	-	100	3.6	< 0.60	< 0.12	< 1.5
Toluene	9.6	47000	< 0.087	0.14 J	0.034 J	< 2.2
trans-1,2-Dichloroethene	-	23000	< 0.087	< 0.89	< 0.18	< 2.2
trans-1,3-Dichloropropene	-	-	< 0.058	< 0.60	< 0.12	< 1.5
Trichloroethene	-	6	< 0.058	< 0.60	< 0.12	< 1.5
Trichlorofluoromethane (CFC-11)	-	3100	< 0.29	< 3.0	< 0.60	< 7.3
Trifluorotrichloroethane (Freon 113)	-	170000	< 1.2	< 12	< 2.4	< 29
Vinyl acetate	-	3800	-	-	-	-
Vinyl chloride	-	1.7	< 0.12	< 1.2	< 0.24	< 2.9
Xylene (total)	3.86	2500	0.098 J	3.3 J	0.91	5.1 J

## NOTES

 $\label{eq:bold_problem} \mbox{Bold where detected; highlighted where exceeds}$ 

Results reported in mg/kg

mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

- -- = screening level not available/sample not analyzed
- < = not detected at the indicated reporting limit
- J = estimated value

WASHINGTON, D.C.

VOCs = volatile organic compounds

- 1. DC Tier 0 Standards from the Tier 0 Standard Final Rulemaking published at 40 DCR 7835, 7892 (November 12, 1993); as amended by Final Rulemaking published at 46 DCR 7699 (October 1, 1999)
- 2. United States Environmental Protection Agency (EPA) Regional Screening Level (RSL) Summary Table (January 2015)

**TABLE 3**SUMMARY OF GROUNDWATER ANALYTICAL RESULTS AND EXCEEDANCES
BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT
WASHINGTON, D.C.

Location	DC Tier 1	Risk-based Gro	oundwater	EPA Regional	GTW-605-802-1	GTW-605-802-1	GTW-605-802-2	GTW-605-802-2	GW-605-802-2	GTW-605-802-6	GTW-605-802-6	GTW-605-802-7
Sample Date		Screening Leve	l <sup>1</sup>	Maximum	04/27/2015	07/27/2015	04/27/2015	04/27/2015	07/27/2015	04/27/2015	07/22/2015	04/27/2015
Sample Type	Indoor	Outdoor	Dermal	Contaminant	GTW-605-802-1-2	GW-605-802-1-3	GTW-605-802-2-2	GTW-605-802-2-3	GW-605-802-2-4	GTW-605-802-6-2	GTW-605-802-6-3	GTW-605-802-7-2
Sample Name	Inhalation	Inhalation	Contact	Level <sup>2</sup>	Primary	Primary	Primary	Duplicate	Primary	Primary	Primary	Primary
oumpie reunie						Timary	Timary	Барпеасс	Timary	Trimary	Timary	Timary
Inorganic Compounds (μg/L)	μg/L	μg/L	μg/L	μg/L								
Aluminum, Dissolved	-	-	-	-	-	13.2	-	-	18	-	9.6 J	-
Aluminum, Total	-	-	-	-	3,030	-	4,580	3,450	-	3,690	-	68.7 J
Antimony, Dissolved	-	-	-	6	-	0.2967 J	-	-	1.895 J	-	0.8936 J	-
Antimony, Total	-	-	-	6	< 5.0	-	8.6	7.1	-	< 5.0	-	< 5.0
Arsenic, Dissolved	-	-	-	10	-	0.535	-	-	0.3968 J	-	0.485 J	-
Arsenic, Total	-	-	-	10	< 10	-	< 10	< 10	-	< 10	-	< 10
Barium, Dissolved	-	-	-	2000	-	33.44	-	-	29.21	=	163.7	-
Barium, Total	-	-	-	2000	33.5	_	33.6	25.5	_	127	-	91.2
Beryllium, Dissolved	_	_	_	4	-	< 0.50	-	-	< 0.50	-	< 0.50	-
Beryllium, Total	_	_	_	4	< 1.0	-	< 1.0	0.33 J	-	< 1.0	-	< 1.0
Cadmium, Dissolved	_	_	_	5	-	0.3955	-	-	1.359	-	< 0.20	_
Cadmium, Total	_	_	_	5	< 1.0	-	< 1.0	0.55 J		< 1.0	-	< 1.0
Calcium, Dissolved	_		_	_	- 1.0	81,400	-	0.557	47,400	-	85,200	- 1.0
Calcium, Total		_	-		47,600	81,400	48,600	42,600	47,400		85,200	69,000
· ·		-	-			101			0.5045.1	14,000	0.7071	
Chromium, Dissolved	-	-	-	100	-	1.9 J	-	-	0.5845 J	-	0.7871 J	-
Chromium, Total	-	-	-	100	5.9	-	11.7	8.6	-	8.9	-	< 5.0
Cobalt, Dissolved	-	-	-	=	-	20.62	-	-	85.55	-	25.03	-
Cobalt, Total	-	-	-	=	28.8	-	92	74.7	-	60.8	-	18.6
Copper, Dissolved	-	-	-	1300	-	1.793	-	-	0.9738 J	-	0.6117 J	-
Copper, Total	-	-	-	1300	14.7	-	9.5	17.6	-	12.1	-	3.6 J
Iron, Dissolved	-	-	-	-	-	50.7	-	-	77.3	-	30.3 J	-
Iron, Total	-	-	-	-	6,210	-	10,500	7,390	-	10,500	-	944
Lead, Dissolved	-	-	-	15	-	< 1.0	-	-	0.2842 J	-	< 1.0	-
Lead, Total	-	-	-	15	6.5	-	8.8	11.5	-	15.2	-	2.7 J
Magnesium, Dissolved	-	-	-	-	-	62,900	-	-	54,800	-	61,900	-
Magnesium, Total	-	-	-	-	37,300	-	46,000	41,900	-	15,400	-	33,800
Manganese, Dissolved	-	-	-	-	-	5,634	-	-	4,294	-	3,553	-
Manganese, Total	-	-	-	-	4,570	-	5,450	4,420	-	2,740	-	2,840
Mercury, Dissolved	-	-	-	2	-	< 0.20	-	-	< 0.20	-	< 0.20	-
Mercury, Total	-	-	-	2	< 0.20	-	< 0.20	< 0.20	-	< 0.20	-	< 0.20
Nickel, Dissolved	-	-	-	=	-	9.753	-	-	36.77	=	13.15	-
Nickel, Total	-	-	_	-	14.7	_	35.5	29.5	_	18.4	-	14
Potassium, Dissolved	_	_	_	_	-	4,190	_	_	1,520	_	2,300	_
Potassium, Total	_	_	_	_	< 5,000	-	< 5,000	< 5,000	-,	< 5,000	-	3,710 J
Selenium, Dissolved	_	_	_	50	-	< 5.0	-	-	3.91 J	-	< 5.0	-
Selenium, Total	_	_	_	50	< 10	-	< 10	< 10	-	< 10	-	< 10
Silver, Dissolved	_	_	_	_	-	< 0.40	-	-	< 0.40	-	< 0.40	-
Silver, Total	_		_	_	< 5.0	-	< 5.0	< 5.0	-	< 5.0	-	< 5.0
Sodium, Dissolved		_		_					611,000			
	-	_	-	_	208 000	132,000	769 000	- 765 000		- 252,000	126,000	-
Sodium, Total	-	-	-		208,000	- - 0 E0	768,000	765,000	- 0.50	252,000	- - 0 E0	50,900
Thallium, Dissolved	-	_	-	2	- 10	< 0.50	-	-	< 0.50	- 110	< 0.50	- 10
Thallium, Total	-	-	-	2	< 10	-	< 10	< 10	-	< 10	-	< 10
Vanadium, Dissolved	-	-	-	-	-	< 5.0	-	-	< 5.0	-	< 5.0	-
Vanadium, Total	-	-	-	-	10.7	-	16	12.1	-	10.6	-	< 5.0
Zinc, Dissolved	-	-	-	-	-	40.76	-	-	26.05	-	9.457 J	-
Zinc, Total	-	-	-	-	28.2	-	59.3	51	-	77.7	-	29.2

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS AND EXCEEDANCES
BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT
WASHINGTON, D.C.

Location	DC Tier 1	Risk-based Gro	undwater	EPA Regional	GTW-605-802-1	GTW-605-802-1	GTW-605-802-2	GTW-605-802-2	GW-605-802-2	GTW-605-802-6	GTW-605-802-6	GTW-605-802-7
Sample Date	S	Screening Leve	l <sup>1</sup>	Maximum	04/27/2015	07/27/2015	04/27/2015	04/27/2015	07/27/2015	04/27/2015	07/22/2015	04/27/2015
Sample Type	Indoor	Outdoor	Dermal	Contaminant	GTW-605-802-1-2	GW-605-802-1-3	GTW-605-802-2-2	GTW-605-802-2-3	GW-605-802-2-4	GTW-605-802-6-2	GTW-605-802-6-3	GTW-605-802-7-2
Sample Name	Inhalation	Inhalation	Contact	Level <sup>2</sup>	Primary	Primary	Primary	Duplicate	Primary	Primary	Primary	Primary
							,	2 apricate	,	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	,	,
PCBs (μg/L)	μg/L	μg/L	μg/L	μg/L								
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	_
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	_
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	=	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	_
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	=	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-
Semi-Volatile Organic Compounds (µg/L)	μg/L	μg/L	μg/L	μg/L								
1,2,4,5-Tetrachlorobenzene	-	-	-	-	-	< 20	-	-	< 10	-	-	-
1,2,4-Trichlorobenzene	-	-	-	70	< 10	-	< 10	< 10	-	-	-	< 10
1,2-Dichlorobenzene	-	-	-	600	< 10	-	< 10	< 10	-	-	-	< 10
1,3-Dichlorobenzene	-	-	-	-	< 10	-	< 10	< 10	-	-	_	< 10
1,4-Dichlorobenzene	-	-	-	75	< 10	-	< 10	< 10	-	-	-	< 10
1-Methylnaphthalene	-	-	-	-	< 10	-	< 10	< 10	-	=	-	< 10
2,2'-oxybis(1-Chloropropane)	-	-	-	-	< 10	< 3.9	< 10	< 10	< 2.0	-	-	< 10
2,3,4,6-Tetrachlorophenol	-	-	-	-	-	< 9.8	-	-	< 5.0	=	-	-
2,4,5-Trichlorophenol	-	-	-	-	< 10	< 9.8	< 10	< 10	< 5.0	=	-	< 10
2,4,6-Trichlorophenol	-	-	-	-	< 10	< 9.8	< 10	< 10	< 5.0	-	-	< 10
2,4-Dichlorophenol	-	-	-	-	< 10	< 9.8	< 10	< 10	< 5.0	-	-	< 10
2,4-Dimethylphenol	-	-	-	-	< 10	< 9.8	< 10	< 10	< 5.0	-	-	< 10
2,4-Dinitrophenol	-	-	-	-	< 50	< 39	< 50	< 50	< 20	-	-	< 50
2,4-Dinitrotoluene	-	-	-	-	< 10	< 9.8	< 10	< 10	< 5.0	-	-	< 10
2,6-Dinitrotoluene	-	-	-	-	< 10	< 9.8	< 10	< 10	< 5.0	=	-	< 10
2-Chloronaphthalene	-	-	-	-	< 10	< 3.9	< 10	< 10	< 2.0	=	-	< 10
2-Chlorophenol	-	-	-	-	< 10	< 3.9	< 10	< 10	< 2.0	=	-	< 10
2-Methylnaphthalene	-	-	-	-	< 10	< 3.9	< 10	< 10	< 2.0	-	-	< 10
2-Methylphenol	-	-	-	-	< 10	< 9.8	< 10	< 10	< 5.0	=	-	< 10
2-Nitroaniline	-	-	-	-	< 50	< 9.8	< 50	< 50	< 5.0	-	-	< 50
2-Nitrophenol	-	-	-	-	< 10	< 20	< 10	< 10	< 10	-	-	< 10
3&4-Methylphenol	-	-	-	-	< 10	-	< 10	< 10	-	-	-	< 10
3,3'-Dichlorobenzidine	-	-	-	-	< 20	< 9.8	< 20	< 20	< 5.0	-	-	< 20
3-Methylphenol	-	-	-	-	-	< 9.8	-	-	< 5.0	-	-	-
3-Nitroaniline	-	-	-	-	< 50	< 9.8	< 50	< 50	< 5.0	-	-	< 50
4,6-Dinitro-2-methylphenol	-	-	-	-	< 20	< 20	< 20	< 20	< 10	-	-	< 20
4-Bromophenyl phenyl ether	-	-	-	-	< 10	< 3.9	< 10	< 10	< 2.0	-	-	< 10
4-Chloro-3-methylphenol	-	-	-	-	< 20	< 3.9	< 20	< 20	< 2.0	-	-	< 20
4-Chloroaniline	-	-	-	-	< 20	< 9.8	< 20	< 20	< 5.0	-	-	< 20
4-Chlorophenyl phenyl ether	-	-	-	-	< 10	< 3.9	< 10	< 10	< 2.0	-	-	< 10
4-Nitroaniline	-	-	-	-	< 20	< 9.8	< 20	< 20	< 5.0	-	-	< 20
4-Nitrophenol	-	-	-	-	< 50	< 20	< 50	< 50	< 10	-	-	< 50
Acenaphthene	-	-	18200	-	< 10	< 3.9	< 10	< 10	< 2.0	-	-	< 10
Acenaphthylene	-	-	-	-	< 10	< 3.9	< 10	< 10	< 2.0	-	-	< 10
Acetophenone	-	-	-	-	-	< 9.8	-	-	< 5.0	-	-	-
Aniline	_	_	_	_	< 10	_	< 10	< 10	_	_	_	< 10

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS AND EXCEEDANCES
BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT
WASHINGTON, D.C.

