RESPONSE AND DEVELOPMENT COMPLETION REPORT

AREA B: PARCEL B15
TRADEPOINT ATLANTIC
SPARROWS POINT, MARYLAND

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TABLE OF CONTENTS

FIGURES

APPENDICES

1.0 INTRODUCTION

ARM Group Inc. (ARM), on behalf of EnviroAnalytics Group (EAG), has prepared this Response and Development Completion Report for a portion of the Tradepoint Atlantic property that has been designated as Area B: Parcel B15 (the Site). Tradepoint Atlantic submitted a letter (**Appendix A**) requesting an expedited remedial plan review to achieve construction deadlines for the proposed development on this Site. In addition, a letter requesting a 2.5-acre expansion to the 16.5-acre Parcel B15 Original Development Area was approved by the agencies on April 6, 2017 (**Appendix B**). The Original Development Area and Expansion Development Area of Parcel B15 together comprise approximately 19 acres of the approximately 3,100-acre former plant property located as shown on **Figure 1**.

This report documents completion of the development performed on Parcel B15 and the Parcel B15 Expansion Area. Details regarding environmental conditions encountered at the Site are presented in the Parcel B15 Phase II Investigation Report (Revision 1 dated April 2, 2018).

An application to enter the full Tradepoint Atlantic property (3,100 acres) into the Maryland Department of the Environment Voluntary Cleanup Program (MDE-VCP) was signed on June 18, 2014 and submitted to the MDE shortly thereafter. On September 11, 2014, MDE determined that Tradepoint Atlantic was eligible for participation in the VCP. On September 12, 2014, Tradepoint Atlantic 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 Site, 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, Tradepoint Atlantic and the United States Environmental Protection Agency (USEPA) entered into a Settlement Agreement and Covenant Not to Sue (SA), which was effective as of November 25, 2014. The SA outlines Tradepoint Atlantic's obligations and work to be performed associated with the existing contamination on the site-wide property.

1.1. REPORT PURPOSE

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

- ACO between Tradepoint Atlantic (formerly Sparrows Point Terminal, LLC) and the MDE, effective September 12, 2014; and

- Settlement Agreement and Covenant Not to Sue (SA) between Tradepoint Atlantic (formerly Sparrows Point Terminal, LLC) and the USEPA, effective November 25, 2014.

The following section (Section 1.2) provides the project background and Section 1.3 provides an overview of the Site development and response action activities. The response actions performed are described in Section 2, and conclusions are provided in Section 3.

1.2. PROJECT BACKGROUND

1.2.1. Site Description and History

The Site is identified as Parcel B15, and is described as one lot on the Sparrows Point Peninsula in Baltimore County, Maryland. Parcel B15 includes an area of approximately 19 acres, comprised of the Original Development Area and Expansion Development Area, and is shown in **Figure 1**. The Site is currently zoned Manufacturing Heavy-Industrial Major (MH-IM) and was not occupied prior to the start of development activities. The Original Development Area consisted of 16.5 acres which was developed for use as a storage facility and laydown area. The Expansion Development Area consisted of 2.5 additional acres for the same use.

The Site 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.

A site visit was completed by ARM on June 15, 2016 to confirm that the Brick Sheds occupied the northern portion of Parcel B15 covering approximately 4 acres of the total area. The Brick Sheds remained standing on elevated floor slabs (trailer height) with open sides. Stockpiles of various metals and materials being stored in the Brick Sheds were observed at the time of the site visit. A follow-up site visit was performed on August 26, 2016 to observe an enclosed room of the southeastern portion of the southern Brick Shed, which was vacant and being used for miscellaneous storage. The enclosed portion of the structure was not occupied prior to development work. The remaining portion of the parcel was either paved or covered with slag aggregate for laydown and did not contain significant vegetation.

Parcel B15 is at an elevation of approximately 12 feet above mean sea level (amsl). Elevations in the parcel are fairly uniform between 10 and 12 feet amsl over the majority of the parcel area. Elevations across the Site appear to slope downward slightly to the north. Surface runoff generally flows from the south to the north based on the observed elevations but may have collected in low spots throughout the parcel prior to development.

There is no groundwater use on-site or within the surrounding Tradepoint Atlantic property.

1.2.2 Historical Environmental Activities

From the late 1800s until 2012, the production and manufacturing of steel was conducted at Sparrows Point. Iron and steel production operations and processes at Sparrows Point included raw material handling, coke production, sinter production, iron production, steel production, and semi-finished and finished product preparation. In 1970, Sparrows Point was the largest steel facility in the United States, producing hot and cold rolled sheets, coated materials, pipes, plates, and rod and wire. The steel making operations at the Facility ceased in fall 2012.

There is limited information on specific historical processes that occurred within Parcel B15. A portion of the Parcel B15 Development Area was formerly occupied by two brick storage sheds which remain standing in the eastern half of the parcel. The development area also included an open laydown area and associated access railways in the western half of the parcel.

A Phase I Environmental Site Assessment (ESA) was completed by Weaver Boos Consultants for the entire Sparrows Point property which resulted in 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. Weaver Boos completed site visits of Sparrows Point from February 19 through 21, 2014, for the purpose of characterizing current conditions at the former steel plant. The Phase I ESA identified particular features across the Tradepoint Atlantic property which presented potential risks to the environment. These Recognized Environmental Conditions (RECs) included buildings and process areas where releases of hazardous substances and/or petroleum products potentially may have occurred. The Phase I ESA also relied upon findings identified during a previous visual site inspection (VSI) conducted as part of the Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) prepared by A.T. Kearney, Inc. dated August 1993, for the purpose of identifying Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) on the property. This 1991 VSI is regularly cited in the Description of Current Conditions (DCC) report prepared by Rust Environmental and Infrastructure, dated January 1998 (included with Weaver Boos' Phase I ESA). Weaver Boos' distinction of a REC or Non-REC was based upon the findings of the DCC Report (which was prepared when the features remained on-site in 1998) or on observations of the general area during their site visit. Weaver Boos made the determination to identify a feature as a REC based on historical information, observations during the site visit, and prior knowledge and experience with similar facilities. There were no RECs identified within the Parcel B15 development boundaries.

Relevant SWMUs and AOCs were also identified as located in Figure 3-1 from the DCC Report. This figure generally shows the SWMUs, AOCs, and main facility areas within the property boundaries. There were no SWMUs or AOCs identified within the Parcel B15 boundary.

A Phase II Investigation for soil, groundwater, and sub-slab soil gas conditions was performed for the Site in accordance with the requirements outlined in the ACO as further described in the

Phase II Investigation Work Plan – Area B: Parcel B15 (Revision 2) dated September 16, 2016. This work plan was submitted to the agencies on September 29, 2016 and was subsequently approved by the agencies on October 5, 2016.

A total of 49 soil samples from 21 boring locations were collected and analyzed to assess the presence or absence of contamination in Parcel B15. It should be noted that the Phase II Investigation was completed for the Original Development Area. No additional soil borings were completed for the addition of the Expansion Development Area (2.5 acres), because the sampling density used for the Phase II Investigation still greatly exceeded the sampling density requirements provided in the Quality Assurance Project Plan (QAPP dated April 5, 2016) for the expanded parcel area. The findings of the Phase II Investigation are presented in the Parcel B15 Phase II Investigation Report.

Groundwater at the Site was investigated in accordance with the Phase II Investigation Work Plan – Area B: Parcel B15 (Revision 2) dated September 16, 2016. The Work Plan included several existing shallow wells which were sampled as part of the separate Area B Groundwater Investigation (Work Plan dated October 6, 2015; Phase II Report dated September 30, 2016) and Finishing Mills Groundwater Investigation (Work Plan dated July 7, 2016; Phase II Report dated November 30, 2016), as well as an additional three temporary groundwater sample collection points (commonly referred to as piezometers). The sampling and analysis plans defined in these separate documents were designed to provide a focused investigation of groundwater in the steel making areas (Area B and the Finishing Mills, respectively). However, the location of five shallow wells within or adjacent to Parcel B15 allowed for further characterization of shallow groundwater in the vicinity of the proposed development. A total of eight shallow groundwater samples were collected from piezometers and permanent monitoring wells within and surrounding Parcel B15. The piezometers included in the Parcel B15 Phase II Investigation were specifically requested by the agencies in the vicinity of the Brick Sheds to determine whether the existing buildings or associated storage may have been a significant source of releases to the groundwater. An additional two temporary screening piezometers (B15-003-PZ and B15-008-PZ, installed on August 22 and October 16, 2016, respectively) were installed to check for the presence of potentially mobile non-aqueous phase liquid (NAPL) in the subsurface following field observations of potential NAPL or elevated levels of total petroleum hydrocarbons-diesel range organics (TPH-DRO) or Oil & Grease in the soil cores at these locations. No measurable NAPL was detected in either piezometer during any of the required gauging events, and no additional installations were warranted.

In general, results of the Phase II ESA indicated the presence of select metals, polynuclear aromatic hydrocarbons (PAHs), total polychlorinated biphenyls (total PCBs), and total petroleum hydrocarbons-diesel range organics (TPH-DRO) and oil and grease in soil at concentrations exceeding the applicable MDE Non-Residential Cleanup Standards (NRCS) and/or the USEPA Regional Screening Levels (RSLs). In addition, three metals, two volatile organic compounds

(VOCs), five semi-volatile organic compounds (SVOCs), TPH-DRO, and Oil & Grease were detected in groundwater at concentrations exceeding Project Action Limits established in the QAPP, including MDE Groundwater Standards for Type I and Type II Aquifers and/or USEPA Maximum Contaminant Levels (MCLs) or Tap Water RSLs. While the concentrations of these exceedances on-site do not present a human health hazard since there is no groundwater use, proper water management is required to prevent unacceptable discharges or risks to on-site workers.

The groundwater data were screened to determine whether any cumulative (or individual) sample results exceeded the USEPA Vapor Intrusion (VI) Target Cancer Risk (TCR, carcinogen) or Target Hazard Quotient (THQ, non-carcinogen) Screening Levels. As stated in the Parcel B15 Phase II Investigation Report, the results indicated no vapor intrusion risks at the Site.

The analytical results for the investigation activities are discussed in detail in the Parcel B15 Phase II Investigation Report (Phase II) Report (Revision 1 dated April 2, 2018). The Phase II Investigation Report includes a human health Screening Level Risk Analysis (SLRA) for the surface and subsurface soils within the proposed development area. Based on this SLRA, a capping remedy (100%) was determined to be appropriate to mitigate the elevated carcinogenic risk and dermal non-carcinogenic hazard index values to be protective of the future Composite Worker.

Elevated Oil & Grease was identified above the PAL (6,200 mg/kg) in four soil samples collected from Parcel B15. In addition, one boring (B15-003-SB) had physical evidence of potential NAPL in the soil core during the Phase II Investigation. Each groundwater collection point was inspected for evidence of NAPL using an oil-water interface. None of the temporary groundwater sample collection points or permanent wells showed evidence of NAPL during these checks. As no new utilities (which could provide new migration routes) were proposed within the development area of Parcel B15, no additional delineation was performed.

A Building Occupancy Assessment (BOA) specific to sub-slab soil gas conditions was performed for the enclosed portion of the southern Brick Shed in accordance with the requirements outlined in the Phase II Investigation Work Plan for Parcel B15. A total of three temporary monitoring probes were installed to collect sub-slab soil gas samples. The three sub-slab samples did not contain any VOCs at concentrations that exceeded their specified PALs based on the Maryland sub-slab soil gas screening values for non-residential properties.

1.3. SITE DEVELOPMENT AND RESPONSE ACTIONS

Parcel B15 has been redeveloped as primarily an outdoor storage facility for construction materials. The parcel contains two existing Brick Sheds totaling approximately 4 acres which have been retained for reuse as storage buildings with a small office space. Development activities included grading, paving, and security improvements.

