Weaver Consultants Group

May 15, 2017

Ms. Barbara Brown
Section Head
Maryland Department of the Environment
Voluntary Cleanup Program
1800 Washington Boulevard – Suite 625
Baltimore, Maryland 21230-1719

Re: Response Action Completion Report
Parcel A1, Federal Express Ground Package System, Inc.
Baltimore, Maryland
Project No.: 3751-300-04-01

Dear Ms. Brown:

On behalf of Scannell Properties #191, LLC (Scannell), Weaver Consultants Group North Central, LLC (WCG) is submitting two bound copies of the Response Action Completion Report (RACR) (enclosed) for the above referenced property. This report has been prepared to document completion of the response actions outlined in the approved Response Action Plan (RAP) dated July 6, 2015 and subsequent RAP Addendums.

Based on the information contained within this report, including documentation of the construction of the containment remedies in conjunction with redevelopment of the property, the applicable requirements for obtaining a No Further Action (NFA) Letter and Certificate of Completion (COC) for this property have been fulfilled. As you are aware, there are three Voluntary Cleanup Program (VCP) applicants associated with this property, including Scannell, Federal Express Ground System, Inc. (FedEx), and Tradepoint Atlantic (TPA). Therefore, upon approval of the RACR, WCG is respectfully requesting issuance of a NFA Letter to Tradepoint Atlantic and issuance of COCs to both Scannell and FedEx for the property.

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Please note that Scannell's address has changed since their VCP application was filed. Their new address is 8801 River Crossing Boulevard, Suite 300, Indianapolis, Indiana 46240.

We look forward to your review of this submittal. Please feel free to contact us should there be any questions concerning the enclosed submittal.

Sincerely,

Weaver Consultants Group North Central, LLC

Laura Craven
Project Manager

Michael B. Maxwell, LPG
EPG Chicago Operations Manager

Cc: Jennifer Sohns, MDE (via email)
Erich Weissbart, USEPA (via email)
Luis Pizarro, USEPA (via email)
Brad Walthall, Scannell Properties #191, LLC (via email)
Shannon Parkhurst, Scannell Properties #191, LLC (via email)
Pete Haid, Tradepoint Atlantic (via email)

Attachments: Response Action Completion Report

May 15, 2017

Project No.: 3751-300-04-01

RESPONSE ACTION COMPLETION REPORT

SCANNELL PROPERTIES #191, LLC

Parcel A1 - Federal Express Ground Package System, Inc.

Baltimore, Maryland

PREPARED BY

Weaver Consultants Group

EXECUTIVE SUMMARY

On behalf of Scannell Properties #191, LLC (who represents the end user, Federal Express Ground Package System, Inc.), Weaver Consultants Group North Central, LLC (WCG) has prepared this Response Action Completion Report (RACR) for a 47.4-acre portion of the Tradepoint Atlantic (TPA) property designated as Parcel A1 (Property). Parcel A1 is located on the northern portion of the 3,100-acre TPA property at 6021 Bethlehem Boulevard in Baltimore, Maryland. This report documents completion of the response actions outlined in the approved Response Action Plan (RAP) dated July 6, 2015 and the approved RAP Addendums dated August 21, 2015, December 2, 2015, and April 26, 2016. The RAP and RAP Addendums were approved by the Maryland Department of the Environment (MDE) through the Voluntary Cleanup Program (VCP).

The Property is part of an approximately 3,100-acre former steel mill that operated for over one hundred years. Beginning in the 1940s, the Property historically operated as a pipe production facility (Pipe Mill) associated with the former Bethlehem Steel Corporation (BSC) steel mill. In 1998, the Pipe Mill was demolished. The Property remained vacant until redevelopment efforts began in 2015. The Property has been redeveloped as a Federal Express Ground facility consisting of an approximate 306,140 square foot, single-story distribution warehouse, an approximate 3,142 square foot one-story building used as security and locker areas for employees, and associated parking lots.

Prior to redevelopment, a Phase II Environmental Site Assessment (ESA) was conducted in November 2014 and additional investigation was conducted in February 2015 to further assess the impacts identified during the initial Phase II ESA. The July 2015 RAP was prepared to outline the response actions proposed to address potential exposure to impacted media identified within the subsurface. In accordance with the MDE-approved RAP, the following activities were conducted as part of the response actions:

- Cleared and removed surface debris;
- Installed wick drains as well as placement and removal of surcharge material;
- Removed former building slabs, pile caps, and vaults;
- Excavated unsuitable soils;
- Relocated total petroleum hydrocarbon-impacted soils;

- Conducted mass grading across the Property;
- Installed utilities and infrastructure;
- Constructed the proposed warehouse building and associated ancillary building, parking lots, and other paved areas;
- Constructed storm water management facilities; and
- Capped landscaped areas with geotextile fabric and clean fill.

During redevelopment activities, routine dust monitoring was conducted in accordance with the approved RAP. In addition, imported fill materials were characterized, as needed, and approved for use by the MDE.

The newly constructed buildings, the asphalt and concrete-paved areas, and the capped landscaped areas serve as containment remedies (capping) to mitigate potential exposure to subsurface impacts. In addition, the following institutional controls will be recorded as deed restrictions within 30 days after receipt of the final No Further Action (NFA) Letter:

- Restriction prohibiting potable use of groundwater;
- Industrial land use restriction; and
- Implementation of inspection procedures as well as maintenance of the containment remedies.

As a result of the information contained within this report, it has been demonstrated that the response actions have been conducted in accordance with the approved RAP. With construction of the containment remedies (caps) in conjunction with redevelopment of the Property, the applicable requirements for obtaining a NFA Letter and Certificate of Completion (COC) for this Property have been fulfilled. Therefore, WCG is respectfully requesting issuance of a NFA Letter and COC for the Property at this time.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1 INTRODUCTION

On behalf of Scannell Properties #191, LLC (who represents the end user, Federal Express Ground Package System, Inc.), Weaver Consultants Group North Central, LLC (WCG) has prepared this Response Action Completion Report (RACR) for a 47.4-acre portion of the Tradepoint Atlantic (TPA) property designated as Parcel A1 (Property). Parcel A1 is located on the northern portion of the 3,100-acre TPA property at 6021 Bethlehem Boulevard in Baltimore, Maryland. The location of the Property is shown on **Figure 1 – Property Location Map**. This report documents completion of the response actions outlined in the approved Response Action Plan (RAP) dated July 6, 2015 and the approved RAP Addendums dated August 21, 2015, December 2, 2015, and April 26, 2016.

On June 26, 2014, the current owner, TPA (formerly Sparrows Point Terminal, LLC), submitted an application to place the entire 3,100-acre property, which includes the Property, into the Maryland Department of the Environment (MDE) Voluntary Cleanup Program (VCP). On September 11, 2014, MDE determined that TPA was eligible for participation in the VCP. On September 12, 2014, TPA and MDE entered into an Administrative Consent Order (ACO) that allows for designation of certain areas of the site-wide property for investigation and remediation on a priority basis through the VCP process. A VCP application for the priority areas (designated as Area A), including the Property, was submitted to the MDE on September 12, 2014.

The ACO provides the framework for investigations and remedial measures to address contaminants of concern on the entire 3,100-acre property under MDE's VCP. Additionally, TPA and the USEPA entered into a Settlement Agreement and Covenant Not to Sue (SA), which was effective as of November 25, 2014. The SA outlines TPA's obligations and work to be performed associated with the existing contamination on the site-wide property.

A VCP Application, including an Inculpable Person Affidavit, for the Property was also submitted to the MDE by WCG on behalf of Scannell Properties #191, LLC (Scannell) on August 10, 2015. A second VCP Application was subsequently submitted by Federal Express Ground Package System, Inc. (FedEx) in August 2015. Applications were submitted by both Scannell and FedEx so that both entities could obtain Inculpable Person approval from MDE and a Certificate of Completion (COC) upon completion of the requirements of the approved RAP to the satisfaction of the MDE. Scannell and FedEx were granted Inculpable Person approval in correspondence from the MDE dated August 14, 2015 and August 20, 2015, respectively. It is

our understanding that the Property was accepted into the VCP by the MDE with both Scannell and FedEx as Applicants.

1.1 Report Purpose

The purpose of this RACR is to document response action activities undertaken in order to secure a No Further Action (NFA) Letter and COC for the Property. In addition, this report is being submitted in accordance with the requirements outlined in the following agreements:

- Administrative Consent Order (ACO) between TPA (formerly Sparrows Point Terminal, LLC) and the MDE (effective September 12, 2014); and
- Settlement Agreement and Covenant Not to Sue (SA) between TPA (formerly Sparrows Point Terminal, LLC) and the United States Environmental Protection Agency (USEPA) (effective November 25, 2014).

The following section (**Section 1.2**) provides the project background and **Section 1.3** provides an overview of the Property development and response action activities. **Section 2** provides a list of status reports submitted to the MDE and USEPA during implementation of the RAP activities. The response actions performed are described in **Section 3** and conclusions are provided in **Section 4**.

1.2 Project Background

1.2.1 Property Description and History

The Property is identified as Parcel A1, located at 6021 Bethlehem Boulevard on the northern portion of the TPA property in Baltimore, Maryland. The Property consists of approximately 47.4 acres of land and is described as one lot on the Sparrows Point Peninsula in Baltimore County, Maryland. The Property legal description is provided in **Appendix A**.

The Property is part of an approximately 3,100-acre former steel mill that operated for over one hundred years. In 2012, steelmaking operations at the facility ceased. Throughout 2013 to the present day, a demolition contractor has been demolishing the majority of the above-grade structures on the site-wide property.

Based on historical information reviewed for a Phase I Environmental Site Assessment (ESA) conducted by WCG in February 2015, portions of the Property were improved by at least 1938 with six industrial buildings and access roads that were associated with the western adjoining property. Beginning in the 1940s, the Property historically operated as a pipe production facility (Pipe Mill) associated with the former Bethlehem Steel Corporation (BSC) steel mill. In

May 1984, the Pipe Mill was closed under a Closure Plan approved by the MDE on December 12, 1983. Closure activities occurred on the Property and surrounding area through the 1980s and 1990s. In 1998, the Pipe Mill was demolished. The Property remained vacant until redevelopment efforts began in 2015. The Property has been redeveloped as a Federal Express Ground facility.

1.2.2 Historical Environmental Activities

While the former steel mill was still operational on the site-wide property, the United States Environmental Protection Agency (USEPA) filed a complaint in February 1997 under the Resource Conservation and Recovery Act (RCRA) against BSC claiming that BSC operated a hazardous waste treatment, storage, or disposal facility and that a release of hazardous constituents had occurred. On October 8, 1997, BSC, the USEPA, and the MDE entered into a Consent Decree to address releases from historical and on-going operations at the facility. As required by the Consent Decree, BSC submitted a Description of Current Conditions (DCC) Report on January 20, 1998 describing prior investigations and identifying potential sources of contaminants. Subsequently, numerous other major reports focusing primarily on areas designated as Special Study Areas have been submitted to the USEPA and MDE.

WCG previously performed a Phase I ESA of the site-wide property and prepared a report titled *Phase I Environmental Site Assessment Report, Former RG Steel Facility, 1430 Sparrows Point Boulevard and 5111 North Point Boulevard, Sparrows Point, Maryland* dated May 19, 2014 (May 2014 Phase I ESA). In addition, WCG performed a Phase I ESA specifically for the Property in November 2014 and prepared a report dated February 18, 2015. Based on the February 2015 Phase I ESA, WCG identified the following recognized environmental conditions (RECs) in connection with the Property related to historical operations on the Property and adjoining properties:

- The potential presence of surface and subsurface impacts associated with the historical presence of a Pipe Mill on the Property.
- The potential presence of surface and subsurface impacts associated with potentially PCB-containing transformers located on the Property and adjoining properties.
- The potential presence of surface and subsurface impacts associated with slag fill material on the Property and adjoining properties.
- The potential presence of surface and subsurface impacts associated with the historical operations of the adjoining properties as part of a former steel mill, including a landfill, a

decanter cell, rod mill, cold mill, part of a wastewater treatment plant, and impoundment area.

To assess potential subsurface impacts associated with the identified RECs, a Phase II ESA was implemented at the Property in November 2014. During the Phase II ESA, twenty-six (26) soil borings/soil probes were advanced and groundwater samples were collected from five of the soil borings. In general, results of the Phase II ESA indicated the presence of select metals, one polychlorinated biphenyl (PCB), and total petroleum hydrocarbons-diesel range organics (TPH-DRO) in soil at concentrations exceeding the applicable MDE Non-Residential Cleanup Standards (NRCS) and/or the United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs). In addition, various dissolved metals were detected in groundwater at concentrations exceeding the MDE Groundwater Standards for Type I and Type II Aquifers and/or USEPA Maximum Contaminant Levels (MCLs) or Tap Water RSLs.

Additional investigation was conducted in February 2015 to further assess the impacts identified during the Phase II ESA. Twenty (20) soil probes were advanced for soil sample collection and analysis. In general, the results indicated the presence of select metals, TPH-DRO, one PCB, and select polynuclear aromatic hydrocarbons (PAHs) in soil at concentrations exceeding the applicable MDE NRCS and/or the USEPA RSLs.

In August 2015, an update to the February 2015 Phase I ESA was initiated by WCG and the same RECs were identified in a report prepared by WCG dated September 1, 2015. The RECs associated with the updated report also included the known impacts identified during the Phase II subsurface investigation activities. A second Phase I ESA update was prepared in April 2017 with the same RECs as those identified in the September 2015 Phase I ESA Report.

The analytical results for the investigation activities are discussed in detail in the Phase II Environmental Site Assessment Report/Response Action Plan (Phase II/RAP) prepared by WCG dated July 6, 2015, which was approved by MDE on July 14, 2015. The approved RAP presents details of the proposed response actions to address impacted soil and groundwater in conjunction with redevelopment of the Property. The approved response actions include containment remedies (engineering controls) and deed restrictions (institutional controls) prohibiting potable groundwater use and restricting land use. An overview of the response actions is provided in **Section 1.3** below and implementation of the Response Action Plan is discussed in **Section 3**.

RAP addendums were prepared during implementation activities as necessary when revisions or additions were made to the proposed activities outlined in the approved RAP. Throughout RAP implementation activities, three RAP addendums were submitted to the MDE as follows:

- RAP Addendum dated August 21, 2015 - Submitted to provide information regarding the proposed installation of wick drains, including the installation method and sequence. In addition, a description of earthwork activities including surcharge activities as well as updates to the project team were included in the RAP addendum. The RAP addendum was approved by MDE in an email dated August 24, 2015.
- RAP Addendum dated December 2, 2015 - Submitted to provide updated information regarding the proposed locations and design of various storm water management facilities. The use of in-situ soil at the base of the storm water management features was proposed in this addendum as an alternative to the 30 mil geomembrane liner proposed in the approved RAP. Subsequent to submittal of the December 2015 RAP Addendum, a further revision to the design of the storm water management facilities was presented to MDE. Specifically, the use of a clay liner as an alternative to the geomembrane liner was approved by the MDE during an on-site meeting with Scannell and ARCO. This approval was confirmed in an email from MDE to WCG dated February 7, 2017.
- RAP Addendum dated April 26, 2016 - Submitted to address the revised location for placement of excavated soils with total petroleum hydrocarbons (TPH) in the area of Soil Probe SP-4. The purpose of the addendum was to request approval for placement of the soil in a proposed landscaped area as an alternative to placement under an asphalt-paved parking lot. The soil was found to be geotechnically unsuitable for placement under paved parking areas. It was proposed that the soil would be capped with two feet of clean fill underlain by a nonwoven geotextile, as specified in the approved RAP for capped landscaped areas. The concept for this RAP Addendum was approved by MDE via email on March 21, 2016.

1.3 Site Development and Response Actions

The Property has been redeveloped as a Federal Express Ground facility consisting of an approximate 306,142 square foot, single-story distribution center/warehouse, an approximate 3,142 square foot one-story building used as security and locker areas for employees, and

associated parking lots. An as-built survey and the relevant as-built Construction Documents for the facility are included in **Appendix B**.

The Property is serviced by municipal water and sanitary sewer through Baltimore County as well as below grade storm water drains and storm water management structures, natural gas, and electric installed as part of the redevelopment activities (see Sheet Nos. C5.1 to C5.4 in **Appendix B**). As shown on Sheet Nos. C7.0 to C7.7, the storm water management facilities are comprised of two Submerged Gravel Wetland Facilities, three Bio-Retention Facilities, and a linear open channel feature located along the west border of the Property. Groundwater beneath the Property is not used as a potable water supply. To ensure groundwater will not be used, a groundwater use restriction will be placed on the Property as part of the deed restrictions recorded as discussed further in **Section 3.7**.

To address potential exposure to impacted media within the subsurface, the buildings as well as the asphalt and concrete-paved areas serve as engineered barriers as discussed further in **Section 3.5.2**. In addition, the landscaped areas were capped with clean fill and topsoil overlying a geotextile fabric marker as discussed further in **Section 3.5.1**. Following approval of the RACR and receipt of the NFA Letter and COCs, institutional controls including a potable groundwater use deed restriction, industrial land use restriction, and cap maintenance will be recorded for the Property in order to maintain the integrity of the containment remedy and mitigate potential exposure.

2 RESPONSE ACTION PLAN DOCUMENTATION

During the course of the RAP implementation activities, WCG prepared and provided the MDE with the following documents on behalf of Scannell:

- *Response Action Plan Quarterly Progress Report (August 2015 through December 2015),* dated February 22, 2016
- *Response Action Plan Quarterly Progress Report (January 2016 through March 2016),* dated June 3, 2016;
- *Response Action Plan Quarterly Progress Report (April 2016 through June 2016),* dated September 6, 2016; and
- *Response Action Plan Quarterly Progress Report (July 2016 through September 2016),* dated November 30, 2016.

Specific activities related to RAP implementation were summarized in the above RAP Quarterly Progress Reports. In addition, regular verbal and electronic mail updates on the progress of RAP implementation activities were provided to the MDE. This Response Action Completion Report was prepared to summarize the RAP activities, including relocation of impacted soils, use of clean fill materials transported to the Property, installation of engineered barriers, construction of storm water management facilities, and other activities outlined in the approved RAP. Please refer to the RAP Quarterly Reports for detailed information on the RAP implementation activities.

3 RESPONSE ACTIONS

Between August 2015 and February 2017, the following activities were conducted as part of the response actions:

- Cleared and removed surface debris;
- Installed wick drains as well as placement and removal of surcharge material;
- Removed former building slabs, pile caps, and vaults;
- Excavated unsuitable soils;
- Relocated TPH-impacted soils;
- Conducted mass grading across the Property;
- Installed utilities and infrastructure;
- Constructed the proposed warehouse building and associated ancillary building, parking lots, and other paved areas;
- Constructed storm water management facilities; and
- Capped landscaped areas with geotextile fabric and clean fill.

The primary construction contractor hired by Scannell for this work was ARCO National Construction (ARCO). ARCO served as the General Contractor for the construction project. Other major subcontractors involved in supporting activities included MCM Management Corporation (MCM) and Crouse Construction (Crouse). MCM and Crouse generally conducted earthwork activities including stripping and clearing of surficial materials, placement of structural fill materials, placement and removal of surcharge material, conducting test pits to evaluate if soils were geotechnically suitable, removal and hauling of unsuitable soils, removal of former utilities and subsurface concrete structures, backfilling and compaction, grading, excavation for installation of utilities, water removal, and placement of geotextile and clean fill in landscaped areas. In addition, MCM crushed and screened concrete removed from the subsurface and transported approved clean fill materials to the Property. Photographs of the activities are included in **Appendix C**.

Geo-Technology Associates, Inc. (GTA) provided oversight of construction activities on behalf of Scannell Properties and documented the RAP implementation activities. In general, the RAP implementation activities included the following:

- Health and Safety Plan – Implementation of a Health and Safety Plan (HASP) during redevelopment activities to control worker exposure to health hazards;
- Construction Monitoring – Construction monitoring primarily consisted of dust monitoring during intrusive operations, as warranted, and observation of materials handling.
- Relocation of Soil – Impacted soil in the area of soil probe SP-4 was relocated from the building footprint into a landscaped area near the southern boundary of the Property. The soil was capped as described in **Section 3.3** below.
- Fill Material Characterization/Documentation - Sampling, as required, and documentation of imported soil and fill materials used on the Property in landscaped and hardscaped areas.
- Capping – Observation of the capping activities for landscaped and hardscaped areas.
- Materials Removal – Observation and documentation of the removal of debris, soil, and water from the Property.

3.1 Health and Safety Plan

During redevelopment activities, there was the potential for exposure to constituents of potential concern (COPCs) through incidental ingestion of soil and/or groundwater, dermal contact of soil and/or groundwater, and inhalation of soil particles by construction workers. Therefore, construction contractors and field personnel were required to comply with the RAP health and safety protocols and the site-specific HASP included in Appendix F of the RAP dated July 6, 2015.

The primary actions utilized to manage exposure for construction workers were dust control, as further discussed in the **Section 3.2.1**, and the use of appropriate personal protective equipment (PPE) during construction activities. A copy of the HASP was present at the Property during RAP activities and construction personnel were advised of the requirements of the HASP prior to working on the Property.

3.2 Construction Monitoring

3.2.1 Dust Monitoring

General construction operations, including removal of existing foundations or utilities, soil excavation and transport, soil grading, trenching for utilities, installation of storm water management facilities, and cap construction activities were performed at the Property. These activities were performed in areas of soil impacted with select metals, Aroclor 1260, select PAHs, and/or TPH (DRO). As mentioned in the previous section, dust control measures were implemented, as warranted, to control worker exposure to airborne dust particulates.

A DustTrak2 Desktop Monitor 8530 was utilized to monitor site conditions from nine locations. The locations are shown on the Monitoring Location Plan prepared by GTA provided in **Appendix D**. The action level for the purpose of determining the need for dust suppression techniques (e.g. watering and/or misting) and/or continuous monitoring was 3.0 milligrams per cubic meter (mg/m^3). Dust monitoring was conducted in accordance with Section 9.2 of the RAP.

Daily dust monitoring results are summarized in **Table 1 – Dust Monitoring Summary Table**. Although the measured dust levels were below the action level throughout RAP implementation activities, a water truck was used to control dust in the work areas, as needed.

3.3 Relocation of Soil

On October 12 and 13, 2015, soil with concentrations of TPH-DRO in the vicinity of soil probe SP-4 was excavated, stockpiled in an area just north of SP-4, and covered with a tarp. The excavation measured approximately 45 feet by 150 feet and extended approximately 4 to 5 feet below ground surface.

During excavation, the soils were field screened by GTA with a photoionization detector (PID). Field screening results ranged from approximately 1 to 2 parts per million by volume (ppmv) to 70 to 80 ppmv. Excavation continued in each direction in the area of SP-4 (beneath the proposed building slab) until field screening results were below sustained readings of approximately 50 ppmv, odors had noticeably diminished, and staining was not observed.

Composite soil samples were collected by GTA from each sidewall and floor of the excavation for laboratory analysis of TPH-DRO. The soil analytical results were below the MDE Non-Residential Cleanup Standard of 620 milligrams per kilogram. Analytical results are provided in **Appendix E**. Groundwater was pumped from the excavation and discharged into a storm drain leading to Humphreys Wastewater Treatment Plant (WWTP). The excavation was backfilled with No. 3 slag material and 3/8-inch slag tailings (blast furnace slag) approved for use by MDE on the Property. Additional information regarding this fill material is provided in **Section 3.4.1**. Photographs of the excavation activities are provided in **Appendix C**.

Section 5.3 of the RAP indicated soils excavated from this area would be relocated and placed beneath a paved parking area. However, the on-site geotechnical engineer indicated that the soils were not geotechnically suitable for placement beneath a paved parking area, and recommended that the soils not be placed in a parking area to minimize the potential future pavement failures. In the April 2016 RAP Addendum, it was proposed that the impacted soil would be relocated beneath an engineered barrier in a landscaped area in the southeast portion of the Property, south of the building and paved parking areas. The RAP Addendum also indicated that the engineered barrier would consist of two feet of clean fill underlain by a nonwoven geotextile in accordance with Section 7.2 of the RAP. In response to an email from WCG on March 17, 2016 outlining this proposed revision, the MDE conditionally approved this alternative by email on March 21, 2016 and requested submittal of a RAP Addendum in hard copy. As requested, the RAP addendum was submitted on April 26, 2016.

On April 15, 2016, the stockpiled soil was transported to a landscaped area on the south side of the Property. As requested by MDE, a metes and bounds description of this relocation area is provided in **Appendix E**. Since this area had not been brought up to final grade at this time, MDE-approved Back River material (as discussed further in **Section 3.4.2**) was temporarily placed over the impacted soil, and then covered with seed and straw. On January 11, 2017, the geotextile was placed over the area and covered with one foot of approved Back River material. On January 12, 2017, an additional two feet of Back River material was placed over the area and six inches of approved topsoil were placed over the top on January 16, 2017 for landscaping purposes. Photographs of these activities are provided in **Appendix C**.

3.4 Fill Material Characterization

3.4.1 Aggregates

On October 6, 2015, MCM provided the MDE with information regarding clean fill aggregate consisting of blast furnace slag and requested approval for use of the material as structural backfill in areas where former building pile caps were removed. In an email dated October 7, 2015, the MDE approved the use of the blast furnace slag under the conditions that it was free of debris and would be used only under a cap, as specified in the approved RAP. The approved slag material was used at various locations beneath capped areas across the Property as needed, including areas where geotechnically unsuitable soils were removed. According to ARCO, approximately 99,985 cubic yards of imported slag were used as structural fill on the Property.

Concrete uncovered during construction activities was crushed, screened, and stockpiled in accordance with the July 14, 2015 Materials Management Plan (MMP). The MMP was prepared for MCM to outline procedures for identification and evaluation of backfill materials to be used on the site-wide TPA property. The MMP was reviewed and approved by MDE. After processing, concrete was generally used as backfill. Fine-grained soils and fines from concrete processing were hauled to Greys Landfill.

3.4.2 Soil

A source of backfill material was identified by MCM from the nearby expansion of the Back River Wastewater Treatment Plant to the north of the TPA property. In accordance with the July 2015 MMP, evaluation of the Back River material was performed under MDE oversight. Use of the material as backfill on the Property was approved by MDE via an email dated April 21, 2015.

The Back River material was used as capping material in the landscaped areas (green spaces), generally located around the perimeter of the Property, as discussed further in **Section 3.5.1**. This material was also used as backfill in utility trenches, including the storm drain trenches near the southeast corner of the Property, and trenches where subsurface concrete structures were removed. According to ARCO, approximately 48,000 cubic yards of trench fill material were used. Additionally, the Back River material was used in construction of the storm water

management facilities as discussed in the section below. Based on information provided by GTA, a total of approximately 83,900 cubic yards of Back River material were used as trench fill and capping materials.

3.4.3 Clay Material

Imported clay material was transported to the Property in December 2016 from Sugar Hill Road, LLC, a clay mine located in Joppa, Maryland, for use in construction of the storm water management facilities. A Surface-Mining Permit Renewal for Sugar Hill Road (included in **Appendix F**) was provided to the MDE via email on December 15, 2016. The use of the clay as a clean fill material was approved by the MDE via email on the same day.

The clay was used as a liner in the storm water management (SWM) facilities constructed on the Property. Based on information provided by GTA, approximately 9,100 cubic yards of clay were used. In general, the storm water ponds (SWM Facility No. 1 and SWM Facility No. 2) and the open channel (SWM Facility No. 3) were constructed with a 6-inch clay liner overlain by approximately 18 to 24 inches of Back River clean fill material. Virgin stone was also used in the SWM facilities as a mud mat for heavy equipment. At SWM facility No. 1, geotextile fabric was installed beneath rip rap at the center berm. The bio-retention facilities were generally constructed with a 6-inch clay liner followed by 4 to 5 inches of No. 8 stone and a 4-inch slotted pipe. The slotted pipe was covered with 6 to 8 inches of No. 8 stone and then approximately 30 inches of planting media. Construction details of the SWM facilities are provided in Sheet Nos. C7.0 to C7.7 in **Appendix B**. Photographs of the storm water facility construction activities are provided in **Appendix C**.

3.4.4 Topsoil

On December 13, 2016, GTA provided MDE with analytical results for samples collected on December 2, 2016 from the topsoil material from Middle River, Maryland proposed for use on the Property. The MDE approved the material for use as clean topsoil fill in an email dated December 14, 2016. The analytical results are provided in **Appendix F**.

Imported topsoil was generally used in green areas across the Property. Generally, six to twelve (12) inches of topsoil were placed as a final layer in green spaces and subsequently fine

graded. Topsoil was also used for fine grading purposes in SWM Facility 1. Approximately 9,000 cubic yards of topsoil were used on the Property.

3.5 Site Capping

As part of the response actions conducted in conjunction with the redevelopment, approximately 45,000 cubic yards of clean fill materials (includes Back River material and clay) were used as capping materials in the landscaped areas. In addition, the building slabs and newly paved areas (concrete and asphalt) serve as caps to mitigate exposure to impacted soil.

3.5.1 Landscaped Areas

The landscaped areas were regraded and capped in accordance with Section 7.2 of the approved RAP. Landscaped areas are primarily located around the perimeter of the Property as shown on **Figure 2 – As-Built Capped Areas**. Geotextile fabric (Ten Cate Mirafi® 180N nonwoven geotextile) was placed over surface soils followed by placement of a minimum of a two-foot thick clean fill layer consisting of Back River material. The clean fill was covered with a top soil layer. Photographs of the capping activities in landscaped areas are included in **Appendix C**.

A deed restriction requiring maintenance of the capped landscaped areas will be placed on the Property as part of the institutional controls as discussed further in **Section 3.7**.

3.5.2 Hardscaped Areas

In accordance with Section 7.1 of the approved RAP, the concrete floor slabs of the new buildings serve as a containment remedy (cap) to address potential exposure to impacted soil in the building areas. Hardscaped areas surrounding the new buildings were regraded and paved with asphalt or concrete as shown on **Figure 2 - As-Built Capped Areas**. These capped areas include access drives, asphalt-paved parking lots, and concrete walkways. The as-built paving details are shown in Sheet No. C4.1 in **Appendix B**. In general, the asphalt areas consist of 4-inch thick new asphalt with six inches of base course and the concrete paved areas consist of six inches of concrete over six inches of graded aggregate base. Photographs of the capping activities in hardscaped areas are included in **Appendix C**.

A deed restriction requiring maintenance of the hardscaped capped areas will be placed on the Property as part of the institutional controls as discussed further in **Section 3.7**.

3.6 Materials Removal

3.6.1 Debris

Debris was removed from the Property as necessary to complete the redevelopment activities. Clearing of debris, including vegetation, concrete obstructions (concrete slabs/pads, old footings, pile caps, and vaults), asphalt, steel, conduit pipe, railroad ties, rail lines, and wood was conducted throughout the redevelopment activities as debris was encountered. Generally, asphalt and concrete were stockpiled on the Property for processing and future use as backfill material. In general, unusable materials were stockpiled and subsequently disposed at Greys Landfill (located on the larger, site-wide property) as appropriate. Metal scrap was loaded into dumpsters for subsequent off-site recycling.

3.6.2 Soil

Excavated soils from the Property were generally stockpiled for use as fill material beneath paved or landscaped areas if geotechnically suitable. In accordance with the Soil Management Plan (SMP) included as Appendix G of the RAP, geotechnically unsuitable soils were stockpiled and subsequently transported to Greys Landfill for disposal.

Saturated and otherwise unsuitable soils were excavated from the following areas:

- Main building pad area;
- Parking lot areas;
- Storm water management facilities;
- Rail line trench area (near north parking lot);
- Roadway east of the Gateway Building; and
- Various landscaped areas.

Unsuitable soils were initially stockpiled in designated soil stockpiles located near the southeast and southwest corners of the Property for subsequent disposal at Greys Landfill. Over the

duration of the RAP implementation and redevelopment activities, 110,000 cubic yards of unsuitable soil were transported to Greys landfill for disposal.

3.6.3 Water

During construction activities, shallow groundwater was generally encountered in excavation areas and utility trenches. Water was pumped from these areas and routed to the existing storm water sewer system, which flows into the Humphrey Creek Waste Water Treatment Plant (WWTP) on the site-wide property.

In accordance with section 9.8 of the RAP, a groundwater sample was collected prior to discharge and submitted for laboratory analysis on December 8, 2015. The analytical results were determined to be within the limits and/or treatment capability of the WWTP. The groundwater analytical results are included in **Appendix G**.

3.7 Institutional Controls and Post Remediation Requirements

Long-term conditions related to future use of the Property will be placed on the NFA Letter and COCs. These conditions include a restriction prohibiting potable use of groundwater, an industrial land use restriction, and implementation of inspection procedures as well as maintenance of the containment remedies as outlined in Sections 7.6 and 9.4 of the approved RAP. The newly constructed facility includes a connection to a public water supply; therefore, future occupants will not use groundwater for potable purposes. Capped areas as shown on **Figure 2** are subject to the maintenance requirement. Following approval of the RACR and receipt of the NFA Letter, institutional controls will be recorded as deed restrictions for the Property.

4 CONCLUSIONS

Between August 2015 and February 2017, response actions were conducted as part of the redevelopment of the Property as a Federal Express Ground facility. The primary response actions included relocation of TPH-impacted soil, construction of the warehouse building, parking lots, and other paved areas, construction of storm water management facilities, and capping of landscaped areas.

As a result of the information contained herein, it has been demonstrated that the response actions have been conducted in accordance with the approved RAP. With construction of the containment remedy (caps) in conjunction with redevelopment of the Property, the applicable requirements for obtaining a NFA Letter and COC for this Property have been fulfilled. Therefore, WCG is respectfully requesting issuance of a NFA Letter and COCs for the Property at this time. It is WCG's understanding that Scannell will record the deed restrictions identified in Section 7.5 of the RAP, the NFA Letter, and COCs within 30 days after receipt of the final NFA Letter.

TABLES

Table 1
Dust Monitoring Summary Table
Parcel A1
Sparrow's Point, Maryland

Date	Time	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9
8/24/2015	8:30 AM	0.040	0.043	0.058	0.035	0.156	0.058	0.043	0.065	0.072
8/24/2015	10:00 AM	0.053	0.083	0.118	NA	NA	NA	0.093	0.084	0.087
8/24/2015	12:00 PM	0.112	0.208	0.078	0.087	0.070	0.053	0.063	0.088	0.187
8/24/2015	1:30 PM	NA	NA	NA	NA	NA	NA	0.066	0.084	0.079
8/24/2015	3:30 PM	NA	NA	NA	NA	NA	NA	0.095	0.076	0.080
8/25/2015	8:15 AM	NA	NA	NA	NA	NA	0.041	0.042	0.030	0.038
8/25/2015	10:30 AM	NA	NA	NA	NA	NA	0.020	0.014	0.022	0.008
8/25/2015	12:30 PM	0.028	0.043	0.022	0.019	0.073	0.019	0.073	0.048	0.066
8/25/2015	2:30 PM	0.021	0.022	NA	NA	NA	NA	NA	NA	NA
8/26/2015	9:30 AM	0.023	0.019	0.031	NA	NA	0.025	0.024	0.025	0.036
8/26/2015	1:00 PM	0.040	0.030	NA	NA	NA	0.039	0.031	0.036	0.027
8/26/2015	3:00 PM	0.089	0.086	0.091	NA	NA	0.080	0.084	0.080	0.074
8/27/2015	8:30 AM	0.045	0.055	0.029	0.027	NA	0.039	0.045	0.037	0.027
8/27/2015	11:00 AM	0.039	0.032	0.042	0.104	NA	0.048	0.040	0.039	0.041
8/27/2015	1:30 PM	0.038	0.029	0.031	0.050	NA	0.029	0.024	0.040	0.039
8/27/2015	4:00 PM	0.014	0.031	0.029	0.034	0.028	0.041	0.051	0.028	0.022
8/28/2015	8:30 AM	0.019	0.019	0.039	0.021	NA	0.047	0.019	0.031	0.030
8/28/2015	11:00 AM	0.018	0.014	0.122	0.010	0.022	0.032	0.018	0.015	0.025
8/28/2015	1:00 PM	0.020	NA	NA	NA	NA	0.050	0.041	0.031	0.204
8/31/2015	8:00 AM	0.115	0.129	0.108	0.103	0.096	0.108	0.122	0.118	0.107
8/31/2015	11:00 AM	0.122	0.102	0.073	0.127	0.096	0.092	0.086	0.083	0.089
8/31/2015	1:00 PM	0.102	0.100	0.083	0.101	0.097	0.088	0.094	0.083	0.089
8/31/2015	3:30 PM	0.152	0.119	NA	NA	NA	0.097	0.092	0.094	0.104
9/1/2015	8:00 AM	0.086	0.120	0.060	0.074	0.074	0.076	0.090	0.077	0.087
9/1/2015	11:00 AM	0.101	0.117	0.130	0.111	0.122	0.093	0.104	0.104	0.107
9/1/2015	1:00 PM	0.132	0.102	0.106	NA	NA	NA	0.124	0.122	0.102
9/1/2015	3:00 PM	0.117	0.145	0.152	0.143	0.148	0.098	0.143	0.141	0.098
9/2/2015	8:00 AM	0.058	0.056	0.047	0.071	0.088	0.173	0.062	0.059	0.062
9/2/2015	11:00 AM	0.221	0.068	0.087	0.073	0.081	0.152	0.051	0.071	0.068
9/2/2015	1:00 PM	0.055	0.058	0.064	0.069	0.062	0.175	0.125	0.043	0.075
9/2/2015	3:00 PM	0.042	0.071	0.086	0.079	0.071	0.086	0.045	0.114	0.061
9/3/2015	8:00 AM	0.098	0.058	0.121	0.058	0.078	0.082	0.060	0.350	0.058
9/3/2015	11:00 AM	0.192	0.042	0.046	0.068	0.048	0.061	0.040	0.039	0.156
9/3/2015	1:00 AM	0.069	0.040	0.090	0.077	0.051	0.114	0.038	0.056	0.042
9/3/2015	3:00 PM	0.089	0.236	0.076	0.056	0.061	0.250	0.047	0.139	0.065
9/4/2015	8:00 AM	0.064	0.041	0.260	0.084	0.078	0.053	0.049	0.047	0.044
9/4/2015	11:00 AM	0.592	0.093	0.196	NA	NA	0.103	0.059	0.068	0.091
9/8/2015	11:00 AM	0.137	0.051	0.054	0.201	0.147	0.019	0.043	0.089	0.022
9/9/2015	8:00 AM	0.016	0.014	0.012	0.030	0.047	0.025	0.016	0.015	0.014
9/9/2015	11:00 AM	NA	NA	NA	0.045	0.107	0.047	NA	NA	NA
9/9/2015	1:00 PM	NA	NA	NA	0.027	0.066	0.051	NA	NA	NA
9/9/2015	3:00 PM	NA	NA	NA	NA	0.109	NA	NA	NA	NA
9/10/2015	8:00 AM	0.021	0.030	0.032	0.028	0.034	0.020	0.042	0.021	0.019
9/10/2015	11:00 AM	NA	NA	NA	NA	0.047	0.081	NA	NA	NA
9/10/2015	1:00 PM	NA	NA	NA	NA	0.902	0.069	NA	NA	NA
9/11/2015	8:00 AM	0.010	0.010	0.009	0.016	0.015	0.010	0.011	0.013	0.012
9/11/2015	11:00 AM	NA	NA	NA	NA	0.047	0.081	NA	NA	NA
9/11/2015	1:00 PM	NA	NA	NA	NA	0.902	0.069	NA	NA	NA
9/17/2015	8:30 AM	0.044	0.042	0.047	0.043	0.061	0.051	0.095	0.064	NA
9/17/2015	11:00 AM	0.031	0.084	0.031	NA	NA	NA	NA	NA	NA
9/17/2015	1:00 PM	0.018	0.083	0.046	NA	NA	NA	NA	NA	NA
9/17/2015	3:00 PM	0.027	0.023	NA	NA	NA	NA	NA	NA	NA
9/18/2015	8:30 AM	0.018	0.020	0.031	0.036	0.029	0.033	0.022	0.021	0.041
9/18/2015	11:00 AM	0.065	0.031	NA	NA	NA	NA	NA	NA	NA
9/18/2015	1:00 PM	0.028	0.075	NA	NA	NA	NA	NA	NA	NA
9/18/2015	2:30 PM	NA	0.138	NA	NA	NA	NA	NA	NA	NA
9/21/2015	8:30 AM	0.006	0.011	0.021	NA	NA	NA	0.016	0.007	0.060
9/21/2015	11:00 AM	0.021	0.005	0.006	NA	NA	NA	0.039	0.019	0.006
9/21/2015	1:00 PM	NA	NA	0.021	NA	NA	NA	NA	0.012	0.008
9/21/2015	3:00 PM	NA	0.012	0.022	NA	NA	NA	NA	NA	NA
9/22/2015	8:30 AM	0.026	0.017	0.018	NA	NA	0.015	0.025	0.021	0.10
9/22/2015	11:00 AM	0.025	0.028	0.034	NA	NA	NA	NA	NA	NA
9/22/2015	1:00 PM	NA	0.072	0.023	NA	NA	NA	NA	NA	NA
9/22/2015	2:00 PM	NA	0.021	NA	NA	NA	NA	NA	NA	NA
9/22/2015	3:00 PM	NA	NA	0.018	NA	NA	NA	NA	NA	NA

Table 1
Dust Monitoring Summary Table
Parcel A1
Sparrow's Point, Maryland

Date	Time	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9
9/22/2015	4:00 PM	NA	NA	0.026	NA	NA	NA	NA	NA	NA
9/23/2015	8:30 AM	0.019	0.038	0.021	NA	NA	0.018	0.014	0.017	0.015
9/23/2015	11:00 AM	NA	NA	0.035	0.027	0.032	NA	NA	NA	NA
9/23/2015	1:30 PM	0.037	NA	NA	NA	NA	0.025	0.015	NA	NA
9/23/2015	3:00 PM	NA	NA	NA	NA	NA	NA	NA	NA	0.173
9/25/2015	1:00 PM	0.056	0.029	0.032	0.019	0.134	0.014	0.079	0.044	0.026
9/25/2015	2:30 PM	NA	NA	NA	NA	NA	NA	0.014	NA	NA
9/28/2015	8:30 AM	0.061	0.039	0.081	NA	NA	NA	0.038	0.032	NA
9/28/2015	11:00 AM	NA	NA	NA	NA	NA	NA	0.076	NA	NA
9/28/2015	1:00 PM	NA	NA	NA	NA	NA	NA	0.085	NA	NA
9/28/2015	3:00 PM	NA	NA	NA	NA	NA	NA	0.080	NA	NA
9/29/2015	8:30 AM	0.022	0.030	0.033	NA	NA	0.053	0.044	0.039	0.051
9/29/2015	11:00 AM	NA	NA	NA	NA	NA	NA	0.038	NA	0.034
9/29/2015	12:00 PM	0.027	0.039	0.120	NA	NA	NA	NA	NA	NA
9/29/2015	1:30 PM	NA	0.080	NA	NA	NA	NA	0.027	NA	NA
9/29/2015	3:00 PM	NA	NA	NA	NA	NA	NA	0.053	NA	NA
9/30/2015	8:30 AM	0.017	0.017	0.018	NA	NA	0.021	0.016	NA	NA
9/30/2015	11:00 AM	0.017	0.017	0.032	NA	NA	NA	NA	NA	NA
9/30/2015	1:00 PM	NA	NA	NA	NA	NA	NA	0.017	0.023	NA
9/30/2015	3:00 PM	0.028	0.027	NA	NA	NA	NA	0.020	NA	NA
10/1/2015	9:00 AM	0.004	0.006	NA	NA	NA	0.004	0.005	0.016	0.003
10/5/2015	8:00 AM	0.021	0.024	0.027	NA	NA	0.033	0.021	0.025	0.022
10/5/2015	10:00 AM	NA	0.040	NA	NA	NA	NA	0.032	NA	0.119
10/5/2015	12:30 PM	NA	0.021	NA	NA	NA	NA	NA	NA	0.115
10/5/2015	2:00 PM	NA	0.041	NA	NA	NA	NA	NA	NA	0.079
10/5/2015	3:00 PM	NA	0.039	NA	NA	NA	NA	NA	NA	NA
10/6/2015	3:30 PM	NA	0.026	0.031	NA	NA	NA	0.041	NA	NA
10/6/2015	8:00 AM	0.018	0.018	0.054	NA	NA	NA	0.028	0.018	0.018
10/6/2015	10:30 AM	NA	0.023	0.049	0.042	NA	0.046	0.042	0.021	0.018
10/6/2015	1:00 PM	NA	0.021	0.384	NA	NA	NA	NA	NA	NA
10/7/2015	8:00 AM	NA	0.350	0.062	0.029	0.044	0.031	0.032	0.062	0.029
10/7/2015	11:30 AM	NA	NA	0.009	0.019	0.024	NA	NA	NA	0.009
10/7/2015	1:00 PM	NA	NA	NA	NA	0.080	0.136	0.053	0.041	0.028
10/7/2015	3:00 PM	NA	0.063	NA	NA	NA	NA	0.034	NA	NA
10/8/2015	8:30 AM	0.0227	0.0228	NA	NA	NA	NA	0.0248	0.0274	0.0256
10/8/2015	1:30 PM	0.085	0.053	0.121	NA	NA	NA	NA	NA	NA
10/8/2015	3:00 PM	NA	0.114	NA	NA	NA	NA	NA	NA	0.113
10/9/2015	10:30 AM	NA	NA	0.032	NA	NA	NA	0.019	0.038	0.026
10/9/2015	1:00 PM	NA	NA	NA	NA	NA	NA	0.025	NA	0.021
10/12/2015	8:30 AM	0.028	0.072	0.030	NA	NA	NA	0.037	NA	0.033
10/12/2015	11:00 AM	NA	0.026	NA	NA	NA	NA	0.033	0.027	0.025
10/12/2015	1:00 PM	NA	0.053	0.056	NA	NA	NA	NA	0.023	NA
10/12/2015	3:00 PM	NA	0.027	NA	0.023	NA	NA	NA	NA	0.065
10/13/2015	8:30 AM	0.026	0.053	0.043	NA	NA	NA	0.032	0.032	0.035
10/13/2015	10:30 AM	0.069	0.061	0.051	NA	NA	NA	0.041	0.033	0.038
10/13/2015	12:30 PM	0.031	0.042	0.038	NA	NA	NA	0.044	0.039	0.037
10/13/2015	3:00 PM	NA	0.250	NA	NA	NA	NA	NA	NA	0.050
10/14/2015	8:30 AM	NA	0.013	0.014	NA	NA	NA	0.015	0.063	0.022
10/14/2015	10:30 AM	0.015	0.020	0.018	NA	NA	NA	0.015	0.052	NA
10/14/2015	1:30 PM	0.035	0.050	0.015	NA	NA	NA	NA	0.059	0.217
10/14/2015	3:30 PM	NA	0.119	NA	NA	NA	NA	NA	NA	NA
10/15/2015	8:30 AM	NA	0.062	NA	0.023	NA	NA	NA	0.044	0.038
10/15/2015	10:30 AM	NA	0.046	NA	0.009	NA	NA	NA	NA	0.052
10/15/2015	12:30 PM	NA	0.068	NA	0.026	NA	NA	NA	NA	NA
10/15/2015	2:30 PM	NA	0.012	NA	0.046	NA	NA	NA	0.011	NA
10/15/2015	4:00 PM	NA	0.068	NA	0.219	NA	NA	NA	0.282	NA
10/16/2015	8:00 AM	NA	0.065	NA	NA	NA	NA	NA	0.023	0.015
10/16/2015	10:00 AM	NA	0.200	NA	NA	NA	NA	NA	NA	0.115
10/16/2015	12:00 PM	NA	NA	NA	NA	NA	NA	NA	0.125	0.009
10/16/2015	2:00 PM	NA	NA	NA	NA	NA	NA	NA	0.018	0.015
10/19/2015	8:00 AM	NA	0.026	0.024	0.019	NA	NA	NA	NA	0.014
10/19/2015	11:00 AM	NA	0.044	NA	NA	NA	NA	NA	NA	0.024
10/19/2015	1:00 PM	NA	0.018	NA	0.165	NA	NA	NA	NA	NA
10/19/2015	3:00 PM	NA	0.113	NA	0.062	NA	NA	NA	NA	0.024
10/20/2015	8:00 AM	NA	NA	0.039	0.067	0.047	NA	NA	NA	NA

Table 1
Dust Monitoring Summary Table
Parcel A1
Sparrow's Point, Maryland

Date	Time	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9
10/20/2015	10:00 AM	NA	NA	NA	0.077	NA	NA	NA	NA	0.059
10/20/2015	1:00 PM	NA	NA	NA	0.159	NA	NA	NA	NA	0.372
10/20/2015	3:00 PM	NA	NA	NA	0.060	NA	NA	NA	NA	0.093
10/21/2015	8:30 AM	NA	0.119	0.090	0.101	NA	NA	NA	NA	0.087
10/21/2015	11:00 AM	NA	0.079	0.063	0.091	NA	NA	NA	NA	0.069
10/21/2015	1:00 PM	NA	0.137	NA	NA	NA	NA	NA	NA	NA
10/23/2015	8:30 AM	NA	0.065	0.054	0.037	NA	NA	0.071	NA	NA
10/23/2015	11:30 AM	NA	NA	NA	NA	NA	NA	0.081	0.058	NA
10/23/2015	2:00 PM	NA	NA	NA	NA	NA	NA	0.062	0.101	NA
12/7/2015	8:30 AM	0.042	0.052	0.036	0.038	0.057	0.062	0.047	0.101	NA
12/7/2015	2:00 PM	0.037	0.052	0.058	0.086	0.077	0.063	0.058	0.090	NA
12/8/2015	8:30 AM	0.027	0.036	0.038	0.041	0.037	0.029	0.034	0.035	NA
12/8/2015	2::00 pm	0.049	00.056	0.058	0.067	0.070	0.051	0.043	0.043	NA
12/9/2015	8:30 AM	0.078	0.086	0.078	0.069	0.081	0.090	0.077	0.105	NA
12/9/2015	2:00 PM	0.057	0.085	0.093	0.106	0.067	0.086	0.067	0.094	NA
12/10/2015	8:30 AM	0.130	NA	NA	NA	NA	NA	0.069	0.059	0.548
12/10/2015	10:30 AM	NA	NA	NA	NA	NA	NA	NA	0.059	0.051
12/10/2015	1:00 PM	NA	NA	NA	NA	NA	NA	0.063	0.039	0.042
12/10/2015	3:00 PM	NA	NA	NA	NA	NA	NA	0.050	0.086	0.029
12/11/2015	8:00 AM	NA	NA	NA	0.040	NA	NA	0.078	NA	0.068
12/11/2015	10:00 AM	NA	NA	0.040	0.040	NA	NA	0.034	NA	0.051
12/11/2015	12:00 PM	NA	NA	0.051	0.052	NA	NA	0.034	NA	0.055
12/11/2015	2:00 PM	NA	NA	0.039	NA	NA	NA	NA	NA	0.040
12/12/2015	8:00 AM	NA	0.071	0.064	0.118	NA	NA	0.102	NA	0.073
12/12/2015	10:00 AM	NA	0.072	0.062	0.059	NA	NA	NA	NA	0.042
12/12/2015	12:00 PM	NA	0.062	0.056	0.051	NA	NA	0.044	NA	0.041
12/14/2015	8:30 AM	NA	NA	0.049	0.061	NA	NA	0.032	NA	0.037
12/14/2015	10:00 AM	NA	NA	0.055	0.057	NA	NA	0.032	NA	0.071
12/14/2015	12:00 PM	NA	NA	0.055	0.028	NA	NA	0.027	NA	0.041
12/14/2015	2:00 PM	NA	NA	0.049	0.052	NA	NA	0.039	NA	0.042
12/14/2015	4:00 PM	NA	NA	0.044	0.058	NA	NA	0.027	NA	0.048
12/15/2015	8:00 AM	NA	NA	0.048	0.008	NA	NA	0.005	NA	0.008
12/15/2015	10:00 AM	NA	NA	0.009	0.005	NA	NA	0.005	0.021	0.021
12/15/2015	2:00 PM	NA	NA	0.027	0.038	NA	NA	0.010	NA	0.037
12/15/2015	3:30 PM	NA	0.009	0.007	0.008	NA	NA	NA	NA	0.055
12/16/2015	8:00 AM	NA	NA	0.011	0.013	NA	NA	NA	0.030	0.030
12/16/2015	10:00 AM	NA	NA	0.011	0.016	NA	NA	NA	0.013	0.040
12/16/2015	2:00 PM	NA	NA	0.026	0.041	NA	NA	NA	0.052	0.021
12/17/2015	8:00 AM	NA	NA	0.019	NA	NA	NA	NA	0.020	0.010
12/17/2015	10:00 AM	NA	NA	0.014	NA	NA	NA	NA	0.016	0.050
12/17/2015	2:00 PM	NA	NA	0.016	NA	NA	NA	NA	0.012	0.020
12/18/2015	8:00 AM	NA	NA	0.009	NA	NA	NA	NA	0.010	0.012
12/18/2015	10:00 AM	NA	NA	0.004	NA	NA	NA	NA	0.006	0.010
12/18/2015	2:00 PM	NA	NA	0.006	NA	NA	NA	NA	0.017	0.010
12/19/2015	8:00 AM	NA	NA	0.039	NA	NA	NA	NA	0.052	0.043
12/19/2015	10:00 AM	NA	NA	0.031	NA	NA	NA	NA	0.058	0.029
12/19/2015	2:00 PM	NA	NA	0.031	NA	NA	NA	NA	0.052	0.038
12/21/2015	8:00 AM	NA	NA	0.039	NA	NA	NA	NA	0.038	0.046
12/21/2015	10:00 AM	NA	NA	NA	NA	NA	NA	NA	0.055	0.011
12/21/2015	2:00 PM	NA	NA	NA	NA	NA	NA	NA	0.041	0.036
12/22/2015	8:00 AM	0.017	NA	NA	NA	NA	NA	NA	NA	0.028
12/22/2015	10:00 AM	0.019	NA	NA	NA	NA	NA	NA	NA	0.031
12/22/2015	2:00 AM	0.011	NA	NA	NA	NA	NA	NA	0.019	0.017
1/4/2016	8:30 AM	0.002	0.005	0.004	0.003	0.003	0.002	0.001	0.006	NA
1/4/2016	2:00 PM	0.003	0.004	0.004	0.003	0.006	0.005	0.002	0.004	NA
1/5/2016	8:30 AM	0.821	0.531	0.024	NA	0.006	0.006	NA	NA	NA
1/5/2016	10:00 AM	2.444	1.984	0.092	0.361	0.428	NA	NA	NA	NA
1/5/2016	2:00 PM	NA	0.105	0.020	0.034	0.015	NA	NA	NA	NA
1/5/2016	3:30 PM	NA	0.041	0.031	NA	0.036	NA	NA	NA	NA
1/6/2016	8:00 AM	0.054	0.029	0.062	0.838	NA	NA	NA	NA	0.049
1/6/2016	10:00 AM	NA	0.059	0.048	0.036	0.028	NA	NA	NA	NA
1/6/2016	2:00 PM	NA	0.035	0.050	0.044	0.035	NA	NA	NA	NA
1/7/2016	8:00 AM	0.065	0.033	0.115	NA	NA	NA	NA	NA	0.041
1/7/2016	10:00 AM	NA	0.059	0.048	0.036	0.028	NA	NA	NA	NA
1/7/2016	2:00 PM	NA	0.035	0.05	0.044	0.035	NA	NA	NA	NA

Table 1
Dust Monitoring Summary Table
Parcel A1
Sparrow's Point, Maryland

Date	Time	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9
1/8/2016	8:30 AM	0.067	0.056	0.070	0.068	0.069	0.081	0.076	0.135	NA
1/8/2016	2:00 PM	0.075	0.065	0.082	0.145	0.071	0.063	0.068	0.093	NA
1/11/2016	8:30 AM	0.014	0.055	0.087	0.108	0.123	0.084	0.067	0.112	NA
1/11/2016	2:00 PM	0.015	0.044	0.068	0.153	0.128	0.087	0.074	0.026	NA
1/12/2016	8:00 AM	NA	0.089	0.076	NA	NA	NA	0.106	0.061	NA
1/12/2016	10:00 AM	NA	0.095	0.084	0.063	0.082	NA	NA	NA	NA
1/12/2016	2:00 PM	NA	0.053	0.025	0.044	0.054	NA	NA	NA	NA
1/13/2016	8:00 AM	NA	NA	NA	NA	NA	NA	0.091	0.076	0.030
1/13/2016	10:00 AM	NA	0.413	NA	NA	NA	NA	0.285	0.184	0.029
1/13/2016	2:00 PM	NA	0.094	0.105	NA	NA	NA	NA	NA	0.021
1/14/2016	8:00 AM	0.042	0.013	NA	NA	NA	NA	NA	NA	0.018
1/14/2016	10:00 AM	0.028	NA	NA	NA	NA	NA	0.042	0.039	0.038
1/14/2016	2:00 PM	NA	0.040	NA	NA	NA	NA	0.028	0.031	0.025
1/14/2016	4:00 PM	NA	0.039	0.029	NA	NA	NA	0.048	NA	0.029
1/15/2016	8:00 AM	0.079	0.105	NA	NA	NA	NA	0.045	NA	0.048
1/15/2016	10:00 AM	0.048	NA	NA	NA	NA	NA	0.036	0.050	0.019
1/15/2016	2:00 PM	NA	0.033	NA	NA	NA	NA	0.047	0.026	0.021
1/15/2016	4:00 PM	NA	0.065	0.046	NA	NA	NA	0.057	NA	0.039
1/16/2016	8:00 AM	NA	0.018	0.023	NA	NA	NA	0.020	NA	0.034
1/18/2016	8:00 AM	NA	0.175	0.088	0.109	NA	NA	NA	NA	0.212
1/18/2016	10:00 AM	0.248	NA	NA	NA	NA	NA	0.568	0.322	0.418
1/18/2016	2:00 PM	NA	0.673	NA	NA	NA	NA	0.489	0.195	0.227
1/18/2016	4:00 PM	NA	0.724	0.491	NA	NA	NA	0.165	NA	0.278
1/19/2016	8:00 AM	NA	0.287	0.168	0.096	NA	NA	NA	NA	0.335
1/19/2016	10:30 AM	NA	0.312	NA	NA	NA	NA	0.167	0.088	0.108
1/19/2016	2:00 PM	NA	0.026	NA	NA	NA	NA	0.035	0.041	0.037
1/20/2016	8:00 AM	NA	0.087	0.068	0.076	NA	NA	NA	NA	0.035
1/20/2016	10:30 AM	NA	0.068	NA	NA	NA	NA	0.062	0.059	0.032
1/20/2016	2:00 PM	NA	0.036	NA	NA	NA	NA	0.053	0.044	0.021
1/22/2016	8:00 AM	NA	0.028	0.024	0.016	NA	NA	NA	NA	0.021
1/22/2016	10:30 AM	NA	0.022	0.024	NA	NA	NA	NA	0.013	0.019
1/22/2016	2:30 PM	NA	0.034	NA	NA	NA	NA	0.041	0.029	0.027
1/25/2016	10:30 AM	NA	0.024	0.022	NA	NA	NA	NA	0.033	0.029
1/25/2016	2:30 PM	NA	0.024	NA	NA	NA	NA	0.031	0.031	0.028
1/25/2016	10:30 AM	NA	0.024	0.022	NA	NA	NA	NA	0.033	0.029
1/25/2016	2:30 PM	NA	0.024	NA	NA	NA	NA	0.031	0.031	0.028
1/26/2016	8:30 AM	NA	0.029	0.026	0.016	NA	NA	NA	NA	0.030
1/26/2016	10:30 AM	NA	0.028	0.032	NA	NA	NA	NA	0.031	0.026
1/26/2016	2:30 PM	NA	0.053	NA	NA	NA	NA	0.043	0.037	0.039
1/27/2016	9:00 AM	NA	0.031	NA	NA	NA	NA	0.009	0.059	0.019
1/27/2016	11:30 AM	NA	0.034	NA	NA	NA	NA	0.029	0.019	0.027
1/27/2016	2:30 PM	NA	0.018	NA	NA	NA	NA	0.025	0.021	0.013
1/28/2016	8:00 AM	NA	NA	0.033	NA	NA	NA	0.063	0.043	0.091
1/28/2016	11:00 AM	NA	NA	NA	NA	NA	NA	0.043	0.048	0.053
1/28/2016	3:00 PM	NA	NA	NA	NA	NA	NA	0.038	0.029	0.056
1/29/2016	8:00 AM	NA	0.064	NA	NA	NA	NA	0.071	0.053	0.082
1/29/2016	11:00 AM	NA	0.067	NA	NA	NA	NA	0.033	0.038	0.049
1/29/2016	3:00 PM	NA	0.055	NA	NA	NA	NA	0.068	0.092	0.047
1/30/2016	8:00 AM	NA	NA	NA	NA	NA	NA	0.020	0.030	NA
1/30/2016	11:30 AM	NA	NA	NA	NA	NA	NA	0.021	0.024	NA
1/30/2016	3:00 PM	NA	NA	NA	NA	NA	NA	0.036	0.024	NA
2/1/2016	8:00 AM	NA	NA	NA	NA	NA	NA	0.018	0.013	NA
2/1/2016	11:30 AM	NA	NA	NA	NA	NA	NA	0.041	0.029	NA
2/1/2016	3:00 PM	NA	NA	NA	NA	NA	NA	0.039	0.044	NA
2/2/2016	8:00 AM	NA	NA	NA	NA	NA	NA	0.028	0.025	NA
2/2/2016	11:30 AM	NA	NA	NA	NA	NA	NA	0.031	0.024	NA
2/2/2016	3:00 PM	NA	NA	NA	NA	NA	NA	0.019	0.034	NA
2/3/2016	8:00 AM	NA	NA	NA	NA	NA	NA	0.035	0.041	0.048
2/3/2016	11:30 AM	NA	NA	NA	NA	NA	NA	0.011	0.014	NA
2/4/2016	8:00 AM	NA	NA	NA	NA	NA	NA	0.023	0.032	0.018
2/4/2016	11:00 AM	NA	NA	NA	NA	NA	NA	0.017	0.023	NA
2/4/2016	3:00 PM	NA	NA	NA	NA	NA	NA	0.029	0.038	NA
2/5/2016	8:00 AM	NA	0.051	NA	NA	NA	NA	0.043	0.029	0.062
2/5/2016	11:00 AM	NA	NA	NA	NA	NA	NA	0.038	0.051	NA
2/5/2016	2:30 PM	NA	NA	NA	NA	NA	NA	0.041	0.039	NA

Table 1
Dust Monitoring Summary Table
Parcel A1
Sparrow's Point, Maryland

Date	Time	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9
2/6/2016	8:30 AM	NA	NA	NA	NA	NA	NA	0.054	0.036	0.058
2/6/2016	11:00 AM	NA	NA	NA	NA	NA	NA	0.028	0.044	NA
2/6/2016	2:30 PM	NA	NA	NA	NA	NA	NA	0.029	0.037	NA
2/7/2016	8:00 AM	NA	NA	NA	NA	NA	NA	0.074	0.088	0.098
2/7/2016	11:00 AM	NA	NA	NA	NA	NA	NA	0.088	0.074	NA
2/7/2016	2:00 PM	NA	NA	NA	NA	NA	NA	0.079	0.064	NA
2/8/2016	8:00 AM	0.107	0.064	NA	NA	NA	NA	0.088	NA	0.098
2/8/2016	11:00 AM	NA	0.481	NA	NA	NA	NA	0.026	0.044	0.018
2/8/2016	2:30 PM	NA	NA	NA	NA	NA	NA	0.021	NA	0.052
2/9/2016	8:00 AM	0.036	0.029	NA	NA	NA	NA	0.024	NA	0.050
2/10/2016	8:30 AM	0.022	NA	NA	NA	NA	NA	NA	NA	0.033
2/10/2016	11:00 AM	0.046	0.023	NA	NA	NA	NA	NA	NA	0.027
2/10/2016	2:00 PM	0.023	0.048	NA	NA	NA	NA	NA	NA	0.084
2/12/2016	8:00 AM	0.278	0.344	NA	NA	NA	NA	NA	NA	0.178
2/12/2016	11:00 AM	0.318	0.270	NA	NA	NA	NA	NA	NA	0.096
2/12/2016	2:00 PM	0.443	0.502	NA	NA	NA	NA	NA	NA	0.365
2/15/2016	9:00 AM	0.041	0.032	NA	NA	NA	NA	NA	NA	0.019
2/17/2016	8:00 AM	0.256	0.187	NA	NA	NA	NA	NA	NA	0.139
2/17/2016	11:00 AM	0.064	0.058	NA	NA	NA	NA	NA	NA	0.084
2/17/2016	2:00 PM	0.039	0.087	NA	NA	NA	NA	NA	NA	0.048
2/18/2016	7:00 AM	NA	0.065	0.028	NA	NA	NA	NA	NA	0.092
2/18/2016	10:00 AM	NA	0.028	0.033	0.059	NA	NA	NA	NA	0.027
2/18/2016	2:00 PM	NA	0.036	0.047	NA	NA	NA	NA	NA	0.041
2/19/2016	8:00 AM	NA	0.237	0.217	NA	NA	NA	NA	NA	0.146
2/19/2016	10:00 AM	NA	0.048	0.037	NA	NA	NA	NA	NA	0.067
2/19/2016	3:00 PM	NA	0.041	0.039	NA	NA	NA	NA	NA	0.021
2/20/2016	8:00 AM	NA	NA	NA	NA	NA	NA	NA	0.105	0.126
2/20/2016	11:00 AM	NA	NA	NA	NA	NA	NA	NA	0.029	0.043
2/20/2016	2:00 PM	NA	NA	NA	NA	NA	NA	NA	0.037	0.034
2/22/2016	8:00 AM	0.078	0.083	NA	NA	NA	NA	NA	NA	0.056
2/22/2016	2:30 PM	0.071	0.044	NA	NA	NA	NA	NA	NA	0.038
2/24/2016	8:00 AM	NA	NA	NA	NA	NA	NA	0.006	NA	0.003
2/25/2016	8:30 AM	NA	NA	NA	NA	NA	NA	0.021	0.018	0.014
2/26/2016	8:00 AM	0.004	0.034	NA	NA	NA	NA	NA	NA	0.017
2/27/2016	9:00 AM	0.169	0.097	NA	NA	NA	NA	NA	NA	0.065
2/27/2016	11:00 AM	0.036	0.063	NA	NA	NA	NA	NA	NA	0.025
2/29/2016	8:30 AM	0.218	0.107	NA	NA	NA	NA	NA	NA	0.067
2/29/2016	11:00 AM	0.071	0.058	NA	NA	NA	NA	NA	NA	0.042
2/29/2016	2:00 PM	0.120	0.089	NA	NA	NA	NA	NA	NA	0.061
3/1/2016	7:30 AM	0.078	0.064	NA	NA	NA	NA	NA	NA	0.055
3/1/2016	11:00 AM	0.031	0.046	NA	NA	NA	NA	NA	NA	0.027
3/2/2016	8:00 AM	0.419	0.356	NA	NA	NA	NA	NA	NA	0.226
3/2/2016	11:00 AM	0.136	0.084	NA	NA	NA	NA	NA	NA	0.067
3/2/2016	2:00 PM	0.067	0.075	NA	NA	NA	NA	NA	NA	0.086
3/3/2016	8:00 AM	NA	0.134	0.067	NA	NA	NA	NA	NA	0.082
3/3/2016	11:00 AM	NA	0.055	0.048	NA	NA	NA	NA	NA	0.061
3/3/2016	2:00 PM	NA	0.231	0.176	NA	NA	NA	NA	NA	0.088
3/4/2016	8:00 AM	NA	0.068	0.079	NA	NA	NA	NA	NA	0.048
3/4/2016	12:00 PM	NA	NA	NA	NA	NA	NA	NA	0.067	0.054
3/4/2016	3:00 PM	NA	NA	NA	NA	NA	NA	NA	0.102	0.094
3/5/2016	8:30 AM	NA	NA	NA	NA	NA	NA	0.063	0.117	0.115
3/5/2016	11:00 AM	NA	NA	NA	NA	NA	NA	NA	NA	0.070
3/5/2016	11:06 AM	NA	NA	NA	NA	NA	NA	0.036	NA	NA
3/5/2016	2:30 PM	NA	NA	NA	NA	NA	NA	NA	NA	0.079
3/5/2016	2:36 PM	NA	NA	NA	NA	NA	NA	0.041	NA	NA
3/5/2016	3:50 PM	NA	NA	NA	NA	NA	NA	NA	NA	0.068
3/7/2016	9:30 AM	NA	NA	NA	NA	NA	NA	0.041	NA	NA
3/7/2016	9:37 AM	NA	NA	NA	NA	NA	NA	NA	NA	0.098
3/7/2016	9:42 AM	0.060	NA	NA	NA	NA	NA	NA	NA	NA
3/7/2016	12:05 PM	NA	NA	NA	NA	NA	NA	0.051	NA	NA
3/7/2016	12:10 PM	NA	NA	NA	NA	NA	NA	NA	NA	0.075
3/9/2016	8:30 AM	NA	NA	NA	NA	NA	NA	NA	0.106	0.147
3/9/2016	11:00 AM	NA	NA	NA	NA	NA	NA	NA	0.036	0.126
3/9/2016	2:00 PM	0.095	0.118	NA	NA	NA	NA	NA	NA	0.066
3/10/2016	8:00 AM	0.034	NA	NA	0.037	NA	NA	NA	NA	0.046

Table 1
Dust Monitoring Summary Table
Parcel A1
Sparrow's Point, Maryland

Date	Time	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9
3/10/2016	11:00 AM	NA	NA	NA	NA	NA	NA	NA	NA	0.399
3/10/2016	2:00 PM	NA	NA	NA	0.027	0.036	0.041	NA	NA	0.040
3/11/2016	7:30 AM	NA	NA	NA	NA	NA	NA	NA	NA	0.256
3/11/2016	10:30 AM	NA	NA	NA	NA	NA	NA	NA	NA	0.043
3/11/2016	1:30 PM	NA	NA	NA	NA	NA	NA	NA	NA	0.057
3/14/2016	8:30 AM	NA	NA	NA	NA	NA	NA	0.021	NA	0.012
3/14/2016	11:30 AM	NA	NA	NA	NA	NA	NA	0.030	NA	0.027
3/14/2016	2:30 PM	NA	NA	NA	NA	NA	NA	0.015	NA	0.029
3/15/2016	8:30 AM	NA	NA	NA	NA	NA	NA	0.029	NA	0.048
3/15/2016	11:30 AM	NA	0.087	NA	NA	NA	NA	0.062	NA	0.043
3/15/2016	2:00 PM	NA	0.079	NA	NA	NA	NA	0.061	NA	0.053
3/16/2016	10:00 AM	NA	NA	NA	NA	NA	NA	0.032	NA	0.067
3/16/2016	1:00 PM	NA	0.089	NA	NA	NA	NA	0.046	NA	0.058
3/17/2016	9:00 AM	NA	0.185	NA	NA	NA	NA	NA	NA	0.121
3/17/2016	1:00 PM	NA	0.065	NA	NA	NA	NA	NA	NA	0.044
3/18/2016	8:00 AM	NA	0.148	NA	NA	NA	NA	0.084	NA	0.074
3/18/2016	10:00 AM	NA	0.046	NA	NA	NA	NA	NA	NA	0.063
3/18/2016	2:00 PM	NA	0.074	NA	NA	NA	NA	NA	NA	0.071
3/21/2016	8:30 AM	NA	0.018	NA	NA	NA	NA	NA	0.102	0.056
3/21/2016	11:00 AM	0.021	0.019	NA	NA	NA	0.028	NA	NA	0.047
3/21/2016	2:00 PM	NA	0.051	NA	NA	NA	0.067	NA	NA	0.039
3/22/2016	9:00 AM	NA	0.046	NA	NA	NA	NA	NA	0.064	0.081
3/22/2016	11:00 AM	NA	0.036	NA	NA	NA	0.051	NA	NA	0.068
3/22/2016	2:00 PM	NA	0.026	NA	NA	NA	0.074	NA	NA	0.056
3/23/2016	8:30 AM	0.034	0.023	0.124	0.348	0.056	0.038	0.012	0.045	NA
3/23/2016	2:00 PM	0.252	0.067	0.034	0.035	0.015	0.027	0.078	0.067	NA
3/24/2016	8:00 AM	NA	0.027	NA	NA	NA	NA	NA	0.031	0.036
3/24/2016	11:00 AM	NA	0.082	NA	NA	NA	0.073	NA	NA	0.067
3/24/2016	1:00 PM	NA	0.062	NA	NA	NA	0.070	NA	NA	0.061
3/28/2016	8:30 AM	0.024	0.028	0.013	0.026	0.046	0.011	0.018	0.033	NA
3/28/2016	2:00 PM	0.022	0.027	0.014	0.041	0.016	0.016	0.033	0.013	NA
3/29/2016	8:30 AM	0.034	0.015	0.018	0.089	0.056	0.071	0.042	0.032	NA
3/29/2016	2:00 PM	0.012	0.036	0.024	0.066	0.036	0.013	0.032	0.033	NA
3/30/2016	8:00 AM	NA	0.074	NA	NA	NA	NA	NA	0.066	0.085
3/30/2016	11:00 AM	NA	0.058	0.068	NA	NA	NA	NA	NA	0.071
3/30/2016	2:00 PM	NA	0.126	0.096	NA	NA	NA	NA	NA	0.087
3/31/2016	8:00 AM	NA	0.091	NA	NA	NA	NA	NA	0.078	0.084
3/31/2016	11:00 AM	0.086	NA	NA	NA	NA	0.071	0.108	NA	0.079
3/31/2016	3:00 PM	0.078	NA	NA	NA	NA	0.088	0.091	NA	0.065
4/1/2016	8:00 AM	NA	0.078	NA	NA	NA	NA	0.126	NA	0.064
4/1/2016	11:00 AM	0.062	NA	NA	NA	NA	NA	0.087	NA	0.046
4/1/2016	1:00 PM	0.036	NA	NA	NA	NA	NA	0.044	NA	0.021
4/4/2016	8:30AM	NA	NA	NA	NA	NA	NA	0.121	0.088	0.072
4/5/2016	8:00AM	NA	NA	NA	NA	NA	NA	0.098	0.073	0.057
4/5/2016	11:00AM	NA	NA	NA	NA	NA	NA	0.117	0.074	0.083
4/5/2016	2:30PM	NA	NA	NA	NA	NA	NA	0.053	0.027	0.055
4/8/2016	8:00AM	NA	NA	NA	NA	NA	NA	0.098	0.073	0.057
4/8/2016	11:00AM	NA	NA	NA	NA	NA	NA	0.117	0.074	0.083
4/8/2016	2:30PM	NA	NA	NA	NA	NA	NA	0.053	0.027	0.055
4/11/2016	8:00AM	NA	NA	NA	0.065	NA	NA	NA	0.087	0.079
4/11/2016	11:00AM	NA	NA	NA	0.106	NA	NA	NA	0.084	0.064
4/11/2016	3:00PM	NA	NA	NA	0.061	NA	NA	NA	0.046	0.043
4/12/2016	8:00AM	NA	NA	NA	0.048	NA	NA	NA	0.052	0.061
4/12/2016	11:00AM	NA	NA	NA	0.042	NA	NA	NA	0.038	0.036
4/12/2016	3:00PM	NA	NA	NA	0.027	NA	NA	NA	0.031	0.045
4/13/2016	8:00AM	NA	NA	NA	NA	NA	NA	NA	0.065	0.058
4/13/2016	11:00AM	0.077	NA	NA	0.091	NA	NA	NA	0.065	0.073
4/13/2016	3:00PM	0.065	NA	NA	0.031	NA	NA	NA	0.026	0.037
4/14/2016	8:00AM	0.069	NA	0.387	NA	NA	NA	0.281	0.190	0.200
4/14/2016	11:00AM	0.117	NA	NA	NA	NA	NA	0.028	0.043	0.120
4/14/2016	1:30PM	0.025	NA	NA	0.023	NA	NA	NA	0.027	0.036
4/14/2016	4:00PM	NA	NA	NA	0.027	NA	0.049	NA	0.211	0.048
4/15/2016	8:00AM	0.010	NA	NA	0.026	NA	NA	NA	0.008	0.015
4/15/2016	11:00AM	0.037	NA	NA	0.015	NA	NA	NA	0.084	0.054
4/15/2016	1:30PM	0.063	NA	NA	0.131	NA	NA	NA	NA	0.096