Location	DC Tier 1	Risk-based Gro	undwater	EPA Regional	GTW-605-802-1	GTW-605-802-1	GTW-605-802-2	GTW-605-802-2	GW-605-802-2	GTW-605-802-6	GTW-605-802-6	GTW-605-802-7
Sample Date		Screening Leve	$I^1$	Maximum	04/27/2015	07/27/2015	04/27/2015	04/27/2015	07/27/2015	04/27/2015	07/22/2015	04/27/2015
Sample Type	Indoor	Outdoor	Dermal	Contaminant	GTW-605-802-1-2	GW-605-802-1-3	GTW-605-802-2-2	GTW-605-802-2-3	GW-605-802-2-4	GTW-605-802-6-2	GTW-605-802-6-3	GTW-605-802-7-2
Sample Name	Inhalation	Inhalation	Contact	Level <sup>2</sup>	Primary	Primary	Primary	Duplicate	Primary	Primary	Primary	Primary
Anthracene	-	_	810000	-	< 10	< 3.9	< 10	< 10	< 2.0	-	-	< 10
Atrazine	_	_	_	3	-	< 5.9	-	-	< 3.0	_	-	-
Benzaldehyde	-	-	-	-	-	< 9.8	-	-	< 5.0	-	-	-
Benzo(a)anthracene	2300	4.93E+06	4.42E+00	-	< 10	< 0.49	< 10	< 10	< 0.25	-	-	< 10
Benzo(a)pyrene	569	623000	0.26	0.2	< 10	< 0.20	< 10	< 10	< 0.10	-	-	< 10
Benzo(b)fluoranthene	6520	1.01E+07	2.55E+00	-	< 10	< 0.39	< 10	< 10	< 0.20	-	-	< 10
Benzo(g,h,i)perylene	-	-	628	-	< 10	< 0.98	< 10	< 10	< 0.50	-	-	< 10
Benzo(k)fluoranthene	6790	1.01E+07	3.66E+01	-	< 10	< 0.39	< 10	< 10	< 0.20	-	-	< 10
Benzoic acid	-	-	-	-	< 50	-	< 50	< 50	-	-	-	< 50
Benzyl Alcohol	-	-	-	-	< 20	-	< 20	< 20	-	-	-	< 20
Biphenyl	-	-	-	-	-	< 3.9	-	-	< 2.0	-	-	-
bis(2-Chloroethoxy)methane	-	-	-	-	< 10	< 9.8	< 10	< 10	< 5.0	-	-	< 10
bis(2-Chloroethyl)ether	-	-	-	-	< 10	< 0.20	< 10	< 10	< 0.10	-	-	< 10
bis(2-Ethylhexyl)phthalate	-	_	-	6	< 6.0	< 2.0	< 6.0	< 6.0	< 1.0	-	-	< 6.0
Butyl benzylphthalate	_	_	_	-	< 10	< 9.8	< 10	< 10	< 5.0	_	-	< 10
Caprolactam	-	-	-	-	-	< 20	-	-	< 10	-	-	-
Carbazole	-	-	-	-	-	< 3.9	-	-	< 2.0	-	-	-
Chrysene	39900	8.41E+07	4.42E+02	-	< 10	< 3.9	< 10	< 10	< 2.0	-	-	< 10
Dibenz(a,h)anthracene	-	-	-	-	< 10	< 0.20	< 10	< 10	< 0.10	-	-	< 10
Dibenzofuran	-	-	-	-	< 10	< 3.9	< 10	< 10	< 2.0	-	-	< 10
Diethyl phthalate	_	_	_	-	< 10	< 9.8	< 10	< 10	< 5.0	_	-	< 10
Dimethyl phthalate	-	-	-	-	< 10	< 9.8	< 10	< 10	< 5.0	-	-	< 10
Di-n-butylphthalate	-	-	-	-	< 10	< 9.8	< 10	< 10	< 5.0	-	-	< 10
Di-n-octyl phthalate	-	-	-	-	< 10	< 9.8	< 10	< 10	< 5.0	-	-	< 10
Fluoranthene	-	-	4620	-	< 10	< 3.9	< 10	< 10	< 2.0	-	-	< 10
Fluorene	-	-	16200	-	< 10	< 3.9	< 10	< 10	< 2.0	-	-	< 10
Hexachlorobenzene	-	-	-	1	< 10	< 0.39	< 10	< 10	< 0.20	-	-	< 10
Hexachlorobutadiene	-	-	-	-	< 10	< 3.9	< 10	< 10	< 2.0	-	-	< 10
Hexachlorocyclopentadiene	-	-	-	50	< 10	< 39	< 10	< 10	< 20	-	-	< 10
Hexachloroethane	-	-	-	-	< 10	< 0.39	< 10	< 10	0.10 J	-	-	< 10
Indeno(1,2,3-cd)pyrene	-	-	-	-	< 10	< 0.98	< 10	< 10	< 0.50	-	-	< 10
Isophorone	-	-	-	-	< 10	< 9.8	< 10	< 10	< 5.0	-	-	< 10
Naphthalene	764	1.69E+06	1.79E+04	-	< 10	< 3.9	< 10	< 10	< 2.0	-	-	< 10
Nitrobenzene	-	-	-	-	< 10	< 3.9	< 10	< 10	< 2.0	-	-	< 10
N-Nitrosodimethylamine	-	-	-	-	< 10	-	< 10	< 10	-	-	-	< 10
N-Nitrosodi-n-propylamine	-	-	-	-	< 10	< 0.20	< 10	< 10	< 0.10	-	-	< 10
N-Nitrosodiphenylamine	-	-	-	-	< 10	< 3.9	< 10	< 10	< 2.0	-	-	< 10
Pentachlorophenol	-	-	6300	1	< 25	< 0.20	< 25	< 25	< 0.10	-	-	< 25
Phenanthrene	-	-	-	-	< 10	< 3.9	< 10	< 10	< 2.0	-	-	< 10
Phenol	-	-	-	-	< 10	< 9.8	< 10	< 10	< 5.0	-	-	< 10
Pyrene	-	-	3930	-	< 10	< 3.9	< 10	< 10	< 2.0	-	-	< 10
Total Petroleum Hydrocarbons (mg/L)												
Total Petroleum Hydrocarbons (C6-C10) GRO	38.8	85400	-	-	< 0.080	-	< 0.080	< 0.080	-	< 0.080	-	< 0.080
Total Petroleum Hydrocarbons (C10-C28) DRO	245	543000	-	-	< 0.50	-	0.62	0.12 J	-	1.2	-	0.11 J
Total Petroleum Hydrocarbons (C28-C40)	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS AND EXCEEDANCES
BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT
WASHINGTON, D.C.

Location	DC Tier 1	Risk-based Gro	undwater	EPA Regional	GTW-605-802-1	GTW-605-802-1	GTW-605-802-2	GTW-605-802-2	GW-605-802-2	GTW-605-802-6	GTW-605-802-6	GTW-605-802-7
Sample Date		Screening Leve	$I^1$	Maximum	04/27/2015	07/27/2015	04/27/2015	04/27/2015	07/27/2015	04/27/2015	07/22/2015	04/27/2015
Sample Type	Indoor	Outdoor	Dermal	Contaminant	GTW-605-802-1-2	GW-605-802-1-3	GTW-605-802-2-2	GTW-605-802-2-3	GW-605-802-2-4	GTW-605-802-6-2	GTW-605-802-6-3	GTW-605-802-7-2
Sample Name	Inhalation	Inhalation	Contact	Level <sup>2</sup>	Primary	Primary	Primary	Duplicate	Primary	Primary	Primary	Primary
Total Petroleum Hydrocarbons (μg/L)							,	2 apricate	,	,		,
Total Petroleum Hydrocarbons (C6-C10) GRO	38800	85400000	-	_	_	-	_	_	22 J	_	< 50	-
Total Petroleum Hydrocarbons (C9-C44) DRO	245000	543000000	_	_	_	_	-	_	371 J	_	230 J	_
Volatile Organic Compounds (µg/L)												
1,1,1,2-Tetrachloroethane	-	-	-	-	-	-	-	-	-	< 10	-	-
1,1,1-Trichloroethane	-	-	-	200	-	< 0.50	-	-	< 0.50	< 10	< 0.50	-
1,1,2,2-Tetrachloroethane	-	-	-	-	-	< 0.50	-	-	< 0.50	< 10	< 0.50	-
1,1,2-Trichloroethane	-	-	-	5	-	< 0.75	-	-	< 0.75	< 10	< 0.75	-
1,1-Dichloroethane	-	-	-	=	-	< 0.75	-	-	< 0.75	< 10	< 0.75	-
1,1-Dichloroethene	-	-	-	7	-	< 0.50	-	-	< 0.50	< 10	< 0.50	-
1,1-Dichloropropene	-	-	-	-	-	-	-	-	-	< 10	-	-
1,2,3-Trichlorobenzene	-	_	-	-	-	< 2.5	-	-	< 2.5	< 10	< 2.5	-
1,2,3-Trichloropropane	-	-	-	-	-	-	-	-	-	< 10	-	-
1,2,4-Trichlorobenzene	_	_	_	70	_	< 2.5	-	_	< 2.5	< 10	< 2.5	-
1,2-Dibromo-3-chloropropane (DBCP)	_	_	_	0.2	_	< 2.5	-	_	< 2.5	< 20	< 2.5	-
1,2-Dibromoethane (Ethylene Dibromide)	39.5	88100	358	0.05	_	< 2.0	-	_	< 2.0	< 10	< 2.0	-
1,2-Dichlorobenzene	-	-	-	600	_	< 2.5	-	_	< 2.5	< 10	< 2.5	-
1,2-Dichloroethane	305	672000	8970	5	_	< 0.50	_	_	0.48 J	< 10	< 0.50	-
1,2-Dichloroethene (total)	-	-	-	_	_	< 0.50	_	_	< 0.50		< 0.50	-
1,2-Dichloropropane	_	_	_	5	_	< 1.0	_	_	< 1.0	< 10	< 1.0	_
1,3-Dichlorobenzene	_	_	_	-	_	< 2.5	-	_	< 2.5	< 10	< 2.5	-
1,3-Dichloropropane	_	_	-	_	_	-	_	_	-	< 10	-	-
1,3-Dichloropropene	_	_	_	_	_	< 0.50	-	_	< 0.50		< 0.50	-
1,4-Dichlorobenzene	_	_	_	75	_	< 2.5	_	_	< 2.5	< 10	< 2.5	-
1,4-Dioxane	_	_	_	-	_	< 250	_	_	< 250	-	< 250	_
2,2-Dichloropropane	_	_	_	_	_	-	_	_	-	< 10	-	_
2-Butanone (Methyl Ethyl Ketone)	_	_	_	_	_	< 5.0	_	_	< 5.0	< 50	< 5.0	_
2-Chlorotoluene	_	_	_	_	_	-	-	_	-	< 10	-	-
2-Hexanone	_	_	_	_	_	< 5.0	_	_	< 5.0	< 50	< 5.0	-
4-Chlorotoluene	_	_	_	_	_	-	_	_	-	< 10	-	_
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	_	_	_	_	_	< 5.0	_	_	< 5.0	< 50	< 5.0	-
Acetone	_	_	_	_	_	< 5.0	_	_	< 5.0	< 250	< 5.0	-
Benzene	270	591000	4710	5	_	< 0.50	_	_	< 0.50	< 10	< 0.50	-
Bromobenzene		-	-	_	_	-	_	_	-	< 10	-	-
Bromodichloromethane	_	_	_	80	_	< 0.50	_	_	< 0.50	< 10	< 0.50	_
Bromoform	_	_	_	80	_	< 2.0	_	_	< 2.0	< 10	< 2.0	_
Bromomethane (Methyl Bromide)	_		_	_	_	< 1.0	_	_	< 1.0	< 20	< 1.0	_
Carbon disulfide	_		_	_	_	0.34 J	_	_	< 5.0	-	< 5.0	-
Carbon tetrachloride	_		_	5	_	< 0.50	_	_	< 0.50	< 10	< 0.50	_
Chlorobenzene	_		_	100	_	< 0.50	_	_	< 0.50	< 10	< 0.50	_
Chlorobromomethane	_		_	-	_	< 2.5	_	_	< 2.5	< 10	< 2.5	_
Chloroethane	_		_	_	_	< 1.0	_	_	< 1.0	< 10	< 1.0	_
Chloroform (Trichloromethane)			_	80	_	< 0.75		_	< 0.75	< 10	< 0.75	- 
Chloromethane (Methyl Chloride)		[ ]	_	-		< 2.5			< 2.5	< 10	< 2.5	- I -
cis-1,2-Dichloroethene		<b>I</b> [	_	70		< 0.50			< 0.50	< 10	< 0.50	- I -
cis-1,3-Dichloropropene		<b>I</b> -	_	-		< 0.50			< 0.50	< 10	< 0.50	-

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS AND EXCEEDANCES BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT WASHINGTON, D.C.

Location	DC Tier 1	Risk-based Gro	undwater	EPA Regional	GTW-605-802-1	GTW-605-802-1	GTW-605-802-2	GTW-605-802-2	GW-605-802-2	GTW-605-802-6	GTW-605-802-6	GTW-605-802-7
Sample Date	9	creening Level	1	Maximum	04/27/2015	07/27/2015	04/27/2015	04/27/2015	07/27/2015	04/27/2015	07/22/2015	04/27/2015
Sample Type	Indoor	Outdoor	Dermal	Contaminant	GTW-605-802-1-2	GW-605-802-1-3	GTW-605-802-2-2	GTW-605-802-2-3	GW-605-802-2-4	GTW-605-802-6-2	GTW-605-802-6-3	GTW-605-802-7-2
Sample Name	Inhalation	Inhalation	Contact	Level <sup>2</sup>	Primary	Primary	Primary	Duplicate	Primary	Primary	Primary	Primary
Cyclohexane	-	-	-	-	-	< 10	-	-	< 10	-	< 10	-
Cymene (p-Isopropyltoluene)	-	-	-	-	-	-	-	-	-	< 10	-	-
Dibromochloromethane	-	-	-	80	-	< 0.50	-	-	< 0.50	< 10	< 0.50	-
Dibromomethane	-	-	-	-	-	-	-	-	-	< 10	-	-
Dichlorodifluoromethane (CFC-12)	-	-	-	-	-	< 5.0	-	-	< 5.0	< 10	< 5.0	-
Diisopropyl ether	-	-	-	-	-	-	-	-	-	< 10	-	-
Ethylbenzene	826	1.81E+06	6.20E+03	700	-	< 0.50	-	-	< 0.50	< 10	< 0.50	-
Hexachlorobutadiene	-	-	-	-	-	-	-	-	-	< 10	-	-
Isopropylbenzene	-	-	-	-	-	< 0.50	-	-	< 0.50	-	< 0.50	-
m,p-Xylenes	-	-	-	-	-	< 1.0	-	-	< 1.0	< 20	< 1.0	-
Methyl acetate	-	-	-	-	-	< 2.0	-	-	< 2.0	-	< 2.0	-
Methyl cyclohexane	-	-	-	-	-	< 10	-	-	< 10	-	< 10	-
Methyl Tert Butyl Ether	64200	1.42E+08	1.16E+05	-	-	1.0	-	-	0.32 J	< 10	< 1.0	-
Methylene chloride	-	-	-	5	-	< 2.5	-	-	0.37 J	42.4	< 2.5	-
Naphthalene	764	1.69E+06	1.79E+04	-	-	-	-	-	-	< 10	-	-
o-Xylene	-	-	-	-	-	< 1.0	-	-	< 1.0	< 10	< 1.0	-
Styrene	-	-	-	100	-	< 1.0	-	-	< 1.0	< 10	< 1.0	-
Tetrachloroethene	-	-	-	5	-	< 0.50	-	-	< 0.50	< 10	< 0.50	-
Toluene	900000	1.97E+09	1.32E+05	1000	-	< 0.75	-	-	< 0.75	< 10	< 0.75	-
trans-1,2-Dichloroethene	-	-	-	100	-	< 0.75	-	-	< 0.75	< 10	< 0.75	-
trans-1,3-Dichloropropene	-	-	-	-	-	< 0.50	-	-	< 0.50	< 10	< 0.50	-
Trichloroethene	-	-	-	5	-	< 0.50	-	-	< 0.50	< 10	< 0.50	-
Trichlorofluoromethane (CFC-11)	-	-	-	-	-	< 2.5	-	-	< 2.5	< 10	< 2.5	-
Trifluorotrichloroethane (Freon 113)	-	-	-	-	-	< 2.5	-	-	< 2.5	-	< 2.5	-
Vinyl acetate	-	-	-	-	-	-	-	-	-	< 20	-	-
Vinyl chloride	-	-	-	2	-	< 1.0	-	-	< 1.0	< 10	< 1.0	-
Xylene (total)	20500	4.49E+07	1.81E+05	10000	-	< 1.0	=	-	< 1.0	< 20	< 1.0	-

# NOTES

Bold where detected; highlighted where exceeds

ft bgs = feet below ground surface; well screen interval

mg/L = milligrams per liter

μg/L = micrograms per liter

- -- = screening level not available/sample not analyzed
- < = not detected at the indicated reporting limit
- J = estimated value
- 1. District of Columbia Risk-Based Corrective Action Technical Guidance, Table 5-8 Risk-based Screening Levels for resident child (building occupant) indoor/outdoor inhalation (June 2011)
- 2. United States Environmental Protection Agency (EPA) Regional Screening Level (RSL) Summary Table (January 2015)

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS AND EXCEEDANCES
BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT
WASHINGTON, D.C.