The development area consisted of the entirety of the parcel, including the Original and Expansion Development Areas, and all of the area is now covered by asphalt paving or existing building slabs. An as-built survey and the relevant as-built Construction Documents for the facility are included in **Appendix B**.

The Site 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. Groundwater beneath the Site is not used as a potable water supply. To ensure groundwater will not be used, a groundwater use restriction will be placed on the Site as part of the deed restrictions recorded as discussed further in Section 2.12.

To address potential exposure to impacted media within the subsurface, the building floor slabs as well as the asphalt and concrete-paved areas serve as engineered barriers as discussed further in Section 2.10. Following approval of the Response and Development Completion Report 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 Site in order to maintain the integrity of the engineering controls (containment remedy) and mitigate potential exposure.

This Response and Development Completion Report demonstrates that the exposure pathways on the parcel are addressed in a manner that protects public health and the environment.

2.0 RESPONSE AND DEVELOPMENT ACTIONS

Tradepoint Atlantic constructed a storage facility and laydown area on Parcel B15. The proposed use is Tier 3B – Restricted Industrial.

Between October 2016 and April 2017, the following activities were conducted as part of the response and development actions:

Response Phase

- Supplemental NAPL/TPH/O&G Delineation
- Well Abandonment

Development Phase – Original Development Area

- Completion of site preparation/grading
- Completion of paving

Development Phase – Expansion Area

- Completion of site preparation/grading
- Completion of paving

The primary construction contractor 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 Gray & Son and Carlos Fence. Gray & Son generally conducted earthwork activities including stripping and clearing of surficial materials, placement and grading of structural fill materials, and asphalt paving, Carlos Fence was responsible for the construction of a fence surrounding the Site.

For the Original Development Area, development activities were either observed by ARM's environmental professional (EP) or confirmed by the Contractor (Keith Alley of ARCO). An initial site visit was conducted by ARM's EP on October 28, 2016, and the EP observed asphalt paving activities in the Original Development Area from October 31 to November 11, 2016. A photograph log of construction activities is provided in **Appendix C**.

For the Expansion Development Area, work was observed by a field technician with Geo-Technology Associates, Inc. (GTA). GTA's field technician provided construction oversight of development activities in the Expansion Development area from April 14 to April 24, 2017. Photos of construction activities provided by GTA are provided in **Appendix D**.

In general, the development 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;
- Supplemental DRO Investigation – Two additional temporary NAPL screening piezometers were installed to investigate the potential presence of mobile NAPL in the subsurface.
- Well Abandonment – Wells and temporary groundwater collection or screening piezometers were either retained as flush mounts or covered with sonotubes or were properly abandoned.
- Construction Monitoring – Construction monitoring primarily consisted of dust monitoring during intrusive operations, as warranted, and observation of materials handling.
- Fill Material Characterization/Documentation - Sampling, as required, and documentation of imported soil and fill materials used on the Site 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 Site.

2.1. 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 HASP prepared by EAG.

The primary actions utilized to manage exposure for construction workers were dust control, as further discussed in Section 2.9, and the use of appropriate personal protective equipment (PPE) during construction activities. A copy of the HASP was present at the Site during response action activities, and construction personnel were advised of the requirements of the HASP prior to working on the Site. The Contractor required its employees and subcontractor employees to sign in and out each day.

2.2. SUPPLEMENTAL DRO INVESTIGATION

The subsurface sample B15-008-SB-9 (targeting an open storage area and former laydown area) exceeded the acceptable DRO and Oil & Grease levels for no further action (6,200 mg/kg). The elevated concentrations (DRO detection of 13,500 mg/kg and Oil & Grease detection of 24,900 mg/kg) appeared to be isolated to the subsurface soil, as the shallow sample at the same boring location did not have a significant DRO or Oil & Grease detection. The elevated detections at 9

feet bgs may be the result of migration in groundwater at the top of the water table. The elevated detections at B15-008-SB were investigated via the installation of a temporary screening piezometer to determine if free petroleum product was present as a NAPL. One additional temporary piezometer was installed during the Phase II Investigation at soil boring B15-003-SB (targeting the east end of the Brick Sheds) based on the potential presence of NAPL identified in this soil core. At both locations, a piezometer was installed and immediately checked for the presence of NAPL using an oil-water interface probe. NAPL was not detected at either location during the initial checks, and the piezometers were allowed to equilibrate prior to additional measurements. Each piezometer was checked again after 48 hours and 30 days. NAPL was not detected in either piezometer 30 days after installation, indicating that free phase mobility is not present at these locations. Therefore, further action or delineation was not warranted. Piezometer B15-003-PZ was properly abandoned by Green Services Inc. (GSI), (a Maryland-licensed well driller) in accordance with Code of Maryland Regulations (COMAR) COMAR 26.04.04.34 through 36. Piezometer B15-008-PZ was converted to a flush-mount and retained; this piezometer may be abandoned in the future contingent on agency approval.

2.3. WELL ABANDONMENT

Figure 2 shows the wells and temporary groundwater sampling points (piezometers) in all hydrogeologic zones on Parcel B15, indicating which were abandoned or retained. Wells that were retained were either converted to flush-mount wells or covered with sonotubes prior to paving activities.

Two temporary groundwater sampling points (B15-012-PZ, and B15-014-PZ) were properly abandoned by GSI in accordance with Code of Maryland Regulations (COMAR) COMAR 26.04.04.34 through 36 prior to site work in this area. A third temporary groundwater sampling point (B15-PZ-018) was destroyed during construction activities and was covered with asphalt paving.

2.4. SITE PREPARATION/GRADING

All grading activities and the placement and compaction of subbase in the Original Development Area had been completed prior to the start of ARM's daily observations. The Contractor confirmed that all grading activities and site preparation had been performed prior to the laying of subbase in the Original Development Area. Development activities were primarily limited to the placement of asphalt pavement and aggregate subbase where needed. Borrow materials were obtained from MDE-approved common borrow-site stockpiles or processed slag aggregate as necessary that were free of organic material, frozen material, or other deleterious material. No excess material left the 3,100-acre property.

2.5. WATER MANAGEMENT

No new stormwater facilities were constructed at the Site. No dewatering or stormwater management practices were required or implemented during construction at the Site.

2.6. REMOVAL OF MATERIAL

Site preparation and grading of the Original Development Area were completed prior to the observations conducted by ARM's EP. The Contractor confirmed that site grading activities were minimal, with no excavations completed. Grading and site preparation of the Expansion Development Area were observed by GTA's field technician. No excess soil was removed from the parcel during site preparation and grading activities.

Sampling and disposal of soil associated with fence installation are discussed below in Section 2.11 (Fence Construction Activities).

2.7. FILL MATERIAL CHARACTERIZATION

Processed slag aggregate from the Tradepoint Atlantic property or graded aggregate base material was used as compacted sub-base for the paving for this project, as shown in the development plan in **Appendix E**. As indicated in the SLRA for the Parcel B15 Development Area, the on-site soil contaminant concentrations did not exceed acceptable risks (cancer or non-cancer) when worker health and safety protocols and the final capping remedy (100% of the Site) are considered. Relocated materials were determined to be suitable for use as on-site fill below the completed asphalt laydown area.

2.8. PLACEMENT OF FILL MATERIAL

The Contractor confirmed that following the completion of any preparatory work in the Original Development Area, the Original Development Area was fine-graded and placement of subbase commenced. The subbase consisted of processed slag or a replacement aggregate material. Grading and site preparation activities in the Expansion Development Area were observed by GTA's field technician. No fill was added to the existing subgrade, rather, the subgrade was regraded and compacted prior to asphalt paving. The existing aggregate base layer in the Expansion Development Area was previously confirmed to measure a minimum of 18 inches. Additional grading details are provided in GTA's Daily Field Reports (**Appendix D**).

2.9. DUST MONITORING

ARM completed the mandatory dust monitoring during construction activities in the Original Development Area of Parcel B15. A real-time dust meter (ThermoElectron Corporation Personal Data RAM 1000AN) was utilized to monitor the dust produced during construction activities. Daily calibration of the real-time dust meter was required per the QAPP to ensure accurate readings by the instrument. Dust concentrations were recorded in the field book by

ARM's EP every 15 minutes during construction activities with exposed subgrade in the Original Development Area.

Dust monitoring during development activities in the Expansion Development Area was conducted by GTA's field technician using a TSI DustTrak II testing device. Dust concentrations were recorded by GTA's field technician from several locations two to three times daily during construction activities in the Expansion Development Area.

No dust concentrations exceeding 3.0 mg/m^3 were noted from upwind of the Site during either phase of development. No visible dust was produced during paving activities. Asphalt trucks produced minor visible dust when travelling on unpaved areas, but no dust concentration exceedances of 3.0 mg/m^3 were noted during any construction activities in either the Original or Expansion Development Area. While not required, a water truck was utilized at the direction of the Contractor during development in the Expansion Development Area.

2.10. SITE CAPPING

The entirety of the development area (approximately 19 acres) was capped and covered by the existing building footprints or new or existing asphalt paving. No landscaped capped areas were constructed in any areas of the Site. The cover types are indicated in **Figure 3**.

Drawings for the proposed development in the Original Development Area are provided in **Appendix E**. A letter summary prepared by GTA, provided in **Appendix F**, states that the paving in the Original Development Area was completed in general accordance with the plans provided in **Appendix E**. Drawings for the proposed development in the Expansion Development Area are included in **Appendix G**, and as-built certification is provided in **Appendix H**. The existing Brick Sheds and associated loading docks were retained in their current condition and cover 4 acres, or 20% of the combined Original and Expansion Development Areas.

Asphalt paving (all types) covers 13.1 acres, or 80% of the Original Development Area and 2.5 acres, or 100% of the Expansion Development Area. Paving sections with thicknesses as shown in the proposed site development plans (**Appendix E**) were used to cap the paved areas of the Original Development Area. The heavy duty paving section consists of 7 inches of asphalt over a 3-inch aggregate base. The light duty paving section consists of 4 inches of asphalt over a 6-inch aggregate base. The mill & overlay section consists of 3 inches of asphalt over the underlying existing pavement (after removal of 3 inches of existing material). The Expansion Development Area paving thicknesses are indicated on the respective development plans in **Appendix G**.

Asphalt paving in the Original Development Area was conducted by Gray & Son under the overall management of Keith Alley of ARCO. In the Original Development Area, paving activities consisted of light-duty and heavy-duty paving with two layers of 2-inch thick pavement

in light-duty areas and two 2-inch thick layers and a 3-inch thick layer in heavy-duty areas. Heavy-duty paving was used only along the railroad tracks on the western side of the Site, as this area is anticipated to receive a higher volume of traffic than the rest of the parcel due to the loading and unloading of materials from the railroad cars.

All asphalt pavement to the east of the existing Brick Sheds and the first layer of paving in the heavy-duty areas on the western side of the parcel were completed prior to the start of ARM's daily construction observations. Paving of the first light-duty layer and second heavy-duty layer had begun prior to the start of ARM's daily observations; however, ARM did observe the completion of the first light-duty layer and second heavy-duty layer paving activities in the western and southern areas of the parcel. The first light-duty layer was laid on white #10 stone. This stage of work was completed on November 3, 2016. Paving of the second light-duty layer and third heavy-duty layer began on November 3, 2016 and was completed on November 9, 2016. A single layer of asphalt was laid between the two existing Brick Sheds to create a continuous surface across both structures. The path between the two Brick Sheds was too narrow for the asphalt trucks, so the asphalt was brought to the paver with skid-steer loaders instead. Paving work between the two Brick Sheds was conducted on November 1, 2016. Paving between the railroad tracks was completed on the eastern and western sides of the parcel during ARM's observations. The surface of a small area of roadway near the railroad tracks in the northeastern corner of the parcel was removed with a Wirtgen cold planer and repaved by Gray & Son on November 2, 2016.