Table 1
Dust Monitoring Summary Table
Parcel A1
Sparrow's Point, Maryland

Date	Time	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9
4/18/2016	8:30AM	0.046	NA	NA	1.533	NA	NA	NA	NA	0.063
4/18/2016	11:00AM	0.519	NA	NA	0.030	NA	NA	NA	NA	0.030
4/18/2016	3:00PM	0.079	NA	NA	NA	0.075	NA	NA	NA	0.608
4/19/2016	8:30AM	0.118	NA	NA	0.088	NA	NA	0.065	NA	0.038
4/19/2016	11:00 AM	0.202	NA	NA	0.072	NA	NA	NA	NA	0.047
4/19/2016	3:00PM	0.028	NA	NA	0.033	NA	NA	NA	NA	0.041
4/20/2016	8:00AM	0.013	NA	NA	NA	NA	NA	0.010	NA	0.012
4/20/2016	11:00AM	0.024	NA	NA	NA	NA	NA	0.043	NA	0.031
4/20/2016	3:00PM	0.044	NA	NA	NA	NA	NA	0.067	NA	0.064
4/21/2016	8:00AM	0.037	NA	NA	NA	NA	NA	0.048	NA	0.039
4/21/2016	11:00AM	0.061	NA	NA	NA	NA	NA	0.084	NA	0.057
4/21/2016	3:00PM	0.082	NA	NA	NA	NA	NA	0.047	NA	0.038
4/22/2016	8:00AM	0.124	NA	0.085	NA	NA	NA	NA	NA	0.118
4/22/2016	11:00AM	0.016	NA	0.025	NA	NA	NA	NA	NA	0.026
4/22/2016	1:3PM	0.039	NA	0.045	NA	NA	NA	NA	NA	0.024
4/25/2016	8:00AM	0.063	NA	0.045	NA	NA	NA	NA	NA	0.067
4/25/2016	11:00AM	0.024	NA	NA	NA	NA	NA	0.081	NA	0.063
4/25/2016	3:00PM	0.097	NA	NA	NA	NA	NA	0.084	NA	0.074
4/26/2016	8:30AM	0.086	0.048	0.055	NA	NA	NA	0.037	NA	0.041
4/26/2016	11:00AM	0.067	0.078	NA	NA	NA	NA	0.064	NA	0.082
4/26/2016	3:00PM	0.081	0.094	NA	NA	NA	NA	0.080	NA	0.045
4/27/2016	8:00AM	0.066	0.051	0.047	NA	NA	NA	0.045	NA	0.039
4/27/2016	11:00AM	0.057	0.071	NA	NA	NA	NA	0.052	NA	0.062
4/27/2016	3:00PM	0.037	0.012	NA	NA	NA	NA	0.049	NA	0.036
4/28/2016	8:00AM	0.082	0.074	0.067	NA	NA	NA	0.039	NA	0.090
4/28/2016	11:00AM	0.028	0.031	0.019	NA	NA	NA	NA	NA	0.040
4/28/2016	3:00PM	0.027	0.035	0.024	NA	NA	NA	NA	NA	0.045
4/29/2016	8:00AM	0.008	0.004	0.003	NA	NA	NA	NA	0.004	0.006
4/29/2016	11:00AM	0.025	0.032	0.026	NA	NA	NA	NA	NA	0.023
4/29/2016	1:00PM	0.019	0.014	0.022	NA	NA	NA	NA	NA	0.028
5/2/2016	8:30AM	0.017	0.013	0.015	NA	NA	NA	NA	0.018	0.021
5/2/2016	11:00AM	0.031	0.040	0.021	NA	NA	NA	NA	NA	0.032
5/2/2016	3:00PM	0.027	0.042	0.017	NA	NA	NA	NA	NA	0.036
5/3/2016	8:00AM	0.081	0.022	0.007	NA	NA	NA	NA	0.026	0.016
5/3/2016	11:00AM	0.037	0.031	NA	NA	NA	NA	NA	NA	0.018
5/3/2016	3:00PM	0.041	0.031	NA	NA	NA	NA	NA	NA	0.050
5/4/2016	8:00AM	0.011	0.013	0.009	NA	NA	NA	NA	0.022	0.027
5/4/2016	11:00AM	0.025	0.031	0.021	NA	NA	NA	NA	NA	0.018
5/4/2016	3:00PM	0.036	0.040	NA	NA	NA	NA	NA	NA	0.038
5/5/2016	8:00AM	0.035	0.047	0.026	NA	NA	NA	NA	0.019	0.061
5/5/2016	11:00AM	0.039	0.028	NA	NA	NA	NA	NA	NA	0.020
5/5/2016	3:00PM	0.014	0.018	NA	NA	NA	NA	NA	NA	0.023
5/6/2016	8:00AM	0.006	0.008	0.010	NA	NA	NA	NA	NA	0.014
5/10/2016	8:00AM	0.061	0.052	0.039	NA	NA	NA	NA	0.040	0.080
5/10/2016	11:00AM	0.034	0.064	NA	NA	NA	NA	NA	NA	0.070
5/10/2016	3:00PM	0.074	0.082	NA	NA	NA	NA	NA	NA	0.067
5/11/2016	8:00AM	0.008	0.012	0.019	NA	NA	NA	NA	0.004	0.020
5/11/2016	11:00AM	0.012	0.024	NA	NA	NA	NA	NA	NA	0.030
5/12/2016	8:00AM	0.006	0.005	0.007	NA	NA	NA	NA	0.005	0.015
5/12/2016	11:00AM	0.030	0.028	NA	NA	NA	NA	NA	NA	0.034
5/12/2016	2:30PM	0.028	0.038	NA	NA	NA	NA	NA	NA	0.046
5/16/2016	8:30AM	0.064	0.038	0.051	NA	NA	NA	NA	0.037	0.065
5/16/2016	11:00AM	NA	NA	NA	NA	NA	NA	0.058	0.046	0.071
5/16/2016	2:00PM	NA	NA	NA	NA	NA	NA	0.062	0.051	0.068
5/17/2016	8:00AM	0.036	0.051	0.043	NA	NA	NA	NA	0.024	0.037
5/17/2016	11:00AM	0.068	0.053	0.061	NA	NA	NA	NA	NA	0.057
5/18/2016	8:00AM	0.035	0.081	0.037	NA	NA	NA	NA	0.029	0.042
5/18/2016	11:00AM	0.022	0.023	NA	NA	NA	NA	NA	NA	0.012
5/18/2016	2:00PM	0.028	0.036	NA	NA	NA	NA	NA	NA	0.041
5/19/2016	8:00AM	0.025	0.056	0.042	NA	NA	NA	NA	0.031	0.027
5/19/2016	11:00AM	0.037	0.036	NA	NA	NA	NA	NA	NA	0.056
5/19/2016	3:00PM	0.072	0.045	NA	NA	NA	NA	NA	NA	0.039
5/20/2016	8:30AM	0.073	0.627	0.146	NA	NA	NA	NA	0.083	0.024
5/20/2016	11:00AM	0.046	0.027	NA	NA	NA	NA	NA	NA	0.041
5/20/2016	3:00PM	0.037	0.028	NA	NA	NA	NA	NA	NA	0.024

Table 1
Dust Monitoring Summary Table
Parcel A1
Sparrow's Point, Maryland

Date	Time	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9
5/23/2016	10:30AM	NA	0.035	0.021	0.021	NA	NA	NA	NA	0.24
5/23/2016	2:00PM	NA	0.05	0.019	NA	NA	NA	NA	NA	0.015
5/24/2016	7:00AM	NA	NA	NA	NA	NA	NA	0.021	0.017	0.018
5/24/2016	11:30AM	NA	NA	NA	NA	NA	NA	0.020	0.019	0.037
5/24/2016	3:00PM	NA	NA	NA	NA	NA	NA	0.023	0.024	0.029
5/25/2016	7:00AM	NA	NA	NA	NA	NA	NA	0.042	0.078	0.036
5/25/2016	1:00PM	NA	NA	NA	NA	NA	NA	0.029	0.049	0.034
5/26/2016	7:00AM	0.068	NA	NA	NA	NA	NA	NA	0.067	0.089
5/26/2016	11:00PM	0.048	0.046	0.046	NA	NA	NA	NA	NA	0.043
5/26/2016	3:00PM	0.061	0.051	0.045	0.049	NA	NA	NA	NA	0.049
5/31/2016	11:00PM	0.063	0.047	0.049	NA	NA	NA	NA	NA	0.041
5/31/2016	3:00PM	0.029	0.036	0.045	NA	NA	NA	NA	NA	0.061
6/1/2016	7:00AM	0.153	0.084	NA	NA	NA	NA	NA	NA	0.061
6/1/2016	9:30AM	0.034	0.043	0.042	NA	NA	NA	NA	NA	0.044
6/2/2016	7:45AM	0.014	0.013	0.013	0.007	NA	NA	NA	NA	0.018
6/2/2016	2:00PM	NA	NA	NA	NA	NA	0.016	0.025	0.023	0.046
6/2/2016	5:00PM	0.021	0.023	0.025	0.041	NA	NA	NA	NA	0.022
6/3/2016	7:00AM	0.031	0.026	0.029	0.043	NA	NA	NA	NA	0.027
6/3/2016	10:00AM	0.016	0.018	0.021	0.016	NA	NA	NA	NA	0.020
6/3/2016	2:30PM	0.009	0.017	0.009	0.008	NA	NA	NA	NA	0.013
6/6/2016	6:45AM	NA	NA	NA	NA	NA	0.018	0.022	0.023	0.019
6/6/2016	11:00AM	NA	NA	NA	NA	NA	0.006	0.007	0.010	0.007
6/6/2016	4:00PM	NA	NA	NA	NA	NA	0.001	0.011	0.021	0.027
6/7/2016	6:45AM	NA	NA	NA	NA	NA	0.016	0.02	0.0248	0.03
6/7/2016	11:30AM	NA	NA	NA	NA	NA	0.016	0.02	0.0248	0.03
6/7/2016	5:00PM	NA	NA	NA	NA	NA	0.014	0.013	0.012	0.024
6/8/2016	6:45AM	NA	NA	NA	NA	NA	NA	0.014	0.013	0.014
6/8/2016	11:00AM	NA	NA	NA	NA	NA	0.081	0.559	0.128	0.054
6/8/2016	3:00PM	NA	NA	NA	NA	NA	0.008	0.012	0.013	0.022
6/9/2016	11:00AM	NA	NA	NA	NA	NA	0.007	0.015	0.028	0.038
6/9/2016	3:30PM	NA	NA	NA	NA	NA	0.007	0.009	0.049	0.011
6/9/2016	5:15PM	NA	NA	NA	NA	NA	0.007	0.014	0.021	0.008
6/10/2016	7:00AM	NA	NA	NA	NA	NA	0.010	0.007	NA	0.017
6/10/2016	12:00PM	NA	NA	NA	NA	NA	0.006	0.017	0.014	0.016
6/10/2016	3:00PM	NA	NA	NA	NA	NA	0.019	0.100	0.017	0.009
6/13/2016	7:00AM	0.012	NA	NA	NA	NA	NA	0.008	0.011	0.012
6/13/2016	11:30PM	0.028	NA	NA	NA	NA	NA	0.008	0.011	0.012
6/13/2016	3:15PM	0.016	NA	NA	NA	NA	NA	0.013	0.013	0.020
6/14/2016	11:00AM	0.008	NA	NA	NA	NA	NA	0.007	0.006	0.014
6/14/2016	1:00PM	0.037	0.008	0.010	0.009	NA	NA	0.027	0.026	0.034
6/14/2016	3:30PM	0.037	0.019	0.022	NA	NA	NA	NA	NA	0.058
6/15/2016	7:00AM	NA	NA	NA	NA	NA	0.021	0.023	0.020	0.055
6/15/2016	12:30PM	0.024	NA	NA	NA	NA	NA	0.022	0.019	0.020
6/15/2016	3:00PM	0.073	0.019	0.018	NA	NA	NA	NA	NA	0.027
6/16/2016	10:00AM	0.010	0.010	0.008	NA	NA	NA	NA	0.008	0.011
6/16/2016	12:30PM	0.033	0.011	NA	NA	NA	NA	NA	0.016	0.034
6/17/2017	12:00PM	0.008	NA	NA	NA	NA	NA	0.007	0.010	0.012
6/17/2017	1:00PM	0.011	0.007	0.012	0.011	NA	NA	0.024	0.026	0.031
6/17/2017	2:30PM	0.032	0.014	0.022	NA	NA	NA	NA	NA	0.052
6/20/2016	7:00AM	0.075	NA	NA	NA	NA	0.017	0.024	0.032	0.078
6/20/2016	10:00AM	0.038	NA	NA	NA	NA	0.021	0.020	0.048	0.44
6/20/2016	3:00PM	NA	NA	NA	NA	NA	0.016	0.016	0.022	0.025
6/21/2016	7:00AM	0.047	NA	NA	NA	NA	NA	0.020	0.088	0.065
6/21/2016	11:30AM	0.038	NA	NA	NA	NA	NA	0.037	0.081	0.037
6/22/2016	7:00AM	NA	NA	NA	NA	NA	0.028	0.028	0.032	0.065
6/22/2016	11:00AM	0.017	NA	NA	NA	NA	0.013	0.013	0.016	0.025
6/22/2016	3:00PM	0.016	NA	NA	NA	NA	0.008	0.010	0.012	0.011
6/23/2016	9:30AM	0.024	0.021	0.021	NA	NA	NA	NA	0.023	0.021
6/23/2016	12:00AM	0.017	NA	NA	NA	NA	NA	0.020	0.021	0.021
6/23/2016	2:30PM	0.024	NA	NA	NA	NA	NA	0.025	0.012	0.046
6/23/2016	4:15PM	0.014	NA	NA	NA	NA	NA	0.017	0.012	0.057
6/24/2016	7:00AM	0.061	0.060	0.059	NA	NA	NA	NA	NA	0.059
6/24/2016	10:30AM	0.066	0.059	0.057	NA	NA	NA	NA	NA	0.052
6/27/2016	7:00AM	NA	NA	NA	NA	NA	0.016	0.016	0.015	0.014
6/27/2016	10:30AM	NA	NA	NA	NA	NA	0.017	0.020	0.012	0.021

Table 1
Dust Monitoring Summary Table
Parcel A1
Sparrow's Point, Maryland

Date	Time	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9
6/28/2016	7:00AM	0.055	0.039	NA	NA	NA	0.057	0.053	0.051	0.080
6/28/2016	11:15AM	0.055	0.52	NA	NA	NA	NA	0.060	0.057	0.057
6/28/2016	2:30PM	0.058	0.055	NA	NA	NA	NA	0.052	0.055	0.093
6/29/2016	7:00AM	0.018	0.011	NA	NA	NA	NA	0.011	0.015	0.012
6/29/2016	11:15AM	0.014	0.011	NA	NA	NA	NA	0.011	0.018	0.021
6/29/2016	4:15PM	0.008	NA	NA	NA	NA	NA	0.009	0.014	0.010
6/30/2016	7:00AM	0.016	0.015	0.015	NA	NA	NA	NA	0.017	0.022
6/30/2016	12:00PM	NA	NA	NA	NA	NA	0.008	0.013	0.040	0.019
6/30/2016	4:30PM	NA	NA	NA	NA	NA	0.009	0.017	0.38	0.011
7/1/2016	7:00AM	0.036	NA	NA	NA	NA	0.022	0.041	0.033	0.047
7/1/2016	11:00AM	0.034	0.042	0.032	0.029	NA	NA	NA	NA	0.038
7/6/2016	7:00AM	0.017	0.016	NA	NA	NA	NA	0.017	0.018	0.019
7/6/2016	12:00PM	0.015	0.016	NA	NA	NA	NA	0.014	0.017	0.018
7/7/2016	7:00AM	NA	NA	NA	NA	NA	0.046	0.058	0.059	0.064
7/7/2016	11:30AM	NA	NA	NA	NA	NA	0.051	0.057	0.096	0.050
7/7/2016	3:30PM	NA	NA	NA	NA	NA	0.067	0.061	0.057	0.071
7/7/2016	5:00PM	NA	NA	NA	NA	NA	0.041	0.059	0.055	0.065
7/8/2016	7:00AM	0.044	NA	NA	NA	NA	0.045	0.047	0.041	0.083
7/8/2016	12:30PM	0.041	NA	NA	NA	NA	0.051	0.049	0.044	0.154
7/8/2016	3:30PM	0.021	NA	NA	NA	NA	0.011	0.013	0.019	0.025
7/11/2016	7:00AM	0.005	0.003	0.006	NA	NA	NA	NA	0.004	0.000
7/11/2016	11:30AM	0.008	0.004	0.009	NA	NA	NA	NA	0.002	0.013
7/11/2016	2:00PM	0.053	0.013	0.013	NA	NA	NA	NA	NA	0.017
7/11/2016	4:00PM	0.031	0.015	0.017	NA	NA	NA	NA	NA	0.013
7/12/2016	7:00AM	NA	NA	NA	NA	NA	0.018	0.022	0.026	0.113
7/12/2016	11:30AM	0.019	0.018	0.022	NA	NA	NA	NA	0.018	0.019
7/12/2016	3:30PM	0.022	0.017	0.021	NA	NA	NA	NA	0.023	0.013
7/13/2016	7:00AM	0.014	0.018	0.016	NA	NA	NA	NA	0.014	0.014
7/13/2016	9:30AM	0.023	0.016	0.018	NA	NA	NA	NA	0.016	0.018
7/13/2016	12:15PM	0.018	0.016	0.016	NA	NA	NA	NA	0.014	0.018
7/13/2016	4:00PM	0.020	0.019	0.017	NA	NA	NA	NA	0.014	0.013
7/14/2016	7:00AM	NA	NA	NA	NA	NA	0.061	0.067	0.064	0.076
7/14/2016	11:30AM	NA	NA	NA	NA	NA	0.066	0.069	0.065	0.018
7/14/2016	2:30PM	NA	NA	NA	NA	NA	0.017	0.020	0.018	0.047
7/14/2016	4:30PM	NA	NA	NA	NA	NA	0.018	0.019	0.017	0.026
7/15/2016	7:00AM	NA	NA	NA	NA	NA	0.014	0.016	0.016	0.036
7/15/2016	12:00PM	NA	NA	NA	NA	NA	0.014	0.014	0.021	0.023
7/19/2016	7:00AM	0.021	NA	NA	NA	NA	0.018	0.019	0.019	0.028
7/19/2016	1:00PM	0.047	0.030	0.031	0.028	NA	NA	NA	NA	0.027
7/19/2016	3:30PM	0.061	0.026	0.031	0.029	NA	NA	NA	NA	0.030
7/20/2016	7:00AM	0.044	0.048	0.041	NA	NA	NA	NA	NA	0.041
7/20/2016	12:00PM	0.027	0.031	0.038	NA	NA	NA	NA	NA	0.048
7/20/2016	3:30PM	0.028	0.027	0.033	NA	NA	NA	NA	NA	0.020
7/21/2016	7:00AM	0.045	0.048	0.052	NA	NA	NA	NA	NA	0.045
7/21/2016	12:00PM	0.049	0.047	0.059	NA	NA	NA	NA	NA	0.054
7/21/2016	3:30PM	0.036	0.035	0.059	NA	NA	NA	NA	NA	0.053
7/22/2016	7:00AM	NA	NA	NA	NA	NA	0.040	0.051	0.047	0.056
7/22/2016	1:00PM	NA	NA	NA	NA	NA	0.043	0.052	0.080	0.401
7/25/2016	7:00AM	NA	NA	NA	NA	NA	0.075	0.084	0.091	0.071
7/25/2016	1:00PM	NA	NA	NA	NA	NA	0.071	0.086	0.074	0.089
7/25/2016	4:00PM	NA	NA	NA	NA	NA	0.079	0.061	0.059	0.091
7/26/2016	7:00AM	0.013	0.014	NA	NA	NA	NA	NA	0.034	0.050
7/26/2016	10:00AM	0.035	0.036	0.041	NA	NA	NA	NA	NA	0.056
7/26/2016	1:00PM	0.033	0.034	0.032	NA	NA	NA	NA	NA	0.038
7/26/2016	4:30PM	0.059	0.043	0.031	NA	NA	NA	NA	NA	0.066
7/27/2016	8:00AM	0.052	0.054	0.052	NA	NA	NA	NA	NA	0.092
7/27/2016	11:00AM	0.051	0.042	0.048	NA	NA	NA	NA	NA	0.062
7/27/2016	2:00PM	0.054	0.030	0.037	NA	NA	NA	NA	NA	0.030
7/27/2016	4:30PM	0.032	0.034	0.044	NA	NA	NA	NA	NA	0.031
7/28/2016	9:00AM	0.052	0.053	0.050	NA	NA	NA	NA	NA	0.056
7/28/2016	12:00PM	0.047	0.050	0.053	NA	NA	NA	NA	NA	0.053
8/1/2016	9:00AM	0.031	0.049	0.021	NA	NA	NA	NA	NA	0.027
8/1/2016	1:00PM	0.027	0.048	0.022	NA	NA	NA	NA	NA	0.028
8/1/2016	2:30PM	0.041	0.048	0.036	NA	NA	NA	NA	NA	0.039
8/1/2016	4:00PM	0.021	0.034	0.019	NA	NA	NA	NA	NA	0.025

Table 1
Dust Monitoring Summary Table
Parcel A1
Sparrow's Point, Maryland

Date	Time	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9
8/2/2016	9:00AM	0.031	0.049	0.021	NA	NA	NA	NA	NA	0.027
8/2/2016	1:00PM	0.027	0.048	0.022	NA	NA	NA	NA	NA	0.028
8/2/2016	2:30PM	0.041	0.048	0.036	NA	NA	NA	NA	NA	0.039
8/2/2016	4:00PM	0.021	0.034	0.019	NA	NA	NA	NA	NA	0.025
8/3/2016	7:00AM	0.015	0.015	0.014	NA	NA	NA	NA	NA	0.022
8/3/2016	9:00AM	0.019	0.015	0.014	NA	NA	NA	NA	NA	0.021
8/3/2016	1:00PM	0.022	0.014	0.014	NA	NA	NA	NA	NA	0.021
8/3/2016	4:00PM	0.014	0.017	0.022	NA	NA	NA	NA	NA	0.023
8/4/2016	7:00AM	0.017	0.016	0.011	0.011	NA	NA	NA	NA	0.025
8/4/2016	9:00AM	0.020	0.014	0.012	0.012	NA	NA	NA	NA	0.031
8/4/2016	1:00PM	0.024	0.014	0.013	0.013	NA	NA	NA	NA	0.025
8/4/2016	4:00PM	0.033	0.014	0.014	0.014	NA	NA	NA	NA	0.026
8/5/2016	7:00AM	NA	NA	NA	NA	NA	0.028	0.031	0.039	0.038
8/5/2016	9:00AM	NA	NA	NA	NA	NA	0.021	0.021	0.023	0.035
8/5/2016	11:00AM	NA	NA	NA	NA	NA	0.026	0.026	0.027	0.028
8/5/2016	2:00PM	NA	NA	NA	NA	NA	0.013	0.013	0.016	0.018
8/8/2016	7:00AM	0.012	0.017	0.013	NA	NA	NA	NA	NA	0.019
8/8/2016	9:00AM	0.017	0.023	0.015	NA	NA	NA	NA	NA	0.018
8/8/2016	1:00PM	0.019	0.027	0.015	NA	NA	NA	NA	NA	0.018
8/8/2016	4:00PM	0.016	0.012	0.015	NA	NA	NA	NA	NA	0.020
8/9/2016	8:30AM	0.015	NA	NA	NA	NA	NA	0.015	0.020	0.015
8/9/2016	12:00PM	0.020	0.138	0.020	NA	NA	0.015	NA	NA	0.020
8/9/2016	3:30PM	0.022	0.012	0.015	NA	NA	NA	NA	NA	0.048
8/10/2016	7:00AM	NA	NA	NA	NA	NA	0.028	0.031	0.039	0.038
8/10/2016	9:00AM	NA	NA	NA	NA	NA	0.021	0.021	0.023	0.035
8/10/2016	11:00AM	NA	NA	NA	NA	NA	0.026	0.026	0.027	0.028
8/10/2016	2:00PM	NA	NA	NA	NA	NA	0.013	0.018	0.016	0.018
8/11/2016	9:00AM	NA	NA	NA	NA	NA	0.024	0.024	0.023	0.018
8/11/2016	12:00PM	NA	NA	NA	NA	NA	0.023	0.023	0.023	0.024
8/11/2016	3:30PM	NA	NA	NA	NA	NA	0.023	0.021	0.020	0.027
8/16/2016	9:00AM	0.110	0.096	0.041	NA	NA	NA	NA	NA	0.039
8/16/2016	12:00PM	0.033	0.033	0.035	NA	NA	NA	NA	NA	0.046
8/16/2016	3:00PM	0.033	0.033	0.026	NA	NA	NA	NA	NA	0.044
8/16/2016	5:00PM	0.028	0.015	0.014	NA	NA	NA	NA	NA	0.037
8/17/2016	7:00AM	NA	NA	NA	NA	NA	0.0154	0.014	0.014	0.015
8/17/2016	11:00AM	NA	NA	NA	NA	NA	0.013	0.014	0.018	0.017
8/17/2016	2:00PM	NA	NA	NA	NA	NA	0.011	0.015	0.015	0.017
8/19/2016	7:00AM	0.012	0.012	0.011	0.009	NA	NA	NA	NA	0.021
8/19/2016	11:00AM	0.015	0.014	0.011	0.010	NA	NA	NA	NA	0.024
8/19/2016	1:00PM	0.019	0.018	0.011	0.008	NA	NA	NA	NA	0.028
8/22/2016	7:00AM	0.005	0.005	0.005	NA	NA	NA	NA	NA	0.008
8/22/2016	11:00AM	0.005	0.007	0.005	NA	NA	NA	NA	NA	0.008
8/22/2016	2:00PM	0.005	0.006	0.002	NA	NA	NA	NA	NA	0.008
8/23/2016	7:00AM	NA	NA	NA	NA	NA	0.008	0.005	0.008	0.008
8/23/2016	9:00AM	NA	NA	NA	NA	NA	0.007	0.009	0.008	0.011
8/23/2016	1:00PM	0.013	0.011	0.005	NA	NA	NA	NA	NA	0.005
8/23/2016	4:00PM	0.005	0.005	0.005	NA	NA	NA	NA	NA	0.005
8/24/2016	7:00AM	NA	NA	NA	NA	NA	0.013	0.018	0.019	0.016
8/24/2016	9:00AM	NA	NA	NA	NA	NA	0.014	0.012	0.011	0.014
8/24/2016	1:00PM	0.014	0.014	0.016	NA	NA	NA	NA	NA	0.015
8/24/2016	4:00PM	0.015	0.013	0.005	NA	NA	NA	NA	NA	0.004
8/25/2016	9:30AM	NA	NA	NA	NA	NA	0.003	0.007	0.007	0.010
8/25/2016	12:00PM	NA	NA	NA	NA	NA	0.004	0.007	0.005	0.014
8/25/2016	3:00PM	0.013	0.017	0.009	NA	NA	NA	NA	NA	0.013
8/25/2016	5:00PM	0.012	0.013	0.008	NA	NA	NA	NA	NA	0.015
8/26/2016	9:30AM	0.023	0.019	0.031	NA	NA	0.025	0.024	0.025	0.036
8/27/2016	11:00AM	0.039	0.032	0.042	0.104	NA	0.048	0.040	0.039	0.041
8/27/2016	1:30PM	0.038	0.029	0.031	0.050	NA	0.029	0.024	0.040	0.039
8/27/2016	4:00PM	0.014	0.031	0.029	0.034	0.028	0.041	0.051	0.028	0.022
8/28/2016	11:00AM	0.018	0.014	0.122	0.010	0.022	0.032	0.018	0.015	0.025
8/28/2016	1:00PM	0.020	NA	NA	NA	NA	0.050	0.041	0.031	.204
8/29/2016	9:00AM	0.021	0.014	0.011	NA	NA	NA	NA	NA	0.019
8/29/2016	12:00PM	0.015	0.009	0.009	NA	NA	NA	NA	NA	0.020
8/29/2016	3:00PM	0.019	0.015	0.011	NA	NA	NA	NA	NA	0.019
8/30/2016	9:00AM	0.020	0.022	0.007	NA	NA	NA	NA	NA	0.017

Table 1
Dust Monitoring Summary Table
Parcel A1
Sparrow's Point, Maryland

Date	Time	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9
8/30/2016	12:00PM	0.023	0.021	0.011	NA	NA	NA	NA	NA	0.020
8/30/2016	3:00PM	0.023	0.019	0.009	NA	NA	NA	NA	NA	0.021
9/6/2016	9:30AM	0.031	NA	NA	NA	NA	0.023	0.025	0.012	0.018
9/6/2016	11:30AM	0.033	NA	NA	NA	NA	NA	0.031	0.014	0.024
9/6/2016	1:30PM	0.019	0.013	0.018	NA	0.025	NA	NA	NA	0.065
9/6/2016	3:30PM	0.015	0.027	0.033	NA	0.041	NA	NA	NA	0.129
9/7/2016	7:00AM	0.015	NA	NA	NA	NA	NA	0.014	0.015	0.043
9/7/2016	10:00AM	0.010	0.019	0.011	NA	NA	NA	NA	NA	0.011
9/7/2016	1:00PM	0.008	0.020	0.012	NA	NA	NA	NA	NA	0.015
9/7/2016	4:00PM	0.009	0.020	0.009	NA	NA	NA	NA	NA	0.025
9/8/2016	9:00AM	NA	NA	NA	NA	NA	0.020	0.026	0.031	0.021
9/8/2016	11:00AM	NA	NA	NA	NA	NA	0.022	0.049	0.036	0.051
9/8/2016	1:00PM	NA	NA	NA	NA	NA	0.035	0.065	0.073	0.086
9/8/2016	3:00PM	NA	NA	NA	NA	NA	0.035	0.041	0.039	0.049
9/9/2016	7:00AM	NA	NA	0.067	0.053	0.024	NA	NA	NA	0.033
9/9/2016	10:00AM	NA	NA	NA	NA	NA	0.026	0.028	0.036	0.035
9/9/2016	2:00PM	NA	NA	NA	NA	NA	0.040	0.034	0.034	0.060
9/10/2016	11:00AM	NA	NA	NA	NA	0.047	0.081	NA	NA	NA
9/10/2016	1:00PM	NA	NA	NA	NA	0.902	0.069	NA	NA	NA
9/11/2016	8:00AM	0.010	0.010	0.009	0.016	0.015	0.010	0.011	0.013	0.012
9/11/2016	11:00AM	NA	NA	NA	NA	0.047	0.081	NA	NA	NA
9/11/2016	1:00PM	NA	NA	NA	NA	0.902	0.069	NA	NA	NA
9/12/2016	9:30AM	NA	NA	NA	NA	NA	0.019	0.024	0.040	0.040
9/12/2016	11:00AM	0.0003	0.005	0.004	NA	NA	NA	NA	NA	0.029
9/12/2016	1:30PM	0.006	0.009	0.005	NA	NA	NA	NA	NA	0.010
9/12/2016	3:30PM	NA	0.006	NA	0.005	NA	NA	NA	NA	0.010
9/13/2016	9:30AM	NA	NA	NA	NA	NA	0.008	0.001	0.002	0.009
9/13/2016	12:30PM	0.008	0.014	NA	NA	NA	NA	NA	0.007	0.011
9/13/2016	3:30PM	0.009	0.017	NA	NA	NA	NA	NA	0.008	0.014
9/14/2016	9:30AM	0.014	0.020	NA	NA	NA	NA	NA	0.023	0.026
9/14/2016	12:30PM	0.020	0.019	NA	NA	NA	NA	NA	0.025	0.035
9/14/2016	3:30PM	0.053	0.071	NA	NA	NA	NA	NA	0.049	0.046
9/15/2016	9:30AM	NA	NA	NA	NA	NA	0.008	0.001	0.002	0.009
9/15/2016	12:30PM	0.008	NA	NA	NA	NA	0.008	0.014	0.007	0.011
9/15/2016	3:30PM	0.009	NA	NA	NA	NA	0.009	0.017	0.008	0.014
9/16/2016	9:00AM	0.016	0.020	0.007	NA	NA	NA	NA	NA	0.011
9/16/2016	11:00AM	0.0.007	0.004	0.007	NA	NA	NA	NA	NA	0.015
9/16/2016	1:00PM	0.006	0.004	0.005	NA	NA	NA	NA	NA	0.015
9/16/2016	3:00PM	0.008	0.004	0.006	NA	NA	NA	NA	NA	0.015
9/22/2016	7:00AM	0.018	0.021	0.030	NA	NA	NA	NA	NA	0.016
9/22/2016	11:00AM	0.019	0.015	0.021	NA	NA	NA	NA	NA	0.030
9/22/2016	3:00PM	0.015	0.016	0.019	NA	NA	NA	NA	NA	0.018
9/23/2016	7:00AM	0.011	0.013	0.019	NA	NA	NA	NA	NA	0.010
9/23/2016	11:00AM	0.009	0.017	0.020	NA	NA	NA	NA	NA	0.011
9/23/2016	3:00PM	0.012	0.017	0.021	NA	NA	NA	NA	NA	0.010
9/26/2016	7:15AM	0.010	0.011	0.008	NA	NA	NA	NA	NA	0.019
9/26/2016	11:00AM	0.009	0.008	0.010	NA	NA	NA	NA	NA	0.010
9/26/2016	3:00PM	0.011	0.010	0.011	NA	NA	NA	NA	NA	0.011
9/27/2016	7:00AM	0.019	0.021	NA	NA	NA	NA	NA	0.026	0.027
9/27/2016	11:00AM	NA	NA	NA	NA	NA	0.017	0.016	0.014	0.014
9/27/2016	3:00PM	NA	NA	NA	NA	NA	0.021	0.018	0.018	0.015
10/3/2016	7:00AM	0.031	0.028	0.029	NA	NA	NA	NA	NA	0.036
10/3/2016	11:00AM	0.015	0.017	NA	NA	NA	NA	NA	0.018	0.018
10/3/2016	3:00PM	0.014	0.011	NA	NA	NA	NA	NA	0.013	0.014
10/4/2016	7:00AM	0.028	0.023	NA	NA	NA	NA	NA	0.034	0.038
10/4/2016	11:00AM	0.009	0.017	0.011	NA	NA	NA	NA	NA	0.037
10/4/2016	3:00PM	0.021	0.016	0.009	NA	NA	NA	NA	NA	0.021
10/4/2016	5:00PM	0.011	0.015	0.010	NA	NA	NA	NA	NA	0.019
10/5/2016	9:00AM	0.008	0.007	0.024	NA	NA	NA	NA	NA	0.011
10/5/2016	12:00PM	0.014	0.018	0.010	NA	NA	NA	NA	NA	0.011
10/5/2016	3:00PM	0.021	0.013	0.009	NA	NA	NA	NA	NA	0.014
10/6/2016	6:45AM	0.021	NA	NA	NA	NA	NA	0.021	0.022	0.026
10/6/2016	11:00AM	0.023	NA	NA	NA	NA	NA	0.008	0.009	0.021
10/6/2016	3:00PM	0.023	NA	NA	NA	NA	NA	0.010	0.017	0.018
10/6/2016	5:15PM	0.016	NA	NA	NA	NA	NA	0.012	0.009	0.011

Table 1
Dust Monitoring Summary Table
Parcel A1
Sparrow's Point, Maryland

Date	Time	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9
10/7/2016	9:00AM	0.009	0.010	0.016	NA	NA	NA	NA	NA	0.011
10/7/2016	12:00PM	0.007	0.011	0.013	0.019	NA	NA	NA	NA	0.008
10/7/2016	3:00PM	0.013	NA	0.013	0.032	NA	NA	NA	NA	0.032
10/10/2016	9:00AM	0.006	NA	NA	NA	NA	NA	0.002	0.002	0.006
10/10/2016	12:00PM	0.002	NA	NA	NA	NA	0.034	0.003	NA	0.002
10/10/2016	3:00PM	0.010	0.010	0.010	NA	NA	NA	NA	0.010	0.011
10/12/2016	10:00AM	NA	NA	NA	NA	NA	0.008	0.009	0.014	0.009
10/12/2016	12:30PM	NA	NA	NA	NA	NA	0.009	0.008	0.015	0.015
10/12/2016	3:00PM	NA	NA	NA	NA	NA	0.006	0.015	0.014	0.008
10/13/2016	9:00AM	NA	NA	NA	NA	NA	0.036	0.034	0.067	0.039
10/13/2016	12:00PM	NA	NA	NA	NA	NA	0.031	0.033	0.033	0.028
10/13/2016	3:00PM	NA	NA	NA	NA	NA	0.021	0.015	0.015	0.029
10/13/2016	5:00PM	NA	NA	NA	NA	NA	0.016	0.010	0.010	0.008
10/14/2016	6:00AM	NA	NA	0.010	0.006	0.008	NA	NA	NA	0.009
10/14/2016	9:00AM	NA	NA	0.010	0.008	0.007	NA	NA	NA	0.021
10/14/2016	12:00PM	NA	NA	0.006	0.015	0.011	NA	NA	NA	0.019
10/14/2016	3:00PM	NA	NA	0.007	0.009	0.007	NA	NA	NA	0.007
10/15/2016	9:00AM	0.012	0.011	0.018	NA	NA	NA	NA	NA	0.021
10/15/2016	12:00PM	0.027	0.043	0.027	NA	NA	NA	NA	NA	0.015
10/15/2016	3:00PM	0.010	0.014	0.017	NA	NA	NA	NA	NA	0.041
10/18/2016	9:30AM	NA	NA	NA	NA	0.042	0.035	0.035	NA	0.049
10/18/2016	12:30PM	NA	NA	NA	NA	0.040	0.043	0.039	NA	0.053
10/18/2016	3:30PM	NA	NA	NA	NA	0.041	0.033	0.033	NA	0.048
10/19/2016	9:00AM	NA	NA	NA	NA	0.030	0.031	0.047	NA	0.049
10/19/2016	1:00PM	NA	NA	NA	NA	NA	0.023	0.033	0.031	0.026
10/19/2016	4:30PM	NA	NA	NA	NA	NA	0.016	0.018	0.016	0.022
10/20/2016	7:00AM	NA	NA	NA	NA	NA	0.084	0.021	0.026	0.041
10/20/2016	11:00AM	NA	NA	NA	NA	NA	0.019	0.023	0.021	0.019
10/20/2016	3:30PM	NA	NA	NA	NA	NA	0.018	0.025	0.049	0.050
10/21/2016	7:00AM	NA	NA	NA	NA	0.019	0.007	0.010	NA	0.021
10/21/2016	11:00AM	0.020	0.018	0.016	NA	NA	NA	NA	NA	0.030
10/24/2016	9:00AM	NA	NA	NA	NA	NA	0.011	0.013	0.020	0.050
10/24/2016	12:00PM	0.132	NA	NA	NA	NA	NA	0.124	0.060	0.153
10/24/2016	3:00PM	0.026	0.035	NA	NA	NA	NA	NA	0.016	0.064
10/26/2016	10:00AM	0.020	0.029	0.025	NA	NA	NA	NA	NA	0.012
10/26/2016	1:30PM	0.077	0.016	0.005	NA	NA	NA	NA	NA	0.006
10/26/2016	4:00PM	0.022	0.022	0.018	NA	NA	NA	NA	NA	0.006
10/27/2016	6:30AM	0.043	0.027	0.026	NA	NA	NA	NA	NA	0.024
10/27/2016	9:30AM	0.015	0.024	0.015	NA	NA	NA	NA	NA	0.014
10/27/2016	12:30PM	0.013	0.014	0.017	NA	NA	NA	NA	NA	0.019
10/28/2016	9:30AM	0.009	NA	NA	NA	NA	NA	0.012	0.008	0.013
10/28/2016	1:30PM	0.008	NA	NA	NA	NA	NA	0.008	0.012	0.015
10/28/2016	4:30PM	0.006	NA	NA	NA	NA	NA	0.008	0.008	0.015
10/29/2016	9:30AM	0.021	NA	NA	NA	NA	NA	0.023	0.022	0.024
10/29/2016	11:30AM	0.020	NA	NA	NA	NA	NA	0.013	0.016	0.019
10/29/2016	1:30PM	NA	NA	NA	NA	NA	0.015	0.015	0.020	0.019
10/31/2016	8:30AM	0.068	NA	NA	NA	NA	NA	0.062	0.069	0.068
10/31/2016	11:30AM	0.006	NA	NA	NA	NA	NA	0.006	0.007	0.021
10/31/2016	3:00PM	0.016	NA	NA	NA	NA	NA	0.017	0.024	0.013
11/2/2016	9:00AM	NA	NA	NA	NA	NA	0.182	0.038	0.024	0.020
11/2/2016	12:00PM	NA	NA	NA	NA	0.030	0.039	0.033	NA	0.096
11/2/2016	3:00PM	0.043	0.040	0.037	NA	NA	NA	NA	NA	0.073
11/3/2016	10:00AM	NA	0.062	0.059	0.076	NA	NA	NA	NA	0.074
11/4/2016	10:00AM	0.028	0.025	NA	NA	NA	NA	NA	0.040	0.020
11/4/2016	1:00PM	0.020	0.020	NA	NA	NA	NA	NA	0.012	0.012
11/4/2016	4:00PM	0.020	0.021	NA	NA	NA	NA	NA	0.040	0.033
11/5/2016	8:00AM	0.023	0.013	0.012	NA	NA	NA	NA	NA	0.079
11/5/2016	11:00AM	NA	NA	NA	NA	NA	0.009	0.010	0.011	0.010
11/5/2016	2:00PM	NA	NA	NA	NA	NA	0.006	0.006	0.009	0.010
11/7/2016	10:00AM	0.019	0.014	NA	NA	NA	NA	NA	0.09	0.021
11/7/2016	1:00PM	0.021	0.019	0.042	NA	NA	NA	NA	NA	0.039
11/7/2016	4:00PM	0.010	0.017	0.022	NA	NA	NA	NA	NA	0.024
11/8/2016	10:00AM	0.011	0.006	0.010	NA	NA	NA	NA	NA	0.024
11/8/2016	1:00PM	0.032	0.012	0.012	NA	NA	NA	NA	NA	0.031
11/8/2016	4:00PM	0.015	0.013	0.012	NA	NA	NA	NA	NA	0.033

Table 1
Dust Monitoring Summary Table
Parcel A1
Sparrow's Point, Maryland

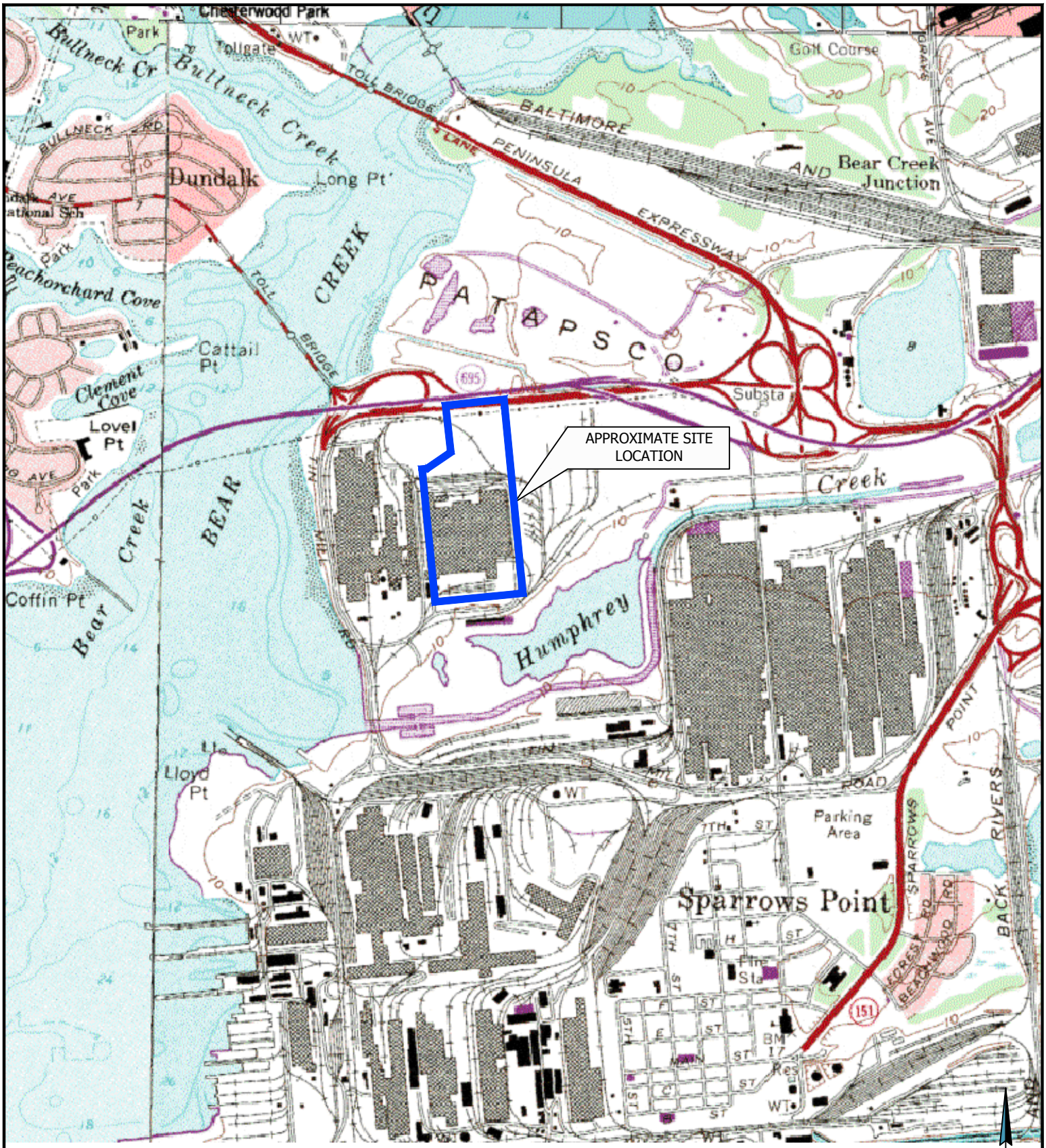
Date	Time	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9
11/10/2016	9:00AM	NA	NA	NA	NA	0.020	0.017	0.014	NA	0.018
11/10/2016	12:00PM	NA	NA	NA	NA	NA	0.016	0.014	0.015	0.020
11/10/2016	3:00PM	NA	NA	NA	NA	NA	0.014	0.009	0.030	0.021
11/11/2016	9:00AM	NA	NA	NA	NA	NA	0.056	0.050	0.047	0.040
11/11/2016	12:00PM	NA	NA	NA	NA	NA	0.054	0.031	0.014	0.040
11/14/2016	9:00AM	NA	0.054	0.079	0.071	NA	NA	NA	NA	0.266
11/14/2016	11:00AM	NA	0.043	0.043	0.053	NA	NA	NA	NA	0.067
11/14/2016	2:00PM	NA	0.041	0.046	0.038	NA	NA	NA	NA	0.059
11/15/2016	7:00AM	NA	0.048	0.049	NA	NA	NA	NA	0.048	0.048
11/15/2016	10:00AM	NA	NA	NA	NA	NA	0.051	0.051	0.050	0.048
11/15/2016	1:30PM	NA	NA	NA	NA	NA	0.046	0.05	0.049	0.048
11/16/2016	9:00AM	NA	NA	NA	NA	NA	0.051	0.050	0.043	0.043
11/16/2016	12:00PM	NA	NA	NA	NA	NA	0.045	0.048	0.043	0.041
11/16/2016	3:00PM	NA	NA	NA	NA	NA	0.048	0.048	0.044	0.072
11/17/2016	8:00AM	0.058	0.034	NA	NA	NA	NA	NA	0.020	0.062
11/17/2016	11:00AM	0.013	0.017	NA	NA	NA	NA	NA	0.018	0.145
11/17/2016	2:30PM	0.012	0.024	NA	NA	NA	NA	NA	0.015	0.051
11/22/2016	9:00AM	NA	NA	NA	NA	NA	0.089	0.016	0.016	0.109
11/22/2016	12:00PM	NA	NA	NA	NA	NA	0.048	0.013	0.019	0.022
11/22/2016	3:00PM	NA	NA	NA	NA	NA	0.017	0.016	0.016	0.023
11/23/2016	9:00AM	0.019	0.026	0.016	NA	NA	NA	NA	NA	0.072
11/23/2016	12:00PM	0.016	0.021	0.016	NA	NA	NA	NA	NA	0.018
12/2/2016	9:00AM	NA	NA	NA	NA	NA	0.009	0.009	0.009	0.008
12/2/2016	12:00PM	NA	NA	NA	NA	NA	0.009	0.009	0.009	0.008
12/2/2016	3:00PM	NA	NA	NA	NA	NA	0.007	0.010	0.010	0.009
12/3/2016	9:00AM	NA	NA	NA	NA	NA	0.008	0.008	0.010	0.011
12/3/2016	12:00PM	NA	NA	NA	NA	NA	0.008	0.007	0.011	0.009
12/5/2016	9:00AM	NA	NA	NA	NA	NA	0.023	0.029	0.043	0.187
12/5/2016	12:00PM	NA	NA	NA	NA	NA	0.021	0.022	0.036	0.038
12/5/2016	2:30PM	NA	NA	NA	NA	NA	0.021	0.025	0.039	0.041
12/7/2016	9:00AM	NA	NA	NA	NA	NA	0.022	0.022	0.033	0.042
12/7/2016	12:00PM	NA	NA	NA	NA	NA	0.022	0.021	0.040	0.039
12/7/2016	3:00PM	NA	NA	NA	NA	NA	0.019	0.019	0.027	0.030
12/8/2016	9:00AM	0.011	0.017	0.015	NA	NA	NA	NA	NA	0.017
12/8/2016	12:00PM	NA	NA	NA	NA	0.016	0.016	0.025	NA	0.028
12/8/2016	3:00PM	NA	NA	NA	NA	0.026	0.025	0.024	NA	0.039
12/9/2016	9:00AM	NA	NA	NA	NA	NA	0.015	0.019	0.652	0.186
12/9/2016	12:00PM	NA	NA	NA	NA	NA	0.016	0.027	0.068	0.075
12/13/2016	7:15AM	0.040	0.038	NA	0.031	NA	NA	NA	NA	0.040
12/13/2016	10:30AM	0.038	0.035	NA	0.031	NA	NA	NA	NA	0.035
12/13/2016	1:15PM	0.039	0.033	NA	0.035	NA	NA	NA	NA	0.039
12/14/2016	8:00AM	NA	NA	NA	NA	NA	0.033	0.031	0.022	0.025
12/14/2016	11:00AM	NA	NA	NA	NA	NA	0.046	0.031	0.029	0.027
12/14/2016	1:00PM	NA	NA	NA	NA	NA	0.040	0.039	0.021	0.021
12/15/2016	8:30AM	NA	NA	NA	NA	NA	0.196	0.062	0.088	0.090
12/15/2016	11:30AM	NA	NA	NA	NA	NA	0.0163	0.066	0.094	0.164
12/20/2016	7:30AM	0.019	0.018	NA	NA	NA	NA	NA	0.030	0.055
12/20/2016	10:30AM	0.019	0.017	NA	NA	NA	NA	NA	0.025	0.035
12/21/2016	9:30AM	NA	NA	NA	NA	NA	0.047	0.055	0.021	0.022
12/21/2016	12:30PM	NA	NA	NA	NA	NA	0.030	0.056	0.033	0.025
12/23/2016	9:00AM	NA	NA	NA	NA	NA	0.011	0.023	0.027	0.046
12/23/2016	12:00PM	NA	NA	NA	NA	NA	0.027	0.033	0.022	0.051
12/23/2016	3:00PM	NA	NA	NA	NA	NA	0.034	0.031	0.021	0.032
12/27/2016	12:00PM	NA	NA	NA	NA	NA	0.021	0.015	0.023	0.036
12/27/2016	3:00PM	NA	NA	NA	NA	NA	0.016	0.011	0.021	0.029
12/28/2016	7:00AM	0.060	NA	NA	NA	NA	NA	0.058	0.051	0.052
12/28/2016	11:00AM	0.042	NA	NA	NA	NA	NA	0.080	0.047	0.055
12/28/2016	2:00PM	0.047	NA	NA	NA	NA	NA	0.110	0.047	0.051
12/30/2016	7:00AM	NA	NA	NA	NA	NA	0.007	0.051	0.022	0.006
12/30/2016	11:00AM	NA	NA	NA	NA	NA	0.008	0.009	0.011	0.020
12/30/2016	3:00PM	NA	NA	NA	NA	NA	0.010	0.023	0.019	0.017
1/4/2017	12:00PM	NA	NA	NA	NA	NA	0.024	0.021	0.006	0.091
1/4/2017	2:30PM	NA	NA	NA	NA	NA	0.011	0.012	0.033	0.050
1/5/2017	12:00PM	NA	NA	NA	NA	NA	0.024	0.021	0.006	0.091
1/5/2017	2:30PM	NA	NA	NA	NA	NA	0.011	0.012	0.033	0.050

Table 1
Dust Monitoring Summary Table
Parcel A1
Sparrow's Point, Maryland

Date	Time	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9
1/6/2017	8:00AM	NA	NA	NA	NA	NA	0.051	0.039	0.040	0.041
1/6/2017	11:00AM	NA	NA	NA	NA	NA	0.022	0.051	0.066	0.023
1/6/2017	2:00PM	NA	NA	NA	NA	NA	0.022	0.024	0.021	0.021
1/7/2017	9:30AM	0.017	0.011	0.013	NA	0.011	NA	NA	NA	0.010
1/7/2017	11:30AM	0.014	0.017	0.012	NA	0.011	NA	NA	NA	0.016
1/9/2017	10:00AM	NA	NA	NA	NA	NA	0.043	0.053	0.122	0.042
1/9/2017	12:00PM	NA	NA	NA	NA	NA	0.050	0.060	0.029	0.020
1/9/2017	2:00PM	NA	NA	NA	NA	NA	0.044	0.051	0.031	0.023
1/10/2017	8:00AM	NA	NA	NA	NA	0.029	0.026	0.037	NA	0.034
1/10/2017	11:00AM	NA	NA	NA	NA	0.026	0.029	0.027	NA	0.026
1/10/2017	2:00PM	NA	NA	NA	NA	0.025	0.024	0.025	NA	0.031
1/11/2017	8:00AM	NA	NA	NA	NA	0.009	0.011	0.011	NA	0.031
1/11/2017	11:00AM	NA	NA	NA	NA	0.015	0.019	0.030	NA	0.066
1/11/2017	2:00PM	NA	NA	NA	NA	0.022	0.020	0.022	NA	0.052
1/12/2017	12:00PM	NA	NA	NA	NA	NA	0.011	0.017	0.012	0.011
1/12/2017	2:00PM	NA	NA	NA	NA	NA	0.013	0.022	0.051	0.066
1/16/2017	8:30AM	0.049	0.060	0.080	NA	NA	NA	NA	NA	0.055
1/16/2017	11:30AM	0.049	0.040	0.051	NA	NA	NA	NA	NA	0.062
1/16/2017	2:30PM	NA	0.019	0.039	NA	NA	NA	NA	NA	0.059
1/18/2017	9:00AM	0.016	0.010	0.010	NA	NA	NA	NA	NA	0.008
1/18/2017	12:00PM	0.008	0.007	0.006	NA	NA	NA	NA	NA	0.007
1/18/2017	3:00PM	NA	NA	NA	NA	NA	0.009	0.011	0.015	0.011
1/19/2017	7:00AM	NA	NA	NA	NA	NA	0.014	0.020	0.018	0.016
1/19/2017	10:00AM	NA	NA	NA	NA	NA	0.012	0.013	0.018	0.014
1/19/2017	1:00PM	NA	NA	NA	NA	NA	0.012	0.014	0.014	0.020
1/19/2017	4:00PM	NA	NA	NA	NA	NA	0.016	0.013	0.013	0.015
1/25/2017	8:30AM	NA	NA	NA	NA	NA	0.013	0.013	0.027	0.038
1/25/2017	12:00PM	NA	NA	NA	NA	NA	0.029	0.038	0.050	0.038
1/25/2017	2:00PM	NA	NA	NA	NA	NA	0.031	0.042	0.015	0.014
1/26/2017	8:00AM	NA	NA	NA	NA	NA	NA	0.065	0.049	0.044
1/26/2017	11:00AM	NA	NA	NA	NA	NA	NA	0.060	0.044	0.044
1/26/2017	2:00PM	NA	NA	NA	NA	NA	NA	0.050	0.051	0.037
1/27/2017	9:00AM	NA	NA	NA	NA	NA	NA	0.043	0.029	0.032
1/27/2017	11:30AM	NA	NA	NA	NA	NA	NA	0.051	0.038	0.047
1/27/2017	2:30PM	NA	NA	NA	NA	NA	NA	0.030	0.036	0.032
1/28/2017	9:00AM	NA	NA	NA	NA	NA	NA	0.043	0.029	0.032
1/30/2017	8:00AM	0.039	NA	NA	NA	NA	NA	0.033	0.009	0.022
1/30/2017	11:00AM	0.036	NA	NA	NA	NA	NA	0.036	0.051	0.019
1/30/2017	2:00PM	0.027	NA	NA	NA	NA	NA	0.029	0.044	0.025
1/31/2017	8:00AM	NA	0.017	0.019	NA	NA	NA	NA	NA	0.018
1/31/2017	11:00AM	NA	0.014	0.015	NA	NA	NA	NA	NA	0.013
1/31/2017	1:45PM	NA	0.018	0.025	NA	NA	NA	NA	NA	0.038

Notes:
Dust monitoring conducted using a DustTrak II Desktop Monitor 8530.
Results are reported in milligrams per cubic meter.
The approved action level is 3.0 milligrams per cubic meter.

FIGURES



APPROXIMATE GRAPHIC SCALE

1500 0 750 1500 3000

1 inch = 1500 ft.

N

SOURCE: IMAGE ADAPTED FROM MAPCARD SPARROWS POINT, MD DATED 1974.

PREPARED FOR:

SCANNELL PROPERTIES

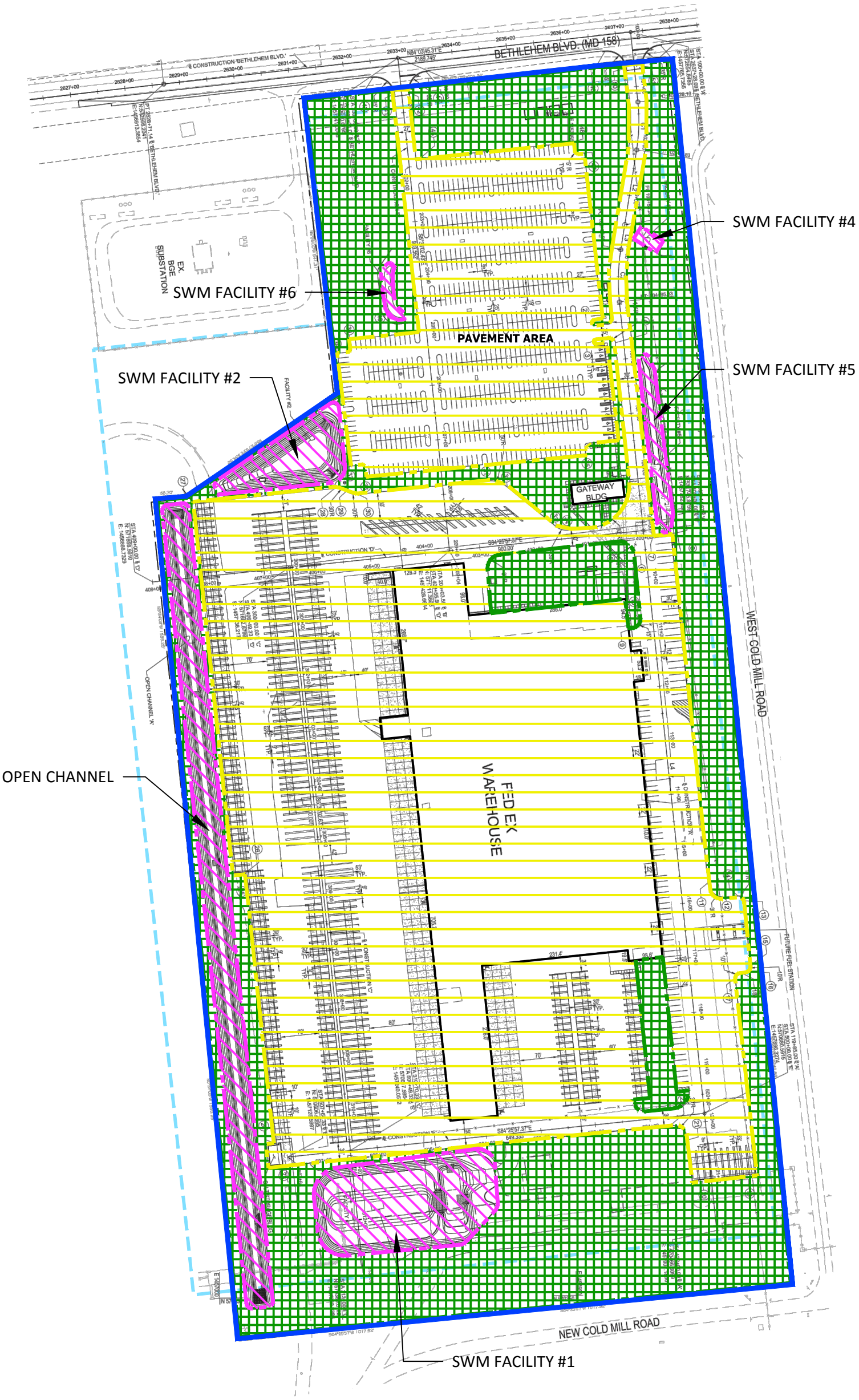
SITE LOCATION MAP

PARCEL A1
TRADEPOINT ATLANTIC
BALTIMORE, MD

Weaver Consultants Group
CHICAGO, ILLINOIS
(312) 922-1030 www.wcgrp.com

DRAWN BY: RMD
REVIEWED BY: LC
DATE: 5/4/2017
FILE: 3751-300-02
CAD: BASE MAP.dwg

FIGURE 1



LEGEND

- APPROXIMATE UPDATED PARCEL BOUNDARY
- APPROXIMATE PRIOR PARCEL BOUNDARY
- ASPHALT/CONCRETE CAP AREAS
- LANDSCAPE CAP AREAS
- STORM WATER MANAGEMENT FACILITY AREAS

APPROXIMATE GRAPHIC SCALE

200 0 100 200

1 inch = 200 ft.

N

SOURCE: BASE IMAGE ADAPTED FROM KCI TECHNOLOGIES CONSTRUCTION DOCUMENT (PROJECT RECORD) SET, OVERALL SWM PLAN DATED 8-8-2016.

PREPARED FOR:

SCANNELL PROPERTIES

AS-BUILT CAPPED AREAS

PARCEL A1
TRADEPOINT ATLANTIC
BALTIMORE, MD

Weaver Consultants Group
CHICAGO, ILLINOIS
(312) 922-1030 www.wcgrp.com

DRAWN BY: RMD
REVIEWED BY: LC
DATE: 5/4/2017
FILE: 3751-300-01
CAD: base6-12-2015.dwg

FIGURE 2

APPENDIX A

Property Legal Description

LEGAL DESCRIPTION OF THE LAND

Beginning for the same at a point on the southerly line of the Perpetual Aerial Easement of the Baltimore Beltway, I-695, as shown on Maryland State Highway Administration Right of Way Plat number 38700, said point being distant North 85 degrees 20 minutes 59 seconds East 71.53 feet from the angle break opposite baseline station 937+85; thence leaving said line and running for the outline of a lease parcel through the lands of Sparrows Point Terminal LLC, as in a deed dated September 18, 2014, from Sparrows Point, LLC to Sparrows Point Terminal LLC, recorded among the Land Records of Baltimore County, Maryland in Liber 35478 at Folio 379, with meridian reference to the Maryland State Coordinate System:

1. South 05 degrees 34 minutes 03 seconds East 2248.88 feet;
thence
2. South 84 degrees 25 minutes 57 seconds West 1017.92 feet;
thence
3. North 05 degrees 34 minutes 03 seconds West 1539.25 feet;
thence
4. North 84 degrees 25 minutes 57 seconds East 58.70 feet;
thence
5. North 55 degrees 27 minutes 53 seconds East 334.52 feet;
thence
5. North 06 degrees 26 minutes 00 seconds West 541.31 feet to intersect said easement line; thence binding on said line
6. North 83 degrees 43 minutes 12 seconds East 603.26 feet;
thence
7. North 85 degrees 20 minutes 59 seconds East 71.53 feet to the point of beginning

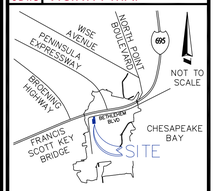
Containing 47.3893 acres of land, more or less.

Being a part of a tract of land owned by Sparrows Point Terminal LLC, as in a deed dated September 18, 2014, from Sparrows Point, LLC to Sparrows Point Terminal LLC, recorded among the Land Records of Baltimore County, Maryland in Liber 35478 at Folio 379.

APPENDIX B

As-Built Survey and As-Built Construction Documents

6Diie | VICINITY MAP



5Ciii | SURVEYOR OBSERVED POSSIBLE ENCROACHMENTS

NONE APPARENT AT THE TIME OF SURVEY UNLESS OTHERWISE DEPICTED ON THIS SURVEY

3 | FLOOD INFORMATION

BY GRAPHIC PLOTTING ONLY, THIS PROPERTY LIES WITHIN ZONE "X", AS SHOWN ON THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 240010 0555 G (MAP NO. 24001005556), WHICH BEARS AN EFFECTIVE DATE OF 05/05/2014, AND IS NOT IN A SPECIAL FLOOD HAZARD AREA. NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE. ZONE "X" DENOTES AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

6Cvii | PLATTED SETBACK OR RECORDED BUILDING RESTRICTION LINES

NONE PROVIDED TO THIS SURVEYOR.

5Ei | "SCHEDULE B - SECTION 2" ITEMS

(4) RIGHTS OF FEDEX PACKAGE SYSTEMS, INC., AS SUBTENANT UNDER AN UNRECORDED SUB GROUND LEASE DATED DECEMBER 17, 2015 AS AFFECTED BY SUBLEASE SUBORDINATION NONDISTURBANCE AND ATTORNMENT AGREEMENT DATED AUGUST 22, 2016 RECORDED AUGUST 26, 2016 IN LIBER 37929, PAGE 302.
(AFFECTS, LEASE NOTHING TO PLOT)

(5) TERMS OF CHAIN QUITCLAIM DEED (LAND) DATED SEPTEMBER 14, 2012, MADE BY AND BETWEEN RG STEEL SPARROWS POINT, LLC, A DELAWARE LIMITED LIABILITY COMPANY AND SPARROWS POINT LLC, A MISSOURI LIMITED LIABILITY COMPANY, AND RECORDED ON OCTOBER 2, 2012 AMONG THE LAND RECORDS OF BALTIMORE COUNTY, MARYLAND IN LIBER 32617, FOLIO 120. (MINERAL INTERESTS RESERVED) (DEEDS CONVEYS LAND ONLY)

AS RE-RECORDED IN TERMS OF CHAIN QUITCLAIM DEED (LAND) DATED SEPTEMBER 14, 2012, MADE BY AND BETWEEN RG STEEL SPARROWS POINT, LLC, A DELAWARE LIMITED LIABILITY COMPANY AND SPARROWS POINT LLC, A MISSOURI LIMITED LIABILITY COMPANY, AND RECORDED ON DECEMBER 3, 2012 AMONG THE LAND RECORDS OF BALTIMORE COUNTY, MARYLAND IN LIBER 32861, FOLIO 274. (MINERAL INTERESTS RESERVED, MEMO AGREEMENT INCLUDED RIGHT OF ACCESS) (DEED CONVEYS LAND ONLY)
(AFFECTS, NOTHING TO PLOT – THERE ARE NO RESTRICTIONS AND/OR RESERVATIONS THAT APPEAR TO AFFECT THE LEASE PARCEL.)

(6) TERMS OF CHAIN QUITCLAIM DEED (IMPROVEMENTS) DATED SEPTEMBER 14, 2012, MADE BY AND AMONG RG STEEL SPARROWS POINT, LLC, A DELAWARE LIMITED LIABILITY COMPANY, HRE SPARROWS POINT, LLC, A DELAWARE LIMITED LIABILITY COMPANY AND SPARROWS POINT LLC, A MISSOURI LIMITED LIABILITY COMPANY, AND RECORDED ON OCTOBER 2, 2012 AMONG THE LAND RECORDS OF BALTIMORE COUNTY, MARYLAND IN LIBER 32617, FOLIO 144. (MINERAL INTERESTS RESERVED) (DEED CONVEYS IMPROVEMENT ONLY)

AS RE-RECORDED IN TERMS OF CHAIN QUITCLAIM DEED (IMPROVEMENTS) DATED SEPTEMBER 14, 2012, MADE BY AND AMONG RG STEEL SPARROWS POINT, LLC, A DELAWARE LIMITED LIABILITY COMPANY, HRE SPARROWS POINT, LLC, A DELAWARE LIMITED LIABILITY COMPANY AND SPARROWS POINT LLC, A MISSOURI LIMITED LIABILITY COMPANY, AND RECORDED ON DECEMBER 3, 2012 AMONG THE LAND RECORDS OF BALTIMORE COUNTY, MARYLAND IN LIBER 32861, FOLIO 324. (MINERAL INTERESTS RESERVED, MEMO AGREEMENT INCLUDED RIGHT OF ACCESS) (DEED CONVEYS IMPROVEMENTS ONLY)
(AFFECTS, NOTHING TO PLOT – THERE ARE NO RESTRICTIONS AND/OR RESERVATIONS THAT APPEAR TO AFFECT THE LEASE PARCEL.)

(7) DEED AND AGREEMENT DATED NOVEMBER 26, 2003, MADE BY AND BETWEEN ISG SPARROWS POINT INC., A DELAWARE CORPORATION AND BALTIMORE COUNTY, MARYLAND, A BODY CORPORATE AND POLITIC, AND RECORDED ON APRIL 12, 2004 AMONG THE LAND RECORDS OF BALTIMORE COUNTY, MARYLAND IN LIBER 19876, FOLIO 718.
(AFFECTS, AS SHOWN)

(8) RIGHT OF WAY AGREEMENT DATED JANUARY 28, 2009, MADE BY AND BETWEEN SEVERSTAL SPARROWS POINT, LLC, A DELAWARE LIMITED LIABILITY COMPANY, SUCCESSOR IN INTEREST TO BETHLEHEM STEEL CORPORATION AND BALTIMORE GAS AND ELECTRIC COMPANY, A MARYLAND CORPORATION, AND RECORDED ON APRIL 17, 2009 AMONG THE LAND RECORDS OF BALTIMORE COUNTY, MARYLAND IN LIBER 27947, FOLIO 335.
(AFFECTS, AS SHOWN)

(9) AGREEMENT CONTAINED IN RIGHT OF WAY DATED MAY 28, 1925 MADE BY AND BETWEEN THE BALTIMORE STEELTON DEVELOPMENT COMPANY AND THE CHESAPEAKE AND POTOMAC TELEPHONE CO. OF BALTIMORE CITY, AND RECORDED JUNE 4, 1925, AMONG THE LAND RECORDS OF BALTIMORE COUNTY, MARYLAND IN LIBER 618, FOLIO 38.
(AFFECTS, BLANKET IN NATURE)

(10) LICENSE, EASEMENT AND COVENANT DATED SEPTEMBER 18, 2014, MADE BY AND BETWEEN SPARROW'S POINT TERMINAL, LLC AND SPARROW'S POINT LLC, AND RECORDED ON OCTOBER 20, 2014 AMONG THE LAND RECORDS OF BALTIMORE COUNTY, MARYLAND IN LIBER 35478, FOLIO 412.
(AFFECTS, BLANKET IN NATURE)

(CONTINUED)

5Ei "SCHEDULE B - SECTION 2" ITEMS CONTINUED

(11) ENVIRONMENTAL LICENSE AND EASEMENT DATED SEPTEMBER 18, 2014, MADE BY AND BETWEEN SPARROWS POINT TERMINAL, LLC, A DELAWARE LIMITED LIABILITY COMPANY AND SPARROWS POINT LLC, A MISSOURI LIMITED LIABILITY COMPANY, AND RECORDED ON OCTOBER 20, 2014 AMONG THE LAND RECORDS OF BALTIMORE COUNTY, MARYLAND IN LIBER 35478, FOLIO 448.
(AFFECTS, BLANKET IN NATURE)

(12) RECLAMATION ACCESS AGREEMENT DATED SEPTEMBER 18, 2014, MADE BY AND AMONG SPARROWS POINT TERMINAL, LLC, A DELAWARE LIMITED LIABILITY COMPANY, HRE SPARROWS POINT, LLC, A DELAWARE LIMITED LIABILITY COMPANY AND HILCO SP, LLC, A DELAWARE LIMITED LIABILITY, AND RECORDED ON DECEMBER 8, 2014 AMONG THE LAND RECORDS OF BALTIMORE COUNTY, MARYLAND IN LIBER 35635, FOLIO 231.
(AFFECTS, BLANKET IN NATURE)

(14) STEEL TOWER LINE EASEMENT RECORDED AMONG THE LAND RECORDS OF BALTIMORE COUNTY, MARYLAND IN LIBER 3788, FOLIO 396.
(AFFECTS, AS SHOWN)

(15) ANY LOSS ARISING OUT OF CIVIL ACTION AGAINST BETHLEHEM STEEL CORPORATION, IN THE US DISTRICT COURT FOR MARYLAND CASE NOS. 1:97-CV-00558JFM AND 00559JFM.
(AFFECTS, NOTHING TO PLOT)

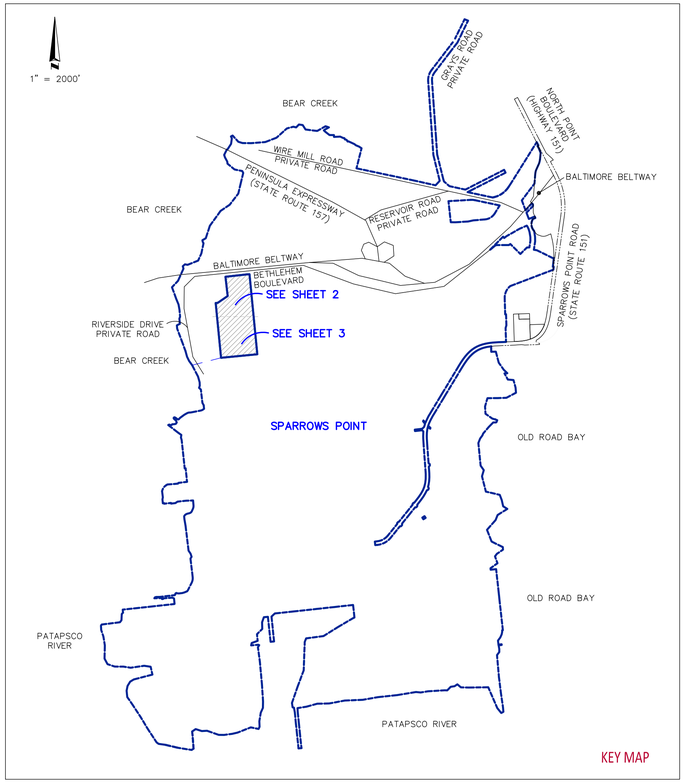
(17) MEMORANDUM OF GROUND LEASE DATED MAY 14, 2015, MADE BY AND BETWEEN SPARROWS POINT TERMINAL, LLC, A DELAWARE LIMITED LIABILITY COMPANY AND SCANNEL PROPERTIES #191, LLC, AN INDIANA LIMITED LIABILITY COMPANY, AND RECORDED ON JUNE 2, 2015 AMONG THE LAND RECORDS OF BALTIMORE COUNTY, MARYLAND IN LIBER 36246, FOLIO 30 AS AMENDED BY AMENDMENT TO MEMORANDUM OF GROUND LEASE DATED FEBRUARY 17, 2016, MADE BY AND BETWEEN SPARROWS POINT TERMINAL, LLC, A DELAWARE LIMITED LIABILITY COMPANY AND SCANNEL PROPERTIES #191, LLC, AN INDIANA LIMITED LIABILITY COMPANY, AND RECORDED ON FEBRUARY 18, 2016 AMONG THE LAND RECORDS OF BALTIMORE COUNTY, MARYLAND IN LIBER 37185, FOLIO 375
(AFFECTS, LEASE NOTHING TO PLOT)

(18) DECLARATION OF RESTRICTIVE COVENANTS DATED MARCH 6, 2017 BY TRADEPOINT ATLANTIC, LLC, A DELAWARE LIMITED LIABILITY COMPANY, AND RECORDED MARCH 8, 2017 AMONG THE LAND RECORDS OF BALTIMORE COUNTY, MARYLAND IN LIBER 38717, FOLIO 157.
(DOES NOT AFFECT, PARCELS DESCRIBED WITHIN DOCUMENT LIE EAST OF SUBJECT PROPERTY.)

(19) DEED OF EASEMENT DATED MARCH 6, 2017 MADE BY AND BETWEEN TRADEPOINT ATLANTIC, LLC, A DELAWARE LIMITED LIABILITY COMPANY AND TPA PROPERTIES 1, LLC, A DELAWARE LIMITED LIABILITY COMPANY AND RECORDED MARCH 8, 2017 AMONG THE LAND RECORDS OF BALTIMORE COUNTY, MARYLAND IN LIBER 38717, FOLIO 183.
DOES NOT AFFECT, PARCELS DESCRIBED WITHIN DOCUMENT LIE EAST OF SUBJECT PROPERTY.

ALTA/NSPS LAND TITLE SURVEY IDENTIFICATION TABLE

2	"TABLE A" PROPERTY ADDRESS	6Biv	BEARING BASIS	7	SURVEYOR'S CERTIFICATE
3	"TABLE A" FLOOD INFORMATION	6Bvii	CONTIGUITY STATEMENT	7b	"TABLE A" BUILDING AREA
4	"TABLE A" LAND AREA	6Bxii	TITLE COMMITMENT INFORMATION	7c	"TABLE A" BUILDING HEIGHT
5Biii	ACCESS TO PROPERTY	6Cvii	RECORDED SETBACKS/RESTRICTIONS PROVIDED BY INSURED	9	"TABLE A" PARKING SPACES
5Ciii	SURVEYOR OBSERVED POSSIBLE ENCROACHMENTS	6Diic	NORTH ARROW & SCALE	13	"TABLE A" ADJOINING OWNERS
5Ei	"SCHEDULE B – SECTION 2" ITEMS	6Diid	LEGEND & ABBREVIATIONS	14	"TABLE A" INTERSECTING STREET
5F	CEMETERY NOTE	6Diie	VICINITY MAP	16	"TABLE A" EARTH MOVING NOTE
6Bi	TITLE DESCRIPTION	6Dig	SURVEYOR'S NOTES	17	RIGHT OF WAY CHANGES
		6Dvi	TYPE OF SURVEY	18	WETLAND AREAS
		11	UTILITY INFORMATION		



KEY MAP

SEE SHEETS 2 & 3 FOR SURVEY DRAWING

STATUS: LEGAL CONFORMING AS NOTED HEREON:
THE CURRENT ZONING DISTRICT FOR THE SUBJECT PROPERTY IS MH-IM, MANUFACTURING, HEAVY-INDUSTRIAL, MAJOR. THE PROPOSED USE OF INDUSTRIAL IS PERMITTED BY RIGHT IN THE MH-IM ZONING DISTRICT, AND NO ZONING, BUILDING OR FIRE CODE VIOLATIONS HAVE BEEN DISCLOSED THAT WOULD AFFECT THE SUBJECT PROPERTY. THE PROPERTY IS CONSIDERED TO BE LEGAL CONFORMING AS NOTED HEREIN. THE FOLLOWING VARIANCES, SPECIAL PERMITS, EXCEPTIONS OR CONDITIONS HAVE BEEN DISCLOSED; HOWEVER, WERE NEVER PUT INTO EFFECT: PETITION FOR VARIANCE WITH PROPOSED PLAT CASE NO. 93-256-A DATED 2.24.93. UPON COMPARING CURRENT APPLICABLE MH-IM ZONING CODE REQUIREMENTS TO EXISTING PROPERTY CONDITIONS AS NOTED ON THE SURVEY, NO NONCONFORMITIES WERE DISCLOSED WITH REGARD TO SETBACKS, HEIGHT, FLOOR AREA RATIO, OR PARKING. NO FACTORS HAVE BEEN DISCLOSED BY THIS REPORT THAT WOULD PRECLUDE THE PROPERTY FROM BEING REBUILT IN ACCORDANCE WITH MUNICIPAL ZONING CODE REQUIREMENTS IN THE EVENT OF DAMAGE OR DESTRUCTION.