Location	DC Tier 1	Risk-based Gro	oundwater	EPA Regional	GW-605-802-7	GTW-605-802-9	GTW-605-7-1	GTW-605-7-1	GTW-605-7-2	GTW-605-7-2	GTW-607-13-1	GTW-607-13-1
Sample Date		Screening Leve		Maximum	07/27/2015	04/10/2015	09/22/2014	07/23/2015	09/22/2014	07/23/2015	12/13/2013	07/23/2015
Sample Type	Indoor	Outdoor	Dermal	Contaminant	GW-605-802-7-3	GTW-605-802-9-2	GTW-605-7-1-1	GTW-605-7-1-2	GTW-605-7-2-1	GTW-605-7-2-2	GTW-607-13-1-1	GTW-607-13-1-2
Sample Name	Inhalation	Inhalation	Contact	Level <sup>2</sup>	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Sample Name	iiiiaatioii	Illiaacion	Contact	Level	Primary	Primary	Primary	Pilliary	Primary	Primary	Primary	Primary
Inorganic Compounds (μg/L)	μg/L	μg/L	μg/L	μg/L								
Aluminum, Dissolved	-	-	-	-	5.31 J	_	_	5.34 J	_	12.6	_	10.1
Aluminum, Total	_	_	_	_	-	24,300	_		_		_	
Antimony, Dissolved	_	_	_	6	0.3418 J		_	2.894	_	1.022 J	_	0.617 J
Antimony, Total	_	_	_	6	-	6.9	_	-	_	-	_	-
Arsenic, Dissolved	_	_	_	10	0.8637	-	_	1.537	_	2.586	_	0.5711
Arsenic, Total	_	_	_	10	-	10.6	_	-	< 10	-	_	-
Barium, Dissolved	_	_	_	2000	128.3	-	_	109.2	-	229.7	_	187.4
Barium, Total	_	_	_	2000	-	359	_		269		_	
Beryllium, Dissolved	_	_	_	4	< 0.50	-	_	< 0.50		< 0.50	_	< 0.50
Beryllium, Total	_	_	_	4	-	1.5	_	-	_	-	_	-
Cadmium, Dissolved	_	_	_	5	0.2864		_	< 0.20	_	< 0.20	_	< 0.20
Cadmium, Total	_	_	_	5	-	1.3	_	-	< 1.0	-	_	-
Calcium, Dissolved	_	_	_	-	138,000	-	_	39,500	-	169,000	_	23,400
Calcium, Total		_	_	_	-	125,000	_	-	_	-	_	-
Chromium, Dissolved		_	_	100	1.342 J	123,000	_	0.8277 J	_	0.668 J	_	0.6604 J
Chromium, Total		_	_	100	-	41.6	_	- 0.02773	< 5.0	-	_	-
Cobalt, Dissolved		_	_	-	14.52	-	_	19.51		4.556	_	5.354
Cobalt, Total		_	_	_	-	82.2	_	- 19.51	_		_	-
Copper, Dissolved		_	_	1300	3.964	-	_	1.042	_	< 1.0	_	< 1.0
Copper, Total		_	_	1300	3.504	42.2	_	-	_	-	_	-
Iron, Dissolved		_	_	-	2,060		_	5,770	_	12,200	_	196
Iron, Total		_	_	_	-	45,600	_		_	-	_	-
Lead, Dissolved				15	0.1812 J	45,000		0.9375 J		0.2282 J	_	< 1.0
Lead, Total		_	_	15	-	30.2	_	- 0.93733	67	-	_	-
Magnesium, Dissolved		_	_	_	41,100	-	_	29,800	-	21,400	_	24,800
Magnesium, Total		_	_	_	-	73,900	_	25,800	_	21,400	_	-
Manganese, Dissolved		_	_	_	3,568	73,500	_	2,085	_	2,511	_	6,045
Manganese, Dissolved		_	_	_	-	17,600	_	2,083	_	-	_	-
Mercury, Dissolved		_	_	2	< 0.20	17,000	_	< 0.20	_	< 0.20	_	< 0.20
Mercury, Total			_	2		< 0.20	_	- 0.20	< 0.20		_	- 0.20
Nickel, Dissolved			_	_	9.566	- 0.20	_	12.46	- 0.20	7.704	_	1.722 J
Nickel, Total			_	_	3.500	41.6	_	12.40	_	7.704	_	-
Potassium, Dissolved					7,360			1,680		22,600		1,800
Potassium, Total				_	-	8,780	_	-		22,000	_	-
Selenium, Dissolved		_	-	50	< 5.0	8,760	-	< 5.0		< 5.0	_	< 5.0
Selenium, Total			_	50	- 3.0	< 10	_	-	24.9	-	_	-
Silver, Dissolved			_	-	< 0.40	\ 10	_	< 0.40	-	< 0.40	_	< 0.40
Silver, Total		_	-	-	< 0.40	< 5.0	-	\ 0.40	< 5.0	V 0.40	_	
Sodium, Dissolved	_	_	] -	1 -	40 700		-	142 000		112 000	_	- 67 600
Sodium, Dissolved Sodium, Total	-	_	-	-	49,700	411 000	-	142,000	-	112,000	_	67,600
Thallium, Dissolved	_	_	_	2	0.0573 J	411,000	-	- < 0.50	_	- < 0.50	_	- < 0.50
Thallium, Dissolved Thallium, Total	-	-	-			- 10	-		_		_	
	_	-	-	2	- - E O	< 10	-	- - E O	-	- - E O	_	- - E O
Vanadium, Dissolved	-	-	-	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0
Vanadium, Total	-	-	-	-	-	69.8	-	-	-	7.016.1	_	- 10
Zinc, Dissolved	-	-	-	-	47.94	-	-	39.09	-	7.916 J	_	< 10
Zinc, Total	-	-	-	-	-	107	-	-	-	-	-	-

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS AND EXCEEDANCES
BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT
WASHINGTON, D.C.

Location	DC Tier 1	Risk-based Gro	undwater	EPA Regional	GW-605-802-7	GTW-605-802-9	GTW-605-7-1	GTW-605-7-1	GTW-605-7-2	GTW-605-7-2	GTW-607-13-1	GTW-607-13-1
Sample Date	9	Screening Leve	1	Maximum	07/27/2015	04/10/2015	09/22/2014	07/23/2015	09/22/2014	07/23/2015	12/13/2013	07/23/2015
Sample Type	Indoor	Outdoor	Dermal	Contaminant	GW-605-802-7-3	GTW-605-802-9-2	GTW-605-7-1-1	GTW-605-7-1-2	GTW-605-7-2-1	GTW-605-7-2-2	GTW-607-13-1-1	GTW-607-13-1-2
Sample Name	Inhalation	Inhalation	Contact	Level <sup>2</sup>	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Sumple Hame					Timary	Timary	1 Timul y	Timary	Tilliary	Trimary	Triniary	Trimary
PCBs (µg/L)	μg/L	μg/L	μg/L	μg/L								
Aroclor-1016 (PCB-1016)	-	-	-	-	-	_	-	-	-	_	_	_
Aroclor-1221 (PCB-1221)	_	_	_	_	-	_	-	-	-	_	_	_
Aroclor-1232 (PCB-1232)	_	_	_	_	-	_	-	-	-	_	_	_
Aroclor-1242 (PCB-1242)	_	_	_	_	-	_	-	-	-	_	_	_
Aroclor-1248 (PCB-1248)	_	_	_	_	_	_	_	-	-	_	-	_
Aroclor-1254 (PCB-1254)	_	_	_	_	_	_	_	-	-	_	-	_
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-
Semi-Volatile Organic Compounds (μg/L)	μg/L	μg/L	μg/L	μg/L								
1,2,4,5-Tetrachlorobenzene	-	-	-	-	< 45	_	-	< 10	-	< 10	-	< 10
1,2,4-Trichlorobenzene	_	-	-	70	-	< 20	-	-	< 10		_	-
1,2-Dichlorobenzene	_	_	-	600	-	< 20	-	_	< 10	_	_	_
1,3-Dichlorobenzene	_	_	-	-	-	< 20	-	-	< 10	_	-	-
1,4-Dichlorobenzene	_	_	_	75	_	< 20	_	-	< 10	_	-	_
1-Methylnaphthalene	_	_	_	-	_	< 20	_	-	< 10	_	-	_
2,2'-oxybis(1-Chloropropane)	_	_	_	_	< 9.1	< 20	_	< 2.0	< 10	< 2.0	-	< 2.0
2,3,4,6-Tetrachlorophenol	_	_	_	_	< 23	-	_	< 5.0	-	< 5.0	-	< 5.0
2,4,5-Trichlorophenol	_	_	_	_	< 23	< 20	_	< 5.0	< 10	< 5.0	-	< 5.0
2,4,6-Trichlorophenol	-	_	_	_	< 23	< 20	_	< 5.0	< 10	< 5.0	_	< 5.0
2,4-Dichlorophenol	-	_	_	_	< 23	< 20	_	< 5.0	< 10	< 5.0	_	< 5.0
2,4-Dimethylphenol	_	_	_	_	< 23	< 20	_	< 5.0	< 10	< 5.0	_	< 5.0
2,4-Dinitrophenol	_	_	_	_	< 91	< 100	_	< 20	< 50	< 20	_	< 20
2,4-Dinitrotoluene	_	_	_	_	< 23	< 20	_	< 5.0	< 10	< 5.0	_	< 5.0
2,6-Dinitrotoluene	_	_	_	_	< 23	< 20	_	< 5.0	< 10	< 5.0	_	< 5.0
2-Chloronaphthalene	_	_	_	_	< 9.1	< 20	_	< 2.0	< 10	< 2.0	_	< 2.0
2-Chlorophenol	_	_	_	_	< 9.1	< 20	_	< 2.0	< 10	< 2.0	_	< 2.0
2-Methylnaphthalene	_	_	_	_	< 9.1	< 20	_	< 2.0	< 10	< 2.0	_	< 2.0
2-Methylphenol	_	_	_	_	< 23	< 20	_	< 5.0	< 10	< 5.0	_	< 5.0
2-Nitroaniline	_	_	_	_	< 23	< 100	_	< 5.0	< 50	< 5.0	_	< 5.0
2-Nitrophenol	-	_	_	_	< 45	< 20	_	< 10	< 10	< 10	_	< 10
3&4-Methylphenol	-	_	_	_	-	< 20	_	-	< 10	-	_	-
3,3'-Dichlorobenzidine	-	_	_	_	< 23	< 40	_	< 5.0	< 20	< 5.0	_	< 5.0
3-Methylphenol	-	_	_	_	< 23	-	_	< 5.0	-	1.2 J	_	< 5.0
3-Nitroaniline	-	_	_	_	< 23	< 100	_	< 5.0	< 50	< 5.0	_	< 5.0
4,6-Dinitro-2-methylphenol	_	_	_	_	< 45	< 40	_	< 10	< 20	< 10	_	< 10
4-Bromophenyl phenyl ether	_	_	_	_	< 9.1	< 20	_	< 2.0	< 10	< 2.0	_	< 2.0
4-Chloro-3-methylphenol		_	-	_	< 9.1	< 40	_	< 2.0	< 20	< 2.0	_	< 2.0
4-Chloroaniline	_	_	_	_	< 23	< 40	-	< 5.0	< 20	< 5.0	_	< 5.0
4-Chlorophenyl phenyl ether	_	_	_	_	< 9.1	< 20	-	< 2.0	< 10	< 2.0	_	< 2.0
4-Nitroaniline	_	_	-	_	< 23	< 40	-	< 5.0	< 20	< 5.0	_	< 5.0
4-Nitrophenol		_	-	_	< 45	< 100	-	< 10	< 50	< 10	_	< 10
Acenaphthene		_	18200	_	< 9.1	< 20	_	< 2.0	< 10	< 2.0	_	0.40 J
Acenaphthylene		_	-	_	< 9.1 < 9.1	< 20	-	< 2.0	< 10	< 2.0		< 2.0
Acetophenone		_	-	_	< 23	-	- -	< 5.0	-	< 5.0		< 5.0
Aniline			_	1	-	< 20	_	\ 3.0	< 10	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	_	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS AND EXCEEDANCES
BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT
WASHINGTON, D.C.

Location	DC Tier 1	Risk-based Gro	oundwater	EPA Regional	GW-605-802-7	GTW-605-802-9	GTW-605-7-1	GTW-605-7-1	GTW-605-7-2	GTW-605-7-2	GTW-607-13-1	GTW-607-13-1
Sample Date	5	Screening Leve	:l <sup>1</sup>	Maximum	07/27/2015	04/10/2015	09/22/2014	07/23/2015	09/22/2014	07/23/2015	12/13/2013	07/23/2015
Sample Type	Indoor	Outdoor	Dermal	Contaminant	GW-605-802-7-3	GTW-605-802-9-2	GTW-605-7-1-1	GTW-605-7-1-2	GTW-605-7-2-1	GTW-605-7-2-2	GTW-607-13-1-1	GTW-607-13-1-2
Sample Name	Inhalation	Inhalation	Contact	Level <sup>2</sup>	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Anthracene	-	-	810000	-	< 9.1	< 20	-	< 2.0	< 10	< 2.0	-	< 2.0
Atrazine	-	-	-	3	< 14	-	-	< 3.0	-	< 3.0	-	< 3.0
Benzaldehyde	-	-	-	-	< 23	-	-	< 5.0	-	< 5.0	-	< 5.0
Benzo(a)anthracene	2300	4.93E+06	4.42E+00	-	< 1.1	< 20	-	< 0.25	< 10	< 0.50	-	< 0.25
Benzo(a)pyrene	569	623000	0.26	0.2	< 0.45	< 20	-	< 0.10	< 10	< 0.20	-	< 0.10
Benzo(b)fluoranthene	6520	1.01E+07	2.55E+00	-	< 0.91	< 20	-	< 0.20	< 10	< 0.40	-	< 0.20
Benzo(g,h,i)perylene	-	-	628	-	< 2.3	< 20	-	< 0.50	< 10	< 1.0	-	< 0.50
Benzo(k)fluoranthene	6790	1.01E+07	3.66E+01	-	< 0.91	< 20	-	< 0.20	< 10	< 0.40	-	< 0.20
Benzoic acid	-	-	-	-	-	< 100	-	-	< 50	-	-	-
Benzyl Alcohol	-	-	-	-	-	< 40	-	-	< 20	-	-	-
Biphenyl	-	-	-	-	< 9.1	-	-	< 2.0	-	< 2.0	-	< 2.0
bis(2-Chloroethoxy)methane	-	-	-	-	< 23	< 20	-	< 5.0	< 10	< 5.0	-	< 5.0
bis(2-Chloroethyl)ether	_	-	-	_	< 0.45	< 20	-	< 0.10	< 10	< 0.20	_	< 0.10
bis(2-Ethylhexyl)phthalate	-	_	_	6	5.4	< 12	-	0.56 J	< 6.0	0.86 J	_	0.36 J
Butyl benzylphthalate	_	_	_	_	< 23	< 20	-	< 5.0	< 10	< 5.0	_	< 5.0
Caprolactam	_	_	_	-	< 45	_	-	< 10	-	< 10	_	< 10
Carbazole	_	_	_	_	< 9.1	_	-	< 2.0	-	< 2.0	-	< 2.0
Chrysene	39900	8.41E+07	4.42E+02	_	< 9.1	< 20	_	< 2.0	< 10	< 2.0	_	< 2.0
Dibenz(a,h)anthracene	-	-	-	_	< 0.45	< 20	_	< 0.10	< 10	< 0.20	_	< 0.10
Dibenzofuran	_	_	_	_	< 9.1	< 20	_	< 2.0	< 10	< 2.0	_	< 2.0
Diethyl phthalate	_	_	_	_	< 23	< 20	_	< 5.0	< 10	< 5.0	_	< 5.0
Dimethyl phthalate	_	_	_	_	< 23	< 20	_	< 5.0	< 10	< 5.0	_	< 5.0
Di-n-butylphthalate	_	_	_	_	< 23	< 20	_	< 5.0	< 10	< 5.0	_	< 5.0
Di-n-octyl phthalate	_	_	_	_	< 23	< 20	_	< 5.0	< 10	< 5.0	_	< 5.0
Fluoranthene	_	_	4620	_	< 9.1	< 20	_	< 2.0	< 10	< 2.0	_	< 2.0
Fluorene	_	_	16200	_	< 9.1	< 20	_	< 2.0	< 10	< 2.0	_	0.58 J
Hexachlorobenzene	_	_	-	1	< 0.91	< 20	_	< 0.20	< 10	< 0.40	_	< 0.20
Hexachlorobutadiene	_	_	_	_	< 9.1	< 20	_	< 2.0	< 10	< 2.0	_	< 2.0
Hexachlorocyclopentadiene	_	_	_	50	< 91	< 20	_	< 20	< 10	< 20	_	< 20
Hexachloroethane	_	_	_	-	< 0.91	< 20	_	< 0.20	< 10	< 0.40	_	< 0.20
Indeno(1,2,3-cd)pyrene		_	_		< 2.3	< 20		< 0.50	< 10	< 1.0		< 0.50
Isophorone			1 [		< 23	< 20		< 5.0	< 10	< 5.0		< 5.0
Naphthalene	764	1.69E+06	1.79E+04	_	< 9.1	< 20	_	< 2.0	< 10	< 2.0	_	< 2.0
Nitrobenzene	704	1.091+00	1.791+04	_	< 9.1	< 20	_	< 2.0	< 10	< 2.0	_	< 2.0
N-Nitrosodimethylamine	_	_	_	_		< 20	_	- 2.0	< 10	-	_	- 2.0
N-Nitrosodi-n-propylamine	_	_	_	_	< 0.45	< 20	_	< 0.10	< 10	< 0.20	_	< 0.10
N-Nitrosodiphenylamine	_			-	< 9.1	< 20	-	< 2.0	< 10	1.1 J	-	< 2.0
Pentachlorophenol	_		6300	1	< 0.45	< 50	_	< 0.10	< 25	< 0.20	-	< 0.10
Pentachiorophenoi Phenanthrene					< 0.45 < 9.1	< 20	-	< 2.0	< 10	< 0.20 < 2.0	_	< 0.10 < 2.0
Phenol	-	-	-	-	< 9.1 < 23	< 20	_	< 2.0 < 5.0	< 10 < 10	< 2.0 < 5.0	_	< 5.0 < 5.0
	-	-	2020				_				_	
Pyrene Total Potroloum Hydrogarhons (mg/l)	-	-	3930	-	< 9.1	< 20	_	< 2.0	< 10	< 2.0	-	< 2.0
Total Petroleum Hydrocarbons (mg/L)	20.0	05400				< 0.000	< 0.000		< 0.000			
Total Petroleum Hydrocarbons (C6-C10) GRO	38.8	85400	-	_	_	< 0.080	< 0.080	-	< 0.080	-	-	-
Total Petroleum Hydrocarbons (C10-C28) DRO	245	543000	-	_	-	< 0.50	< 0.50	-	24.6	-	-	-
Total Petroleum Hydrocarbons (C28-C40)	-	-	-	-	-	< 2.0	-	-	-	-	-	-

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS AND EXCEEDANCES
BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT
WASHINGTON, D.C.