The applied asphalt thickness was checked periodically by a Gray & Son employee. Nuclear gauge testing and pavement coring were also conducted periodically by a Gray & Son employee. The full thickness of the pavement section (i.e., asphalt cap) placed over the existing soils consisted of 10 inches (3 inches of subbase and 7 inches of asphalt in the heavy duty areas and 6 inches of subbase and 4 inches of asphalt in the heavy duty areas). The thickness of asphalt in the mill & overlay areas consisted of 3 inches of asphalt over the existing pavement (after the removal of 3 inches of older material). Asphalt core data confirming these thickness values are provided in **Appendix I** for the Original Development Areas. Details regarding the thickness of pavement layers for the Expansion Development Area are provided in the Development Plan Drawings in **Appendix G**.

Gray & Son paved around (and preserved) two existing monitoring wells in the southwestern area of the Original Development Area (TM05-PZM005 and TM05-PZM040). Gray & Son paved over and subsequently re-exposed the existing flush-mounted piezometer cap on the western side of the site (B15-008-SB).

Paving activities in the Expansion Development Area were conducted by Gray & Son and observed by GTA's field technician from April 20 to April 24, 2017. An asphalt thickness of 2-inches was applied to the compacted subgrade. Gray & Son paved around two existing wells

(TM03-PZM004 and TM03-PZM037) and a manhole on the western portion of the Expansion Development Area.

2.11. FENCE CONSTRUCTION ACTIVITIES

During ARM's construction observations, a fence was constructed by Carlos Fence along the northern edge of the northern Brick Shed, approximately 10 feet from the structure. Fence post holes were dug with a Bobcat T590 auger and various hand tools. Steel fence posts were placed in the holes and set in concrete. Photos of the fence during construction may be found in the photograph log (**Appendix C**). Excavated soils from the fence post holes were left in small piles next to their respective fence posts during construction. The fence was near completion at the conclusion of ARM's construction observations on November 10, 2016. During the final fence construction activities, all excavated soils were combined into two stockpiles near the fence. A composite sample was collected using materials from multiple locations throughout each stockpile and submitted for TCLP analysis to facilitate proper disposal. The laboratory reports have been included as **Appendix J**. The excavated soil was determined to be non-hazardous and was taken by MCM Management Corporation (MCM) to another area of the 3,100-acre Tradepoint Atlantic property.

2.12. INSTITUTIONAL CONTROLS (FUTURE LAND USE CONTROLS)

Long-term conditions related to future use of the Site will be placed on the No Further Action Letter (NFA) and COC. These conditions are anticipated to include the following:

- A restriction that limits the use of the property to industrial land use.
- A restriction prohibiting the use of groundwater for any purpose at the Site and a requirement to characterize, containerize, and properly dispose of groundwater in the event of deep excavations encountering groundwater.
- Notice to MDE prior to any future soil disturbance activities at the Site below areas designated for engineering controls. This written notice will be required at least 30 days prior to any planned excavation activities at the Site that will penetrate through the cap.
- Requirement for a HASP in the event of any future excavations at the Site.
- Complete appropriate characterization and disposal of any future material excavated from beneath the cap in accordance with applicable local, state and federal requirements.
- Implementation of inspection procedures and maintenance of the containment remedies as outlined the following section.

The responsible party will file the above deed restrictions as defined by the MDE VCP in the NFA and COC. The soil disturbance and maintenance requirements will apply to the capped

areas shown in **Figure 3**. The entire Site will be subject to the industrial use groundwater use restrictions.

2.13. POST REMEDIATION REQUIREMENTS

Post remediation requirements will include compliance with the conditions specified in the NFA, COC, and the deed restrictions recorded for the Site. Deed restrictions will be recorded within 30 days after receipt of the final NFA.

Maintenance requirements will include maintenance of the capped areas to minimize degradation of the cap and exposure to the underlying soil. An Operations and Maintenance Plan (O&M Plan) for the capped areas is included in **Appendix K**. The O&M Plan includes the inspection protocols and specifies that annual inspections will be completed to evaluate the condition of the capping remedies. Inspection forms are provided in the O&M Plan for paved areas (both interior and exterior) and landscaped areas.

The responsible party will perform cap maintenance inspections, perform maintenance of the cap, and retain cap inspection records. Areas of the cap that have degraded to a Pavement Condition Index (PCI) of 4.0 will be repaired within 30 days of discovery. MDE shall be notified within ten business days of any repairs that are the result of a PCI of 4.0 or greater. The notification will include documentation of the conditions being repaired and the location of the repair.

In addition, MDE will be provided with a written notice at least 30 days prior to any planned excavation activities at the Site that will penetrate through the cap. Written notice of planned excavation activities will include the proposed date(s) for the excavation, location of the excavation, health and safety protocols (as required), clean fill source (as required), and proposed characterization and disposal procedures.

3.0 CONCLUSION

Between August 2016 and April 2017, response and development actions were conducted as part of the redevelopment of the Site identified as Parcel B15. The primary response and development actions included a supplemental NAPL/TPH/O&G Delineation, abandonment of temporary groundwater collection points and wells, grading, paving, and security improvements.

As a result of the information contained herein, it has been demonstrated that the response and development actions have been completed in accordance with the recommendations for remediation specified in the Phase II Investigation Report. A Notice of Readiness for Use prepared by the EP, a Professional Engineer registered in Maryland, is enclosed in **Appendix F** and **Appendix H** to certify that the response actions have been completed in accordance with the recommendations specified in the Phase II Investigation Report and that the Site is suitable for occupancy and use.

With construction of the engineering controls (cap) in conjunction with redevelopment of the Site, the applicable requirements for obtaining a NFA Letter and COC for this Site have been fulfilled. Therefore, Tradepoint Atlantic is respectfully requesting issuance of a NFA Letter for the Site at this time. It is ARM's understanding that Tradepoint Atlantic will record the NFA Letter and the deed restrictions identified in the RADWP within 30 days after receipt of the final NFA Letter. Proof of recordation will be submitted to MDE upon receipt from Baltimore County.

FIGURES

Site Boundary

Parcel Boundaries

Private Property

Parcel A9
Parcel A5
Parcel A13
Parcel A7
Parcel A14
Parcel A11
Parcel A8
Parcel A12
Parcel A2
Parcel A15
Parcel A17
Parcel A18
Parcel A16
Parcel A6
Parcel A4
Parcel A10
Parcel A3
Parcel A1
Parcel B6
Parcel B8
Parcel B14
Parcel B22
Parcel B16
Parcel B21
Parcel B15
Parcel B24
Parcel B23
Parcel B25
Parcel B7
Parcel B1
Parcel B2
Parcel B3
Parcel B17
Parcel B19
Parcel B4
Parcel B5
Parcel B9
Parcel B18
Parcel B10
Parcel B13
Parcel B20
Parcel B11
Parcel B12

Tradepoint Atlantic
Area A and Area B Parcels

March 1, 2018

Figure 1

N

ARM Group Inc.
Earth Resource Engineers and Consultants

0 500 1,000 2,000 Feet

Tradepoint Atlantic

Baltimore County, MD

EnviroAnalytics Group

Area A: Project 150298M
Area B: Project 150300M
Development: Project 160443M

Parcel B15 Groundwater Network
Abandonment: All Hydrogeologic Zones
February 15, 2018

Figure 2

EnviroAnalytics Group

ARM Project 160443M-4

Tradepoint Atlantic

Baltimore County, MD

EXISTING ASPHALT PAVING

EXISTING BUILDING

EXISTING BUILDING

EXISTING BUILDING

LIGHT DUTY PAVING

3" MILL AND OVERLAY

WAREHOUSE SHOP ROAD

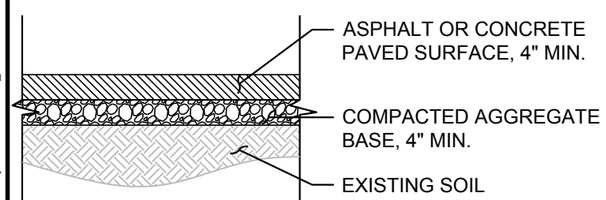
RAIL SPUR

HEAVY DUTY PAVING

LIGHT DUTY PAVING

PARCEL B15 ORIGINAL DEVELOPMENT AREA

PARCEL B15 EXPANSION DEVELOPMENT AREA



TYPICAL PAVING SECTION
NOT TO SCALE

LEGEND

BUILDING

PAVING

0 200 400
SCALE IN FEET

ARM Group Inc.
Earth Resource Engineers and Consultants
www.armgroup.net

designed JMA
checked TNP
drawn JMA
scale 1" = 200'
date 7/14/2017
project no. 160443M-4-1

drawing title
ENVIRONMENTAL CAPPING PLAN AND DETAIL

project title
SPARROWS POINT AREA B
ENVIROANALYTICS GROUP

SPARROWS POINT
BALTIMORE COUNTY, MARYLAND

Figure 3

P:\EnviroAnalytics Group\160443M EAG_TPA Redevelopment\Drwg\B15\Production\Figure 6 - Environmental Capping Detail.dwg Plotted: July 14, 2017

APPENDIX A

TRADEPOINT ATLANTIC
1600 Sparrows Point Boulevard
Baltimore, Maryland 21219

October 4, 2016

Maryland Department of Environment
1800 Washington Boulevard
Baltimore MD, 21230

Attention: Ms. Barbara Brown

Subject: Request to Enter Temporary CHS Review for Parcel B-15

Ms. Brown:

The conduct of any environmental assessment and cleanup activities on the Tradepoint Atlantic property, as well as any associated development, is subject to the requirements outlined in the following agreements:

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

On September 11, 2014, Tradepoint Atlantic submitted an application to the Maryland Department of the Environment's (Department) Voluntary Cleanup Program (VCP). Parcel B-15 is part of the acreage that remains subject to the Multimedia Consent Decree between Bethlehem Steel Corporation, the United States Environmental Protection Agency (EPA), and the Department (effective October 8, 1997) as amended.

In consultation with the Department, Tradepoint Atlantic affirms that it desires to accelerate the assessment, remediation and redevelopment of certain sub-parcels within the larger site due to current market conditions. To that end, the Department and Tradepoint Atlantic agree that the Controlled Hazardous Substance (CHS) Act (Section 7-222 of the Environment Article) and the CHS Response Plan (COMAR 26.14.02) shall serve as the governing statutory and regulatory authority for completing the development activities on Parcel B-15 and complement the statutory requirements of the Voluntary Cleanup Program (Section 7-501 of the Environment Article).

Upon submission of a Site Response and Development Work Plan and completion of the remedial activities for the sub-parcel, the Department shall issue a "No Further Action" letter upon a recordation of an environmental covenant describing any necessary land use controls for the specific sub-parcel. At

TRADEPOINT
ATLANTIC
1600 Sparrows Point Boulevard
Baltimore, Maryland 21219

such time that all the sub-parcels within the larger parcel have completed remedial activities, Tradepoint Atlantic shall submit to the Department a request for issuing a Certificate of Completion (COC) as well as all pertinent information concerning completion of remedial activities conducted on the parcel. Once the VCP has completed its review of the submitted information it shall issue a COC for the entire parcel described in Tradepoint Atlantic's VCP application.

Alternatively, Tradepoint Atlantic or other entity may elect to submit an application for a specific sub-parcel and submit it to the VCP for review and acceptance. If the application is received after the cleanup and redevelopment activities described in this work plan are implemented and a No Further Action letter is issued by the Department pursuant to the CHS Act, the VCP shall prepare a No Further Requirements Determination for the sub-parcel.

If Tradepoint Atlantic or other entity has not carried out cleanup and redevelopment activities described in the work plan, the cleanup and redevelopment activities may be conducted under the oversight authority of either the VCP or the CHS Act, so long as those activities comport with this work plan.