6 | ZONING INFORMATION

ITEM	REQUIRED	OBSERVED
PERMITTED USE	MH-IM	INDUSTRIAL
MINIMUM LOT AREA (SQ.FT.)	NONE	2,064,279
MINIMUM FRONTAGE	N/S	674'±
MINIMUM LOT WIDTH	NONE	2248'±
MAX BUILDING COVERAGE	NONE	15%
MAX BUILDING HEIGHT	UNLIMITED	37.0'
MINIMUM SETBACKS		
FRONT	75'	757.8'
SIDE	50'	157.1'
REAR	50'	359.3'

PARKING REQUIREMENTS: PARKING FORMULA: TRUCKING FACILITY CLASS I: 5 PLUS 1 PER 2 EMPLOYEES IN LARGEST SHIFT.
REGULAR PARKING: 5 SPACES PLUS 1 SPACE PER 2 EMPLOYEES IN LARGE SHIFTS, DOES NOT EXCEED 2,370

ZONING INFORMATION SHOWN HEREON WAS PROVIDED BY INSURED, INFORMATION WAS NOT OBTAINED BY ASM, INC.
CONTACT:
BOCK & CLARK ZONING
SITE # 7201700255-030
REPORT DATE: 03/21/17
"REVISED 4-14-17"
PHONE/FAX
(800) 787-8390

NOTES:
MH-IM = MANUFACTURING INDUSTRIAL MAJOR
N/S = NOT SPECIFIED

11 | UNDERGROUND UTILITIES

EXISTING UTILITY NOTE: THIS SITE IS SERVED BY PUBLIC AND PRIVATE UTILITIES. PER AGREEMENT WITH THE CLIENT, UTILITIES SHOWN HEREON ARE BASED ON VISIBLE EVIDENCE OF UTILITY APPURTENANCES OBSERVED DURING A FIELD SURVEY PERFORMED IN MARCH 2017 AND DRAWINGS PROVIDED BY THE CLIENT ENTITLED "CONSTRUCTION DOCUMENTS FOR FEDEX WAREHOUSE BUILDING, SPARROWS POINT, MARYLAND" PREPARED BY KCI TECHNOLOGIES, DATED 05-17-16. THE SURVEYOR DOES NOT CERTIFY OR WARRANT THAT ALL UTILITIES ARE SHOWN, BUT DOES STATE THAT THE UTILITIES ARE SHOWN TO THE BEST OF HIS KNOWLEDGE FROM INFORMATION SUPPLIED TO HIM AND OBSERVED ON SITE AT THE TIME OF THE SURVEY.

17 | RIGHT OF WAY CHANGES

SURVEYOR HAS NO KNOWLEDGE OF PROPOSED CHANGES IN STREET RIGHT OF WAY LINES. NO OBSERVABLE EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS WERE OBSERVED AT THE TIME OF THIS SURVEY.

18 | WETLAND AREAS

AT THE TIME OF SURVEY, NO WETLAND AREAS WERE DELINEATED BY APPROPRIATE AUTHORITIES NOR WERE ANY INDICATED TO THE SURVEYOR BY THE CLIENT.

THE UNDERSIGNED SURVEYOR WAS IN RESPONSIBLE CHARGE OVER PREPARATION OF THIS PLAT AND THE SURVEY WORK SHOWN HEREON, ALL IN COMPLIANCE WITH DLLR 9.13.06.3,12. (LICENSE EXPIRATION DATE: 6-30-2017)

TABLE OF REFERENCES

LIBER 35478 AT FOLIO 379

DATE	REVISIONS	TECH
04/07/17	REVISE TITLE	BLI
04/18/17	ADDED ZONING	SLB
04/18/17	CLIENT COMMENTS	SLB
04/25/17	SIGNING SURVEYORS	SLB
	COMMENTS	
. .	. .	.

FIELD	JB	DRAWING SCALE	VARIES
DRAWN BY	SLB	QC BY	CB(04-03-17)
DRAWING NAME	1703986 – 11164 FED EX 6021 BETHLEHEM BOULEVARD – SPARROWS POINT – MD.DWG		

6Bxii | TITLE COMMITMENT INFORMATION

THE TITLE DESCRIPTION AND SCHEDULE "B" ITEMS HEREON ARE FROM:
FIRST AMERICAN TITLE INSURANCE COMPANY, COMMITMENT NO.: 683961A, HAVING AN EFFECTIVE DATE OF MARCH 20, 2017.

SHEET 1 OF 3

6Bi | TITLE DESCRIPTION

ALL OF THOSE LOTS OR PARCELS OF LAND LOCATED IN BALTIMORE COUNTY, MARYLAND, AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

REAL PROPERTY IN THE CITY OF BALTIMORE, COUNTY OF BALTIMORE, STATE OF MARYLAND, DESCRIBED AS FOLLOWS:

BEGINNING FOR THE SAME AT A POINT ON THE SOUTHERLY LINE OF THE PERPETUAL AERIAL EASEMENT OF THE BALTIMORE BELTWAY, I-695, AS SHOWN ON MARYLAND STATE HIGHWAY ADMINISTRATION RIGHT OF WAY PLAT NUMBER 38700, SAID POINT BEING DISTANT NORTH 85 DEGREES 20 MINUTES 59 SECONDS EAST 71.53 FEET FROM THE ANGLE BREAK OPPOSITE BASELINE STATION 937+85; THENCE LEAVING SAID LINE AND RUNNING FOR THE OUTLINE OF A LEASE PARCEL THROUGH THE LANDS OF SPARROWS POINT TERMINAL LLC, AS IN A DEED DATED SEPTEMBER 18, 2014, FROM SPARROWS POINT, LLC TO SPARROWS POINT TERMINAL LLC, RECORDED AMONG THE LAND RECORDS OF BALTIMORE COUNTY, MARYLAND IN LIBER 35478 AT FOLIO 379, WITH MERIDIAN REFERENCE TO THE MARYLAND STATE COORDINATE SYSTEM:

1. SOUTH 05 DEGREES 34 MINUTES 03 SECONDS EAST 2248.88 FEET; THENCE
2. SOUTH 84 DEGREES 25 MINUTES 57 SECONDS WEST 1017.92 FEET; THENCE
3. NORTH 05 DEGREES 34 MINUTES 03 SECONDS WEST 1539.25 FEET; THENCE
4. NORTH 84 DEGREES 25 MINUTES 57 SECONDS EAST 58.70 FEET; THENCE
5. NORTH 55 DEGREES 27 MINUTES 53 SECONDS EAST 334.52 FEET; THENCE
6. NORTH 06 DEGREES 26 MINUTES 00 SECONDS WEST 541.31 FEET TO INTERSECT SAID EASEMENT LINE; THENCE BINDING ON SAID LINE
7. NORTH 83 DEGREES 43 MINUTES 12 SECONDS EAST 603.26 FEET; THENCE
8. NORTH 85 DEGREES 20 MINUTES 59 SECONDS EAST 71.53 FEET TO THE POINT OF BEGINNING

CONTAINING 47.3893 ACRES OF LAND, MORE OR LESS.

BEING A PART OF A TRACT OF LAND OWNED BY SPARROWS POINT TERMINAL LLC, AS IN A DEED DATED SEPTEMBER 18, 2014, FROM SPARROWS POINT, LLC TO SPARROWS POINT TERMINAL LLC, RECORDED AMONG THE LAND RECORDS OF BALTIMORE COUNTY, MARYLAND IN LIBER 35478 AT FOLIO 379.

THIS SURVEY DESCRIBES AND DEPICTS THE SAME LAND AS DESCRIBED IN THE TITLE COMMITMENT AS REFERENCED ABOVE.

6Dig | SURVEYOR'S NOTES

1. ALL STATEMENTS WITHIN THE CERTIFICATION, AND OTHER REFERENCES LOCATED ELSEWHERE HEREON, RELATED TO: UTILITIES, IMPROVEMENTS, STRUCTURES, BUILDINGS, PARTY WALLS, PARKING, EASEMENTS, SERVITUDES, AND ENCROACHMENTS ARE BASED SOLELY ON ABOVE GROUND, VISIBLE EVIDENCE, UNLESS ANOTHER SOURCE OF INFORMATION IS SPECIFICALLY REFERENCED HEREON.
2. THIS SURVEY MEETS OR EXCEEDS THE SURVEY STANDARDS/STANDARDS OF CARE AS SET FORTH IN SECTION 3 OF THE 2016 ALTA/NSPS SURVEY REQUIREMENTS.

4 | LAND AREA

2,064,279± SQUARE FEET — 47.389± ACRES

6Biv | BEARING BASIS

BEARINGS ARE BASED ON GRID NORTH MD ZONE 1900 BY NGS OPUS SOLUTION.

5F | CEMETERY NOTE

THERE IS NO VISIBLE EVIDENCE OF CEMETERIES ON SUBJECT PROPERTY.

9 | PARKING SPACES

REGULAR = 703 HANDICAP = 13 MP = 6 TPS = 468 TOTAL = 1190

5Biii | ACCESS TO PROPERTY

THE SUBJECT PROPERTY HAS DIRECT PHYSICAL ACCESS TO BETHLEHEM BOULEVARD, AN APPARENT PUBLIC STREET OR HIGHWAY.

16 | EARTH MOVING NOTE

THERE IS OBSERVABLE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS WITHIN RECENT MONTHS.

6Bvii | CONTIGUITY STATEMENT

THE PARCELS CONTAINED IN THE LEGAL DESCRIPTION ARE CONTIGUOUS WITHOUT ANY GAPS, GORES OR OVERLAPS.

7 | SURVEYOR'S CERTIFICATE

TO: ETCL SPARROWS POINT, LLC., JP MORGAN CHASE BANK, NATIONAL ASSOCIATION AND BANK OF AMERICA, N.A. TOGETHER WITH THEIR RESPECTIVE SUCCESSORS AND/OR ASSIGNS AND FIRST AMERICAN TITLE INSURANCE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 6(a), 6(b), 7(a), 7(b)(1), 7(c), 8, 9, 11, 13, 16, 17, 18 AND 21 OF TABLE A THEREOF.
THE FIELD WORK WAS COMPLETED ON 04/2/2017.
DATE OF PLAT OR MAP: 04/3/2017.

WILLIAM R. REEVES JR. — 4/25/2017 DATE

PROPERTY LINE SURVEYOR NO: 312
STATE OF: MARYLAND
PROJECT NO: #1703986 (#11164)

SURVEY PREPARED BY:
AMERICAN SURVEYING AND MAPPING, INC.
3191 MAGUIRE BLVD., SUITE 200
ORLANDO, FL 32803
CERTIFICATE OF AUTHORIZATION # 21419
PHONE: (407) 426-7979
FAX: (407) 426-9741
INFO@ASMCORPORATE.COM

THIS DOCUMENT SHOULD BE CONSIDERED INVALID WITHOUT A LICENSED SURVEYOR'S SIGNATURE AND SEAL

6Dvi | 2

ALTA/NSPS LAND TITLE SURVEY
OF
SPARROWS POINT FEDEX FACILITY
6021 BETHLEHEM BOULEVARD
BALTIMORE COUNTY | SPARROWS POINT, MARYLAND

AMERICAN SURVEYING & MAPPING INC.
3191 MAGUIRE BLVD., SUITE 200 ORLANDO, FLORIDA 32803
PHONE (407) 426-7979 WWW.ASMCORPORATE.COM

6Diic NORTH ARROW & SCALE

1" = 100'
GRAPHIC SCALE
0 50' 100' 200'

6Diid LEGEND AND ABBREVIATIONS

	CONCRETE SURFACE	CC	CONCRETE CURB
	NO PARKING AREA	EP	EDGE OF PAVEMENT
	HANDICAP PARKING	HW	HEADWALL
X PS	PARKING SPACE	MP	MOTORCYCLE PARKING
E	ELECTRIC MANHOLE	MS	METAL SHELTER
S	STORM MANHOLE	OS	OUTFALL STRUCTURE
TF	ELECTRIC TRANSFORMER	POB	POINT OF BEGINNING
	STORM DRAIN GRATE	RR	RIPRAP
	UTILITY POLE OR TOWER	RW	RETAINING WALL
V	MANHOLE (UNKNOWN)	SB	SPEAKER BOX
	GAS VALVE	ST	STEPS
	LIGHT POLE	SQ.FT.	SQUARE FEET
EC	ELECTRIC CHARGE STATION	TOB	TOP OF BANK
E	ELECTRIC BOX	TPS	TRUCK PARKING SPACES
	BOLLARD	UB	UNKNOWN BOX
TB	TELEPHONE BOX	(C)	CALCULATED DATA
WM	WATER METER	(R)	RECORD DESCRIPTION
	SIGN	OHU	OVERHEAD UTILITY LINE
	FIRE HYDRANT	UGE	BURIED ELECTRIC LINE
WV	WATER VALVE	GAS	BURIED GAS LINE
CO	CLEANOUT	WL	BURIED WATER LINE
S	SANITARY MANHOLE	SD	STORM SEWER LINE
TF	ELECTRIC TRANSFORMER	SS	SANITARY SEWER LINE
AC	AIR CONDITIONER		GUARDRAIL
GEN	GENERATOR	x	CHAIN LINK FENCE
	FOUND 1/2" REBAR & CAP (KCI) UNLESS NOTED OTHERWISE		
	SET MONUMENT AS NOTED		
CA	COVERED AREA		

INTERSTATE 695
(BALTIMORE BELTWAY)
ASPHALT PAVEMENT-WIDTH VARIES
APPARENT PUBLIC RIGHT OF WAY

BETHLEHEM BOULEVARD
(STATE ROUTE 158)
APPARENT PUBLIC RIGHT OF WAY

8 UTILITY EASEMENT EXHIBIT "B"
(LIBER 27947, FOLIO 335)

INGRESS/EGRESS EASEMENT PER PLAT BOOK 69 PAGES 87 & 88

14 STEEL TOWER LINE EASEMENT
(LIBER 3788, FOLIO 396)

8 ELECTRICAL SUBSTATION EXHIBIT "A"
(LIBER 27947, FOLIO 335)

7 APPROXIMATE LOCATION OF DRAINAGE & UTILITY EASEMENT
(LIBER 19876, FOLIO 718)

ANGLE BREAK OPPOSITE BASELINE STATION 937+85
SET MAG NAIL IN CONCRETE

N85°20'59"E
71.53'(R)

POB:
SOUTHERLY LINE OF THE PERPETUAL EASEMENT OF BALTIMORE BELTWAY, I-695

N83°43'12"E 603.26'(R)

N06°26'00"W
541.31'(R)(M)

SET 1/2" REBAR & CAP (WRR#312)

N84°32'56"E
58.66'(M)
N84°25'57"E
58.70'(R)

N55°27'53"E 334.52'(R)(M)

S05°34'03"E 2248.88'(R)(M)

N05°34'03"W
1539.37'(M)
1539.25'(R)

75' FRONT SETBACK (PER ZONING)

50' SIDE SETBACK (PER ZONING)

TRADEPOINT ATLANTIC, LLC
LIBER 35478 FOLIO 379
TAX MAP NO.: 0111 0014 0318
(6021 BETHLEHEM BOULEVARD)
1 STORY STUCCO & METAL BUILDING
7b 306,140± SQ.FT.
7c HEIGHT = 37.0'
(SITE IS UNDER CONSTRUCTION AS OF 04/01/17)

1 STORY STUCCO & METAL BUILDING
7b 3,142± SQ.FT.
7c HEIGHT = 16.3'
(POSTED #6021)

13 TRADEPOINT ATLANTIC, LLC
LIBER 35478 FOLIO 379
TAX MAP NO.: 0111 0014 0318

13 TRADEPOINT ATLANTIC, LLC
LIBER 35478 FOLIO 379
TAX MAP NO.: 0111 0014 0318

8 COLD MILL FACILITY THAT BENEFITS FROM EASEMENTS
(LIBER 27947, FOLIO 335)

SPARROWS POINT BOUNDARY

RIVERSIDE DRIVE
PRIVATE ROAD

POND

OPEN CHANNEL

MATCH LINE: SEE SHEET 3
MATCH LINE: SEE SHEET 2

6Dv 2

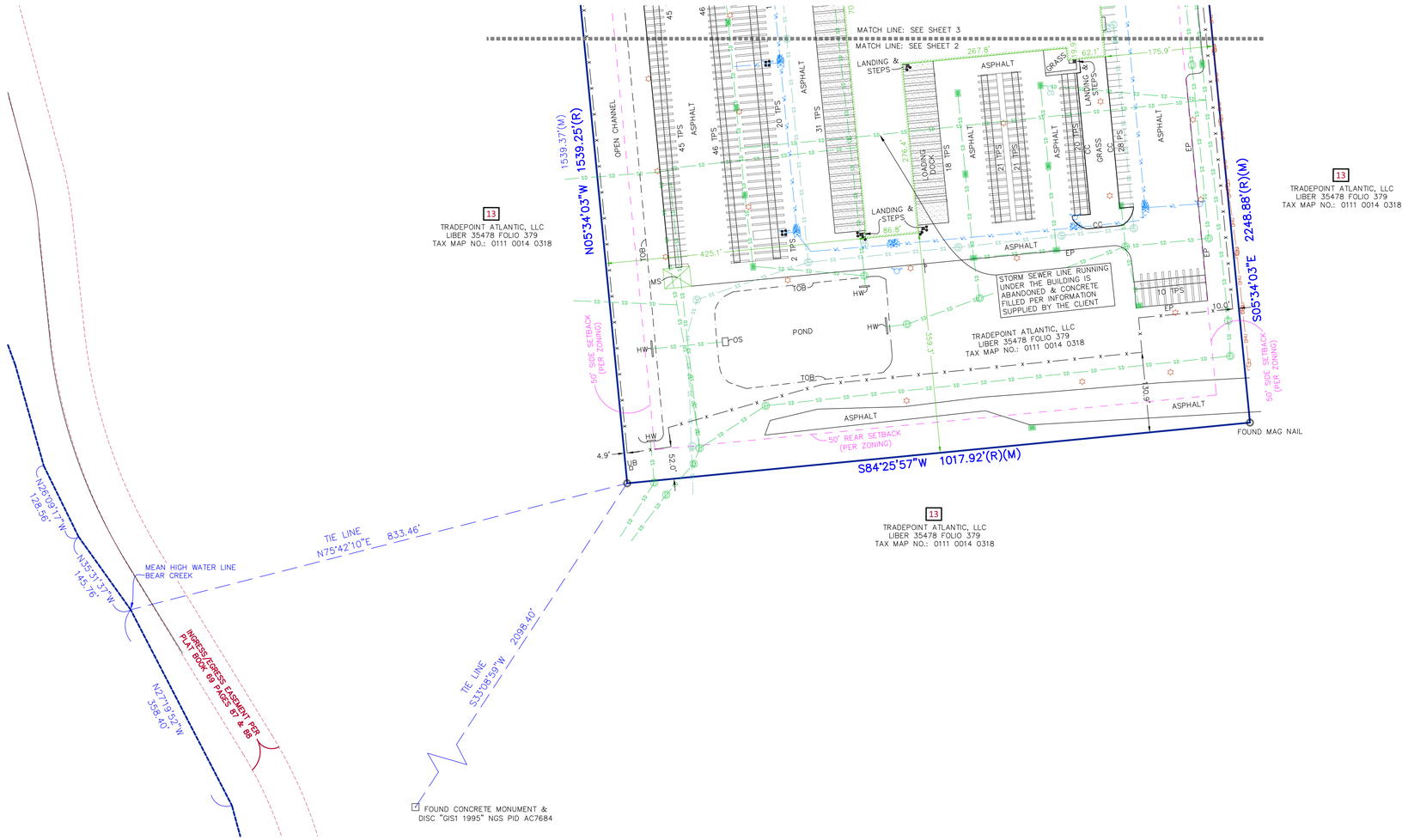
ALTA/NSPS LAND TITLE SURVEY
OF
SPARROWS POINT FEDEX FACILITY
6021 BETHLEHEM BOULEVARD
BALTIMORE COUNTY SPARROWS POINT, MARYLAND

AMERICAN SURVEYING & MAPPING INC.
3191 MAGUIRE BLVD., SUITE 200 ORLANDO, FLORIDA 32803
PHONE (407) 426-7979 WWW.ASMCORPORATE.COM

SHEET 3
OF 3

6Diic NORTH ARROW & SCALE

1" = 100'
GRAPHIC SCALE
0 50' 100' 200'



6Diid LEGEND AND ABBREVIATIONS

	CONCRETE SURFACE	CC	CONCRETE CURB
	NO PARKING AREA	EP	EDGE OF PAVEMENT
	HANDICAP PARKING	HW	HEADWALL
X PS	PARKING SPACE	MP	MOTORCYCLE PARKING
	ELECTRIC MANHOLE	MS	METAL SHELTER
	STORM MANHOLE	OS	OUTFALL STRUCTURE
	ELECTRIC TRANSFORMER	POB	POINT OF BEGINNING
	STORM DRAIN GRATE	RR	RIPRAP
	UTILITY POLE OR TOWER	RW	RETAINING WALL
	MANHOLE (UNKNOWN)	SB	SPEAKER BOX
	GAS VALVE	ST	STEPS
	LIGHT POLE	SQ.FT.	SQUARE FEET
	ELECTRIC CHARGE STATION	TOB	TOP OF BANK
	ELECTRIC BOX	TPS	TRUCK PARKING SPACES
	BOLLARD	UB	UNKNOWN BOX
	TELEPHONE BOX	(C)	CALCULATED DATA
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	WATER VALVE	GAS	BURIED GAS LINE
	CLEANOUT	WL	BURIED WATER LINE
	SANITARY MANHOLE	SD	STORM SEWER LINE
	ELECTRIC TRANSFORMER	SS	SANITARY SEWER LINE
	AIR CONDITIONER		GUARDRAIL
	GENERATOR	x	CHAIN LINK FENCE
	FOUND 1/2" REBAR & CAP (KCI) UNLESS NOTED OTHERWISE		
	SET MONUMENT AS NOTED		
CA	COVERED AREA		

6Dvi ALTA/NSPS LAND TITLE SURVEY
2
OF
SPARROWS POINT FEDEX FACILITY
6021 BETHLEHEM BOULEVARD
BALTIMORE COUNTY SPARROWS POINT, MARYLAND

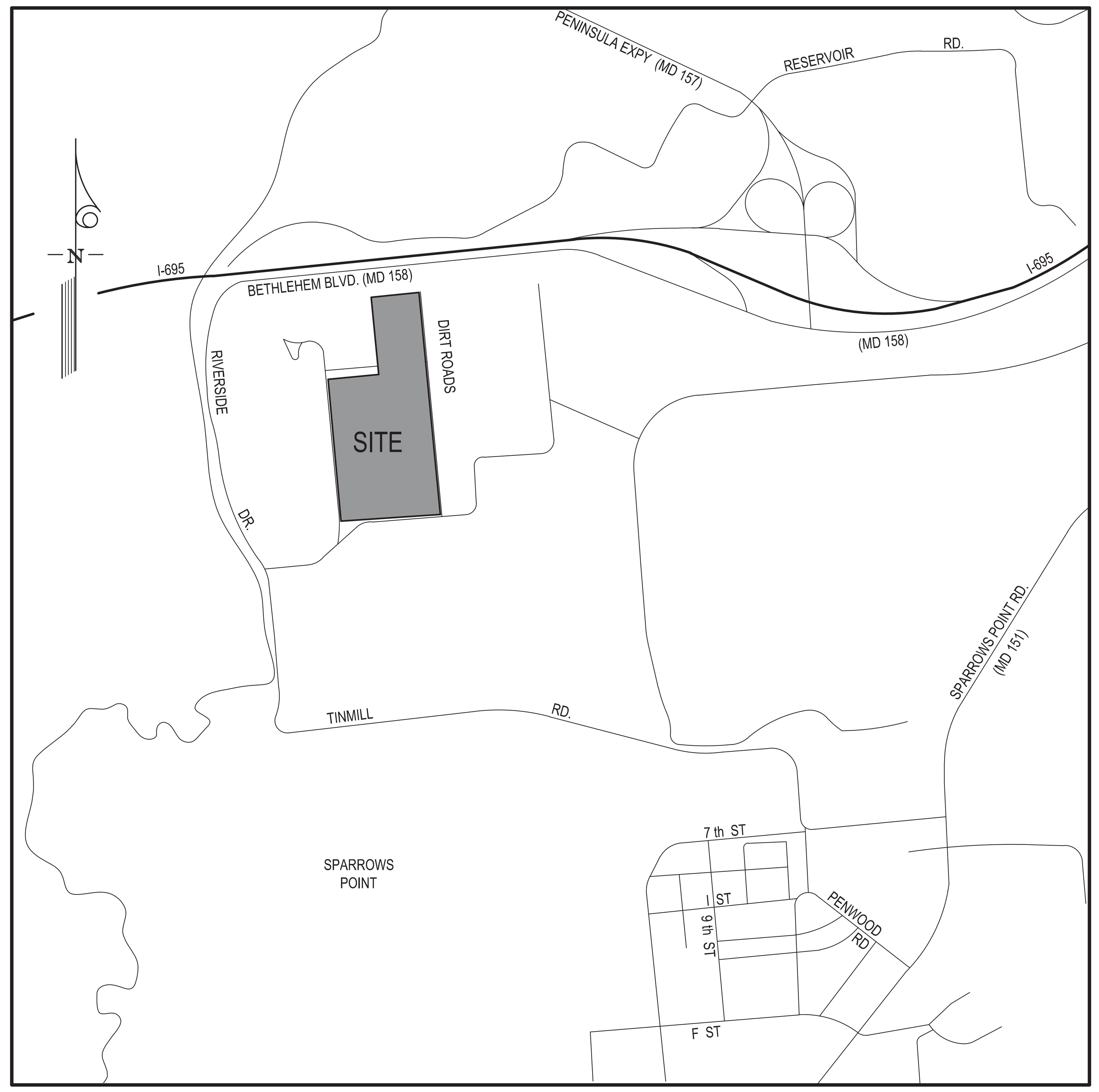
AMERICAN SURVEYING & MAPPING INC.
319 - MAGUIRE BLVD., SUITE 200 ORLANDO, FLORIDA 32803
PHONE (407) 426-7979 WWW.ASMCORPORATE.COM

CONSTRUCTION DOCUMENTS

FOR

FEDEX WAREHOUSE BUILDING
SPARROWS POINT, MARYLAND

SHEET INDEX



VICINITY MAP

SCALE: 1" = 1000'

SITE DATA

1. SITE ADDRESS: 101 BETHLEHEM BOULEVARD
   BALTIMORE, MD 21219
2. ELECTION DISTRICT: 15
3. COUNCILMANIC DISTRICT: 7
4. CENSUS TRACT: 452200
5. DEED REF: 32617/00144
6. TAX MAP: 111 GRID: 14 PARCEL: 318
7. PROPERTY TAX ACCOUNT NO. 1502024000
8. PROPERTY OWNER: HRE SPARROWS POINT LLC
   1650 DES PERES RD
   SUITE 303
   ST. LOUIS, MO 63131
9. TOTAL SITE (LEASE) AREA: 2,064,279 SQ. FT OR 47.39 AC.± LOT 1
10. SITE IS LOCATED WITHIN THE BALTIMORE HARBOR WATERSHED DRAINAGE AREA.
11. ZONING: MH/IM (MANUFACTURING HEAVY/INDUSTIRAL MAJOR) 2-5 N/A
12. PARKING:
    TOTAL PARKING REQUIRED:
    1 PARKING SPACE PER EMPLOYEE ON LARGEST SHIFT
    TOTAL PARKING PROVIDED:
    EMPLOYEE PARKING:

EMPLOYEE SPACES:	631 (INCLUDING 13 VAN HANDICAP SPACES)
MOTORCYCLE PARKING:	6

    FEDEX VEHICLE PARKING:

TRACTOR PARKING:	25
HOME DELIVERY VANS:	50
DEADLINE SPACES:	10
28' TRAILER PARKING:	200
LONG TRAILER PARKING	162
INBOUND PARKING:	15

13. SET BACKS: FRONT = 50'
    SIDE = 30'
    REAR = 30'
14. BUILDING HEIGHT: NO RESTRICTIONS
15. THIS SITE IS SERVED BY PRIVATELY OWNED SEWER AND PUBLIC WATER SYSTEMS
16. SITE IS NOT IN ANY FEMA FLOODPLAIN PER FEMA PANEL NUMBER 2400100555G

PREPARED FOR:
SCANNELL PROPERTIES
800 EAST 96TH STREET
INDIANAPOLIS, INDIANA 46240

PROJECT RECORD

Monday, August 8, 2016 2:50:05 PM
KYLE DONALDSON

DEVELOPER:
SCANNELL PROPERTIES
800 E. 96TH ST, SUITE 175
INDIANAPOLIS, IN 46240
PHONE: (317) 843-5959
FAX: (317) 743-5957

ARCHITECT:
PRECEPT, LLC
Architects & Planners
800 E. 96th St., Suite 175
Indianapolis, Indiana 46240
Phone: (317) 843-5961
Fax: (317) 843-5965

CONTRACTOR:
ARCO NATIONAL CONSTRUCTION
ARCO NATIONAL CONSTRUCTION CO, INC.
8150 CORPORATE PARK DRIVE SUITE 200
CINCINNATI, OH 45242
PHONE : 314-963-0715 FAX: 314-963-0714

CONSULTING ENGINEERS
CIVIL: KCI TECHNOLOGIES
936 RIDGEBROOK ROAD
SPARKS, MD 21152
C: ANTHONY MEYERS P(410)316-7898

STRUCTURAL: CONSULTING ENGINEERS CORP
13C OLD STREET
CINCINNATI, OH 45050
C: TRACY MITCHELL P:(513)229-9000

MECHANICAL: ICON MECHANICAL
1616 CLEVELAND BLVD
GRANITE CITY, IL 62040
C: TIM SCHAEFFER P:(618)452-0035

ELECTRICAL: CHERAN INC.
3552 GETTYSBURG RD. SUITE 101
CAMP HILL, PA 17011
C: RANDY PENTZ P:(717)525-9461

PLUMBING: TENNILL & ASSOCIATES
177 CHESTERFIELD INDUSTRIAL BLVD.
CHESTERFIELD, MO 63005
C: DANA TENNILL P:(636)537-3999

FIRE PROTECTION: FE MORAN
3001 RESEARCH RD SUITE A
CHAMPAIGN, IL 61822
C: JIM HEINOLD P:(217)356-0700

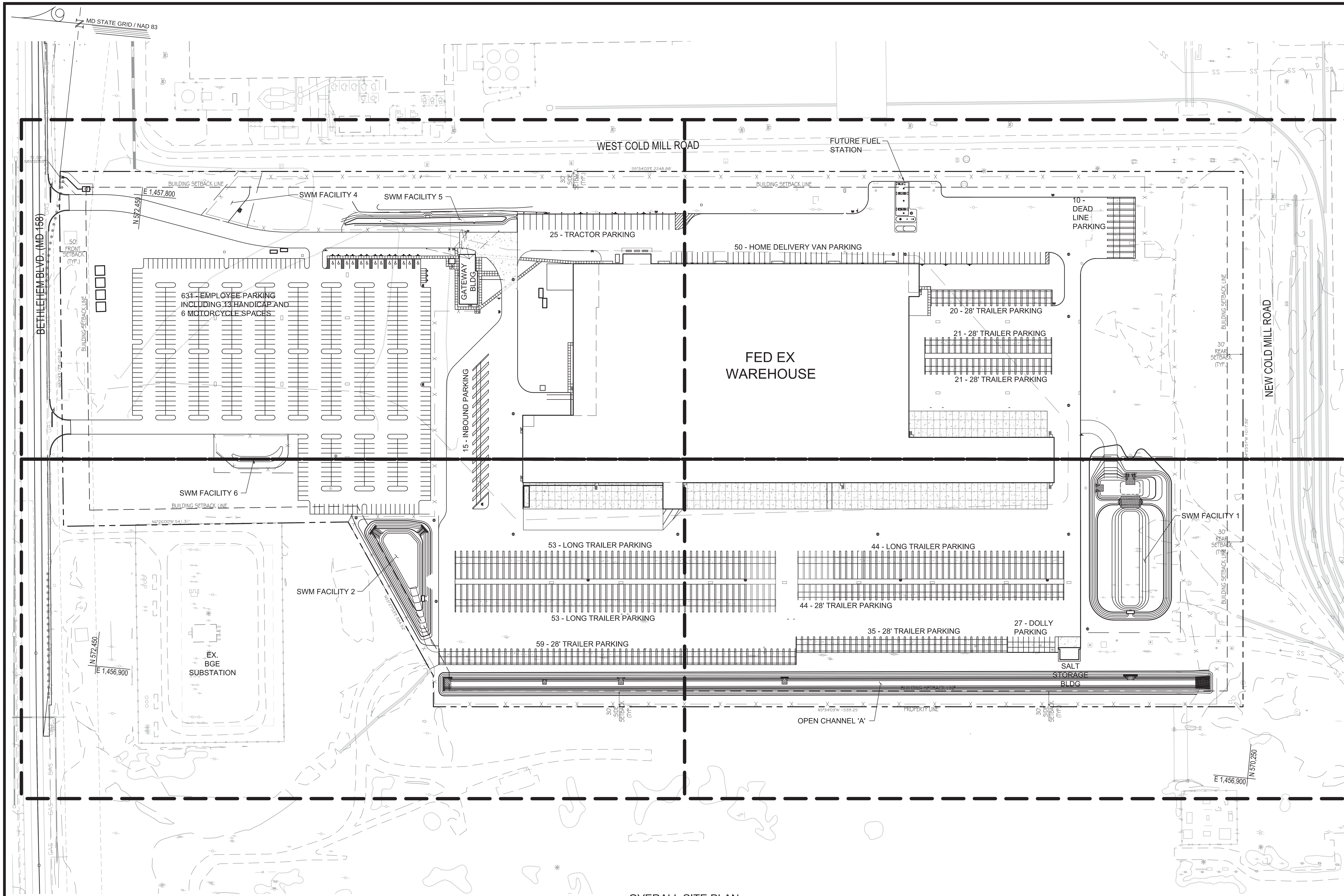
A NEW FACILITY
FOR:
FedEx Ground
EAST BALTIMORE FACILITY #209
101 BETHLEHEM BOULEVARD
BALTIMORE, MD 21219

CONSTRUCTION DOCUMENTS
8.8.2016

CERTIFICATION

I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF A MARYLAND,
LICENSE NUMBER 23381 , EXPIRATION DATE 8/19/16

Drawn By	KD / AI
Designed By	AGM
Project No.	
Date	08-03-16



OVERALL SITE PLAN

SCALE: 1" = 80'

PROJECT RECORD

80' 0 80' 160'
SCALE: 1"= 80'

Friday, July 22, 2016 6:59:58 PM
SCOTT ROSE
C:\DMS\PWISE\SCOTT.ROSE\DMS39020\C1-0.DWG

DEVELOPER:

SCANNELL PROPERTIES
800 E. 96TH ST, SUITE 175
INDIANAPOLIS, IN 46240
PHONE: (317) 843-5959
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A NEW FACILITY FOR:

FedEx Ground

EAST BALTIMORE FACILITY #209
101 BETHLEHEM BOULEVARD
BALTIMORE, MD 21219

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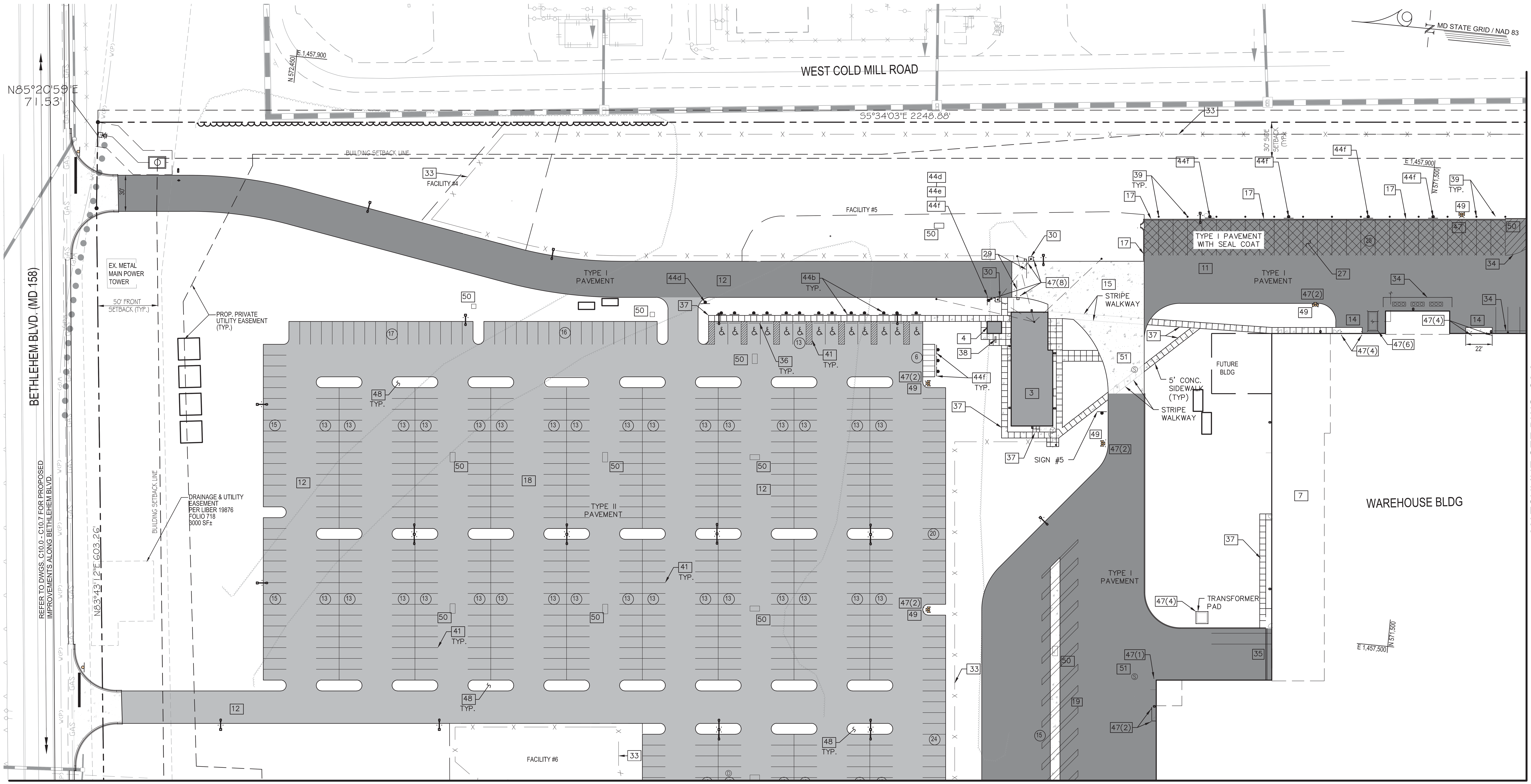
LICENSE NUMBER 23381 , EXPIRATION DATE 8/19/16

Drawn By	KD / AI
Designed By	AGM
Project No.	
Date	07-22-16

OVERALL SITE PLAN

C1.0



MATCHLINE SEE DWG C2.3

SITE PLAN - 1

SCALE: 1" = 40'

LEGEND

EXISTING MINOR CONTOUR	PROP. ASPHALT PAVING TYPE I
EXISTING MAJOR CONTOUR	PROP. ASPHALT PAVING TYPE II
EXISTING UNDERGROUND ELECTRIC	PROP. ASPHALT PAVING TYPE I W/ SEALCOAT
EXISTING OVERHEAD WIRE, UTILITY POLE AND GUY WIRE	CONCRETE PAD
EXISTING SPOT ELEVATION	PROP. LEASE LINE
EXISTING SIDEWALK	PROP. SECURITY FENCE
EXISTING EASEMENT LINE	PROP. BUILDING LINE
EXISTING ROAD EDGE	PROP. EDGE OF ROAD
EXISTING TRAIN TRACKS	PROP. CONCRETE CURB
EXISTING STORM DRAIN LINE AND STRUCTURES	PROP. SIDEWALK
EXISTING SANITARY SEWER LINE AND STRUCTURE	PROP. SIGN
EXISTING WATER LINE AND VALVE	PROP. PARKING COUNT
EXISTING FENCE LINE	PROP. SHA PAVING
	ASPHALT PAVING TIE-IN
	SHA LIMITS OF WORK
	PROP WOODSLINE

PROJECT RECORD

DRAWING INDEX

1 BUILDING (WAREHOUSE AREA)
2 VEHICLE MAINTENANCE GARAGE
3 GATEWAY BUILDING
4 LOCKER SHELTER
5 SALT STORAGE BUILDING (30' X 20')
6 FUTURE FUEL ISLAND WITH CANOPY
7 ADMIN OFFICE
8 REMOTE OFFICE
9 L / H OFFICE
10 REMOTE TOILET ROOM
11 ASPHALT PAVEMENT TYPE I (01/4.1)
12 ASPHALT PAVEMENT TYPE II (05/4.1)
13 ASPHALT PAVEMENT TYPE I (W/ SEALCOAT) (08/4.1)
14 CONCRETE PAD (06/4.1)
15 CONCRETE PAVING (02/4.1)
17 8" CONCRETE CURB (19/4.2)
17A 6" CONCRETE CURB & GUTTER (17/4.2)
18 AUTOMOBILE PARKING
19 INBOUND DROP AREA
20 TRANSITION AREA
21 LONG TRAILER PARKING
22 TRIPLES PARKING
23 DOUBLES PARKING
24 28' TRAILER PARKING
25 DOLLY PARKING (69 SPACES)
26 HD VAN PARKING
27 TRACTOR PARKING
28 DEAD PARKING
29 MOTORIZED OVERHEAD TRUSS GATE
30 GATE ACCESS PEDISTAL
31 TRASH COMPACTOR
33 8' CHAIN LINK FENCE (07/4.1)
33a 6' CHAIN LINK FENCE
34 HIGHWAY GUARDRAIL (04/4.1)
35 TRENCH DRAIN
36 WHEEL STOP (03/4.1)
37 CONCRETE SIDEWALK (11/4.1)
38 BIKE RACK
39 BLOCK HEATER
40 EXPANSION / CONSTRUCTION JOINT
41 4" WIDE PAINT STRIPING (13/4.2)
42 CLEAR AREA (NOTHING PERMITTED IN CLEAR AREA)
43 SNOW STORAGE AREA
44a SPEED LIMIT 10 MPH SIGN (24"x18")
44b HANDICAP PARKING SIGN (XX/C-XX)
44c MOTORCYCLE PARKING ONLY SIGN (18"x12")
44d STOP SIGN (24"x24")
44e NOTICE – NO ADMITTANCE UNAUTHORIZED (24"x36") "UNAUTHORIZED PERSONS OR PRIVATE VEHICLES NOT ALLOWED BEYOND THIS POINT. VIOLATORS WILL BE PROSECUTED"
44f NO ENGINE IDLING SIGN (20"x24")
45 DEPRESSED CURB (15/4.2)
47 CONCRETE PIPE BOLLARD (12/4.1)
48 LANDSCAPE ISLAND
49 FIRE HYDRANT
50a CLEAN OUT
50 INLET
51 MANHOLE
52 STORM WATER MANAGEMENT STRUCTURE
53 END WALL
54 STORM WATER MANAGEMENT EASEMENT
55 1500 GAL. OIL/WATER SEPARATOR (REFER TO SPECIFICATIONS FOR MANUFACTURER INFORMATION)
56 750 GAL. OIL/WATER SEPARATOR (REFER TO SPECIFICATIONS FOR MANUFACTURER INFORMATION)
57 END WALL

GRAPHIC SCALE
40' 0 40' 80'
SCALE: 1"= 40'

SIGHT DISTANCE NOTES:

–WITH NO OBSTRUCTIONS BETWEEN ENTRANCES, THE SIGHT DISTANCE TRIANGLES SHOWN WILL GOVERN FOR BOTH ENTRANCES.
–WITH THE MINIMUM REQUIRED SIGHT DISTANCE FOR A POSTED SPEED LIMIT OF 40 MPH BEING 555' FOR CROSSING A SINGLE LANE, THE MINIMUM DISTANCE IS EXCEEDED IN BOTH DIRECTIONS FROM BOTH ENTRANCES.

DEVELOPER:
SCANNELL PROPERTIES
ARCHITECT:
PRECEPT, LLC Architects & Planners
CONTRACTOR:
ARCO NATIONAL CONSTRUCTION
ARCO NATIONAL CONSTRUCTION CO, INC.
CONSULTING ENGINEERS

A NEW FACILITY FOR:
FedEx Ground
EAST BALTIMORE FACILITY #209
101 BETHLEHEM BOULEVARD
BALTIMORE, MD 21219

CONSTRUCTION DOCUMENTS
8.8.2016

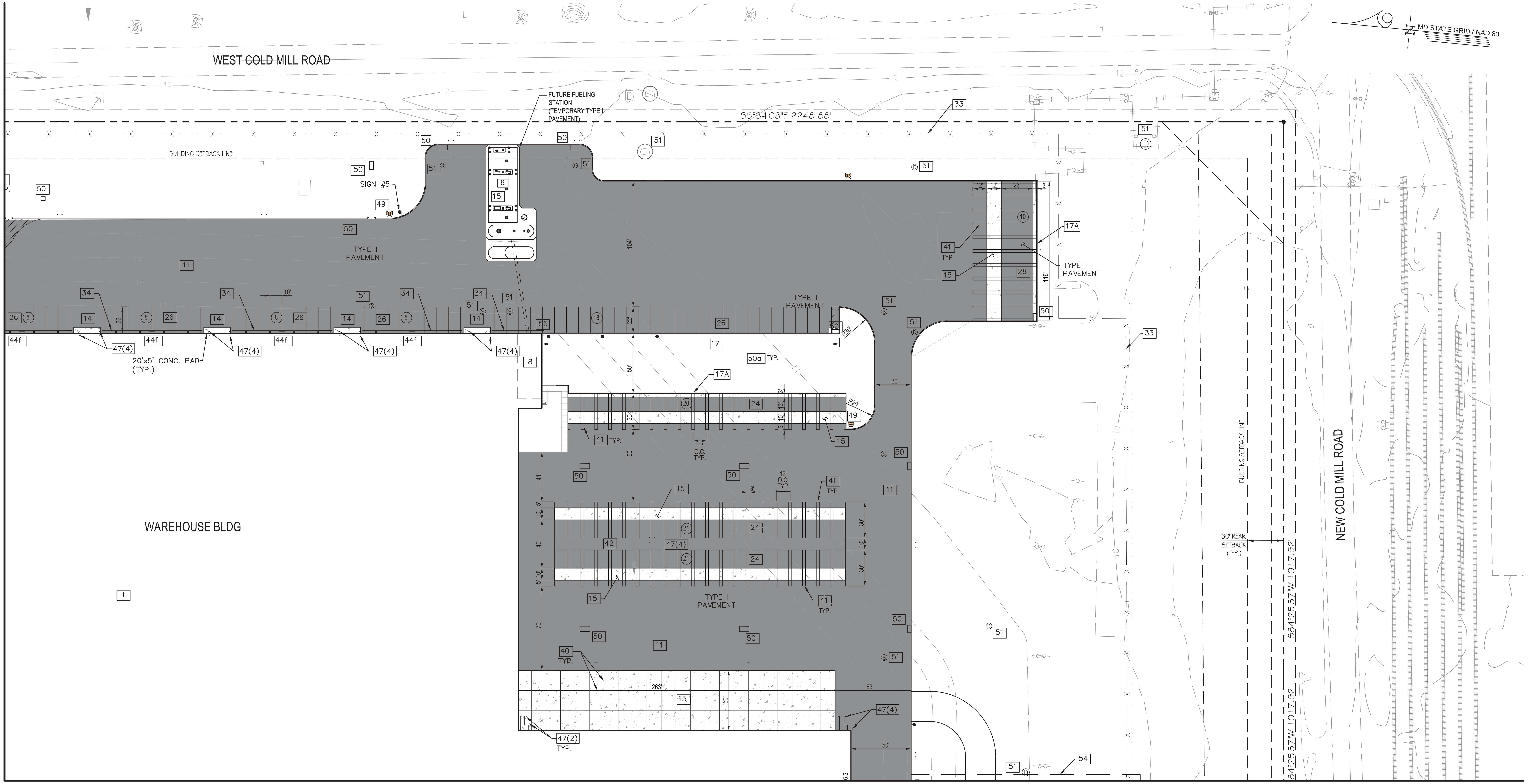
CERTIFICATION

Drawn By KD / AI
Designed By AGM
Project No.
Date 07-22-16

SITE PLAN-1

C2.1

Friday, July 22, 2016 4:25:44 PM



SITE PLAN - 2

SCALE: 1" = 40'

LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING UNDERGROUND ELECTRIC
- EXISTING OVERHEAD WIRE, UTILITY POLE AND GUY WIRE
- EXISTING SPOT ELEVATION
- EXISTING SIDEWALK
- EXISTING EASEMENT LINE
- EXISTING ROAD EDGE
- EXISTING TRAIN TRACKS
- EXISTING STORM DRAIN LINE AND STRUCTURES
- EXISTING SANITARY SEWER LINE AND STRUCTURE
- EXISTING WATER LINE AND VALVE
- EXISTING FENCE LINE
- PROP. ASPHALT PAVING TYPE I
- PROP. ASPHALT PAVING TYPE II
- PROP. ASPHALT PAVING TYPE I W/ SEALCOAT
- CONCRETE PAD
- PROP. LEASE LINE
- PROP. SECURITY FENCE
- PROP. BUILDING LINE
- PROP. EDGE OF ROAD
- PROP. CONCRETE CURB
- PROP. SIDEWALK
- PROP. SIGN
- PROP. PARKING COUNT
- PROP. SHA PAVING
- ASPHALT PAVING TIE-IN
- SHA LIMITS OF WORK
- PROP WOODSLINE

PROJECT RECORD

DRAWING INDEX

No.	Item	Detail
1	BUILDING (WAREHOUSE AREA)	
2	VEHICLE MAINTENANCE GARAGE	
3	GATEWAY BUILDING	
4	LOCKER SHELTER	
5	SALT STORAGE BUILDING (30' X 20')	
6	FUTURE FUEL ISLAND WITH CANOPY	
7	ADMIN OFFICE	
8	REMOTE OFFICE	
9	L / H OFFICE	
10	REMOTE TOILET ROOM	
11	ASPHALT PAVEMENT TYPE I	01 / 4.1
12	ASPHALT PAVEMENT TYPE II	05 / 4.1
13	ASPHALT PAVEMENT TYPE I (W/ SEALCOAT)	08 / 4.1
14	CONCRETE PAD	06 / 4.1
15	CONCRETE PAVING	02 / 4.1
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17A	6" CONCRETE CURB & GUTTER	17 / 4.2
18	AUTOMOBILE PARKING	
19	INBOUND DROP AREA	
20	TRANSITION AREA	
21	LONG TRAILER PARKING	
22	TRIPLES PARKING	
23	DOUBLES PARKING	
24	28' TRAILER PARKING	
25	DOLLY PARKING (69 SPACES)	
26	HD VAN PARKING	
27	TRACTOR PARKING	
28	DEAD PARKING	
29	MOTORIZED OVERHEAD TRUSS GATE	
30	GATE ACCESS PEDISTAL	
31	TRASH COMPACTOR	
33	8' CHAIN LINK FENCE	07 / 4.1
33a	6' CHAIN LINK FENCE	07 / 4.1
34	HIGHWAY GUARDRAIL	04 / 4.1
35	TRENCH DRAIN	
36	WHEEL STOP	03 / 4.1
37	CONCRETE SIDEWALK	11 / 4.1
38	BIKE RACK	
39	BLOCK HEATER	
40	EXPANSION / CONSTRUCTION JOINT	
41	4" WIDE PAINT STRIPING	13 / 4.2
42	CLEAR AREA (NOTHING PERMITTED IN CLEAR AREA)	
43	SNOW STORAGE AREA	
44a	SPEED LIMIT 10 MPH SIGN (24"x18")	
44b	HANDICAP PARKING SIGN	XX / C-XX
44c	MOTORCYCLE PARKING ONLY SIGN (18"x12")	
44d	STOP SIGN (24"x24")	
44e	NOTICE – NO ADMITTANCE UNAUTHORIZED (24"x36") "UNAUTHORIZED PERSONS OR PRIVATE VEHICLES NOT ALLOWED BEYOND THIS POINT. VIOLATORS WILL BE PROSECUTED"	
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53	END WALL	
54	STORM WATER MANAGEMENT EASEMENT	
55	1500 GAL. OIL/WATER SEPARATOR (REFER TO SPECIFICATIONS FOR MANUFACTURER INFORMATION)	
56	750 GAL. OIL/WATER SEPARATOR (REFER TO SPECIFICATIONS FOR MANUFACTURER INFORMATION)	
57	END WALL	

GRAPHIC SCALE
40' 0 40' 80'
SCALE: 1"= 40'

DEVELOPER:
SCANNELL PROPERTIES
800 E. 96TH ST, SUITE 175
INDIANAPOLIS, IN 46240
PHONE: (317) 843-5959
FAX: (317) 743-5957

ARCHITECT:
PRECEPT, LLC
Architects & Planners
800 E. 96th St., Suite 175
Indianapolis, Indiana 46240
Phone: (317) 843-5961
Fax: (317) 843-5965

CONTRACTOR:
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ARCO NATIONAL CONSTRUCTION CO, INC.
8150 CORPORATE PARK DRIVE SUITE 200
CINCINNATI, OH 45242
PHONE : 314-963-0715 FAX: 314-963-0714

CONSULTING ENGINEERS
CIVIL: KCI TECHNOLOGIES
936 RIDGEBROOK ROAD
SPARKS, MD 21152
C: ANTHONY MEYERS P:(410)316-7898

STRUCTURAL: CONSULTING ENGINEERS CORP
13C OLD STREET
CINCINNATI, OH 45050
C: TRACY MITCHELL P:(513)229-9000

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GRANITE CITY, IL 62040
C: TIM SCHAEFFER P:(618)452-0035

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CHESTERFIELD, MO 63005
C: DANA TENNILL P:(636)537-3999

FIRE PROTECTION: FE MORAN
3001 RESEARCH RD SUITE A
CHAMPAIGN, IL 61822
C: JIM HEINOLD P:(217)356-0700

A NEW FACILITY FOR:
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EAST BALTIMORE FACILITY #209
101 BETHLEHEM BOULEVARD
BALTIMORE, MD 21219

CONSTRUCTION DOCUMENTS
8.8.2016

CERTIFICATION

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LICENSE NUMBER 23381 , EXPIRATION DATE 8/19/16

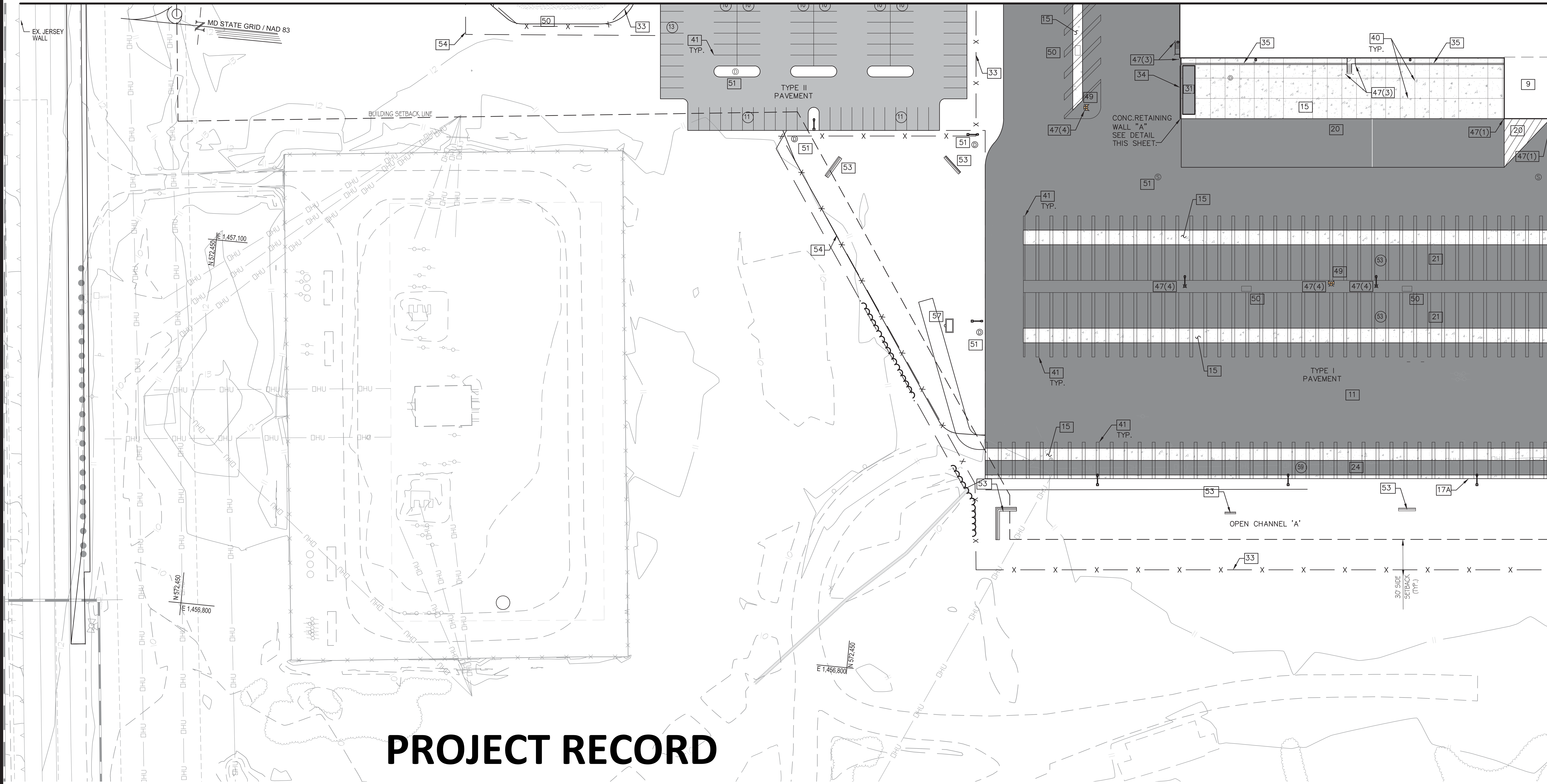
Drawn By KD / AI
Designed By AGM
Project No.
Date 07-22-16

SITE PLAN-2

C2.2

Friday, July 22, 2016 6:50:40 PM
SCOTT ROSE
C:\DMS\PWISE\SCOTT.ROSE\DMS39020\C2-2.DWG

MATCHLINE SEE SHEET C2.1

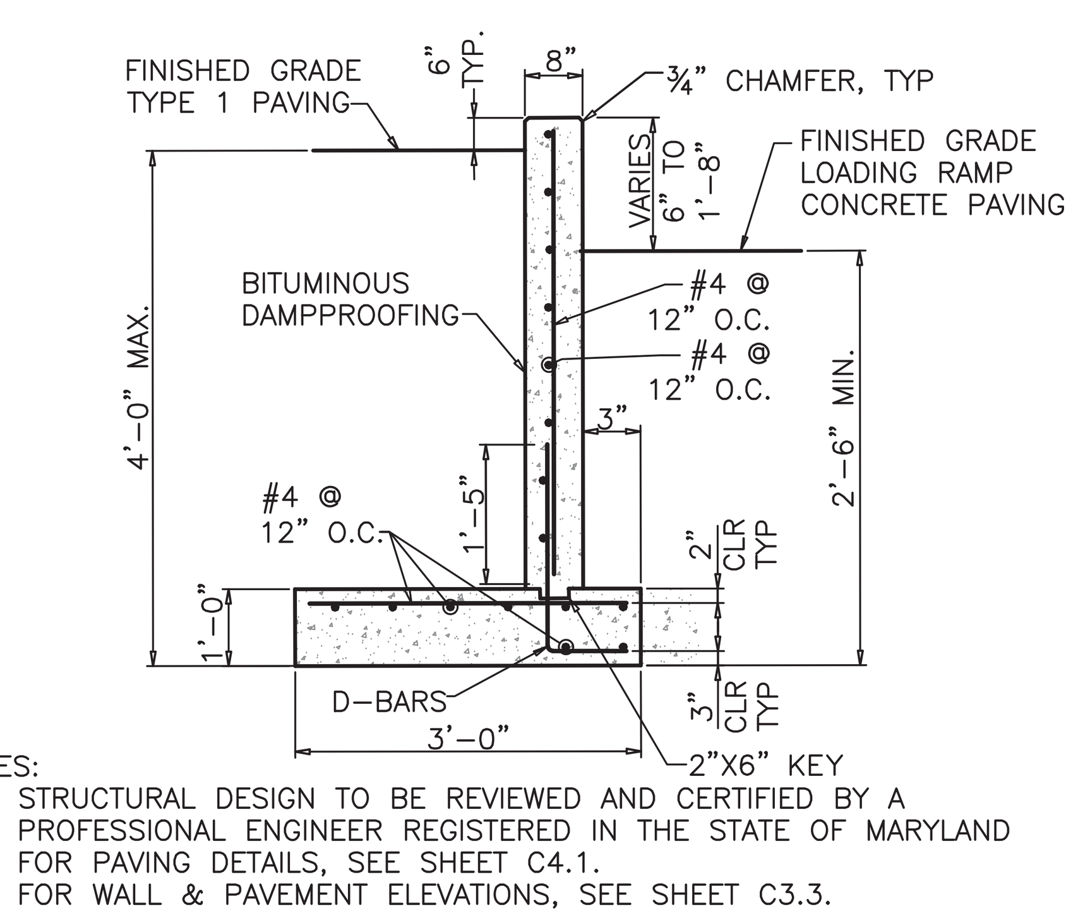


PROJECT RECORD

SITE PLAN - 3
SCALE: 1" = 40'

LEGEND

EXISTING MINOR CONTOUR	PROP. ASPHALT PAVING TYPE I
EXISTING MAJOR CONTOUR	PROP. ASPHALT PAVING TYPE II
EXISTING UNDERGROUND ELECTRIC	PROP. ASPHALT PAVING TYPE I W/ SEALCOAT
EXISTING OVERHEAD WIRE, UTILITY POLE AND GUY WIRE	CONCRETE PAD
EXISTING SPOT ELEVATION	PROP. LEASE LINE
EXISTING SIDEWALK	PROP. SECURITY FENCE
EXISTING EASEMENT LINE	PROP. BUILDING LINE
EXISTING ROAD EDGE	PROP. EDGE OF ROAD
EXISTING TRAIN TRACKS	PROP. CONCRETE CURB
EXISTING STORM DRAIN LINE AND STRUCTURES	PROP. SIDEWALK
EXISTING SANITARY SEWER LINE AND STRUCTURE	PROP. SIGN
EXISTING WATER LINE AND VALVE	PROP. PARKING COUNT
EXISTING FENCE LINE	PROP. SHA PAVING
	ASPHALT PAVING TIE-IN
	SHA LIMITS OF WORK
	PROP WOODSLINE



NOTES:
1. STRUCTURAL DESIGN TO BE REVIEWED AND CERTIFIED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND
2. FOR PAVING DETAILS, SEE SHEET C4.1.
3. FOR WALL & PAVEMENT ELEVATIONS, SEE SHEET C3.3.

CONCRETE RETAINING WALL "A"
SCALE: N.T.S.

DRAWING INDEX

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27 TRACTOR PARKING
28 DEAD PARKING
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57 END WALL

GRAPHIC SCALE
40' 0 40' 80'
SCALE: 1"= 40'

Friday, July 22, 2016 11:36:24 AM
KYLE DONALDSON
C:\DWGS\FWIRE\KYLE.DONALDSON\DWGS\9020\C2-3.DWG

DEVELOPER:
SCANNELL PROPERTIES
800 E. 96TH ST, SUITE 175
INDIANAPOLIS, IN 46240
PHONE: (317) 843-5959
FAX: (317) 743-5957

ARCHITECT:
PRECEPT, LLC
Architects & Planners
800 E. 96th St., Suite 175
Indianapolis, Indiana 46240
Phone: (317) 843-5961
Fax: (317) 843-5965

CONTRACTOR:
ARCO
NATIONAL CONSTRUCTION
ARCO NATIONAL CONSTRUCTION CO, INC.
8150 CORPORATE PARK DRIVE SUITE 200
CINCINNATI, OH 45242
PHONE : 314-963-0715 FAX: 314-963-0714

CONSULTING ENGINEERS
CIVIL: KCI TECHNOLOGIES
936 RIDGEBROOK ROAD
SPARKS, MD 21152
C: ANTHONY MEYERS P:(410)316-7898

STRUCTURAL: CONSULTING ENGINEERS CORP
13C OLD STREET
CINCINNATI, OH 45050
C: TRACY MITCHELL P:(513)229-9000

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1616 CLEVELAND BLVD
GRANITE CITY, IL 62040
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ELECTRICAL: CHERAN INC.
3552 GETTYSBURG RD. SUITE 101
CAMP HILL, PA 17011
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PLUMBING: TENNILL & ASSOCIATES
177 CHESTERFIELD INDUSTRIAL BLVD.
CHESTERFIELD, MO 63005
C: DANA TENNILL P:(636)537-3999

FIRE PROTECTION: FE MORAN
3001 RESEARCH RD SUITE A
CHAMPAIGN, IL 61822
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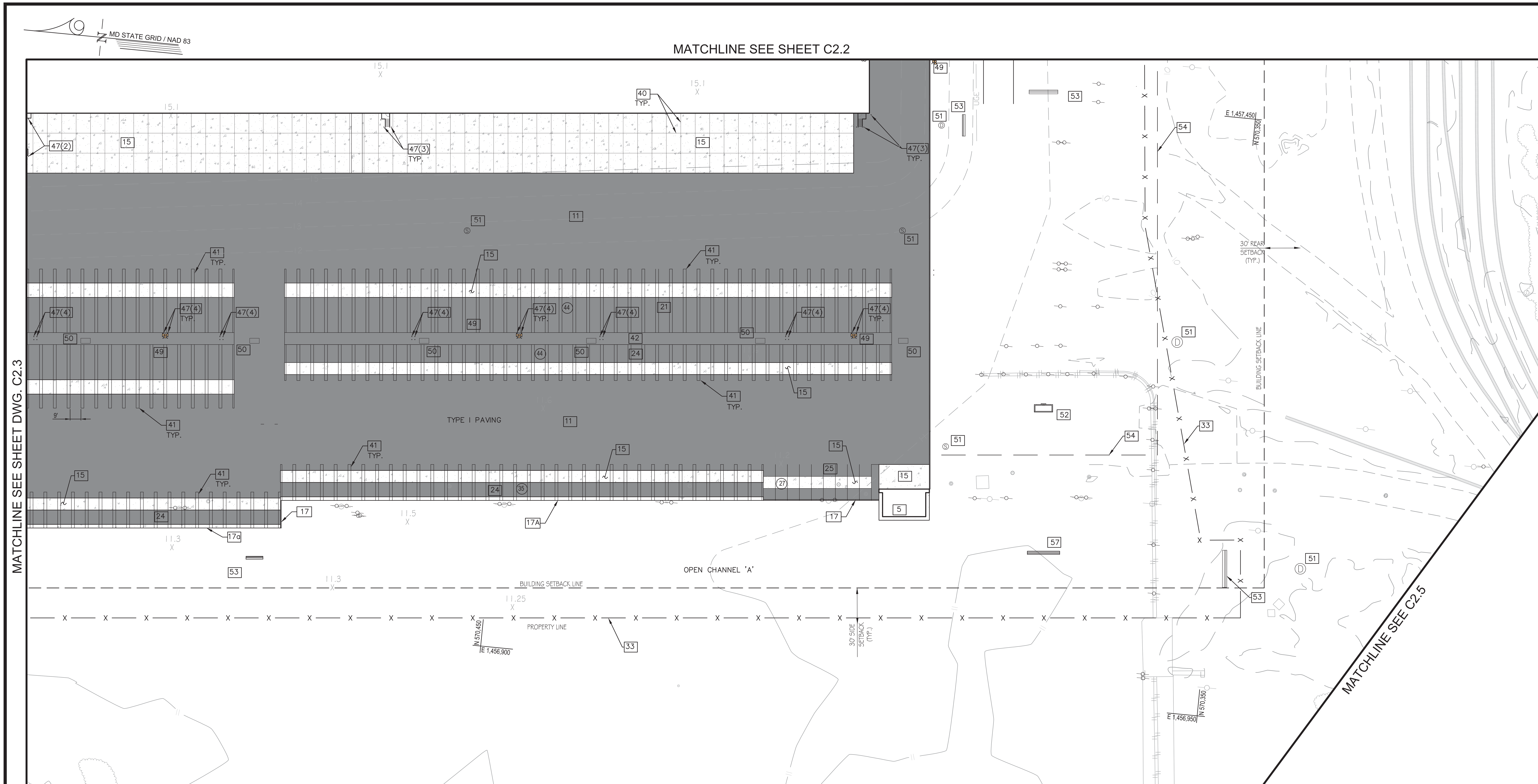
A NEW FACILITY
FOR:
FedEx Ground
EAST BALTIMORE FACILITY #209
101 BETHLEHEM BOULEVARD
BALTIMORE, MD 21219

CONSTRUCTION DOCUMENTS
8.8.2016

CERTIFICATION
FOR CIVIL DESIGN ONLY, NOT FOR STRUCTURAL DESIGN.
I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF A MARYLAND,
LICENSE NUMBER 23381 , EXPIRATION DATE 8/19/16

Drawn By KD / AI
Designed By AGM
Project No.
Date 07-22-16

SITE PLAN-3
C2.3



SITE PLAN

SCALE: 1" = 40'

LEGEND

EXISTING MINOR CONTOUR	PROP. ASPHALT PAVING TYPE I
EXISTING MAJOR CONTOUR	PROP. ASPHALT PAVING TYPE II
EXISTING UNDERGROUND ELECTRIC	PROP. ASPHALT PAVING TYPE I W/ SEALCOAT
EXISTING OVERHEAD WIRE, UTILITY POLE AND GUY WIRE	CONCRETE PAD
EXISTING SPOT ELEVATION	PROP. LEASE LINE
EXISTING SIDEWALK	PROP. SECURITY FENCE
EXISTING EASEMENT LINE	PROP. BUILDING LINE
EXISTING ROAD EDGE	PROP. EDGE OF ROAD
EXISTING TRAIN TRACKS	PROP. CONCRETE CURB
EXISTING STORM DRAIN LINE AND STRUCTURES	PROP. SIDEWALK
EXISTING SANITARY SEWER LINE AND STRUCTURE	PROP. SIGN
EXISTING WATER LINE AND VALVE	PROP. PARKING COUNT
EXISTING FENCE LINE	PROP. SHA PAVING
	ASPHALT PAVING TIE-IN
	SHA LIMITS OF WORK
	PROP WOODSLINE

PROJECT RECORD

DRAWING INDEX

No.	Description	Detail
1	BUILDING (WAREHOUSE AREA)	
2	VEHICLE MAINTENANCE GARAGE	
3	GATEWAY BUILDING	
4	LOCKER SHELTER	
5	SALT STORAGE BUILDING (30' X 20')	
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7	ADMIN OFFICE	
8	REMOTE OFFICE	
9	L / H OFFICE	
10	REMOTE TOILET ROOM	
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30	GATE ACCESS PEDISTAL	
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36	WHEEL STOP	03/4.1
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38	BIKE RACK	
39	BLOCK HEATER	
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44a	SPEED LIMIT 10 MPH SIGN (24"x18")	
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57	END WALL	

GRAPHIC SCALE

40' 0 40' 80'

SCALE: 1"= 40'

DEVELOPER:
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Drawn By KD / AI
Designed By AGM
Project No.
Date 07-22-16

SITE PLAN-4

C2.4

DRAWING INDEX

1. BUILDING (WAREHOUSE AREA)
2. VEHICLE MAINTENANCE GARAGE
3. GATEWAY BUILDING
4. LOCKER SHELTER
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12. ASPHALT PAVEMENT TYPE II (05/4.1)
13. ASPHALT PAVEMENT TYPE I (W/ SEALCOAT) (08/4.1)
14. CONCRETE PAD (06/4.1)
15. CONCRETE PAVING (02/4.1)
16. CONCRETE APRON (XX/C-XX)
17. 5" CONCRETE CURB (19/4.2)
17A. 5" CONCRETE CURB & GUTTER (17/4.2)
17B. 5" CONCRETE CURB & GUTTER (9/4.1)
17C. TYPE 'A' CURB & GUTTER MD. STD. 620.02
18. AUTOMOBILE PARKING
19. INBOUND DROP AREA
20. TRANSITION AREA
21. LONG TRAILER PARKING
22. TRIPLES PARKING
23. DOUBLES PARKING
24. 28' TRAILER PARKING
25. DOLLY PARKING (69 SPACES)
26. HD VAN PARKING
27. TRACTOR PARKING
28. DEAD PARKING
29. MOTORIZED OVERHEAD TRUSS GATE
30. GATE ACCESS PEDISTAL
31. TRASH COMPACTOR
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33. 8' CHAIN LINK FENCE (07/4.1)
33a. 6' CHAIN LINK FENCE (04/4.1)
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35. TRENCH DRAIN
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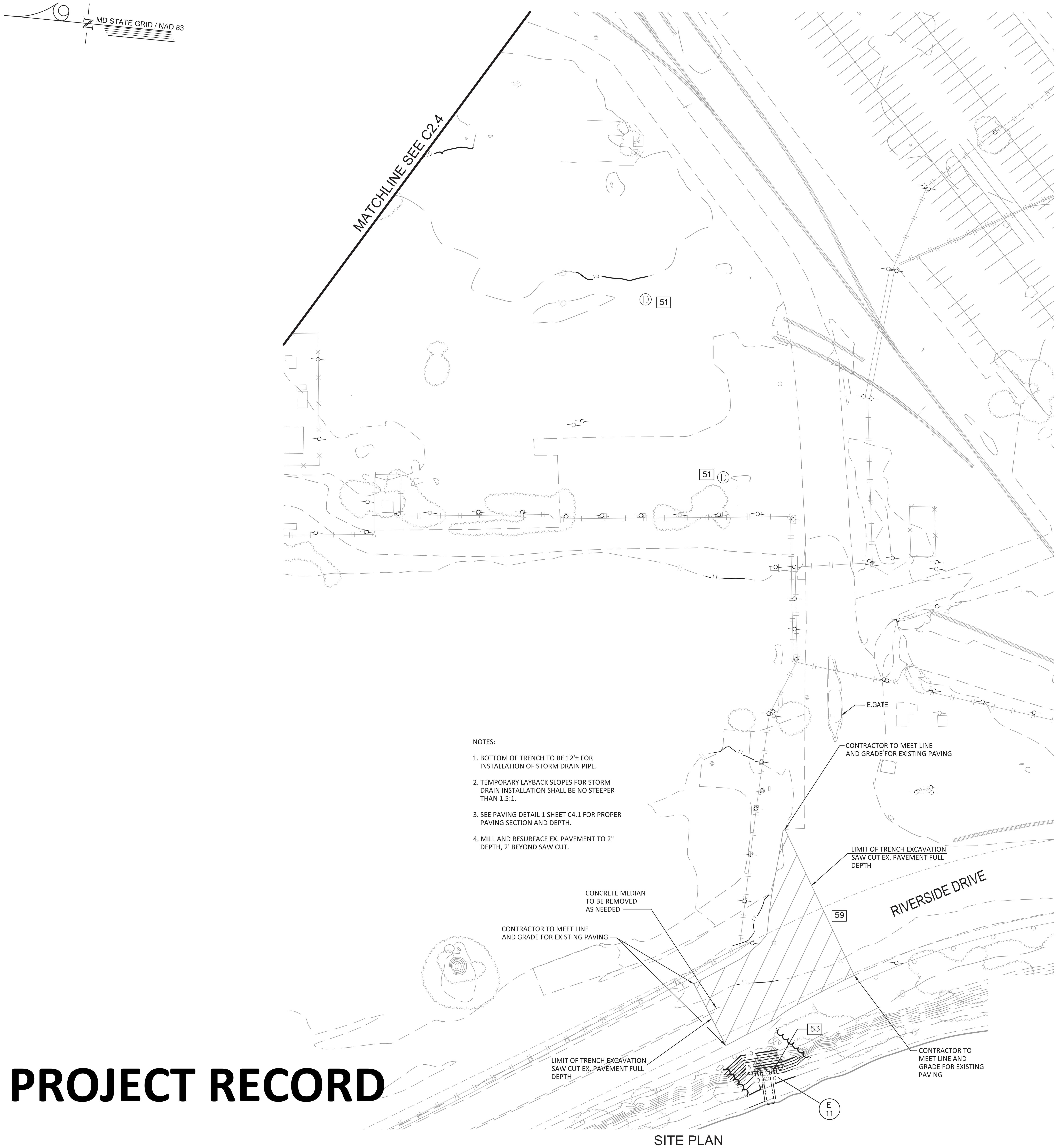
45. DEPRESSED CURB (15/4.2)
46. HANDICAP RAMP (14/4.2)
47. CONCRETE PIPE BOLLARD (12/4.1)
48. LANDSCAPE ISLAND
49. FIRE HYDRANT
50a. CLEAN OUT
50. INLET
51. MANHOLE
52. STORM WATER MANAGEMENT STRUCTURE
53. END WALL
54. STORM WATER MANAGEMENT EASEMENT
55. 1500 GAL. OIL/WATER SEPARATOR (REFER TO SPECIFICATIONS FOR MANUFACTURER INFORMATION)
56. 750 GAL. OIL/WATER SEPARATOR (REFER TO SPECIFICATIONS FOR MANUFACTURER INFORMATION)
57. END WALL
58. END SECTION
59. RIVERSIDE ROAD PAVEMENT REPLACEMENT



NOTES:

1. BOTTOM OF TRENCH TO BE 12'± FOR INSTALLATION OF STORM DRAIN PIPE.
2. TEMPORARY LAYBACK SLOPES FOR STORM DRAIN INSTALLATION SHALL BE NO STEEPER THAN 1.5:1.
3. SEE PAVING DETAIL 1 SHEET C4.1 FOR PROPER PAVING SECTION AND DEPTH.
4. MILL AND RESURFACE EX. PAVEMENT TO 2" DEPTH, 2' BEYOND SAW CUT.