Location	DC Tier 1	Risk-based Gro	undwater	EPA Regional	GW-605-802-7	GTW-605-802-9	GTW-605-7-1	GTW-605-7-1	GTW-605-7-2	GTW-605-7-2	GTW-607-13-1	GTW-607-13-1
Sample Date	•	Screening Leve	l <sup>1</sup>	Maximum	07/27/2015	04/10/2015	09/22/2014	07/23/2015	09/22/2014	07/23/2015	12/13/2013	07/23/2015
Sample Type	Indoor	Outdoor	Dermal	Contaminant	GW-605-802-7-3	GTW-605-802-9-2	GTW-605-7-1-1	GTW-605-7-1-2	GTW-605-7-2-1	GTW-605-7-2-2	GTW-607-13-1-1	GTW-607-13-1-2
Sample Name	Inhalation	Inhalation	Contact	Level <sup>2</sup>	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Total Petroleum Hydrocarbons (µg/L)					, , , , ,		, , , , , , , , , , , , , , , , , , , ,	, , , ,	,	, , , , , , ,		, , , , ,
Total Petroleum Hydrocarbons (C6-C10) GRO	38800	85400000	_	_	-	_	-	< 50	_	42 J	_	150
Total Petroleum Hydrocarbons (C9-C44) DRO	245000	543000000	-	-	-	_	-	524	-	37,200	-	700
, , ,												
Volatile Organic Compounds (µg/L)												
1,1,1,2-Tetrachloroethane	-	-	-	-	-	< 10	-	-	< 1.0	-	< 1.0	-
1,1,1-Trichloroethane	-	-	-	200	< 0.50	< 10	-	< 0.50	< 1.0	< 10	< 1.0	< 0.50
1,1,2,2-Tetrachloroethane	-	-	-	-	< 0.50	< 10	-	< 0.50	< 1.0	< 10	< 1.0	< 0.50
1,1,2-Trichloroethane	-	-	-	5	< 0.75	< 10	-	< 0.75	< 1.0	< 15	< 1.0	< 0.75
1,1-Dichloroethane	-	-	-	-	< 0.75	< 10	-	< 0.75	< 1.0	< 15	< 1.0	< 0.75
1,1-Dichloroethene	-	-	-	7	< 0.50	< 10	-	< 0.50	< 1.0	< 10	< 1.0	< 0.50
1,1-Dichloropropene	-	-	-	-	-	< 10	-	-	< 1.0	-	< 1.0	-
1,2,3-Trichlorobenzene	-	-	-	-	< 2.5	< 10	-	< 2.5	< 1.0	< 50	< 1.0	< 2.5
1,2,3-Trichloropropane	-	-	-	-	-	< 10	-	-	< 1.0	-	< 1.0	-
1,2,4-Trichlorobenzene	-	-	-	70	< 2.5	< 10	-	< 2.5	< 1.0	< 50	< 1.0	< 2.5
1,2-Dibromo-3-chloropropane (DBCP)	-	-	-	0.2	< 2.5	< 20	-	< 2.5	< 2.0	< 50	< 5.0	< 2.5
1,2-Dibromoethane (Ethylene Dibromide)	39.5	88100	358	0.05	< 2.0	< 10	-	< 2.0	< 1.0	< 40	< 1.0	< 2.0
1,2-Dichlorobenzene	-	-	-	600	< 2.5	< 10	-	< 2.5	< 1.0	< 50	< 1.0	< 2.5
1,2-Dichloroethane	305	672000	8970	5	< 0.50	< 10	-	< 0.50	< 1.0	< 10	< 1.0	0.29 J
1,2-Dichloroethene (total)	-	-	-	-	< 0.50	-	-	< 0.50	-	< 10	-	5.5
1,2-Dichloropropane	-	-	-	5	< 1.0	< 10	-	< 1.0	< 1.0	< 20	< 1.0	< 1.0
1,3-Dichlorobenzene	-	-	-	-	< 2.5	< 10	-	< 2.5	< 1.0	< 50	< 1.0	< 2.5
1,3-Dichloropropane	-	-	-	-	-	< 10	-	-	< 1.0	-	< 1.0	-
1,3-Dichloropropene	-	-	-	-	< 0.50	-	-	< 0.50	-	< 10	-	< 0.50
1,4-Dichlorobenzene	-	-	-	75	< 2.5	< 10	-	< 2.5	< 1.0	< 50	< 1.0	< 2.5
1,4-Dioxane	-	-	-	-	< 250	_	-	220 J	-	< 5,000	-	150 J
2,2-Dichloropropane	-	-	-	-	-	< 10	-	-	< 1.0	-	< 1.0	-
2-Butanone (Methyl Ethyl Ketone)	-	-	-	-	< 5.0	< 50	-	< 5.0	< 5.0	< 100	< 5.0	< 5.0
2-Chlorotoluene	-	-	-	-	-	< 10	-	-	< 1.0	-	< 1.0	-
2-Hexanone	-	-	-	-	< 5.0	< 50	-	< 5.0	< 5.0	< 100	< 5.0	< 5.0
4-Chlorotoluene	-	-	-	-	-	< 10	-	-	< 1.0	-	< 1.0	-
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	-	-	-	-	< 5.0	< 50	-	< 5.0	< 5.0	< 100	< 5.0	< 5.0
Acetone	-	-	_	-	< 5.0	< 250	-	3.7 J	< 25	32 J	115	7.0
Benzene	270	591000	4710	5	< 0.50	< 10	< 1.0	< 0.50	< 1.0	< 10	< 1.0	2.1
Bromobenzene	_	-	_	_	-	< 10	-	_	< 1.0	_	< 1.0	-
Bromodichloromethane	-	-	_	80	< 0.50	< 10	-	< 0.50	< 1.0	< 10	< 1.0	< 0.50
Bromoform	-	-	_	80	< 2.0	< 10	-	< 2.0	< 1.0	< 40	< 1.0	< 2.0
Bromomethane (Methyl Bromide)	_	_	_	-	< 1.0	< 20	-	< 1.0	< 2.0	< 20	< 2.0	< 1.0
Carbon disulfide	_	_	_	_	< 5.0	-	-	0.76 J	-	< 100	-	0.52 J
Carbon tetrachloride	-	-	-	5	< 0.50	< 10	-	< 0.50	< 1.0	< 10	< 1.0	< 0.50
Chlorobenzene	_	-	-	100	< 0.50	< 10	-	< 0.50	< 1.0	< 10	< 1.0	< 0.50
Chlorobromomethane	_	-	-	-	< 2.5	< 10	_	< 2.5	< 1.0	< 50	< 1.0	< 2.5
Chloroethane	_	_	_	-	< 1.0	< 10	-	< 1.0	< 1.0	< 20	< 1.0	< 1.0
Chloroform (Trichloromethane)	_	_	_	80	< 0.75	< 10	-	< 0.75	< 1.0	< 15	< 1.0	< 0.75
Chloromethane (Methyl Chloride)	_	_	_	-	< 2.5	< 10	-	0.92 J	< 1.0	< 50	< 1.0	1.8 J
cis-1,2-Dichloroethene	_	-	-	70	< 0.50	< 10	-	< 0.50	1.8	< 10	< 1.0	5.5
cis-1,3-Dichloropropene	_	_	_	-	< 0.50	< 10	-	< 0.50	< 1.0	< 10	< 1.0	< 0.50

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS AND EXCEEDANCES BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT WASHINGTON, D.C.

Location	DC Tier 1	Risk-based Gro	oundwater	EPA Regional	GW-605-802-7	GTW-605-802-9	GTW-605-7-1	GTW-605-7-1	GTW-605-7-2	GTW-605-7-2	GTW-607-13-1	GTW-607-13-1
Sample Date	9	creening Leve	l <sup>1</sup>	Maximum	07/27/2015	04/10/2015	09/22/2014	07/23/2015	09/22/2014	07/23/2015	12/13/2013	07/23/2015
Sample Type	Indoor	Outdoor	Dermal	Contaminant	GW-605-802-7-3	GTW-605-802-9-2	GTW-605-7-1-1	GTW-605-7-1-2	GTW-605-7-2-1	GTW-605-7-2-2	GTW-607-13-1-1	GTW-607-13-1-2
Sample Name	Inhalation	Inhalation	Contact	Level <sup>2</sup>	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Cyclohexane	-	-	-	-	< 10	-	-	< 10	-	< 200	-	1.6 J
Cymene (p-Isopropyltoluene)	-	-	-	-	-	< 10	-	-	< 1.0	-	< 1.0	-
Dibromochloromethane	-	-	-	80	< 0.50	< 10	-	< 0.50	< 1.0	< 10	< 1.0	< 0.50
Dibromomethane	-	-	-	-	-	< 10	-	-	< 1.0	-	< 1.0	-
Dichlorodifluoromethane (CFC-12)	-	-	-	-	< 5.0	< 10	-	< 5.0	< 1.0	< 100	< 1.0	< 5.0
Diisopropyl ether	-	-	-	-	-	< 10	-	-	< 1.0	-	< 1.0	-
Ethylbenzene	826	1.81E+06	6.20E+03	700	< 0.50	< 10	< 1.0	< 0.50	< 1.0	< 10	< 1.0	< 0.50
Hexachlorobutadiene	-	-	-	-	-	< 10	-	-	< 1.0	-	< 1.0	-
Isopropylbenzene	-	-	-	-	< 0.50	-	-	< 0.50	-	< 10	-	0.81
m,p-Xylenes	-	-	-	-	< 1.0	< 20	< 2.0	< 1.0	< 2.0	< 20	< 2.0	0.71 J
Methyl acetate	-	-	-	-	< 2.0	-	-	< 2.0	-	< 40	-	< 2.0
Methyl cyclohexane	-	-	-	-	< 10	-	-	< 10	-	< 200	-	0.77 J
Methyl Tert Butyl Ether	64200	1.42E+08	1.16E+05	-	< 1.0	< 10	-	< 1.0	< 1.0	< 20	54	3.6
Methylene chloride	-	-	-	5	< 2.5	< 20	-	< 2.5	< 2.0	< 50	< 2.0	< 2.5
Naphthalene	764	1.69E+06	1.79E+04	-	-	< 10	-	-	< 1.0	-	< 1.0	-
o-Xylene	-	-	-	-	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 20	< 1.0	< 1.0
Styrene	-	-	-	100	< 1.0	< 10	-	< 1.0	< 1.0	< 20	< 1.0	< 1.0
Tetrachloroethene	-	-	-	5	< 0.50	< 10	-	< 0.50	< 1.0	< 10	< 1.0	< 0.50
Toluene	900000	1.97E+09	1.32E+05	1000	< 0.75	< 10	< 1.0	< 0.75	< 1.0	< 15	< 1.0	0.27 J
trans-1,2-Dichloroethene	-	-	-	100	< 0.75	< 10	-	< 0.75	< 1.0	< 15	< 1.0	< 0.75
trans-1,3-Dichloropropene	-	-	-	-	< 0.50	< 10	-	< 0.50	< 1.0	< 10	< 1.0	< 0.50
Trichloroethene	-	-	-	5	< 0.50	< 10	-	< 0.50	< 1.0	< 10	< 1.0	0.35 J
Trichlorofluoromethane (CFC-11)	-	-	-	-	< 2.5	< 10	-	< 2.5	< 1.0	< 50	< 1.0	< 2.5
Trifluorotrichloroethane (Freon 113)	-	-	-	-	< 2.5	-	-	< 2.5	-	< 50	-	< 2.5
Vinyl acetate	-	-	-	-	-	< 20	-	-	< 2.0	-	< 2.0	-
Vinyl chloride	-	-	-	2	< 1.0	< 10	-	< 1.0	1.8	< 20	< 1.0	< 1.0
Xylene (total)	20500	4.49E+07	1.81E+05	10000	< 1.0	< 20	< 2.0	< 1.0	< 2.0	< 20	< 2.0	0.71 J

# NOTES

Bold where detected; highlighted where exceeds

ft bgs = feet below ground surface; well screen interval

mg/L = milligrams per liter

μg/L = micrograms per liter

- -- = screening level not available/sample not analyzed
- < = not detected at the indicated reporting limit
- J = estimated value
- 1. District of Columbia Risk-Based Corrective Action Technical Guidance, Table 5-8 Risk-based Screening Levels for resident child (building occupant) indoor/outdoor inhalation (June 2011)
- 2. United States Environmental Protection Agency (EPA) Regional Screening Level (RSL) Summary Table (January 2015)

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS AND EXCEEDANCES
BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT
WASHINGTON, D.C.

Location	DC Tier 1	Risk-based Gro	undwater	EPA Regional	GTW-607-13-2	GTW-607-13-2	GTW-661-804-3	GTW-661-24-1	GTW-661-804-1	GTW-661-804-2	GTW-661-804-3
Sample Date		creening Leve	$I^1$	Maximum	12/13/2013	12/13/2013	07/22/2015	07/02/2014	07/02/2014	07/02/2014	07/01/2014
Sample Type	Indoor	Outdoor	Dermal	Contaminant	GTW-607-13-2-1	GTW-607-13-2A-1				GTW-661-804-2-1,2,3,4	GTW-661-804-3-1,2,3,4
Sample Name	Inhalation	Inhalation	Contact	Level <sup>2</sup>	Primary	Primary	Primary	Primary	Primary	Primary	Primary
					·	,	,	,		,	·
Inorganic Compounds (µg/L)	μg/L	μg/L	μg/L	μg/L							
Aluminum, Dissolved	-	-	-	-	-	-	8.55 J	-	-	-	-
Aluminum, Total	-	-	-	-	-	-	-	-	-	-	-
Antimony, Dissolved	-	-	-	6	-	-	1.606 J	-	-	-	-
Antimony, Total	-	-	-	6	-	-	-	-	-	-	-
Arsenic, Dissolved	-	-	-	10	-	-	3.947	-	-	-	-
Arsenic, Total	-	-	-	10	-	-	-	-	-	-	-
Barium, Dissolved	-	-	-	2000	-	-	207.6	-	-	-	-
Barium, Total	-	-	-	2000	-	-	-	-	-	-	-
Beryllium, Dissolved	-	-	-	4	-	-	< 0.50	-	-	-	-
Beryllium, Total	-	-	-	4	-	-	-	-	-	-	-
Cadmium, Dissolved	-	-	-	5	-	-	< 0.20	-	-	-	-
Cadmium, Total	-	-	-	5	-	-	-	-	-	-	-
Calcium, Dissolved	-	-	-	-	-	-	26,900	-	-	-	-
Calcium, Total	_	-	-	-	-	-	-	-	-	-	-
Chromium, Dissolved	_	-	-	100	-	-	10.08	-	-	-	-
Chromium, Total	_	_	_	100	-	_	-	_	_	-	-
Cobalt, Dissolved	_	_	_	-	-	_	12.11	_	_	_	-
Cobalt, Total	_	_	_	-	-	_		_	_	-	-
Copper, Dissolved	_	_	_	1300	_	_	0.6323 J	_	_	_	-
Copper, Total	_	_	_	1300	_	_	-	_	_	_	-
Iron, Dissolved	_	_	_	-	_	_	77,200	_	_	_	-
Iron, Total		_	_	_	_	_	-	_	_	_	_
Lead, Dissolved		_	_	15	_	_	4.073	_	_	_	_
Lead, Total		_	_	15	_	_		_	_	_	_
Magnesium, Dissolved		_	_	_	_	_	34,900	_	_	_	_
Magnesium, Dissolved  Magnesium, Total		_		_		_	-			_	_
Manganese, Dissolved	-	_	_	-	-	_	5,221	_	_	_	-
Manganese, Total	-		_	-	-	_		_	_	_	-
Mercury, Dissolved	-	-	-	-	-	-		-	-	-	<del>-</del>
	-	-	-	2	-	-	< 0.20	-	-	-	-
Mercury, Total	-	-	-	2	-	-		-	-	-	-
Nickel, Dissolved	-	-	-	-	-	-	9.628	-	-	-	-
Nickel, Total	-	-	-	-	-	-	2.150	-	-	-	-
Potassium, Dissolved	-	_	-	· -	-	-	2,160	-	-	-	-
Potassium, Total	-	-	-	-	-	-	-	-	-	-	-
Selenium, Dissolved	-	-	-	50	-	-	< 5.0	-	-	-	-
Selenium, Total	-	-	-	50	-	-	-	-	-	-	-
Silver, Dissolved	-	-	-	-	-	-	0.101 J	-	-	-	-
Silver, Total	-	-	-	-	-	-	-	-	-	-	-
Sodium, Dissolved	-	-	-	-	-	-	189,000	-	-	-	-
Sodium, Total	-	-	-	-	-	-	-	-	-	-	-
Thallium, Dissolved	-	-	-	2	-	-	< 0.50	-	-	-	-
Thallium, Total	-	-	-	2	-	-	-	-	-	-	-
Vanadium, Dissolved	-	-	-	-	-	-	< 5.0	-	-	-	-
Vanadium, Total	-	-	-	-	-	-	-	-	-	-	-
Zinc, Dissolved	-	-	-	-	-	-	3.927 J	-	-	-	-
Zinc, Total	-	-	-	-	-	-	-	-	-	-	-

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS AND EXCEEDANCES
BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT
WASHINGTON, D.C.