Engineering and institutional controls approved as part of this Site Response and Development Work Plan shall be described in documentation submitted to the Department demonstrating that the exposure pathways on the sub-parcel are addressed in a manner that protects public health and the environment. This information shall support Tradepoint Atlantic's request for the issuance of a COC for the larger parcel.

Sincerely,
Tradepoint Atlantic

John M. Martin III
Development Director

APPENDIX B

EnviroAnalytics Group

April 4, 2017

Ms. Barbara Brown
Project Coordinator
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD 21230

Re: Proposed Modification to Area of Parcel 15
Response and Development Closure Report
Tradepoint Atlantic
Sparrows Point, MD 21219

Dear Ms. Brown:

This letter provides notification to the Maryland Department of the Environment (MDE) and United States Environmental Protection Agency (USEPA) regarding a proposed modification to the boundary of the area being developed as Parcel B15 (the Site) of the Tradepoint Atlantic property located in Sparrows Point, Maryland. At this time, the construction and development activities described in the most recent submission of the Parcel B15 Response and Development Work Plan (RADWP) Revision 1 (dated October 31, 2016) and Screening Level Risk Assessment (SLRA) excerpt and response letter (dated December 13, 2016) have been completed, and the entire parcel has been capped. The tenant has requested adjustments to the south and west boundaries of Parcel B15 to provide paving over an additional area of approximately 2.5 acres.

The addition of this paving would increase the total area of Parcel B15 from 16.5 acres to approximately 19 acres. Based on the available historical drawings for the Site (provided in the approved Phase II Investigation Work Plan Revision 2 dated September 16, 2016) there are no specific sampling plan targets or historical features of potential environmental concern within the proposed additional area. Furthermore, based on the sampling density requirements provided in the Phase II Investigation Work Plan as well as the Quality Assurance Project Plan (QAPP dated April 5, 2016) Worksheet 17 – Sampling Design and Rationale, the density requirements for the proposed enlarged parcel are still greatly exceeded. These requirements specify that 7 borings would be required in an area of 19 acres with engineered barriers. However, a total of 21 borings were completed in Parcel B15. Based on these considerations, additional sampling data is not required in the relatively narrow paving expansion to meet the density requirements or to investigate specific targets.

On April 3, 2017, the MDE requested additional information based on a review of a Parcel B15 expansion letter request dated March 10, 2017. The "Development Phase" and "Implementation Schedule" sections below provide all of the requested information which was recently exchanged in emails between EnviroAnalytics Group, LLC (EAG), Tradepoint Atlantic, and the MDE. A figure showing the currently existing monitoring wells in the vicinity of the proposed expansion is also included as **Attachment 1** to this letter.

Development Phase

1. Grading and site preparation

Site grading activities will be minimal, with no excavations planned. Development activities will be primarily limited to the placement of asphalt pavement and aggregate subbase where needed. Any material that is not suitable for compaction will be excavated and replaced with subbase material, although it is not anticipated that poor soils will be encountered. Borrow materials will be obtained from MDE-approved common borrow-site stockpiles or processed slag aggregate, if necessary, and shall be free of organic material, frozen material, or other deleterious material. In the case that there is excess material, the spoils will be stockpiled at a suitable location in accordance with the Materials Management Plan (MMP) for the Sparrows Point Facility (Papadopulos & Associates, et al., June 17, 2015). This work will be coordinated with MDE accordingly. No excess material will leave the 3,100 acre property without prior approval from MDE.

2. Monitoring Well

Prior to the start of any work, existing permanent monitoring wells will be identified in the field (**Attachment 1**). Each well will be staked out and inspected for structural integrity, proper seal, and lock prior to the start of work. Once field verification has been completed, Construction Workers will be instructed to practice extreme caution while working in the vicinity of the existing wells to retain their integrity. Hand grading will be performed directly in the vicinity of the wells to final elevation, and manholes will be set around each existing well (reconstructed as flush-mounts) prior to any paving activities. Concrete pads will be paved around each well (if applicable).

3. Placement of subbase, asphalt paving, and fill

According to the cut/fill analysis performed by the design engineer, no cut will be required for this project. Following the completion of any preparatory work, the site will be fine-graded and subbase will be placed. An estimated 2,000 cubic yards of slag subbase will be placed over the existing grade. Hot mix asphalt (HMA) pavement will be

placed on top of the slag subbase and will extend to the existing pavement already present at the Site.

4. Fencing

New fencing will be installed around the perimeter of the extended boundary. The full extent of Parcel B15 with this additional paving is shown in the "Site Expansion" figure provided as **Attachment 2**.

Implementation Schedule

The expansion is projected to take six (6) weeks to complete with the following milestones as provided below:

- Fence installation – 3 weeks
- Fine grading and pavement subbase installation – 1 week
- Installation of HMA paving – 1 week

In previous correspondence received from the agencies, the MDE/USEPA requested that since proposed development work had been completed (at the time of comment receipt), the Response and Development Work Plan dated October 31, 2016 (and supporting revision letters) should not be revised, but instead this document should be renamed as the "Parcel B15 Response and Development Closure Report", and the report should include the SLRA and provide documentation for the implementation of the remedy/development. Therefore, EAG requests approval from the agencies for Tradepoint Atlantic to proceed with the paving expansion and associated work, with the expectation that this additional development work will also be documented in the final Response and Development Closure Report for Parcel B15.

If you have any questions, or if we can provide any additional information at this time, please do not hesitate to contact me.

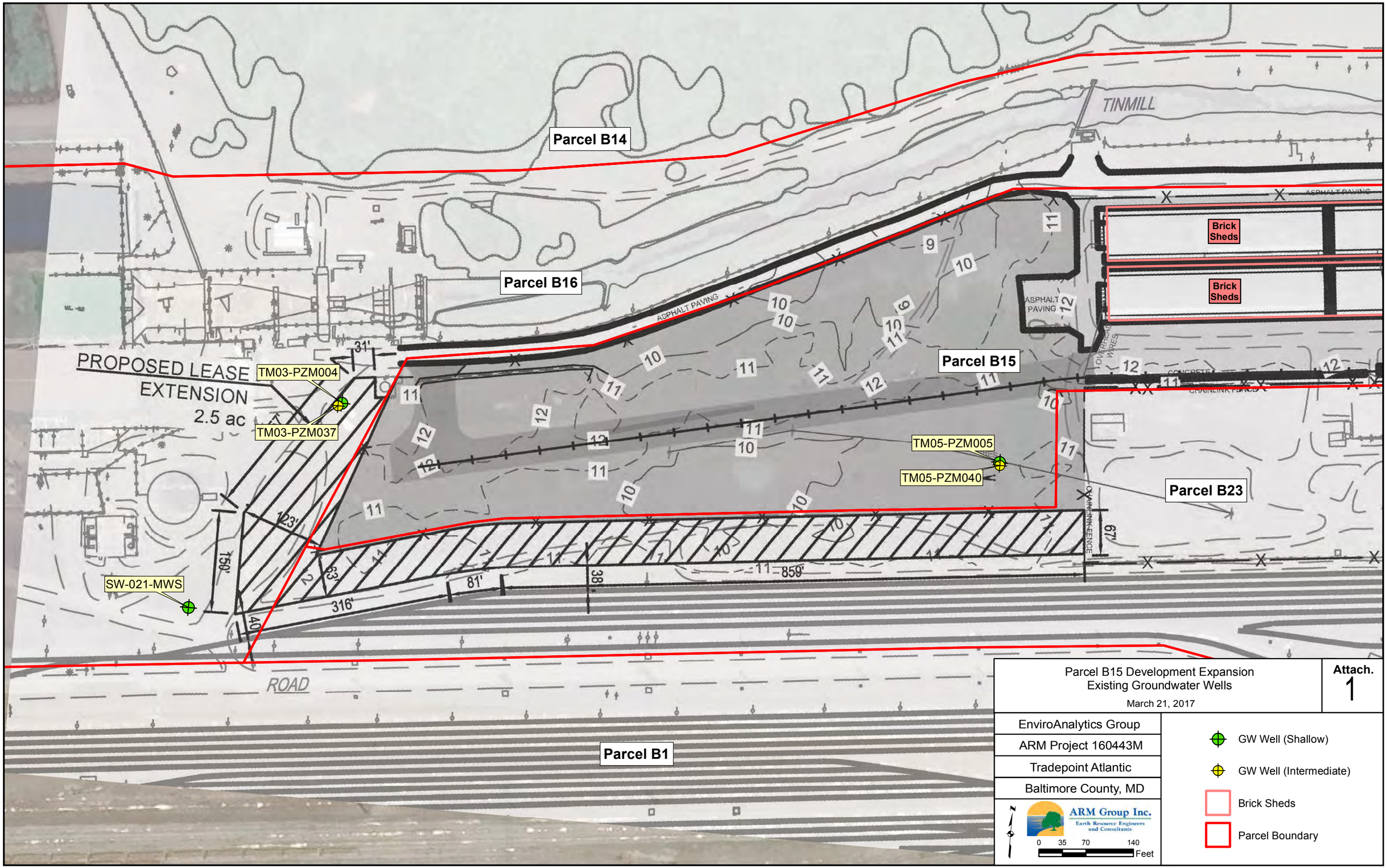
Sincerely,

James Calenda

James Calenda
Project Manager

cc: Ruth Prince

Attachment 1



Parcel B15 Development Expansion
Existing Groundwater Wells
March 21, 2017

Attach. 1

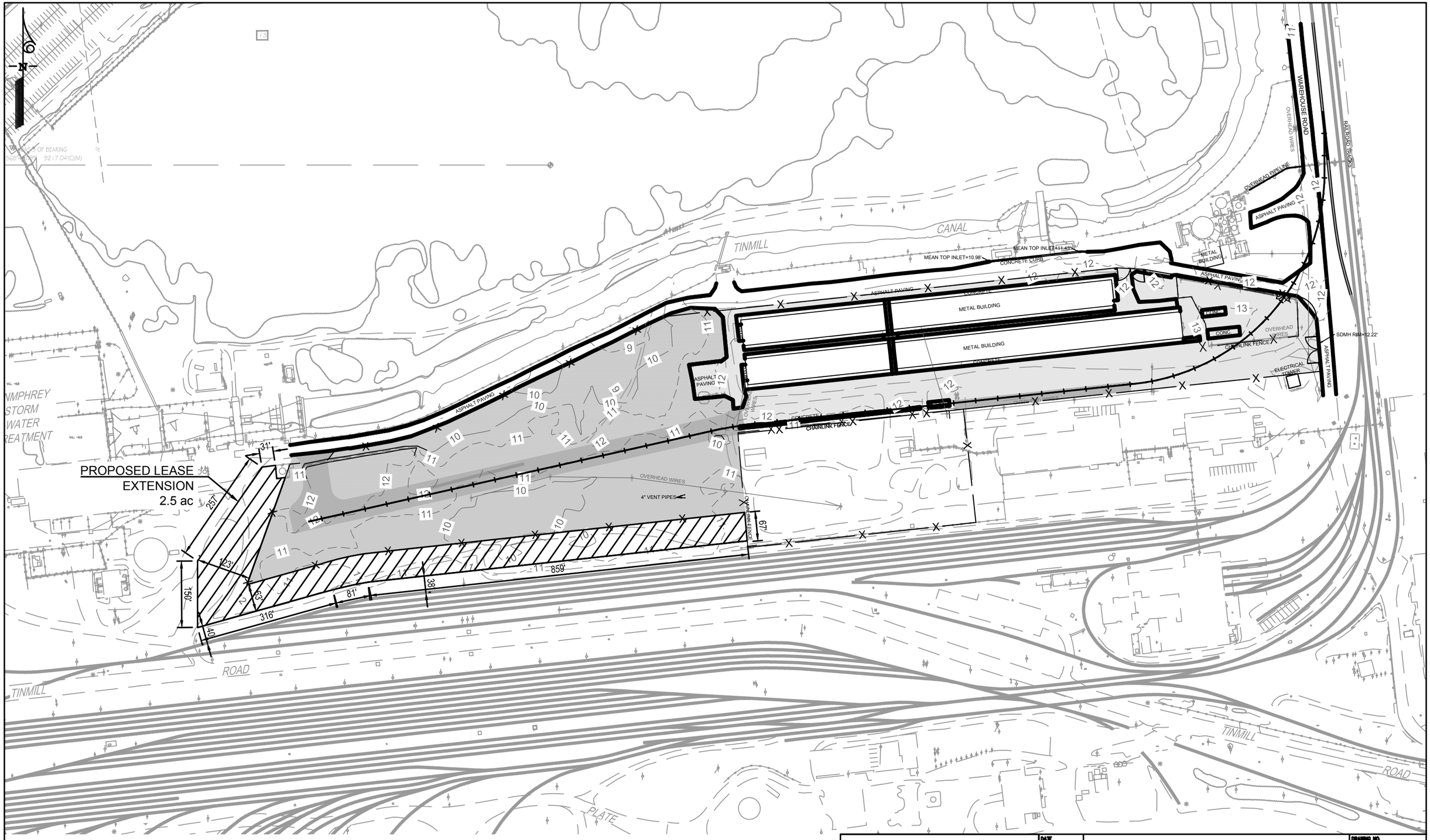
EnviroAnalytics Group
ARM Project 160443M
Tradepitch Atlantic
Baltimore County, MD