PROJECT RECORD

SITE PLAN
SCALE: 1" = 40'

LEGEND

EXISTING MINOR CONTOUR	RIVERSIDE DRIVE PAVING (SEE SHEET C4.1 FOR DETAILS)
EXISTING MAJOR CONTOUR	PROP. ASPHALT PAVING TYPE I
EXISTING UNDERGROUND ELECTRIC	PROP. ASPHALT PAVING TYPE II
EXISTING OVERHEAD WIRE, UTILITY POLE AND GUY WIRE	PROP. ASPHALT PAVING TYPE I W/ SEALCOAT
EXISTING SPOT ELEVATION	CONCRETE PAD
EXISTING SIDEWALK	PROP. LEASE LINE
EXISTING EASEMENT LINE	PROP. SECURITY FENCE
EXISTING ROAD EDGE	PROP. BUILDING LINE
EXISTING TRAIN TRACKS	PROP. EDGE OF ROAD
EXISTING STORM DRAIN LINE AND STRUCTURES	PROP. CONCRETE CURB
EXISTING SANITARY SEWER LINE AND STRUCTURE	PROP. SIDEWALK
EXISTING WATER LINE AND VALVE	PROP. SIGN
EXISTING FENCE LINE	PROP. PARKING COUNT
	PROP. SHA PAVING
	ASPHALT PAVING TIE-IN
	SHA LIMITS OF WORK
	PROP WOODSLINE

GRAPHIC SCALE
40' 0 40' 80'
SCALE: 1"= 40'

DEVELOPER:
SCANNELL PROPERTIES

ARCHITECT:
PRECEPT, LLC Architects & Planners
800 E. 96th St., Suite 175
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Fax: (317) 843-5965

CONTRACTOR:
ARCO NATIONAL CONSTRUCTION
ARCO NATIONAL CONSTRUCTION CO, INC.

CONSULTING ENGINEERS

A NEW FACILITY FOR:
FedEx Ground
EAST BALTIMORE FACILITY #209
101 BETHLEHEM BOULEVARD
BALTIMORE, MD 21219

CONSTRUCTION DOCUMENTS
8.8.2016

CERTIFICATION

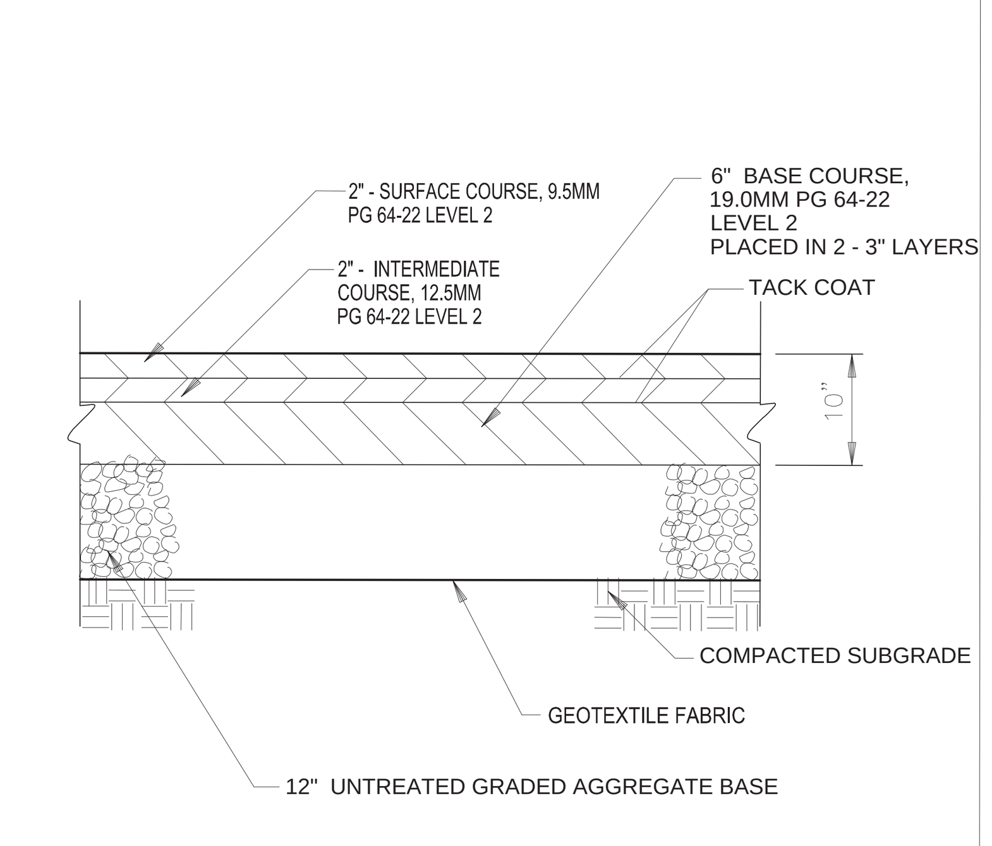
I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 23383, EXPIRATION DATE 8/19/16

Drawn By KD / AI
Designed By AGM
Project No.
Date 04-28-16

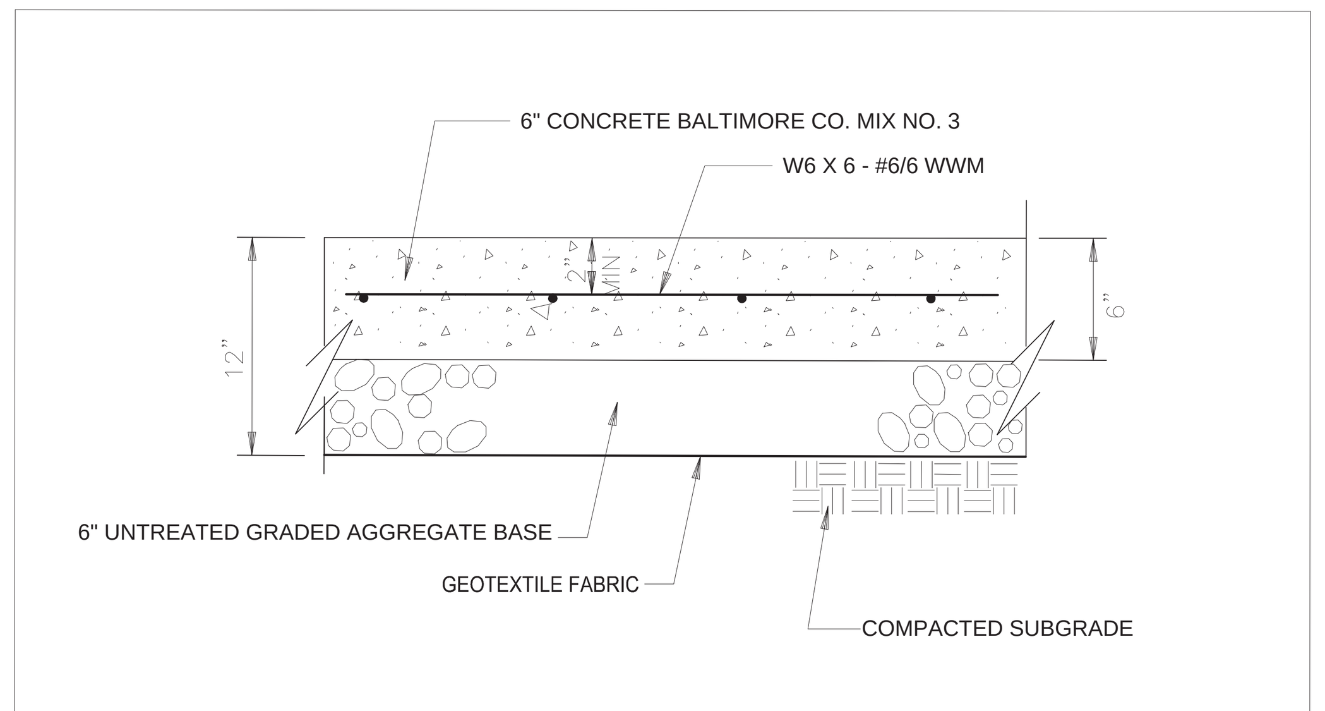
SITE PLAN-5

C2.5

Monday, May 16, 2016 9:44:16 AM
KYLE DONALDSON

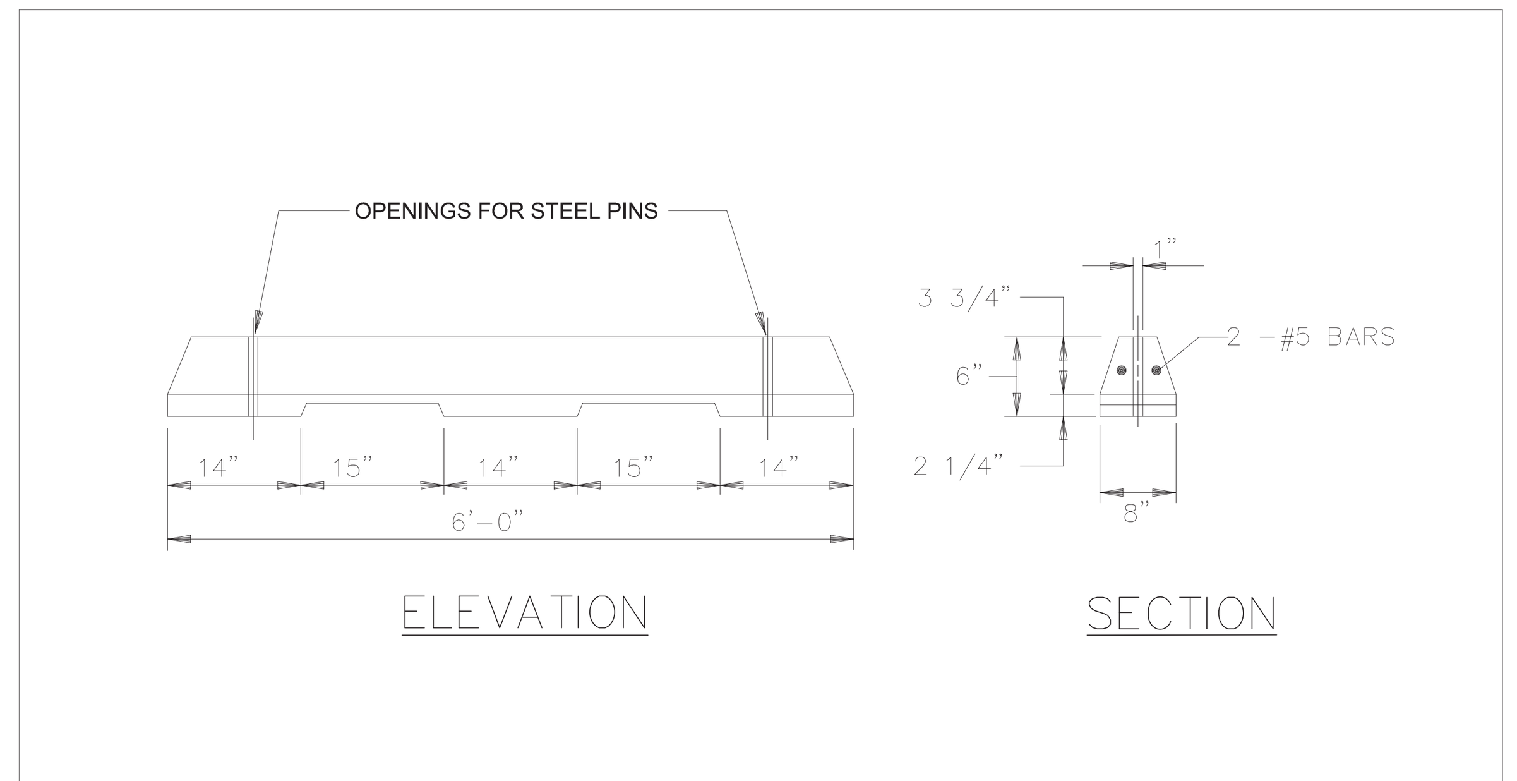


1 TYPE I PAVING DETAIL SCALE: N.T.S.



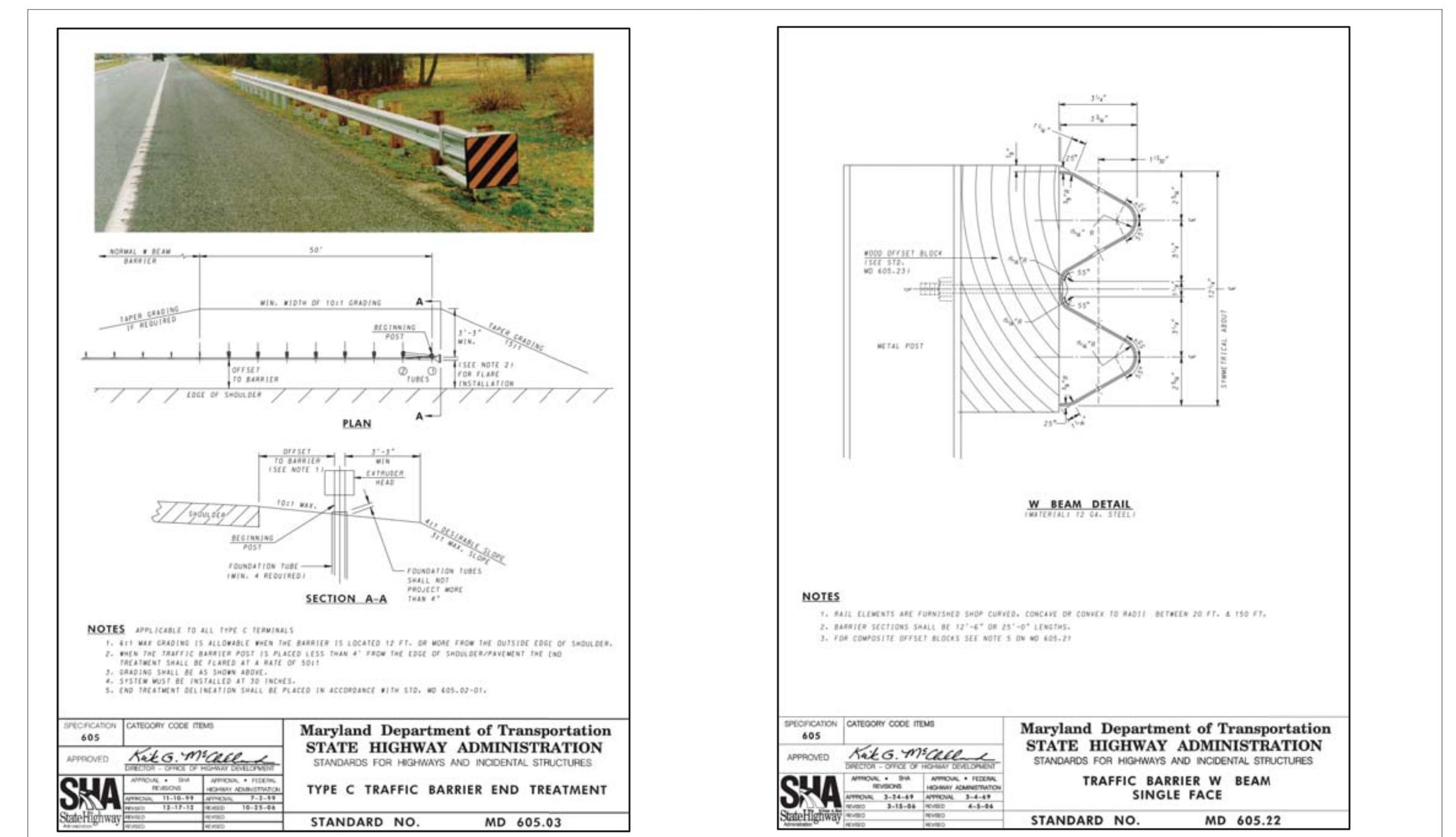
NOTE: 1. EXPANSION JOINTS SHALL BE AT THE LOCATIONS SHOWN ON THE PLANS AND SHALL BE IN ACCORDANCE WITH MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD DETAIL NO. MD 572.92.

2 CONCRETE PAVING DETAIL SCALE: N.T.S.

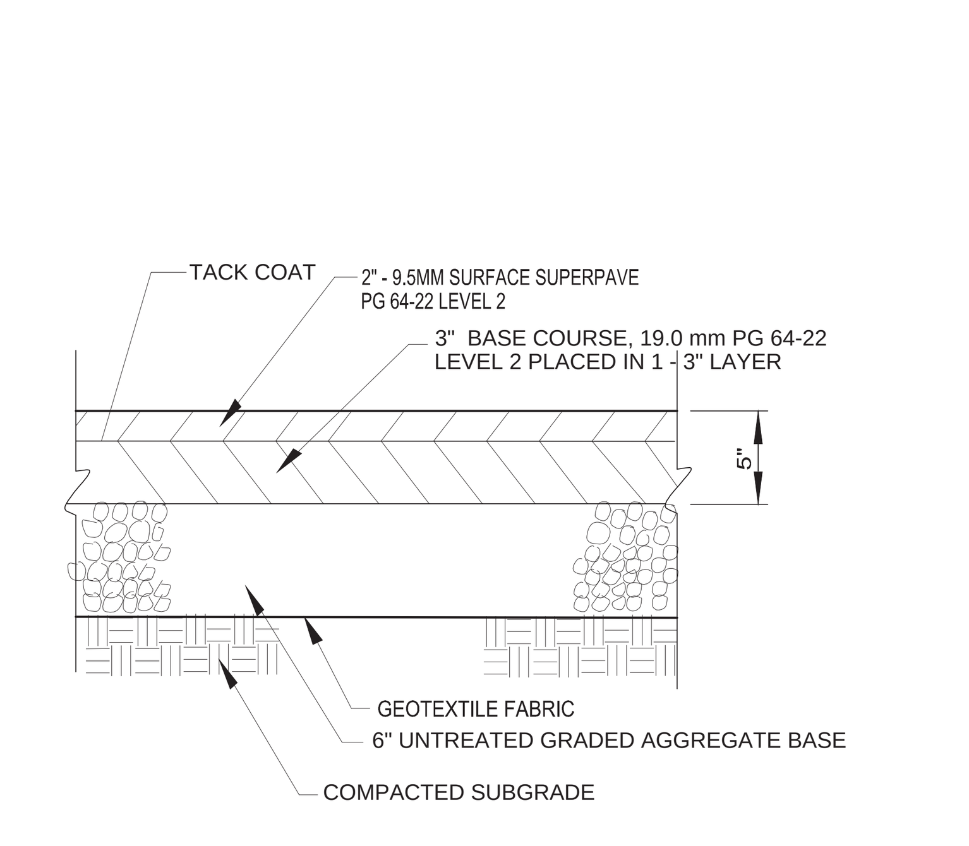


NOTE: CONTRACTOR TO PROVIDE TWO (2) NO.8 REBARS, 16" LONG FOR EACH WHEEL STOP.

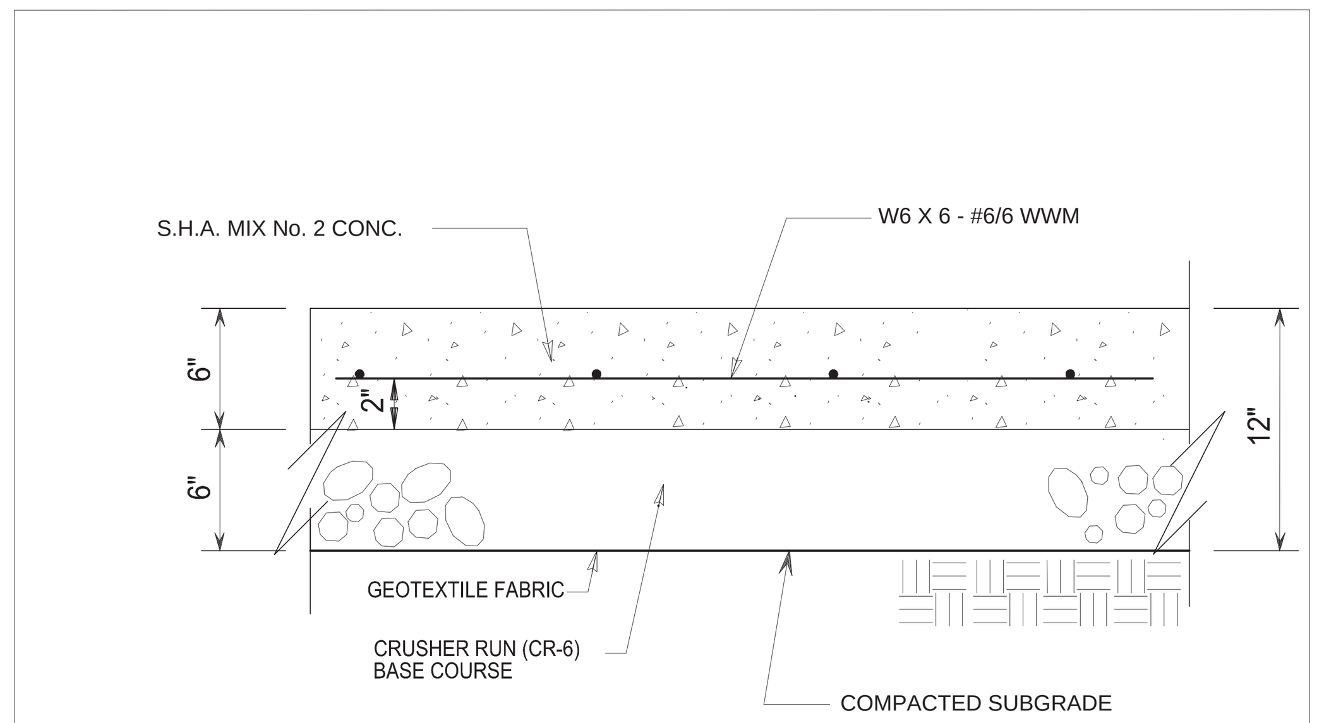
3 PRECAST CONCRETE WHEEL STOP SCALE: N.T.S.



4 SHA GUARD RAIL DETAIL SCALE: N.T.S.

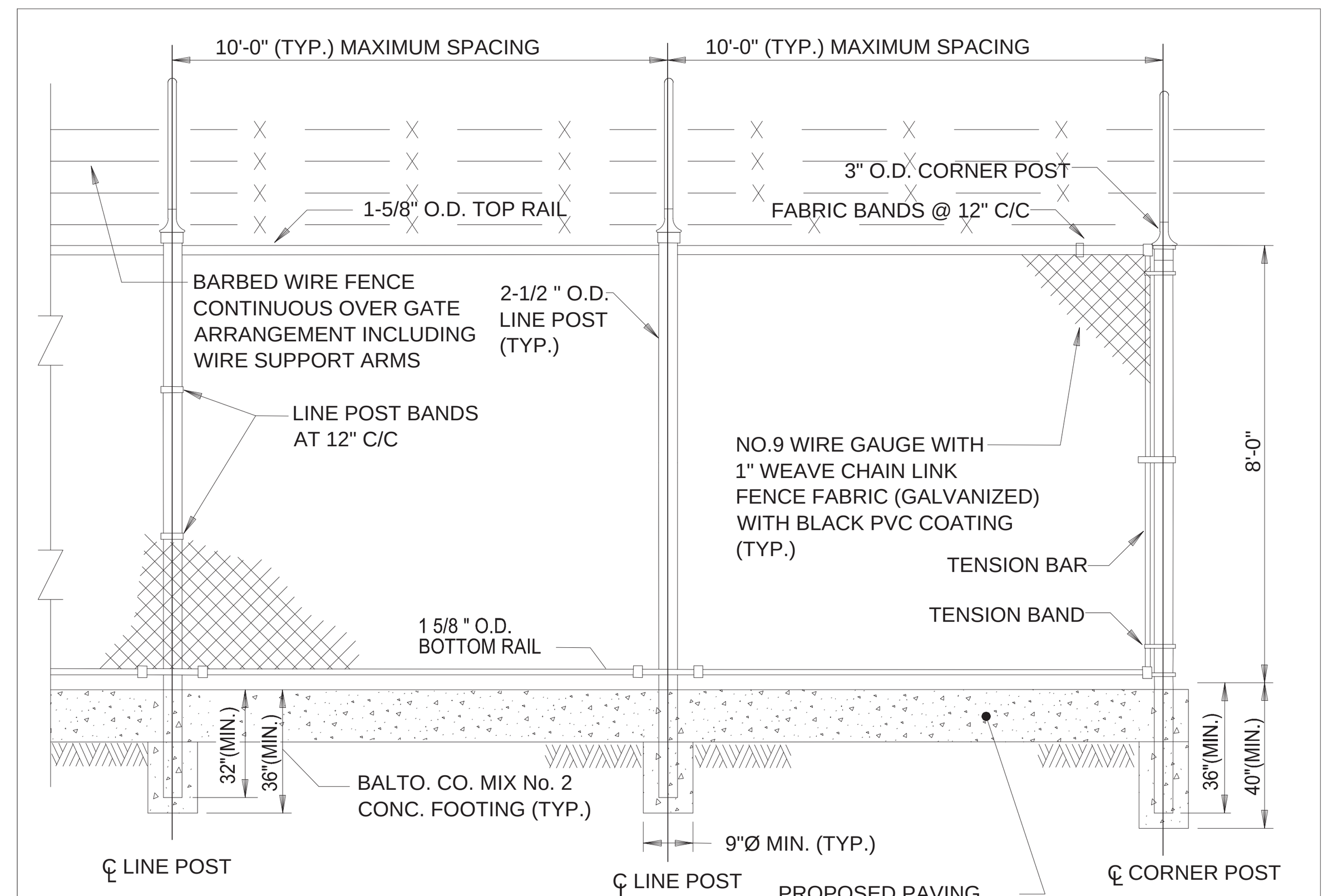


5 TYPE II PAVING DETAIL SCALE: N.T.S.



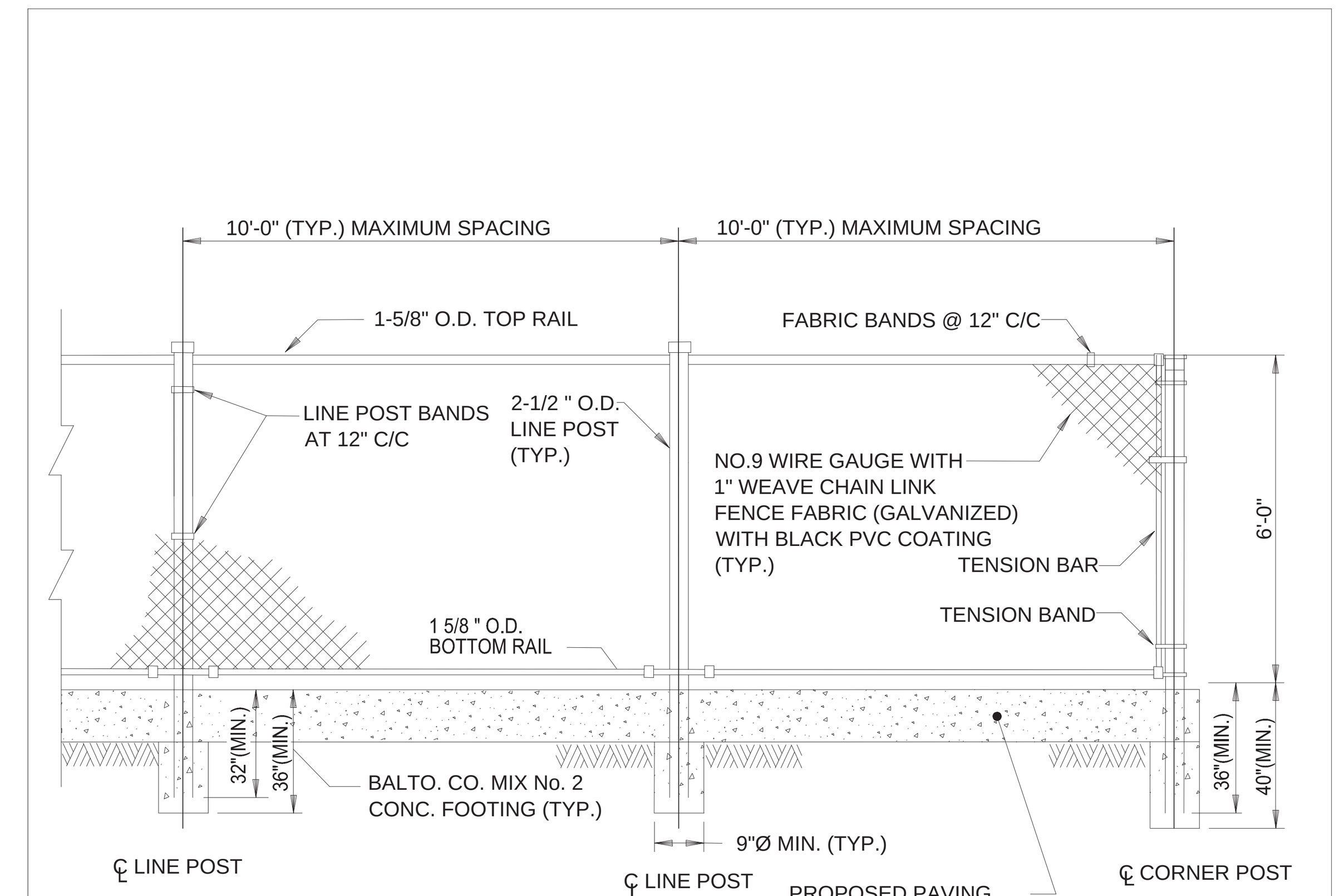
NOTES:
1. EXPANSION JOINTS SHALL BE AT THE LOCATIONS SHOWN ON THE PLANS.
2. MINIMUM 28 DAY COMPRESSION STRENGTH 4000psi.

6 REINFORCED CONCRETE PAD DETAIL SCALE: N.T.S.



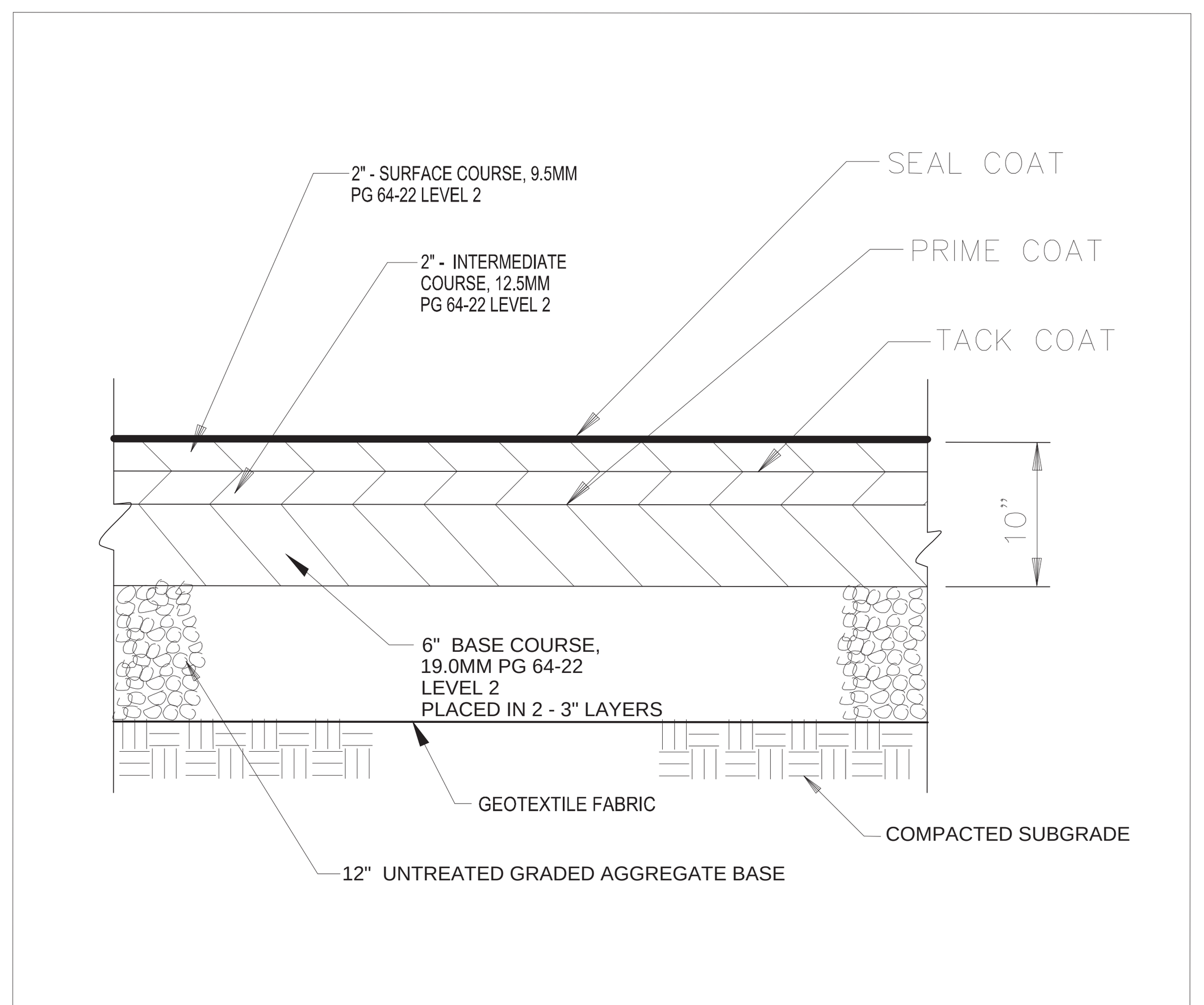
NOTES:
1. ALL PIPING SHALL BE SCHEDULE 40.
2. CONTRACTOR SHALL EXERCISE EXTREME CARE WHEN INSTALLING FENCE SO AS NOT TO DAMAGE UNDERGROUND UTILITIES.
3. FENCE FABRIC SHALL BE SECURED TO THE RAILS AND POSTS WITH ALUMINUM SELF LOCKING BANDS.

7 8' HIGH CHAIN LINK FENCE DETAIL SCALE: N.T.S.

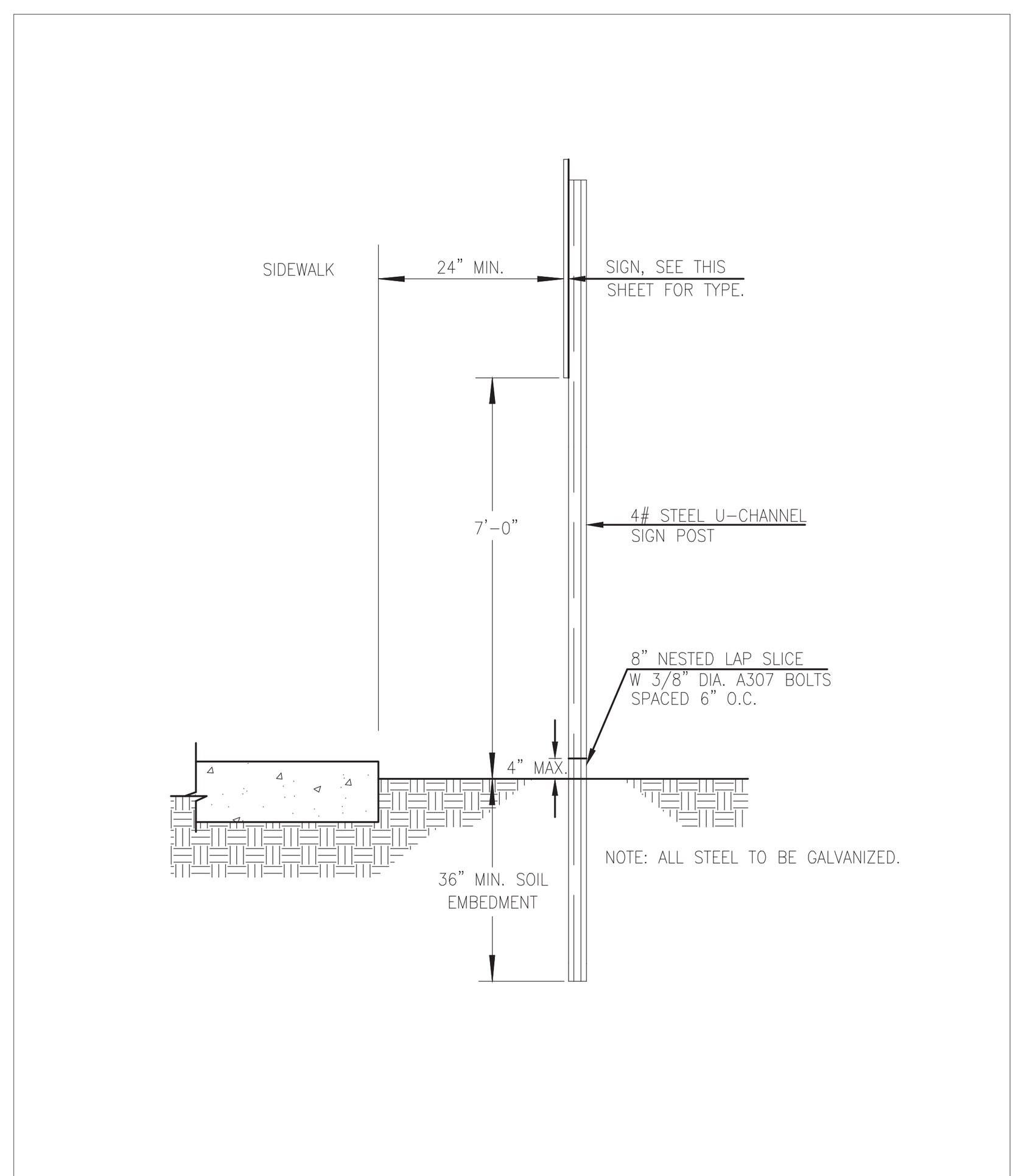


NOTES:
1. ALL PIPING SHALL BE SCHEDULE 40.
2. CONTRACTOR SHALL EXERCISE EXTREME CARE WHEN INSTALLING FENCE SO AS NOT TO DAMAGE UNDERGROUND UTILITIES.
3. FENCE FABRIC SHALL BE SECURED TO THE RAILS AND POSTS WITH ALUMINUM SELF LOCKING BANDS.

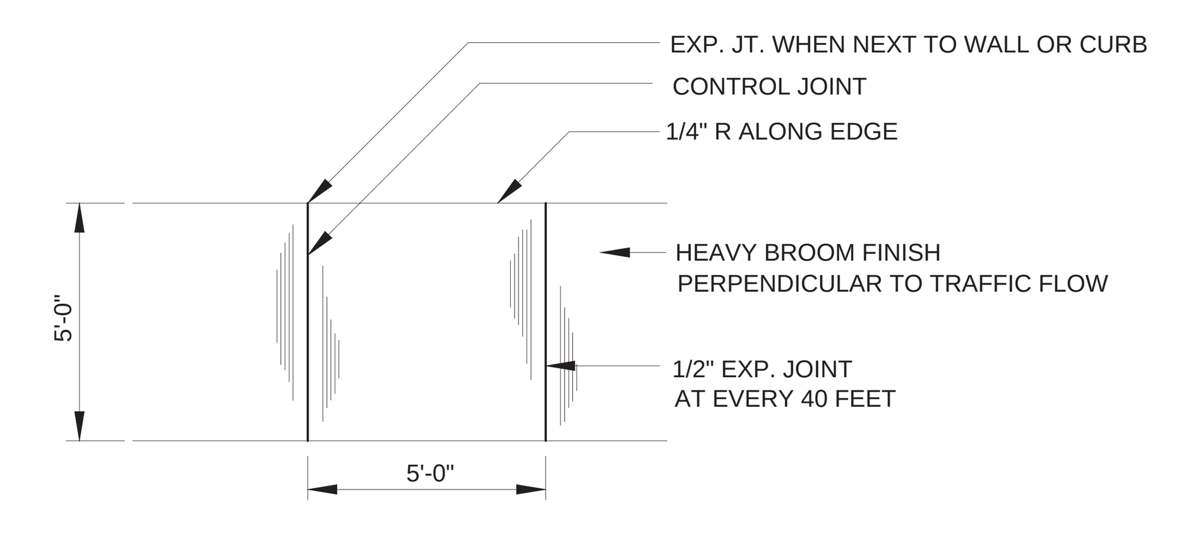
7 6' HIGH CHAIN LINK FENCE DETAIL SCALE: N.T.S.



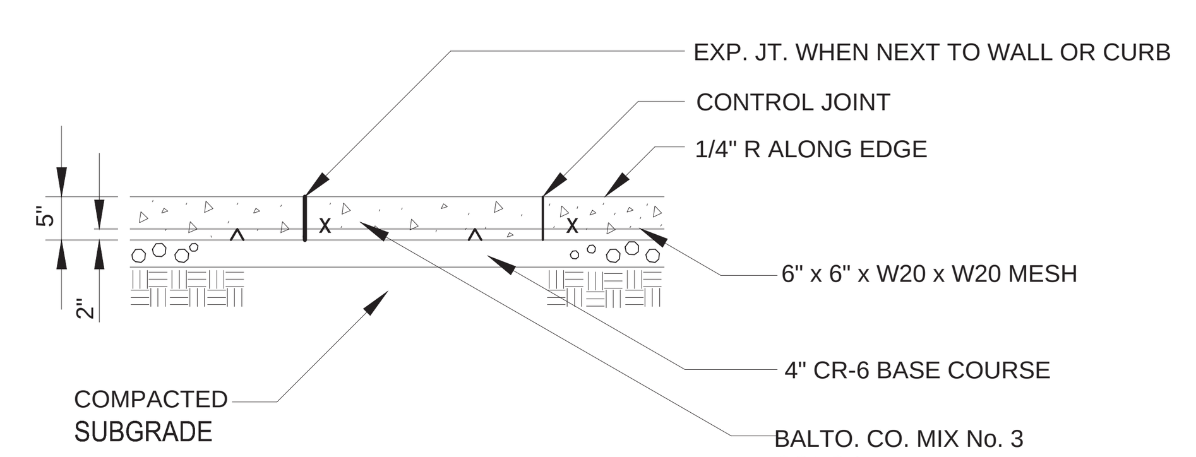
8 TYPE I PAVING W/ SEALCOAT DETAIL SCALE: N.T.S.



9 TYPICAL SIGN INSTALLATION DETAIL SCALE: N.T.S.



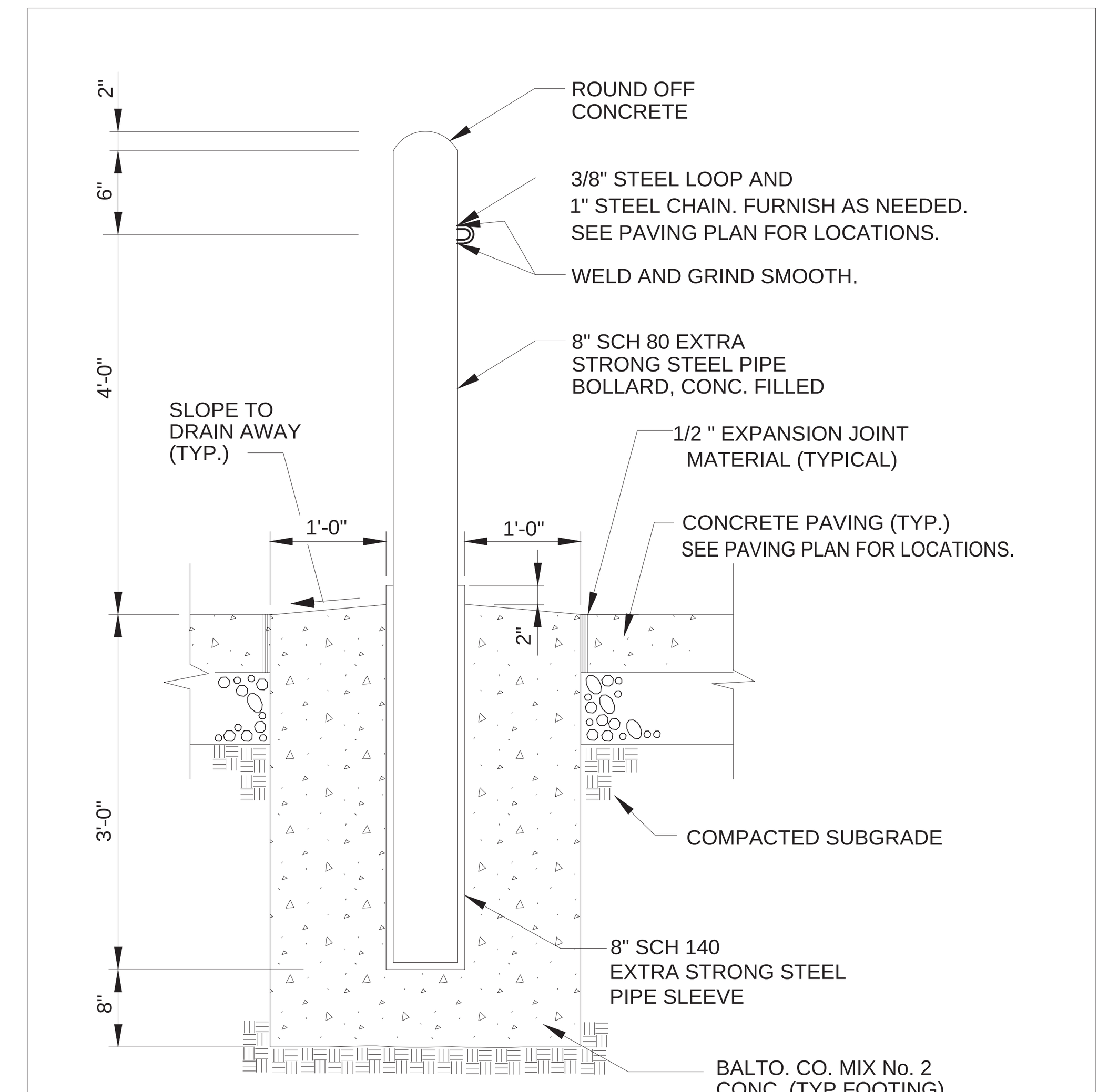
PROFILE



SECTION

1. PROVIDE EXPANSION JOINTS 40' C.C. MAX. AND SCORE JOINTS 5' C.C. (UNLESS OTHERWISE NOTED). EXPANSION JOINTS SHALL BE 1/2" PREMOLDED BITUMINOUS JOINT MATERIAL IN ACCORDANCE WITH BALTIMORE COUNTY SPECIFICATION.
2. WHEN SIDEWALK ABUTS CURB, SIDEWALK SHALL BE 1/4" ABOVE CURB WITH 1/2" PREMOLDED BITUMINOUS JOINT MATERIAL.
3. SEE BALTIMORE COUNTY STANDARD DETAIL R-19 FOR ADDITIONAL INFORMATION.

10 CONCRETE SIDEWALK SCALE: N.T.S.



NOTE: PROVIDE 2% CROSS-SLOPE FOR POSITIVE DRAINAGE AS REQUIRED

NOTE:
1. PIPE BOLLARDS TO BE PRIMED AND PAINTED WITH EXTERIOR ENAMEL PAINT IN ACCORDANCE WITH BALTIMORE COUNTY STANDARD DETAIL G-10. COLOR TO BE PER ARCHITECT.

11 PIPE BOLLARD SCALE: N.T.S.

PROJECT RECORD

Friday, July 22, 2016 7:24:19 PM
SCOTT ROSE

DEVELOPER:
SCANNELL PROPERTIES

ARCHITECT:
PRECEPT, LLC Architects & Planners
800 E. 96th St., Suite 175
Indianapolis, Indiana 46240

CONTRACTOR:
ARCO NATIONAL CONSTRUCTION
ARCO NATIONAL CONSTRUCTION CO., INC.
CINCINNATI, OH 45242
PHONE: 314-963-0715 FAX: 314-963-0714

CONSULTING ENGINEERS

A NEW FACILITY FOR:
FedEx Ground
EAST BALTIMORE FACILITY #209
101 BETHLEHEM BOULEVARD
BALTIMORE, MD 21219

CONSTRUCTION DOCUMENTS
8.8.2016

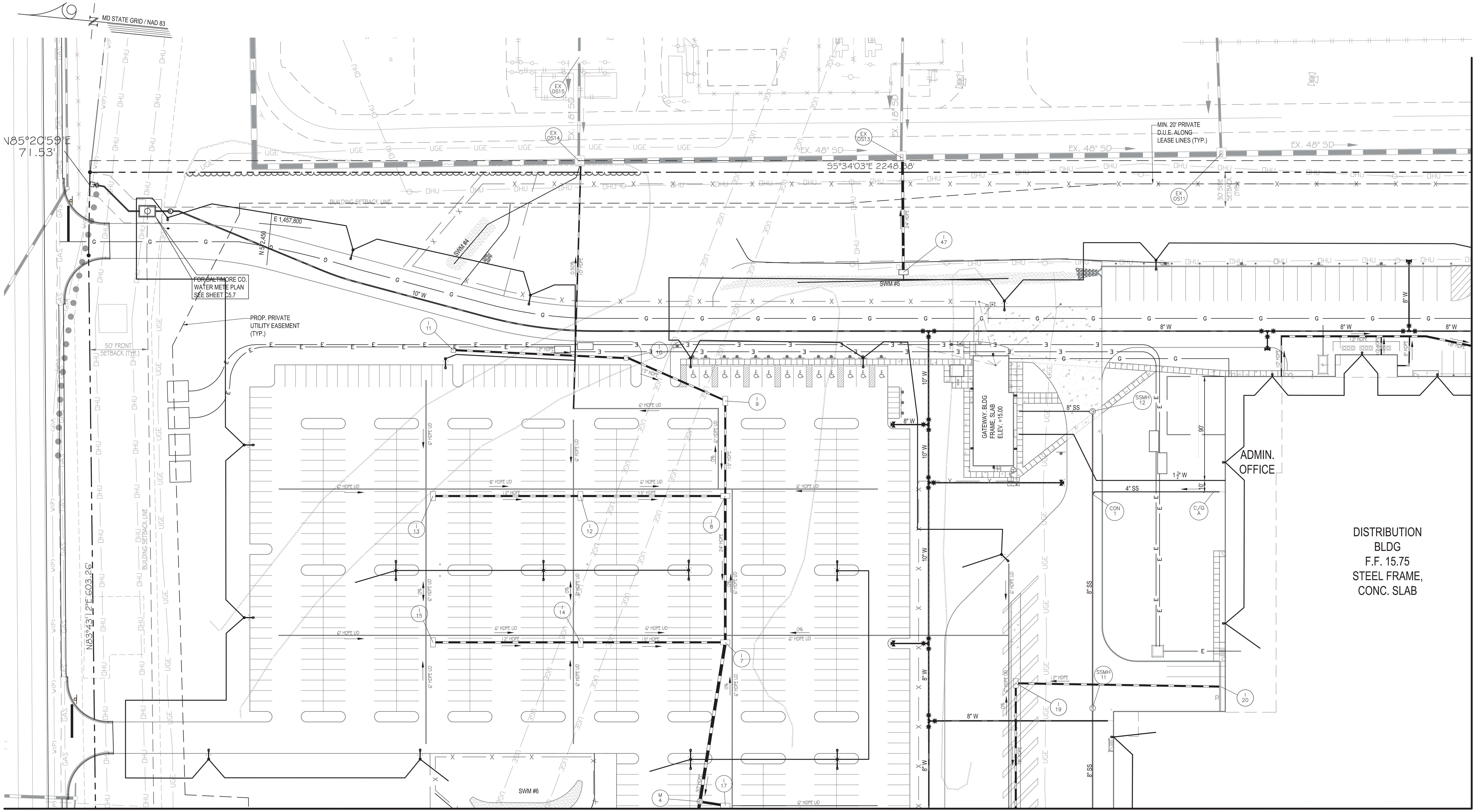
CERTIFICATION

I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 23381 , EXPIRATION DATE 8/19/16

Drawn By
Designed By
Project No.
Date 07-22-16

SITE DETAILS-1

C4.1



MATCHLINE SEE SHEET DWG. C5.3

LEGEND

- EXISTING UNDERGROUND ELECTRIC
- EXISTING OVERHEAD WIRE, UTILITY POLE AND GUY WIRE
- EXISTING SIDEWALK
- EXISTING EASEMENT LINE
- EXISTING ROAD EDGE
- EXISTING TRAIN TRACKS
- EXISTING STORM DRAIN LINE AND STRUCTURES
- EXISTING SANITARY SEWER LINE AND STRUCTURE
- EXISTING WATER LINE AND VALVE
- EXISTING FENCE LINE
- PROP. CURB
- PROP. WATER
- LIMIT OF DISTURBANCE
- PROPOSED LEASE PARCEL LINE (N84°25'57"E 50.00')
- PROPOSED STORM DRAIN
- PROPOSED UNDER DRAIN
- PROPOSED TRENCH DRAIN
- EX. UTILITY TO BE ABANDONED
- PROP. FENCE LINE
- PROP. EASEMENT LINE
- PROP. CONC. PAVEMENT
- PROP. FIRE HYDRANT
- PROP. SAN. SEWER
- PROP. ELECTRIC
- PROP. GAS BY OTHERS
- PROP. WATER VALVE

UTILITY PLAN
SCALE: 1" = 40'

PROJECT RECORD

GRAPHIC SCALE
40' 0 40' 80'
SCALE: 1"= 40'

Friday, July 22, 2016 7:45:09 PM
SCOTT ROSE
C:\DMS\PWISE\SCOTT.ROSE\DMS39020\C5-1.DWG

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Indianapolis, Indiana 46240
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ARCO NATIONAL CONSTRUCTION CO, INC.
8150 CORPORATE PARK DRIVE SUITE 200
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CONSULTING ENGINEERS
CIVIL: KCI TECHNOLOGIES, 936 RIDGEBROOK ROAD, SPARKS, MD 21152, C: ANTHONY MEYERS P:(410)316-7898
STRUCTURAL: CONSULTING ENGINEERS CORP, 13C OLD STREET, CINCINNATI, OH 45050, C: TRACY MITCHELL P:(513)229-9000
MECHANICAL: ICON MECHANICAL, 1616 CLEVELAND BLVD, GRANITE CITY, IL 62040, C: TIM SCHAEFFER P:(618)452-0035
ELECTRICAL: CHERAN INC., 3552 GETTYSBURG RD. SUITE 101, CAMP HILL, PA 17011, C: RANDY PENTZ P:(717)525-9461
PLUMBING: TENNILL & ASSOCIATES, 177 CHESTERFIELD INDUSTRIAL BLVD., CHESTERFIELD, MO 63005, C: DANA TENNILL P:(636)537-3999
FIRE PROTECTION: FE MORAN, 3001 RESEARCH RD SUITE A, CHAMPAIGN, IL 61822, C: JIM HEINOLD P:(217)356-0700

A NEW FACILITY FOR:
FedEx Ground
EAST BALTIMORE FACILITY #209
101 BETHLEHEM BOULEVARD
BALTIMORE, MD 21219

CONSTRUCTION DOCUMENTS
8.8.2016

CERTIFICATION
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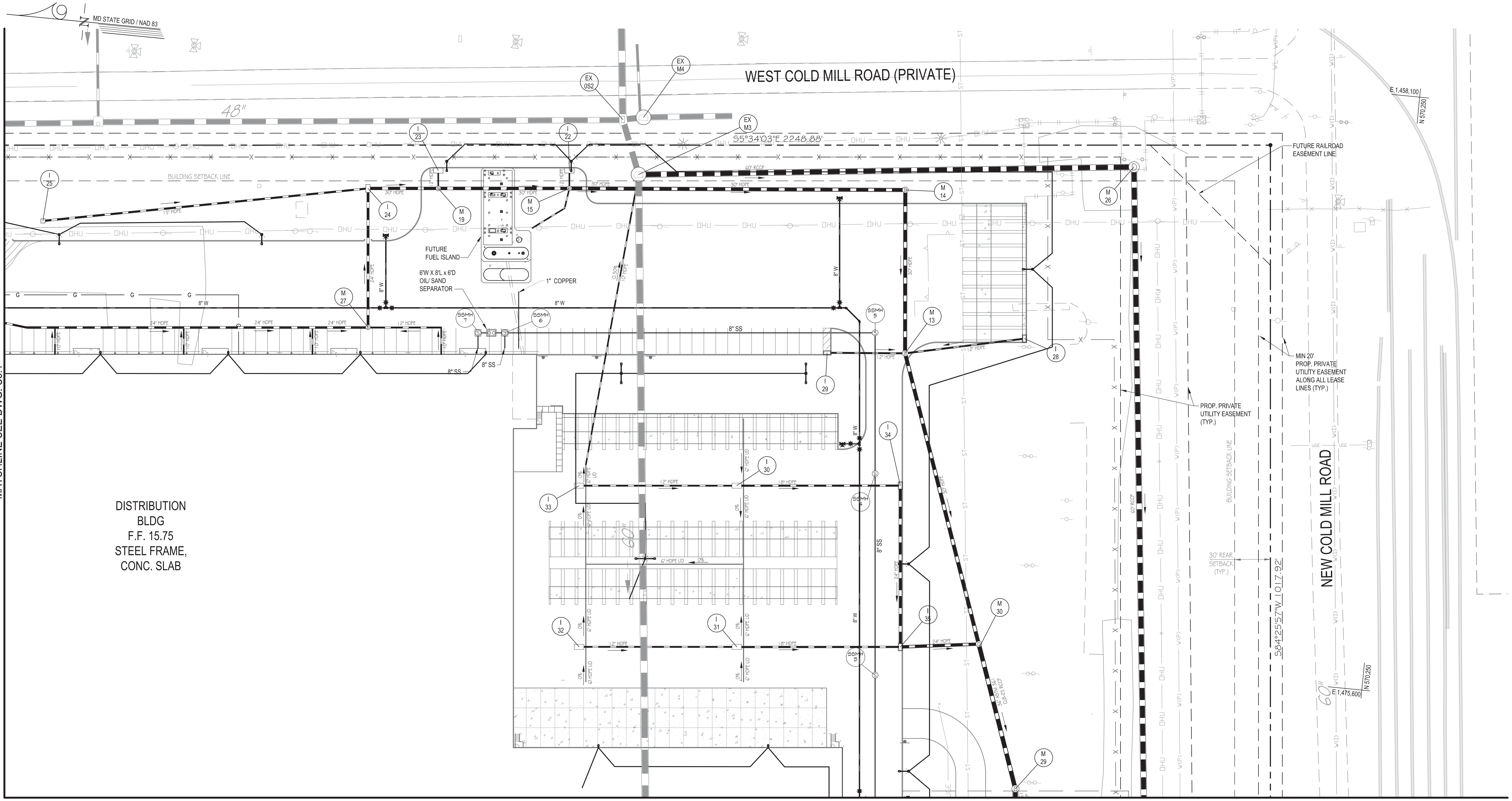
LICENSE NUMBER 23381 , EXPIRATION DATE 8/19/16

Drawn By: KD / AI
Designed By: AGM
Project No.:
Date: 07-22-16

UTILITY PLAN - 1

C5.1



MATCHLINE SEE DWG. C5.4

LEGEND

EXISTING UNDERGROUND ELECTRIC	LIMIT OF DISTURBANCE
EXISTING OVERHEAD WIRE, UTILITY POLE AND GUY WIRE	N84°25'57"E 50.00' PROPOSED LEASE PARCEL LINE
EXISTING SIDEWALK	PROPOSED STORM DRAIN
EXISTING EASEMENT LINE	PROPOSED UNDER DRAIN
EXISTING ROAD EDGE	PROPOSED TRENCH DRAIN
EXISTING TRAIN TRACKS	EX. UTILITY TO BE ABANDONED
EXISTING STORM DRAIN LINE AND STRUCTURES	PROP. FENCE LINE
EXISTING SANITARY SEWER LINE AND STRUCTURE	PROP. EASEMENT LINE
EXISTING WATER LINE AND VALVE	PROP. CONC. PAVEMENT
EXISTING FENCE LINE	PROP. FIRE HYDRANT
PROP. CURB	PROP. SAN. SEWER
PROP. WATER	PROP. UNDERGROUND ELECTRIC
	PROP. GAS BY OTHERS
	PROP. WATER VALVE

UTILITY PLAN

SCALE: 1" = 40'

PROJECT RECORD

GRAPHIC SCALE

40' 0 40' 80'

SCALE: 1"= 40'

PLOTTED: Friday, July 22, 2016 1:41:13 PM
BY:KYLE DONALDSON

DEVELOPER:

SCANNELL PROPERTIES
800 E. 96TH ST, SUITE 175
INDIANAPOLIS, IN 46240
PHONE: (317) 843-5959
FAX: (317) 743-5957

ARCHITECT:

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Architects & Planners
800 E. 96th St., Suite 175
Indianapolis, Indiana 46240
Phone: (317) 843-5961
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CONTRACTOR:

ARCO NATIONAL CONSTRUCTION
ARCO NATIONAL CONSTRUCTION CO, INC.
8150 CORPORATE PARK DRIVE SUITE 200
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CONSULTING ENGINEERS

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936 RIDGEBROOK ROAD
SPARKS, MD 21152
C: ANTHONY MEYERS P(410)316-7898

STRUCTURAL: CONSULTING ENGINEERS CORP
13C OLD STREET
CINCINNATI, OH 45050
C: TRACY MITCHELL P:(513)229-9000

MECHANICAL: ICON MECHANICAL
1616 CLEVELAND BLVD
GRANITE CITY, IL 62040
C: TIM SCHAEFFER P:(618)452-0035

ELECTRICAL: CHERAN INC.
3552 GETTYSBURG RD. SUITE 101
CAMP HILL, PA 17011
C: RANDY PENTZ P:(717)525-9461

PLUMBING: TENNILL & ASSOCIATES
177 CHESTERFIELD INDUSTRIAL BLVD.
CHESTERFIELD, MO 63005
C: DANA TENNILL P:(636)537-3999

FIRE PROTECTION: FE MORAN
3001 RESEARCH RD SUITE A
CHAMPAIGN, IL 61822
C: JIM HEINOLD P:(217)356-0700

A NEW FACILITY FOR:
FedEx Ground
EAST BALTIMORE FACILITY #209
101 BETHLEHEM BOULEVARD
BALTIMORE, MD 21219

CONSTRUCTION DOCUMENTS
8.8.2016

CERTIFICATION

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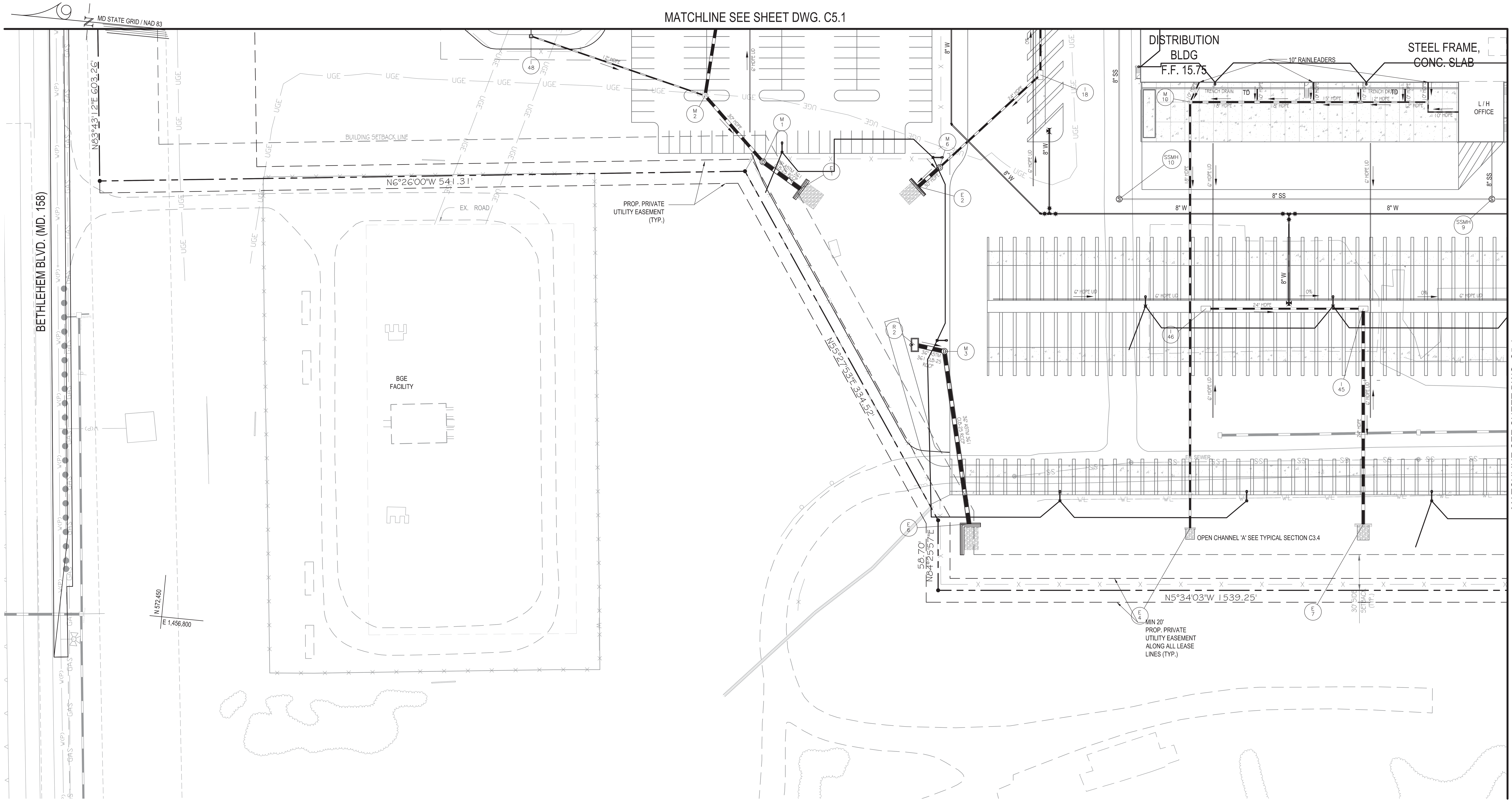
LICENSE NUMBER 23381 , EXPIRATION DATE 8/19/16

Drawn By KD / AI
Designed By AGM
Project No.
Date 07-22-16

UTILITY PLAN - 2

C5.2



UTILITY PLAN

SCALE: 1" = 40'

LEGEND

Symbol	Description	Symbol	Description
UGE	EXISTING UNDERGROUND ELECTRIC	LOD	LIMIT OF DISTURBANCE
OHU	EXISTING OVERHEAD WIRE, UTILITY POLE AND GUY WIRE	N84°25'57"E 50.00'	PROPOSED LEASE PARCEL LINE
	EXISTING SIDEWALK		PROPOSED STORM DRAIN
	EXISTING EASEMENT LINE	UD	PROPOSED UNDER DRAIN
	EXISTING ROAD EDGE	TD	PROPOSED TRENCH DRAIN
	EXISTING TRAIN TRACKS	///	EX. UTILITY TO BE ABANDONED
	EXISTING STORM DRAIN LINE AND STRUCTURES	X	PROP. FENCE LINE
S SS	EXISTING SANITARY SEWER LINE AND STRUCTURE		PROP. EASEMENT LINE
WV WL	EXISTING WATER LINE AND VALVE		PROP. CONC. PAVEMENT
X	EXISTING FENCE LINE		PROP. FIRE HYDRANT
	PROP. CURB	SS	PROP. SAN. SEWER
W	PROP. WATER	UGE	PROP. UNDERGROUND ELECTRIC
		G	PROP. GAS BY OTHERS
			PROP. WATER VALVE

PROJECT RECORD

GRAPHIC SCALE

40' 0 40' 80'

SCALE: 1"= 40'

DEVELOPER:

SCANNELL PROPERTIES

ARCHITECT:

PRECEPT, LLC Architects & Planners

800 E. 96th St., Suite 175 Indianapolis, Indiana 46240 Phone: (317) 843-5961 Fax: (317) 843-5965

CONTRACTOR:

ARCO NATIONAL CONSTRUCTION

ARCO NATIONAL CONSTRUCTION CO, INC.

8150 CORPORATE PARK DRIVE SUITE 200 CINCINNATI, OH 45242

PHONE: 314-963-0715 FAX: 314-963-0714

CONSULTING ENGINEERS

A NEW FACILITY FOR:

FedEx Ground

EAST BALTIMORE FACILITY #209

101 BETHLEHEM BOULEVARD BALTIMORE, MD 21219

CONSTRUCTION DOCUMENTS 8.8.2016

CERTIFICATION

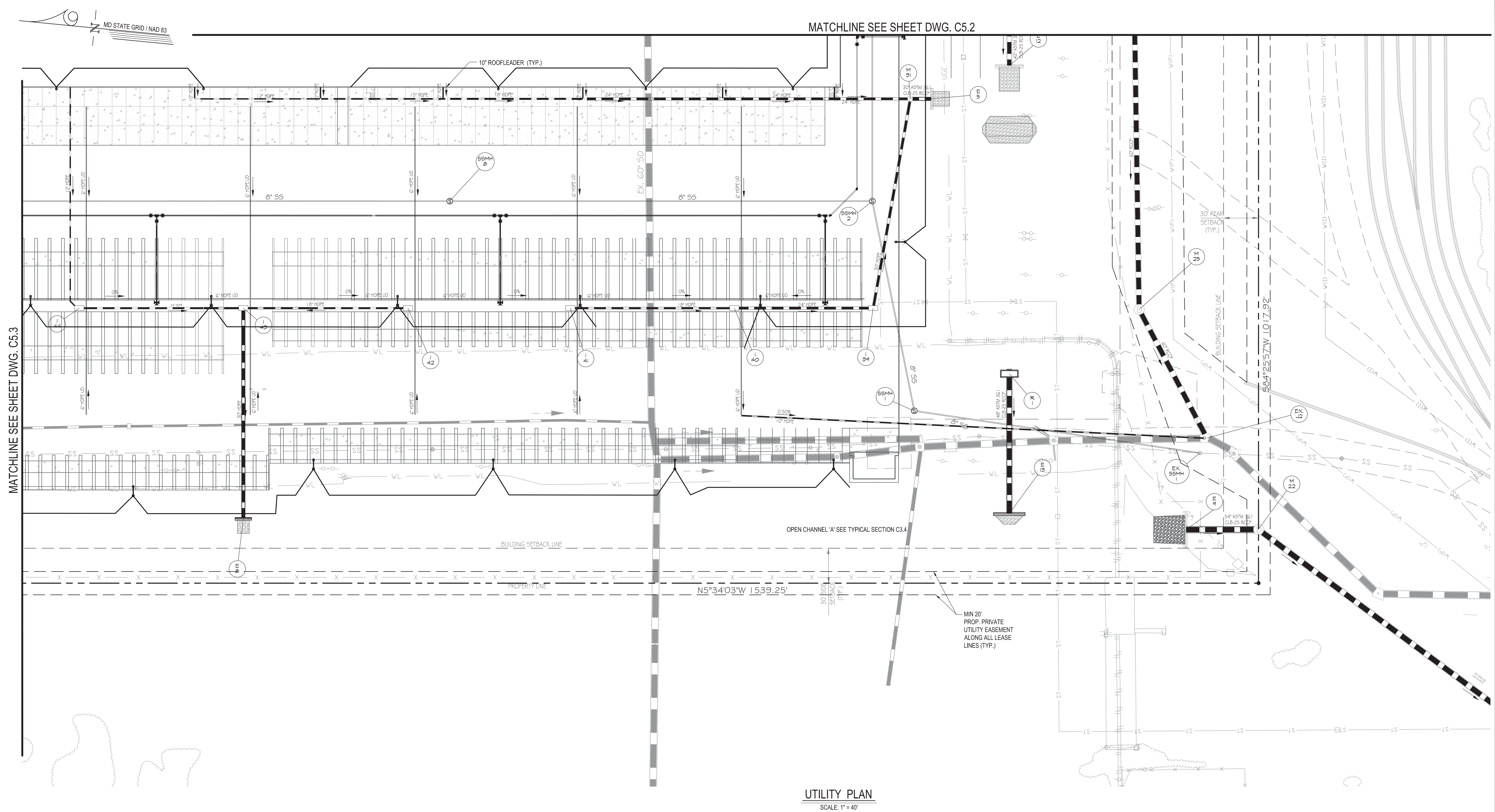
I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF A MARYLAND, LICENSE NUMBER 23381, EXPIRATION DATE 8/19/16

Drawn By KD / AI
Designed By AGM
Project No.
Date 07-07-16

UTILITY PLAN - 3

C5.3

Thursday, July 07, 2016 4:03:38 PM
SCOTT ROSE



UTILITY PLAN

SCALE: 1" = 40'

LEGEND

UGE	EXISTING UNDERGROUND ELECTRIC	LOD	LIMIT OF DISTURBANCE
OHU	EXISTING OVERHEAD WIRE, UTILITY POLE AND GUY WIRE	N84°25'57"E 50.00'	PROPOSED LEASE PARCEL LINE
	EXISTING SIDEWALK		PROPOSED STORM DRAIN
	EXISTING EASEMENT LINE	UD	PROPOSED UNDER DRAIN
	EXISTING ROAD EDGE	TD	PROPOSED TRENCH DRAIN
	EXISTING TRAIN TRACKS		EX. UTILITY TO BE ABANDONED
	EXISTING STORM DRAIN LINE AND STRUCTURES	X	PROP. FENCE LINE
SS	EXISTING SANITARY SEWER LINE AND STRUCTURE		PROP. EASEMENT LINE
WV WL	EXISTING WATER LINE AND VALVE		PROP. CONC. PAVEMENT
X	EXISTING FENCE LINE		PROP. FIRE HYDRANT
	PROP. CURB	SS	PROP. SAN. SEWER
W	PROP. WATER	UGE	PROP. UNDERGROUND ELECTRIC
		G	PROP. GAS BY OTHERS
			PROP. WATER VALVE

PROJECT RECORD

Friday, July 22, 2016 3:38:03 PM
KYLE.DONALDSON
C:\PWS\PWISE\KYLE.DONALDSON\D0539020\C5-4.DWG

DEVELOPER:

SCANNELL PROPERTIES
800 E. 96TH ST, SUITE 175
INDIANAPOLIS, IN 46240
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FAX: (317) 743-5957

ARCHITECT:

PRECEPT, LLC
Architects & Planners
800 E. 96th St., Suite 175
Indianapolis, Indiana 46240
Phone: (317) 843-5961
Fax: (317) 843-5965

CONTRACTOR:

ARCO
NATIONAL CONSTRUCTION
ARCO NATIONAL CONSTRUCTION CO, INC.
8150 CORPORATE PARK DRIVE SUITE 200
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PHONE : 314-963-0715 FAX: 314-963-0714

CONSULTING ENGINEERS

CIVIL: KCI TECHNOLOGIES
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STRUCTURAL: CONSULTING ENGINEERS CORP
13C OLD STREET
CINCINNATI, OH 45050
C: TRACY MITCHELL P:(513)229-9000

MECHANICAL: ICON MECHANICAL
1616 CLEVELAND BLVD
GRANITE CITY, IL 62040
C: TIM SCHAEFFER P:(618)452-9035

ELECTRICAL: CHERAN INC.
3552 GETTYSBURG RD. SUITE 101
CAMP HILL, PA 17011
C: RANDY PENTZ P:(717)525-9461

PLUMBING: TENNILL & ASSOCIATES
177 CHESTERFIELD INDUSTRIAL BLVD.
CHESTERFIELD, MO 63005
C: DANA TENNILL P:(636)537-3999

FIRE PROTECTION: FE MORAN
3001 RESEARCH RD SUITE A
CHAMPAIGN, IL 61822
C: JIM HEINOLD P:(217)356-0700

A NEW FACILITY
FOR:
FedEx Ground
EAST BALTIMORE FACILITY #209
101 BETHLEHEM BOULEVARD
BALTIMORE, MD 21219

CONSTRUCTION DOCUMENTS
8.8.2016

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LICENSE NUMBER 23381 , EXPIRATION DATE 8/19/16

Drawn By KD / AI
Designed By AGM
Project No.
Date 07-22-16

UTILITY PLAN - 4

C5.4

MD STATE GRID / NAD 83

BIO-RETENTION FACILITY (SWM FACILITY #4) REFER TO DWG. C7.5

BIO-RETENTION FACILITY (SWM FACILITY #5) REFER TO DWG. C7.6

WEST COLD MILL ROAD

BETHLEHEM BLVD. (MD 158)

I-695 BALTIMORE BELTWAY R/W UNESTABLISHED

PROPOSED FED EX WAREHOUSE

NEW COLD MILL ROAD

BILLET RECORD BLDG

PROP. VEHICULAR MAINTENANCE GARAGE FINISH SLAB ELEV. 5.50

PROP. MAINT. GARAGE

TOP GATEWAY BLDG

BIO-RETENTION FACILITY (SWM FACILITY #6) REFER TO DWG. C7.7

EX. S.D. TO BE RELOCATED

RELOCATED S.D.