Location	DC Tier 1	Risk-based Gro	undwater	EPA Regional	GTW-607-13-2	GTW-607-13-2	GTW-661-804-3	GTW-661-24-1	GTW-661-804-1	GTW-661-804-2	GTW-661-804-3
Sample Date	s	creening Level	1	Maximum	12/13/2013	12/13/2013	07/22/2015	07/02/2014	07/02/2014	07/02/2014	07/01/2014
Sample Type	Indoor	Outdoor	Dermal	Contaminant	GTW-607-13-2-1	GTW-607-13-2A-1				GTW-661-804-2-1,2,3,4	GTW-661-804-3-1,2,3,4
Sample Name	Inhalation	Inhalation	Contact	Level <sup>2</sup>	Primary	Primary	Primary	Primary	Primary	Primary	Primary
						,	,	,	,	,	,
PCBs (μg/L)	μg/L	μg/L	μg/L	μg/L							
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	< 0.50	-	-	-
Aroclor-1221 (PCB-1221)	_	_	_	-	-	-	_	< 0.50	_	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	< 0.50	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	< 0.50	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	< 0.50	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	< 0.50	-	-	=
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	< 0.50	-	-	-
Semi-Volatile Organic Compounds (µg/L)	μg/L	μg/L	μg/L	μg/L							
1,2,4,5-Tetrachlorobenzene	-	-	-	-	-	-	< 10	-	-	-	-
1,2,4-Trichlorobenzene	-	-	-	70	-	-	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	600	-	-	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	75	-	-	-	-	-	-	-
1-Methylnaphthalene	-	-	-	-	-	-	-	-	-	-	-
2,2'-oxybis(1-Chloropropane)	-	-	-	-	-	-	< 2.0	-	-	-	-
2,3,4,6-Tetrachlorophenol	-	-	-	-	-	-	< 5.0	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-	-	< 5.0	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-	-	< 5.0	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-	-	< 5.0	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-	-	< 5.0	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-	-	< 20	-	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-	-	< 5.0	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-	-	< 5.0	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-	-	< 2.0	-	-	-	-
2-Chlorophenol	-	-	-	-	-	-	< 2.0	-	-	-	-
2-Methylnaphthalene	-	-	-	-	-	-	4.8	-	-	-	-
2-Methylphenol	-	-	-	-	-	-	< 5.0	-	-	-	-
2-Nitroaniline	-	-	-	-	-	-	< 5.0	-	-	-	-
2-Nitrophenol	-	-	-	-	-	-	< 10	-	-	-	-
3&4-Methylphenol	-	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	-	-	-	-	-	-	< 5.0	-	-	-	-
3-Methylphenol	-	-	-	-	-	-	< 5.0	-	-	-	-
3-Nitroaniline	-	-	-	-	-	-	< 5.0	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-	-	< 10	-	-	-	-
4-Bromophenyl phenyl ether	-	-	-	-	-	-	< 2.0	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-	-	< 2.0	-	-	-	-
4-Chloroaniline	-	-	-	-	-	-	< 5.0	-	-	-	-
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	< 2.0	-	-	-	-
4-Nitroaniline	-	-	-	-	-	-	< 5.0	-	-	-	-
4-Nitrophenol	-	-	-	-	-	-	< 10	-	-	-	-
Acenaphthene	-	-	18200	-	-	-	1.8 J	-	-	-	-
Acenaphthylene	-	-	-	-	-	-	< 2.0	-	-	-	-
Acetophenone	-	-	-	-	-	-	< 5.0	-	-	-	-
Aniline	-	-	-	-	-	-	-	-	-	-	-

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS AND EXCEEDANCES
BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT
WASHINGTON, D.C.

Location	DC Tier 1	Risk-based Gro	oundwater	EPA Regional	GTW-607-13-2	GTW-607-13-2	GTW-661-804-3	GTW-661-24-1	GTW-661-804-1	GTW-661-804-2	GTW-661-804-3
Sample Date		Screening Leve		Maximum	12/13/2013	12/13/2013	07/22/2015	07/02/2014	07/02/2014	07/02/2014	07/01/2014
Sample Type	Indoor	Outdoor	Dermal	Contaminant	GTW-607-13-2-1	GTW-607-13-2A-1				GTW-661-804-2-1,2,3,4	GTW-661-804-3-1,2,3,4
Sample Name	Inhalation	Inhalation	Contact	Level <sup>2</sup>	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Anthracene		_	810000	_	- Trilliary	-	< 2.0	-	-	-	-
Atrazine	_	_	-	3	_	_	< 3.0	_	_	_	_
Benzaldehyde	_	_	_	_	_	_	< 5.0	_	_	_	_
Benzo(a)anthracene	2300	4.93E+06	4.42E+00	_	_	_	< 0.25	_	_	_	_
Benzo(a)pyrene	569	623000	0.26	0.2	_		< 0.10				_
Benzo(b)fluoranthene	6520	1.01E+07	2.55E+00	-	_		< 0.20				_
Benzo(g,h,i)perylene	-	1.011.07	628	_	_		< 0.50				_
Benzo(k)fluoranthene	6790	1.01E+07	3.66E+01		_		< 0.20				_
Benzoic acid	0790	1.011+07	3.001+01	-	-	_	₹ 0.20	_	_	_	-
Benzyl Alcohol	_	_	_	-	-	_	-	_	_	_	-
Biphenyl	_	· -	_	-	-	-	- 2.0	_	· -	-	-
bis(2-Chloroethoxy)methane	-	-	-	-	-	-	< 2.0	-	-	-	<del>-</del>
• • • • • • • • • • • • • • • • • • • •	-	-	-	-	-	-	< 5.0	-	-	-	<del>-</del>
bis(2-Chloroethyl)ether	-	-	-	-	-	-	< 0.10	-	-	-	-
bis(2-Ethylhexyl)phthalate	-	-	-	б	-	-	< 1.0	-	-	-	-
Butyl benzylphthalate	-	-	-	-	-	-	< 5.0	-	-	-	-
Caprolactam	-	-	-	-	-	-	< 10	-	-	-	-
Carbazole	-	-	-	-	-	-	< 2.0	-	-	-	-
Chrysene	39900	8.41E+07	4.42E+02	-	-	-	< 2.0	-	-	-	-
Dibenz(a,h)anthracene	-	-	-	-	-	-	< 0.10	-	-	-	-
Dibenzofuran	-	-	-	-	-	-	1.5 J	-	-	-	-
Diethyl phthalate	-	-	-	-	-	-	< 5.0	-	-	=	=
Dimethyl phthalate	-	-	-	-	-	-	< 5.0	-	-	-	-
Di-n-butylphthalate	-	-	-	-	-	-	< 5.0	-	-	=	-
Di-n-octyl phthalate	-	-	-	-	-	-	< 5.0	-	-	-	-
Fluoranthene	-	-	4620	-	-	-	< 2.0	-	-	-	-
Fluorene	-	-	16200	-	-	-	3	-	-	-	-
Hexachlorobenzene	-	-	-	1	-	-	< 0.20	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-	-	< 2.0	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	50	-	-	< 20	-	-	-	-
Hexachloroethane	-	-	-	-	-	-	< 0.20	-	-	-	-
Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	< 0.50	-	-	-	-
Isophorone	-	-	-	-	-	-	< 5.0	-	-	-	-
Naphthalene	764	1.69E+06	1.79E+04	-	-	-	< 2.0	-	-	-	-
Nitrobenzene	-	-	-	-	-	-	< 2.0	-	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-	-	< 0.10	-	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-	-	< 2.0	-	-	-	-
Pentachlorophenol	-	-	6300	1	-	-	< 0.10	-	-	-	-
Phenanthrene	-	-	-	-	-	-	1.9 J	-	-	-	-
Phenol	-	-	-	-	-	-	< 5.0	-	-	-	-
Pyrene	-	-	3930	-	-	-	< 2.0	-	-	-	-
Total Petroleum Hydrocarbons (mg/L)											
Total Petroleum Hydrocarbons (C6-C10) GRO	38.8	85400	-	-	-	< 0.080	-	< 0.080	0.66	< 0.080	3.0
Total Petroleum Hydrocarbons (C10-C28) DRO	245	543000	-	-	-	< 0.50	-	< 0.50	< 0.50	< 0.50	3.0
Total Petroleum Hydrocarbons (C28-C40)	-	-	-	-	-	-	-	-	-	-	-

TABLE 3
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BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT
WASHINGTON, D.C.

Location	DC Tier 1	Risk-based Gro	undwater	EPA Regional	GTW-607-13-2	GTW-607-13-2	GTW-661-804-3	GTW-661-24-1	GTW-661-804-1	GTW-661-804-2	GTW-661-804-3
Sample Date		creening Level	1	Maximum	12/13/2013	12/13/2013	07/22/2015	07/02/2014	07/02/2014	07/02/2014	07/01/2014
Sample Type	Indoor	Outdoor	Dermal	Contaminant	GTW-607-13-2-1	GTW-607-13-2A-1				GTW-661-804-2-1,2,3,4	GTW-661-804-3-1,2,3,4
Sample Name	Inhalation	Inhalation	Contact	Level <sup>2</sup>	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Total Petroleum Hydrocarbons (µg/L)					Timary	Timiary	Timary	Timary	Triitiary	Timiary	Triniary
Total Petroleum Hydrocarbons (C6-C10) GRO	38800	85400000	_	_	-	_	1,400	_	-	_	-
Total Petroleum Hydrocarbons (C9-C44) DRO	245000	543000000	_	_	-	_	1,710	_	-	_	-
	- 10000										
Volatile Organic Compounds (µg/L)											
1,1,1,2-Tetrachloroethane	- '	-	-	-	< 1.0	< 1.0	-	< 1.0	< 1.0	< 1.0	-
1,1,1-Trichloroethane	- '	-	-	200	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	-
1,1,2,2-Tetrachloroethane	- '	-	-	-	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	-
1,1,2-Trichloroethane	- '	-	-	5	< 1.0	< 1.0	< 0.75	< 1.0	< 1.0	< 1.0	-
1,1-Dichloroethane	- '	-	-	-	< 1.0	< 1.0	< 0.75	< 1.0	< 1.0	< 1.0	-
1,1-Dichloroethene	- '	-	-	7	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	-
1,1-Dichloropropene	- '	-	-	-	< 1.0	< 1.0	-	< 1.0	< 1.0	< 1.0	-
1,2,3-Trichlorobenzene	- '	-	-	-	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	-
1,2,3-Trichloropropane	- '	-	-	-	< 1.0	< 1.0	-	< 1.0	< 1.0	< 1.0	-
1,2,4-Trichlorobenzene	- '	-	-	70	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	-
1,2-Dibromo-3-chloropropane (DBCP)	-	-	-	0.2	< 5.0	< 5.0	< 2.5	< 2.0	< 2.0	< 2.0	-
1,2-Dibromoethane (Ethylene Dibromide)	39.5	88100	358	0.05	< 1.0	< 1.0	< 2.0	< 1.0/<0.020	< 1.0/<0.020	< 1.0/<0.020	< 0.020
1,2-Dichlorobenzene	-	-	-	600	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	-
1,2-Dichloroethane	305	672000	8970	5	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	-
1,2-Dichloroethene (total)	-	-	-	-	-	-	< 0.50	-	-	-	-
1,2-Dichloropropane	-	-	-	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	-
1,3-Dichlorobenzene	-	-	-	-	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	-
1,3-Dichloropropane	- '	-	-	-	< 1.0	< 1.0	-	< 1.0	< 1.0	< 1.0	-
1,3-Dichloropropene	- '	-	-	-	-	-	< 0.50	-	-	-	-
1,4-Dichlorobenzene	- '	-	-	75	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	-
1,4-Dioxane	- '	-	-	-	-	-	< 250	-	-	-	-
2,2-Dichloropropane	- '	-	-	-	< 1.0	< 1.0	-	< 1.0	< 1.0	< 1.0	-
2-Butanone (Methyl Ethyl Ketone)	- '	-	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	-
2-Chlorotoluene	- '	-	-	-	< 1.0	< 1.0	-	< 1.0	< 1.0	< 1.0	-
2-Hexanone	- '	-	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	-
4-Chlorotoluene	- '	-	-	-	< 1.0	< 1.0	-	< 1.0	< 1.0	< 1.0	-
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	- '	-	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	-
Acetone	- '	-	-	-	625	79	3.2 J	< 25	25.8	< 25	-
Benzene	270	591000	4710	5	< 1.0	< 1.0	6.0	< 1.0	34.4	< 1.0	8.2
Bromobenzene	- '	-	-	-	< 1.0	< 1.0	-	< 1.0	< 1.0	< 1.0	-
Bromodichloromethane	- '	-	-	80	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	-
Bromoform	- '	-	-	80	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	-
Bromomethane (Methyl Bromide)	- '	-	-	-	< 2.0	< 2.0	< 1.0	< 2.0	< 2.0	< 2.0	-
Carbon disulfide	- '	-	-	-	-	-	< 5.0	-	-	-	-
Carbon tetrachloride	- '	-	-	5	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	-
Chlorobenzene	- '	-	-	100	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	-
Chlorobromomethane	- '	-	-	-	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	-
Chloroethane	- '	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	-
Chloroform (Trichloromethane)	- '	-	-	80	< 1.0	< 1.0	< 0.75	< 1.0	< 1.0	< 1.0	-
Chloromethane (Methyl Chloride)	-	-	-	-	< 1.0	< 1.0	< 2.5	1.2	4.4	4.1	-
cis-1,2-Dichloroethene	-	-	-	70	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	-
cis-1,3-Dichloropropene	-	-	-	-	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	-

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS AND EXCEEDANCES BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT WASHINGTON, D.C.

Location	DC Tier 1 Risk-based Groundwater			EPA Regional	GTW-607-13-2	GTW-607-13-2	GTW-661-804-3	GTW-661-24-1	GTW-661-804-1	GTW-661-804-2	GTW-661-804-3
Sample Date	Screening Level <sup>1</sup>			Maximum	12/13/2013	12/13/2013	07/22/2015	07/02/2014	07/02/2014	07/02/2014	07/01/2014
Sample Type	Indoor	Outdoor	Dermal	Contaminant	GTW-607-13-2-1	GTW-607-13-2A-1	GTW-661-804-3-5	TW-661-24-1-1,2,3,4,	GTW-661-804-1-1,2,3,	GTW-661-804-2-1,2,3,4	GTW-661-804-3-1,2,3,4
Sample Name	Inhalation	Inhalation	Contact	Level <sup>2</sup>	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Cyclohexane	-	-	-	-	-	-	52	-	-	-	-
Cymene (p-Isopropyltoluene)	-	-	-	-	< 1.0	< 1.0	-	< 1.0	< 1.0	< 1.0	-
Dibromochloromethane	-	-	-	80	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	-
Dibromomethane	-	-	-	-	< 1.0	< 1.0	-	< 1.0	< 1.0	< 1.0	-
Dichlorodifluoromethane (CFC-12)	-	-	-	-	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	-
Diisopropyl ether	-	-	-	-	< 1.0	< 1.0	-	< 1.0	< 1.0	< 1.0	-
Ethylbenzene	826	1.81E+06	6.20E+03	700	< 1.0	< 1.0	6.4	< 1.0	< 1.0	< 1.0	12.2
Hexachlorobutadiene	-	-	-	-	< 1.0	< 1.0	-	< 1.0	< 1.0	< 1.0	-
Isopropylbenzene	-	-	-	-	-	-	51	-	-	-	-
m,p-Xylenes	-	-	-	-	< 2.0	< 2.0	1.6	< 2.0	2.5	< 2.0	3.6
Methyl acetate	-	-	-	-	-	-	< 2.0	-	-	-	-
Methyl cyclohexane	-	-	-	-	-	-	27	-	-	-	-
Methyl Tert Butyl Ether	64200	1.42E+08	1.16E+05	-	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	-
Methylene chloride	-	-	-	5	< 2.0	< 2.0	< 2.5	< 2.0	< 2.0	< 2.0	-
Naphthalene	764	1.69E+06	1.79E+04	-	< 1.0	< 1.0	-	< 1.0	1.4	< 1.0	67.4
o-Xylene	-	-	-	-	< 1.0	< 1.0	0.55 J	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	-	-	-	100	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	-
Tetrachloroethene	-	-	-	5	< 1.0	< 1.0	< 0.50	2.5	< 1.0	2.3	-
Toluene	900000	1.97E+09	1.32E+05	1000	< 1.0	< 1.0	1	< 1.0	2	< 1.0	1.3
trans-1,2-Dichloroethene	-	-	-	100	< 1.0	< 1.0	< 0.75	< 1.0	< 1.0	< 1.0	-
trans-1,3-Dichloropropene	-	-	-	-	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	-
Trichloroethene	-	-	-	5	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	-
Trichlorofluoromethane (CFC-11)	-	-	-	-	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	-
Trifluorotrichloroethane (Freon 113)	-	-	-	-	-	-	< 2.5	-	-	-	-
Vinyl acetate	-	-	-	-	< 2.0	< 2.0	-	< 2.0	< 2.0	< 2.0	-
Vinyl chloride	-	-	-	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	-
Xylene (total)	20500	4.49E+07	1.81E+05	10000	< 2.0	< 2.0	2.2 J	< 2.0	2.5	< 2.0	3.6