ARM Group Inc.
Earth Resource Engineers and Consultants

0 35 70 140
Feet

- GW Well (Shallow)
- GW Well (Intermediate)
- Brick Sheds
- Parcel Boundary

Attachment 2



TRADEPOINT ATLANTIC

DATE	01/03/17
SCALE	1"=200'
DESIGNED BY	
DRAWN BY	RD

ATLANTIC FOREST PRODUCTS

2.5 ACRE SITE EXPANSION

DRAWING NO.

SHEET 1 OF 1

APPENDIX C

Parcel B15: Original Development Area
Tradepoint Atlantic
Sparrows Point, MD

102816-1: View to the south of the unpaved western side of the site.

102816-2: Edge of first layer of paving on southeast corner of site.

.

102816-3: View to the west of paving along southern edge of southern building.

102816-4: View along the northern edge of the northern building. Visible is one strip of new pavement along the edge of the building.

102816-5: View to the southwest of unpaved portion of site.

102816-6: View to the east along northern edge of building with one strip of new pavement.

.

102816-7: View to the west of pavement coring along railroad tracks.

103116-1: View to west from center of site. Visible are first layer light-duty paving activities on western side of site.

103116-2: View to the east of first light-duty layer paving activities.

103116-3: View to the west of second layer heavy duty paving on each side of railroad tracks.

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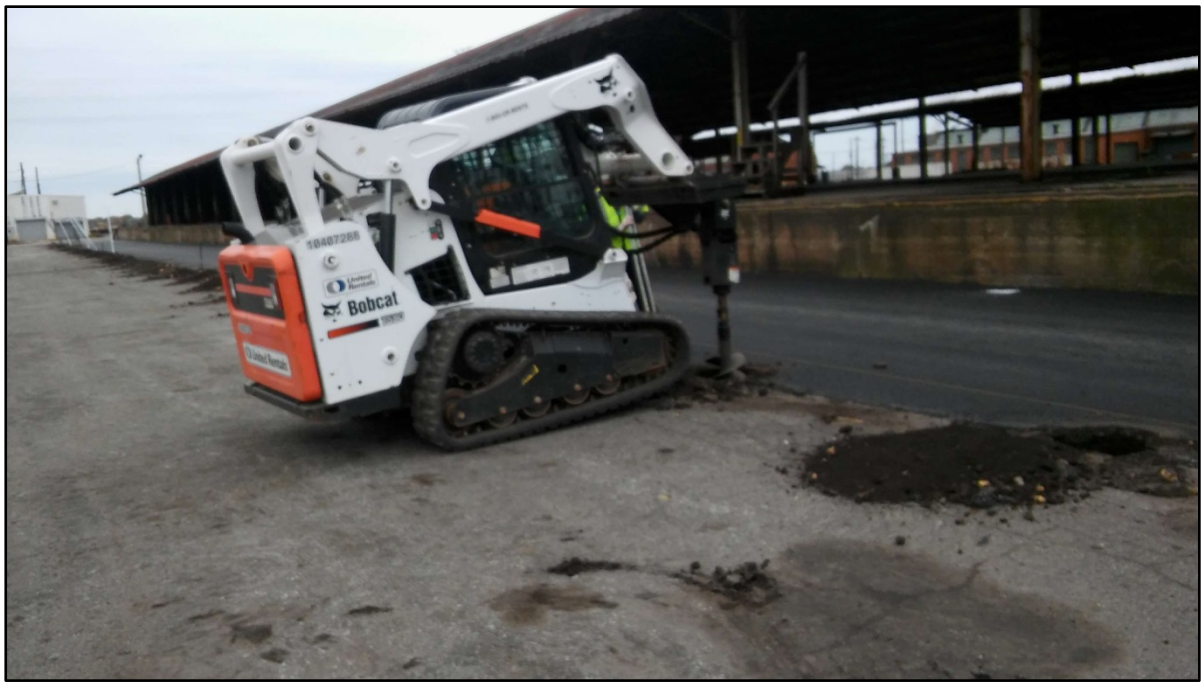

110116-1: Fence post drilling and digging activities along northern edge of building.

110216-1: Pavement planning at northeastern corner of site.

.

110316-1: View of paving activities in the northeastern corner of site along the railroad tracks (continued slightly off the parcel).

110416-1: View to the west of the start of second layer paving activities on western portion of the site. Visible are the two monitoring wells and tacked areas of the first layer of pavement.

110716-44: View of paved-over and re-exposed piezometer cap.

.

110816-48: Paving at end of railroad tracks on western portion of site.

111016-1: View to the east of fence construction.

111016-2: Stockpiled soil from fence post hole excavation.

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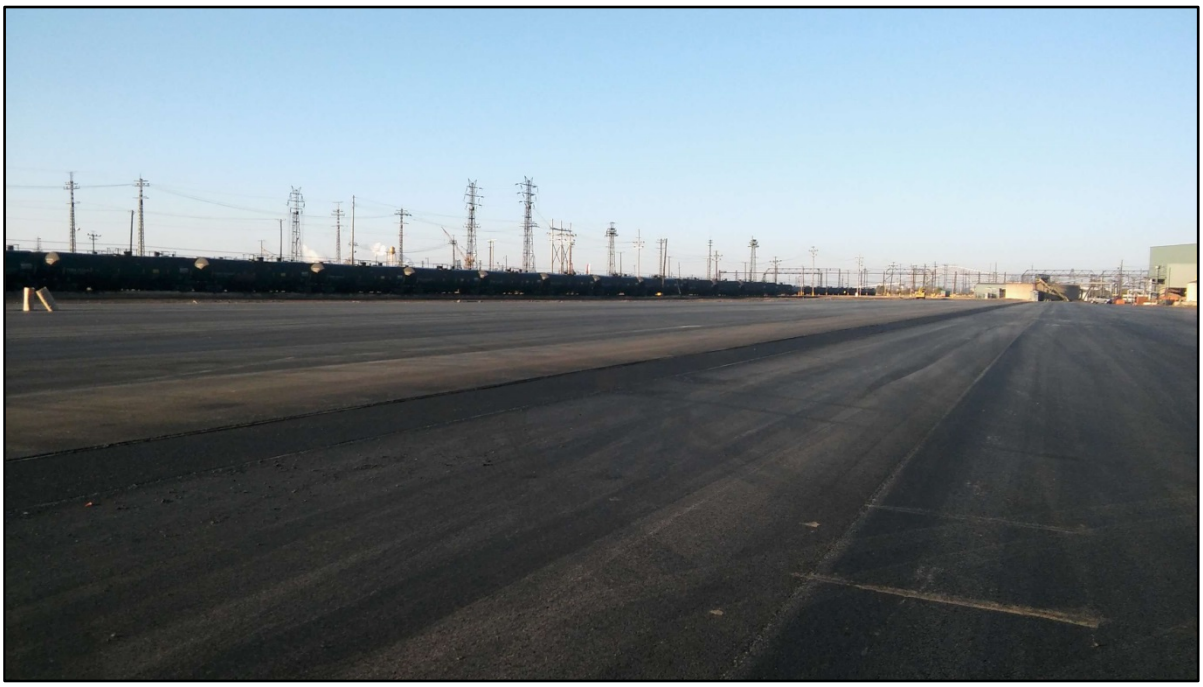
111016-3: View to the east along southern edge of building.



111016-4: View to the west of completed paving of the western portion of the site. Visible is the completed paving between the railroad tracks.

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APPENDIX D

GEO-TECHNOLOGY ASSOCIATES, INC.
Geotechnical and Environmental Consultants

PHOTOS

Project No.
Project Name: AFP (Atlantic Forest Products)

Date: 04 / 14 / 2017
Photo Page No. 1

Grader Deere 672D

Allied Environmental for ARM Group

GEO-TECHNOLOGY ASSOCIATES, INC.
Geotechnical and Environmental Consultants

PHOTOS

Project No.
Project Name: AFP (Atlantic Forest Products)

Date: 04 / 14 /2017
Photo Page No. 2

GEO-TECHNOLOGY ASSOCIATES, INC.
Geotechnical and Environmental Consultants

PHOTOS

Project No. 31170758
Project Name: Atlantic Forest Products (AFP)