EXTENDED DETENTION WET POND (SWM FACILITY #1) REFER TO DWG. C7.1-C7.2

EXTENDED DETENTION WET POND (SWM FACILITY #2) REFER TO DWG. C7.3-C7.4

SALT STORAGE

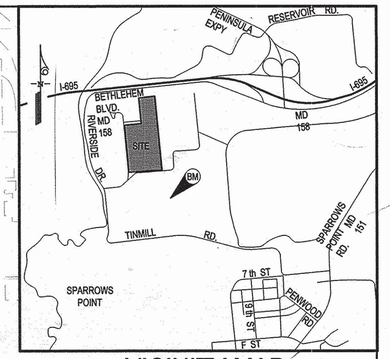
EX. BGE SUBSTATION

OPEN CHANNEL 'A' — SEE TYPICAL SECTION ON DWG. C3.4

CRITICAL AREA (IDA)

WORK WITHIN L.O.D. ALONG R-O-W BETHLEHEM BLVD. (MD 158); SWM PROVIDED BY GRASS CHANNEL CREDIT SEE SHA ACCESS PERMIT/SWM REPORT SHA# 14APBA25XX

MATCH LINE "A" SEE THIS SHEET



VICINITY MAP

SCALE: 1" = 2000'

LEGEND

- PROPERTY LINE
- EX. BUILDING OUTLINE
- EX. EDGE OF ROAD
- OHU — EX. OVERHEAD ELECTRIC
- EX. RAILROAD TRACKS
- EX. SIDEWALK LINE
- EX. EASEMENT LINE
- EX. TREE LINE
- SS — SS — EX. SANITARY SEWER
- EX. MINOR CONTOUR
- EX. MAJOR CONTOUR
- PROP. MINOR CONTOUR
- PROP. MAJOR CONTOUR
- x — x — EX. FENCE
- EX. LIGHT POLE
- EX. SIGN
- EX. OVERHEAD PIPE W/ TOWER SUPPORTS
- EX. UTILITY POLE
- CRITICAL AREA (IDA)
- PROP. STORM DRAIN MANHOLE
- PROP. STORM DRAIN INLET
- PROP. STORM DRAIN PIPE
- PROP. FENCE
- SOIL BORING
- SWM-2

BENCHMARK

PROJECT BENCHMARK: BALTIMORE COUNTY CONTROL MONUMENT GIS-1, BEING A 10 INCH DIAMETER CONCRETE MONUMENT SET FLUSH IN THE GROUND WITH A BRASS DISK STAMPED "BALTIMORE COUNTY GIS CONTROL POINT, SURVEY MARKER, STATION DESIGNATION NO. GIS-1, 1995, DO NOT DISTURB". ELEVATION=6.72 FEET, NORTH 569,581.11 EAST 1,458,294.14, NAVD 88 DATUM.

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23381 EXPIRATION DATE: 8/19/2016

HYDROLOGIC CRITERIA & FACILITY SUMMARY TABLE FOR ESD FACILITIES

WATERSHED	BALTIMORE HARBOR
STRUCTURE TYPE	ESD FACILITIES AND TECHNIQUES
ON-SITE L.O.D.	47.39 AC.
WATER QUALITY TYPE	STORMWATER PONDS & FILTERING
STRUCTURE CLASSIFICATION	N/A
DRAINAGE AREA TO FACILITY	SEE DRAINAGE AREA INFORMATION PROVIDED ON SHEETS C6.0 AND C8.1
LEVEL OF MANAGEMENT REQUIRED	ESD(WQ, ReV, CPV)
LEVEL OF MANAGEMENT PROVIDED	ESD(WQ, ReV, CPV)

Baltimore County Soil Conservation District

APPROVED FOR STORMWATER MANAGEMENT

J.A. Markle 8/1/16 — DISTRICT OFFICIAL — DATE

078 078-45A10-16 — PLAN NO.

TECHNICAL REVIEW FOR DISTRICT

BY: J.A. Markle 8/1/16

BALTO. CO. DEPT. OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY — DATE

KLD

BALTO. CO. # 5628, 5629, 5630

OVERALL STORMWATER MANAGEMENT PLAN

SCALE: 1" = 100'

NOTE: ALL STORMWATER MANAGEMENT FACILITIES ARE TO BE PRIVATELY OWNED AND MAINTAINED AND ARE THEREFORE WITHIN STORMWATER MANAGEMENT EASEMENTS.

NOTE: STORMWATER MANAGEMENT APPROVED UNDER BILL NO. 25-10.

THE NATURAL RESOURCES SHOWN ON THIS PLAN HAVE BEEN FIELD VERIFIED BY ASM DURING SEPTEMBER OF 2014.

1.98 ACRES OF THE SITE FALLS WITHIN THE CRITICAL AREA.

UNLESS OTHERWISE NOTED, ALL CONSTRUCTION AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS FOR CONSTRUCTION MATERIALS, DECEMBER 2007, ERRATA & ADDENDA.

SHEET INDEX

MATCH LINE "A" SEE THIS SHEET

CONSTRUCTION DOCUMENTS 8.8.2016

PROJECT RECORD

APPROVED J.A. Markle 8/1/16 CHIEF

STORMWATER ENGINEERING BALTIMORE CO. DEPT. OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY

THESE PLANS ARE ON THE MARYLAND COORDINATE SYSTEM NAD-83

CONTRACT NO.

JOB ORDER NO.

GRAPHIC SCALE

100' 0 100' 200'

SCALE: 1"= 100'

ROAD PERMIT AND GRADES	REVISED AS PER RECORD PRINT		DATE	REVISION	BY
PERMIT REQUESTED	DRAFTSMAN	DATE			
PERMIT NUMBER					
GRADE ESTABLISHED					
PROFILE NUMBER					

STATE OF MARYLAND — SCOTT R. ROSE — 23381 — PROFESSIONAL ENGINEER — SEAL

KCI TECHNOLOGIES, INC.

ENGINEER SCOTT ROSE

DATE 08/19/2016 LIC. NO. 23381

DESIGNED: AGM

DRAWN: KGD

CHECKED: AGM

BUREAU OF ENGINEERING AND CONSTRUCTION	HIGHWAYS	STRUCTURES	STORM DRAINS	SEWER	WATER	FIELD ENGINEER
REVIEWED						
DATE						

BUR. OF ENGINEERING & CONSTRUCTION

APPROVED CHIEF

DATE

DEPARTMENT OF PUBLIC WORKS

APPROVED DIRECTOR

DATE

P. W. A. DIR. NO.	KEY SHEET
	CNE
RIGHT OF WAY	POSITION SHEET
	23SW 5

SCALE

PLAN: AS SHOWN

PROFILE HOR. VERT.

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

OVERALL SWM PLAN

FEDEX DISTRIBUTION WAREHOUSE

SPARROWS POINT, MARYLAND

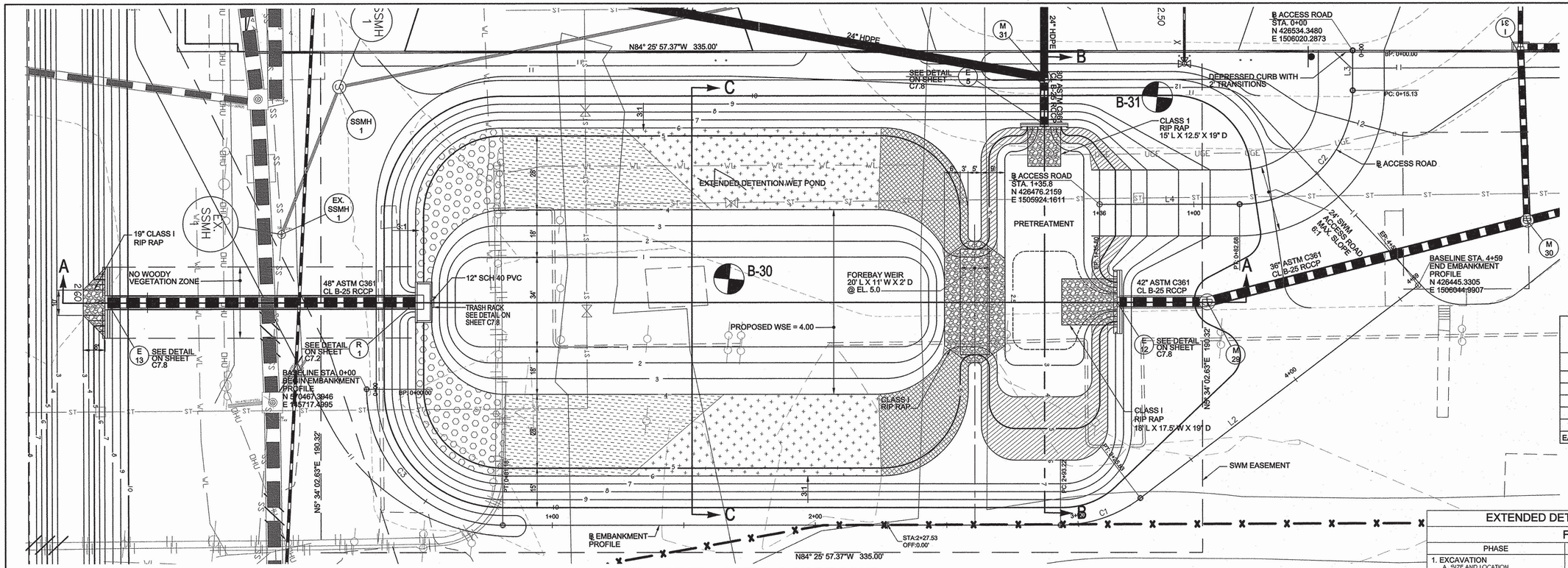
SUBDIVISION: FEDEX DISTRIBUTION WAREHOUSE EL. DISTRICT NO. 15, C7

SHEET 1 OF 23

DWG. NO. C7.0

FILE: 27-157328

PLOTTED: $DATE$
BY: $USERNAME$
FILE: $FILE$



EXTENDED DETENTION WET POND SWM FACILITY #1

SCALE: 1" = 20'

EXTENDED DETENTION WET POND (SWM FACILITY #1) SCHEDULE					
KEY	QTY.	BOTANICAL / COMMON NAME	SIZE	CONDITION	COMMENT
HERBACEOUS					
	680	CHASMANTHIUM LATIFOLIUM / NORTHERN SEA OATS	PLUG	CONTAINER	24" O.C.
	635	IRIS VERSICOLOR / BLUE FLAG IRIS	PLUG	CONTAINER	24" O.C.
	1190	LOBELIA CARDINALIS / CARDINAL FLOWER	PLUG	CONTAINER	24" O.C.
	600	PANICUM VIRGATUM / SWITCH GRASS	PLUG	CONTAINER	24" O.C.
	1470	RUDBECKIA HIRTA / BLACK-EYED SUSAN	PLUG	CONTAINER	24" O.C.

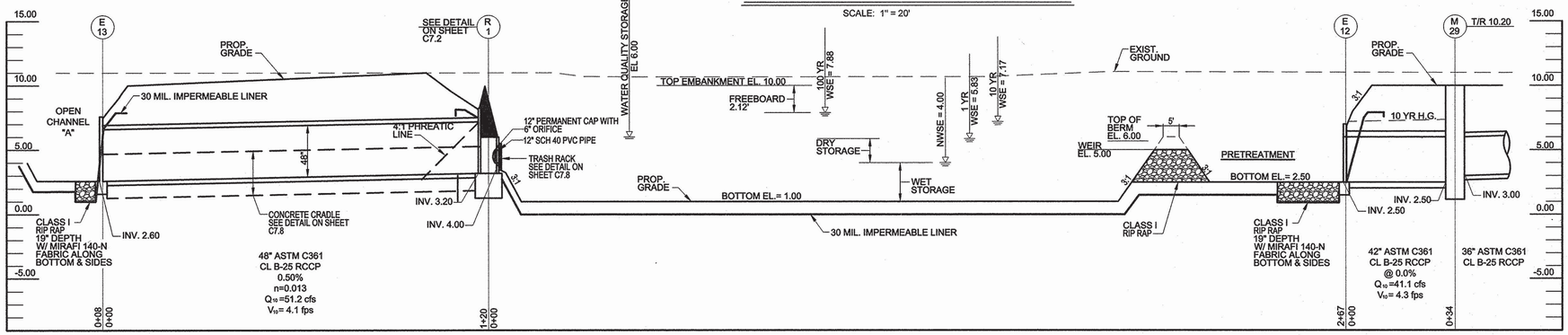
SWM EASEMENT NO. 1 TABLE (STARTING @ P.O.B. CLOCKWISE)		
BEARING/ RADIUS	DISTANCE/ ARC LENGTH	CHORD
N5° 34' 02.63"W	190.32'	
N84° 25' 57.37"E	335.00'	
S5° 34' 02.63"E	335.00'	
S84° 25' 57.37"W	190.32'	
EASEMENT AREA = 63,694.27 SF / 1.46 AC		

NOTE:
THIS FACILITY MEETS MD CRITERIA FOR AN EXCAVATED FACILITY UNDER MD 378 GUIDELINES, THEREFORE, IS EXEMPT FROM MD.378 CRITERIA..

EXTENDED DETENTION WET POND (P3) FACILITY # 1			
PHASE	DATE	INITIALS	REMARKS - DESCRIPTION OF ACTION TAKEN
1. EXCAVATION A. SIZE AND LOCATION B. SIDE SLOPE STABILITY C. SOIL PERMEABILITY D. GROUNDWATER / BEDROCK E. SETBACKS PER DESIGN MANUAL			
2. AGGREGATE MATERIAL A. TYPE (SLAG, # CRUSHED, GRAVEL) B. SIZE C. PLACEMENT			
3. SURFACE LAYER A. AGGREGATE SURFACE B. VEGETATIVE SURFACE C. PAVED SURFACE			
4. RISER STRUCTURE A. INVERTS AND ELEVATIONS B. RECEIVES DESIGNED DRAINAGE AREA			
5. FINAL GRADING & PERMANENT STABILIZATION A. FINAL GRADES, PLANTINGS & MULCH			

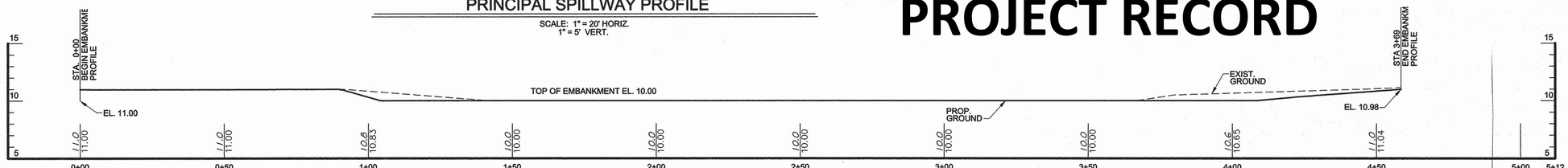
I HEREBY CERTIFY THAT I PERSONALLY REVIEWED OR A PERSON UNDER MY DIRECT SUPERVISION PROVIDED THE INFORMATION REPORTED ON THIS CHECKLIST AND TO THE BEST OF MY KNOWLEDGE DO HEREBY INSURE THAT THE SUBMITTAL IS COMPLETE AND ACCURATE.

PROFESSIONAL ENGINEER SIGNATURE AND DATE



EXTENDED DETENTION WET POND - SWM FACILITY #1 SECTION A-A PRINCIPAL SPILLWAY PROFILE

SCALE: 1" = 20' HORIZ.
1" = 5' VERT.



TOP OF EMBANKMENT PROFILE SWM FACILITY #1

SCALE: 1" = 20' HOR. 1"=5' VERT.

PROJECT RECORD

CONSTRUCTION DOCUMENTS
8.8.2016

LEGEND

- PROPERTY LINE
- EX. BUILDING OUTLINE
- EX. EDGE OF ROAD
- EX. OVERHEAD ELECTRIC
- EX. RAILROAD TRACKS
- 100-YEAR FLOOD PLAIN
- EX. SIDEWALK LINE
- EX. EASEMENT LINE
- EX. TREE LINE
- EX. SANITARY SEWER
- EX. MINOR CONTOUR
- EX. MAJOR CONTOUR
- EX. LIGHT POLE
- EX. SIGN
- EX. UTILITY POLE
- SWM EASEMENTS
- PROP. MINOR CONTOUR
- PROP. MAJOR CONTOUR
- PROP. FENCE
- PROP. STORM PIPE
- PROP. INLET
- PROP. MANHOLE
- PROP. SPOT ELEV.
- PROP. FIRE HYDRANT
- RIP RAP OUTFALL
- SOIL BORING

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23381 EXPIRATION DATE: 8/19/2016

APPROVED Joe Mable 8/1/16 CHIEF
STORMWATER ENGINEERING
BALTIMORE CO. DEPT. OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY

BASELINE DATA					
NO.	STATION	NORTHING	EASTING	BEARING	LENGTH
L2	3+25.83	570454.71	1457471.20	N47°03'44"E	132.67'
L3	0+00	570631.28	1457535.11	S05°34'03"E	15.13'
L4	0+82.68	570569.26	1457497.95	S84°25'57"W	53.13'

CURVE DATA							
NO.	FROM	TO	Δ	RADIUS	TANGENT	LENGTH	CHORD BEARING & LENGTH
C1	2+93.22	3+25.83	037°22'10"	50.00'	16.91'	32.61'	N65°44'49"E32.04'
C2	0+15.13	0+82.68	090°00'00"	43.00'	43.00'	67.54'	S39°25'57"W 60.81'
C3	0+00	0+81.18	090°00'00"	51.68'	51.68'	81.18'	S50°34'03"E73.09'

ROAD PERMIT AND GRADES	REVISED AS PER RECORD PRINT		DATE	REVISION	BY
PERMIT REQUESTED	DRAFTSMAN	DATE			
PERMIT NUMBER					
GRADE ESTABLISHED					
PROFILE NUMBER					

STATE OF MARYLAND — SCOTT R. ROSE — 23381 — PROFESSIONAL ENGINEER
SEAL

KCI TECHNOLOGIES, INC.
ENGINEER SCOTT ROSE
DATE 08/19/2016 LIC. NO. 23381
DESIGNED: AGM
DRAWN: KGD
CHECKED: AGM

BUREAU OF ENGINEERING AND CONSTRUCTION	HIGHWAYS	STRUCTURES	STORM DRAINS	SEWER	WATER	FIELD ENGINEER
REVIEWED						
DATE						

BUR. OF ENGINEERING & CONSTRUCTION
APPROVED _____ CHIEF
DATE _____

DEPARTMENT OF PUBLIC WORKS
APPROVED _____ DIRECTOR
DATE _____

P. W. A. DIR. NO.	KEY SHEET
	CNE
RIGHT OF WAY	POSITION SHEET
	23SW 5

SCALE
PLAN: AS SHOWN
PROFILE HOR. VERT.

THESE PLANS ARE ON THE MARYLAND COORDINATE SYSTEM NAD-83

CONTRACT NO.
JOB ORDER NO.

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

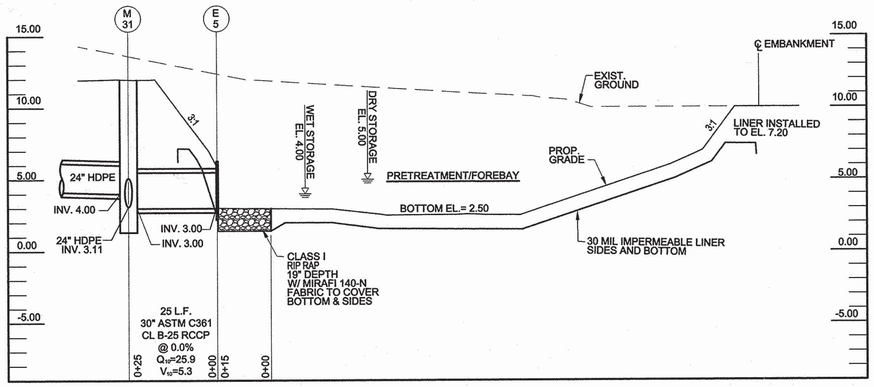
SWM PLAN & SECTIONS FACILITY #1

FEDEX DISTRIBUTION WAREHOUSE
SPARROWS POINT, MARYLAND

SUBDIVISION: FEDEX DISTRIBUTION WAREHOUSE EL. DISTRICT NO. 15, C7

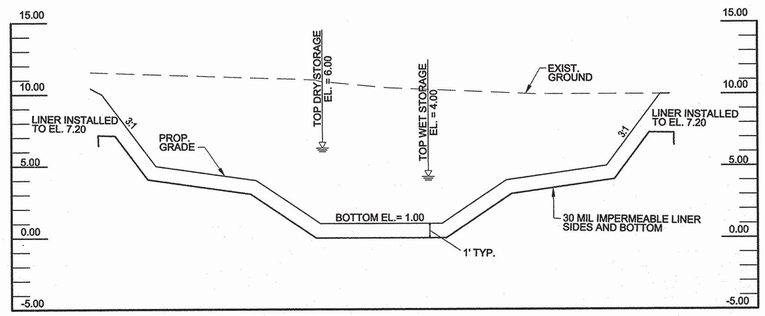
SHEET 2 OF 12
DWG. NO. C7.1
FILE: 27-157328

PLOTTED: $DATE$
FILE: $FILENAME$



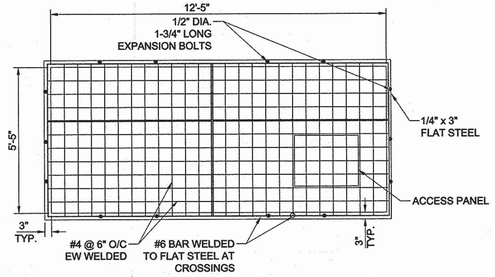
EXTENDED DETENTION WET POND SECTION B-B

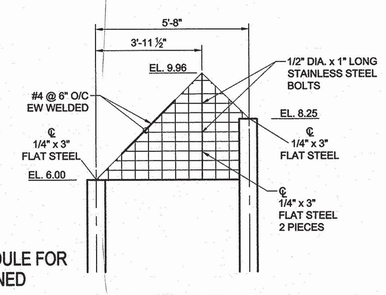
SCALE: 1" = 20' HORIZ.
1" = 5' VERT.



EXTENDED DETENTION WET POND SECTION C-C

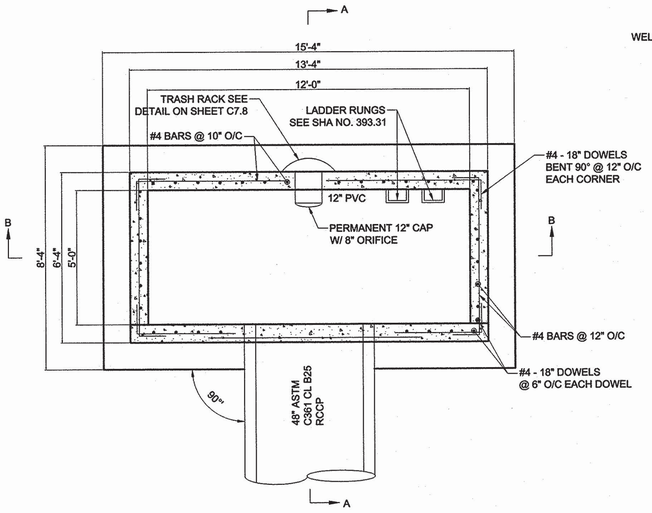
SCALE: 1" = 20' HORIZ.
1" = 5' VERT.





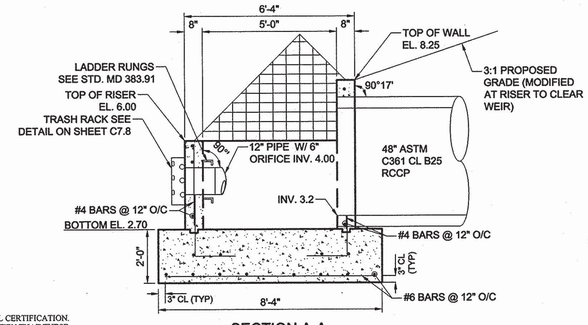
TRASH RACK DETAIL

SCALE: 3/8" = 1'



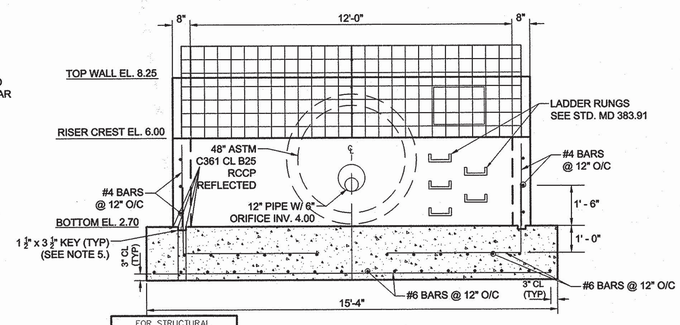
PLAN

SCALE: 3/8" = 1'-0"



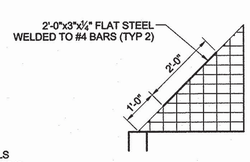
SECTION A-A

SCALE: 3/8" = 1'-0"

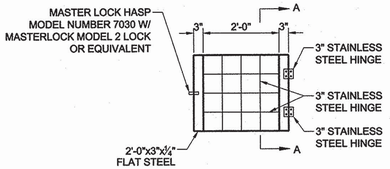


SECTION B-B

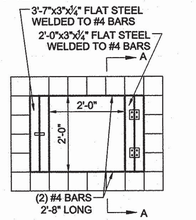
SCALE: 3/8" = 1'-0"



SECTION A-A



ACCESS PANEL



ATTACHMENT TO TRASH RACK

REMOVABLE TRASH RACK ACCESS PANEL DETAIL

NOT TO SCALE

NOTES:
1. POURED IN PLACE CONCRETE SHALL MEET CURRENT SHA MIX NO.3 SPECIFICATIONS. ALL CONCRETE SHALL BE AIR ENTRAINED AND HAVE 28 DAY COMPRESSION STRENGTH OF 3000 P.S.I.(PC)
2. BACKFILL SHALL BE COMPACTED TO 95% OF T-99. SOIL BEARING CAPACITY TO BE FIELD VERIFIED MINIMUM 2000PSF.
3. CONCRETE WORK SHALL COMPLY WITH THE LATEST ACI 3 18 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
4. STEM AND FOOTING REINFORCEMENT IS PLAIN STEEL U.N.O. ALL REINFORCING IS ASTM A-6 15 GRADE 60.
5. ALL CONNECTIONS TO BE SEALED WITH WATERSTOP-RX, FOLLOWING MANUFACTURERS SPECIFICATIONS. USE WB-ADHESIVE TO SECURE TO PIPES.
6. TRASH RACK TO BE ASSEMBLED IN FOUR SECTIONS. ALL ANGLES & BARS USED FOR TRASH RACK TO BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
7. GALVANIZED RACKS ARE NOT TO BE CUT IN FIELD AND PAINTED.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER PONDS

ROUTINE MAINTENANCE:

A. THE OWNER SHALL INSPECT THE FACILITY ANNUALLY AND AFTER EVERY HEAVY STORM. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.

B. THE OWNER SHALL MOW THE TOP AND SIDE SLOPES OF THE EMBANKMENT A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED. PLANTED AREAS SHALL BE ALLOWED TO GROW TO THEIR DESIGN SIZE, AND SHALL BE WEEDED AS NEEDED. CONSULT LANDSCAPE ARCHITECT FOR DETAILS.

C. THE OWNER SHALL REMOVE ANY DEBRIS AND LITTER FROM THE FACILITY.

D. THE OWNER SHALL REPAIR ANY EROSION IN THE POND AS WELL AS THE RIP-RAP OR GABION OUTLET AREA AS SOON AS IT IS NOTICED.

E. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE EMBANKMENT, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.

F. THE OWNER SHALL REMOVE SEDIMENT FROM THE POND, AND FOREBAY, NO LATER THAN WHEN THE CAPACITY OF THE POND, OR FOREBAY, IS HALF FULL OF SEDIMENT, OR WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.

INSPECTION SCHEDULE

IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE ENGINEER/ INSPECTOR OF AN APPROXIMATE TIME FOR INSPECTION OF THE FOLLOWING ITEMS.

1. DURING EXCAVATION TO SUBGRADE AND PLACEMENT OF 30 MIL IMPERMEABLE LINER.
2. DURING PLACEMENT OF FILL OVER 30 MIL I IMPERMEABLE LINER OR STONE.
3. DURING CONSTRUCTION OF APPURTENANT CONVEYANCE
4. UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION/LANDSCAPING.

DESIGN SUMMARY

1. FACILITY NUMBER: 1
2. FACILITY TYPE:WET EXTENDED DETENTION (P-2)
3. DRAINAGE AREA = 15.51 Ac.
4. RCN TO FACILITY = 95
5. BOTTOM ELEVATION = 1.0
6. TOP OF EMBANKMENT ELEVATION = 10.00
7. RISER CREST ELEVATION = 6.00 (NO EMERGENCY SPILLWAY)
8. WET STORAGE PROVIDED: 28,666 CU. FT.
9. DRY STORAGE PROVIDED: 73,582 CU. FT.* (*NOTE: ONLY 28,666 CU. FT. COUNTED TOWARDS WQv)
10. NORMAL WATER SURFACE ELEVATION = 4.00 SURFACE AREA = 16,910 S.F.
11. WATER SURFACE ELEVATION: 1-YEAR = 5.83
    10-YEAR = 7.17
12. DISCHARGE: 1-YEAR = 1.2
    10-YEAR = 51.2
    PRINCIPAL SPILLWAY 48" ASTM C361 CL825 RCCP CARRIES 51.2 C.F.S. AT 4.1 F.P.S.
13. MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED AND MAINTAINED BY THE OWNER.
14. THIS FACILITY IS EXEMPT FROM MD-378 GUIDELINES IN THAT IT MEETS CRITERIA FOR EXCAVATED FACILITY.
15. THIS SITE LIES WITHIN BALTIMORE HARBOR WATERSHED 02130903.
16. REQUIRED TO TREAT 1" OF RUNOFF = 53,486 CU. FT.
    PROVIDED TREATMENT = 57,332 CU. FT.
17. 100 YEAR W.S.E. = 7.89 TOP EMBANKMENT = 10.00
    2.11 FEET OF FREEBOARD PROVIDED. REQUIRED FREEBOARD = 1.0 FEET FOR NON-MD 378 FACILITY.
18. MAXIMUM HEIGHT OF FILL = 6.6'

FACILITY #1 EXTENDED DETENTION WET POND SEQUENCE OF CONSTRUCTION

1. NOTIFY CERTIFYING ENGINEER FIVE (5) WORKING DAYS PRIOR TO BEGINNING STORMWATER MANAGEMENT FACILITY CONSTRUCTION.
2. NOTIFY BALTIMORE COUNTY AT LEAST 48 HOURS PRIOR TO DOING ANY WORK.
3. CONSTRUCT ACCESS ROAD PER PLANS.
4. EXCAVATE FOR PRE-TREATMENT/FOREBAY TO ELEVATIONS SHOWN ON PLAN.
5. EXCAVATE FOR FOREBAY WEIR TO ELEVATIONS SHOWN ON PLAN.
6. EXCAVATE WET AND DRY PORTIONS OF EXTENDED DETENTION WET POND TO ELEVATIONS SHOWN ON PLAN.
7. INSTALL RISER STRUCTURE R-1.
   - INSTALL 12" SCH. 40 PVC LOW FLOW PIPE AS SHOWN ON PLAN.
   - INSPECT REBAR AND FORMS PRIOR TO CONCRETE BEING POURED.
8. INSTALL 48" ASTM C-361 RCCP FROM R1 TO E-23. (SEE SHEET C7.8 FOR ENDWALL DIMENSIONS.) INSTALL 19" OF CLASS I RIP-RAP AS SHOWN ON PLAN.
9. INSTALL ALL INCOMING PIPES PER PLAN. SEE SHEET C7.8 FOR ENDWALL DIMENSIONS.
10. INSTALL 30 MIL IMPERMEABLE LINER, SEE SHEET C7.8 FOR INSTRUCTIONS.
11. CONSTRUCT FOREBAY WEIR WITH CLASS I RIP-RAP AS SHOWN ON PLAN. INSTALL OUTFALL PROTECTION AT ALL INCOMING PIPES AS SHOWN ON PLAN.
12. FINE GRADE AND PERMANENTLY STABILIZE PER NOTES ON C7.8 AND C7.9.
13. CONTRACTOR TO PROVIDE PROOF OF DELIVERY AND INSTALLATION OF SOIL AMENITIES, GRASS SEED, AND LANDSCAPING IN QUANTITIES REQUIRED TO INSPECTING AGENT AT COMPLETION OF STABILIZATION.
14. CONDUCT 'AS-BUILT' SURVEY OF FACILITY AND STORMDRAIN AND SUBMIT TO APPROPRIATE AGENCIES WITHIN 30 DAYS OF COMPLETION.

NOTE:
THIS FACILITY MEETS CRITERIA FOR AN EXCAVATED FACILITY UNDER MD. 378 GUIDELINES, THEREFORE, IS EXEMPT FROM MD. 387 CRITERIA

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23381
EXPIRATION DATE: 8/19/2016

FOR STRUCTURAL DESIGN ONLY
STATE OF MARYLAND — KENNETH G. DITZ — No. 18323 — REGISTERED PROFESSIONAL ENGINEER
SEAL
7/20/16

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18323
EXPIRATION DATE: 07-05-2017

RISER STRUCTURE R1

SCALE: 3/8" = 1'-0"

PROJECT RECORD

CONSTRUCTION DOCUMENTS
8.8.2016

APPROVED J.A. Markle 8/1/16 CHIEF
STORMWATER ENGINEERING
BALTIMORE CO. DEPT. OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY

THESE PLANS ARE ON THE MARYLAND COORDINATE SYSTEM NAD-83

CONTRACT NO.

JOB ORDER NO.

ROAD PERMIT AND GRADES	REVISED AS PER RECORD PRINT	DATE	REVISION	BY
PERMIT REQUESTED	DRAFTSMAN			
PERMIT NUMBER				
GRADE ESTABLISHED				
PROFILE NUMBER				

KCI TECHNOLOGIES, INC.	DESIGNED: AGM	BUREAU OF ENGINEERING AND CONSTRUCTION	HIGHWAYS	STRUCTURES	STORM DRAINS	SEWER	WATER	FIELD ENGINEER
ENGINEER SCOTT ROSE	DRAWN: KGD	REVIEWED						
DATE 08/19/2016 LIC. NO. 23381	CHECKED: AGM	DATE						

BUR. OF ENGINEERING & CONSTRUCTION	DEPARTMENT OF PUBLIC WORKS
APPROVED CHIEF	APPROVED DIRECTOR
DATE	DATE

P. W. A. DIR. NO.	KEY SHEET
	CNE
RIGHT OF WAY	POSITION SHEET
	23SW 5

SCALE
PLAN: AS SHOWN
PROFILE HOR. VERT.

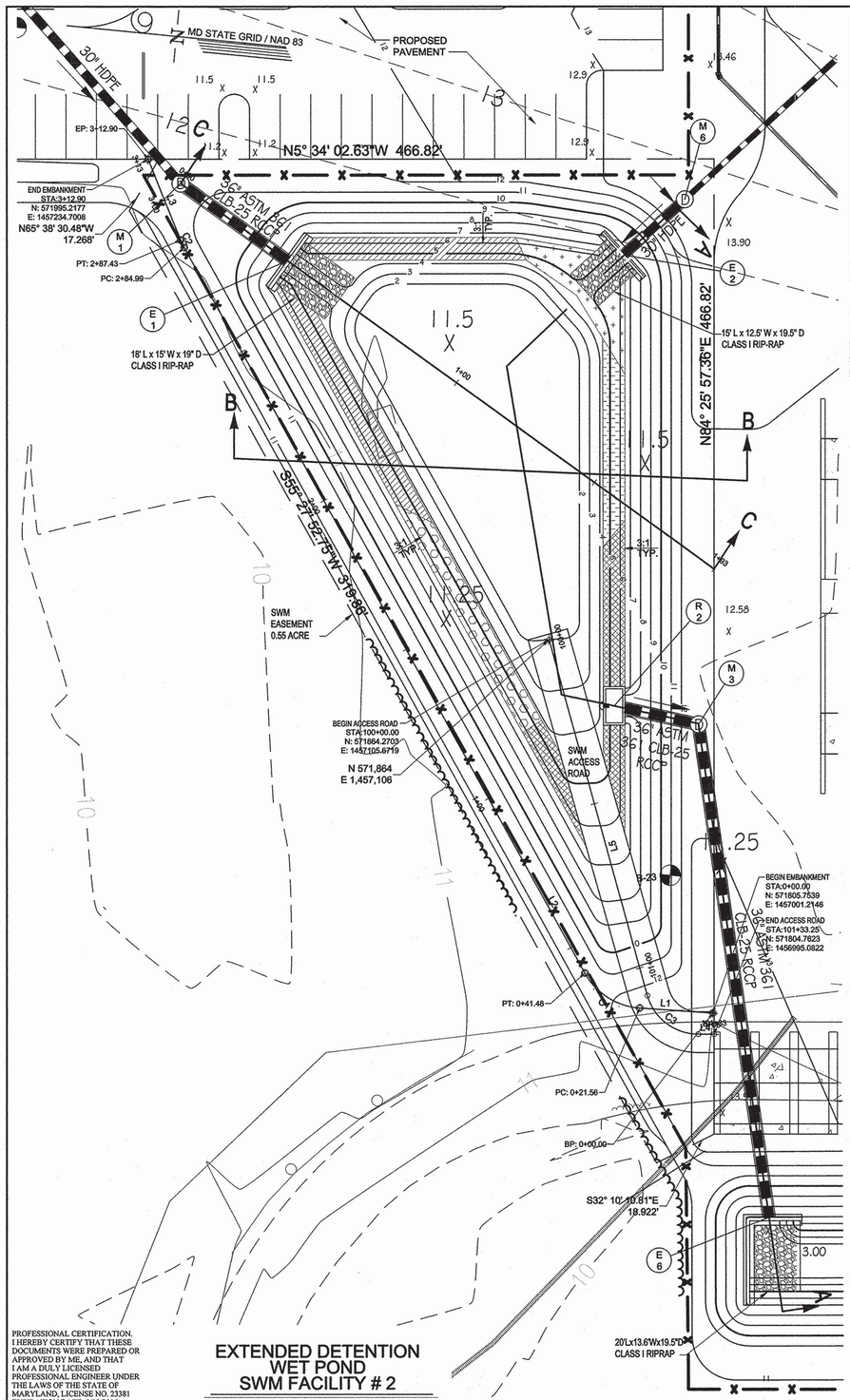
BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

SWM PLAN & SECTIONS FACILITY #1
FEDEX DISTRIBUTION WAREHOUSE
SPARROWS POINT, MARYLAND

SUBDIVISION: FEDEX DISTRIBUTION WAREHOUSE EL. DISTRICT NO. 15, C7

SHEET OF
DWG. NO. C7.2
FILE: 27-157328

PLOTTED: $DATE$
BY: $USERNAME$
FILE: $FILE$



EXTENDED DETENTION WET POND (P-3)

FACILITY # 2

PHASE	DATE	INITIALS	REMARKS - DESCRIPTION OF ACTION TAKEN
1. EXCAVATION A. SIZE AND LOCATION B. SIDE SLOPE STABILITY C. SOIL PERMEABILITY D. GROUNDWATER / BEDROCK E. SETBACKS PER DESIGN MANUAL			
2. AGGREGATE MATERIAL A. TYPE (SLAG, # CRUSHED, GRAVEL) B. SIZE C. PLACEMENT			
3. SURFACE LAYER A. AGGREGATE SURFACE B. VEGETATIVE SURFACE C. PAVED SURFACE			
4. RISER STRUCTURE A. INVERTS AND ELEVATIONS B. RECEIVES DESIGNED DRAINAGE AREA			
5. FINAL GRADING & PERMANENT STABILIZATION A. FINAL GRADES, PLANTINGS & MULCH			

I HEREBY CERTIFY THAT I PERSONALLY REVIEWED OR A PERSON UNDER MY DIRECT SUPERVISION PROVIDED THE INFORMATION REPORTED ON THIS CHECKLIST AND TO THE BEST OF MY KNOWLEDGE DO HEREBY INSURE THAT THE SUBMITTAL IS COMPLETE AND ACCURATE.

PROFESSIONAL ENGINEER SIGNATURE AND DATE

NOTE:
THIS FACILITY MEETS CRITERIA FOR AN EXCAVATED FACILITY UNDER MD. 378 GUIDELINES, THEREFORE, IS EXEMPT FROM MD. 378 CRITERIA.

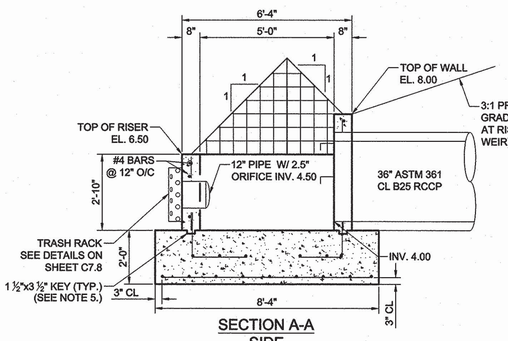
BASELINE DATA

NO.	STATION	NORTHING	EASTING	BEARING	LENGTH
L1	0+00	571805.75	1457001.21	N01°33'43"W	21.56'
L2	0+41.48	571844.33	1457009.30	N55°31'03"E	243.51'
L3	2+87.43	571983.45	1457212.11	N62°29'28"E	25.47'
L4	101+28.59	571809.40	1456994.63	S05°34'03"E	4.66'
L5	100+00	571864.27	1457105.67	S68°59'58"W	108.40'

CURVE DATA

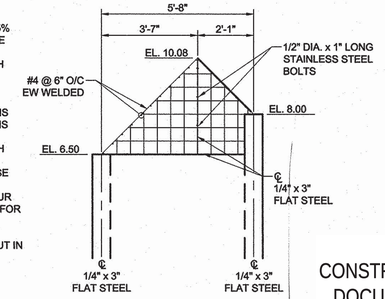
NO.	FROM	TO	Δ	RADIUS	TANGENT	LENGTH	CHORD BEARING & LENGTH
C1	0+21.56	0+41.48	057°04'46"	20.00'	10.88'	19.92'	N26°58'40"E19.11'
C2	2+84.99	2+87.43	006°58'26"	20.00'	1.22'	2.43'	N59°00'15"E2.43'
C3	101+08.40	101+28.59	074°15'37"	15.58'	11.80'	20.19'	S31°33'46"W 18.81'

PLAN

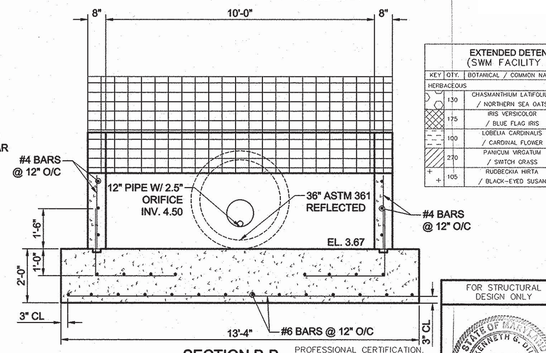


SECTION A-A
SIDE

NOTES:
1. POURED IN PLACE CONCRETE SHALL MEET CURRENT SHA MIX NO.3 SPECIFICATIONS. ALL CONCRETE SHALL BE AIR ENTRAINED AND HAVE 28 DAY COMPRESSION STRENGTH OF 3000 P.S.I.(PC)
2. BACKFILL SHALL BE COMPACTED TO 95% OF T-99. SOIL BEARING CAPACITY TO BE FIELD VERIFIED MINIMUM 2000PSF.
3. CONCRETE WORK SHALL COMPLY WITH THE LATEST ACI 3 18 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
4. STEM AND FOOTING REINFORCEMENT IS PLAIN STEEL U.N.O. ALL REINFORCING IS ASTM A-6 15 GRADE 60.
5. ALL CONNECTIONS TO BE SEALED WITH WATERSTOP-RX, FOLLOWING MANUFACTURERS SPECIFICATIONS. USE WB-ADHESIVE TO SECURE TO PIPES.
6. TRASH RACK TO BE ASSEMBLED IN FOUR SECTIONS. ALL ANGLES & BARS USED FOR TRASH RACK TO BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
7. GALVANIZED RACKS ARE NOT TO BE CUT IN FIELD AND PAINTED.



TRASH RACK DETAIL
SCALE: 3/8" = 1'



SECTION B-B
FRONT

RISER STRUCTURE #2
SCALE: 3/8" = 1'

EXTENDED DETENTION WET POND (SWM FACILITY #2) SCHEDULE						
KEY	QTY.	BOTANICAL / COMMON NAME	SIZE	CONDITION	COMMENT	
HERBACEOUS						
○	150	CHASMANTHIUM LATIFOLIUM / NORTHERN SEA OATS	PLUG	CONTAINER	24" O.C.	
▨	175	IRIS VERSICOLOR / BLUE FLAG IRIS	PLUG	CONTAINER	24" O.C.	
–	100	LOBELIA CARDINALIS / CARDINAL FLOWER	PLUG	CONTAINER	24" O.C.	
▧	270	PANICUM VIRGATUM / SWITCH GRASS	PLUG	CONTAINER	24" O.C.	
+	105	RUDBECKIA HIRTA / BLACK-EYED SUSAN	PLUG	CONTAINER	24" O.C.	

DESIGN SUMMARY

1. FACILITY NUMBER: 2
2. FACILITY TYPE: WET EXTENDED DETENTION (P-2)
3. DRAINAGE AREA = 9.06 AC.
4. RCN TO FACILITY = 88
5. BOTTOM EL. = 2.0
6. TOP OF EMBANKMENT EL. = 11
7. RISER CREST EL. = 6.50 (NO EMERGENCY SPILLWAY)
8. WET STORAGE VOLUME PROVIDED: 14,961 C.F.
9. DRY STORAGE VOLUME PROVIDED = 18,641 C.F.
10. NORMAL WATER SURFACE EL. = 4.50
11. WATER SURFACE EL.: 1 YEAR = 6.67
10 YEAR = 7.90
12. DISCHARGE: 1 YEAR = 7.6 CFS
10 YEAR = 37.4 CFS
13. RISER TYPE: 10'x5' PRINCIPAL SPILLWAY 36" ASTM C361 CLB-25 RCCP CARRIES 37.4 CFS AT 5.3 F.P.S.
14. MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THIS OWNER.
15. THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT IT MEETS THE CRITERIA FOR AN EXCAVATED FACILITY.
16. THIS SITE LIES WITHIN BALTIMORE HARBOR WATERSHED 02130903
17. THIS FACILITY DESIGNED TO PROVIDE QUALITY MGMT. ONLY.
18. 100 YR WSE = 8.73; 2.27' OF FREEBOARD PROVIDED REQUIRED FREEBOARD = 1.0' FOR NON-MD 378 FACILITY
19. MAXIMUM HEIGHT OF FILL = 7.25 @ BARREL PIPE

INSPECTION SCHEDULE

IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE ENGINEER/ INSPECTOR OF AN APPROXIMATE TIME FOR INSPECTION OF THE FOLLOWING ITEMS.

1. DURING EXCAVATION TO SUBGRADE AND PLACEMENT OF 30 MIL IMPERMEABLE LINER.
2. DURING PLACEMENT OF FILL OVER 30 MIL I IMPERMEABLE LINER OR STONE.
3. DURING CONSTRUCTION OF APPURTENANT CONVEYANCE
4. UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION/LANDSCAPING.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER PONDS

ROUTINE MAINTENANCE:

A. THE OWNER SHALL INSPECT THE FACILITY ANNUALLY AND AFTER EVERY HEAVY STORM. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.

B. THE OWNER SHALL MOW THE TOP AND SIDE SLOPES OF THE EMBANKMENT A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED. PLANTED AREAS SHALL BE ALLOWED TO GROW TO THEIR DESIGN SIZE, AND SHALL BE WEEDED AS NEEDED. CONSULT LANDSCAPE ARCHITECT FOR DETAILS.

C. THE OWNER SHALL REMOVE ANY DEBRIS AND LITTER FROM THE FACILITY.

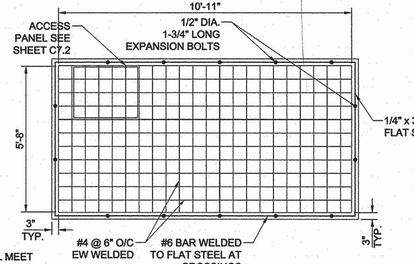
D. THE OWNER SHALL REPAIR ANY EROSION IN THE POND AS WELL AS THE RIP-RAP OR GABION OUTLET AREA AS SOON AS IT IS NOTICED.

E. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE EMBANKMENT, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.

F. THE OWNER SHALL REMOVE SEDIMENT FROM THE POND, AND FOREBAY, NO LATER THAN WHEN THE CAPACITY OF THE POND, OR FOREBAY, IS HALF FULL OF SEDIMENT, OR WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.

FACILITY #2
EXTENDED DETENTION WET POND SEQUENCE OF CONSTRUCTION

1. NOTIFY CERTIFYING ENGINEER FIVE (5) WORKING DAYS PRIOR TO BEGINNING STORMWATER MANAGEMENT FACILITY CONSTRUCTION.
2. NOTIFY BALTIMORE COUNTY AT LEAST 48 HOURS PRIOR TO DOING ANY WORK.
3. CONSTRUCT ACCESS ROAD PER PLANS.
4. EXCAVATE WET AND DRY PORTIONS OF EXTENDED DETENTION WET POND TO ELEVATIONS SHOWN ON PLAN.
5. INSTALL RISER STRUCTURE R-2.
   - INSTALL 12" SCH. 40 PVC LOW FLOW PIPE AS SHOWN ON PLAN.
   - INSPECT REBAR AND FORMS PRIOR TO CONCRETE BEING POURED.
8. INSTALL 36" ASTM C-361 RCCP FROM R-2 TO E-6. (SEE SHEET C7.8 FOR ENDWALL DIMENSIONS) INSTALL 19" CLASS I RIP-RAP AT E-6 AS SHOWN ON PLAN.
9. INSTALL ALL INCOMING PIPES PER PLAN. SEE SHEET C7.8 FOR ENDWALL DIMENSIONS.
10. INSTALL 30 MIL IMPERMEABLE LINER, SEE SHEET C7.8 FOR INSTRUCTIONS.
11. FINE GRADE AND PERMANENTLY STABILIZE PER NOTES ON C7.9 AND C7.10. INSTALL OUTFALL PROTECTION ON ALL INCOMING PIPES AS SHOWN ON PLAN.
12. CONTRACTOR TO PROVIDE PROOF OF DELIVERY AND INSTALLATION OF SOIL AMENITIES, GRASS SEED, AND LANDSCAPING IN QUANTITIES REQUIRED TO INSPECTING AGENT AT COMPLETION OF STABILIZATION.
13. CONDUCT 'AS-BUILT' SURVEY OF FACILITY AND STORMDRAIN AND SUBMIT TO APPROPRIATE AGENCIES WITHIN 30 DAYS OF COMPLETION.



SWM EASEMENT NO. 2 TABLE
(STARTING @ P.O.B. CLOCKWISE)

BEARING/ RADIUS	DISTANCE/ ARC LENGTH	CHORD
S54°27'53"W	319.86'	
S32°10'11"E	18.92'	
N84°25'57"E	466.82'	
N05°34'03"W	466.82'	
N65°38'31"E	17.27'	
EASEMENT AREA = 28,846 SF / 0.6622 AC		

LEGEND

- PROPERTY LINE
- EX. BUILDING OUTLINE
- EX. EDGE OF ROAD
- OHU — EX. OVERHEAD ELECTRIC
- EX. RAILROAD TRACKS
- 100-YEAR FLOOD PLAIN
- EX. SIDEWALK LINE
- EX. EASEMENT LINE
- EX. TREE LINE
- SS — EX. SANITARY SEWER
- EX. MINOR CONTOUR
- EX. MAJOR CONTOUR
- EX. LIGHT POLE
- EX. SIGN
- EX. UTILITY POLE
- SWM EASEMENTS
- PROP. MINOR CONTOUR
- PROP. MAJOR CONTOUR
- PROP. FENCE
- PROP. STORM PIPE
- PROP. INLET
- PROP. MANHOLE
- PROP. SPOT ELEV.
- PROP. FIRE HYDRANT
- RIP RAP OUTFALL
- LIMIT OF PLANTING SOIL
- TOP OF EMBANKMENT
- SOIL BORING

CONSTRUCTION DOCUMENTS
8.8.2016

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23381 EXPIRATION DATE: 8/19/2016

EXTENDED DETENTION WET POND SWM FACILITY # 2

SCALE: 1" = 20'

PROFESSIONAL CERTIFICATION.
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FOR STRUCTURAL DESIGN ONLY

APPROVED Jeff Markle 8/1/16 CHIEF
STORMWATER ENGINEERING
BALTIMORE CO. DEPT. OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY

THESE PLANS ARE ON THE MARYLAND COORDINATE SYSTEM NAD-83

CONTRACT NO.

JOB ORDER NO.

PROJECT RECORD

ROAD PERMIT AND GRADES	REVISED AS PER RECORD PRINT	DATE	REVISION	BY
PERMIT REQUESTED	DRAFTSMAN			
PERMIT NUMBER				
GRADE ESTABLISHED				
PROFILE NUMBER				

KCI TECHNOLOGIES, INC.
ENGINEER SCOTT ROSE
DATE 08/19/2016 LIC. NO. 23381
SEAL

DESIGNED: AGM
DRAWN: KGD
CHECKED: AGM

BUREAU OF ENGINEERING AND CONSTRUCTION	HIGHWAYS	STRUCTURES	STORM DRAINS	SEWER	WATER	FIELD ENGINEER
REVIEWED						
DATE						

BUR. OF ENGINEERING & CONSTRUCTION
APPROVED CHIEF
DATE

DEPARTMENT OF PUBLIC WORKS
APPROVED DIRECTOR
DATE

P. W. A. DIR. NO.	KEY SHEET
	CNE
RIGHT OF WAY	POSITION SHEET
	23SW 5

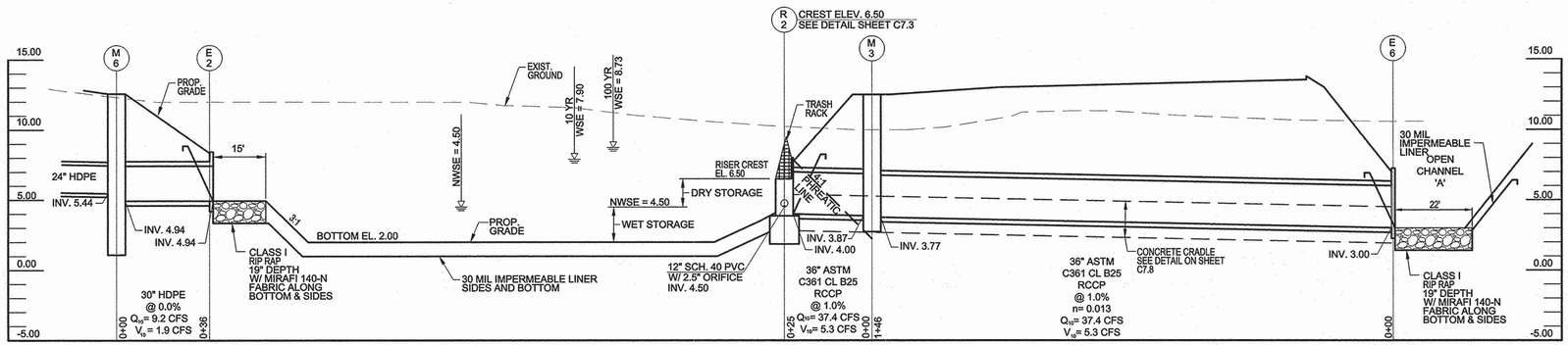
SCALE
PLAN: AS SHOWN
PROFILE HOR. VERT.

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

SWM PLAN & SECTIONS FACILITY #2
FEDEX DISTRIBUTION WAREHOUSE
SPARROWS POINT, MARYLAND
SUBDIVISION: FEDEX DISTRIBUTION WAREHOUSE EL. DISTRICT NO. 15, C7

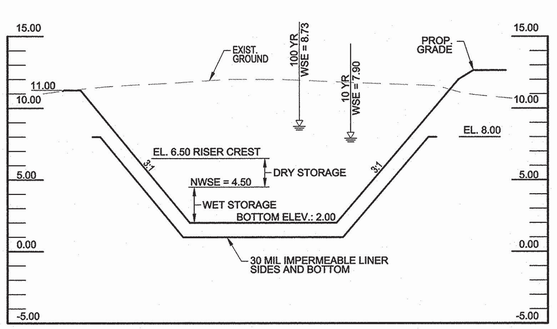
SHEET ____ OF ____
DWG. NO. C7.3
FILE: 27-157328

PLOTTED: $DATE$
DWG NAME: $NAME$
FILE: $FILE$



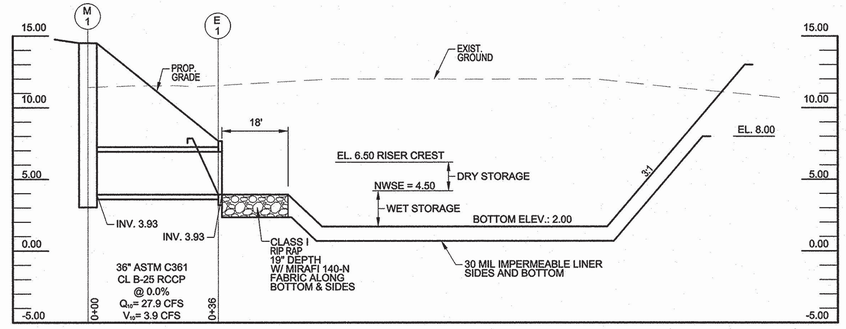
EXTENDED DETENTION WETPOND
SECTION A-A PRINCIPAL SPILLWAY PROFILE

SCALE: 1" = 20' HORIZ.
1" = 5' VERT.



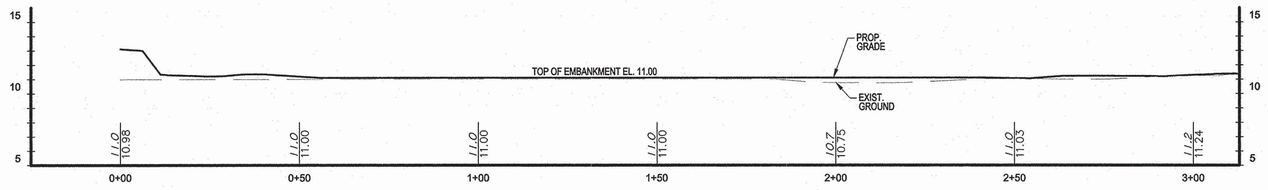
EXTENDED DETENTION WETPOND
SECTION B-B

SCALE: 1" = 20' HORIZ.
1" = 5' VERT.



EXTENDED DETENTION WETPOND
SECTION C-C

SCALE: 1" = 20' HORIZ.
1" = 5' VERT.



TOP OF EMBANKMENT PROFILE
(FACILITY No. 1)

SCALE: 1" = 20' HORIZ.
1" = 5' VERT.

LEGEND

- PROPERTY LINE
- EX. BUILDING OUTLINE
- EX. EDGE OF ROAD
- OHU — EX. OVERHEAD ELECTRIC
- EX. RAILROAD TRACKS
- 100-YEAR FLOOD PLAIN
- EX. SIDEWALK LINE
- EX. EASEMENT LINE
- EX. TREE LINE
- SS — EX. SANITARY SEWER
- EX. MINOR CONTOUR
- 10 — EX. MAJOR CONTOUR
- EX. LIGHT POLE
- EX. SIGN
- EX. UTILITY POLE
- SWM EASEMENTS
- PROP. MINOR CONTOUR
- PROP. MAJOR CONTOUR
- PROP. FENCE
- PROP. STORM PIPE
- PROP. INLET
- PROP. MANHOLE
- 11.20 PROP. SPOT ELEV.
- PROP. FIRE HYDRANT
- RIP RAP OUTFALL
- LIMIT OF PLANTING SOIL
- TOP OF EMBANKMENT
- SOIL BORING

PROFESSIONAL CERTIFICATION.
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EXPIRATION DATE: 8/19/2016

PROJECT RECORD

CONSTRUCTION DOCUMENTS
8.8.2016

APPROVED J.A.Markle 8/1/16 CHIEF
STORMWATER ENGINEERING
BALTIMORE CO. DEPT. OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY

THESE PLANS ARE ON THE MARYLAND COORDINATE SYSTEM NAD-83

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ROAD PERMIT AND GRADES	REVISED AS PER RECORD PRINT		DATE	REVISION	BY
PERMIT REQUESTED	DRAFTSMAN	DATE			
PERMIT NUMBER					
GRADE ESTABLISHED					
PROFILE NUMBER					

STATE OF MARYLAND SCOTT R. ROSE 23381 PROFESSIONAL ENGINEER 8/19/16
SEAL

KCI TECHNOLOGIES, INC.
ENGINEER SCOTT ROSE
DATE 08/19/2016 LIC. NO. 23381

DESIGNED: AGM
DRAWN: KGD
CHECKED: AGM

BUREAU OF ENGINEERING AND CONSTRUCTION	HIGHWAYS	STRUCTURES	STORM DRAINS	SEWER	WATER	FIELD ENGINEER
REVIEWED						
DATE						

BUR. OF ENGINEERING & CONSTRUCTION
APPROVED _____ CHIEF
DATE _____

DEPARTMENT OF PUBLIC WORKS
APPROVED _____ DIRECTOR
DATE _____

P. W. A. DIR. NO.	KEY SHEET
	CNE
RIGHT OF WAY	POSITION SHEET
	23SW 5

SCALE
PLAN: AS SHOWN
PROFILE HOR. VERT.

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION
SWM SECTIONS FACILITY #2
FEDEX DISTRIBUTION WAREHOUSE
SPARROWS POINT, MARYLAND
SUBDIVISION: FEDEX DISTRIBUTION WAREHOUSE EL. DISTRICT NO. 15, C7

SHEET 5 OF 23
DWG. NO. C7.4
FILE: 27-157328

PLOTTED: #DATE$
BY: #USERNAME$
FILE: #FILE$

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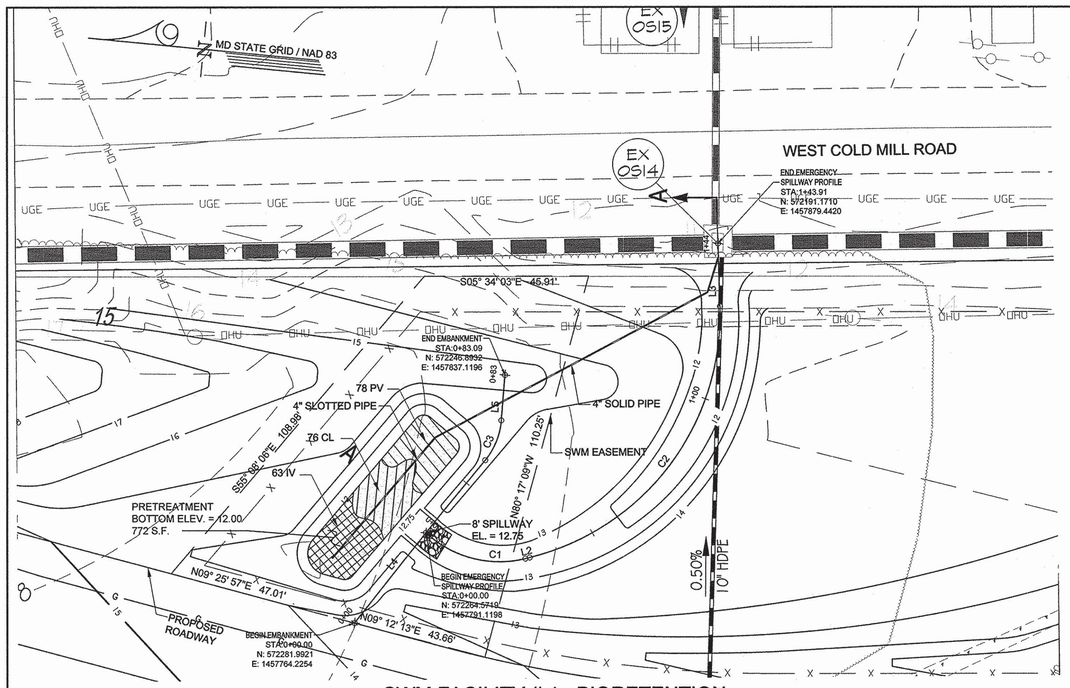


SWM FACILITY # 4 - BIORETENTION

SCALE: 1" = 20'

BIORETENTION FACILITY (M-6)			
FACILITY 4			
PHASE	DATE	INITIALS	REMARKS - DESCRIPTION OF ACTION TAKEN
1. EXCAVATION A. SIZE AND LOCATION B. SIDE SLOPE STABILITY C. SOIL PERMEABILITY D. GROUNDWATER / BEDROCK E. SETBACKS PER DESIGN MANUAL			
2. 30 MIL IMPERMEABLE LINER A. FABRIC SPECIFICATIONS B. SIDES AND TOP (INFILTRATION) C. SIDES, TOP, BOTTOM (ATTENUATION)			
3. AGGREGATE MATERIAL A. TYPE (SLAG, # CRUSHED, GRAVEL) B. SIZE C. PLACEMENT			
4. OBSERVATION WELL / ROOF LEADERS A. ROOF LEADERS B. SURCHARGE PIPE(S) C. PIPE SIZE AND TYPE D. MINIMUM COVER (1' FOOT)			
5. SURFACE LAYER A. AGGREGATE SURFACE B. VEGETATIVE SURFACE C. PAVED SURFACE			
6. FINAL GRADING & PERMANENT STABILIZATION A. FINAL GRADES, PLANTINGS & MULCH			

I HEREBY CERTIFY THAT I PERSONALLY REVIEWED OR A PERSON UNDER MY DIRECT SUPERVISION PROVIDED THE INFORMATION REPORTED ON THIS CHECKLIST AND TO THE BEST OF MY KNOWLEDGE DO HEREBY INSURE THAT THE SUBMITTAL IS COMPLETE AND ACCURATE.

PROFESSIONAL ENGINEER SIGNATURE AND DATE

NOTE:
THIS FACILITY HAS LESS THAN SIX (6) FEET OF EMBANKMENT AND THE STORAGE AT THE EMERGENCY SPILLWAY IS LESS THAN 40,000 S.F., THEREFORE, IS EXEMPT FROM MD378 SMALL POND APPROVAL..

SWM EASEMENT NO. 4 TABLE (STARTING @ P.O.B. CLOCKWISE)		
BEARING/ RADIUS	DISTANCE/ ARC LENGTH	CHORD
S55°08'06"E	108.98'	
S05°34'03"E	45.91'	
N80°17'09"W	110.25'	
N09°12'13"E	43.66'	
N09°25'57"E	47.01	
EASEMENT AREA = 6,908 SF / 0.1586 AC		

DESIGN SUMMARY

1. FACILITY NUMBER: 4
2. FACILITY TYPE: BIO-RETENTION (M-6)
3. DRAINAGE AREA = 0.41 AC.
4. RCN TO FACILITY = 75
5. BOTTOM ELEVATION = 12.00
6. TOP OF EMBANKMENT ELEVATION = 14.00
7. SURFACE AREA BOTTOM OF FACILITY = 772 S.F.
8. STORAGE VOLUME PROVIDED INCLUDING FILTER MEDIA: 1,467 C.F.
9. WATER SURFACE ELEV.: 1 YEAR = 12.00
10 YEAR = 12.86
100 YEAR = 12.95 - FREEBOARD PROVIDED = 1.0'
10. DISCHARGE: 1 YEAR = 0.01 CFS
10 YEAR = 1.6 CFS
EMERGENCY SPILLWAY CARRIES 1.6 C.F.S. AT 1.5 F.P.S
11. MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THIS OWNER.
12. THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT THE IMPOUNDED DESIGN HIGH WATER DEPTH IS LESS THAN 4 FEET AT THE EMBANKMENT.
13. THIS SITE LIES WITHIN BALTIMORE HARBOR WATERSHED 02130903.
14. REQUIRED TO TREAT 1.8" OF RUNOFF = 1,018 C.F.
PROVIDED ESDV_E = 1,956 C.F.
15. MAXIMUM HEIGHT OF FILL = 5.8'

INSPECTION SCHEDULE

IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE ENGINEER/ INSPECTOR OF AN APPROXIMATE TIME FOR THE FOLLOWING.

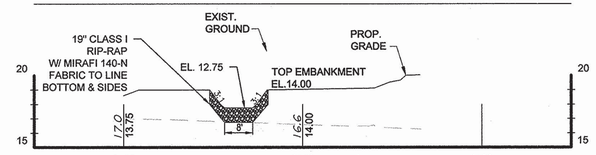
1. DURING EXCAVATION TO SUBGRADE AND PLACEMENT OF 30 MIL IMPERMEABLE LINER AND UNDERDRAIN SYSTEM.
2. DURING PLACEMENT OF FILTER MEDIA.
3. DURING CONSTRUCTION OF APPURTENANT CONVEYANCE.
4. UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION/LANDSCAPING.

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6)

1. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
2. THE OWNER SHALL PERFORM A PLANT INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
3. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED ANNUALLY OR AS REQUIRED. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
4. THE OWNER SHALL CORRECT SOIL EROSION ON AN NEEDED BASIS. INSPECTIONS SHALL BE PERFORMED A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

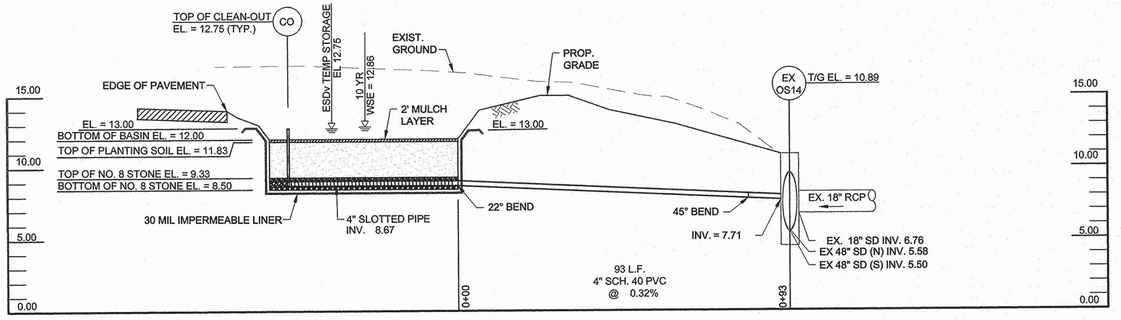
STORMWATER MANAGEMENT FACILITY SEQUENCE OF CONSTRUCTION

1. NOTIFY CERTIFYING ENGINEER FIVE (5) WORKING DAYS PRIOR TO BEGINNING STORM WATER MANAGEMENT FACILITY CONSTRUCTION.
2. NOTIFY BALTIMORE COUNTY AT LEAST 48 HOURS PRIOR TO DOING ANY WORK.
3. CLEAR, GRUB & INSTALL PERIMETER SEDIMENT CONTROL MEASURES AS SHOWN ON THE SEDIMENT CONTROL PLAN.
4. CONSTRUCT INCOMING DITCHES AND BEGIN EXCAVATION OF FACILITY. PERMANATELY STABILIZE DITCHES PER PERMANENT STABILIZATION NOTES ON SHEETS C7.9 AND C7.10.
5. INSTALL 30 MIL IMPERMEABLE LINER, SEE SHEET C7.8 FOR INSTRUCTIONS.
6. UPON STABILIZATION OF DRAINAGE AREA CONSTUCT EMERGENCY SPILLWAY AND 19" OF CLASS I RIP-RAP AS SHOWN ON PLAN. (1-DAY)
7. INSTALL STONE RESERVOIR, UNDERDRAINS AND PLANTING SOIL. (2-DAYS)
8. FINE GRADE AND PERMANENTLY STABILIZE DISTURBED AREA. (1-DAY)
9. INSTALL LANDSCAPE PLANTINGS.
10. CONDUCT 'AS-BUILT SURVEY OF FACILITY AND STORMDRAIN AND SUBMIT TO APPROPRIATE AGENCIES WITHIN 30 DAYS OF COMPLETION.



℄ EMBANKMENT PROFILE

SCALE: 1" = 20'



SWM FACILITY#4 - BIORETENTION UNDERDRAIN PROFILE

SCALE: 1" = 20' HORIZ.
1" = 5' VERT.

PLANT SCHEDULE					
KEY	QTY	BOTANICAL / COMMON NAME	SIZE	ROOT	COMMENTS
PV	78	PANICUM VIRGATUM / HEAVY METAL SWITCH GRASS	1 QT	CONT.	PLANT 2' O.C.
IV	63	IRIS VERSICOLOR / HARLEQUIN BLUE FLAG	1 QT	CONT.	PLANT 2' O.C.
CL	76	CHASMANTHIUM LATIFOLIUM / BLUE SEA OATS	1 QT	CONT.	PLANT 2' O.C.

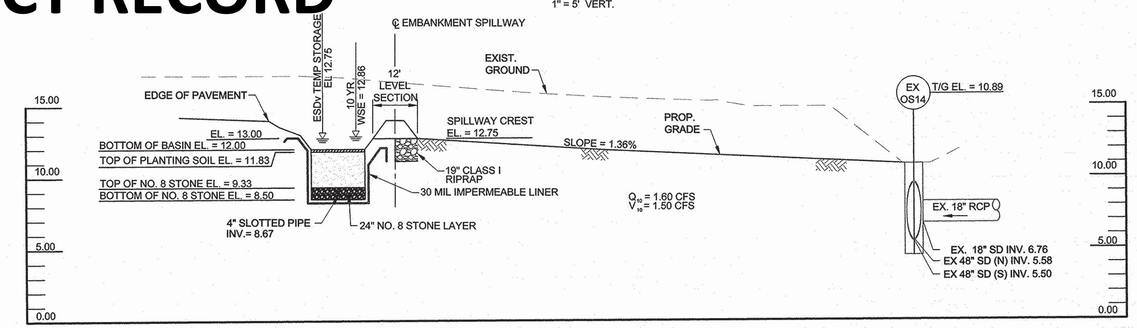
LEGEND

- PROPERTY LINE
- EX. BUILDING OUTLINE
- EX. EDGE OF ROAD
- EX. OVERHEAD ELECTRIC (OHU)
- EX. RAILROAD TRACKS
- 100-YEAR FLOOD PLAIN
- EX. SIDEWALK LINE
- EX. EASEMENT LINE
- EX. TREE LINE
- EX. SANITARY SEWER (SS)
- EX. MINOR CONTOUR
- EX. MAJOR CONTOUR
- EX. LIGHT POLE
- SOIL BORING
- EX. SIGN
- EX. UTILITY POLE
- SWM EASEMENTS
- PROP. MINOR CONTOUR
- PROP. MAJOR CONTOUR
- PROP. FENCE
- PROP. STORM PIPE
- PROP. INLET
- PROP. MANHOLE
- PROP. SPOT ELEV.
- PROP. FIRE HYDRANT
- RIP RAP OUTFALL
- LIMIT OF PLANTING SOIL
- TOP OF EMBANKMENT

PROJECT RECORD

BASELINE DATA					
NO.	STATION	NORTHING	EASTING	BEARING	LENGTH
L1	0+00	572264.57	1457791.12	S34°43'52"W	1.52'
L2	0+29.86	572236.27	1457786.61	S19°24'17"E	1.24'
L3	1+26.31	572188.93	1457861.98	N82°40'15"E	17.61'
L4	0+00	572281.99	1457764.23	S57°04'04"E	40.09'
L5	0+70.35	572246.70	1457624.38	N89°08'02"E	12.74'

CURVE DATA							
NO.	FROM	TO	Δ	RADIUS	TANGENT	LENGTH	CHORD BEARING & LENGTH
C1	0+01.52	0+29.86	054°08'10"	30.00'	15.33'	28.35'	S07°39'48"W 27.30'
C2	0+31.10	1+26.31	077°55'28"	70.00'	56.61'	95.20'	S58°22'01"E 88.03'
C3	0+58.23	0+70.35	034°43'34"	20.00'	6.25'	12.12'	S73°30'11"E 11.94'



SWM FACILITY #4 - BIORETENTION SECTION A-A PRINCIPLE SPILLWAY

SCALE: 1" = 20' HORIZ.
1" = 5' VERT.

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23381 EXPIRATION DATE: 8/19/2016

APPROVED _____ CHIEF
STORMWATER ENGINEERING
BALTIMORE CO. DEPT. OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY

CONSTRUCTION DOCUMENTS
8.8.2016

THESE PLANS ARE ON THE MARYLAND COORDINATE SYSTEM NAD-83

CONTRACT NO.

JOB ORDER NO.

ROAD PERMIT AND GRADES	REVISED AS PER RECORD PRINT	DATE	REVISION	BY
PERMIT REQUESTED	DRAFTSMAN			
PERMIT NUMBER	DATE			
GRADE ESTABLISHED				
PROFILE NUMBER				

STATE OF MARYLAND — SCOTT R. ROSE — 23381 — PROFESSIONAL ENGINEER — SEAL

KCI TECHNOLOGIES, INC.
ENGINEER SCOTT ROSE
DATE 08/19/2016 LIC. NO. 23381
DESIGNED: AGM
DRAWN: KGD
CHECKED: AGM

BUREAU OF ENGINEERING AND CONSTRUCTION	HIGHWAYS	STRUCTURES	STORM DRAINS	SEWER	WATER	FIELD ENGINEER
REVIEWED						
DATE						

BUR. OF ENGINEERING & CONSTRUCTION
APPROVED _____ CHIEF
DATE _____

DEPARTMENT OF PUBLIC WORKS
APPROVED _____ DIRECTOR
DATE _____

P. W. A. DIR. NO.	KEY SHEET
	CNE
RIGHT OF WAY	POSITION SHEET
	23SW 5

SCALE
PLAN: AS SHOWN
PROFILE HOR. VERT.