# NOTES

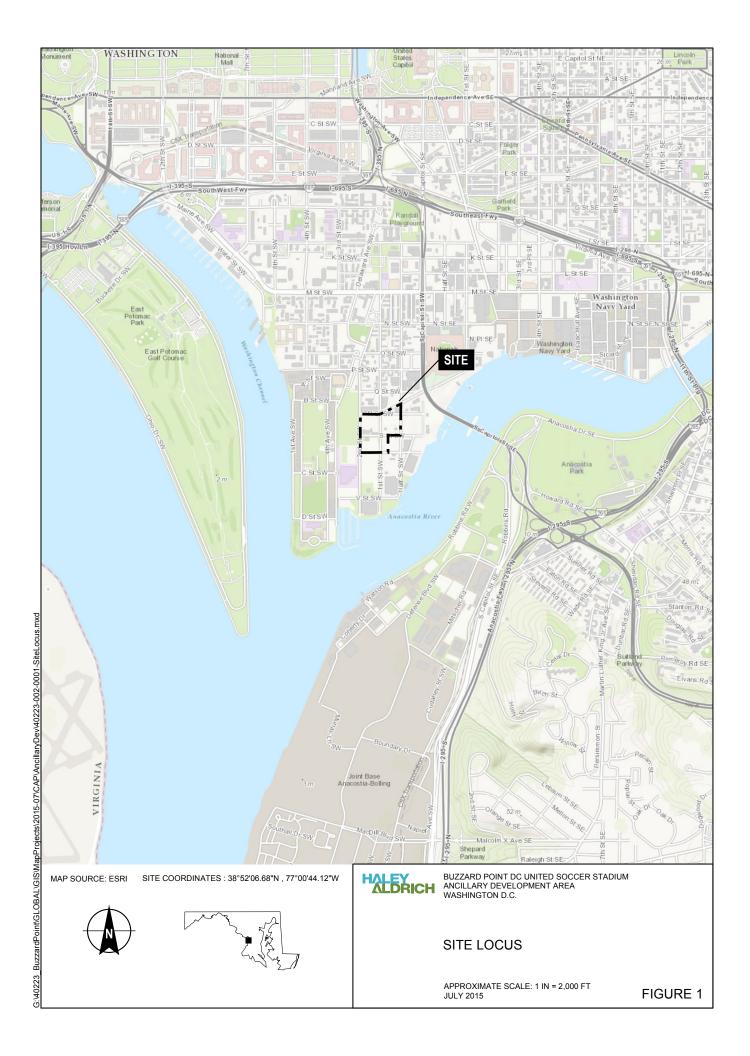
Bold where detected; highlighted where exceeds

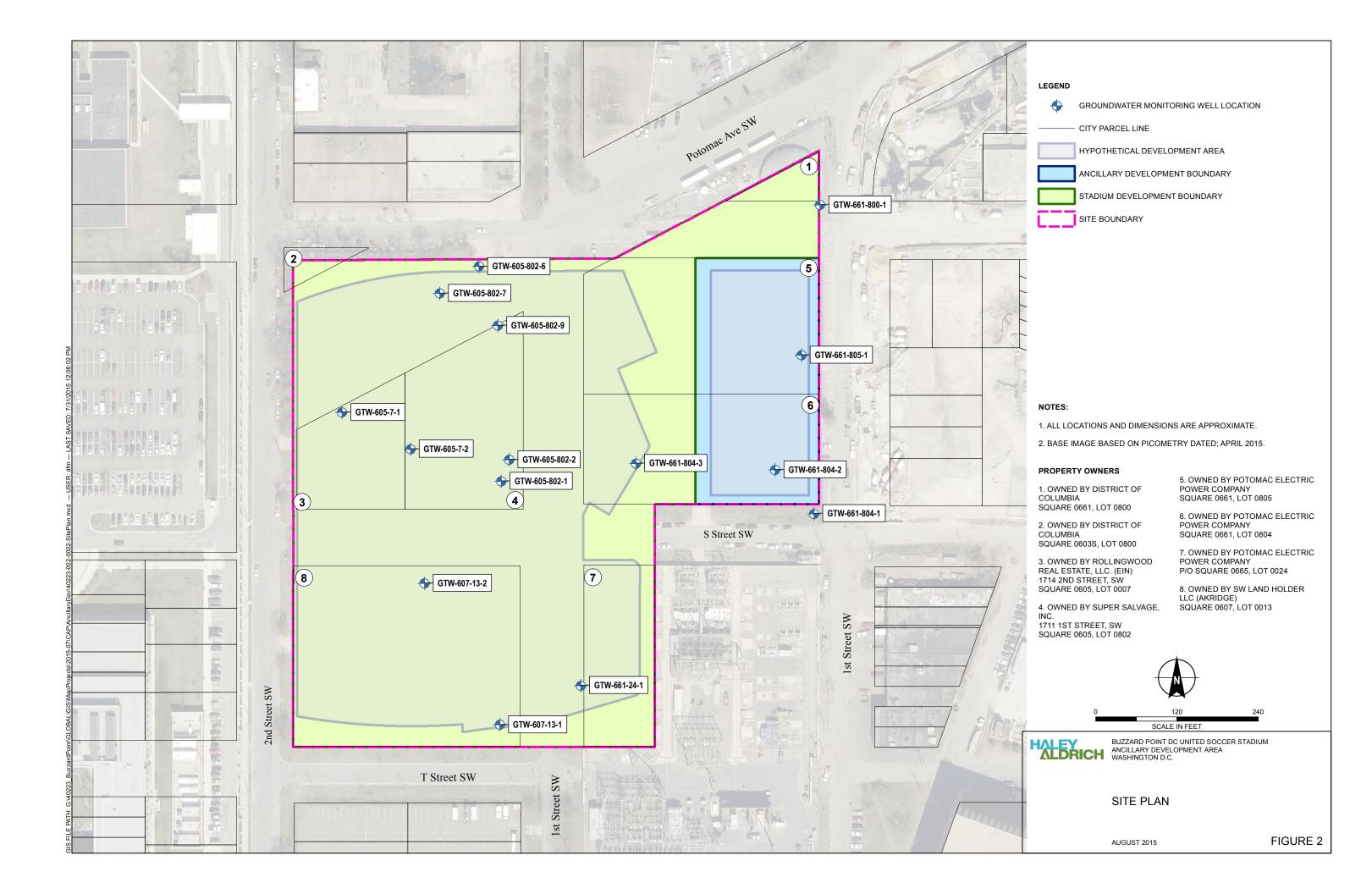
ft bgs = feet below ground surface; well screen interval

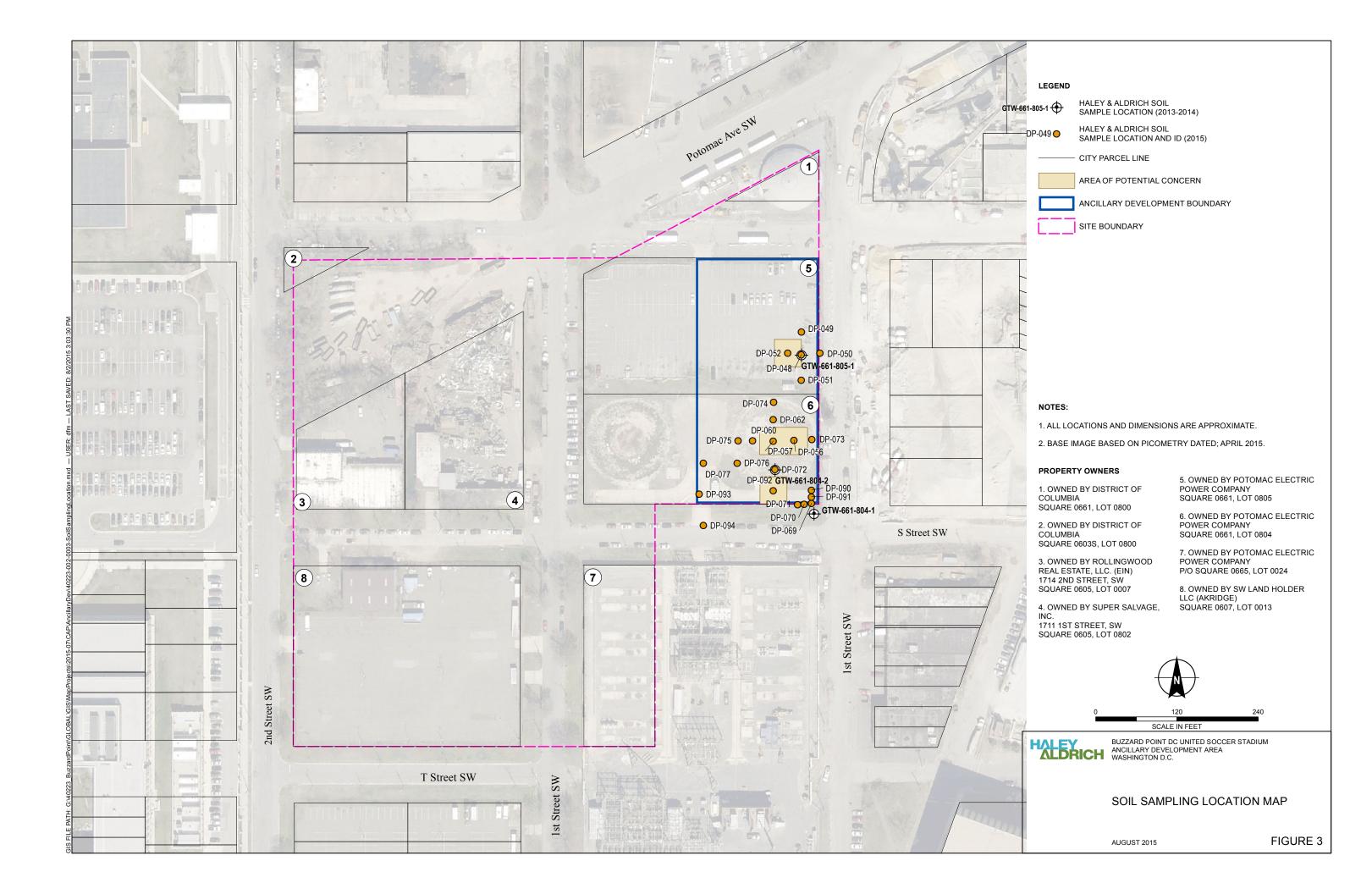
mg/L = milligrams per liter

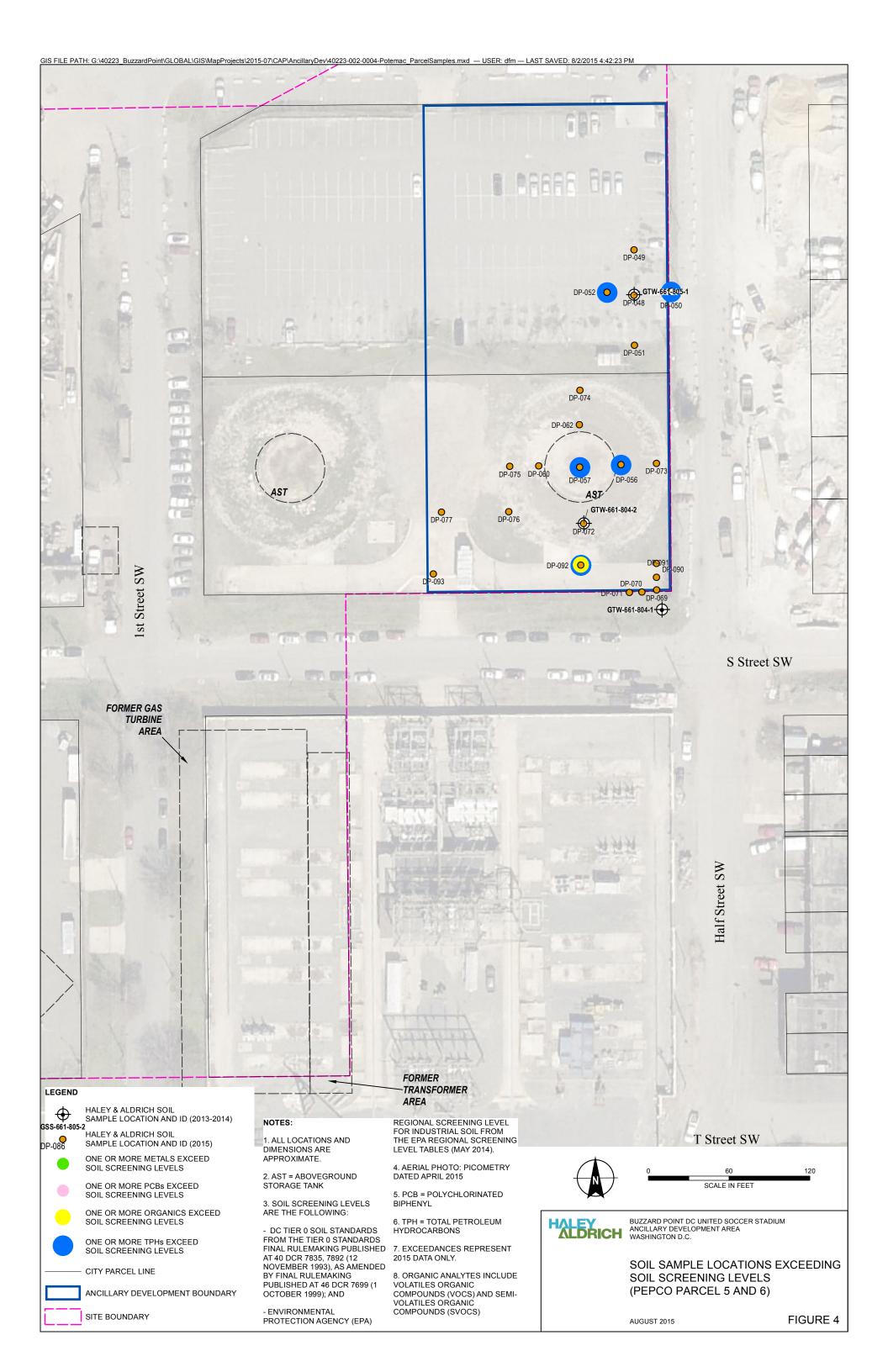
μg/L = micrograms per liter

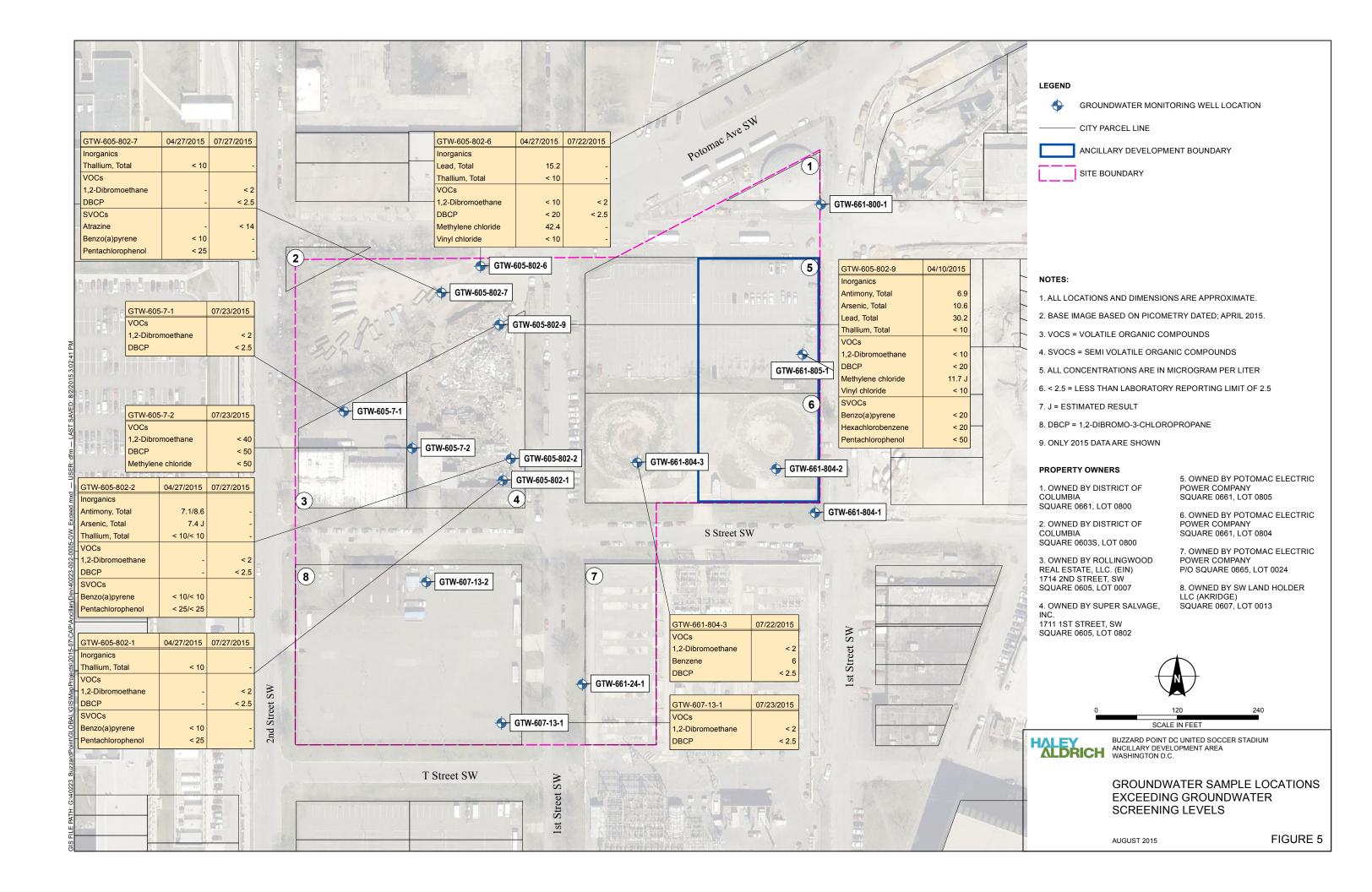
- -- = screening level not available/sample not analyzed
- < = not detected at the indicated reporting limit
- J = estimated value
- 1. District of Columbia Risk-Based Corrective Action Technical Guidance, Table 5-8 Risk-based Screening Levels for resident child (building occupant) indoor/outdoor inhalation (June 2011)
- 2. United States Environmental Protection Agency (EPA) Regional Screening Level (RSL) Summary Table (January 2015)











**Environmental Field Screening Procedures** 

#### **ENVIRONMENTAL FIELD SCREENING PROCEDURE**

During pavement removal and mass excavation activities, the environmental consultant will conduct environmental field screening of exposed soils for signs of the presence of chemicals that may impact waste profiling for off-site disposal. This environmental screening procedure includes:

- A discussion of setting up and using a site-wide grid system;
- A discussion of how environmental field screening will be conducted;
- A figure showing the site-wide grid system (Figure A-1);
- A process flow chart of the screening and assessment during pavement removal (Figure A-2);
   and
- A process flow chart of the screening and assessment during mass excavation (Figure A-3).