Date: 4 / 17 / 17
Photo Page No. 1

GEO-TECHNOLOGY ASSOCIATES, INC.
Geotechnical and Environmental Consultants

PHOTOS

Project No. 31170758
Project Name: AFP

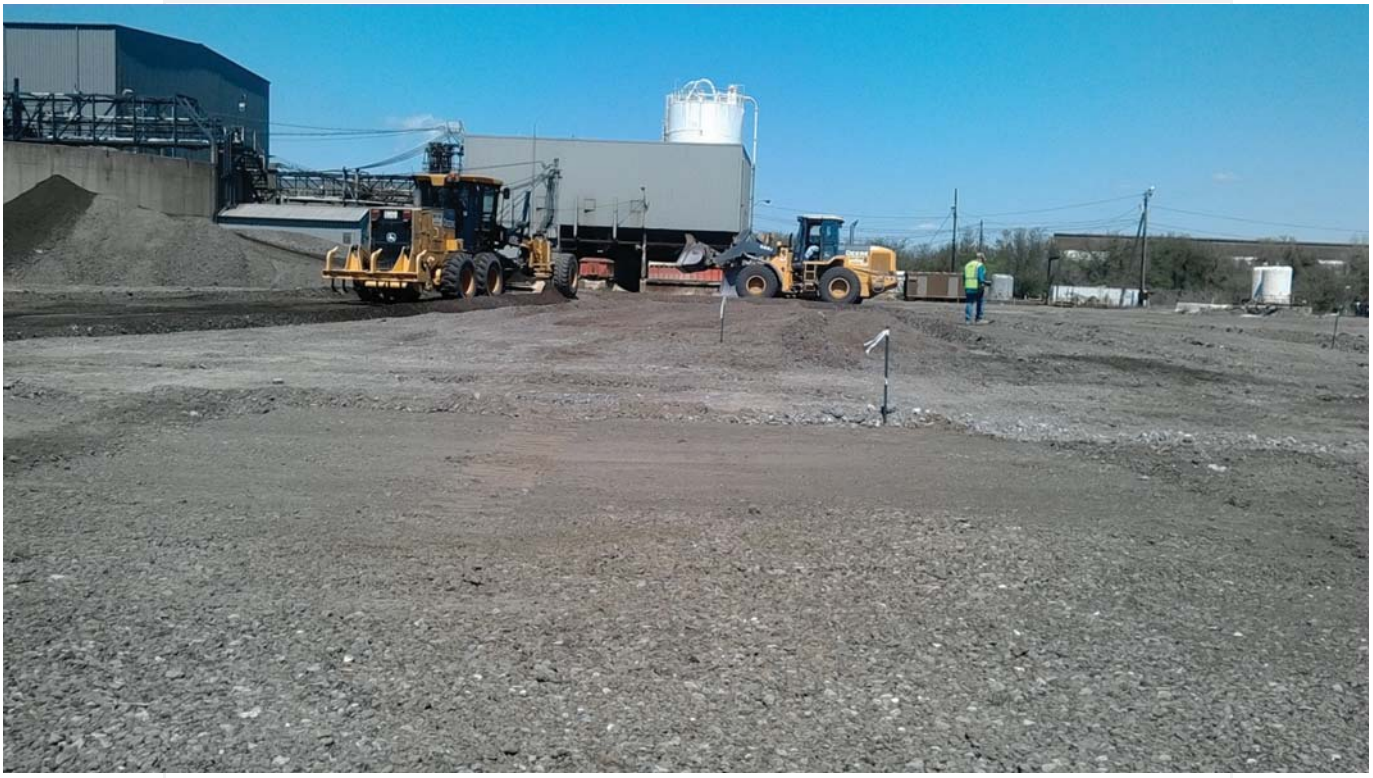
Date: 04 / 18 / 2017
Photo Page No. 1

GEO-TECHNOLOGY ASSOCIATES, INC.
Geotechnical and Environmental Consultants

PHOTOS

Project No. 31170758
Project Name: AFP

Date: 04 / 18 /2017
Photo Page No. 2



GEO-TECHNOLOGY ASSOCIATES, INC.
Geotechnical and Environmental Consultants

PHOTOS

Project No. 31170758
Project Name: AFP

Date: 04 / 20 / 2017
Photo Page No. 1

Southern, Eastern side of lot- asphalt

West and NW of lot fine graded

GEO-TECHNOLOGY ASSOCIATES, INC.
Geotechnical and Environmental Consultants

PHOTOS

Project No. 31170758
Project Name: AFP

Date: 04 / 20 / 2017
Photo Page No. 2

West and NW lot fine graded

West of lot Slag fines stockpile

GEO-TECHNOLOGY ASSOCIATES, INC.
Geotechnical and Environmental Consultants

PHOTOS

Project No. 31170758
Project Name: AFP

Date: 04 / 20 / 2017
Photo Page No. 3

Observation wells, which get mini slabs and caps, manhole gets 4" riser

GEO-TECHNOLOGY ASSOCIATES, INC.
Geotechnical and Environmental Consultants

PHOTOS

Project No. 31170758
Project Name: AFP

Date: 04 / 20 / 2017
Photo Page No. 4

GEO-TECHNOLOGY ASSOCIATES, INC.
Geotechnical and Environmental Consultants

PHOTOS

Project No. 31170758
Project Name: AFP

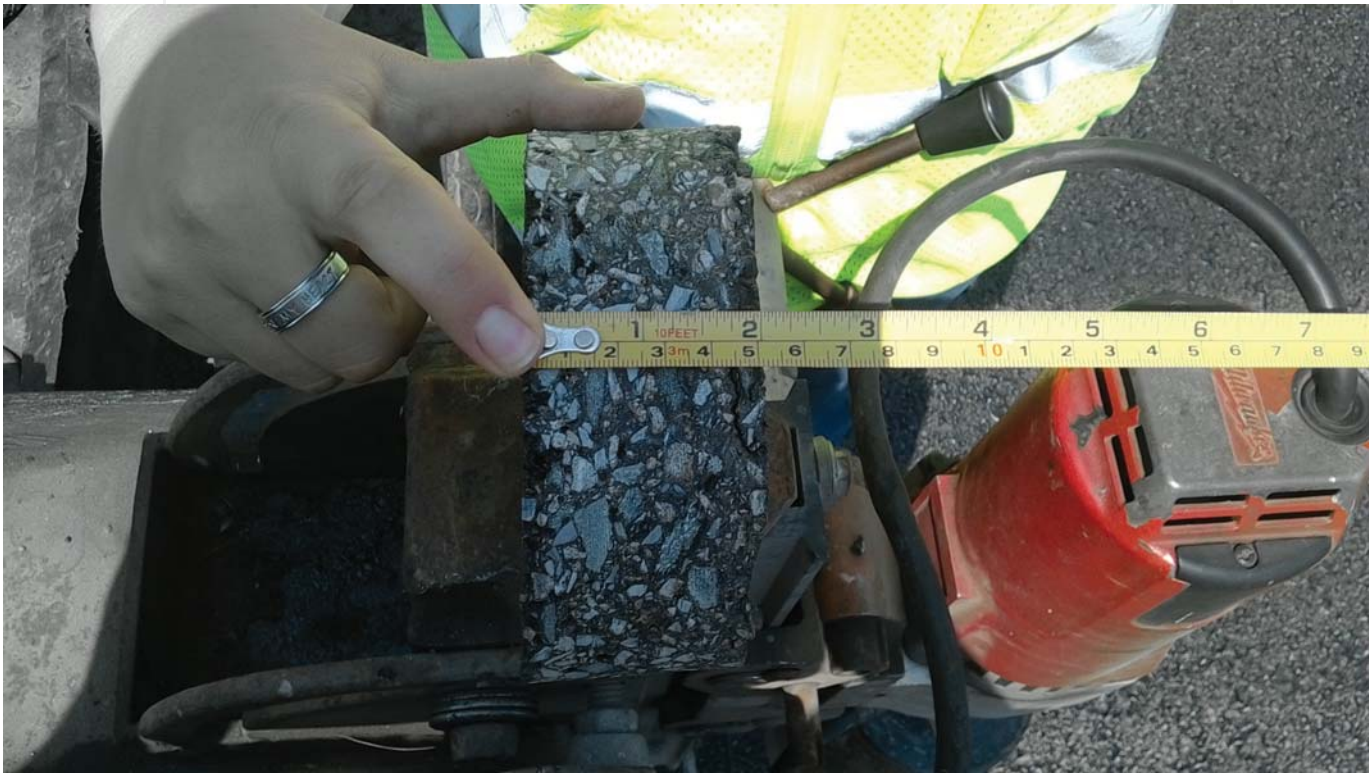
Date: 04 / 20 / 2017
Photo Page No. 6

GEO-TECHNOLOGY ASSOCIATES, INC.
Geotechnical and Environmental Consultants

PHOTOS

Project No. 31170758
Project Name: AFP

Date: 04 / 20 / 2017
Photo Page No. 5

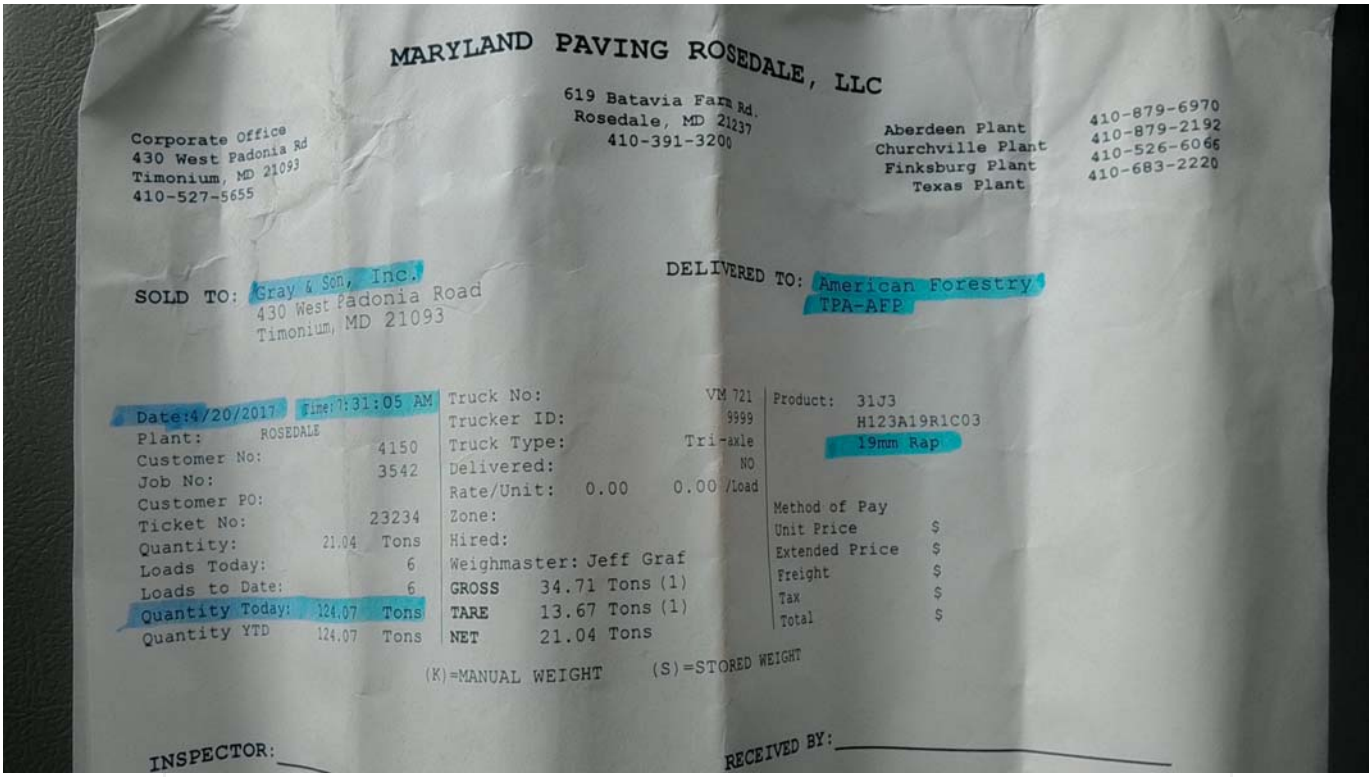


GEO-TECHNOLOGY ASSOCIATES, INC.
Geotechnical and Environmental Consultants

PHOTOS

Project No. 31170758
Project Name: AFP

Date: 04 / 20 / 2017
Photo Page No. 6



MARYLAND PAVING ROSEDALE, LLC

619 Batavia Farm Rd.
Rosedale, MD 21237
410-391-3200

Corporate Office
430 West Padonia Rd
Timonium, MD 21093
410-527-5655

Aberdeen Plant 410-879-6970
Churchville Plant 410-879-2192
Finksburg Plant 410-526-6066
Texas Plant 410-683-2220

SOLD TO: Gray & Son, Inc.
430 West Padonia Road
Timonium, MD 21093

DELIVERED TO: American Forestry
TPA-AFP

Date: 4/20/2017 Time: 7:31:05 AM
Plant: ROSEDALE
Customer No: 4150
Job No: 3542
Customer PO:
Ticket No: 23234
Quantity: 21.04 Tons
Loads Today: 6
Loads to Date: 6
Quantity Today: 124.07 Tons
Quantity YTD 124.07 Tons

Truck No: VM 721
Trucker ID: 9999
Truck Type: Tri-axle
Delivered: NO
Rate/Unit: 0.00 0.00 /Load
Zone:
Hired:
Weighmaster: Jeff Graf
GROSS 34.71 Tons (1)
TARE 13.67 Tons (1)
NET 21.04 Tons