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION
SWM PLAN & SECTIONS FACILITY #4
FEDEX DISTRIBUTION WAREHOUSE
SPARROWS POINT, MARYLAND
SUBDIVISION: FEDEX DISTRIBUTION WAREHOUSE EL. DISTRICT NO. 15, C7

SHEET 6 OF 23
DWG. NO. C7.5
FILE: 27-157328

PLOTTED: $DATE$
BY: $USERNAME$
FILES: $FILES$

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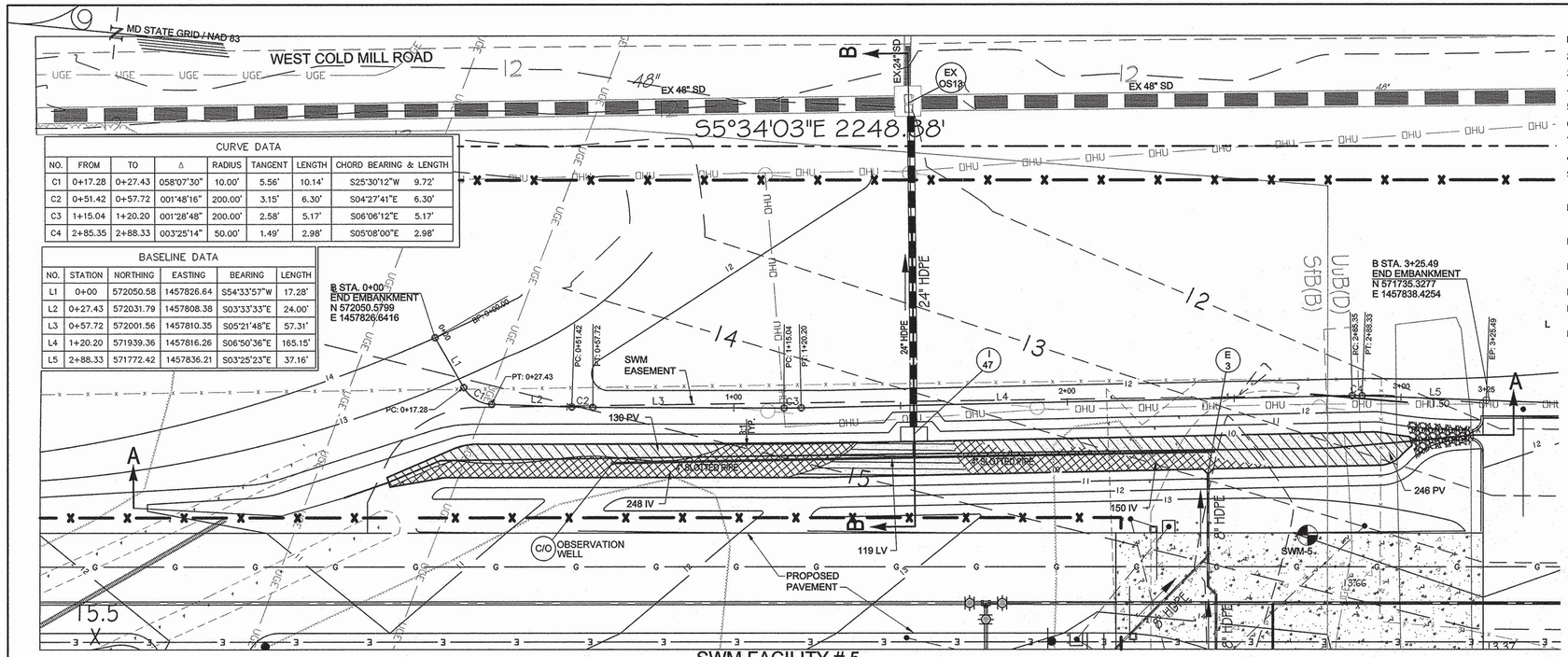
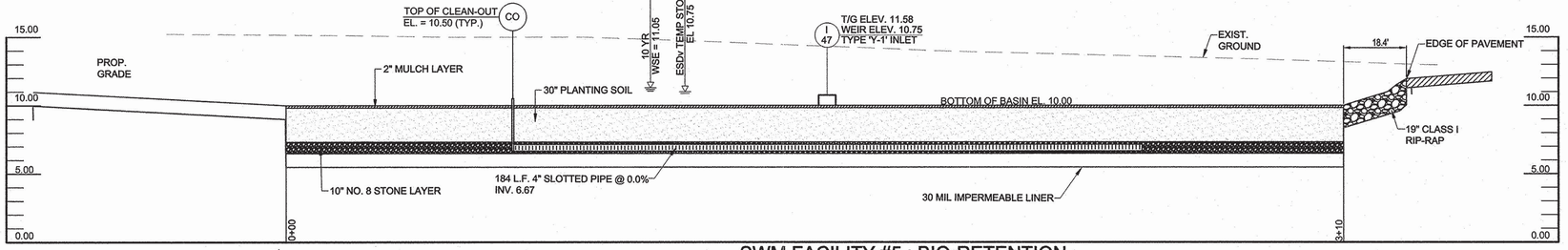


CURVE DATA							
NO.	FROM	TO	Δ	RADIUS	TANGENT	LENGTH	CHORD BEARING & LENGTH
C1	0+17.28	0+27.43	058°07'30"	10.00'	5.56'	10.14'	S25°30'12"W 9.72'
C2	0+51.42	0+57.72	001°48'16"	200.00'	3.15'	6.30'	S04°27'41"E 6.30'
C3	1+15.04	1+20.20	001°28'48"	200.00'	2.58'	5.17'	S06°06'12"E 5.17'
C4	2+85.35	2+88.33	003°25'14"	50.00'	1.49'	2.98'	S05°08'00"E 2.98'

BASELINE DATA					
NO.	STATION	NORTHING	EASTING	BEARING	LENGTH
L1	0+00	572050.58	1457826.64	S54°33'57"W	17.28'
L2	0+27.43	572031.79	1457808.38	S03°33'33"E	24.00'
L3	0+57.72	572001.56	1457810.35	S05°21'48"E	57.31'
L4	1+20.20	571939.36	1457816.26	S06°50'36"E	165.15'
L5	2+88.33	571772.42	1457836.21	S03°25'23"E	37.16'

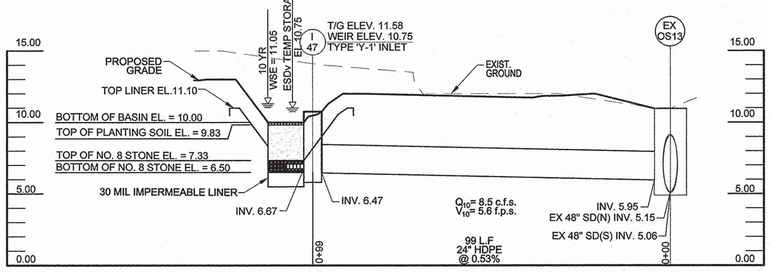
SWM FACILITY # 5

SCALE: 1" = 20'



SWM FACILITY #5 : BIO-RETENTION SECTION A-A

SCALE: 1" = 20' HORIZ.
1" = 5' VERT.

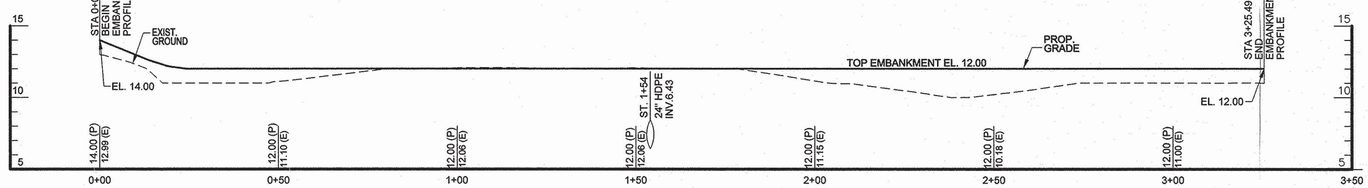


SWM FACILITY #5 : BIO-RETENTION SECTION B-B / PRINCIPLE SPILLWAY PROFILE

SCALE: 1" = 20' HORIZ.
1" = 5' VERT.

PLANT SCHEDULE					
KEY	QTY	BOTANICAL / COMMON NAME	SIZE	ROOT	COMMENTS
PV	376	PANICUM VIRGATUM / HEAVY METAL SWITCH GRASS	1 QT	CONT.	PLANT 2' O.C.
LC	119	LOBELIA CARDINALIS / CARDINAL FLOWER	1 QT	CONT.	PLANT 2' O.C.
IV	398	IRIS VERSICOLOR / HARLEQUIN BLUE FLAG	1 QT	CONT.	PLANT 2' O.C.

PROJECT RECORD



TOP OF EMBANKMENT PROFILE SWM FACILITY #5

SCALE: 1" = 20' HOR. 1"=5' VERT.

DESIGN SUMMARY

1. FACILITY NUMBER: 5
2. FACILITY TYPE: BIO-RETENTION (M-6)
3. DRAINAGE AREA = 1.73 AC.
4. RCN TO FACILITY = 83
5. BOTTOM ELEVATION = 10.00
6. TOP OF EMBANKMENT ELEVATION = 12.00
7. STORAGE VOLUME PROVIDED, INCLUDING STORAGE WITHIN MEDIA = 5,660 CF.
8. SURFACE AREA BOTTOM OF FACILITY = 2,929 S.F.
9. WATER SURFACE ELEV.: 1 YEAR = 10.77
   10 YEAR = 11.05
   100 YEAR = 11.15 - FREEBOARD PROVIDED = 0.85'
10. DISCHARGE: 1 YEAR = 0.5 CFS
    10 YEAR = 8.5 CFS
    PRINCIPAL SPILLWAY 24" HDPE CARRIES 8.5 C.F.S. @ 5.6 F.P.S.
11. MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THIS OWNER.
12. THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT THE IMPOUNDED DESIGN HIGH WATER DEPTH IS LESS THAN 4 FEET AT THE EMBANKMENT.
13. THIS SITE LIES WITHIN BALTIMORE HARBOR WATERSHED 02130903.
14. REQUIRED TO TREAT 1.8" OF RUNOFF = 6,217 C.F.
    PROVIDED ESDv = 7,547 C.F.
15. MAXIMUM HEIGHT OF FILL = 5.57'

LEGEND

- PROPERTY LINE
- EX. BUILDING OUTLINE
- EX. EDGE OF ROAD
- OHU — EX. OVERHEAD ELECTRIC
- EX. RAILROAD TRACKS
- 100-YEAR FLOOD PLAIN
- EX. SIDEWALK LINE
- EX. EASEMENT LINE
- EX. TREE LINE
- SS — EX. SANITARY SEWER
- 10 — EX. MINOR CONTOUR
- 10 — EX. MAJOR CONTOUR
- EX. LIGHT POLE
- EX. SIGN
- EX. UTILITY POLE
- SWM EASEMENTS
- 11 — PROP. MINOR CONTOUR
- 10 — PROP. MAJOR CONTOUR
- x — x — PROP. FENCE
- PROP. STORM PIPE
- PROP. INLET
- PROP. MANHOLE
- 11.20 x — PROP. SPOT ELEV.
- PROP. FIRE HYDRANT
- RIP RAP OUTFALL
- LIMIT OF PLANTING SOIL
- SOIL BORING

NOTE:
THIS FACILITY HAS LESS THAN SIX (6) FEET OF EMBANKMENT AND THE STORAGE VOLUME AT THE TOP OF EMBANKMENT IS LESS THAN 40,000 C.F. THEREFORE, IS EXEMPT FROM MD378 SMALL POND APPROVAL.

INSPECTION SCHEDULE

IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE ENGINEER/ INSPECTOR OF AN APPROXIMATE TIME FOR THE FOLLOWING.

1. DURING EXCAVATION TO SUBGRADE AND PLACEMENT OF 30 MIL IMPERMEABLE LINER AND UNDERDRAIN SYSTEM.
2. DURING PLACEMENT OF FILTER MEDIA.
3. DURING CONSTRUCTION OF APPURTENANT CONVEYANCE.
4. UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION/LANDSCAPE.

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6)

1. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
2. THE OWNER SHALL PERFORM A PLANT INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
3. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED ANNUALLY OR AS REQUIRED. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
4. THE OWNER SHALL CORRECT SOIL EROSION ON AN NEEDED BASIS. INSPECTIONS SHALL BE PERFORMED A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

STORMWATER MANAGEMENT FACILITY SEQUENCE OF CONSTRUCTION

1. NOTIFY CERTIFYING ENGINEER FIVE (5) WORKING DAYS PRIOR TO BEGINNING STORM WATER MANAGEMENT FACILITY CONSTRUCTION.
2. NOTIFY BALTIMORE COUNTY AT LEAST 48 HOURS PRIOR TO DOING ANY WORK.
3. CLEAR, GRUB & INSTALL PERIMETER SEDIMENT CONTROL MEASURES AS SHOWN ON THE SEDIMENT CONTROL PLAN.
4. CONSTRUCT INCOMING DITCHES AND BEGIN EXCAVATION OF FACILITY. PERMANATELY STABILIZE DITCH GRADING AS COMPLETED PER PERMANENT STABILIZATION NOTES ON SHEET C7.9 & C7.10
5. INSTALL INLET I-47 AND 24" HDPE TO EX. OS-13.
6. INSTALL 30 MIL IMPERMEABLE LINER, SEE SHEET C7.6 FOR INSTRUCTIONS.
7. UPON STABILIZATION OF DRAINAGE AREA INSTALL STONE RESERVOIR, UNDERDRAINS AND PLANTING SOIL. (2-DAYS)
8. FINE GRADE AND PERMANENTLY STABILIZE DISTURBED AREA. (1-DAY)
9. INSTALL LANDSCAPE PLANTINGS.
10. CONDUCT 'AS-BUILT' SURVEY OF FACILITY AND STORMDRAIN AND SUBMIT TO APPROPRIATE AGENCIES WITHIN 30 DAYS OF COMPLETION.

BIORETENTION FACILITY (M-6)

FACILITY # 5

PHASE	DATE	INITIALS	REMARKS - DESCRIPTION OF ACTION TAKEN
1. EXCAVATION A. SIZE AND LOCATION B. SIDE SLOPE STABILITY C. SOIL PERMEABILITY D. GROUNDWATER / BEDROCK E. SETBACKS PER DESIGN MANUAL			
2. 30 MIL IMPERMEABLE LINER A. FABRIC SPECIFICATIONS B. SIDES AND TOP (INFILTRATION) C. SIDES, TOP, BOTTOM (ATTENUATION)			
3. AGGREGATE MATERIAL A. TYPE (SLAG, # CRUSHED, GRAVEL) B. SIZE C. PLACEMENT			
4. OBSERVATION WELL / ROOF LEADERS A. ROOF LEADERS B. SURCHARGE PIPE(S) C. PIPE SIZE AND TYPE D. MINIMUM COVER (1' FOOT)			
5. SURFACE LAYER A. AGGREGATE SURFACE B. VEGETATIVE SURFACE C. PAVED SURFACE			
6. FINAL GRADING & PERMANENT STABILIZATION A. FINAL GRADES, PLANTINGS & MULCH			

I HEREBY CERTIFY THAT I PERSONALLY REVIEWED OR A PERSON UNDER MY DIRECT SUPERVISION PROVIDED THE INFORMATION REPORTED ON THIS CHECKLIST AND TO THE BEST OF MY KNOWLEDGE DO HEREBY INSURE THAT THE SUBMITTAL IS COMPLETE AND ACCURATE.

PROFESSIONAL ENGINEER SIGNATURE AND DATE

SWM EASEMENT NO. 5 TABLE

(STARTING @ P.O.B. CLOCKWISE)

BEARING/ RADIUS	DISTANCE/ ARC LENGTH	CHORD
N84°25'57"E	14.32'	
S69°36'31"E	14.45'	
31.00'	32.37'	S35°28'55"E 30.92'
S05°19'57"E	271.67'	
S0°56'05"E	29.50'	
S84°25'57"W	40.36'	
N05°34'03"W	334.35'	

EASEMENT AREA = 12,679 SF / 0.2911 AC

CONSTRUCTION DOCUMENTS
8.8.2016

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23381
EXPIRATION DATE: 8/19/2016

SEAL

ROAD PERMIT AND GRADES	REVISED AS PER RECORD PRINT	DATE	REVISION	BY
PERMIT REQUESTED	DRAFTSMAN			
PERMIT NUMBER	DATE			
GRADE ESTABLISHED				
PROFILE NUMBER				

KCI TECHNOLOGIES, INC.
ENGINEER SCOTT ROSE
DATE 08/19/2016 LIC. NO. 23381
DESIGNED: AGM
DRAWN: KGD
CHECKED: AGM

BUREAU OF ENGINEERING AND CONSTRUCTION	HIGHWAYS	STRUCTURES	STORM DRAINS	SEWER	WATER	FIELD ENGINEER
REVIEWED						
DATE						

BUR. OF ENGINEERING & CONSTRUCTION
APPROVED _____ CHIEF
DATE _____

DEPARTMENT OF PUBLIC WORKS
APPROVED _____ DIRECTOR
DATE _____

P. W. A. DIR. NO.
RIGHT OF WAY

KEY SHEET
CNE
POSITION SHEET
23SW 5

SCALE
PLAN: AS SHOWN
PROFILE HOR. VERT.

APPROVED J.A.Nadle 8/1/16 CHIEF
STORMWATER ENGINEERING
BALTIMORE CO. DEPT. OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY

THESE PLANS ARE ON THE MARYLAND COORDINATE SYSTEM NAD-83

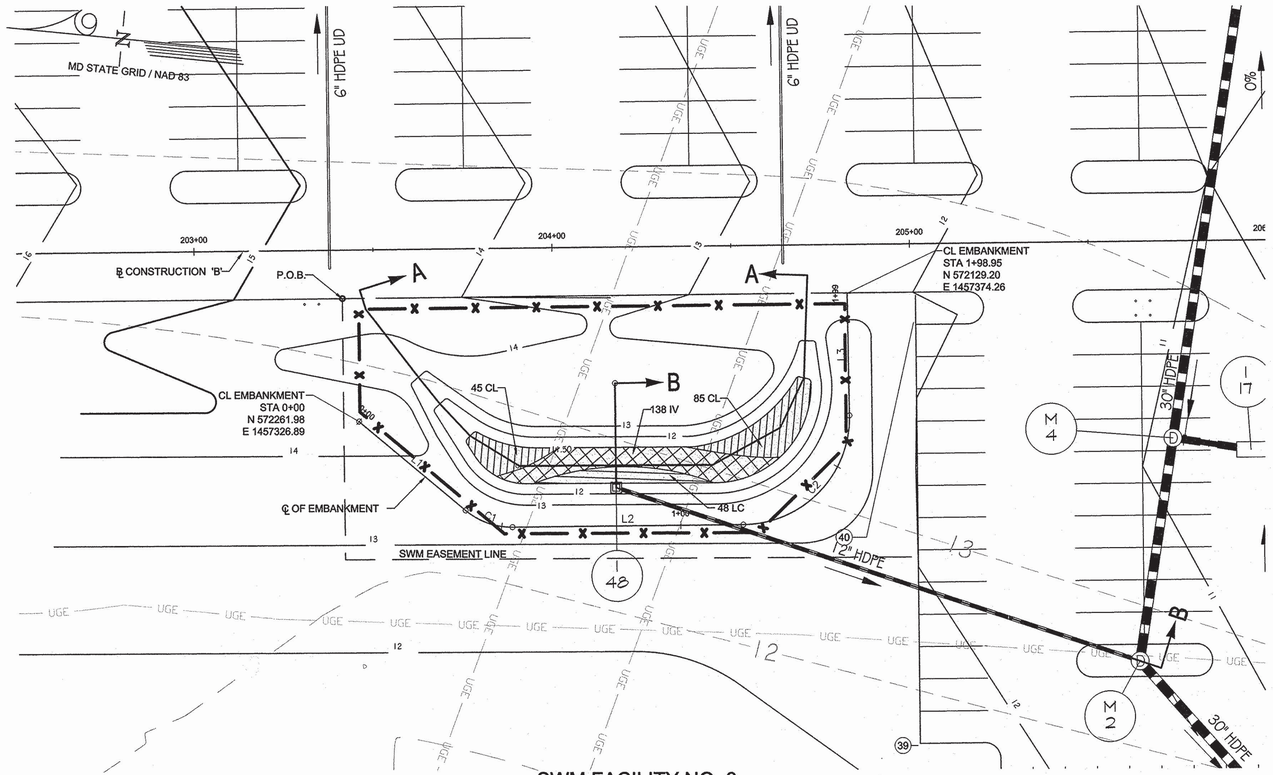
CONTRACT NO.
JOB ORDER NO.

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION
SWM PLAN & SECTIONS FACILITY #5
FEDEX DISTRIBUTION WAREHOUSE
SPARROWS POINT, MARYLAND
SUBDIVISION: FEDEX DISTRIBUTION WAREHOUSE EL. DISTRICT NO. 15, C7

SHEET 7 OF 23
DWG. NO. C7.6
FILE: 27-157328

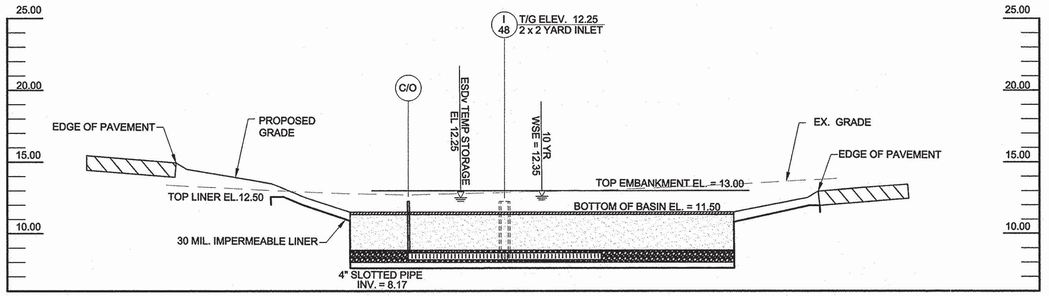
PLOTTED: $DATE$
BY: $USERNAME$
PLOT SCALE: 1

c:\dms\pwiseltony.meyers\dms39020\C7-6.dwg, SWM FACILITY 5, 5/6/2016 11:18:56 AM



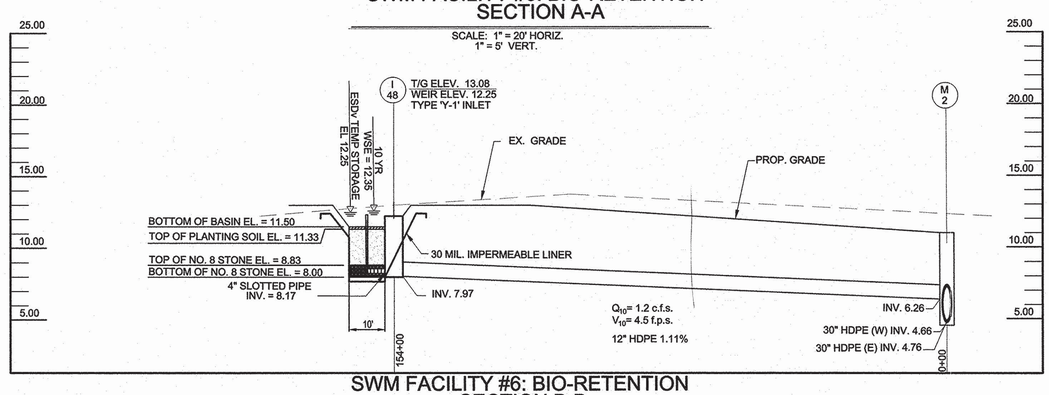
SWM FACILITY NO. 6

SCALE: 1" = 20'



SWM FACILITY #6: BIO-RETENTION SECTION A-A

SCALE: 1" = 20' HORIZ.
1" = 5' VERT.



SWM FACILITY #6: BIO-RETENTION SECTION B-B

SCALE: 1" = 20' HORIZ.
1" = 5' VERT.

SWM EASEMENT NO. 6 TABLE

(STARTING @ P.O.B. CLOCKWISE)

BEARING/ RADIUS	DISTANCE/ ARC LENGTH	CHORD
S5°34'2.64"E	160.00'	
S84°27'49.6"W	74.00'	
N5°13'48.19"W	160.00'	
N84°18'45"E	73.00'	

EASEMENT AREA = 11,770 SF / 0.2702 AC

PLANT SCHEDULE

KEY	QTY	BOTANICAL / COMMON NAME	SIZE	ROOT	COMMENTS
IV	138	IRIS VERSICOLOR / HARLEQUIN BLUE FLAG	1 QT	CONT.	PLANT 2' O.C.
LC	48	LOBELIA CARDINALIS / CARDINAL FLOWER	1 QT	CONT.	PLANT 2' O.C.
CL	130	CHASMANTHIUM LATIFOLIUM / BLUE SEA OATS	1 QT	CONT.	PLANT 2' O.C.

CL EMBANKMENT BASELINE DATA

NO.	STATION	NORTHING	EASTING	BEARING	LENGTH
L1	0+00	572261.98	1457326.89	S35°01'34"W	38.79'
L2	0+52.96	572216.80	1457301.10	S05°34'03"E	64.54'
L3	1+64.84	572125.64	1457340.35	N84°00'45"E	34.11'

CL EMBANKMENT CURVE DATA

NO.	FROM	TO	Δ	RADIUS	TANGENT	LENGTH	CHORD BEARING & LENGTH
C1	0+38.79	0+52.96	040°35'37"	20.00'	7.40'	14.17'	S14°43'46"W 13.88'
C2	1+17.50	1+64.84	090°25'12"	30.00'	30.22'	47.34'	S50°46'39"E 42.56'

LEGEND

- PROPERTY LINE
- EX. BUILDING OUTLINE
- EX. EDGE OF ROAD
- EX. OVERHEAD ELECTRIC
- EX. RAILROAD TRACKS
- 100-YEAR FLOOD PLAIN
- EX. SIDEWALK LINE
- EX. EASEMENT LINE
- EX. TREE LINE
- EX. SANITARY SEWER
- EX. MINOR CONTOUR
- EX. MAJOR CONTOUR
- EX. LIGHT POLE
- SOIL BORING
- EX. SIGN
- EX. UTILITY POLE
- SWM EASEMENTS
- PROP. MINOR CONTOUR
- PROP. MAJOR CONTOUR
- PROP. FENCE
- PROP. STORM DRAIN
- PROP. INLET
- PROP. MANHOLE
- PROP. SPOT ELEV.
- PROP. FIRE HYDRANT
- RIP RAP OUTFALL
- LIMIT OF PLANTING SOIL
- TOP OF EMBANKMENT

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23381 EXPIRATION DATE: 8/19/2016

NOTE: THIS FACILITY HAS LESS THAN 6' OF EMBANKMENT AND THE STORAGE VOLUME AT THE TOP OF EMBANKMENT IS LESS THAN 40,000 CU. FT., THEREFORE, IS EXEMPT FROM MD378 SMALL POND APPROVAL

BIORETENTION FACILITY (M-6)

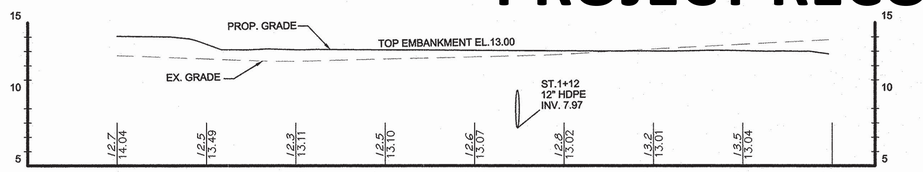
FACILITY #6

PHASE	DATE	INITIALS	REMARKS - DESCRIPTION OF ACTION TAKEN
1. EXCAVATION A. SIZE AND LOCATION B. SIDE SLOPE STABILITY C. SOIL PERMEABILITY D. GROUNDWATER / BEDROCK E. SETBACKS PER DESIGN MANUAL			
2. 30 MIL IMPERMEABLE LINER A. FABRIC SPECIFICATIONS B. SIDES AND TOP (INFILTRATION) C. SIDES, TOP, BOTTOM (ATTENUATION)			
3. AGGREGATE MATERIAL A. TYPE (SLAG, # CRUSHED, GRAVEL) B. SIZE C. PLACEMENT			
4. OBSERVATION WELL / ROOF LEADERS A. ROOF LEADERS B. SURCHARGE PIPE(S) C. PIPE SIZE AND TYPE D. MINIMUM COVER (1 FOOT)			
5. SURFACE LAYER A. AGGREGATE SURFACE B. VEGETATIVE SURFACE C. PAVED SURFACE			
6. FINAL GRADING & PERMANENT STABILIZATION A. FINAL GRADES, PLANTINGS & MULCH			

I HEREBY CERTIFY THAT I PERSONALLY REVIEWED OR A PERSON UNDER MY DIRECT SUPERVISION PROVIDED THE INFORMATION REPORTED ON THIS CHECKLIST AND TO THE BEST OF MY KNOWLEDGE DO HEREBY INSURE THAT THE SUBMITTAL IS COMPLETE AND ACCURATE.

PROFESSIONAL ENGINEER SIGNATURE AND DATE

PROJECT RECORD



SWM FACILITY #6 TOP OF EMBANKMENT PROFILE

SCALE: 1" = 20'

CONSTRUCTION DOCUMENTS
8.8.2016

INSPECTION SCHEDULE

IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER/ INSPECTOR OF AN APPROXIMATE TIME FOR THE FOLLOWING.

1. DURING EXCAVATION TO SUBGRADE AND PLACEMENT OF 30 MIL IMPERMEABLE LINER AND UNDERDRAIN SYSTEM.
2. DURING PLACEMENT OF FILTER MEDIA.
3. DURING CONSTRUCTION OF APPURTENANT CONVEYANCE.
4. UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION/LANDSCAPING.

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6)

1. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
2. THE OWNER SHALL PERFORM A PLANT INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
3. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED ANNUALLY OR AS REQUIRED. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
4. THE OWNER SHALL CORRECT SOIL EROSION ON AN NEEDED BASIS. INSPECTIONS SHALL BE PERFORMED A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

STORMWATER MANAGEMENT FACILITY SEQUENCE OF CONSTRUCTION

1. NOTIFY CERTIFYING ENGINEER FIVE (5) WORKING DAYS PRIOR TO BEGINNING STORM WATER MANAGEMENT FACILITY CONSTRUCTION.
2. NOTIFY BALTIMORE COUNTY AT LEAST 48 HOURS PRIOR TO DOING ANY WORK.
3. CLEAR, GRUB & INSTALL PERIMETER SEDIMENT CONTROL MEASURES AS SHOWN ON THE SEDIMENT CONTROL PLAN.
4. CONSTRUCT INCOMING DITCHES AND BEGIN EXCAVATION OF FACILITY. PERMANENTLY STABILIZE ALL DITCH GRADING AS COMPLETED PER PERMANENT STABILIZATION NOTES ON SHEET C7.9 & C7.10.
5. INSTALL INLET I-48 & 12" HDPE TO M-2.
6. INSTALL 30 MIL IMPERMEABLE LINER; SEE SHEET C7.8 FOR INSTRUCTIONS.
7. UPON STABILIZATION OF DRAINAGE AREA INSTALL STONE RESERVOIR, UNDERDRAINS AND PLANTING SOIL. (2-DAYS)
8. FINE GRADE AND PERMANENTLY STABILIZE DISTURBED AREA. (1-DAY)
9. INSTALL LANDSCAPE PLANTINGS.
10. CONDUCT 'AS-BUILT' SURVEY OF FACILITY AND STORMDRAIN AND SUBMIT TO APPROPRIATE AGENCIES WITHIN 30 DAYS OF COMPLETION.

DESIGN SUMMARY

1. FACILITY NUMBER: 6
2. FACILITY TYPE: BIO-RETENTION (M-6)
3. DRAINAGE AREA = 0.45 AC.
4. RCN TO FACILITY = 75
5. BOTTOM ELEVATION = 11.50
6. TOP OF EMBANKMENT ELEVATION = 13.00
7. STORAGE VOLUME PROVIDED: 1,656 CF. (INCLUDING STORAGE WITHIN THE MEDIA)
8. SURFACE AREA AT BOTTOM FACILITY = 1,050 S.F.
9. WATER SURFACE ELEV.: 1 YEAR = 11.50
10 YEAR = 12.35
100 YEAR = 12.47 - FREEBOARD PROVIDED = 0.53'
10. DISCHARGE: 1 YEAR = 0.01 CFS
10 YEAR = 1.2 CFS
PRINCIPAL SPILLWAY = 12" HDPE CARRIES 1.2 C.F.S. @ 4.5 F.P.S.
11. MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THIS OWNER.
12. THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT THE IMPOUNDED DESIGN HIGH WATER DEPTH IS LESS THAN 4 FEET AT THE EMBANKMENT.
13. THIS SITE LIES WITHIN BALTIMORE HARBOR WATERSHED 02130903
14. REQUIRED TO TREAT 1.8" RUNOFF = 1,147 C.F.
PROVIDED ESDv= 2,206 C.F.

APPROVED _____ CHIEF
STORMWATER ENGINEERING
BALTIMORE CO. DEPT. OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY

THESE PLANS ARE ON THE MARYLAND COORDINATE SYSTEM NAD-83

CONTRACT NO.

JOB ORDER NO.

ROAD PERMIT AND GRADES	REVISED AS PER RECORD PRINT	DATE	REVISION	BY
PERMIT REQUESTED	DRAFTSMAN			
PERMIT NUMBER	DATE			
GRADE ESTABLISHED				
PROFILE NUMBER				

SEAL

KCI TECHNOLOGIES, INC.
ENGINEER SCOTT ROSE
DATE 08/19/2016 LIC. NO. 23381
DESIGNED: AGM
DRAWN: KGD
CHECKED: AGM

BUREAU OF ENGINEERING AND CONSTRUCTION	HIGHWAYS	STRUCTURES	STORM DRAINS	SEWER	WATER	FIELD ENGINEER
REVIEWED						
DATE						

BUR. OF ENGINEERING & CONSTRUCTION
APPROVED _____ CHIEF
DATE _____

DEPARTMENT OF PUBLIC WORKS
APPROVED _____ DIRECTOR
DATE _____

P. W. A. DIR. NO.
RIGHT OF WAY

KEY SHEET
CNE
POSITION SHEET
23SW 5

SCALE
PLAN: AS SHOWN
PROFILE HOR. VERT.

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

SWM PLAN & SECTIONS FACILITY #6
FEDEX DISTRIBUTION WAREHOUSE
SPARROWS POINT, MARYLAND

SUBDIVISION: FEDEX DISTRIBUTION WAREHOUSE EL. DISTRICT NO. 15, C7

SHEET 8 OF 23
DWG. NO. C7.7
FILE: 27-157328

PLOTTED: $DATE$
BY: $USERNAME$
FILE: $FILE$

c:\dms\pwisetony.meyers\dms39020\C7-7.dwg, SWM FACILITY 6, 5/6/2016 11:21:45 AM

APPENDIX C

Photographic Documentation

Site:
Parcel A1
6021 Bethlehem Boulevard
Baltimore, Maryland

Taken By: GTA

Photo 1: View of former building slabs and concrete pile caps.

Photo 2: View of former building slabs and concrete pile caps.

Photo 3: View of concrete pile caps and brick pad.

Photo 4: View of area after concrete structures were removed.

Photo 5: View of piping removed from subsurface.

Photo 6: View of concrete crushing activities.

Photo 7: View of concrete crushing activities.

Photo 8: View of metals segregated for recycling.

Photo 9: View of excavation for removal of subsurface obstructions.

Photo 10: View of trench backfilling activities.

Photo 11: View of trench backfilling with clean structural fill.

Photo 12: View of backfill compaction activities.

Photo 13: View of impacted soil in the vicinity of soil probe SP-4.

Photo 14: View of the SP-4 excavation.

Photo 15: View of backfilling activities for the SP-4 excavation.

Photo 16: View of the SP-4 excavation after backfilling.

Photo 17: View of area with soil from the SP-4 excavation beneath geotextile fabric.

Photo 18: View of the wick drain installation.

Photo 19: Alternate view of the wick drain installation.

Photo 20: View of excavation activities for main building footers.

Photo 21: View of excavation activities for main building footers.

Photo 22: View of a worker in the main building footing excavation.

Photo 23: View of excavation for the main building footings.

Photo 24: View of backfilling with clean fill material in footer area.

Photo 25: View of utility installation.

Photo 26: View of utility installation.

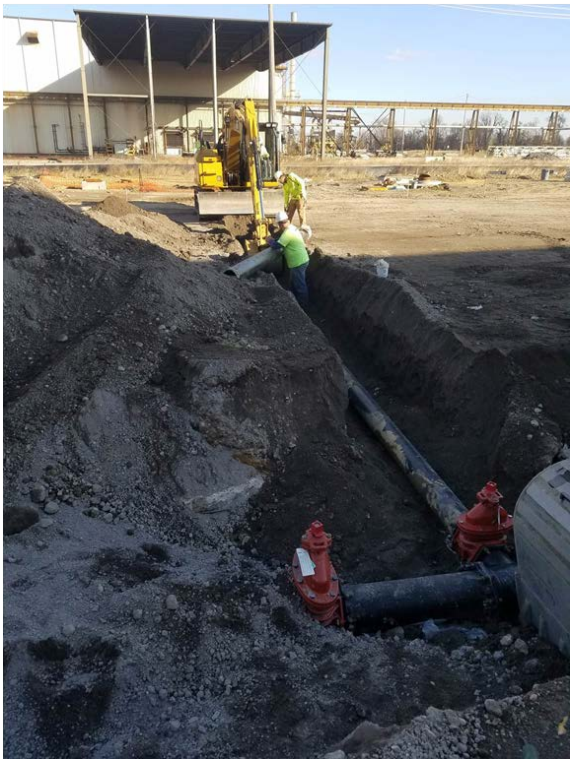


Photo 27: View of utility installation.

Photo 28: View of utility installation.

Photo 29: View of building construction in progress.

Photo 30: View of building slab construction within the newly erected building.

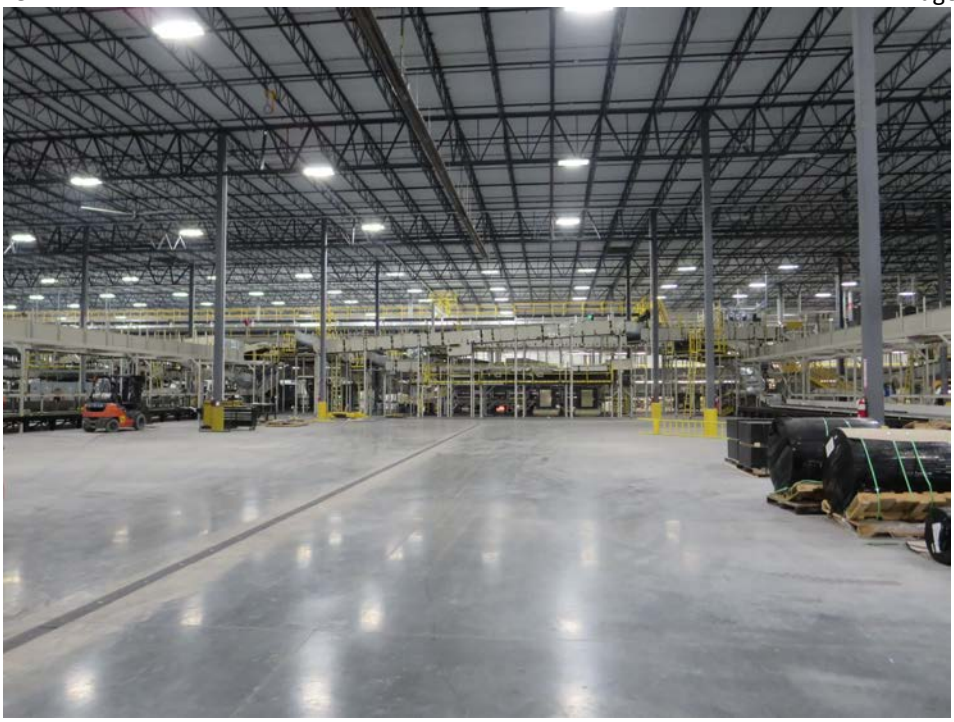


Photo 31: View of main building interior.

Photo 32: View of the completed main building exterior.

Photo 33: View of the completed Gateway Building exterior.

Photo 34: View of geotextile fabric laid in future landscape area.

Photo 35: Alternate view of the geotextile fabric in future landscape area.

Photo 36: View of placement of clean fill material in landscape area.

Photo 37: View of completed placement of clean fill cap in landscape area.

Photo 38: View of clean fill in landscape area covered with seed and straw.

Photo 39: View of road base and asphalt in a hardscape area.

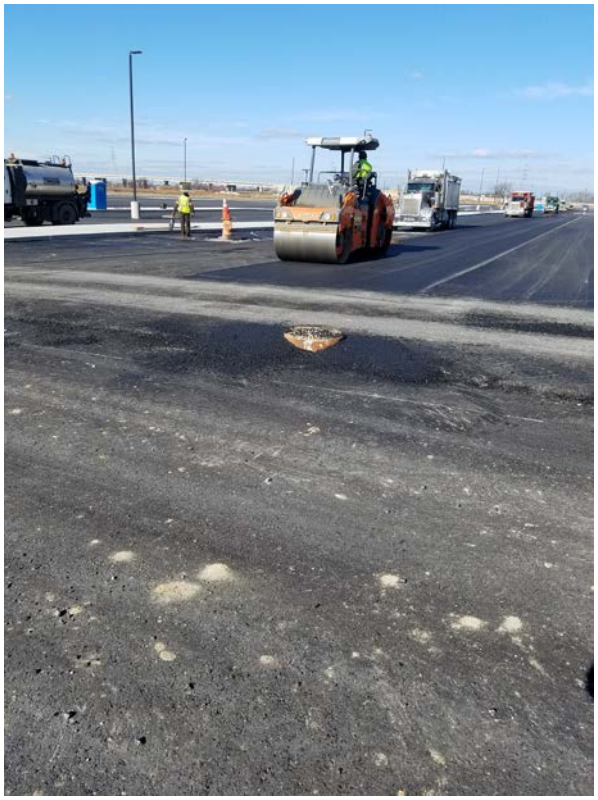


Photo 40: View of paving activities.

Photo 41: View of paving activities.

Photo 42: View of paved areas.

Photo 43: View of completed paved and capped landscaped areas.

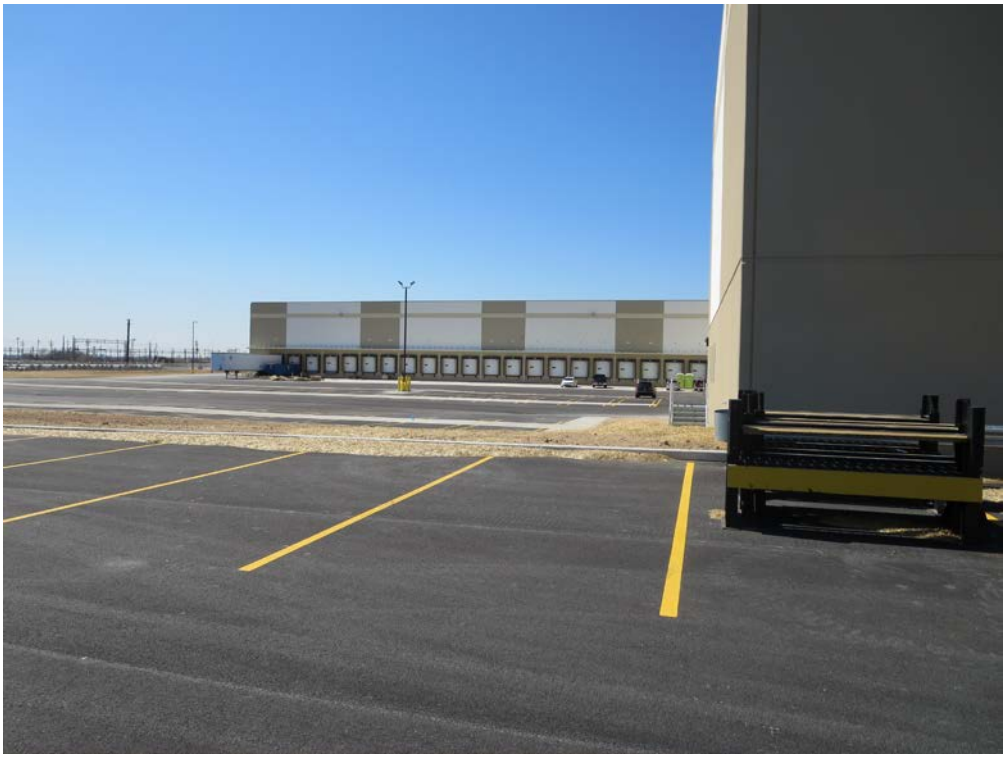


Photo 44: Alternate view of completed paved and capped landscaped areas.

Photo 45: View of construction of storm water management (SWM) facility No. 1.

Photo 46: View of workers laying geotextile fabric for SWM facility No. 1.

Photo 47: View of SWM facility No. 1.

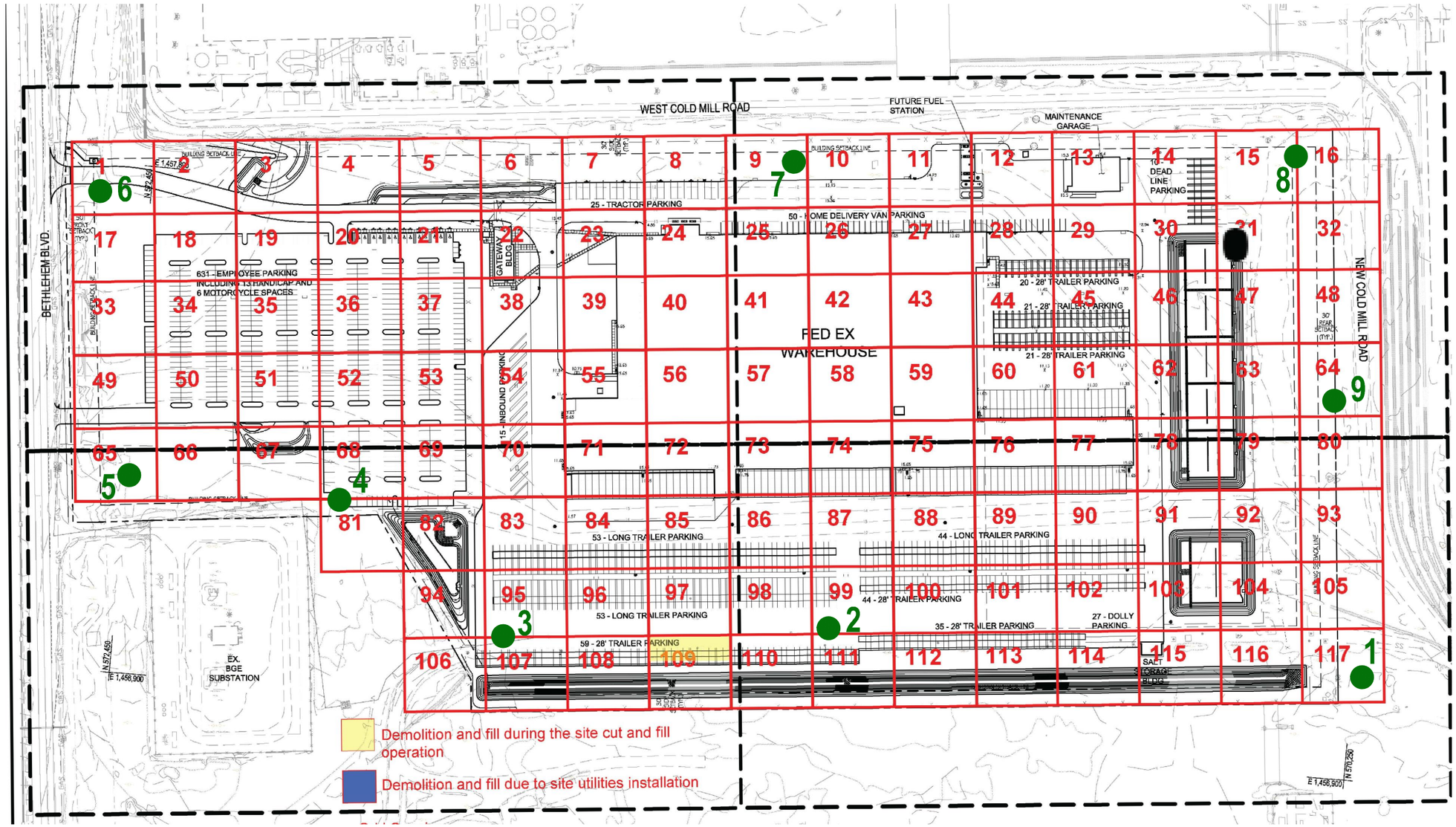
Photo 48: View of construction of SWM facility No. 2.

Photo 49: Alternate view of construction of SWM facility 2.

Photo 50: View of open channel (SWM facility No. 3).

APPENDIX D

Dust Monitoring Location Map



SOURCE: PLAN ADAPTED FROM A PLAN TITLED *A NEW FACILITY FOR FEDEX GROUND EAST BALTIMORE FACILITY #209*, PREPARED BY KCI TECHNOLOGIES, DATED OCTOBER 15, 2015

LEGEND

1 **DUST MONITORING LOCATIONS**

NORTH

0' 50' 100' 200' 400'

SCALE: 1"=200'

GEO-TECHNOLOGY ASSOCIATES, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
3445-A BOX HILL CORPORATE CENTER DRIVE
ABINGDON, MARYLAND 21009
410-515-9446
FAX: 410-515-4895
WWW.GTAENG.COM

MONITORING LOCATION PLAN

FEDEX GROUND EAST BALTIMORE FACILITY #209

BALTIMORE COUNTY, MARYLAND

JOB NO.	151454	SCALE:	1"=200'	DATE:	APRIL 2016	DRAWN BY:	CLO	REVIEW BY:	BGM	FIGURE:	1

G:\GTA\151454-FedEx SPT\Plot\151454-N449 Demolition Progress Plan.dwg

APPENDIX E

Documentation for SP-4 Area Excavation

EXHIBIT 'A'

METES AND BOUNDS DESCRIPTION

Beginning for the same at a point distant South 56 degrees 40 minutes 25 seconds East 239.28 feet from the end of the first or South 05 degrees 34 minutes 03 seconds East 2248.88 foot line of that parcel of land by ground lease dated May 14, 2015, was recorded among the Land Records of Baltimore County in Liber JLE 36246, folio 030, granted and conveyed by Sparrows Point Terminal, LLC to Scannell Properties #191, LLC; thence leaving the point of beginning, with all bearings being referenced to the aforementioned Deed (JLE 36246/030),

1. South 84 degrees 25 minutes 57 seconds West 273.00 feet; thence
2. North 05 degrees 34 minutes 03 seconds West 136.00 feet; thence
3. North 84 degrees 25 minutes 57 seconds East 273.00 feet; thence
4. South 05 degrees 34 minutes 03 seconds East 136.00 feet to the point of beginning. Containing 37,128 square feet or 0.8523 acres of land more or less.

Being part of that parcel of land by ground lease dated May 14, 2015, was recorded among the Land Records of Baltimore County in Liber JLE 36246, folio 030, granted and conveyed by Sparrows Point Terminal, LLC to Scannell Properties #191, LLC

Analytical Report for

GTA - Abingdon

Certificate of Analysis No.: 15101321

Project Manager: Nick Guns

Project Name : Sparrows Point-A-1

Project Location: Baltimore, MD

Project ID : 151454

October 14, 2015

Phase Separation Science, Inc.

6630 Baltimore National Pike
Baltimore, MD 21228
Phone: (410) 747-8770
Fax: (410) 788-8723

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

October 14, 2015

Nick Guns
GTA - Abingdon
3445-A Box Hill Corporate Ctr. Dr.
Abingdon, MD 21009

Reference: PSS Work Order(s) No: **15101321**
Project Name: Sparrows Point-A-1
Project Location: Baltimore, MD
Project ID.: 151454

Dear Nick Guns :

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order(s) numbered **15101321**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on November 17, 2015, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt , the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

Sample Summary

Client Name: GTA - Abingdon

Project Name: Sparrows Point-A-1

Work Order Number(s): 15101321

Project ID: 151454

The following samples were received under chain of custody by Phase Separation Science (PSS) on 10/13/2015 at 03:00 pm

Lab Sample Id	Sample Id	Matrix	Date/Time Collected
15101321-001	North	SOIL	10/13/15 12:30
15101321-002	South	SOIL	10/13/15 12:40
15101321-003	East	SOIL	10/13/15 12:35
15101321-004	West	SOIL	10/13/15 12:45
15101321-005	Bottom-1	SOIL	10/13/15 13:00
15101321-006	Bottom-2	SOIL	10/13/15 13:15
15101321-007	Bottom-3	SOIL	10/13/15 13:30

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 15101321
GTA - Abingdon, Abingdon, MD
October 14, 2015

Project Name: Sparrows Point-A-1
Project Location: Baltimore, MD
Project ID: 151454

Sample ID: North **Date/Time Sampled: 10/13/2015 12:30** **PSS Sample ID: 15101321-001**
Matrix: SOIL **Date/Time Received: 10/13/2015 15:00** **% Solids: 76**

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**24**	mg/kg	13		1	10/13/15	10/13/15 22:35	1029

Sample ID: South **Date/Time Sampled: 10/13/2015 12:40** **PSS Sample ID: 15101321-002**
Matrix: SOIL **Date/Time Received: 10/13/2015 15:00** **% Solids: 74**

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/kg	14		1	10/13/15	10/13/15 23:00	1029

Sample ID: East **Date/Time Sampled: 10/13/2015 12:35** **PSS Sample ID: 15101321-003**
Matrix: SOIL **Date/Time Received: 10/13/2015 15:00** **% Solids: 75**

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**63**	mg/kg	13		1	10/13/15	10/13/15 23:25	1029

Sample ID: West **Date/Time Sampled: 10/13/2015 12:45** **PSS Sample ID: 15101321-004**
Matrix: SOIL **Date/Time Received: 10/13/2015 15:00** **% Solids: 78**

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/kg	13		1	10/13/15	10/13/15 23:50	1029

Sample ID: Bottom-1 **Date/Time Sampled: 10/13/2015 13:00** **PSS Sample ID: 15101321-005**
Matrix: SOIL **Date/Time Received: 10/13/2015 15:00** **% Solids: 77**

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/kg	13		1	10/13/15	10/14/15 00:15	1029

Sample ID: Bottom-2 **Date/Time Sampled: 10/13/2015 13:15** **PSS Sample ID: 15101321-006**
Matrix: SOIL **Date/Time Received: 10/13/2015 15:00** **% Solids: 78**

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/kg	13		1	10/13/15	10/14/15 00:40	1029

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 15101321

GTA - Abingdon, Abingdon, MD

October 14, 2015

Project Name: Sparrows Point-A-1
Project Location: Baltimore, MD
Project ID: 151454

Sample ID: Bottom-3	**Date/Time Sampled: 10/13/2015 13:30**	**PSS Sample ID: 15101321-007**
Matrix: SOIL	**Date/Time Received: 10/13/2015 15:00**	**% Solids: 78**

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/kg	13		1	10/13/15	10/14/15 01:06	1029

Case Narrative Summary

Client Name: GTA - Abingdon

Project Name: Sparrows Point-A-1

Work Order Number(s): 15101321
Project ID: 151454

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

The analyses of chlorine, pH, dissolved oxygen, temperature and sulfite for drinking water and non-potable samples tested for compliance have a maximum holding time of 15 minutes. As such, all laboratory analyses for these analytes exceed holding times.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Analytical Data Package Information Summary

Work Order(s): 15101321
Report Prepared For: GTA - Abingdon, Abingdon, MD
Project Name: Sparrows Point-A-1
Project Manager: Nick Guns

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
ASTM D2216 05	North	Initial	15101321-001	1051	S	126839	126839	10/13/2015	10/13/2015 17:34	10/13/2015 17:34
	South	Initial	15101321-002	1051	S	126839	126839	10/13/2015	10/13/2015 17:34	10/13/2015 17:34
	East	Initial	15101321-003	1051	S	126839	126839	10/13/2015	10/13/2015 17:34	10/13/2015 17:34
	West	Initial	15101321-004	1051	S	126839	126839	10/13/2015	10/13/2015 17:34	10/13/2015 17:34
	Bottom-1	Initial	15101321-005	1051	S	126839	126839	10/13/2015	10/13/2015 17:34	10/13/2015 17:34
	Bottom-2	Initial	15101321-006	1051	S	126839	126839	10/13/2015	10/13/2015 17:34	10/13/2015 17:34
	Bottom-3	Initial	15101321-007	1051	S	126839	126839	10/13/2015	10/13/2015 17:34	10/13/2015 17:34
SW-846 8015 C	North	Initial	15101321-001	1029	S	57719	126867	10/13/2015	10/13/2015 17:17	10/13/2015 22:35
	South	Initial	15101321-002	1029	S	57719	126867	10/13/2015	10/13/2015 17:17	10/13/2015 23:00
	East	Initial	15101321-003	1029	S	57719	126867	10/13/2015	10/13/2015 17:17	10/13/2015 23:25
	West	Initial	15101321-004	1029	S	57719	126867	10/13/2015	10/13/2015 17:17	10/13/2015 23:50
	Bottom-1	Initial	15101321-005	1029	S	57719	126867	10/13/2015	10/13/2015 17:17	10/14/2015 00:15
	Bottom-2	Initial	15101321-006	1029	S	57719	126867	10/13/2015	10/13/2015 17:17	10/14/2015 00:40
	Bottom-3	Initial	15101321-007	1029	S	57719	126867	10/13/2015	10/13/2015 17:17	10/14/2015 01:06
	57719-1-BKS	BKS	57719-1-BKS	1029	S	57719	126867	--------	10/13/2015 17:17	10/13/2015 20:54
	57719-1-BLK	BLK	57719-1-BLK	1029	S	57719	126867	--------	10/13/2015 17:17	10/13/2015 20:29
	57719-1-BSD	BSD	57719-1-BSD	1029	S	57719	126867	--------	10/13/2015 17:17	10/13/2015 21:19
	12113-B1-20' S	MS	15100715-003 S	1029	S	57719	126867	10/06/2015	10/13/2015 17:17	10/13/2015 21:45
	12113-B1-20' SD	MSD	15100715-003 SD	1029	S	57719	126867	10/06/2015	10/13/2015 17:17	10/13/2015 22:10

PHASE SEPARATION SCIENCE, INC.

QC Summary 15101321

GTA - Abingdon
Sparrows Point-A-1

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 126867 Matrix: Soil Date Prep: 10/13/2015
PSS Sample ID: 15101321-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	74		42-129	%	10/13/15 22:35

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 126867 Matrix: Soil Date Prep: 10/13/2015
PSS Sample ID: 15101321-002

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	67		42-129	%	10/13/15 23:00

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 126867 Matrix: Soil Date Prep: 10/13/2015
PSS Sample ID: 15101321-003

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	67		42-129	%	10/13/15 23:25

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 126867 Matrix: Soil Date Prep: 10/13/2015
PSS Sample ID: 15101321-004

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	65		42-129	%	10/13/15 23:50

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 126867 Matrix: Soil Date Prep: 10/13/2015
PSS Sample ID: 15101321-005

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	60		42-129	%	10/14/15 00:15

PHASE SEPARATION SCIENCE, INC.

QC Summary 15101321

GTA - Abingdon
Sparrows Point-A-1

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 126867 Matrix: Soil Date Prep: 10/13/2015
PSS Sample ID: 15101321-006

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	61		42-129	%	10/14/15 00:40

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 126867 Matrix: Soil Date Prep: 10/13/2015
PSS Sample ID: 15101321-007

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	69		42-129	%	10/14/15 01:06

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

PHASE SEPARATION SCIENCE, INC.

QC Summary 15101321

GTA - Abingdon
Sparrows Point-A-1

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 126867 Matrix: Solid Date Prep: 10/13/15
MB Sample Id: 57719-1-BLK LCS Sample Id: 57719-1-BKS LCSD Sample Id: 57719-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-DRO (Diesel Range Organics)	<10.11	33.72	27.35	81	27.37	83	56-117	0	25	mg/kg	10/13/15 20:54	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date
o-Terphenyl	58		65		68		42-129	%	10/13/15 20:54

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

(1) *CLIENT: GTA *OFFICE LOC.: ABWGDON, MD

*PROJECT MGR: NICK GUNS *PHONE NO.: (410) 515-9446

EMAIL: NGUNS@GTAENG.COM FAX NO.: ( )

*PROJECT NAME: SPARROWS POINT - A-1 PROJECT NO.: 151454

SITE LOCATION: BALTIMORE, MD P.O. NO.: 151454

SAMPLER(S): NBG DW CERT NO.:

PSS Work Order #: 15101321 PAGE 1 OF 1

Matrix Codes: SW=Surface Wtr DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr O=Oil S=Soil L=Liquid SOL=Solid A=Air WI=Wipe

(2)

LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used	Analysis/ Method Required (3) * TPH - DRO	REMARKS
1	NORTH	10/13/15	1230	S	1	C		X	
2	SOUTH		1240						
3	EAST		1235						
4	WEST		1245						
5	BOTTOM-1		1300						
6	BOTTOM-2		1315						
7	BOTTOM-3		1330						

(5)

Relinquished By: (1)	Date	Time	Received By:
	10/13/15	1500	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

*Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☑ Next Day ☐ Emergency ☐ Other

Data Deliverables Required:
COA ☐ QC SUMM ☐ CLP LIKE ☐ OTHER

# of Coolers: 1

Custody Seal: ABS

Ice Present: YES Temp: 13°C

Shipping Carrier: CLIENT

Special Instructions:
TIER 2

DW COMPLIANCE? YES ☐

EDD FORMAT TYPE

STATE RESULTS REPORTED TO:
MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

Phase Separation Science, Inc

Sample Receipt Checklist

Work Order #	15101321	**Received By**	Rachel Davis
Client Name	GTA - Abingdon	**Date Received**	10/13/2015 03:00:00 PM
Project Name	Sparrows Point-A-1	**Delivered By**	Client
Project Number	151454	**Tracking No**	Not Applicable
Disposal Date	11/17/2015	**Logged In By**	Rachel Davis

Shipping Container(s)

No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	13
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Documentation

		Sampler Name	NBG
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Total No. of Samples Received 7

Total No. of Containers Received 7

Preservation

Metals	(pH<2)	N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	N/A
Do VOA vials have zero headspace?		N/A
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Rachel Davis — Date: 10/13/2015

Rachel Davis

PM Review and Approval: — Date: 10/13/2015

Simon Crisp

APPENDIX F

Imported Clean Fill Material Documentation

Myers, Benjamin

From: Barbara Brown -MDE- <barbara.brown1@maryland.gov>
Sent: Thursday, December 15, 2016 3:21 PM
To: Myers, Benjamin
Subject: Re: Fedex

Hi Ben

The material noted in the certification from Sugar Hill Road, LLC is acceptable for use a clean fill material at the Sparrows Point site.

Barbara Brown

On Thu, Dec 15, 2016 at 3:09 PM, Myers, Benjamin <BMyers@gtaeng.com> wrote:

Letter for the Clay pit.

Thanks!

Benjamin G. Myers, P.E.
Associate

GEO-TECHNOLOGY ASSOCIATES, INC.
3445-A Box Hill Corporate Center Dr.
Abingdon, Maryland 21009
Tel: 410-515-9446 Fax: 410-372-1503
Cell: (443) 286-0765
Visit us at www.gtaeng.com

MRA: Planners • Architects • Landscape Architects
Civil, Structural & MEP Engineers • Surveyors

GTA: Geotechnical Engineers • Environmental
Consultants • Construction Observation & Testing

Offices: Abingdon, Towson, Laurel, Frederick & Waldorf, MD
Georgetown & New Castle, DE • York & Quakertown, PA
Somerset, NJ • Sterling, VA • Charlotte, NC

Celebrating 25 years of service

--
Barbara Brown
MDE-LRP-VCP Section Head
direct 410 537 3212
general 410 537 3493

Click here to complete a three question customer experience survey.

Sugar Hill Road, LLC

P.O. Box 250
Aberdeen, MD 21001
(410) 879-1822

December 15, 2016

Ref: Mountain Road Pit
MDE Surface Mine Permit #86-SP-0232-1

TO WHOM IT MAY CONCERN;

The above site is a "CLAY MINE" located at MD RT#152 and Sugar Hill Road in Joppa Maryland. The site is used to mine clean virgin clay for use in core trenches, SWM ponds and the like. To the best of our knowledge, the clay mined at our facility has not been contaminated by controlled hazardous substances or oil. The current MDE issued permit expires on 11/30/2020. A copy of the MDE permit is attached hereto.

To date there has not been any material imported for reclamation. The final reclamation plan for this site is the creation of a residential development using onsite material only.

If you have any questions please feel free to call me at (410) 698-9200.

Yours truly,

Jim Halsey

JH/ww
file:mountainrdpit

Maryland
Department of
the Environment

Larry Hogan
Governor

Boyd Rutherford
Lieutenant Governor

Ben Grumbles
Secretary

February 29, 2016

Mr. Jim Halsey
Sugar Hill Road LLC
2 Bush Chapel Road
Aberdeen, MD 21001

RE: Mountain Road Pit
No. 86-SP-0232
Permit Renewal

Dear Mr. Halsey:

Enclosed please find the Renewal of Surface Mine Permit No. 86-SP-0232. The review of this renewal has been completed pursuant to Title 15, Subtitle 8 of the Environment Article §5-204, Annotated Code of Maryland and COMAR 26.21.01.01 through .30.

You are authorized to conduct surface mining at the site described in the permit. Please become familiar with all conditions attached to the permit.

Your cooperation throughout the process has been appreciated. Please call me if you have any questions at (410) 537-3557.

Sincerely,

C. Edmon Larrimore, Program Manager
Mining Program

Enclosure

MARYLAND DEPARTMENT OF THE ENVIRONMENT
LAND MANAGEMENT ADMINISTRATION

SURFACE MINING PERMIT

RENEWAL

SURFACE MINE PERMIT NO.: 86-SP-0232-1

PERMIT EFFECTIVE DATE: November 19, 1985

PERMIT EXPIRATION DATE: November 30, 2020

Pursuant to Title 15, Subtitle 8 of the Environment Article, Annotated Code of Maryland (2014 Replacement Volume and 2015 Supplement), the Land Management Administration hereinafter referred to as "the Administration" hereby authorizes the renewal of the above referenced surface mining permit;

PERMITTEE: Sugar Hill Road, LLC
2 Bush Chapel Rd
Aberdeen, MD 21001

The permittee is authorized to engage in a Surface Mining Operation known as Mountain Road Pit and located: from US 40 to Mountain Rd, 0.5 miles on right on Sugar Hill Rd in Harford County; as described in the approved Mining and Reclamation Plan dated November 30, 2015 and drawings dated August 26, 2010 and prepared by Morris & Ritchie Associates, Inc. The permit area shall not exceed 24.5 acres as shown on the aforementioned Mining and Reclamation Plan and drawings.

1. Other Authorizations -- This permit is issued in addition to, and not in substitution of, the requirements of other permits or authorizations granted for the surface mining operation. Issuance of this permit does not relieve the permittee of the obligation to obtain and comply with all other required authorizations.

2. Permit Transfer -- The permit is valid only for use by the Permittee and may not be transferred to another unless written permission for such transfer is obtained from the Administration.

3. Permit on Site -- A copy of the approved Mining and Reclamation Plan, and the permit are to be kept at the mining site available for reference during the period that the permit is in effect.

4. Permit Modification -- Any changes in land areas stipulated in the permit, mining or reclamation practices, schedule of reclamation, and planned land use must have the prior written approval of the Administration. The approval shall be requested by submission of an application for a permit modification or new application.

5. Departmental Modification -- The Administration may modify the permit upon giving the permittee notice and providing an opportunity for an administrative hearing.

6. Compliance with Law/Regulation and Permit -- All surface mining operations shall be conducted in compliance with Environment Article 15-801 through 15-834, COMAR 26.21.01 through 26.21.04 inclusive, and the surface mine permit. The permit may be suspended or revoked by the Administration for violation of the surface mine law, regulations, this permit, or any other required approval. The location, dimensions, and type of all structures, reclamation practices and all excavation and filling shall be in accordance with the approved Mining and Reclamation Plan and map.

7. Abandoned Operation -- The surface mining operation shall be considered abandoned if no mineral has been produced or overburden removed for a period of one (1) year and the operator has vacated the site of the operation without having complied with all the requirements of the permit.

8. Halted Operation -- The surface mining operation shall be considered halted if active work has ceased temporarily due to weather or market conditions, or other reasonable cause. An operation may not be halted for a period exceeding twenty-four (24) months. All pollution controls shall be maintained during this period.

9. Staking Permitted Area -- The permittee shall mark each corner of the perimeter of the permitted area by placing permanent markers. In addition, the permittee shall place markers along the perimeter of the permitted area no more than two hundred feet (200') apart. The markers shall be no less than three feet (3') above the ground. All of the required markers shall be in place no later than ten (10) days from the effective date of this permit and shall be maintained by the permittee throughout the life of the permit.

10. Haul and Access Roads -- No mud may be tracked onto the public roads. All haul and access roads shall be treated for dust and mud control by the permittee as required by approved Mining and Reclamation Plan and drawings. Should these methods fail to control the dust and mud, the permittee shall treat the roads as directed by the Administration.

11. Completion of Reclamation -- Reclamation activities shall be completed in accordance with the approved Mining and Reclamation Plan and drawings no later than one (1) year after termination of mining on any segment of permit area.

12. Annual Mining and Reclamation Report -- At the end of each calendar year, but before March 31 of the succeeding year, the permittee shall submit an annual mining and reclamation report to the Administration on a form prescribed and furnished by the Administration.

13. Compliance with Non-Tidal Wetlands Regulations -- Maintenance, including excavation or dredging, of wash ponds or sediment control structures is authorized under this permit in accordance with COMAR 08.05.04. Non-tidal Wetlands created incidental to the mining activity authorized under this permit may be reclaimed in accordance with the approved Mining and Reclamation Plan. Any wetlands remaining upon completion of the reclamation authorized by this permit will be regulated pursuant to COMAR 26.23.01 through .06.

14. Annual Permit Fee: The permittee shall remit an annual permit fee of $294.00. The annual fee is due by November 30th, of each year. Failure to submit the fee by the prescribed date shall be considered as a violation of this permit subject to further administrative action.

15. Performance Bond: The required bond(s) for the above referenced permit consist of Certificate of Deposit number 2315033591 issued by The Peoples Bank of Oxford in the amount of $30,650.00. Failure to maintain the required bond may result in the suspension/revocation of the permit and forfeiture of the bond.

Hilary Miller

HILARY MILLER, DIRECTOR
LAND MANAGEMENT ADMINISTRATION

3/8/16
DATE

Myers, Benjamin

From: Barbara Brown -MDE- <barbara.brown1@maryland.gov>
Sent: Wednesday, December 14, 2016 3:21 PM
To: Myers, Benjamin
Cc: Jennifer Sohns -MDE-
Subject: Re: FW: Revised Report for WO 16120215 Project Name: 151454

Hello Ben

Based upon a review of the sampling results the material sampled may be used as clean topsoil fill at the Fedex site at Sparrows Point. This approval only applies to the material in the piles sampled and is void if any new material has been added to the piles.

If you have any questions please contact me.

Barbara Brown
MDE Project Coordinator

On Tue, Dec 13, 2016 at 1:13 PM, Myers, Benjamin <BMyers@gtaeng.com> wrote:
Hi Barbara. The revised report is appended. Let me know if you have any questions.

Thanks,
Ben

Benjamin G. Myers, P.E.
Associate

GEO-TECHNOLOGY ASSOCIATES, INC.
3445-A Box Hill Corporate Center Dr.
Abingdon, Maryland 21009
Tel: 410-515-9446 Fax: 410-372-1503
Cell: (443) 286-0765 or (717) 858-7828
Visit us at www.gtaeng.com

-----Original Message-----
From: Betsy Colson [mailto:reporting@phaseonline.com]
Sent: Tuesday, December 13, 2016 12:45 PM
To: Myers, Benjamin
Cc: reporting@phaseonline.com
Subject: Revised Report for WO 16120215 Project Name: 151454

The report for WO 16120215, Project ID: 151454 Project Name: 151454 is attached and is revised to lower SVOA reporting limits.

We thank you for selecting Phase Separation Science (PSS) to serve your analytical needs. If you need further assistance please contact:

Phase Separation Science
Email: reporting@phaseonline.com
Phone: (410) 747-8770
Fax: (410) 788-8723

--
Barbara Brown
MDE-LRP-VCP Section Head
direct 410 537 3212
general 410 537 3493

Analytical Report for

GTA - Abingdon

Certificate of Analysis No.: 16120215

Project Manager: Ben Myers

Project Name : 151454

Project Location: Middle River

Project ID : 151454

December 13, 2016

Phase Separation Science, Inc.