# Site-wide Grid System Set-up and Use

The purpose of a site-wide grid system is to provide a location reference for environmental data collection and documentation. A grid was developed that divides the Stadium Development and Ancillary Development areas into 100-foot by 100-foot squares. The location of each square can be referenced using an alphanumeric identifier consisting of a letter and a two-digit number. The letter identifiers include A to H in the north to south direction; the numbers include 1 to 8 in the east to west direction (Figure A-1). Known environmental features are also depicted on Figure A-1.

Prior to pavement removal and mass excavation activities, the environmental consultant will establish the site-wide grid system with permanent physical references to grid notes located at the site boundary using survey stakes, flags, or nails.

Survey control points will likely be destroyed during the site redevelopment process; hand held global positioning system (GPS) equipment will therefore be the primary method used to identify the locations requiring additional assessment and other data tied to specific site locations. The GPS receiver used will have sub-meter horizontal accuracy, which is adequate for initial site redevelopment monitoring purposes. The GPS receivers will be calibrated at the beginning and end of each day using control points such as the survey points established and protected by the redevelopment contractor during the site redevelopment process.

If vertical or horizontal data with greater than sub-meter accuracy at a specific location is required, a licensed land surveyor will survey the point. Survey and location data collected for use at the site will be based on the District of Columbia Engineering Datum, which is 0.69 foot below the National Geodetic Vertical Datum (formerly USC&GS Mean Sea Level Datum) of 1929.

## **Field Screening**

Soils will be exposed during redevelopment activities involving the removal of floor slabs, spread footings, and concrete or asphalt surface paving during mass excavation to approximately 10 feet below

ground surface. Soil will also be exposed during removal of subsurface utilities and structures, or site grading. The environmental consultant will screen exposed soil in the field for the potential presence of chemicals, which may be indicated by:

- Photoionization detector (PID) measurements greater than 10 parts per million by volume (ppmv);
- Discolored soils;
- Wet or saturated soils;
- Oily sheen on ponded perched water;
- Odors in ambient air; or
- The presence of other previously unknown subsurface features, such as "wet" utilities, sumps, underground storage tanks (USTs), or other features indicative of past chemical use.

In the context of this project, the referenced odors are those that may be noted in ambient air when potential chemical-containing soil areas are first exposed or otherwise disturbed during removal of pavement or subsurface features during mass excavation. If an indication of a potential chemical-containing soil is observed, the environmental consultant will immediately alert the redevelopment contractor foreman.

## A. Frequency of Screening

After the surface soil is exposed from the area within each grid, the environmental consultant will observe the surface soils. A minimum of one grab sample within each grid will be screened with a PID. Areas of focus within the grid will include:

- Soil remediation areas (areas of potential concern with chemical concentrations in soil exceeding soil screening levels);
- Previous underground storage tank locations; and
- Other known subsurface environmental features such as sumps, vaults, utilities, etc.

At each location where discolored soils, odors, or evidence of wet or saturated soil are observed that have not been previously investigated, a grab sample will be collected for headspace screening using a PID.

In the event that no odors or visual indication of chemicals are identified within a grid, a soil grab sample will be collected from the center of the grid for headspace screening using a PID.

# B. Headspace Screening Procedure

Soil grab samples for headspace screening will be collected from soil samples collected at least six inches below ground surface to ensure they are representative of in-situ total gross volatile organic compound (VOC) concentrations. Approximately six ounces of soil will be sealed inside an one-pint Zip-Lock-type freezer bag or one-pint glass jar and agitated to promote VOC

volatilization, if any, into the head space. After allowing two minutes for VOCs to volatilize and equilibrate, the PID probe will be inserted into the headspace and the peak and steady PID reading recorded. To minimize variability, the PIDs will be calibrated on a daily basis per the manufacturer's specifications.

A headspace PID reading exceeding 10 ppmv above background will be considered indicative of potential VOC or total petroleum hydrocarbon concentrations in soil (see Figures A-2 and A-3). It should be noted, however, that several factors affect the level of VOCs volatilizing from soils. These include the VOC concentration in the soil, soil and air temperature, organic carbon content of the soil, equilibration time, moisture content of the soil, and the chemical and physical characteristics of the VOC.

# C. Data Recording and Use

The following will be recorded at each grab sample location:

- Grid Identification;
- Latitude and longitude of soil grab sample;
- Date and time of sample collection;
- PID measurement; and
- Observation notes (odors, stains, presence of unexpected subsurface structure, etc).

These data will be electronically entered into a field data acquisition system and maintained in the field database by the environmental consultant. These recordings will be used to verify field screening completion within each grid.

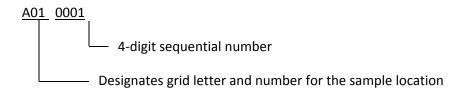
## **Chemical Assessment Procedures**

Locations where potential chemicals in soil are identified by the environmental consultant will be cordoned off by the redevelopment contractor. The environmental consultant will assess the area to evaluate whether special disposal or handling is warranted based on the results of sample collection and laboratory analysis. These potential assessment procedures may include:

- Initial soil sample collection and analysis;
- Evaluation of sample analytical data;
- Delineation of the area; and
- Oversight of excavation, segregation, and stockpiling.

# A. Soil Sample Collection and Analysis

Collected soil samples will be assigned a unique identification number structure as shown below.



Initial soil sampling is conducted to confirm the presence of chemicals. At least one soil sample will be collected for chemical analysis. The analysis conducted on the sample will be based on observations recorded in the field during environmental screening and historical operations or features in the vicinity, if any, in general accordance with the rational provided in the following table.

Observation During Environmental Screening	Minimum Analysis for Initial Laboratory Analysis					
PID measurement greater than 10 ppmv	VOCs by EPA Method 8260B					
Staining, odors, or sheen (petroleum or oily based)	VOCs by EPA Method 8260B SVOCs by EPA Method 8270 TPH by EPA Method 8015M					
Staining (discoloration) with no elevated PID measurements	TPH by EPA Method 8015M SVOCs by EPA Method 8270 PCBs by EPA Method 8082 Metals by EPA Methods 7471A/6010B Hexavalent chromium by EPA Method 7199 (if greenish discoloration is observed)					
If PID measurement, odor, or staining is observed and the location collocated with known historical feature (paint booth, underground storage tank, clarifier, solvent use area, etc.)	Additional analysis may include: PCBs by EPA Method 8082 Hexavalent chromium by EPA Method 7199 TPH by EPA Method 8015M					

PID: Photoionization detector ppmv: parts per million by volume VOC: volatile organic compound PCBs: polychlorinated biphenyls TPH: total petroleum hydrocarbons SVOC: semi-volatile organic compound

#### **Evaluation and Delineation**

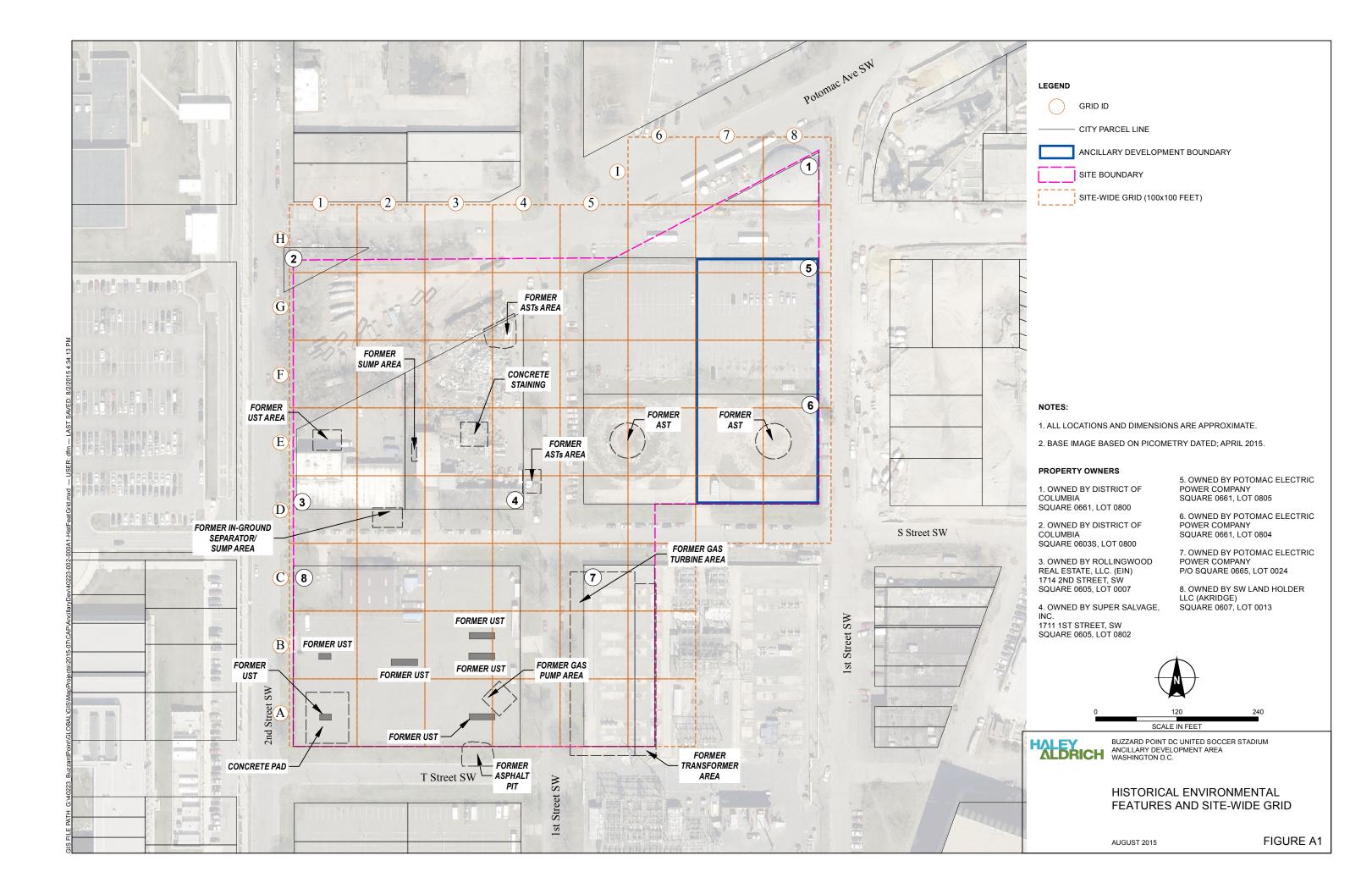
After receipt of the initial analytical data, the environmental consultant will evaluate the data compared to hazardous waste levels (20 times the Toxicity Characteristic Leaching Procedure thresholds). If initial soil sampling results indicate the soil may need to be segregated during excavation, the environmental consultant shall assess the lateral and vertical extent of the chemicals in soil by collecting step-out soil samples both horizontally and vertically.

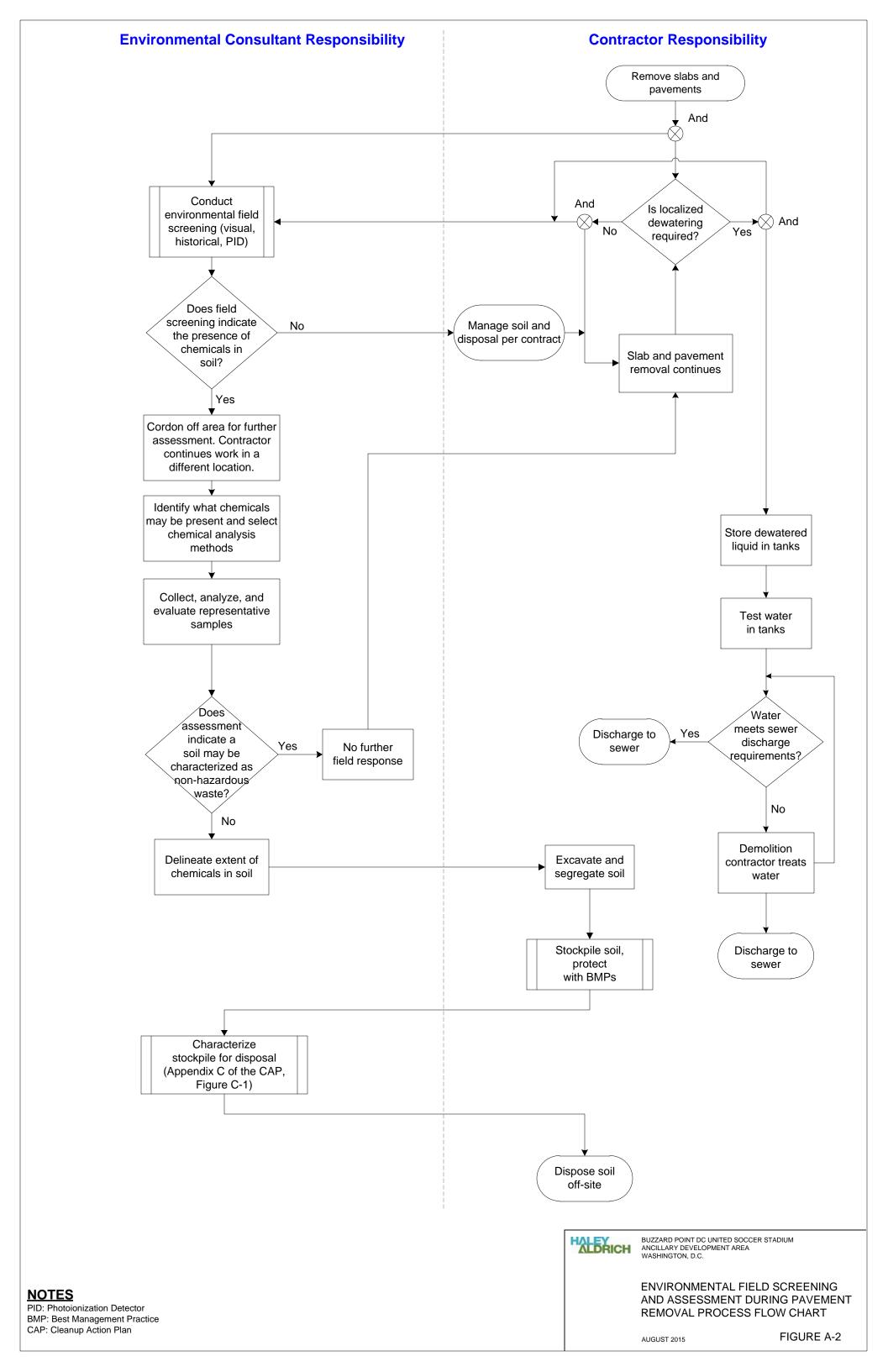
Soil samples for chemical analysis will be collected using hand auger and/or direct-push sampling, or grab samples from test pits, test trenches, or excavations. Regardless of how the samples are collected, the objective is to gather sufficient data to delineate chemical-containing soil for proper off-site disposal.