Product: 31J3
H123A19R1C03
19mm Rap

Method of Pay
Unit Price $
Extended Price $
Freight $
Tax $
Total $

(K)=MANUAL WEIGHT (S)=STORED WEIGHT

INSPECTOR: _____ RECEIVED BY: _____

GEO-TECHNOLOGY ASSOCIATES, INC.
Geotechnical and Environmental Consultants

PHOTOS

Project No. 31170758
Project Name: AFP

Date: 04 / 21 / 2017
Photo Page No. 1

West lot facing North

West lot facing South

GEO-TECHNOLOGY ASSOCIATES, INC.
Geotechnical and Environmental Consultants

PHOTOS

Project No. 31170758
Project Name: AFP

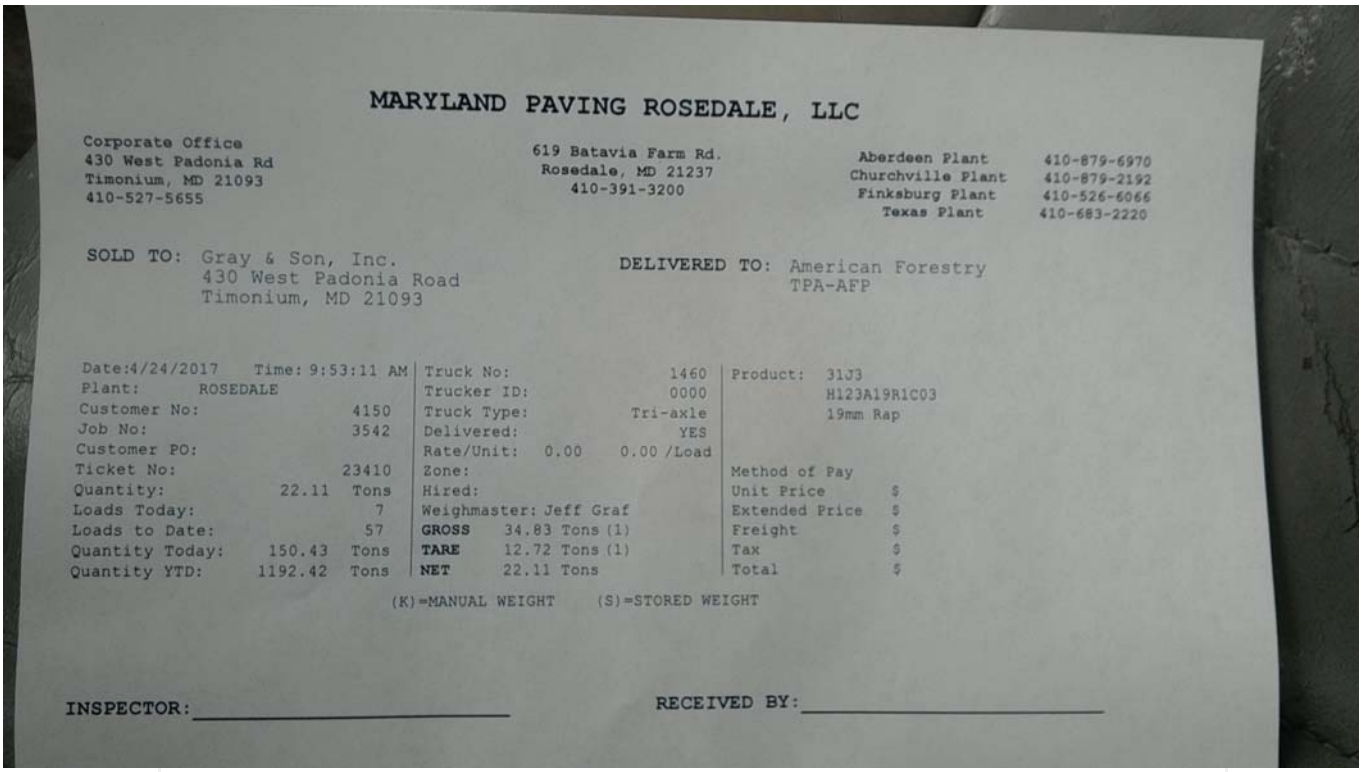
Date: 04 / 21 /2017
Photo Page No. 2

GEO-TECHNOLOGY ASSOCIATES, INC.
Geotechnical and Environmental Consultants

PHOTOS

Project No. 31170758
Project Name: AFP

Date: 04 / 24 / 2017
Photo Page No. 1



MARYLAND PAVING ROSEDALE, LLC

Corporate Office
430 West Padonia Rd
Timonium, MD 21093
410-527-5655

619 Batavia Farm Rd.
Rosedale, MD 21237
410-391-3200

Aberdeen Plant 410-879-6970
Churchville Plant 410-879-2192
Finksburg Plant 410-526-6066
Texas Plant 410-683-2220

SOLD TO: Gray & Son, Inc.
430 West Padonia Road
Timonium, MD 21093

DELIVERED TO: American Forestry
TPA-AFP

Date:4/24/2017	Time: 9:53:11 AM	Truck No:	1460	Product:	31J3
Plant:	ROSEDALE	Trucker ID:	0000		H123A19R1C03
Customer No:	4150	Truck Type:	Tri-axle		19mm Rap
Job No:	3542	Delivered:	YES		
Customer PO:		Rate/Unit: 0.00	0.00 /Load		
Ticket No:	23410	Zone:		Method of Pay	
Quantity:	22.11 Tons	Hired:		Unit Price	$
Loads Today:	7	Weighmaster: Jeff Graf		Extended Price	$
Loads to Date:	57	GROSS	34.83 Tons (1)	Freight	$
Quantity Today:	150.43 Tons	TARE	12.72 Tons (1)	Tax	$
Quantity YTD:	1192.42 Tons	NET	22.11 Tons	Total	$

(K)=MANUAL WEIGHT (S)=STORED WEIGHT

INSPECTOR:_____ RECEIVED BY:_____

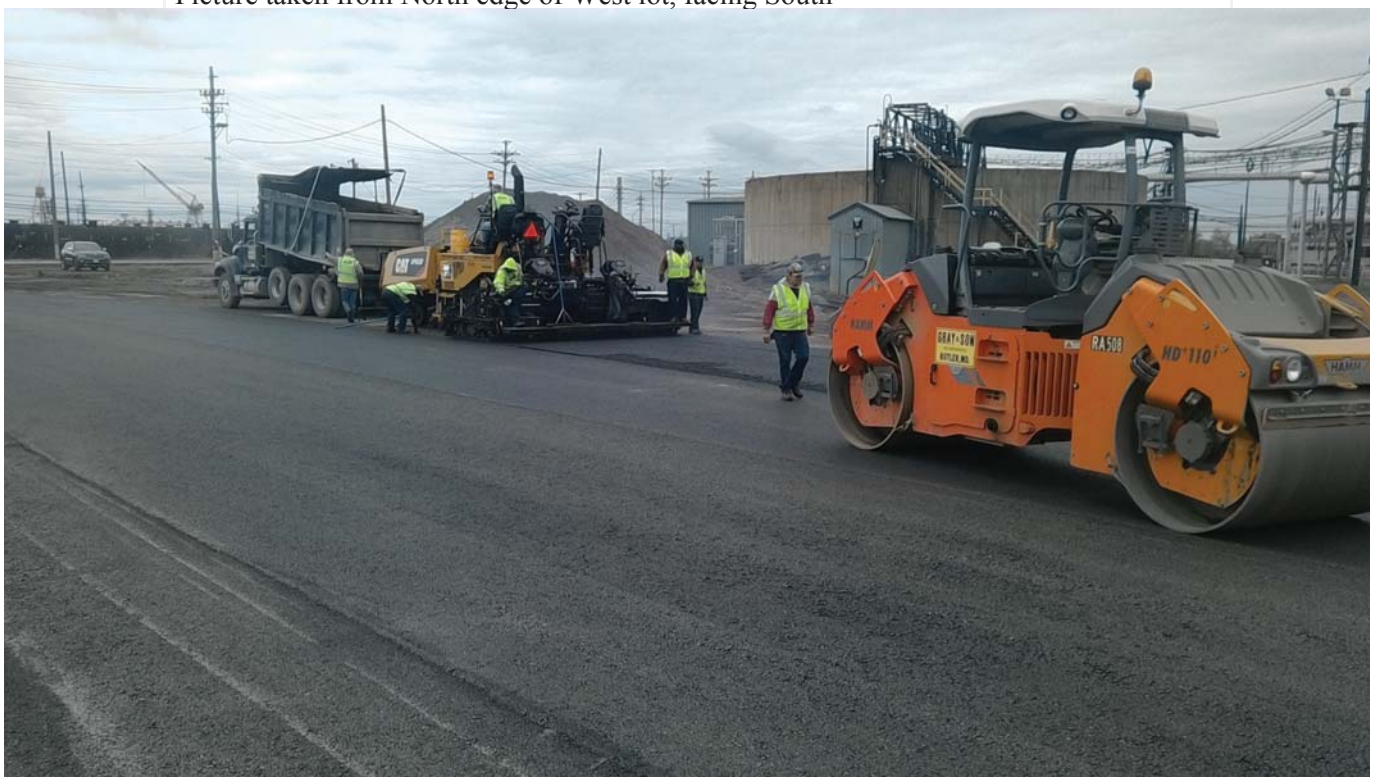
GEO-TECHNOLOGY ASSOCIATES, INC.
Geotechnical and Environmental Consultants