6630 Baltimore National Pike
Baltimore, MD 21228
Phone: (410) 747-8770
Fax: (410) 788-8723

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

December 13, 2016

Ben Myers
GTA - Abingdon
3445-A Box Hill Corporate Ctr. Dr.
Abingdon, MD 21009

Reference: PSS Work Order(s) No: **16120215**
Project Name: 151454
Project Location: Middle River
Project ID.: 151454

Dear Ben Myers :

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order(s) numbered **16120215**. This report has been revised to include lower reporting limits for SVOCs. This report version includes revised sample results. This report cancels and supersedes report version 1.000 dated December 9, 2016.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on January 6, 2017, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt , the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Dan Prucnal
Laboratory Manager

Sample Summary

Client Name: GTA - Abingdon

Project Name: 151454

Work Order Number(s): 16120215

Project ID: 151454

The following samples were received under chain of custody by Phase Separation Science (PSS) on 12/02/2016 at 04:57 pm

Lab Sample Id	Sample Id	Matrix	Date/Time Collected
16120215-001	TS-1	SOIL	12/02/16 09:30
16120215-002	TS-2	SOIL	12/02/16 10:00
16120215-003	TS-3	SOIL	12/02/16 10:25
16120215-004	TS-4	SOIL	12/02/16 10:45
16120215-005	TS-5	SOIL	12/02/16 11:05
16120215-006	TS-6	SOIL	12/02/16 11:15
16120215-007	TS-7	SOIL	12/02/16 11:45
16120215-008	TS-8	SOIL	12/02/16 12:00
16120215-009	TS-9	SOIL	12/02/16 12:25
16120215-010	TS-10	SOIL	12/02/16 12:45
16120215-011	TS-11	SOIL	12/02/16 13:05
16120215-012	TS-12	SOIL	12/02/16 13:15
16120215-013	TS-13	SOIL	12/02/16 13:30
16120215-014	TS-14	SOIL	12/02/16 13:45
16120215-015	TS-15	SOIL	12/02/16 14:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Sample Summary
Client Name: GTA - Abingdon
Project Name: 151454

Work Order Number(s): 16120215

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-1 **Date/Time Sampled: 12/02/2016 09:30** **PSS Sample ID: 16120215-001**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 84**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.5		1	12/05/16	12/06/16 21:26	1033
Arsenic	**3.2**	mg/kg	0.50		1	12/05/16	12/07/16 17:23	1033
Beryllium	ND	mg/kg	2.5		1	12/05/16	12/06/16 21:26	1033
Cadmium	ND	mg/kg	2.5		1	12/05/16	12/06/16 21:26	1033
Chromium	**45**	mg/kg	2.5		1	12/05/16	12/06/16 21:26	1033
Copper	**29**	mg/kg	2.5		1	12/05/16	12/07/16 17:23	1033
Lead	**41**	mg/kg	2.5		1	12/05/16	12/06/16 21:26	1033
Mercury	**0.15**	mg/kg	0.099		1	12/05/16	12/06/16 21:26	1033
Nickel	**24**	mg/kg	2.5		1	12/05/16	12/07/16 17:23	1033
Selenium	ND	mg/kg	2.5		1	12/05/16	12/06/16 21:26	1033
Silver	ND	mg/kg	2.5		1	12/05/16	12/06/16 21:26	1033
Thallium	ND	mg/kg	2.0		1	12/05/16	12/06/16 21:26	1033
Zinc	**46**	mg/kg	9.9		1	12/05/16	12/06/16 21:26	1033

Chromium, Hexavalent — Analytical Method: SW-846 7196 A — Preparation Method: SW3060A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chromium, Hexavalent	ND	mg/kg	1.2		1	12/07/16	12/08/16 15:44	1053

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

DF/HF - No. 2/diesel fuel and heavier fuel/oil patterns observed in sample.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**84**	mg/kg	12	DF	1	12/07/16	12/08/16 00:55	1060

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	120		1	12/05/16	12/06/16 05:25	1035

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No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-1 **Date/Time Sampled: 12/02/2016 09:30** **PSS Sample ID: 16120215-001**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 84**

Polychlorinated Biphenyls

Analytical Method: SW-846 8082 A
Preparation Method: SW3550C
Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.058		1	12/06/16	12/07/16 10:09	1029
PCB-1221	ND	mg/kg	0.058		1	12/06/16	12/07/16 10:09	1029
PCB-1232	ND	mg/kg	0.058		1	12/06/16	12/07/16 10:09	1029
PCB-1242	ND	mg/kg	0.058		1	12/06/16	12/07/16 10:09	1029
PCB-1248	ND	mg/kg	0.058		1	12/06/16	12/07/16 10:09	1029
PCB-1254	ND	mg/kg	0.058		1	12/06/16	12/07/16 10:09	1029
PCB-1260	ND	mg/kg	0.058		1	12/06/16	12/07/16 10:09	1029

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December 13, 2016

Project Name: 151454
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Project ID: 151454

Sample ID: TS-1 **Date/Time Sampled: 12/02/2016 09:30** **PSS Sample ID: 16120215-001**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 84**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Acenaphthylene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Acetophenone	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Anthracene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Atrazine	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Benzo(a)anthracene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Benzo(a)pyrene	**81**	ug/kg	20		1	12/07/16	12/09/16 05:24	1055
Benzo(b)fluoranthene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Benzo(g,h,i)perylene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Benzo(k)fluoranthene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Biphenyl (Diphenyl)	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Butyl benzyl phthalate	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
bis(2-chloroethoxy) methane	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
bis(2-chloroethyl) ether	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
4-Bromophenylphenyl ether	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Di-n-butyl phthalate	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Carbazole	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Caprolactam	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
4-Chloro-3-methylphenol	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
4-Chloroaniline	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
2-Chloronaphthalene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
2-Chlorophenol	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Chrysene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Dibenz(a,h)anthracene	ND	ug/kg	20		1	12/07/16	12/09/16 05:24	1055
Dibenzofuran	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
3,3-Dichlorobenzidine	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
2,4-Dichlorophenol	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-1 **Date/Time Sampled: 12/02/2016 09:30** **PSS Sample ID: 16120215-001**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 84**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Dimethyl phthalate	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
2,4-Dimethylphenol	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
2,4-Dinitrophenol	ND	ug/kg	400		1	12/07/16	12/09/16 05:24	1055
2,4-Dinitrotoluene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
2,6-Dinitrotoluene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Fluoranthene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Fluorene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Hexachlorobenzene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Hexachlorobutadiene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Hexachlorocyclopentadiene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Hexachloroethane	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Isophorone	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
2-Methylnaphthalene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
2-Methylphenol	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
3&4-Methylphenol	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Naphthalene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
2-Nitroaniline	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
3-Nitroaniline	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
4-Nitroaniline	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Nitrobenzene	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
2-Nitrophenol	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
4-Nitrophenol	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	20		1	12/07/16	12/09/16 05:24	1055
N-Nitrosodiphenylamine	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Di-n-octyl phthalate	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Pentachlorophenol	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Phenanthrene	**210**	ug/kg	200		1	12/07/16	12/09/16 05:24	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-1 | **Date/Time Sampled: 12/02/2016 09:30** | **PSS Sample ID: 16120215-001**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 84**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Pyrene	**220**	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
Pyridine	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
2,4,5-Trichlorophenol	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055
2,4,6-Trichlorophenol	ND	ug/kg	200		1	12/07/16	12/09/16 05:24	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-2 **Date/Time Sampled: 12/02/2016 10:00** **PSS Sample ID: 16120215-002**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 85**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.3		1	12/05/16	12/06/16 22:26	1033
Arsenic	**3.1**	mg/kg	0.46		1	12/05/16	12/06/16 22:26	1033
Beryllium	ND	mg/kg	2.3		1	12/05/16	12/06/16 22:26	1033
Cadmium	ND	mg/kg	2.3		1	12/05/16	12/06/16 22:26	1033
Chromium	**55**	mg/kg	2.3		1	12/05/16	12/06/16 22:26	1033
Copper	**25**	mg/kg	2.3		1	12/05/16	12/06/16 22:26	1033
Lead	**24**	mg/kg	2.3		1	12/05/16	12/06/16 22:26	1033
Mercury	ND	mg/kg	0.092		1	12/05/16	12/06/16 22:26	1033
Nickel	**28**	mg/kg	2.3		1	12/05/16	12/06/16 22:26	1033
Selenium	ND	mg/kg	2.3		1	12/05/16	12/06/16 22:26	1033
Silver	ND	mg/kg	2.3		1	12/05/16	12/06/16 22:26	1033
Thallium	ND	mg/kg	1.8		1	12/05/16	12/06/16 22:26	1033
Zinc	**46**	mg/kg	9.2		1	12/05/16	12/06/16 22:26	1033

Chromium, Hexavalent — Analytical Method: SW-846 7196 A — Preparation Method: SW3060A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chromium, Hexavalent	ND	mg/kg	1.2		1	12/07/16	12/08/16 15:58	1053

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

DF/HF - No. 2/diesel fuel and heavier fuel/oil patterns observed in sample.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**78**	mg/kg	12	DF	1	12/07/16	12/08/16 17:29	1060

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	110		1	12/05/16	12/06/16 05:56	1035

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No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-2 **Date/Time Sampled: 12/02/2016 10:00** **PSS Sample ID: 16120215-002**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 85**

Polychlorinated Biphenyls — Analytical Method: SW-846 8082 A — Preparation Method: SW3550C — Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.060		1	12/06/16	12/07/16 10:38	1029
PCB-1221	ND	mg/kg	0.060		1	12/06/16	12/07/16 10:38	1029
PCB-1232	ND	mg/kg	0.060		1	12/06/16	12/07/16 10:38	1029
PCB-1242	ND	mg/kg	0.060		1	12/06/16	12/07/16 10:38	1029
PCB-1248	ND	mg/kg	0.060		1	12/06/16	12/07/16 10:38	1029
PCB-1254	ND	mg/kg	0.060		1	12/06/16	12/07/16 10:38	1029
PCB-1260	ND	mg/kg	0.060		1	12/06/16	12/07/16 10:38	1029

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December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-2 **Date/Time Sampled: 12/02/2016 10:00** **PSS Sample ID: 16120215-002**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 85**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Acenaphthylene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Acetophenone	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Anthracene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Atrazine	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Benzo(a)anthracene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Benzo(a)pyrene	**94**	ug/kg	19		1	12/07/16	12/09/16 05:52	1055
Benzo(b)fluoranthene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Benzo(g,h,i)perylene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Benzo(k)fluoranthene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Biphenyl (Diphenyl)	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Butyl benzyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
bis(2-chloroethoxy) methane	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
bis(2-chloroethyl) ether	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
4-Bromophenylphenyl ether	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Di-n-butyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Carbazole	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Caprolactam	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
4-Chloro-3-methylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
4-Chloroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
2-Chloronaphthalene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
2-Chlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Chrysene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Dibenz(a,h)anthracene	ND	ug/kg	19		1	12/07/16	12/09/16 05:52	1055
Dibenzofuran	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
3,3-Dichlorobenzidine	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
2,4-Dichlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-2 **Date/Time Sampled: 12/02/2016 10:00** **PSS Sample ID: 16120215-002**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 85**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Dimethyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
2,4-Dimethylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
2,4-Dinitrophenol	ND	ug/kg	390		1	12/07/16	12/09/16 05:52	1055
2,4-Dinitrotoluene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
2,6-Dinitrotoluene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Fluoranthene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Fluorene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Hexachlorobenzene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Hexachlorobutadiene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Hexachlorocyclopentadiene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Hexachloroethane	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Isophorone	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
2-Methylnaphthalene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
2-Methylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
3&4-Methylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Naphthalene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
2-Nitroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
3-Nitroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
4-Nitroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Nitrobenzene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
2-Nitrophenol	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
4-Nitrophenol	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	19		1	12/07/16	12/09/16 05:52	1055
N-Nitrosodiphenylamine	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Di-n-octyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Pentachlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Phenanthrene	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-2 | **Date/Time Sampled: 12/02/2016 10:00** | **PSS Sample ID: 16120215-002**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 85**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Pyrene	**240**	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
Pyridine	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
2,4,5-Trichlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055
2,4,6-Trichlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 05:52	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-3 **Date/Time Sampled: 12/02/2016 10:25** **PSS Sample ID: 16120215-003**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 87**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.2		1	12/05/16	12/06/16 22:32	1033
Arsenic	**2.9**	mg/kg	0.44		1	12/05/16	12/06/16 22:32	1033
Beryllium	ND	mg/kg	2.2		1	12/05/16	12/06/16 22:32	1033
Cadmium	ND	mg/kg	2.2		1	12/05/16	12/06/16 22:32	1033
Chromium	**35**	mg/kg	2.2		1	12/05/16	12/06/16 22:32	1033
Copper	**24**	mg/kg	2.2		1	12/05/16	12/06/16 22:32	1033
Lead	**53**	mg/kg	4.4		2	12/05/16	12/07/16 17:30	1033
Mercury	**0.12**	mg/kg	0.088		1	12/05/16	12/06/16 22:32	1033
Nickel	**15**	mg/kg	2.2		1	12/05/16	12/06/16 22:32	1033
Selenium	ND	mg/kg	2.2		1	12/05/16	12/06/16 22:32	1033
Silver	ND	mg/kg	2.2		1	12/05/16	12/06/16 22:32	1033
Thallium	ND	mg/kg	1.8		1	12/05/16	12/06/16 22:32	1033
Zinc	**63**	mg/kg	8.8		1	12/05/16	12/06/16 22:32	1033

Chromium, Hexavalent — Analytical Method: SW-846 7196 A — Preparation Method: SW3060A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chromium, Hexavalent	ND	mg/kg	1.1		1	12/07/16	12/08/16 16:01	1053

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

DF/HF - No. 2/diesel fuel and heavier fuel/oil patterns observed in sample.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**100**	mg/kg	12	DF	1	12/07/16	12/08/16 17:29	1060

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	110		1	12/05/16	12/06/16 06:26	1035

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-3 | **Date/Time Sampled: 12/02/2016 10:25** | **PSS Sample ID: 16120215-003**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

Polychlorinated Biphenyls

Analytical Method: SW-846 8082 A

Preparation Method: SW3550C
Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.058		1	12/06/16	12/07/16 14:31	1029
PCB-1221	ND	mg/kg	0.058		1	12/06/16	12/07/16 14:31	1029
PCB-1232	ND	mg/kg	0.058		1	12/06/16	12/07/16 14:31	1029
PCB-1242	ND	mg/kg	0.058		1	12/06/16	12/07/16 14:31	1029
PCB-1248	ND	mg/kg	0.058		1	12/06/16	12/07/16 14:31	1029
PCB-1254	**0.076**	mg/kg	0.058		1	12/06/16	12/07/16 14:31	1029
PCB-1260	ND	mg/kg	0.058		1	12/06/16	12/07/16 14:31	1029

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-3 | **Date/Time Sampled: 12/02/2016 10:25** | **PSS Sample ID: 16120215-003**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Acenaphthylene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Acetophenone	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Anthracene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Atrazine	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Benzo(a)anthracene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Benzo(a)pyrene	ND	ug/kg	190		10	12/07/16	12/09/16 10:59	1055
Benzo(b)fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Benzo(g,h,i)perylene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Benzo(k)fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Biphenyl (Diphenyl)	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Butyl benzyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
bis(2-chloroethoxy) methane	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
bis(2-chloroethyl) ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
4-Bromophenylphenyl ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Di-n-butyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Carbazole	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Caprolactam	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
4-Chloro-3-methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
4-Chloroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
2-Chloronaphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
2-Chlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Chrysene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Dibenz(a,h)anthracene	ND	ug/kg	190		10	12/07/16	12/09/16 10:59	1055
Dibenzofuran	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
3,3-Dichlorobenzidine	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
2,4-Dichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-3 | **Date/Time Sampled: 12/02/2016 10:25** | **PSS Sample ID: 16120215-003**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Dimethyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
2,4-Dimethylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
2,4-Dinitrophenol	ND	ug/kg	3,800		10	12/07/16	12/09/16 10:59	1055
2,4-Dinitrotoluene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
2,6-Dinitrotoluene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Fluorene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Hexachlorobenzene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Hexachlorobutadiene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Hexachlorocyclopentadiene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Hexachloroethane	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Isophorone	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
2-Methylnaphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
2-Methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
3&4-Methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Naphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
2-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
3-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
4-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Nitrobenzene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
2-Nitrophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
4-Nitrophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	190		10	12/07/16	12/09/16 10:59	1055
N-Nitrosodiphenylamine	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Di-n-octyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Pentachlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Phenanthrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-3 | **Date/Time Sampled: 12/02/2016 10:25** | **PSS Sample ID: 16120215-003**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Pyrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
Pyridine	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
2,4,5-Trichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055
2,4,6-Trichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:59	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-4 **Date/Time Sampled: 12/02/2016 10:45** **PSS Sample ID: 16120215-004**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 86**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.2		1	12/05/16	12/06/16 22:39	1033
Arsenic	**9.4**	mg/kg	0.45		1	12/05/16	12/06/16 22:39	1033
Beryllium	ND	mg/kg	2.2		1	12/05/16	12/06/16 22:39	1033
Cadmium	ND	mg/kg	2.2		1	12/05/16	12/06/16 22:39	1033
Chromium	**110**	mg/kg	2.2		1	12/05/16	12/06/16 22:39	1033
Copper	**20**	mg/kg	2.2		1	12/05/16	12/06/16 22:39	1033
Lead	**47**	mg/kg	4.5		2	12/05/16	12/07/16 17:36	1033
Mercury	**0.14**	mg/kg	0.090		1	12/05/16	12/06/16 22:39	1033
Nickel	**14**	mg/kg	2.2		1	12/05/16	12/06/16 22:39	1033
Selenium	ND	mg/kg	2.2		1	12/05/16	12/06/16 22:39	1033
Silver	ND	mg/kg	2.2		1	12/05/16	12/06/16 22:39	1033
Thallium	ND	mg/kg	1.8		1	12/05/16	12/06/16 22:39	1033
Zinc	**44**	mg/kg	9.0		1	12/05/16	12/06/16 22:39	1033

Chromium, Hexavalent — Analytical Method: SW-846 7196 A — Preparation Method: SW3060A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chromium, Hexavalent	ND	mg/kg	1.2		1	12/07/16	12/08/16 16:04	1053

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

DF/HF - No. 2/diesel fuel and heavier fuel/oil patterns observed in sample.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**120**	mg/kg	11	DF	1	12/07/16	12/08/16 18:25	1060

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	120		1	12/05/16	12/06/16 06:57	1035

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-4 | **Date/Time Sampled: 12/02/2016 10:45** | **PSS Sample ID: 16120215-004**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 86**

Polychlorinated Biphenyls

Analytical Method: SW-846 8082 A

Preparation Method: SW3550C
Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.059		1	12/06/16	12/07/16 15:30	1029
PCB-1221	ND	mg/kg	0.059		1	12/06/16	12/07/16 15:30	1029
PCB-1232	ND	mg/kg	0.059		1	12/06/16	12/07/16 15:30	1029
PCB-1242	ND	mg/kg	0.059		1	12/06/16	12/07/16 15:30	1029
PCB-1248	ND	mg/kg	0.059		1	12/06/16	12/07/16 15:30	1029
PCB-1254	**0.061**	mg/kg	0.059		1	12/06/16	12/07/16 15:30	1029
PCB-1260	ND	mg/kg	0.059		1	12/06/16	12/07/16 15:30	1029

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-4 **Date/Time Sampled: 12/02/2016 10:45** **PSS Sample ID: 16120215-004**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 86**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Acenaphthylene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Acetophenone	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Anthracene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Atrazine	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Benzo(a)anthracene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Benzo(a)pyrene	ND	ug/kg	190		10	12/07/16	12/09/16 11:30	1055
Benzo(b)fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Benzo(g,h,i)perylene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Benzo(k)fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Biphenyl (Diphenyl)	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Butyl benzyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
bis(2-chloroethoxy) methane	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
bis(2-chloroethyl) ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
4-Bromophenylphenyl ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Di-n-butyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Carbazole	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Caprolactam	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
4-Chloro-3-methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
4-Chloroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
2-Chloronaphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
2-Chlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Chrysene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Dibenz(a,h)anthracene	ND	ug/kg	190		10	12/07/16	12/09/16 11:30	1055
Dibenzofuran	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
3,3-Dichlorobenzidine	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
2,4-Dichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-4 **Date/Time Sampled: 12/02/2016 10:45** **PSS Sample ID: 16120215-004**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 86**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Dimethyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
2,4-Dimethylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
2,4-Dinitrophenol	ND	ug/kg	3,800		10	12/07/16	12/09/16 11:30	1055
2,4-Dinitrotoluene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
2,6-Dinitrotoluene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Fluorene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Hexachlorobenzene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Hexachlorobutadiene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Hexachlorocyclopentadiene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Hexachloroethane	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Isophorone	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
2-Methylnaphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
2-Methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
3&4-Methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Naphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
2-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
3-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
4-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Nitrobenzene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
2-Nitrophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
4-Nitrophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	190		10	12/07/16	12/09/16 11:30	1055
N-Nitrosodiphenylamine	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Di-n-octyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Pentachlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Phenanthrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-4 **Date/Time Sampled: 12/02/2016 10:45** **PSS Sample ID: 16120215-004**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 86**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Pyrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
Pyridine	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
2,4,5-Trichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055
2,4,6-Trichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:30	1055

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No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-5 **Date/Time Sampled: 12/02/2016 11:05** **PSS Sample ID: 16120215-005**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 86**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.7		1	12/05/16	12/06/16 22:45	1033
Arsenic	**3.2**	mg/kg	0.54		1	12/05/16	12/06/16 22:45	1033
Beryllium	ND	mg/kg	2.7		1	12/05/16	12/06/16 22:45	1033
Cadmium	ND	mg/kg	2.7		1	12/05/16	12/06/16 22:45	1033
Chromium	**37**	mg/kg	2.7		1	12/05/16	12/06/16 22:45	1033
Copper	**22**	mg/kg	2.7		1	12/05/16	12/06/16 22:45	1033
Lead	**35**	mg/kg	2.7		1	12/05/16	12/06/16 22:45	1033
Mercury	**0.14**	mg/kg	0.11		1	12/05/16	12/06/16 22:45	1033
Nickel	**16**	mg/kg	2.7		1	12/05/16	12/06/16 22:45	1033
Selenium	ND	mg/kg	2.7		1	12/05/16	12/06/16 22:45	1033
Silver	ND	mg/kg	2.7		1	12/05/16	12/06/16 22:45	1033
Thallium	ND	mg/kg	2.2		1	12/05/16	12/06/16 22:45	1033
Zinc	**43**	mg/kg	11		1	12/05/16	12/06/16 22:45	1033

Chromium, Hexavalent — Analytical Method: SW-846 7196 A — Preparation Method: SW3060A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chromium, Hexavalent	ND	mg/kg	1.2		1	12/07/16	12/08/16 16:07	1053

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

DF/HF - No. 2/diesel fuel and heavier fuel/oil patterns observed in sample.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**150**	mg/kg	12	DF	1	12/07/16	12/08/16 18:25	1060

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	120		1	12/05/16	12/06/16 07:28	1035

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No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-5 **Date/Time Sampled: 12/02/2016 11:05** **PSS Sample ID: 16120215-005**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 86**

Organochlorine Pesticides — Analytical Method: SW-846 8081 B — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
alpha-BHC	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
Gamma-BHC (Lindane)	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
beta-BHC	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
delta-BHC	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
Heptachlor	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
Aldrin	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
Heptachlor Epoxide	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
Gamma-Chlordane	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
Alpha-Chlordane	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
4,4-DDE	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
Endosulfan I	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
Dieldrin	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
Endrin	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
4,4-DDD	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
Endosulfan II	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
4,4-DDT	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
Endrin Aldehyde	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
Methoxychlor	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
Endosulfan Sulfate	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
Endrin ketone	ND	ug/kg	24		5	12/08/06	12/08/06 01:26	1029
Toxaphene	ND	ug/kg	590		5	12/08/06	12/08/06 01:26	1029
Chlordane	ND	ug/kg	590		5	12/08/06	12/08/06 01:26	1029

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-5 **Date/Time Sampled: 12/02/2016 11:05** **PSS Sample ID: 16120215-005**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 86**

Polychlorinated Biphenyls — Analytical Method: SW-846 8082 A — Preparation Method: SW3550C — Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.059		1	12/06/16	12/07/16 15:59	1029
PCB-1221	ND	mg/kg	0.059		1	12/06/16	12/07/16 15:59	1029
PCB-1232	ND	mg/kg	0.059		1	12/06/16	12/07/16 15:59	1029
PCB-1242	ND	mg/kg	0.059		1	12/06/16	12/07/16 15:59	1029
PCB-1248	ND	mg/kg	0.059		1	12/06/16	12/07/16 15:59	1029
PCB-1254	**0.11**	mg/kg	0.059		1	12/06/16	12/07/16 15:59	1029
PCB-1260	ND	mg/kg	0.059		1	12/06/16	12/07/16 15:59	1029

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December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-5 **Date/Time Sampled: 12/02/2016 11:05** **PSS Sample ID: 16120215-005**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 86**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Acenaphthylene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Acetophenone	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Anthracene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Atrazine	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Benzo(a)anthracene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Benzo(a)pyrene	ND	ug/kg	190		10	12/07/16	12/09/16 11:58	1055
Benzo(b)fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Benzo(g,h,i)perylene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Benzo(k)fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Biphenyl (Diphenyl)	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Butyl benzyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
bis(2-chloroethoxy) methane	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
bis(2-chloroethyl) ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
4-Bromophenylphenyl ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Di-n-butyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Carbazole	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Caprolactam	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
4-Chloro-3-methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
4-Chloroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
2-Chloronaphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
2-Chlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Chrysene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Dibenz(a,h)anthracene	ND	ug/kg	190		10	12/07/16	12/09/16 11:58	1055
Dibenzofuran	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
3,3-Dichlorobenzidine	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
2,4-Dichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-5 **Date/Time Sampled: 12/02/2016 11:05** **PSS Sample ID: 16120215-005**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 86**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Dimethyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
2,4-Dimethylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
2,4-Dinitrophenol	ND	ug/kg	3,800		10	12/07/16	12/09/16 11:58	1055
2,4-Dinitrotoluene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
2,6-Dinitrotoluene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Fluorene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Hexachlorobenzene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Hexachlorobutadiene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Hexachlorocyclopentadiene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Hexachloroethane	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Isophorone	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
2-Methylnaphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
2-Methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
3&4-Methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Naphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
2-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
3-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
4-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Nitrobenzene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
2-Nitrophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
4-Nitrophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	190		10	12/07/16	12/09/16 11:58	1055
N-Nitrosodiphenylamine	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Di-n-octyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Pentachlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Phenanthrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-5 **Date/Time Sampled: 12/02/2016 11:05** **PSS Sample ID: 16120215-005**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 86**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Pyrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
Pyridine	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
2,4,5-Trichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055
2,4,6-Trichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 11:58	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-6 | **Date/Time Sampled: 12/02/2016 11:15** | **PSS Sample ID: 16120215-006**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.3		1	12/05/16	12/06/16 22:52	1033
Arsenic	**3.4**	mg/kg	0.45		1	12/05/16	12/06/16 22:52	1033
Beryllium	ND	mg/kg	2.3		1	12/05/16	12/06/16 22:52	1033
Cadmium	ND	mg/kg	2.3		1	12/05/16	12/06/16 22:52	1033
Chromium	**48**	mg/kg	2.3		1	12/05/16	12/06/16 22:52	1033
Copper	**23**	mg/kg	2.3		1	12/05/16	12/06/16 22:52	1033
Lead	**37**	mg/kg	2.3		1	12/05/16	12/06/16 22:52	1033
Mercury	**0.14**	mg/kg	0.091		1	12/05/16	12/06/16 22:52	1033
Nickel	**16**	mg/kg	2.3		1	12/05/16	12/06/16 22:52	1033
Selenium	ND	mg/kg	2.3		1	12/05/16	12/06/16 22:52	1033
Silver	ND	mg/kg	2.3		1	12/05/16	12/06/16 22:52	1033
Thallium	ND	mg/kg	1.8		1	12/05/16	12/06/16 22:52	1033
Zinc	**44**	mg/kg	9.1		1	12/05/16	12/06/16 22:52	1033

Chromium, Hexavalent — Analytical Method: SW-846 7196 A — Preparation Method: SW3060A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chromium, Hexavalent	ND	mg/kg	1.2		1	12/07/16	12/08/16 16:14	1053

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

DF/HF - No. 2/diesel fuel and heavier fuel/oil patterns observed in sample.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**200**	mg/kg	11	DF	1	12/07/16	12/08/16 19:20	1060

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	110		1	12/05/16	12/06/16 07:58	1035

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-6 **Date/Time Sampled: 12/02/2016 11:15** **PSS Sample ID: 16120215-006**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 87**

Polychlorinated Biphenyls

Analytical Method: SW-846 8082 A

Preparation Method: SW3550C
Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.057		1	12/06/16	12/07/16 12:07	1029
PCB-1221	ND	mg/kg	0.057		1	12/06/16	12/07/16 12:07	1029
PCB-1232	ND	mg/kg	0.057		1	12/06/16	12/07/16 12:07	1029
PCB-1242	ND	mg/kg	0.057		1	12/06/16	12/07/16 12:07	1029
PCB-1248	ND	mg/kg	0.057		1	12/06/16	12/07/16 12:07	1029
PCB-1254	**0.070**	mg/kg	0.057		1	12/06/16	12/07/16 12:07	1029
PCB-1260	ND	mg/kg	0.057		1	12/06/16	12/07/16 12:07	1029

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No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-6 | **Date/Time Sampled: 12/02/2016 11:15** | **PSS Sample ID: 16120215-006**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Acenaphthylene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Acetophenone	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Anthracene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Atrazine	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Benzo(a)anthracene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Benzo(a)pyrene	**220**	ug/kg	190		10	12/07/16	12/09/16 12:26	1055
Benzo(b)fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Benzo(g,h,i)perylene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Benzo(k)fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Biphenyl (Diphenyl)	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Butyl benzyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
bis(2-chloroethoxy) methane	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
bis(2-chloroethyl) ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
4-Bromophenylphenyl ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Di-n-butyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Carbazole	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Caprolactam	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
4-Chloro-3-methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
4-Chloroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
2-Chloronaphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
2-Chlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Chrysene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Dibenz(a,h)anthracene	ND	ug/kg	190		10	12/07/16	12/09/16 12:26	1055
Dibenzofuran	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
3,3-Dichlorobenzidine	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
2,4-Dichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-6 **Date/Time Sampled: 12/02/2016 11:15** **PSS Sample ID: 16120215-006**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 87**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Dimethyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
2,4-Dimethylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
2,4-Dinitrophenol	ND	ug/kg	3,800		10	12/07/16	12/09/16 12:26	1055
2,4-Dinitrotoluene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
2,6-Dinitrotoluene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Fluorene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Hexachlorobenzene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Hexachlorobutadiene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Hexachlorocyclopentadiene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Hexachloroethane	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Isophorone	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
2-Methylnaphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
2-Methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
3&4-Methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Naphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
2-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
3-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
4-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Nitrobenzene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
2-Nitrophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
4-Nitrophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	190		10	12/07/16	12/09/16 12:26	1055
N-Nitrosodiphenylamine	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Di-n-octyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Pentachlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Phenanthrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-6 | **Date/Time Sampled: 12/02/2016 11:15** | **PSS Sample ID: 16120215-006**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Pyrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
Pyridine	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
2,4,5-Trichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055
2,4,6-Trichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 12:26	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-7 | **Date/Time Sampled: 12/02/2016 11:45** | **PSS Sample ID: 16120215-007**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.1		1	12/05/16	12/06/16 22:58	1033
Arsenic	**4.2**	mg/kg	0.41		1	12/05/16	12/06/16 22:58	1033
Beryllium	ND	mg/kg	2.1		1	12/05/16	12/06/16 22:58	1033
Cadmium	ND	mg/kg	2.1		1	12/05/16	12/06/16 22:58	1033
Chromium	**43**	mg/kg	2.1		1	12/05/16	12/06/16 22:58	1033
Copper	**24**	mg/kg	2.1		1	12/05/16	12/06/16 22:58	1033
Lead	**38**	mg/kg	2.1		1	12/05/16	12/06/16 22:58	1033
Mercury	**0.36**	mg/kg	0.082		1	12/05/16	12/06/16 22:58	1033
Nickel	**16**	mg/kg	2.1		1	12/05/16	12/06/16 22:58	1033
Selenium	ND	mg/kg	2.1		1	12/05/16	12/06/16 22:58	1033
Silver	ND	mg/kg	2.1		1	12/05/16	12/06/16 22:58	1033
Thallium	ND	mg/kg	1.6		1	12/05/16	12/06/16 22:58	1033
Zinc	**47**	mg/kg	8.2		1	12/05/16	12/06/16 22:58	1033

Chromium, Hexavalent — Analytical Method: SW-846 7196 A — Preparation Method: SW3060A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chromium, Hexavalent	ND	mg/kg	1.1		1	12/07/16	12/08/16 16:17	1053

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

DF/HF - No. 2/diesel fuel and heavier fuel/oil patterns observed in sample.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**120**	mg/kg	12	DF	1	12/07/16	12/08/16 19:20	1060

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	110		1	12/05/16	12/06/16 08:29	1035

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-7 **Date/Time Sampled: 12/02/2016 11:45** **PSS Sample ID: 16120215-007**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 87**

Polychlorinated Biphenyls — Analytical Method: SW-846 8082 A — Preparation Method: SW3550C — Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.059		1	12/06/16	12/07/16 16:28	1029
PCB-1221	ND	mg/kg	0.059		1	12/06/16	12/07/16 16:28	1029
PCB-1232	ND	mg/kg	0.059		1	12/06/16	12/07/16 16:28	1029
PCB-1242	ND	mg/kg	0.059		1	12/06/16	12/07/16 16:28	1029
PCB-1248	ND	mg/kg	0.059		1	12/06/16	12/07/16 16:28	1029
PCB-1254	**0.063**	mg/kg	0.059		1	12/06/16	12/07/16 16:28	1029
PCB-1260	ND	mg/kg	0.059		1	12/06/16	12/07/16 16:28	1029

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-7 | **Date/Time Sampled: 12/02/2016 11:45** | **PSS Sample ID: 16120215-007**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Acenaphthylene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Acetophenone	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Anthracene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Atrazine	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Benzo(a)anthracene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Benzo(a)pyrene	**150**	ug/kg	19		1	12/07/16	12/09/16 08:12	1055
Benzo(b)fluoranthene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Benzo(g,h,i)perylene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Benzo(k)fluoranthene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Biphenyl (Diphenyl)	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Butyl benzyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
bis(2-chloroethoxy) methane	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
bis(2-chloroethyl) ether	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
4-Bromophenylphenyl ether	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Di-n-butyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Carbazole	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Caprolactam	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
4-Chloro-3-methylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
4-Chloroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
2-Chloronaphthalene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
2-Chlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Chrysene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Dibenz(a,h)anthracene	**44**	ug/kg	19		1	12/07/16	12/09/16 08:12	1055
Dibenzofuran	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
3,3-Dichlorobenzidine	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
2,4-Dichlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-7 | **Date/Time Sampled: 12/02/2016 11:45** | **PSS Sample ID: 16120215-007**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Dimethyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
2,4-Dimethylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
2,4-Dinitrophenol	ND	ug/kg	380		1	12/07/16	12/09/16 08:12	1055
2,4-Dinitrotoluene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
2,6-Dinitrotoluene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Fluoranthene	**270**	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Fluorene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Hexachlorobenzene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Hexachlorobutadiene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Hexachlorocyclopentadiene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Hexachloroethane	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Isophorone	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
2-Methylnaphthalene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
2-Methylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
3&4-Methylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Naphthalene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
2-Nitroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
3-Nitroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
4-Nitroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Nitrobenzene	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
2-Nitrophenol	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
4-Nitrophenol	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	19		1	12/07/16	12/09/16 08:12	1055
N-Nitrosodiphenylamine	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Di-n-octyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Pentachlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Phenanthrene	**280**	ug/kg	190		1	12/07/16	12/09/16 08:12	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-7 | **Date/Time Sampled: 12/02/2016 11:45** | **PSS Sample ID: 16120215-007**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Pyrene	**390**	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
Pyridine	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
2,4,5-Trichlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055
2,4,6-Trichlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 08:12	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-8 | **Date/Time Sampled: 12/02/2016 12:00** | **PSS Sample ID: 16120215-008**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 86**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.5		1	12/05/16	12/06/16 23:05	1033
Arsenic	**8.6**	mg/kg	0.50		1	12/05/16	12/06/16 23:05	1033
Beryllium	ND	mg/kg	2.5		1	12/05/16	12/06/16 23:05	1033
Cadmium	ND	mg/kg	2.5		1	12/05/16	12/06/16 23:05	1033
Chromium	**74**	mg/kg	2.5		1	12/05/16	12/06/16 23:05	1033
Copper	**12**	mg/kg	2.5		1	12/05/16	12/06/16 23:05	1033
Lead	**21**	mg/kg	2.5		1	12/05/16	12/06/16 23:05	1033
Mercury	**0.15**	mg/kg	0.10		1	12/05/16	12/06/16 23:05	1033
Nickel	**10**	mg/kg	2.5		1	12/05/16	12/06/16 23:05	1033
Selenium	ND	mg/kg	2.5		1	12/05/16	12/06/16 23:05	1033
Silver	ND	mg/kg	2.5		1	12/05/16	12/06/16 23:05	1033
Thallium	ND	mg/kg	2.0		1	12/05/16	12/06/16 23:05	1033
Zinc	**39**	mg/kg	10		1	12/05/16	12/06/16 23:05	1033

Chromium, Hexavalent — Analytical Method: SW-846 7196 A — Preparation Method: SW3060A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chromium, Hexavalent	ND	mg/kg	1.2		1	12/07/16	12/08/16 16:20	1053

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

DF/HF - No. 2/diesel fuel and heavier fuel/oil patterns observed in sample.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**200**	mg/kg	12	DF	1	12/07/16	12/08/16 20:15	1060

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	110		1	12/06/16	12/06/16 15:37	1035

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-8 **Date/Time Sampled: 12/02/2016 12:00** **PSS Sample ID: 16120215-008**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 86**

Polychlorinated Biphenyls

Analytical Method: SW-846 8082 A
Preparation Method: SW3550C
Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.058		1	12/06/16	12/07/16 12:35	1029
PCB-1221	ND	mg/kg	0.058		1	12/06/16	12/07/16 12:35	1029
PCB-1232	ND	mg/kg	0.058		1	12/06/16	12/07/16 12:35	1029
PCB-1242	ND	mg/kg	0.058		1	12/06/16	12/07/16 12:35	1029
PCB-1248	ND	mg/kg	0.058		1	12/06/16	12/07/16 12:35	1029
PCB-1254	ND	mg/kg	0.058		1	12/06/16	12/07/16 12:35	1029
PCB-1260	ND	mg/kg	0.058		1	12/06/16	12/07/16 12:35	1029

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No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-8 **Date/Time Sampled: 12/02/2016 12:00** **PSS Sample ID: 16120215-008**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 86**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Acenaphthylene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Acetophenone	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Anthracene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Atrazine	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Benzo(a)anthracene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Benzo(a)pyrene	ND	ug/kg	190		10	12/07/16	12/09/16 08:40	1055
Benzo(b)fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Benzo(g,h,i)perylene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Benzo(k)fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Biphenyl (Diphenyl)	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Butyl benzyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
bis(2-chloroethoxy) methane	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
bis(2-chloroethyl) ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
4-Bromophenylphenyl ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Di-n-butyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Carbazole	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Caprolactam	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
4-Chloro-3-methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
4-Chloroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
2-Chloronaphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
2-Chlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Chrysene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Dibenz(a,h)anthracene	ND	ug/kg	190		10	12/07/16	12/09/16 08:40	1055
Dibenzofuran	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
3,3-Dichlorobenzidine	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
2,4-Dichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-8 **Date/Time Sampled: 12/02/2016 12:00** **PSS Sample ID: 16120215-008**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 86**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Dimethyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
2,4-Dimethylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
2,4-Dinitrophenol	ND	ug/kg	3,800		10	12/07/16	12/09/16 08:40	1055
2,4-Dinitrotoluene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
2,6-Dinitrotoluene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Fluorene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Hexachlorobenzene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Hexachlorobutadiene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Hexachlorocyclopentadiene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Hexachloroethane	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Isophorone	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
2-Methylnaphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
2-Methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
3&4-Methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Naphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
2-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
3-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
4-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Nitrobenzene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
2-Nitrophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
4-Nitrophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	190		10	12/07/16	12/09/16 08:40	1055
N-Nitrosodiphenylamine	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Di-n-octyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Pentachlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Phenanthrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-8 **Date/Time Sampled: 12/02/2016 12:00** **PSS Sample ID: 16120215-008**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 86**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Pyrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
Pyridine	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
2,4,5-Trichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055
2,4,6-Trichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 08:40	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-9 **Date/Time Sampled: 12/02/2016 12:25** **PSS Sample ID: 16120215-009**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 86**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.2		1	12/05/16	12/06/16 23:12	1033
Arsenic	**5.8**	mg/kg	0.43		1	12/05/16	12/06/16 23:12	1033
Beryllium	ND	mg/kg	2.2		1	12/05/16	12/06/16 23:12	1033
Cadmium	ND	mg/kg	2.2		1	12/05/16	12/06/16 23:12	1033
Chromium	**47**	mg/kg	2.2		1	12/05/16	12/06/16 23:12	1033
Copper	**25**	mg/kg	2.2		1	12/05/16	12/06/16 23:12	1033
Lead	**34**	mg/kg	2.2		1	12/05/16	12/06/16 23:12	1033
Mercury	**0.18**	mg/kg	0.086		1	12/05/16	12/06/16 23:12	1033
Nickel	**17**	mg/kg	2.2		1	12/05/16	12/06/16 23:12	1033
Selenium	ND	mg/kg	2.2		1	12/05/16	12/06/16 23:12	1033
Silver	ND	mg/kg	2.2		1	12/05/16	12/06/16 23:12	1033
Thallium	ND	mg/kg	1.7		1	12/05/16	12/06/16 23:12	1033
Zinc	**41**	mg/kg	8.6		1	12/05/16	12/06/16 23:12	1033

Chromium, Hexavalent — Analytical Method: SW-846 7196 A — Preparation Method: SW3060A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chromium, Hexavalent	ND	mg/kg	1.1		1	12/07/16	12/08/16 16:23	1053

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

DF/HF - No. 2/diesel fuel and heavier fuel/oil patterns observed in sample.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**180**	mg/kg	12	DF	1	12/07/16	12/08/16 20:15	1060

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	120		1	12/06/16	12/06/16 16:08	1035

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-9 **Date/Time Sampled: 12/02/2016 12:25** **PSS Sample ID: 16120215-009**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 86**

Polychlorinated Biphenyls

Analytical Method: SW-846 8082 A

Preparation Method: SW3550C
Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.058		1	12/06/16	12/07/16 16:56	1029
PCB-1221	ND	mg/kg	0.058		1	12/06/16	12/07/16 16:56	1029
PCB-1232	ND	mg/kg	0.058		1	12/06/16	12/07/16 16:56	1029
PCB-1242	ND	mg/kg	0.058		1	12/06/16	12/07/16 16:56	1029
PCB-1248	ND	mg/kg	0.058		1	12/06/16	12/07/16 16:56	1029
PCB-1254	ND	mg/kg	0.058		1	12/06/16	12/07/16 16:56	1029
PCB-1260	ND	mg/kg	0.058		1	12/06/16	12/07/16 16:56	1029

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No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-9 | **Date/Time Sampled: 12/02/2016 12:25** | **PSS Sample ID: 16120215-009**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 86**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Acenaphthylene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Acetophenone	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Anthracene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Atrazine	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Benzo(a)anthracene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Benzo(a)pyrene	ND	ug/kg	190		10	12/07/16	12/09/16 09:08	1055
Benzo(b)fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Benzo(g,h,i)perylene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Benzo(k)fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Biphenyl (Diphenyl)	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Butyl benzyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
bis(2-chloroethoxy) methane	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
bis(2-chloroethyl) ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
4-Bromophenylphenyl ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Di-n-butyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Carbazole	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Caprolactam	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
4-Chloro-3-methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
4-Chloroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
2-Chloronaphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
2-Chlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Chrysene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Dibenz(a,h)anthracene	ND	ug/kg	190		10	12/07/16	12/09/16 09:08	1055
Dibenzofuran	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
3,3-Dichlorobenzidine	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
2,4-Dichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-9 **Date/Time Sampled: 12/02/2016 12:25** **PSS Sample ID: 16120215-009**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 86**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Dimethyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
2,4-Dimethylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
2,4-Dinitrophenol	ND	ug/kg	3,800		10	12/07/16	12/09/16 09:08	1055
2,4-Dinitrotoluene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
2,6-Dinitrotoluene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Fluorene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Hexachlorobenzene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Hexachlorobutadiene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Hexachlorocyclopentadiene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Hexachloroethane	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Isophorone	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
2-Methylnaphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
2-Methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
3&4-Methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Naphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
2-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
3-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
4-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Nitrobenzene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
2-Nitrophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
4-Nitrophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	190		10	12/07/16	12/09/16 09:08	1055
N-Nitrosodiphenylamine	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Di-n-octyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Pentachlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Phenanthrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-9 | **Date/Time Sampled: 12/02/2016 12:25** | **PSS Sample ID: 16120215-009**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 86**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Pyrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
Pyridine	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
2,4,5-Trichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055
2,4,6-Trichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 09:08	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-10 **Date/Time Sampled: 12/02/2016 12:45** **PSS Sample ID: 16120215-010**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 87**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.5		1	12/05/16	12/06/16 23:18	1033
Arsenic	**3.5**	mg/kg	0.50		1	12/05/16	12/06/16 23:18	1033
Beryllium	ND	mg/kg	2.5		1	12/05/16	12/06/16 23:18	1033
Cadmium	ND	mg/kg	2.5		1	12/05/16	12/06/16 23:18	1033
Chromium	**35**	mg/kg	2.5		1	12/05/16	12/06/16 23:18	1033
Copper	**20**	mg/kg	2.5		1	12/05/16	12/06/16 23:18	1033
Lead	**29**	mg/kg	2.5		1	12/05/16	12/06/16 23:18	1033
Mercury	**0.11**	mg/kg	0.10		1	12/05/16	12/06/16 23:18	1033
Nickel	**15**	mg/kg	2.5		1	12/05/16	12/06/16 23:18	1033
Selenium	ND	mg/kg	2.5		1	12/05/16	12/06/16 23:18	1033
Silver	ND	mg/kg	2.5		1	12/05/16	12/06/16 23:18	1033
Thallium	ND	mg/kg	2.0		1	12/05/16	12/06/16 23:18	1033
Zinc	**37**	mg/kg	10		1	12/05/16	12/06/16 23:18	1033

Chromium, Hexavalent — Analytical Method: SW-846 7196 A — Preparation Method: SW3060A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chromium, Hexavalent	ND	mg/kg	1.1		1	12/07/16	12/08/16 16:26	1053

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

DF/HF - No. 2/diesel fuel and heavier fuel/oil patterns observed in sample.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**130**	mg/kg	11	DF	1	12/07/16	12/08/16 21:10	1060

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	110		1	12/06/16	12/06/16 16:38	1035

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-10 **Date/Time Sampled: 12/02/2016 12:45** **PSS Sample ID: 16120215-010**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 87**

Organochlorine Pesticides — Analytical Method: SW-846 8081 B — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
alpha-BHC	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
Gamma-BHC (Lindane)	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
beta-BHC	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
delta-BHC	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
Heptachlor	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
Aldrin	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
Heptachlor Epoxide	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
Gamma-Chlordane	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
Alpha-Chlordane	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
4,4-DDE	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
Endosulfan I	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
Dieldrin	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
Endrin	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
4,4-DDD	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
Endosulfan II	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
4,4-DDT	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
Endrin Aldehyde	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
Methoxychlor	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
Endosulfan Sulfate	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
Endrin ketone	ND	ug/kg	22		5	12/08/06	12/08/06 00:30	1029
Toxaphene	ND	ug/kg	550		5	12/08/06	12/08/06 00:30	1029
Chlordane	ND	ug/kg	550		5	12/08/06	12/08/06 00:30	1029

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-10 **Date/Time Sampled: 12/02/2016 12:45** **PSS Sample ID: 16120215-010**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 87**

Polychlorinated Biphenyls

Analytical Method: SW-846 8082 A

Preparation Method: SW3550C
Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.055		1	12/06/16	12/07/16 13:04	1029
PCB-1221	ND	mg/kg	0.055		1	12/06/16	12/07/16 13:04	1029
PCB-1232	ND	mg/kg	0.055		1	12/06/16	12/07/16 13:04	1029
PCB-1242	ND	mg/kg	0.055		1	12/06/16	12/07/16 13:04	1029
PCB-1248	ND	mg/kg	0.055		1	12/06/16	12/07/16 13:04	1029
PCB-1254	ND	mg/kg	0.055		1	12/06/16	12/07/16 13:04	1029
PCB-1260	ND	mg/kg	0.055		1	12/06/16	12/07/16 13:04	1029

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-10 | **Date/Time Sampled: 12/02/2016 12:45** | **PSS Sample ID: 16120215-010**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Acenaphthylene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Acetophenone	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Anthracene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Atrazine	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Benzo(a)anthracene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Benzo(a)pyrene	ND	ug/kg	190		10	12/07/16	12/09/16 10:04	1055
Benzo(b)fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Benzo(g,h,i)perylene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Benzo(k)fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Biphenyl (Diphenyl)	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Butyl benzyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
bis(2-chloroethoxy) methane	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
bis(2-chloroethyl) ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
4-Bromophenylphenyl ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Di-n-butyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Carbazole	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Caprolactam	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
4-Chloro-3-methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
4-Chloroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
2-Chloronaphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
2-Chlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Chrysene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Dibenz(a,h)anthracene	ND	ug/kg	190		10	12/07/16	12/09/16 10:04	1055
Dibenzofuran	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
3,3-Dichlorobenzidine	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
2,4-Dichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-10 **Date/Time Sampled: 12/02/2016 12:45** **PSS Sample ID: 16120215-010**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 87**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Dimethyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
2,4-Dimethylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
2,4-Dinitrophenol	ND	ug/kg	3,800		10	12/07/16	12/09/16 10:04	1055
2,4-Dinitrotoluene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
2,6-Dinitrotoluene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Fluoranthene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Fluorene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Hexachlorobenzene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Hexachlorobutadiene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Hexachlorocyclopentadiene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Hexachloroethane	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Isophorone	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
2-Methylnaphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
2-Methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
3&4-Methylphenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Naphthalene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
2-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
3-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
4-Nitroaniline	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Nitrobenzene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
2-Nitrophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
4-Nitrophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	190		10	12/07/16	12/09/16 10:04	1055
N-Nitrosodiphenylamine	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Di-n-octyl phthalate	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Pentachlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Phenanthrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-10 **Date/Time Sampled: 12/02/2016 12:45** **PSS Sample ID: 16120215-010**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 87**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Pyrene	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
Pyridine	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
2,4,5-Trichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055
2,4,6-Trichlorophenol	ND	ug/kg	1,900		10	12/07/16	12/09/16 10:04	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-11 **Date/Time Sampled: 12/02/2016 13:05** **PSS Sample ID: 16120215-011**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 88**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.7		1	12/05/16	12/06/16 23:51	1033
Arsenic	**2.9**	mg/kg	0.54		1	12/05/16	12/06/16 23:51	1033
Beryllium	ND	mg/kg	2.7		1	12/05/16	12/06/16 23:51	1033
Cadmium	ND	mg/kg	2.7		1	12/05/16	12/06/16 23:51	1033
Chromium	**30**	mg/kg	2.7		1	12/05/16	12/06/16 23:51	1033
Copper	**13**	mg/kg	2.7		1	12/05/16	12/06/16 23:51	1033
Lead	**20**	mg/kg	2.7		1	12/05/16	12/06/16 23:51	1033
Mercury	ND	mg/kg	0.11		1	12/05/16	12/06/16 23:51	1033
Nickel	**10**	mg/kg	2.7		1	12/05/16	12/06/16 23:51	1033
Selenium	ND	mg/kg	2.7		1	12/05/16	12/06/16 23:51	1033
Silver	ND	mg/kg	2.7		1	12/05/16	12/06/16 23:51	1033
Thallium	ND	mg/kg	2.1		1	12/05/16	12/06/16 23:51	1033
Zinc	**27**	mg/kg	11		1	12/05/16	12/06/16 23:51	1033

Chromium, Hexavalent — Analytical Method: SW-846 7196 A — Preparation Method: SW3060A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chromium, Hexavalent	ND	mg/kg	1.1		1	12/07/16	12/08/16 16:29	1053

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

DF/HF - No. 2/diesel fuel and heavier fuel/oil patterns observed in sample.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**110**	mg/kg	11	DF	1	12/07/16	12/08/16 21:10	1060

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	110		1	12/06/16	12/06/16 17:09	1035

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-11 **Date/Time Sampled: 12/02/2016 13:05** **PSS Sample ID: 16120215-011**

Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 88**

Polychlorinated Biphenyls

Analytical Method: SW-846 8082 A

Preparation Method: SW3550C
Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.057		1	12/06/16	12/07/16 13:33	1029
PCB-1221	ND	mg/kg	0.057		1	12/06/16	12/07/16 13:33	1029
PCB-1232	ND	mg/kg	0.057		1	12/06/16	12/07/16 13:33	1029
PCB-1242	ND	mg/kg	0.057		1	12/06/16	12/07/16 13:33	1029
PCB-1248	ND	mg/kg	0.057		1	12/06/16	12/07/16 13:33	1029
PCB-1254	ND	mg/kg	0.057		1	12/06/16	12/07/16 13:33	1029
PCB-1260	ND	mg/kg	0.057		1	12/06/16	12/07/16 13:33	1029

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No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-11 | **Date/Time Sampled: 12/02/2016 13:05** | **PSS Sample ID: 16120215-011**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 88**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Acenaphthylene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Acetophenone	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Anthracene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Atrazine	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Benzo(a)anthracene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Benzo(a)pyrene	**80**	ug/kg	19		1	12/07/16	12/09/16 06:20	1055
Benzo(b)fluoranthene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Benzo(g,h,i)perylene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Benzo(k)fluoranthene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Biphenyl (Diphenyl)	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Butyl benzyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
bis(2-chloroethoxy) methane	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
bis(2-chloroethyl) ether	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
4-Bromophenylphenyl ether	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Di-n-butyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Carbazole	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Caprolactam	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
4-Chloro-3-methylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
4-Chloroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
2-Chloronaphthalene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
2-Chlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Chrysene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Dibenz(a,h)anthracene	ND	ug/kg	19		1	12/07/16	12/09/16 06:20	1055
Dibenzofuran	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
3,3-Dichlorobenzidine	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
2,4-Dichlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-11 **Date/Time Sampled: 12/02/2016 13:05** **PSS Sample ID: 16120215-011**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 88**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Dimethyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
2,4-Dimethylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
2,4-Dinitrophenol	ND	ug/kg	380		1	12/07/16	12/09/16 06:20	1055
2,4-Dinitrotoluene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
2,6-Dinitrotoluene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Fluoranthene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Fluorene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Hexachlorobenzene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Hexachlorobutadiene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Hexachlorocyclopentadiene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Hexachloroethane	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Isophorone	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
2-Methylnaphthalene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
2-Methylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
3&4-Methylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Naphthalene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
2-Nitroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
3-Nitroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
4-Nitroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Nitrobenzene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
2-Nitrophenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
4-Nitrophenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	19		1	12/07/16	12/09/16 06:20	1055
N-Nitrosodiphenylamine	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Di-n-octyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Pentachlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Phenanthrene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-11 | **Date/Time Sampled: 12/02/2016 13:05** | **PSS Sample ID: 16120215-011**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 88**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Pyrene	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
Pyridine	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
2,4,5-Trichlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055
2,4,6-Trichlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:20	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-12 | **Date/Time Sampled: 12/02/2016 13:15** | **PSS Sample ID: 16120215-012**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.5		1	12/05/16	12/06/16 23:58	1033
Arsenic	**3.4**	mg/kg	0.51		1	12/05/16	12/06/16 23:58	1033
Beryllium	ND	mg/kg	2.5		1	12/05/16	12/06/16 23:58	1033
Cadmium	ND	mg/kg	2.5		1	12/05/16	12/06/16 23:58	1033
Chromium	**54**	mg/kg	2.5		1	12/05/16	12/06/16 23:58	1033
Copper	**28**	mg/kg	2.5		1	12/05/16	12/06/16 23:58	1033
Lead	**39**	mg/kg	2.5		1	12/05/16	12/06/16 23:58	1033
Mercury	ND	mg/kg	0.10		1	12/05/16	12/06/16 23:58	1033
Nickel	**21**	mg/kg	2.5		1	12/05/16	12/06/16 23:58	1033
Selenium	ND	mg/kg	2.5		1	12/05/16	12/06/16 23:58	1033
Silver	ND	mg/kg	2.5		1	12/05/16	12/06/16 23:58	1033
Thallium	ND	mg/kg	2.0		1	12/05/16	12/06/16 23:58	1033
Zinc	**35**	mg/kg	10		1	12/05/16	12/06/16 23:58	1033

Chromium, Hexavalent — Analytical Method: SW-846 7196 A — Preparation Method: SW3060A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chromium, Hexavalent	ND	mg/kg	1.1		1	12/07/16	12/08/16 16:32	1053

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

DF/HF - No. 2/diesel fuel and heavier fuel/oil patterns observed in sample.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**140**	mg/kg	11	DF	1	12/07/16	12/08/16 22:06	1060

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	110		1	12/06/16	12/06/16 17:40	1035

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-12 **Date/Time Sampled: 12/02/2016 13:15** **PSS Sample ID: 16120215-012**

Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 87**

Polychlorinated Biphenyls

Analytical Method: SW-846 8082 A

Preparation Method: SW3550C
Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.056		1	12/06/16	12/07/16 13:33	1029
PCB-1221	ND	mg/kg	0.056		1	12/06/16	12/07/16 13:33	1029
PCB-1232	ND	mg/kg	0.056		1	12/06/16	12/07/16 13:33	1029
PCB-1242	ND	mg/kg	0.056		1	12/06/16	12/07/16 13:33	1029
PCB-1248	ND	mg/kg	0.056		1	12/06/16	12/07/16 13:33	1029
PCB-1254	ND	mg/kg	0.056		1	12/06/16	12/07/16 13:33	1029
PCB-1260	ND	mg/kg	0.056		1	12/06/16	12/07/16 13:33	1029

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-12 | **Date/Time Sampled: 12/02/2016 13:15** | **PSS Sample ID: 16120215-012**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Acenaphthylene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Acetophenone	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Anthracene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Atrazine	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Benzo(a)anthracene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Benzo(a)pyrene	**110**	ug/kg	19		1	12/07/16	12/09/16 06:48	1055
Benzo(b)fluoranthene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Benzo(g,h,i)perylene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Benzo(k)fluoranthene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Biphenyl (Diphenyl)	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Butyl benzyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
bis(2-chloroethoxy) methane	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
bis(2-chloroethyl) ether	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
4-Bromophenylphenyl ether	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Di-n-butyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Carbazole	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Caprolactam	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
4-Chloro-3-methylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
4-Chloroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
2-Chloronaphthalene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
2-Chlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Chrysene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Dibenz(a,h)anthracene	**20**	ug/kg	19		1	12/07/16	12/09/16 06:48	1055
Dibenzofuran	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
3,3-Dichlorobenzidine	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
2,4-Dichlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-12 | **Date/Time Sampled: 12/02/2016 13:15** | **PSS Sample ID: 16120215-012**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Dimethyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
2,4-Dimethylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
2,4-Dinitrophenol	ND	ug/kg	380		1	12/07/16	12/09/16 06:48	1055
2,4-Dinitrotoluene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
2,6-Dinitrotoluene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Fluoranthene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Fluorene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Hexachlorobenzene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Hexachlorobutadiene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Hexachlorocyclopentadiene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Hexachloroethane	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Isophorone	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
2-Methylnaphthalene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
2-Methylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
3&4-Methylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Naphthalene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
2-Nitroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
3-Nitroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
4-Nitroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Nitrobenzene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
2-Nitrophenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
4-Nitrophenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	19		1	12/07/16	12/09/16 06:48	1055
N-Nitrosodiphenylamine	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Di-n-octyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Pentachlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Phenanthrene	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-12 | **Date/Time Sampled: 12/02/2016 13:15** | **PSS Sample ID: 16120215-012**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Pyrene	**270**	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
Pyridine	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
2,4,5-Trichlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055
2,4,6-Trichlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 06:48	1055

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No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-13 | **Date/Time Sampled: 12/02/2016 13:30** | **PSS Sample ID: 16120215-013**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.0		1	12/05/16	12/07/16 00:04	1033
Arsenic	**3.6**	mg/kg	0.41		1	12/05/16	12/07/16 00:04	1033
Beryllium	ND	mg/kg	2.0		1	12/05/16	12/07/16 00:04	1033
Cadmium	ND	mg/kg	2.0		1	12/05/16	12/07/16 00:04	1033
Chromium	**49**	mg/kg	2.0		1	12/05/16	12/07/16 00:04	1033
Copper	**24**	mg/kg	2.0		1	12/05/16	12/07/16 00:04	1033
Lead	**46**	mg/kg	4.1		2	12/05/16	12/07/16 18:10	1033
Mercury	ND	mg/kg	0.082		1	12/05/16	12/07/16 00:04	1033
Nickel	**20**	mg/kg	2.0		1	12/05/16	12/07/16 00:04	1033
Selenium	ND	mg/kg	2.0		1	12/05/16	12/07/16 00:04	1033
Silver	ND	mg/kg	2.0		1	12/05/16	12/07/16 00:04	1033
Thallium	ND	mg/kg	1.6		1	12/05/16	12/07/16 00:04	1033
Zinc	**39**	mg/kg	8.2		1	12/05/16	12/07/16 00:04	1033

Chromium, Hexavalent — Analytical Method: SW-846 7196 A — Preparation Method: SW3060A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chromium, Hexavalent	ND	mg/kg	1.1		1	12/07/16	12/08/16 16:35	1053

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

DF/HF - No. 2/diesel fuel and heavier fuel/oil patterns observed in sample.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**100**	mg/kg	12	DF	1	12/07/16	12/08/16 22:06	1060

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	110		1	12/06/16	12/06/16 18:10	1035

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-13 **Date/Time Sampled: 12/02/2016 13:30** **PSS Sample ID: 16120215-013**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 87**

Polychlorinated Biphenyls

Analytical Method: SW-846 8082 A

Preparation Method: SW3550C
Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.056		1	12/06/16	12/07/16 14:02	1029
PCB-1221	ND	mg/kg	0.056		1	12/06/16	12/07/16 14:02	1029
PCB-1232	ND	mg/kg	0.056		1	12/06/16	12/07/16 14:02	1029
PCB-1242	ND	mg/kg	0.056		1	12/06/16	12/07/16 14:02	1029
PCB-1248	ND	mg/kg	0.056		1	12/06/16	12/07/16 14:02	1029
PCB-1254	ND	mg/kg	0.056		1	12/06/16	12/07/16 14:02	1029
PCB-1260	ND	mg/kg	0.056		1	12/06/16	12/07/16 14:02	1029

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No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-13 | **Date/Time Sampled: 12/02/2016 13:30** | **PSS Sample ID: 16120215-013**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Acenaphthylene	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Acetophenone	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Anthracene	**380**	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Atrazine	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Benzo(a)anthracene	**400**	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Benzo(a)pyrene	**310**	ug/kg	19		1	12/07/16	12/09/16 07:16	1055
Benzo(b)fluoranthene	**210**	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Benzo(g,h,i)perylene	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Benzo(k)fluoranthene	**260**	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Biphenyl (Diphenyl)	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Butyl benzyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
bis(2-chloroethoxy) methane	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
bis(2-chloroethyl) ether	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
4-Bromophenylphenyl ether	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Di-n-butyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Carbazole	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Caprolactam	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
4-Chloro-3-methylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
4-Chloroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
2-Chloronaphthalene	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
2-Chlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Chrysene	**410**	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Dibenz(a,h)anthracene	**44**	ug/kg	19		1	12/07/16	12/09/16 07:16	1055
Dibenzofuran	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
3,3-Dichlorobenzidine	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
2,4-Dichlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-13 | **Date/Time Sampled: 12/02/2016 13:30** | **PSS Sample ID: 16120215-013**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Dimethyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
2,4-Dimethylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
2,4-Dinitrophenol	ND	ug/kg	380		1	12/07/16	12/09/16 07:16	1055
2,4-Dinitrotoluene	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
2,6-Dinitrotoluene	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Fluoranthene	**550**	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Fluorene	**190**	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Hexachlorobenzene	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Hexachlorobutadiene	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Hexachlorocyclopentadiene	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Hexachloroethane	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Isophorone	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
2-Methylnaphthalene	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
2-Methylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
3&4-Methylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Naphthalene	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
2-Nitroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
3-Nitroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
4-Nitroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Nitrobenzene	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
2-Nitrophenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
4-Nitrophenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	19		1	12/07/16	12/09/16 07:16	1055
N-Nitrosodiphenylamine	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Di-n-octyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Pentachlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Phenanthrene	**1,200**	ug/kg	190		1	12/07/16	12/09/16 07:16	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-13 | **Date/Time Sampled: 12/02/2016 13:30** | **PSS Sample ID: 16120215-013**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 87**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Pyrene	**1,100**	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
Pyridine	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
2,4,5-Trichlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055
2,4,6-Trichlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:16	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-14 | **Date/Time Sampled: 12/02/2016 13:45** | **PSS Sample ID: 16120215-014**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 86**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.5		1	12/05/16	12/07/16 00:11	1033
Arsenic	**4.1**	mg/kg	0.49		1	12/05/16	12/07/16 00:11	1033
Beryllium	ND	mg/kg	2.5		1	12/05/16	12/07/16 00:11	1033
Cadmium	ND	mg/kg	2.5		1	12/05/16	12/07/16 00:11	1033
Chromium	**70**	mg/kg	2.5		1	12/05/16	12/07/16 00:11	1033
Copper	**24**	mg/kg	2.5		1	12/05/16	12/07/16 00:11	1033
Lead	**38**	mg/kg	2.5		1	12/05/16	12/07/16 00:11	1033
Mercury	**0.13**	mg/kg	0.099		1	12/05/16	12/07/16 00:11	1033
Nickel	**23**	mg/kg	2.5		1	12/05/16	12/07/16 00:11	1033
Selenium	ND	mg/kg	2.5		1	12/05/16	12/07/16 00:11	1033
Silver	ND	mg/kg	2.5		1	12/05/16	12/07/16 00:11	1033
Thallium	ND	mg/kg	2.0		1	12/05/16	12/07/16 00:11	1033
Zinc	**53**	mg/kg	9.9		1	12/05/16	12/07/16 00:11	1033

Chromium, Hexavalent — Analytical Method: SW-846 7196 A — Preparation Method: SW3060A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chromium, Hexavalent	ND	mg/kg	1.2		1	12/07/16	12/08/16 16:38	1053

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

DF/HF - No. 2/diesel fuel and heavier fuel/oil patterns observed in sample.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**180**	mg/kg	12	DF	1	12/07/16	12/08/16 23:01	1060

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	120		1	12/06/16	12/06/16 18:40	1035

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No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-14 **Date/Time Sampled: 12/02/2016 13:45** **PSS Sample ID: 16120215-014**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 86**

Polychlorinated Biphenyls — Analytical Method: SW-846 8082 A — Preparation Method: SW3550C — Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.060		1	12/06/16	12/07/16 14:02	1029
PCB-1221	ND	mg/kg	0.060		1	12/06/16	12/07/16 14:02	1029
PCB-1232	ND	mg/kg	0.060		1	12/06/16	12/07/16 14:02	1029
PCB-1242	ND	mg/kg	0.060		1	12/06/16	12/07/16 14:02	1029
PCB-1248	ND	mg/kg	0.060		1	12/06/16	12/07/16 14:02	1029
PCB-1254	ND	mg/kg	0.060		1	12/06/16	12/07/16 14:02	1029
PCB-1260	ND	mg/kg	0.060		1	12/06/16	12/07/16 14:02	1029

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No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-14 | **Date/Time Sampled: 12/02/2016 13:45** | **PSS Sample ID: 16120215-014**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 86**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Acenaphthylene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Acetophenone	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Anthracene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Atrazine	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Benzo(a)anthracene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Benzo(a)pyrene	**110**	ug/kg	19		1	12/07/16	12/09/16 07:44	1055
Benzo(b)fluoranthene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Benzo(g,h,i)perylene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Benzo(k)fluoranthene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Biphenyl (Diphenyl)	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Butyl benzyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
bis(2-chloroethoxy) methane	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
bis(2-chloroethyl) ether	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
4-Bromophenylphenyl ether	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Di-n-butyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Carbazole	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Caprolactam	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
4-Chloro-3-methylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
4-Chloroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
2-Chloronaphthalene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
2-Chlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Chrysene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Dibenz(a,h)anthracene	ND	ug/kg	19		1	12/07/16	12/09/16 07:44	1055
Dibenzofuran	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
3,3-Dichlorobenzidine	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
2,4-Dichlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-14 | **Date/Time Sampled: 12/02/2016 13:45** | **PSS Sample ID: 16120215-014**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 86**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Dimethyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
2,4-Dimethylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
2,4-Dinitrophenol	ND	ug/kg	390		1	12/07/16	12/09/16 07:44	1055
2,4-Dinitrotoluene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
2,6-Dinitrotoluene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Fluoranthene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Fluorene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Hexachlorobenzene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Hexachlorobutadiene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Hexachlorocyclopentadiene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Hexachloroethane	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Isophorone	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
2-Methylnaphthalene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
2-Methylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
3&4-Methylphenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Naphthalene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
2-Nitroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
3-Nitroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
4-Nitroaniline	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Nitrobenzene	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
2-Nitrophenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
4-Nitrophenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	19		1	12/07/16	12/09/16 07:44	1055
N-Nitrosodiphenylamine	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Di-n-octyl phthalate	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Pentachlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Phenanthrene	**210**	ug/kg	190		1	12/07/16	12/09/16 07:44	1055

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CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-14 | **Date/Time Sampled: 12/02/2016 13:45** | **PSS Sample ID: 16120215-014**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 86**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Pyrene	**300**	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
Pyridine	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
2,4,5-Trichlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055
2,4,6-Trichlorophenol	ND	ug/kg	190		1	12/07/16	12/09/16 07:44	1055

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No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-15 | **Date/Time Sampled: 12/02/2016 14:00** | **PSS Sample ID: 16120215-015**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 85**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.2		1	12/05/16	12/07/16 00:17	1033
Arsenic	**3.1**	mg/kg	0.44		1	12/05/16	12/07/16 00:17	1033
Beryllium	ND	mg/kg	2.2		1	12/05/16	12/07/16 00:17	1033
Cadmium	ND	mg/kg	2.2		1	12/05/16	12/07/16 00:17	1033
Chromium	**55**	mg/kg	2.2		1	12/05/16	12/07/16 00:17	1033
Copper	**25**	mg/kg	2.2		1	12/05/16	12/07/16 00:17	1033
Lead	**35**	mg/kg	2.2		1	12/05/16	12/07/16 00:17	1033
Mercury	**0.16**	mg/kg	0.087		1	12/05/16	12/07/16 00:17	1033
Nickel	**18**	mg/kg	2.2		1	12/05/16	12/07/16 00:17	1033
Selenium	ND	mg/kg	2.2		1	12/05/16	12/07/16 00:17	1033
Silver	ND	mg/kg	2.2		1	12/05/16	12/07/16 00:17	1033
Thallium	ND	mg/kg	1.7		1	12/05/16	12/07/16 00:17	1033
Zinc	**40**	mg/kg	8.7		1	12/05/16	12/07/16 00:17	1033

Chromium, Hexavalent — Analytical Method: SW-846 7196 A — Preparation Method: SW3060A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chromium, Hexavalent	ND	mg/kg	1.2		1	12/07/16	12/08/16 16:41	1053

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

DF/HF - No. 2/diesel fuel and heavier fuel/oil patterns observed in sample.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**220**	mg/kg	12	DF	1	12/07/16	12/08/16 23:01	1060

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	120		1	12/07/16	12/07/16 22:17	1035

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No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-15 **Date/Time Sampled: 12/02/2016 14:00** **PSS Sample ID: 16120215-015**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 85**

Organochlorine Pesticides — Analytical Method: SW-846 8081 B — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
alpha-BHC	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
Gamma-BHC (Lindane)	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
beta-BHC	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
delta-BHC	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
Heptachlor	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
Aldrin	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
Heptachlor Epoxide	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
Gamma-Chlordane	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
Alpha-Chlordane	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
4,4-DDE	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
Endosulfan I	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
Dieldrin	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
Endrin	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
4,4-DDD	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
Endosulfan II	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
4,4-DDT	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
Endrin Aldehyde	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
Methoxychlor	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
Endosulfan Sulfate	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
Endrin ketone	ND	ug/kg	23		5	12/08/06	12/08/06 00:58	1029
Toxaphene	ND	ug/kg	570		5	12/08/06	12/08/06 00:58	1029
Chlordane	ND	ug/kg	570		5	12/08/06	12/08/06 00:58	1029

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-15 **Date/Time Sampled: 12/02/2016 14:00** **PSS Sample ID: 16120215-015**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 85**

Polychlorinated Biphenyls — Analytical Method: SW-846 8082 A — Preparation Method: SW3550C — Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.057		1	12/06/16	12/07/16 14:31	1029
PCB-1221	ND	mg/kg	0.057		1	12/06/16	12/07/16 14:31	1029
PCB-1232	ND	mg/kg	0.057		1	12/06/16	12/07/16 14:31	1029
PCB-1242	ND	mg/kg	0.057		1	12/06/16	12/07/16 14:31	1029
PCB-1248	ND	mg/kg	0.057		1	12/06/16	12/07/16 14:31	1029
PCB-1254	ND	mg/kg	0.057		1	12/06/16	12/07/16 14:31	1029
PCB-1260	ND	mg/kg	0.057		1	12/06/16	12/07/16 14:31	1029

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-15 | **Date/Time Sampled: 12/02/2016 14:00** | **PSS Sample ID: 16120215-015**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 85**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Acenaphthylene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Acetophenone	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Anthracene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Atrazine	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Benzo(a)anthracene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Benzo(a)pyrene	**130**	ug/kg	20		1	12/07/16	12/09/16 04:56	1055
Benzo(b)fluoranthene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Benzo(g,h,i)perylene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Benzo(k)fluoranthene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Biphenyl (Diphenyl)	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Butyl benzyl phthalate	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
bis(2-chloroethoxy) methane	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
bis(2-chloroethyl) ether	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
4-Bromophenylphenyl ether	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Di-n-butyl phthalate	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Carbazole	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Caprolactam	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
4-Chloro-3-methylphenol	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
4-Chloroaniline	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
2-Chloronaphthalene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
2-Chlorophenol	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
4-Chlorophenyl phenyl ether	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Chrysene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Dibenz(a,h)anthracene	**24**	ug/kg	20		1	12/07/16	12/09/16 04:56	1055
Dibenzofuran	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
3,3-Dichlorobenzidine	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
2,4-Dichlorophenol	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-15 **Date/Time Sampled: 12/02/2016 14:00** **PSS Sample ID: 16120215-015**
Matrix: SOIL **Date/Time Received: 12/02/2016 16:57** **% Solids: 85**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Dimethyl phthalate	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
2,4-Dimethylphenol	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
2,4-Dinitrophenol	ND	ug/kg	390		1	12/07/16	12/09/16 04:56	1055
2,4-Dinitrotoluene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
2,6-Dinitrotoluene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Fluoranthene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Fluorene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Hexachlorobenzene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Hexachlorobutadiene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Hexachlorocyclopentadiene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Hexachloroethane	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Isophorone	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
2-Methylnaphthalene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
2-Methylphenol	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
3&4-Methylphenol	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Naphthalene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
2-Nitroaniline	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
3-Nitroaniline	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
4-Nitroaniline	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Nitrobenzene	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
2-Nitrophenol	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
4-Nitrophenol	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
N-Nitrosodi-n-Propylamine	ND	ug/kg	20		1	12/07/16	12/09/16 04:56	1055
N-Nitrosodiphenylamine	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Di-n-octyl phthalate	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Pentachlorophenol	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Phenanthrene	**230**	ug/kg	200		1	12/07/16	12/09/16 04:56	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 16120215

GTA - Abingdon, Abingdon, MD

December 13, 2016

Project Name: 151454
Project Location: Middle River
Project ID: 151454

Sample ID: TS-15 | **Date/Time Sampled: 12/02/2016 14:00** | **PSS Sample ID: 16120215-015**
Matrix: SOIL | **Date/Time Received: 12/02/2016 16:57** | **% Solids: 85**

TCL Semivolatile Organic Compounds | Analytical Method: SW-846 8270 C | Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Pyrene	**260**	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
Pyridine	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
2,4,5-Trichlorophenol	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055
2,4,6-Trichlorophenol	ND	ug/kg	200		1	12/07/16	12/09/16 04:56	1055

Case Narrative Summary

Client Name: GTA - Abingdon

Project Name: 151454

Work Order Number(s): 16120215
Project ID: 151454

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

The analyses of chlorine, pH, dissolved oxygen, temperature and sulfite for drinking water and non-potable samples tested for compliance have a maximum holding time of 15 minutes. As such, all laboratory analyses for these analytes exceed holding times.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

Analytical:

RCRA Metals

Batch: 138104
Matrix spike and/or matrix spike duplicate (MS/MSD) exceedances identified; see MS summary form.

Organochlorine Pesticides

Batch: 138116
Matrix spike and/or matrix spike duplicate (MS/MSD) exceedances identified; see MS summary form.