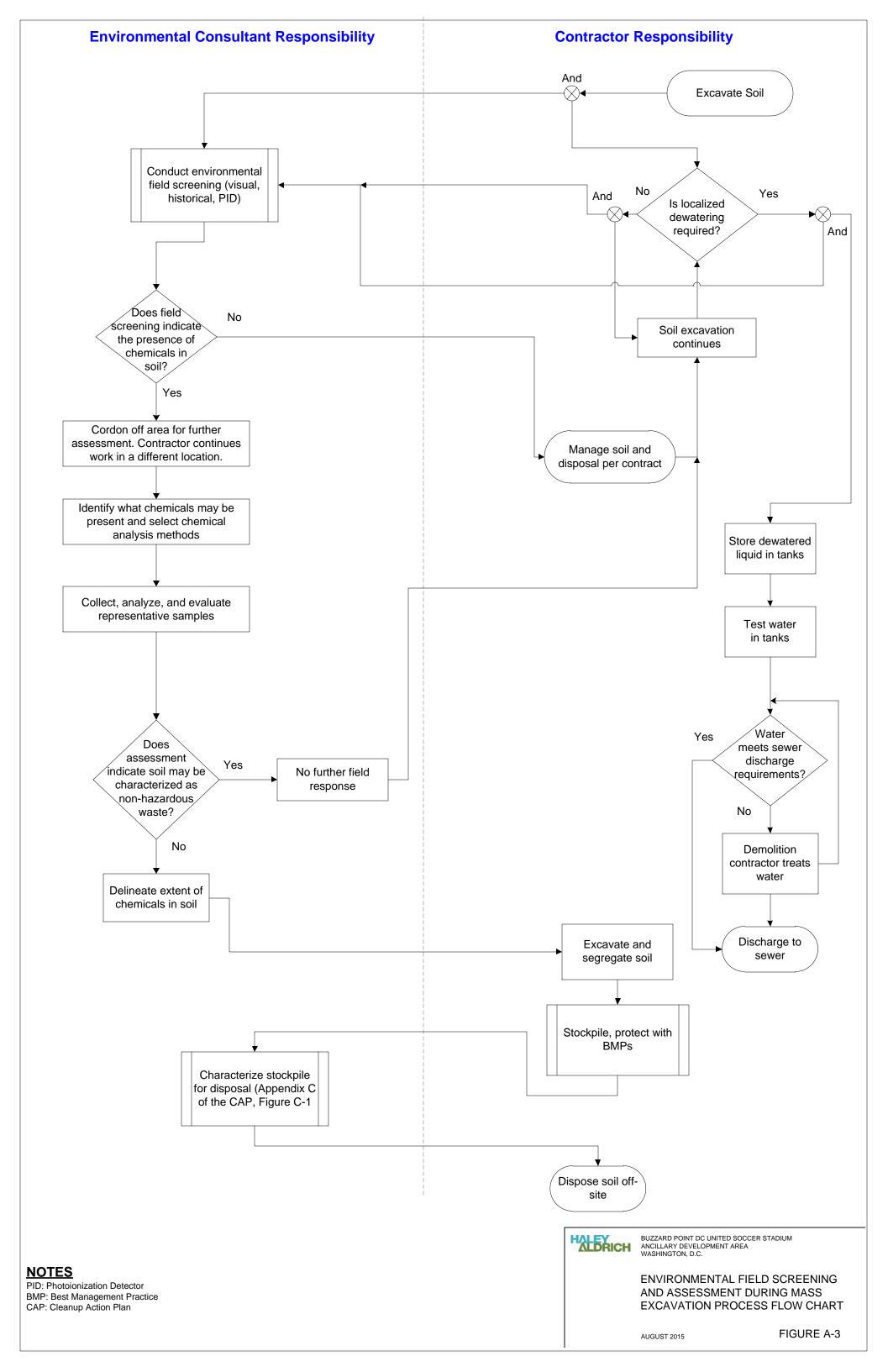
#### Attachments:

- Figure A-1 Historical Environmental Features and Sampling Locations with Field Screening Grid
- Figure A-2 Environmental Field Screening and Assessment during Pavement Removal Process
  Flow Chart
- Figure A-3 Environmental Field Screening and Assessment during Mass Excavation Process Flow Chart

 $\label{lem:common_projects_40223} - M&M \ Potomac \ Ave \ SW \ 002\ Deliverables \ CAP \ 2\ Appendix \ A - Environmental \ Screening \ 2015_0802\_HAI\_Environmental \ Screening \ Appendix \ A - Environmental \ A - Environmental \ Screening \ Appendix \ A - Environmental \ A - Environme$ 







# APPENDIX B

**Underground Storage Tank Removal Procedures** 

# **APPENDIX B**

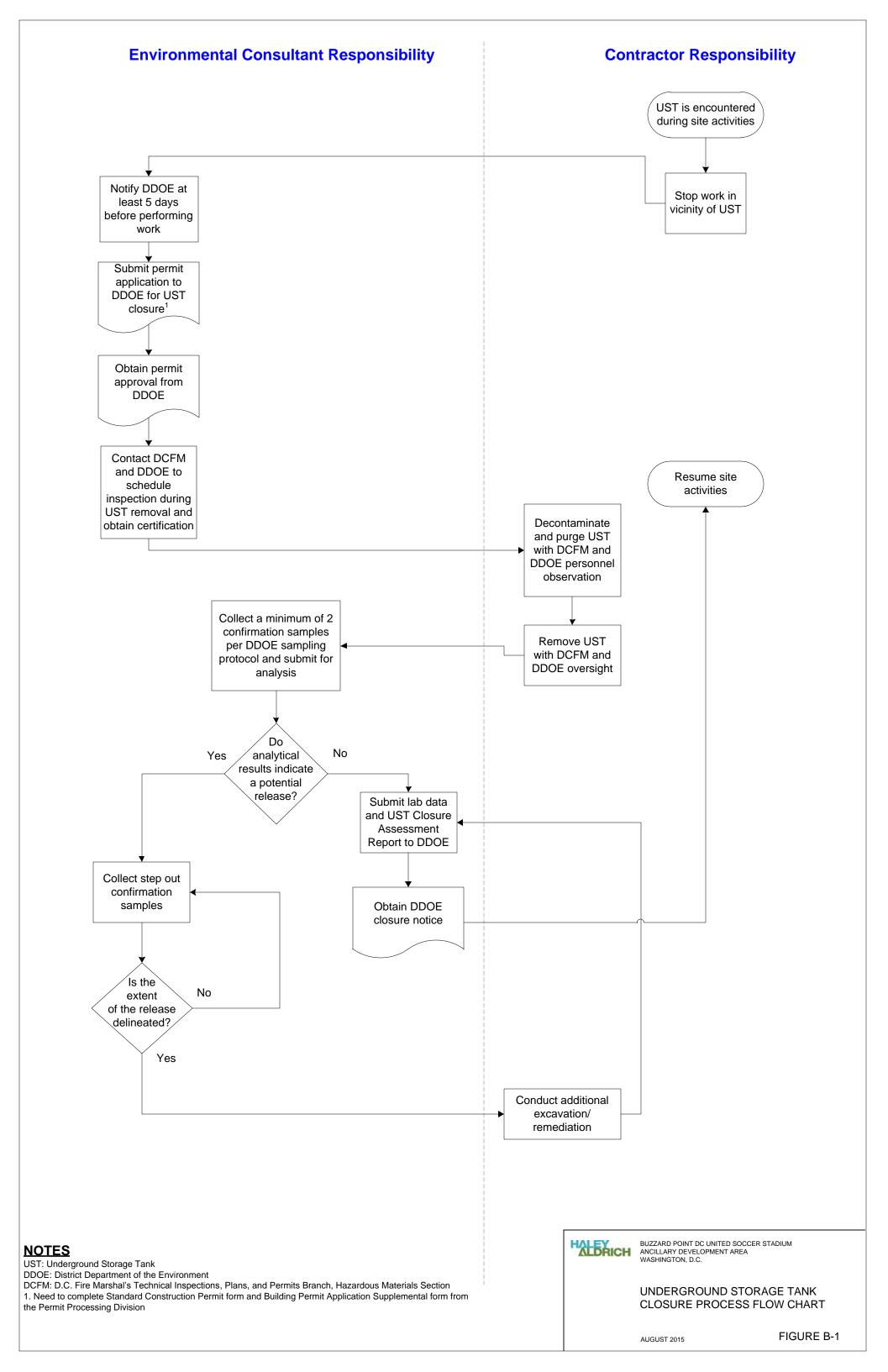
## **UNDERGROUND STORAGE TANK REMOVAL PROCEDURES**

If an underground storage tank (UST) is encountered during mass excavation activities, the redevelopment contractor shall stop work and the environmental consultant will review existing historical records to evaluate if the UST was previously known to exist.

The environmental consultant will be responsible for completing the permit applications and obtaining the permit, overseeing the UST and associated piping removal, collecting confirmation samples, and obtaining closure. The environmental consultant will act as a liaison to the District of Columbia Department of the Environment (DDOE) and District of Columbia Fire Marshal to facilitate the removal and closure of any encountered UST. The environmental consultant will close the encountered UST in accordance with DDOE requirements as shown in Figure B-1.

#### Attachment:

Figure B-1 – Underground Storage Tank Closure Process Flow Chart



# **APPENDIX C**

Waste Sampling, Profiling, and Disposal

## **APPENDIX C**

## WASTE SAMPLING, PROFILING, AND DISPOSAL

During mass excavation activities, the environmental consultant will screen exposed soil. If environmental screening indicates the possible presence of chemicals, samples will be collected for laboratory analysis and the soil profiled prior to off-site transportation and disposal. These sampling, profiling, and disposal procedures include:

- Stockpile best management practices (BMPs);
- Material sampling and analysis;
- Waste profiling; and
- Coordinated waste transportation and disposal.

## **Stockpile Best Management Practices**

Stormwater BMPs will be used to control runoff from site stockpiles and may include straw waddles (rolls) staked to the ground surface, geotextile fabric, or visqueen, based on the Storm Water Pollution Prevention Plan (SWPPP) for the site. The BMPs will be maintained for the duration of the project. Surface drainage and BMPs existing at the site, if appropriate, will be maintained in compliance with the SWPPP by the redevelopment contractor.

## **Material Management**

Each generated stockpile will be assigned a unique identification number structured as follows:

```
SP 0001

Sequential Stockpile Number

Object Type
(SP = stockpile; CN = container; BT = Baker Tank)
```

Stockpiles generated from mass excavation will generally be limited to approximately 400 cubic yards of disturbed (bulked) material. Limiting the size of individual stockpiles will help avoid a situation where an entire large stockpile would have to be disposed of because a relatively small amount of the material contains chemicals above hazardous waste characterization criteria. For covering and sampling purposes, stockpiles will generally be limited to approximately 7 feet in height.

## **Container and Stockpile Sampling and Analysis**

Soil/waste stockpiles segregated from confirmed non-hazardous stockpiles will be sampled, profiled, and characterized for disposal. The environmental consultant will be responsible for collecting the samples, submitting the samples to the selected laboratory, and waste profiling the stockpile. Waste will be disposed of by the redevelopment contractor.

## **APPENDIX C**

Sampling frequency and analysis for stockpiles and containers will be determined by the waste receiving facility.

# **Waste Profiling**

The environmental consultant will collect samples for waste profiling to assist in evaluating the appropriate disposal locations. Additional analyses (e.g., Toxicity Characteristic Leaching Procedure analysis) may be required to assess whether the stockpile is classified as non-hazardous or Resource Conservation and Recovery Act (RCRA) hazardous waste. A flow chart summarizing the waste profiling process is included as Figure C-1.

During mass excavation activities, it is possible that fluid will be encountered in subsurface structures and utilities, though it is not anticipated. The contractor shall collect and contain the fluid in drums or temporary tanks. The environmental consultant may also need to profile the fluid for disposal following similar procedures as described herein.

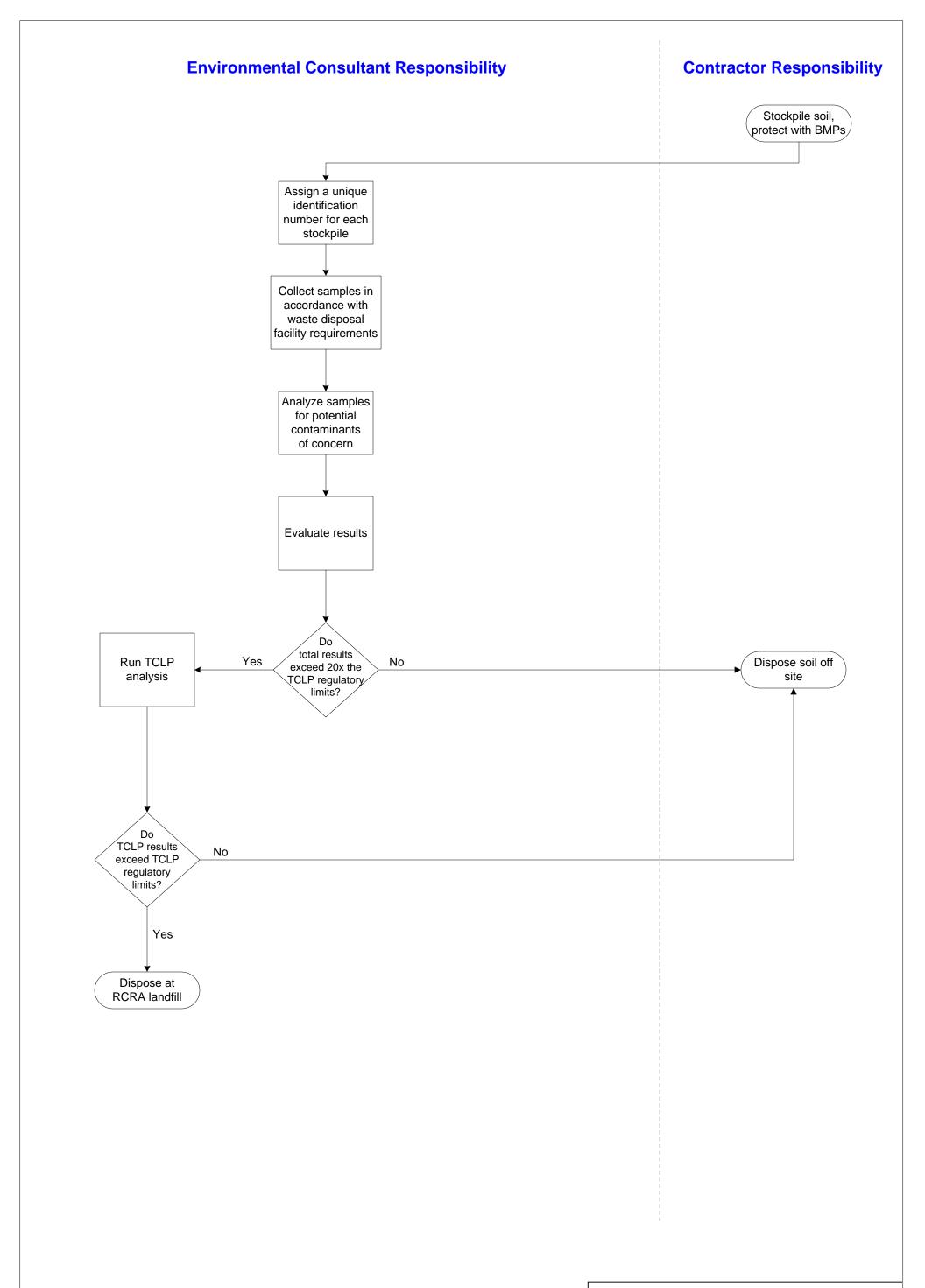
#### **Waste Transportation and Disposal**

The environmental consultant is responsible for assisting with arranging and coordinating the off-Site transportation and disposal/recycling of generated RCRA wastes as shown in Figure C-1. Material will be transferred from the stockpile onto licensed waste transportation trucks under manifesting signed by the Department of General Services. The redevelopment contractor is responsible for the off-Site transportation of non-hazardous waste. All material be will covered and the truck evaluated for debris from the site prior to leaving the site. Should debris be noted, it will be cleaned prior to entry onto the public street.

### Attachments:

Figure C-1 – Waste Profiling and Disposal Process Flow Chart

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RCRA: Resource Conservation Recovery Act TCLP: Toxicity Characteristic Leaching Procedure BMP: Best Management Practice



BUZZARD POINT DC UNITED SOCCER STADIUM ANCILLARY DEVELOPMENT AREA WASHINGTON, D.C.

WASTE PROFILING AND DISPOSAL PROCESS FLOW CHART