TCL Semivolatile Organic Compounds

Batch: 138205
Matrix spike and/or matrix spike duplicate (MS/MSD) exceedances identified; see MS summary form.
Internal Standards fell below 50% due to sample matrix.
Samples 16120215-003, -004, -005, -006, -008, -009, and -010 required 10X dilution due to extracts being viscous and dark in color.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Analytical Data Package Information Summary

Work Order(s): 16120215
Report Prepared For: GTA - Abingdon, Abingdon, MD
Project Name: 151454
Project Manager: Ben Myers

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SM2540G	TS-1	Initial	16120215-001	1059	S	138053	138053	12/02/2016	12/06/2016 10:40	12/06/2016 10:40
	TS-2	Initial	16120215-002	1059	S	138053	138053	12/02/2016	12/06/2016 10:40	12/06/2016 10:40
	TS-3	Initial	16120215-003	1059	S	138053	138053	12/02/2016	12/06/2016 10:40	12/06/2016 10:40
	TS-4	Initial	16120215-004	1059	S	138053	138053	12/02/2016	12/06/2016 10:40	12/06/2016 10:40
	TS-5	Initial	16120215-005	1059	S	138053	138053	12/02/2016	12/06/2016 10:40	12/06/2016 10:40
	TS-6	Initial	16120215-006	1059	S	138053	138053	12/02/2016	12/06/2016 10:40	12/06/2016 10:40
	TS-7	Initial	16120215-007	1059	S	138053	138053	12/02/2016	12/06/2016 10:40	12/06/2016 10:40
	TS-8	Initial	16120215-008	1059	S	138053	138053	12/02/2016	12/06/2016 10:40	12/06/2016 10:40
	TS-9	Initial	16120215-009	1059	S	138053	138053	12/02/2016	12/06/2016 10:40	12/06/2016 10:40
	TS-10	Initial	16120215-010	1059	S	138053	138053	12/02/2016	12/06/2016 10:40	12/06/2016 10:40
	TS-11	Initial	16120215-011	1059	S	138053	138053	12/02/2016	12/06/2016 10:40	12/06/2016 10:40
	TS-12	Initial	16120215-012	1059	S	138053	138053	12/02/2016	12/06/2016 10:40	12/06/2016 10:40
	TS-13	Initial	16120215-013	1059	S	138053	138053	12/02/2016	12/06/2016 10:40	12/06/2016 10:40
	TS-14	Initial	16120215-014	1059	S	138053	138053	12/02/2016	12/06/2016 10:40	12/06/2016 10:40
	TS-15	Initial	16120215-015	1059	S	138053	138053	12/02/2016	12/06/2016 10:40	12/06/2016 10:40
SW-846 6020 A	TS-1	Initial	16120215-001	1033	S	63794	138104	12/02/2016	12/05/2016 17:20	12/06/2016 21:26
	TS-2	Initial	16120215-002	1033	S	63794	138104	12/02/2016	12/05/2016 17:20	12/06/2016 22:26
	TS-3	Initial	16120215-003	1033	S	63794	138104	12/02/2016	12/05/2016 17:20	12/06/2016 22:32
	TS-4	Initial	16120215-004	1033	S	63794	138104	12/02/2016	12/05/2016 17:20	12/06/2016 22:39
	TS-5	Initial	16120215-005	1033	S	63794	138104	12/02/2016	12/05/2016 17:20	12/06/2016 22:45
	TS-6	Initial	16120215-006	1033	S	63794	138104	12/02/2016	12/05/2016 17:20	12/06/2016 22:52
	TS-7	Initial	16120215-007	1033	S	63794	138104	12/02/2016	12/05/2016 17:20	12/06/2016 22:58
	TS-8	Initial	16120215-008	1033	S	63794	138104	12/02/2016	12/05/2016 17:20	12/06/2016 23:05
	TS-9	Initial	16120215-009	1033	S	63794	138104	12/02/2016	12/05/2016 17:20	12/06/2016 23:12
	TS-10	Initial	16120215-010	1033	S	63794	138104	12/02/2016	12/05/2016 17:20	12/06/2016 23:18
	TS-11	Initial	16120215-011	1033	S	63794	138104	12/02/2016	12/05/2016 17:20	12/06/2016 23:51
	TS-12	Initial	16120215-012	1033	S	63794	138104	12/02/2016	12/05/2016 17:20	12/06/2016 23:58
	TS-13	Initial	16120215-013	1033	S	63794	138104	12/02/2016	12/05/2016 17:20	12/07/2016 00:04
	TS-14	Initial	16120215-014	1033	S	63794	138104	12/02/2016	12/05/2016 17:20	12/07/2016 00:11

Analytical Data Package Information Summary

Work Order(s): 16120215
Report Prepared For: GTA - Abingdon, Abingdon, MD
Project Name: 151454
Project Manager: Ben Myers

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 6020 A	TS-15	Initial	16120215-015	1033	S	63794	138104	12/02/2016	12/05/2016 17:20	12/07/2016 00:17
	63794-1-BKS	BKS	63794-1-BKS	1033	S	63794	138104	--------	12/05/2016 17:20	12/06/2016 21:20
	63794-1-BLK	BLK	63794-1-BLK	1033	S	63794	138104	--------	12/05/2016 17:20	12/06/2016 21:13
	TS-1 S	MS	16120215-001 S	1033	S	63794	138104	12/02/2016	12/05/2016 17:20	12/06/2016 21:33
	TS-1 SD	MSD	16120215-001 SD	1033	S	63794	138104	12/02/2016	12/05/2016 17:20	12/06/2016 21:40
	TS-1	Reanalysis	16120215-001	1033	S	63794	138138	12/02/2016	12/05/2016 17:20	12/07/2016 17:23
	TS-3	Reanalysis	16120215-003	1033	S	63794	138138	12/02/2016	12/05/2016 17:20	12/07/2016 17:30
	TS-4	Reanalysis	16120215-004	1033	S	63794	138138	12/02/2016	12/05/2016 17:20	12/07/2016 17:36
	TS-13	Reanalysis	16120215-013	1033	S	63794	138138	12/02/2016	12/05/2016 17:20	12/07/2016 18:10
SW-846 7196 A	TS-1	Initial	16120215-001	1053	S	63840	138193	12/02/2016	12/07/2016 14:56	12/08/2016 15:44
	TS-2	Initial	16120215-002	1053	S	63840	138193	12/02/2016	12/07/2016 14:56	12/08/2016 15:58
	TS-3	Initial	16120215-003	1053	S	63840	138193	12/02/2016	12/07/2016 14:56	12/08/2016 16:01
	TS-4	Initial	16120215-004	1053	S	63840	138193	12/02/2016	12/07/2016 14:56	12/08/2016 16:04
	TS-5	Initial	16120215-005	1053	S	63840	138193	12/02/2016	12/07/2016 14:56	12/08/2016 16:07
	TS-6	Initial	16120215-006	1053	S	63840	138193	12/02/2016	12/07/2016 14:56	12/08/2016 16:14
	TS-7	Initial	16120215-007	1053	S	63840	138193	12/02/2016	12/07/2016 14:56	12/08/2016 16:17
	TS-8	Initial	16120215-008	1053	S	63840	138193	12/02/2016	12/07/2016 14:56	12/08/2016 16:20
	TS-9	Initial	16120215-009	1053	S	63840	138193	12/02/2016	12/07/2016 14:56	12/08/2016 16:23
	TS-10	Initial	16120215-010	1053	S	63840	138193	12/02/2016	12/07/2016 14:56	12/08/2016 16:26
	TS-11	Initial	16120215-011	1053	S	63840	138193	12/02/2016	12/07/2016 14:56	12/08/2016 16:29
	TS-12	Initial	16120215-012	1053	S	63840	138193	12/02/2016	12/07/2016 14:56	12/08/2016 16:32
	TS-13	Initial	16120215-013	1053	S	63840	138193	12/02/2016	12/07/2016 14:56	12/08/2016 16:35
	TS-14	Initial	16120215-014	1053	S	63840	138193	12/02/2016	12/07/2016 14:56	12/08/2016 16:38
	TS-15	Initial	16120215-015	1053	S	63840	138193	12/02/2016	12/07/2016 14:56	12/08/2016 16:41
	63840-1-BKS	BKS	63840-1-BKS	1053	S	63840	138193	--------	12/07/2016 14:56	12/08/2016 15:37
	63840-1-BLK	BLK	63840-1-BLK	1053	S	63840	138193	--------	12/07/2016 14:56	12/08/2016 15:35
	63840-1-BSD	BSD	63840-1-BSD	1053	S	63840	138193	--------	12/07/2016 14:56	12/08/2016 15:39
	TS-1 D	MD	16120215-001 D	1053	S	63840	138193	12/02/2016	12/07/2016 14:56	12/08/2016 15:47
	TS-1 S	MS	16120215-001 S	1053	S	63840	138193	12/02/2016	12/07/2016 14:56	12/08/2016 15:50

Analytical Data Package Information Summary

Work Order(s): 16120215
Report Prepared For: GTA - Abingdon, Abingdon, MD
Project Name: 151454
Project Manager: Ben Myers

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8015 C	TS-1	Initial	16120215-001	1060	S	63834	138198	12/02/2016	12/07/2016 11:39	12/08/2016 00:55
	TS-2	Initial	16120215-002	1060	S	63834	138198	12/02/2016	12/07/2016 11:39	12/08/2016 17:29
	TS-3	Initial	16120215-003	1060	S	63834	138198	12/02/2016	12/07/2016 11:39	12/08/2016 17:29
	TS-4	Initial	16120215-004	1060	S	63834	138198	12/02/2016	12/07/2016 11:39	12/08/2016 18:25
	TS-5	Initial	16120215-005	1060	S	63834	138198	12/02/2016	12/07/2016 11:39	12/08/2016 18:25
	TS-6	Initial	16120215-006	1060	S	63834	138198	12/02/2016	12/07/2016 11:39	12/08/2016 19:20
	TS-7	Initial	16120215-007	1060	S	63834	138198	12/02/2016	12/07/2016 11:39	12/08/2016 19:20
	TS-8	Initial	16120215-008	1060	S	63834	138198	12/02/2016	12/07/2016 11:39	12/08/2016 20:15
	TS-9	Initial	16120215-009	1060	S	63834	138198	12/02/2016	12/07/2016 11:39	12/08/2016 20:15
	TS-10	Initial	16120215-010	1060	S	63834	138198	12/02/2016	12/07/2016 11:39	12/08/2016 21:10
	TS-11	Initial	16120215-011	1060	S	63834	138198	12/02/2016	12/07/2016 11:39	12/08/2016 21:10
	TS-12	Initial	16120215-012	1060	S	63834	138198	12/02/2016	12/07/2016 11:39	12/08/2016 22:06
	TS-13	Initial	16120215-013	1060	S	63834	138198	12/02/2016	12/07/2016 11:39	12/08/2016 22:06
	TS-14	Initial	16120215-014	1060	S	63834	138198	12/02/2016	12/07/2016 11:39	12/08/2016 23:01
	TS-15	Initial	16120215-015	1060	S	63834	138198	12/02/2016	12/07/2016 11:39	12/08/2016 23:01
	63834-1-BKS	BKS	63834-1-BKS	1060	S	63834	138198	--------	12/07/2016 11:39	12/07/2016 23:32
	63834-1-BLK	BLK	63834-1-BLK	1060	S	63834	138198	--------	12/07/2016 11:39	12/07/2016 23:04
	63834-1-BSD	BSD	63834-1-BSD	1060	S	63834	138198	--------	12/07/2016 11:39	12/08/2016 23:59
	Sample 2 (East) S	MS	16120218-003 S	1060	S	63834	138198	12/02/2016	12/07/2016 11:39	12/08/2016 23:59
	Sample 2 (East) SD	MSD	16120218-003 SD	1060	S	63834	138198	12/02/2016	12/07/2016 11:39	12/08/2016 00:27
SW-846 8015C	TS-1	Initial	16120215-001	1035	S	63816	138061	12/02/2016	12/05/2016 23:17	12/06/2016 05:25
	TS-2	Initial	16120215-002	1035	S	63816	138061	12/02/2016	12/05/2016 23:17	12/06/2016 05:56
	TS-3	Initial	16120215-003	1035	S	63816	138061	12/02/2016	12/05/2016 23:17	12/06/2016 06:26
	TS-4	Initial	16120215-004	1035	S	63816	138061	12/02/2016	12/05/2016 23:17	12/06/2016 06:57
	TS-5	Initial	16120215-005	1035	S	63816	138061	12/02/2016	12/05/2016 23:17	12/06/2016 07:28
	TS-6	Initial	16120215-006	1035	S	63816	138061	12/02/2016	12/05/2016 23:17	12/06/2016 07:58
	TS-7	Initial	16120215-007	1035	S	63816	138061	12/02/2016	12/05/2016 23:17	12/06/2016 08:29
	63816-2-BKS	BKS	63816-2-BKS	1035	S	63816	138061	--------	12/05/2016 23:17	12/06/2016 04:23
	63816-2-BLK	BLK	63816-2-BLK	1035	S	63816	138061	--------	12/05/2016 23:17	12/06/2016 01:49

Analytical Data Package Information Summary

Work Order(s): 16120215
Report Prepared For: GTA - Abingdon, Abingdon, MD
Project Name: 151454
Project Manager: Ben Myers

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8015C	TS-1 S	MS	16120215-001 S	1035	S	63816	138061	12/02/2016	12/05/2016 23:17	12/06/2016 08:59
	TS-1 SD	MSD	16120215-001 SD	1035	S	63816	138061	12/02/2016	12/05/2016 23:17	12/06/2016 09:29
	TS-8	Initial	16120215-008	1035	S	63837	138101	12/02/2016	12/06/2016 11:29	12/06/2016 15:37
	TS-9	Initial	16120215-009	1035	S	63837	138101	12/02/2016	12/06/2016 11:29	12/06/2016 16:08
	TS-10	Initial	16120215-010	1035	S	63837	138101	12/02/2016	12/06/2016 11:29	12/06/2016 16:38
	TS-11	Initial	16120215-011	1035	S	63837	138101	12/02/2016	12/06/2016 11:29	12/06/2016 17:09
	TS-12	Initial	16120215-012	1035	S	63837	138101	12/02/2016	12/06/2016 11:29	12/06/2016 17:40
	TS-13	Initial	16120215-013	1035	S	63837	138101	12/02/2016	12/06/2016 11:29	12/06/2016 18:10
	TS-14	Initial	16120215-014	1035	S	63837	138101	12/02/2016	12/06/2016 11:29	12/06/2016 18:40
	63837-2-BKS	BKS	63837-2-BKS	1035	S	63837	138101	--------	12/06/2016 11:29	12/06/2016 14:36
	63837-2-BLK	BLK	63837-2-BLK	1035	S	63837	138101	--------	12/06/2016 11:29	12/06/2016 14:01
	Sample 3 S	MS	16120219-004 S	1035	S	63837	138101	12/01/2016	12/06/2016 11:29	12/06/2016 23:17
	Sample 3 SD	MSD	16120219-004 SD	1035	S	63837	138101	12/01/2016	12/06/2016 11:29	12/06/2016 23:48
	TS-15	Initial	16120215-015	1035	S	63859	138137	12/02/2016	12/07/2016 12:28	12/07/2016 22:17
	63859-2-BKS	BKS	63859-2-BKS	1035	S	63859	138137	--------	12/07/2016 12:28	12/07/2016 20:14
	63859-2-BLK	BLK	63859-2-BLK	1035	S	63859	138137	--------	12/07/2016 12:28	12/07/2016 15:39
	Sample 2 S	MS	16120626-002 S	1035	S	63859	138137	12/05/2016	12/07/2016 12:28	12/07/2016 22:47
	Sample 2 SD	MSD	16120626-002 SD	1035	S	63859	138137	12/05/2016	12/07/2016 12:28	12/07/2016 23:17
SW-846 8081 B	TS-5	Initial	16120215-005	1029	S	63805	138116	12/02/2016	12/06/2016 09:59	12/08/2006 01:26
	TS-10	Initial	16120215-010	1029	S	63805	138116	12/02/2016	12/06/2016 09:59	12/08/2006 00:30
	TS-15	Initial	16120215-015	1029	S	63805	138116	12/02/2016	12/06/2016 09:59	12/08/2006 00:58
	63805-1-BKS	BKS	63805-1-BKS	1029	S	63805	138116	--------	12/06/2016 09:59	12/07/2006 22:10
	63805-1-BLK	BLK	63805-1-BLK	1029	S	63805	138116	--------	12/06/2016 09:59	12/07/2006 21:14
	63805-1-BSD	BSD	63805-1-BSD	1029	S	63805	138116	--------	12/06/2016 09:59	12/07/2006 22:38
	TS-10 S	MS	16120215-010 S	1029	S	63805	138116	12/02/2016	12/06/2016 09:59	12/07/2006 23:34
	TS-10 SD	MSD	16120215-010 SD	1029	S	63805	138116	12/02/2016	12/06/2016 09:59	12/08/2006 00:02
SW-846 8082 A	TS-1	Initial	16120215-001	1029	S	63811	138178	12/02/2016	12/06/2016 10:14	12/07/2016 10:09
	TS-2	Initial	16120215-002	1029	S	63811	138178	12/02/2016	12/06/2016 10:14	12/07/2016 10:38

Analytical Data Package Information Summary

Work Order(s): 16120215
Report Prepared For: GTA - Abingdon, Abingdon, MD
Project Name: 151454
Project Manager: Ben Myers

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8082 A	TS-3	Initial	16120215-003	1029	S	63811	138178	12/02/2016	12/06/2016 10:14	12/07/2016 14:31
	TS-4	Initial	16120215-004	1029	S	63811	138178	12/02/2016	12/06/2016 10:14	12/07/2016 15:30
	TS-5	Initial	16120215-005	1029	S	63811	138178	12/02/2016	12/06/2016 10:14	12/07/2016 15:59
	TS-6	Initial	16120215-006	1029	S	63811	138178	12/02/2016	12/06/2016 10:14	12/07/2016 12:07
	TS-7	Initial	16120215-007	1029	S	63811	138178	12/02/2016	12/06/2016 10:14	12/07/2016 16:28
	TS-8	Initial	16120215-008	1029	S	63811	138178	12/02/2016	12/06/2016 10:14	12/07/2016 12:35
	TS-9	Initial	16120215-009	1029	S	63811	138178	12/02/2016	12/06/2016 10:14	12/07/2016 16:56
	TS-10	Initial	16120215-010	1029	S	63811	138178	12/02/2016	12/06/2016 10:14	12/07/2016 13:04
	TS-11	Initial	16120215-011	1029	S	63811	138178	12/02/2016	12/06/2016 10:14	12/07/2016 13:33
	TS-12	Initial	16120215-012	1029	S	63811	138178	12/02/2016	12/06/2016 10:14	12/07/2016 13:33
	TS-13	Initial	16120215-013	1029	S	63811	138178	12/02/2016	12/06/2016 10:14	12/07/2016 14:02
	TS-14	Initial	16120215-014	1029	S	63811	138178	12/02/2016	12/06/2016 10:14	12/07/2016 14:02
	TS-15	Initial	16120215-015	1029	S	63811	138178	12/02/2016	12/06/2016 10:14	12/07/2016 14:31
	63811-1-BKS	BKS	63811-1-BKS	1029	S	63811	138178	--------	12/06/2016 10:14	12/07/2016 10:09
	63811-1-BLK	BLK	63811-1-BLK	1029	S	63811	138178	--------	12/06/2016 10:14	12/07/2016 09:40
	63811-1-BSD	BSD	63811-1-BSD	1029	S	63811	138178	--------	12/06/2016 10:14	12/07/2016 10:38
	TS-1 S	MS	16120215-001 S	1029	S	63811	138178	12/02/2016	12/06/2016 10:14	12/07/2016 11:08
	TS-1 SD	MSD	16120215-001 SD	1029	S	63811	138178	12/02/2016	12/06/2016 10:14	12/07/2016 11:37
SW-846 8270 C	TS-1	Initial	16120215-001	1055	S	63822	138205	12/02/2016	12/07/2016 09:17	12/09/2016 05:24
	TS-2	Initial	16120215-002	1055	S	63822	138205	12/02/2016	12/07/2016 09:17	12/09/2016 05:52
	TS-3	Initial	16120215-003	1055	S	63822	138205	12/02/2016	12/07/2016 09:17	12/09/2016 10:59
	TS-4	Initial	16120215-004	1055	S	63822	138205	12/02/2016	12/07/2016 09:17	12/09/2016 11:30
	TS-5	Initial	16120215-005	1055	S	63822	138205	12/02/2016	12/07/2016 09:17	12/09/2016 11:58
	TS-6	Initial	16120215-006	1055	S	63822	138205	12/02/2016	12/07/2016 09:17	12/09/2016 12:26
	TS-7	Initial	16120215-007	1055	S	63822	138205	12/02/2016	12/07/2016 09:17	12/09/2016 08:12
	TS-8	Initial	16120215-008	1055	S	63822	138205	12/02/2016	12/07/2016 09:17	12/09/2016 08:40
	TS-9	Initial	16120215-009	1055	S	63822	138205	12/02/2016	12/07/2016 09:17	12/09/2016 09:08
	TS-10	Initial	16120215-010	1055	S	63822	138205	12/02/2016	12/07/2016 09:17	12/09/2016 10:04
	TS-11	Initial	16120215-011	1055	S	63822	138205	12/02/2016	12/07/2016 09:17	12/09/2016 06:20

Analytical Data Package Information Summary

Work Order(s): 16120215
Report Prepared For: GTA - Abingdon, Abingdon, MD
Project Name: 151454
Project Manager: Ben Myers

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8270 C	TS-12	Initial	16120215-012	1055	S	63822	138205	12/02/2016	12/07/2016 09:17	12/09/2016 06:48
	TS-13	Initial	16120215-013	1055	S	63822	138205	12/02/2016	12/07/2016 09:17	12/09/2016 07:16
	TS-14	Initial	16120215-014	1055	S	63822	138205	12/02/2016	12/07/2016 09:17	12/09/2016 07:44
	TS-15	Initial	16120215-015	1055	S	63822	138205	12/02/2016	12/07/2016 09:17	12/09/2016 04:56
	63822-1-BKS	BKS	63822-1-BKS	1055	S	63822	138205	--------	12/07/2016 09:17	12/09/2016 03:04
	63822-1-BLK	BLK	63822-1-BLK	1055	S	63822	138205	--------	12/07/2016 09:17	12/09/2016 02:37
	63822-1-BSD	BSD	63822-1-BSD	1055	S	63822	138205	--------	12/07/2016 09:17	12/09/2016 03:32
	TS-15 S	MS	16120215-015 S	1055	S	63822	138205	12/02/2016	12/07/2016 09:17	12/09/2016 04:00
	TS-15 SD	MSD	16120215-015 SD	1055	S	63822	138205	12/02/2016	12/07/2016 09:17	12/09/2016 04:28

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon
151454

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 138178 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	77		61-150	%	12/07/16 10:09
Tetrachloro-m-xylene	78		42-142	%	12/07/16 10:09

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 138198 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	101		34-133	%	12/08/16 00:55

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 138205 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	74		32-107	%	12/09/16 05:24
2-Fluorophenol	60		34-113	%	12/09/16 05:24
Nitrobenzene-d5	69		35-123	%	12/09/16 05:24
Phenol-d6	71		34-120	%	12/09/16 05:24
Terphenyl-D14	117		46-154	%	12/09/16 05:24
2,4,6-Tribromophenol	83		31-113	%	12/09/16 05:24

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 138061 Matrix: Soil Date Prep: 12/05/2016
PSS Sample ID: 16120215-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	59		50-122	%	12/06/16 05:25

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 138178 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-002

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	89		61-150	%	12/07/16 10:38
Tetrachloro-m-xylene	88		42-142	%	12/07/16 10:38

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon
151454

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 138198 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-002

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	92		34-133	%	12/08/16 17:29

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 138205 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-002

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	71		32-107	%	12/09/16 05:52
2-Fluorophenol	61		34-113	%	12/09/16 05:52
Nitrobenzene-d5	67		35-123	%	12/09/16 05:52
Phenol-d6	69		34-120	%	12/09/16 05:52
Terphenyl-D14	113		46-154	%	12/09/16 05:52
2,4,6-Tribromophenol	76		31-113	%	12/09/16 05:52

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 138061 Matrix: Soil Date Prep: 12/05/2016
PSS Sample ID: 16120215-002

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	53		50-122	%	12/06/16 05:56

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 138178 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-003

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	76		61-150	%	12/07/16 14:31
Tetrachloro-m-xylene	65		42-142	%	12/07/16 14:31

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 138198 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-003

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	83		34-133	%	12/08/16 17:29

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon
151454

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 138205 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-003

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	75		32-107	%	12/09/16 10:59
2-Fluorophenol	61		34-113	%	12/09/16 10:59
Nitrobenzene-d5	61		35-123	%	12/09/16 10:59
Phenol-d6	67		34-120	%	12/09/16 10:59
Terphenyl-D14	103		46-154	%	12/09/16 10:59
2,4,6-Tribromophenol	61		31-113	%	12/09/16 10:59

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 138061 Matrix: Soil Date Prep: 12/05/2016
PSS Sample ID: 16120215-003

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	56		50-122	%	12/06/16 06:26

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 138178 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-004

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	86		61-150	%	12/07/16 15:30
Tetrachloro-m-xylene	75		42-142	%	12/07/16 15:30

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 138198 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-004

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	101		34-133	%	12/08/16 18:25

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon
151454

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 138205 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-004

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	86		32-107	%	12/09/16 11:30
2-Fluorophenol	67		34-113	%	12/09/16 11:30
Nitrobenzene-d5	69		35-123	%	12/09/16 11:30
Phenol-d6	76		34-120	%	12/09/16 11:30
Terphenyl-D14	119		46-154	%	12/09/16 11:30
2,4,6-Tribromophenol	66		31-113	%	12/09/16 11:30

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 138061 Matrix: Soil Date Prep: 12/05/2016
PSS Sample ID: 16120215-004

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	54		50-122	%	12/06/16 06:57

Analytical Method: SW-846 8081 B Prep Method: SW3550C
Seq Number: 138116 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-005

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	97		23-165	%	12/08/06 01:26
Tetrachloro-m-xylene	78		31-145	%	12/08/06 01:26

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 138178 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-005

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	77		61-150	%	12/07/16 15:59
Tetrachloro-m-xylene	67		42-142	%	12/07/16 15:59

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 138198 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-005

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	84		34-133	%	12/08/16 18:25

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon
151454

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 138205 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-005

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	76		32-107	%	12/09/16 11:58
2-Fluorophenol	65		34-113	%	12/09/16 11:58
Nitrobenzene-d5	56		35-123	%	12/09/16 11:58
Phenol-d6	67		34-120	%	12/09/16 11:58
Terphenyl-D14	110		46-154	%	12/09/16 11:58
2,4,6-Tribromophenol	61		31-113	%	12/09/16 11:58

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 138061 Matrix: Soil Date Prep: 12/05/2016
PSS Sample ID: 16120215-005

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	51		50-122	%	12/06/16 07:28

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 138178 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-006

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	81		61-150	%	12/07/16 12:07
Tetrachloro-m-xylene	71		42-142	%	12/07/16 12:07

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 138198 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-006

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	101		34-133	%	12/08/16 19:20

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon
151454

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 138205 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-006

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	78		32-107	%	12/09/16 12:26
2-Fluorophenol	65		34-113	%	12/09/16 12:26
Nitrobenzene-d5	59		35-123	%	12/09/16 12:26
Phenol-d6	68		34-120	%	12/09/16 12:26
Terphenyl-D14	110		46-154	%	12/09/16 12:26
2,4,6-Tribromophenol	65		31-113	%	12/09/16 12:26

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 138061 Matrix: Soil Date Prep: 12/05/2016
PSS Sample ID: 16120215-006

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	50		50-122	%	12/06/16 07:58

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 138178 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-007

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	79		61-150	%	12/07/16 16:28
Tetrachloro-m-xylene	67		42-142	%	12/07/16 16:28

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 138198 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-007

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	87		34-133	%	12/08/16 19:20

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon
151454

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 138205 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-007

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	78		32-107	%	12/09/16 08:12
2-Fluorophenol	67		34-113	%	12/09/16 08:12
Nitrobenzene-d5	68		35-123	%	12/09/16 08:12
Phenol-d6	74		34-120	%	12/09/16 08:12
Terphenyl-D14	109		46-154	%	12/09/16 08:12
2,4,6-Tribromophenol	76		31-113	%	12/09/16 08:12

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 138061 Matrix: Soil Date Prep: 12/05/2016
PSS Sample ID: 16120215-007

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	49	*	50-122	%	12/06/16 08:29

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 138178 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-008

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	89		61-150	%	12/07/16 12:35
Tetrachloro-m-xylene	70		42-142	%	12/07/16 12:35

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 138198 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-008

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	103		34-133	%	12/08/16 20:15

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon
151454

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 138205 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-008

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	80		32-107	%	12/09/16 08:40
2-Fluorophenol	65		34-113	%	12/09/16 08:40
Nitrobenzene-d5	59		35-123	%	12/09/16 08:40
Phenol-d6	74		34-120	%	12/09/16 08:40
Terphenyl-D14	105		46-154	%	12/09/16 08:40
2,4,6-Tribromophenol	70		31-113	%	12/09/16 08:40

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 138101 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-008

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	75		50-122	%	12/06/16 15:37

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 138178 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-009

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	88		61-150	%	12/07/16 16:56
Tetrachloro-m-xylene	75		42-142	%	12/07/16 16:56

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 138198 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-009

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	91		34-133	%	12/08/16 20:15

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QC Summary 16120215

GTA - Abingdon
151454

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 138205 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-009

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	86		32-107	%	12/09/16 09:08
2-Fluorophenol	71		34-113	%	12/09/16 09:08
Nitrobenzene-d5	65		35-123	%	12/09/16 09:08
Phenol-d6	77		34-120	%	12/09/16 09:08
Terphenyl-D14	102		46-154	%	12/09/16 09:08
2,4,6-Tribromophenol	73		31-113	%	12/09/16 09:08

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 138101 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-009

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	76		50-122	%	12/06/16 16:08

Analytical Method: SW-846 8081 B Prep Method: SW3550C
Seq Number: 138116 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-010

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	77		23-165	%	12/08/06 00:30
Tetrachloro-m-xylene	65		31-145	%	12/08/06 00:30

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 138178 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-010

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	63		61-150	%	12/07/16 13:04
Tetrachloro-m-xylene	52		42-142	%	12/07/16 13:04

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 138198 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-010

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	95		34-133	%	12/08/16 21:10

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon
151454

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 138205 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-010

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	81		32-107	%	12/09/16 10:04
2-Fluorophenol	67		34-113	%	12/09/16 10:04
Nitrobenzene-d5	57		35-123	%	12/09/16 10:04
Phenol-d6	70		34-120	%	12/09/16 10:04
Terphenyl-D14	117		46-154	%	12/09/16 10:04
2,4,6-Tribromophenol	57		31-113	%	12/09/16 10:04

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 138101 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-010

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	66		50-122	%	12/06/16 16:38

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 138178 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-011

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	72		61-150	%	12/07/16 13:33
Tetrachloro-m-xylene	73		42-142	%	12/07/16 13:33

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 138198 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-011

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	89		34-133	%	12/08/16 21:10

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon
151454

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 138205 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-011

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	79		32-107	%	12/09/16 06:20
2-Fluorophenol	67		34-113	%	12/09/16 06:20
Nitrobenzene-d5	71		35-123	%	12/09/16 06:20
Phenol-d6	76		34-120	%	12/09/16 06:20
Terphenyl-D14	118		46-154	%	12/09/16 06:20
2,4,6-Tribromophenol	78		31-113	%	12/09/16 06:20

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 138101 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-011

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	75		50-122	%	12/06/16 17:09

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 138178 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-012

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	101		61-150	%	12/07/16 13:33
Tetrachloro-m-xylene	94		42-142	%	12/07/16 13:33

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 138198 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-012

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	96		34-133	%	12/08/16 22:06

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon
151454

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 138205 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-012

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	88		32-107	%	12/09/16 06:48
2-Fluorophenol	75		34-113	%	12/09/16 06:48
Nitrobenzene-d5	78		35-123	%	12/09/16 06:48
Phenol-d6	84		34-120	%	12/09/16 06:48
Terphenyl-D14	124		46-154	%	12/09/16 06:48
2,4,6-Tribromophenol	85		31-113	%	12/09/16 06:48

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 138101 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-012

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	75		50-122	%	12/06/16 17:40

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 138178 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-013

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	67		61-150	%	12/07/16 14:02
Tetrachloro-m-xylene	68		42-142	%	12/07/16 14:02

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 138198 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-013

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	89		34-133	%	12/08/16 22:06

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon
151454

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 138205 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-013

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	77		32-107	%	12/09/16 07:16
2-Fluorophenol	67		34-113	%	12/09/16 07:16
Nitrobenzene-d5	67		35-123	%	12/09/16 07:16
Phenol-d6	74		34-120	%	12/09/16 07:16
Terphenyl-D14	110		46-154	%	12/09/16 07:16
2,4,6-Tribromophenol	76		31-113	%	12/09/16 07:16

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 138101 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-013

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	75		50-122	%	12/06/16 18:10

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 138178 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-014

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	74		61-150	%	12/07/16 14:02
Tetrachloro-m-xylene	55		42-142	%	12/07/16 14:02

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 138198 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-014

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	107		34-133	%	12/08/16 23:01

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon
151454

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 138205 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-014

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	81		32-107	%	12/09/16 07:44
2-Fluorophenol	68		34-113	%	12/09/16 07:44
Nitrobenzene-d5	72		35-123	%	12/09/16 07:44
Phenol-d6	75		34-120	%	12/09/16 07:44
Terphenyl-D14	116		46-154	%	12/09/16 07:44
2,4,6-Tribromophenol	75		31-113	%	12/09/16 07:44

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 138101 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-014

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	74		50-122	%	12/06/16 18:40

Analytical Method: SW-846 8081 B Prep Method: SW3550C
Seq Number: 138116 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-015

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	88		23-165	%	12/08/06 00:58
Tetrachloro-m-xylene	75		31-145	%	12/08/06 00:58

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 138178 Matrix: Soil Date Prep: 12/06/2016
PSS Sample ID: 16120215-015

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	72		61-150	%	12/07/16 14:31
Tetrachloro-m-xylene	68		42-142	%	12/07/16 14:31

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 138198 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-015

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	84		34-133	%	12/08/16 23:01

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon
151454

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 138205 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-015

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	73		32-107	%	12/09/16 04:56
2-Fluorophenol	61		34-113	%	12/09/16 04:56
Nitrobenzene-d5	68		35-123	%	12/09/16 04:56
Phenol-d6	69		34-120	%	12/09/16 04:56
Terphenyl-D14	103		46-154	%	12/09/16 04:56
2,4,6-Tribromophenol	75		31-113	%	12/09/16 04:56

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 138137 Matrix: Soil Date Prep: 12/07/2016
PSS Sample ID: 16120215-015

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	75		50-122	%	12/07/16 22:17

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon
151454

Analytical Method: SW-846 6020 A Prep Method: SW3050B
Seq Number: 138104 Matrix: Solid Date Prep: 12/05/16
MB Sample Id: 63794-1-BLK LCS Sample Id: 63794-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Antimony	<2.489	19.91	19.48	98	80-120	mg/kg	12/06/16 21:20	
Arsenic	<0.4977	19.91	18.88	95	80-120	mg/kg	12/06/16 21:20	
Beryllium	<2.489	19.91	18.52	93	80-120	mg/kg	12/06/16 21:20	
Cadmium	<2.489	19.91	19.30	97	80-120	mg/kg	12/06/16 21:20	
Chromium	<2.489	19.91	19.75	99	80-120	mg/kg	12/06/16 21:20	
Copper	<2.489	19.91	17.65	89	80-120	mg/kg	12/06/16 21:20	
Lead	<2.489	19.91	19.15	96	80-120	mg/kg	12/06/16 21:20	
Mercury	<0.09954	0.4977	0.4828	97	80-120	mg/kg	12/06/16 21:20	
Nickel	<2.489	19.91	18.07	91	80-120	mg/kg	12/06/16 21:20	
Selenium	<2.489	19.91	17.11	86	80-120	mg/kg	12/06/16 21:20	
Silver	<2.489	19.91	19.50	98	80-120	mg/kg	12/06/16 21:20	
Thallium	<1.991	19.91	16.94	85	80-120	mg/kg	12/06/16 21:20	
Zinc	<9.954	99.54	88.99	89	80-120	mg/kg	12/06/16 21:20	

Analytical Method: SW-846 6020 A Prep Method: SW3050B
Seq Number: 138104 Matrix: Soil Date Prep: 12/05/16
Parent Sample Id: 16120215-001 MS Sample Id: 16120215-001 S MSD Sample Id: 16120215-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Antimony	<2.262	18.09	10.22	56	10.74	58	75-125	5	30	mg/kg	12/06/16 21:33	X
Arsenic	3.240	18.09	18.27	83	18.81	84	75-125	3	30	mg/kg	12/06/16 21:33	
Beryllium	<2.262	18.09	16.34	90	16.59	89	75-125	2	30	mg/kg	12/06/16 21:33	
Cadmium	<2.262	18.09	17.54	97	17.92	96	75-125	2	30	mg/kg	12/06/16 21:33	
Chromium	45.27	18.09	70.06	137	150.7	566	75-125	73	30	mg/kg	12/06/16 21:33	XF
Copper	27.21	18.09	42.80	86	42.84	84	75-125	0	30	mg/kg	12/06/16 21:33	
Lead	41.12	18.09	53.10	66	38.70	0	75-125	31	30	mg/kg	12/06/16 21:33	XF
Mercury	0.1488	0.4523	0.5609	91	0.5631	89	75-125	0	30	mg/kg	12/06/16 21:33	
Nickel	23.17	18.09	36.64	74	45.83	122	75-125	22	30	mg/kg	12/06/16 21:33	X
Selenium	<2.262	18.09	14.37	79	14.39	77	75-125	0	30	mg/kg	12/06/16 21:33	
Silver	<2.262	18.09	17.67	98	18.15	97	75-125	3	30	mg/kg	12/06/16 21:33	
Thallium	<1.809	18.09	15.21	84	17.16	92	75-125	12	20	mg/kg	12/06/16 21:33	
Zinc	46.35	90.46	115.2	76	103.5	61	75-125	11	30	mg/kg	12/06/16 21:33	X

Analytical Method: SW-846 7196 A Prep Method: SW3060A
Seq Number: 138193 Matrix: Solid Date Prep: 12/07/16
MB Sample Id: 63840-1-BLK LCS Sample Id: 63840-1-BKS LCSD Sample Id: 63840-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chromium, Hexavalent	<0.9994	4.997	4.517	90	4.235	86	80-120	6	20	mg/kg	12/08/16 15:37	

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon

151454

Analytical Method: SW-846 7196 A Prep Method: SW3060A

Seq Number: 138193 Matrix: Soil Date Prep: 12/07/16

Parent Sample Id: 16120215-001 MD Sample Id: 16120215-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Chromium, Hexavalent	<1.206	<1.206	0	20	mg/kg	12/08/16 15:47	U

Analytical Method: SW-846 7196 A Prep Method: SW3060A

Seq Number: 138193 Matrix: Soil Date Prep: 12/07/16

Parent Sample Id: 16120215-001 MS Sample Id: 16120215-001 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Chromium, Hexavalent	<1.180	5.902	<1.180	0	75-125	mg/kg	12/08/16 15:50	X

Analytical Method: SW-846 8081 B Prep Method: SW3550C

Seq Number: 138116 Matrix: Solid Date Prep: 12/06/16

MB Sample Id: 63805-1-BLK LCS Sample Id: 63805-1-BKS LCSD Sample Id: 63805-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
alpha-BHC	<3.887	19.44	18.20	94	19.52	99	58-120	7	25	ug/kg	12/07/06 22:10	
Gamma-BHC (Lindane)	<3.887	19.44	18.14	93	19.73	100	57-120	8	25	ug/kg	12/07/06 22:10	
beta-BHC	<3.887	19.44	17.74	91	19.41	99	59-118	9	25	ug/kg	12/07/06 22:10	
delta-BHC	<3.887	19.44	17.76	91	19.60	100	52-123	10	25	ug/kg	12/07/06 22:10	
Heptachlor	<3.887	19.44	16.86	87	18.82	96	44-130	11	25	ug/kg	12/07/06 22:10	
Aldrin	<3.887	19.44	17.82	92	19.58	100	59-123	9	25	ug/kg	12/07/06 22:10	
Heptachlor Epoxide	<3.887	19.44	18.16	93	20.18	103	61-119	11	25	ug/kg	12/07/06 22:10	
Gamma-Chlordane	<3.887	19.44	18.45	95	20.30	103	61-122	10	25	ug/kg	12/07/06 22:10	
Alpha-Chlordane	<3.887	19.44	18.12	93	20.26	103	61-123	11	25	ug/kg	12/07/06 22:10	
4,4-DDE	<3.887	19.44	17.73	91	20.30	103	49-131	14	25	ug/kg	12/07/06 22:10	
Endosulfan I	<3.887	19.44	18.19	94	20.41	104	66-118	12	25	ug/kg	12/07/06 22:10	
Dieldrin	<3.887	19.44	17.93	92	20.31	103	60-122	12	25	ug/kg	12/07/06 22:10	
Endrin	<3.887	19.44	15.67	81	18.26	93	39-133	15	25	ug/kg	12/07/06 22:10	
4,4-DDD	<3.887	19.44	17.56	90	19.95	102	44-130	13	25	ug/kg	12/07/06 22:10	
Endosulfan II	<3.887	19.44	17.91	92	20.62	105	59-118	14	25	ug/kg	12/07/06 22:10	
4,4-DDT	<3.887	19.44	17.18	88	20.77	106	28-134	19	25	ug/kg	12/07/06 22:10	
Endrin Aldehyde	<3.887	19.44	17.39	89	20.31	103	51-129	15	25	ug/kg	12/07/06 22:10	
Endosulfan Sulfate	<3.887	19.44	17.62	91	20.97	107	54-124	17	25	ug/kg	12/07/06 22:10	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	98		88		116		23-165	%	12/07/06 22:10
Tetrachloro-m-xylene	91		90		99		31-145	%	12/07/06 22:10

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon

151454

Analytical Method: SW-846 8081 B Prep Method: SW3550C

Seq Number: 138116 Matrix: Soil Date Prep: 12/06/16

Parent Sample Id: 16120215-010 MS Sample Id: 16120215-010 S MSD Sample Id: 16120215-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
alpha-BHC	<23.80	23.80	0	0	0	0	56-114	NC	30	ug/kg	12/07/06 23:34	X
Gamma-BHC (Lindane)	<23.80	23.80	0	0	24.19	103	55-116	200	30	ug/kg	12/07/06 23:34	XF
beta-BHC	<23.80	23.80	0	0	24.55	104	62-111	200	30	ug/kg	12/07/06 23:34	XF
delta-BHC	<23.80	23.80	0	0	0	0	52-122	NC	30	ug/kg	12/07/06 23:34	X
Heptachlor	<23.80	23.80	28.56	120	31.27	133	48-127	9	30	ug/kg	12/07/06 23:34	X
Aldrin	<23.80	23.80	0	0	24.84	105	65-120	200	30	ug/kg	12/07/06 23:34	XF
Heptachlor Epoxide	<23.80	23.80	0	0	26.08	111	61-118	200	30	ug/kg	12/07/06 23:34	XF
Gamma-Chlordane	<23.80	23.80	24.57	103	30.80	131	56-126	23	30	ug/kg	12/07/06 23:34	X
Alpha-Chlordane	<23.80	23.80	24.04	101	30.86	131	54-127	25	30	ug/kg	12/07/06 23:34	X
4,4-DDE	<23.80	23.80	0	0	30.45	129	52-124	200	30	ug/kg	12/07/06 23:34	XF
Endosulfan I	<23.80	23.80	0	0	29.62	126	61-123	200	30	ug/kg	12/07/06 23:34	XF
Dieldrin	<23.80	23.80	24.27	102	29.80	126	64-118	20	30	ug/kg	12/07/06 23:34	X
Endrin	<23.80	23.80	30.52	128	33.93	144	51-122	11	30	ug/kg	12/07/06 23:34	X
4,4-DDD	<23.80	23.80	0	0	25.31	107	48-119	200	30	ug/kg	12/07/06 23:34	XF
Endosulfan II	<23.80	23.80	0	0	24.61	104	59-118	200	30	ug/kg	12/07/06 23:34	XF
4,4-DDT	<23.80	23.80	33.73	142	38.00	161	35-148	12	30	ug/kg	12/07/06 23:34	X
Endrin Aldehyde	<23.80	23.80	0	0	25.20	107	48-123	200	30	ug/kg	12/07/06 23:34	XF
Endosulfan Sulfate	<23.80	23.80	0	0	27.14	115	60-121	200	30	ug/kg	12/07/06 23:34	XF

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	103		126		23-165	%	12/07/06 23:34
Tetrachloro-m-xylene	81		99		31-145	%	12/07/06 23:34

Analytical Method: SW-846 8082 A Prep Method: SW3550C

Seq Number: 138178 Matrix: Solid Date Prep: 12/06/16

MB Sample Id: 63811-1-BLK LCS Sample Id: 63811-1-BKS LCSD Sample Id: 63811-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	<0.04859	0.4859	0.3535	73	0.3577	73	60-110	1	25	mg/kg	12/07/16 10:09	
PCB-1260	<0.04859	0.4859	0.4246	87	0.4311	88	60-98	2	25	mg/kg	12/07/16 10:09	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	98		96		99		61-150	%	12/07/16 10:09
Tetrachloro-m-xylene	85		83		85		42-142	%	12/07/16 10:09

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon

151454

Analytical Method: SW-846 8082 A Prep Method: SW3550C

Seq Number: 138178 Matrix: Soil Date Prep: 12/06/16

Parent Sample Id: 16120215-001 MS Sample Id: 16120215-001 S MSD Sample Id: 16120215-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	<0.06105	0.6105	0.3433	56	0.3870	67	45-130	12	30	mg/kg	12/07/16 11:08	
PCB-1260	<0.06105	0.6105	0.4170	68	0.4529	78	30-125	8	30	mg/kg	12/07/16 11:08	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	87		86		61-150	%	12/07/16 11:08
Tetrachloro-m-xylene	73		77		42-142	%	12/07/16 11:08

Analytical Method: SW-846 8015 C Prep Method: SW3550C

Seq Number: 138198 Matrix: Solid Date Prep: 12/07/16

MB Sample Id: 63834-1-BLK LCS Sample Id: 63834-1-BKS LCSD Sample Id: 63834-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-DRO (Diesel Range Organics)	<10.14	33.81	30.30	90	32.12	95	54-123	6	25	mg/kg	12/07/16 23:32	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date
o-Terphenyl	88		85		91		34-133	%	12/07/16 23:32

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon

151454

Analytical Method: SW-846 8270 C Prep Method: SW3550C

Seq Number: 138205 Matrix: Solid Date Prep: 12/07/16

MB Sample Id: 63822-1-BLK LCS Sample Id: 63822-1-BKS LCSD Sample Id: 63822-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<166.1	1328	1187	89	1155	87	60-116	3	25	ug/kg	12/09/16 03:04	
Acenaphthylene	<166.1	1328	1205	91	1162	87	61-112	4	25	ug/kg	12/09/16 03:04	
Acetophenone	<166.1	1328	1121	84	1089	82	57-114	3	25	ug/kg	12/09/16 03:04	
Anthracene	<166.1	1328	1191	90	1137	85	66-115	5	25	ug/kg	12/09/16 03:04	
Atrazine	<166.1	1328	1062	80	1010	76	7-109	5	25	ug/kg	12/09/16 03:04	
Benzo(a)anthracene	<166.1	1328	1235	93	1181	89	71-113	4	25	ug/kg	12/09/16 03:04	
Benzo(a)pyrene	<16.61	1328	1267	95	1240	93	69-118	2	25	ug/kg	12/09/16 03:04	
Benzo(b)fluoranthene	<166.1	1328	1456	110	1408	106	65-126	3	25	ug/kg	12/09/16 03:04	
Benzo(g,h,i)perylene	<166.1	1328	780.5	59	894.1	67	69-112	14	25	ug/kg	12/09/16 03:04	L
Benzo(k)fluoranthene	<166.1	1328	1485	112	1336	100	57-129	11	25	ug/kg	12/09/16 03:04	
Biphenyl (Diphenyl)	<166.1	1328	1137	86	1082	81	62-117	5	25	ug/kg	12/09/16 03:04	
Butyl benzyl phthalate	<166.1	1328	1592	120	1406	106	81-111	12	25	ug/kg	12/09/16 03:04	H
bis(2-chloroethoxy) methane	<166.1	1328	1186	89	1146	86	56-119	3	25	ug/kg	12/09/16 03:04	
bis(2-chloroethyl) ether	<166.1	1328	1136	86	1099	83	55-107	3	25	ug/kg	12/09/16 03:04	
bis(2-chloroisopropyl) ether	<166.1	1328	1041	78	1014	76	44-103	3	25	ug/kg	12/09/16 03:04	
bis(2-ethylhexyl) phthalate	<166.1	1328	1574	119	1391	104	84-109	12	25	ug/kg	12/09/16 03:04	H
4-Bromophenylphenyl ether	<166.1	1328	1252	94	1200	90	63-125	4	25	ug/kg	12/09/16 03:04	
Di-n-butyl phthalate	<166.1	1328	1368	103	1298	97	76-110	5	25	ug/kg	12/09/16 03:04	
Carbazole	<166.1	1328	1171	88	1123	84	58-133	4	25	ug/kg	12/09/16 03:04	
Caprolactam	<166.1	1328	1173	88	1104	83	51-122	6	25	ug/kg	12/09/16 03:04	
4-Chloro-3-methylphenol	<166.1	1328	1166	88	1117	84	74-119	4	25	ug/kg	12/09/16 03:04	
4-Chloroaniline	<166.1	1328	1183	89	1129	85	45-107	5	25	ug/kg	12/09/16 03:04	
2-Chloronaphthalene	<166.1	1328	1217	92	1179	89	56-113	3	25	ug/kg	12/09/16 03:04	
2-Chlorophenol	<166.1	1328	1126	85	1086	82	59-113	4	25	ug/kg	12/09/16 03:04	
4-Chlorophenyl phenyl ether	<166.1	1328	1189	90	1144	86	62-111	4	25	ug/kg	12/09/16 03:04	
Chrysene	<166.1	1328	1210	91	1149	86	72-114	5	25	ug/kg	12/09/16 03:04	
Dibenz(a,h)anthracene	<16.61	1328	851.9	64	1010	76	72-110	17	25	ug/kg	12/09/16 03:04	L
Dibenzofuran	<166.1	1328	1156	87	1112	83	62-118	4	25	ug/kg	12/09/16 03:04	
3,3-Dichlorobenzidine	<166.1	1328	1513	114	1483	111	66-141	2	25	ug/kg	12/09/16 03:04	
2,4-Dichlorophenol	<166.1	1328	1204	91	1143	86	68-118	5	25	ug/kg	12/09/16 03:04	
Diethyl phthalate	<166.1	1328	1277	96	1215	91	61-113	5	25	ug/kg	12/09/16 03:04	
Dimethyl phthalate	<166.1	1328	1328	100	1288	97	69-109	3	25	ug/kg	12/09/16 03:04	
2,4-Dimethylphenol	<166.1	1328	1105	83	1059	80	57-122	4	25	ug/kg	12/09/16 03:04	
4,6-Dinitro-2-methyl phenol	<166.1	1328	1167	88	1121	84	50-134	4	25	ug/kg	12/09/16 03:04	
2,4-Dinitrophenol	<332.1	1328	1032	78	997.3	75	24-144	3	25	ug/kg	12/09/16 03:04	
2,4-Dinitrotoluene	<166.1	1328	1315	99	1279	96	61-124	3	25	ug/kg	12/09/16 03:04	
2,6-Dinitrotoluene	<166.1	1328	1286	97	1232	92	59-124	4	25	ug/kg	12/09/16 03:04	
Fluoranthene	<166.1	1328	1223	92	1168	88	69-119	5	25	ug/kg	12/09/16 03:04	
Fluorene	<166.1	1328	1195	90	1154	87	65-115	3	25	ug/kg	12/09/16 03:04	
Hexachlorobenzene	<166.1	1328	1301	98	1227	92	63-118	6	25	ug/kg	12/09/16 03:04	
Hexachlorobutadiene	<166.1	1328	1201	90	1146	86	55-120	5	25	ug/kg	12/09/16 03:04	
Hexachlorocyclopentadiene	<166.1	1328	888.4	67	889.1	67	29-138	0	25	ug/kg	12/09/16 03:04	
Hexachloroethane	<166.1	1328	1268	95	1234	93	54-110	3	25	ug/kg	12/09/16 03:04	
Indeno(1,2,3-c,d)pyrene	<166.1	1328	850.5	64	1022	77	60-127	18	25	ug/kg	12/09/16 03:04	
Isophorone	<166.1	1328	1166	88	1119	84	57-116	4	25	ug/kg	12/09/16 03:04	
2-Methylnaphthalene	<166.1	1328	1151	87	1107	83	70-109	4	25	ug/kg	12/09/16 03:04	
2-Methylphenol	<166.1	1328	1131	85	1092	82	59-118	4	25	ug/kg	12/09/16 03:04	
3&4-Methylphenol	<166.1	1328	1136	86	1104	83	59-113	3	25	ug/kg	12/09/16 03:04	
Naphthalene	<166.1	1328	1152	87	1111	83	59-108	4	25	ug/kg	12/09/16 03:04	
2-Nitroaniline	<166.1	1328	1222	92	1189	89	51-116	3	25	ug/kg	12/09/16 03:04	
3-Nitroaniline	<166.1	1328	1234	93	1192	89	57-111	3	25	ug/kg	12/09/16 03:04	

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon

151454

Analytical Method: SW-846 8270 C Prep Method: SW3550C

Seq Number: 138205 Matrix: Solid Date Prep: 12/07/16

MB Sample Id: 63822-1-BLK LCS Sample Id: 63822-1-BKS LCSD Sample Id: 63822-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
4-Nitroaniline	<166.1	1328	1267	95	1225	92	55-125	3	25	ug/kg	12/09/16 03:04	
Nitrobenzene	<166.1	1328	1122	84	1079	81	53-110	4	25	ug/kg	12/09/16 03:04	
2-Nitrophenol	<166.1	1328	1278	96	1237	93	58-124	3	25	ug/kg	12/09/16 03:04	
4-Nitrophenol	<166.1	1328	1204	91	1160	87	51-116	4	25	ug/kg	12/09/16 03:04	
N-Nitrosodi-n-Propylamine	<16.61	1328	1144	86	1105	83	60-98	3	25	ug/kg	12/09/16 03:04	
N-Nitrosodiphenylamine	<166.1	1328	1239	93	1185	89	65-111	4	25	ug/kg	12/09/16 03:04	
Di-n-octyl phthalate	<166.1	1328	1819	137	1484	111	69-120	20	25	ug/kg	12/09/16 03:04	H
Pentachlorophenol	<166.1	1328	1124	85	1066	80	56-124	5	25	ug/kg	12/09/16 03:04	
Phenanthrene	<166.1	1328	1205	91	1152	86	67-117	4	25	ug/kg	12/09/16 03:04	
Phenol	<166.1	1328	1107	83	1062	80	58-114	4	25	ug/kg	12/09/16 03:04	
Pyrene	<166.1	1328	1333	100	1166	88	77-111	13	25	ug/kg	12/09/16 03:04	
Pyridine	<166.1	1328	1035	78	992.3	74	37-110	4	25	ug/kg	12/09/16 03:04	
2,4,5-Trichlorophenol	<166.1	1328	1250	94	1182	89	64-114	6	25	ug/kg	12/09/16 03:04	
2,4,6-Trichlorophenol	<166.1	1328	1218	92	1175	88	60-125	4	25	ug/kg	12/09/16 03:04	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	81		81		76		32-107	%	12/09/16 03:04
2-Fluorophenol	84		79		74		34-113	%	12/09/16 03:04
Nitrobenzene-d5	83		81		77		35-123	%	12/09/16 03:04
Phenol-d6	84		82		77		34-120	%	12/09/16 03:04
Terphenyl-D14	88		106		89		46-154	%	12/09/16 03:04
2,4,6-Tribromophenol	85		93		86		31-113	%	12/09/16 03:04

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon

151454

Analytical Method: SW-846 8270 C Prep Method: SW3550C

Seq Number: 138205 Matrix: Soil Date Prep: 12/07/16

Parent Sample Id: 16120215-015 MS Sample Id: 16120215-015 S MSD Sample Id: 16120215-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<193.9	1552	1335	86	1518	96	61-106	13	30	ug/kg	12/09/16 04:00	
Acenaphthylene	<193.9	1552	1327	86	1527	96	60-104	14	30	ug/kg	12/09/16 04:00	
Acetophenone	<193.9	1552	1126	73	1323	83	57-103	16	30	ug/kg	12/09/16 04:00	
Anthracene	<193.9	1552	1381	89	1626	103	68-110	16	30	ug/kg	12/09/16 04:00	
Atrazine	<193.9	1552	1185	76	1404	89	6-106	17	30	ug/kg	12/09/16 04:00	
Benzo(a)anthracene	<193.9	1552	1503	97	1736	110	70-111	14	30	ug/kg	12/09/16 04:00	
Benzo(a)pyrene	127.6	1552	1529	90	1772	104	71-114	15	30	ug/kg	12/09/16 04:00	
Benzo(b)fluoranthene	<193.9	1552	1479	95	1873	118	68-120	24	30	ug/kg	12/09/16 04:00	
Benzo(g,h,i)perylene	<193.9	1552	1614	104	1527	96	64-117	6	30	ug/kg	12/09/16 04:00	
Benzo(k)fluoranthene	<193.9	1552	1476	95	1807	114	60-128	20	30	ug/kg	12/09/16 04:00	
Biphenyl (Diphenyl)	<193.9	1552	1201	77	1369	86	61-107	13	30	ug/kg	12/09/16 04:00	
Butyl benzyl phthalate	<193.9	1552	1706	110	2164	137	74-111	24	30	ug/kg	12/09/16 04:00	X
bis(2-chloroethoxy) methane	<193.9	1552	1237	80	1386	87	55-109	11	30	ug/kg	12/09/16 04:00	
bis(2-chloroethyl) ether	<193.9	1552	1145	74	1291	81	53-98	12	30	ug/kg	12/09/16 04:00	
bis(2-chloroisopropyl) ether	<193.9	1552	1071	69	1220	77	43-93	13	30	ug/kg	12/09/16 04:00	
bis(2-ethylhexyl) phthalate	<193.9	1552	1687	109	2072	131	75-114	20	30	ug/kg	12/09/16 04:00	X
4-Bromophenylphenyl ether	<193.9	1552	1438	93	1642	104	67-114	13	30	ug/kg	12/09/16 04:00	
Di-n-butyl phthalate	<193.9	1552	1557	100	1762	111	72-106	12	30	ug/kg	12/09/16 04:00	X
Carbazole	<193.9	1552	1320	85	1574	99	63-132	18	30	ug/kg	12/09/16 04:00	
Caprolactam	<193.9	1552	1269	82	1557	98	51-119	20	30	ug/kg	12/09/16 04:00	
4-Chloro-3-methylphenol	<193.9	1552	1271	82	1491	94	68-113	16	30	ug/kg	12/09/16 04:00	
4-Chloroaniline	<193.9	1552	1025	66	1230	78	45-100	18	30	ug/kg	12/09/16 04:00	
2-Chloronaphthalene	<193.9	1552	1337	86	1529	96	56-104	13	30	ug/kg	12/09/16 04:00	
2-Chlorophenol	<193.9	1552	1155	74	1313	83	60-97	13	30	ug/kg	12/09/16 04:00	
4-Chlorophenyl phenyl ether	<193.9	1552	1303	84	1514	96	61-104	15	30	ug/kg	12/09/16 04:00	
Chrysene	<193.9	1552	1509	97	1717	108	72-114	13	30	ug/kg	12/09/16 04:00	
Dibenz(a,h)anthracene	23.88	1552	1789	114	1721	107	69-112	4	30	ug/kg	12/09/16 04:00	X
Dibenzofuran	<193.9	1552	1278	82	1477	93	63-109	14	30	ug/kg	12/09/16 04:00	
3,3-Dichlorobenzidine	<193.9	1552	1714	110	1906	120	74-134	11	30	ug/kg	12/09/16 04:00	
2,4-Dichlorophenol	<193.9	1552	1275	82	1477	93	63-109	15	30	ug/kg	12/09/16 04:00	
Diethyl phthalate	<193.9	1552	1401	90	1599	101	60-108	13	30	ug/kg	12/09/16 04:00	
Dimethyl phthalate	<193.9	1552	1455	94	1644	104	64-104	12	30	ug/kg	12/09/16 04:00	
2,4-Dimethylphenol	<193.9	1552	1211	78	1385	87	44-107	13	30	ug/kg	12/09/16 04:00	
4,6-Dinitro-2-methyl phenol	<193.9	1552	1169	75	1032	65	51-130	12	30	ug/kg	12/09/16 04:00	
2,4-Dinitrophenol	<387.9	1552	951.9	61	876.5	55	12-150	8	30	ug/kg	12/09/16 04:00	
2,4-Dinitrotoluene	<193.9	1552	1426	92	1672	105	61-123	16	30	ug/kg	12/09/16 04:00	
2,6-Dinitrotoluene	<193.9	1552	1422	92	1631	103	58-120	14	30	ug/kg	12/09/16 04:00	
Fluoranthene	<193.9	1552	1467	95	1638	103	69-114	11	30	ug/kg	12/09/16 04:00	
Fluorene	<193.9	1552	1342	86	1549	98	66-106	14	30	ug/kg	12/09/16 04:00	
Hexachlorobenzene	<193.9	1552	1505	97	1701	107	63-114	12	30	ug/kg	12/09/16 04:00	
Hexachlorobutadiene	<193.9	1552	1263	81	1412	89	55-107	11	30	ug/kg	12/09/16 04:00	
Hexachlorocyclopentadiene	<193.9	1552	847.5	55	588.8	37	36-120	36	30	ug/kg	12/09/16 04:00	F
Hexachloroethane	<193.9	1552	1257	81	1373	87	52-99	9	30	ug/kg	12/09/16 04:00	
Indeno(1,2,3-c,d)pyrene	<193.9	1552	1927	124	1786	113	63-123	8	30	ug/kg	12/09/16 04:00	X
Isophorone	<193.9	1552	1219	79	1364	86	57-106	11	30	ug/kg	12/09/16 04:00	
2-Methylnaphthalene	<193.9	1552	1226	79	1377	87	63-102	12	30	ug/kg	12/09/16 04:00	
2-Methylphenol	<193.9	1552	1164	75	1346	85	60-103	15	30	ug/kg	12/09/16 04:00	
3&4-Methylphenol	<193.9	1552	1163	75	1373	87	58-101	17	30	ug/kg	12/09/16 04:00	
Naphthalene	<193.9	1552	1218	78	1385	87	59-97	13	30	ug/kg	12/09/16 04:00	
2-Nitroaniline	<193.9	1552	1347	87	1559	98	52-109	15	30	ug/kg	12/09/16 04:00	
3-Nitroaniline	<193.9	1552	1196	77	1467	93	59-109	20	30	ug/kg	12/09/16 04:00	

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon
151454

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 138205 Matrix: Soil Date Prep: 12/07/16
Parent Sample Id: 16120215-015 MS Sample Id: 16120215-015 S MSD Sample Id: 16120215-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
4-Nitroaniline	<193.9	1552	1133	73	1503	95	60-121	28	30	ug/kg	12/09/16 04:00	
Nitrobenzene	<193.9	1552	1175	76	1302	82	52-100	10	30	ug/kg	12/09/16 04:00	
2-Nitrophenol	<193.9	1552	1320	85	1481	93	62-109	11	30	ug/kg	12/09/16 04:00	
4-Nitrophenol	<193.9	1552	1232	79	1479	93	48-114	18	30	ug/kg	12/09/16 04:00	
N-Nitrosodi-n-Propylamine	<19.39	1552	1124	72	1322	83	50-96	16	30	ug/kg	12/09/16 04:00	
N-Nitrosodiphenylamine	<193.9	1552	1416	91	1622	102	64-108	14	30	ug/kg	12/09/16 04:00	
Di-n-octyl phthalate	<193.9	1552	1303	84	1880	119	69-117	36	30	ug/kg	12/09/16 04:00	XF
Pentachlorophenol	<193.9	1552	1187	76	1396	88	66-114	16	30	ug/kg	12/09/16 04:00	
Phenanthrene	227.5	1552	1584	87	1759	97	67-115	10	30	ug/kg	12/09/16 04:00	
Phenol	<193.9	1552	1119	72	1289	81	55-106	14	30	ug/kg	12/09/16 04:00	
Pyrene	263.1	1552	1669	91	2108	116	67-116	23	30	ug/kg	12/09/16 04:00	
Pyridine	<193.9	1552	1034	67	1072	68	41-92	4	30	ug/kg	12/09/16 04:00	
2,4,5-Trichlorophenol	<193.9	1552	1370	88	1602	101	65-107	16	30	ug/kg	12/09/16 04:00	
2,4,6-Trichlorophenol	<193.9	1552	1368	88	1566	99	62-114	13	30	ug/kg	12/09/16 04:00	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	74		82		32-107	%	12/09/16 04:00
2-Fluorophenol	67		72		34-113	%	12/09/16 04:00
Nitrobenzene-d5	72		79		35-123	%	12/09/16 04:00
Phenol-d6	71		80		34-120	%	12/09/16 04:00
Terphenyl-D14	94		121		46-154	%	12/09/16 04:00
2,4,6-Tribromophenol	84		98		31-113	%	12/09/16 04:00

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 138061 Matrix: Solid Date Prep: 12/05/16
MB Sample Id: 63816-2-BLK LCS Sample Id: 63816-2-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
TPH-GRO (Gasoline Range Organics	<100	5000	4974	99	75-123	ug/kg	12/06/16 04:23	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	65		78		50-122	%	12/06/16 04:23

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 138101 Matrix: Solid Date Prep: 12/06/16
MB Sample Id: 63837-2-BLK LCS Sample Id: 63837-2-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
TPH-GRO (Gasoline Range Organics	<100	5000	4886	98	75-123	ug/kg	12/06/16 14:36	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	74		91		50-122	%	12/06/16 14:36

PHASE SEPARATION SCIENCE, INC.

QC Summary 16120215

GTA - Abingdon

151454

Analytical Method: SW-846 8015C Prep Method: SW5030

Seq Number: 138137 Matrix: Solid Date Prep: 12/07/16

MB Sample Id: 63859-2-BLK LCS Sample Id: 63859-2-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
TPH-GRO (Gasoline Range Organics	<100	5000	4432	89	75-123	ug/kg	12/07/16 20:14	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	75		91		50-122	%	12/07/16 20:14

Analytical Method: SW-846 8015C Prep Method: SW5030

Seq Number: 138061 Matrix: Soil Date Prep: 12/05/16

Parent Sample Id: 16120215-001 MS Sample Id: 16120215-001 S MSD Sample Id: 16120215-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO (Gasoline Range Organics	<119	5952	3630	61	2239	38	31-140	47	30	ug/kg	12/06/16 08:59	F

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	61		54		50-122	%	12/06/16 08:59

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

(1) *CLIENT: GTA *OFFICE LOC.: Abingdon
*PROJECT MGR: Ben Myers *PHONE NO.: (410) 515-9446
EMAIL: bmyers@gtaeng.com FAX NO.: ( )
*PROJECT NAME: 151954 PROJECT NO.:
SITE LOCATION: Middle River P.O. NO.:
SAMPLER(S): JLV DW CERT NO.:

PSS Work Order #: 1612025 PAGE 1 OF 2

Matrix Codes: SW=Surface Wtr DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr O=Oil S=Soil L=Liquid SOL=Solid A=Air WI=Wipe

(2)

LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used	Analysis/ Method Required (3) * PP Metals	hex chrome	5 VOCs	TPH DRO	TPH GRO	PCBs	Pesticides	REMARKS
1	TS-1	12/2/16	930	S	4	C		X	X	X	X	X	X		
2	TS-2	12/2/16	1000	S	4	C		X	X	X	X	X	X		
3	TS-3	12/2/16	1025	S	4	C		X	X	X	X	X	X		
4	TS-4	12/2/16	1045	S	4	C		X	X	X	X	X	X		
5	TS-5	12/2/16	1105	S	4	C		X	X	X	X	X	X	X	
6	TS-6	12/2/16	1115	S	4	C		X	X	X	X	X	X		
7	TS-7	12/2/16	1145	S	4	C		X	X	X	X	X	X		
8	TS-8	12/2/16	1200	S	4	C		X	X	X	X	X	X		
9	TS-9	12/2/16	1225	S	4	C		X	X	X	X	X	X		
10	TS-10	12/2/16	1245	S	4	C		X	X	X	X	X	X	X	

(5)

Relinquished By: (1)	Date	Time	Received By:
[signature]	12/2	1157	[signature]
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

*Requested TAT (One TAT per COC)
☒ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☐ Other

Data Deliverables Required: COA ☐ QC SUMM ☐ CLP LIKE ☐ OTHER ____

# of Coolers: 2
Custody Seal: ABS
Ice Present: YES Temp: 5.9 / 2
Shipping Carrier: CLIENT

Special Instructions: Tier II

DW COMPLIANCE? YES ☐
EDD FORMAT TYPE: ____
STATE RESULTS REPORTED TO: MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER ____

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SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

(1) *CLIENT: GTA *OFFICE LOC.: Abingdon
*PROJECT MGR: Ben Myers *PHONE NO.: (410) 515-9446
EMAIL: bmyers@gaeng.com FAX NO.: ( )
*PROJECT NAME: 151454 PROJECT NO.:
SITE LOCATION: Middle River P.O. NO.:
SAMPLER(S): JLW DW CERT NO.:

PSS Work Order #: 16120215 PAGE 2 OF 2

Matrix Codes: SW=Surface Wtr DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr O=Oil S=Soil L=Liquid SOL=Solid A=Air WI=Wipe

(2)

LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)	No. CONTAINERS	SAMPLE TYPE C=COMP G=GRAB	Preservatives Used	Analysis/ Method Required (3) * PP Metals	hex chrome	5 VOCs	TPH DRO	TPH GRO	PCBs	Pesticides	REMARKS
11	TS-11	12/2/16	1305	S	4	C		X	X	X	X	X	X		
12	TS-12	12/2/16	1315	S	4	C		X	X	X	X	X	X		
13	TS-13	12/2/16	1330	S	4	C		X	X	X	X	X	X		
14	TS-14	12/2/16	1345	S	4	C		X	X	X	X	X	X		
15	TS-15	12/2/16	1400	S	4	C		X	X	X	X	X	X	X	

(5)

Relinquished By: (1)	Date	Time	Received By:
	12/2	1657	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

*Requested TAT (One TAT per COC)
☒ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☐ Other

Data Deliverables Required:
COA ☐ QC SUMM ☐ CLP LIKE ☐ OTHER ____

# of Coolers: 2
Custody Seal: ABS
Ice Present: YES Temp: 5°C, 1°C
Shipping Carrier: CLIENT

Special Instructions:
Tier II

DW COMPLIANCE? YES ☐
EDD FORMAT TYPE: ____
STATE RESULTS REPORTED TO: MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER ____

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Phase Separation Science, Inc

Sample Receipt Checklist

Work Order #	16120215	**Received By**	Rachel Davis
Client Name	GTA - Abingdon	**Date Received**	12/02/2016 04:57:00 PM
Project Name	151454	**Delivered By**	Client
Project Number	151454	**Tracking No**	Not Applicable
Disposal Date	01/06/2017	**Logged In By**	Thomas Wingate

Shipping Container(s)

No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	5
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Documentation

		Sampler Name	Justin Valkos
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Total No. of Samples Received 15 Total No. of Containers Received 60

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	N/A
Do VOA vials have zero headspace?		N/A
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 12/05/2016

Thomas Wingate

PM Review and Approval: N Y Jackson Date: 12/05/2016

Lynn Jackson

APPENDIX G

Groundwater Analytical Results

Analytical Report for

GTA - Abingdon

Certificate of Analysis No.: 15120832

Project Manager: Nick Guns

Project Name : 151454

Project Location: Baltimore, MD

Project ID : 151454

December 16, 2015

Phase Separation Science, Inc.

6630 Baltimore National Pike
Baltimore, MD 21228
Phone: (410) 747-8770
Fax: (410) 788-8723

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800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

December 16, 2015

Nick Guns
GTA - Abingdon
3445-A Box Hill Corporate Ctr. Dr.
Abingdon, MD 21009

Reference: PSS Work Order(s) No: **15120832**
Project Name: 151454
Project Location: Baltimore, MD
Project ID.: 151454

Dear Nick Guns :

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order(s) numbered **15120832**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on January 12, 2016, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt , the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

Sample Summary

Client Name: GTA - Abingdon

Project Name: 151454

Work Order Number(s): 15120832

Project ID: 151454

The following samples were received under chain of custody by Phase Separation Science (PSS) on 12/08/2015 at 05:23 pm

Lab Sample Id	Sample Id	Matrix	Date/Time Collected
15120832-001	TRENCH-1	GROUND WATER	12/08/15 13:30

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

OFFICES:
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ROUTE 40 WEST
BALTIMORE, MD 21228
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800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 15120832
GTA - Abingdon, Abingdon, MD
December 16, 2015

Project Name: 151454
Project Location: Baltimore, MD
Project ID: 151454

Sample ID: TRENCH-1 **Date/Time Sampled: 12/08/2015 13:30** **PSS Sample ID: 15120832-001**
Matrix: GROUND WATER **Date/Time Received: 12/08/2015 17:23**

Dissolved RCRA Metals & Zinc — Analytical Method: SW-846 6020 A — Preparation Method: 3005A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Arsenic	ND	ug/L	1.0		1	12/09/15	12/09/15 21:44	1033
Barium	**33**	ug/L	1.0		1	12/09/15	12/09/15 21:44	1033
Cadmium	ND	ug/L	1.0		1	12/09/15	12/09/15 21:44	1033
Chromium	ND	ug/L	1.0		1	12/09/15	12/09/15 21:44	1033
Lead	ND	ug/L	1.0		1	12/09/15	12/09/15 21:44	1033
Mercury	ND	ug/L	0.20		1	12/09/15	12/09/15 21:44	1033
Selenium	**3.9**	ug/L	1.0		1	12/09/15	12/09/15 21:44	1033
Silver	ND	ug/L	1.0		1	12/09/15	12/09/15 21:44	1033
Zinc	**41**	ug/L	20		1	12/09/15	12/09/15 21:44	1033

RCRA Metals & Zinc — Analytical Method: SW-846 6020 A — Preparation Method: 3010A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Arsenic	**1.7**	ug/L	1.0		1	12/09/15	12/10/15 00:22	1033
Barium	**38**	ug/L	1.0		1	12/09/15	12/10/15 00:22	1033
Cadmium	ND	ug/L	1.0		1	12/09/15	12/10/15 00:22	1033
Chromium	**5.0**	ug/L	1.0		1	12/09/15	12/10/15 00:22	1033
Lead	**4.4**	ug/L	1.0		1	12/09/15	12/10/15 00:22	1033
Mercury	ND	ug/L	0.20		1	12/09/15	12/10/15 00:22	1033
Selenium	**3.9**	ug/L	1.0		1	12/09/15	12/10/15 00:22	1033
Silver	ND	ug/L	1.0		1	12/09/15	12/10/15 00:22	1033
Zinc	**370**	ug/L	20		1	12/09/15	12/10/15 00:22	1033

Case Narrative Summary

Client Name: GTA - Abingdon

Project Name: 151454

Work Order Number(s): 15120832
Project ID: 151454

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

The analyses of chlorine, pH, dissolved oxygen, temperature and sulfite for drinking water and non-potable samples tested for compliance have a maximum holding time of 15 minutes. As such, all laboratory analyses for these analytes exceed holding times.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Preserved one container with HNO3.

General Comments:
Revised report includes total and dissolved zinc.
NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Analytical Data Package Information Summary

Work Order(s): **15120832**
Report Prepared For: GTA - Abingdon, Abingdon, MD
Project Name: 151454
Project Manager: Nick Guns

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 6020 A	TRENCH-1	Initial	15120832-001	1033	W	58531	128453	12/08/2015	12/09/2015 09:15	12/10/2015 00:22
	58531-1-BKS	BKS	58531-1-BKS	1053	W	58531	128453	--------	12/09/2015 09:15	12/09/2015 22:20
	58531-1-BLK	BLK	58531-1-BLK	1053	W	58531	128453	--------	12/09/2015 09:15	12/09/2015 22:14
	MW-3 S	MS	15120826-006 S	1053	W	58531	128453	12/08/2015	12/09/2015 09:15	12/09/2015 22:32
	MW-3 SD	MSD	15120826-006 SD	1053	W	58531	128453	12/08/2015	12/09/2015 09:15	12/09/2015 22:38
SW-846 6020 A	TRENCH-1	Initial	15120832-001	1033	W	58529	128451	12/08/2015	12/09/2015 09:10	12/09/2015 21:44
	58529-1-BKS	BKS	58529-1-BKS	1053	W	58529	128451	--------	12/09/2015 09:10	12/09/2015 17:29
	58529-1-BLK	BLK	58529-1-BLK	1053	W	58529	128451	--------	12/09/2015 09:10	12/09/2015 17:23
	MW-3 S	MS	15120826-006 S	1053	W	58529	128451	12/08/2015	12/09/2015 09:10	12/09/2015 18:48
	MW-3 SD	MSD	15120826-006 SD	1053	W	58529	128451	12/08/2015	12/09/2015 09:10	12/09/2015 18:54

PHASE SEPARATION SCIENCE, INC.

QC Summary 15120832

GTA - Abingdon
151454

Analytical Method: SW-846 6020 A Prep Method: SW3010A
Seq Number: 128451 Matrix: Water Date Prep: 12/09/15
MB Sample Id: 58529-1-BLK LCS Sample Id: 58529-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Arsenic	<1.000	40.00	40.16	100	80-120	ug/L	12/09/15 17:29	
Barium	<1.000	40.00	40.73	102	80-120	ug/L	12/09/15 17:29	
Cadmium	<1.000	40.00	39.72	99	80-120	ug/L	12/09/15 17:29	
Chromium	<1.000	40.00	38.68	97	80-120	ug/L	12/09/15 17:29	
Lead	<1.000	40.00	39.46	99	80-120	ug/L	12/09/15 17:29	
Mercury	<0.2000	1.000	1.020	102	80-120	ug/L	12/09/15 17:29	
Selenium	<1.000	40.00	37.73	94	80-120	ug/L	12/09/15 17:29	
Silver	<1.000	40.00	38.80	97	80-120	ug/L	12/09/15 17:29	
Zinc	<20.00	40.00	39.70	99	80-120	ug/L	12/09/15 17:29	

Analytical Method: SW-846 6020 A Prep Method: SW3010A
Seq Number: 128453 Matrix: Water Date Prep: 12/09/15
MB Sample Id: 58531-1-BLK LCS Sample Id: 58531-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Arsenic	<1.000	40.00	40.11	100	80-120	ug/L	12/09/15 22:20	
Barium	<1.000	40.00	39.97	100	80-120	ug/L	12/09/15 22:20	
Cadmium	<1.000	40.00	38.85	97	80-120	ug/L	12/09/15 22:20	
Chromium	<1.000	40.00	37.90	95	80-120	ug/L	12/09/15 22:20	
Lead	<1.000	40.00	38.76	97	80-120	ug/L	12/09/15 22:20	
Mercury	<0.2000	1.000	0.9000	90	80-120	ug/L	12/09/15 22:20	
Selenium	<1.000	40.00	36.45	91	80-120	ug/L	12/09/15 22:20	
Silver	<1.000	40.00	38.26	96	80-120	ug/L	12/09/15 22:20	
Zinc	<20.00	40.00	44.04	110	80-120	ug/L	12/09/15 22:20	

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

(1)

*CLIENT: GTA *OFFICE LOC. ABINGDON, MD

*PROJECT MGR: NICK GUNS *PHONE NO.: (410) 515-9446

EMAIL: NGUNS@GTAENG.COM FAX NO.: ( )

*PROJECT NAME: 151454 PROJECT NO.: 151454

SITE LOCATION: BALTIMORE, MD P.O. NO.: 151454

SAMPLER(S): NBG DW CERT NO.:

PSS Work Order #: 15120832 PAGE 1 OF 1

Matrix Codes:
SW=Surface Wtr **DW**=Drinking Wtr **GW**=Ground Wtr **WW**=Waste Wtr **O**=Oil **S**=Soil **L**=Liquid **SOL**=Solid **A**=Air **WI**=Wipe

(2)

LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used												REMARKS
								—											
	TRENCH-1	12/8/2015	1330	GW	2	G													

Analysis/Method Required (3) *: TOTAL RCRA METALS; DISSOLVED METALS

(5)

Relinquished By: (1)	Date	Time	Received By:
	12/8/2015	3:35	895
Relinquished By: (2)	Date	Time	Received By:
895	12/8/15	17:23	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

*Requested TAT (One TAT per COC)
☐ 5-Day ☑ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☐ Other

Data Deliverables Required:
COA ☐ QC SUMM ☐ CLP LIKE ☐ OTHER ☐

# of Coolers: 1

Custody Seal: N/A

Ice Present: Yes Temp: 4°C

Shipping Carrier: TTE

Special Instructions:
TAT 2

DW COMPLIANCE? YES ☐

EDD FORMAT TYPE

STATE RESULTS REPORTED TO:
MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

Phase Separation Science, Inc

Sample Receipt Checklist

Work Order #	15120832	**Received By**	Cathy Thompson
Client Name	GTA - Abingdon	**Date Received**	12/08/2015 05:23:00 PM
Project Name	151454	**Delivered By**	Trans Time Express
Project Number	151454	**Tracking No**	Not Applicable
Disposal Date	01/12/2016	**Logged In By**	Rachel Davis

Shipping Container(s)

No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	4
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Documentation

		Sampler Name	NBG
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Total No. of Samples Received 1 Total No. of Containers Received 3

Preservation

Metals	(pH<2)	No
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	N/A
Do VOA vials have zero headspace?		N/A
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Preserved one container with HNO3.

Samples Inspected/Checklist Completed By: Rachel Davis Date: 12/08/2015

Rachel Davis

PM Review and Approval: Amber J Confer Date: 12/14/2015

Amber Confer