PHOTOS

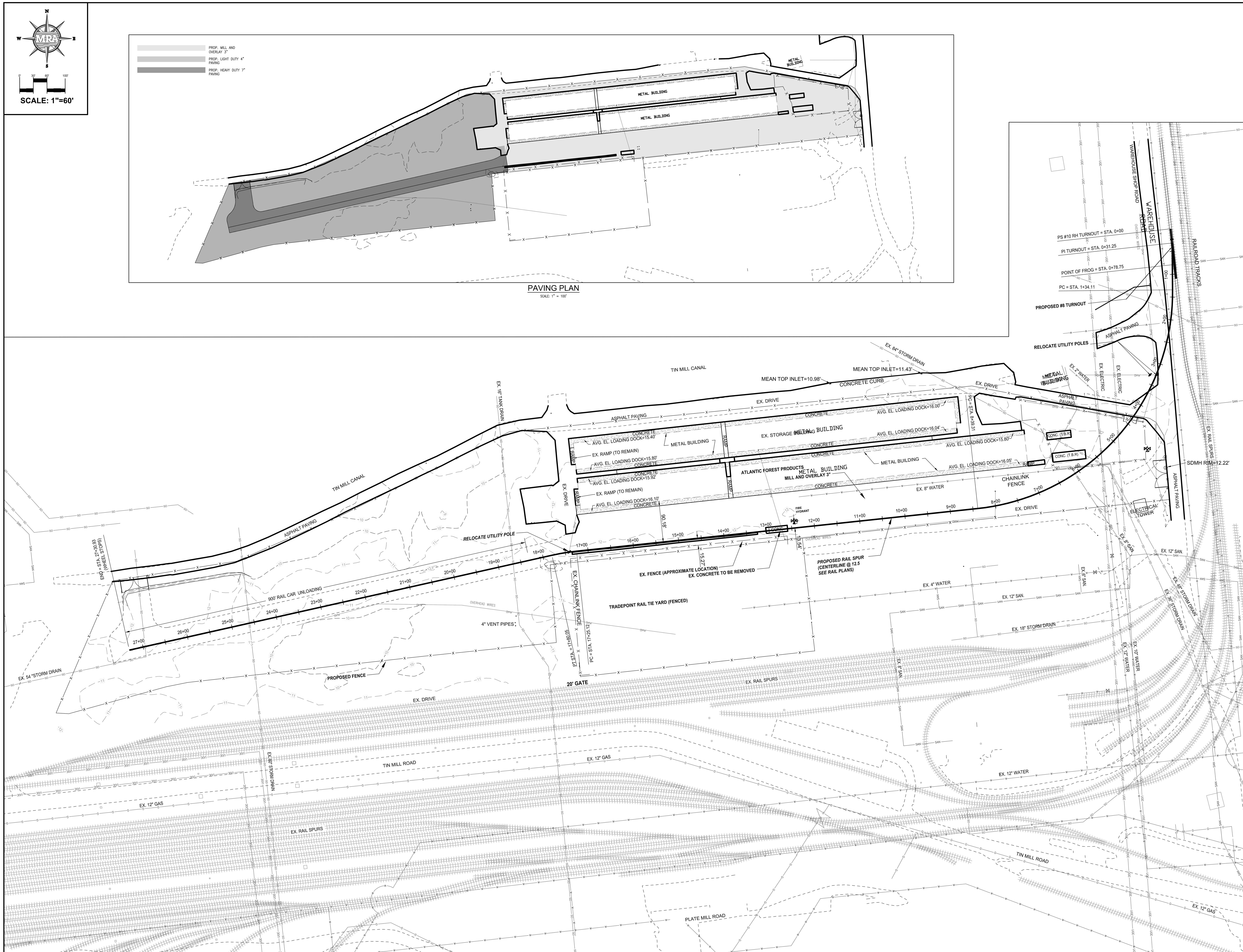
Project No. 31170758
Project Name: AFP

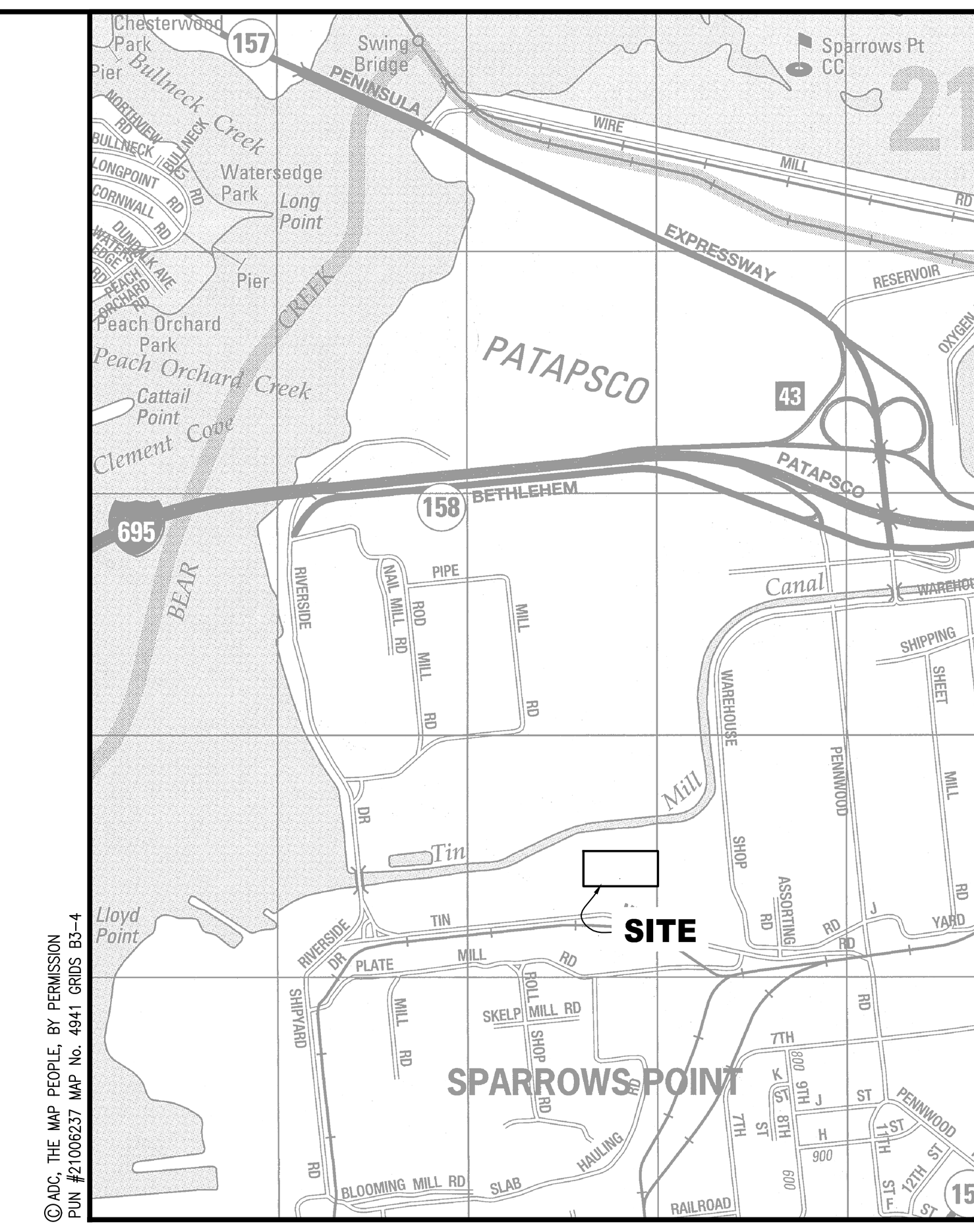
Date: 04 / 24 / 2017
Photo Page No. 2

Picture taken from North edge of West lot, facing South



APPENDIX E



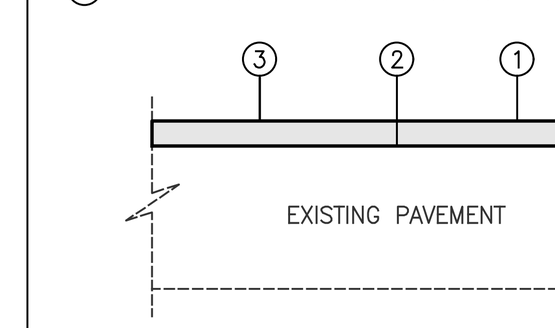


VICINITY MAP

SCALE: 1" = 1,200'

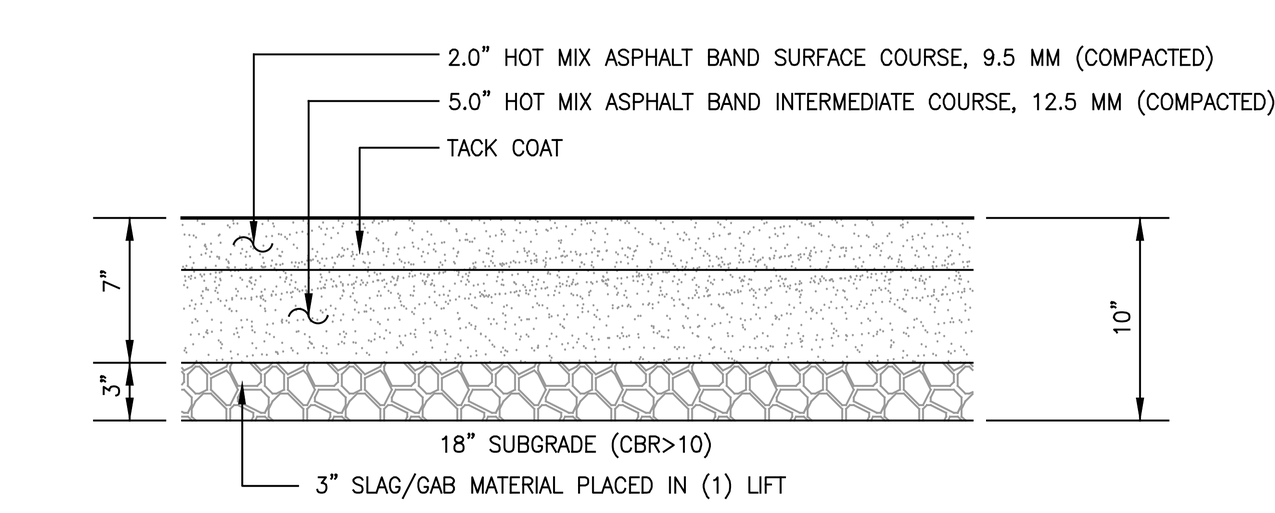
LEGEND

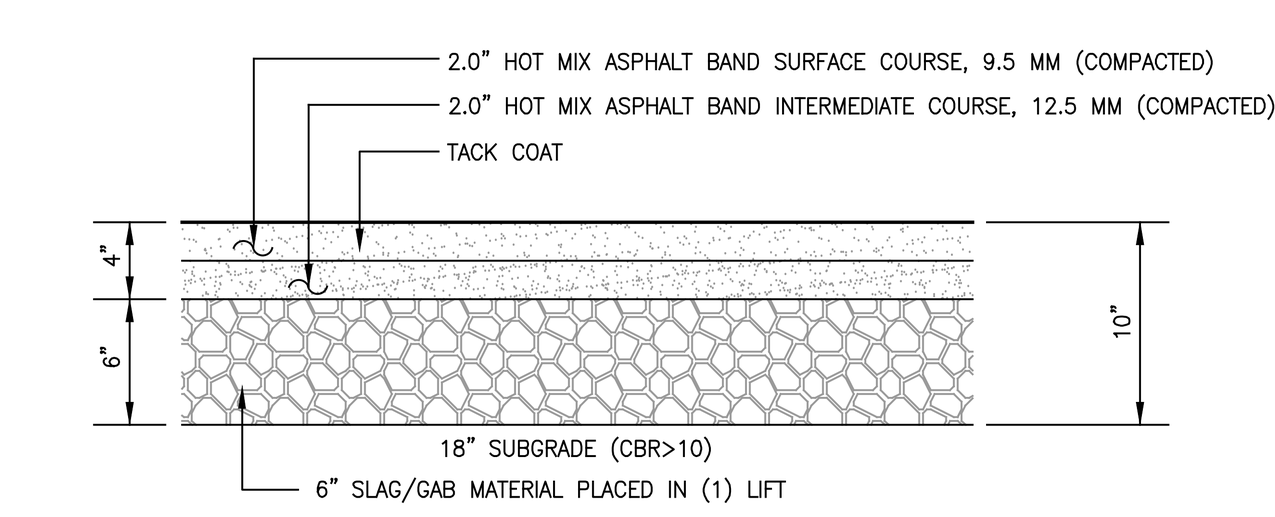
1. 3" HOT MIX ASPHALT SUPERPAVE 12.5 mm FOR SURFACE, PG 64.22, LEVEL 2.
2. TOP OF EXISTING PAVEMENT BEFORE 3" MILL.
3. TOP OF EXISTING PAVEMENT AFTER 3" MILL.



MILL & OVERLAY

NOT TO SCALE





LEGEND

PROPOSED	EXISTING
PROPERTY LINE	PROPERTY LINE
RIGHT OF WAY	RIGHT OF WAY
CL OF ROAD/STATIONS	CL OF ROAD
EDGE OF PAVING	EDGE OF PAVING
CURB	CURB
2' CONTOUR	BUILDING
5' CONTOUR	1' CONTOURS
PAVEMENT W/ 8' CHAIN LINK FENCE	5' CONTOURS
PROP. MILL AND OVERLAY 3"	WETLANDS
PROP. LIGHT DUTY 4" PAVING	25' WETLANDS BUFFER
PROP. HEAVY DUTY 7" PAVING	WATERS OF THE U.S.
PROP. SPOT ELEVATION	STREAM BUFFER
	STREAM
	STORM DRAIN
	WATER
	SANITARY SEWER
	GAS MAIN
	ELECTRIC–OVERHEAD
	ELECTRIC–UNDERGROUND
	WOODS
	FENCE
	RAILROAD
	SPOT ELEVATION
	EX. ASPHALT PAVING

NOTE: ALL GATES ARE TO BE MANUAL.

MORRIS & RITCHIE ASSOCIATES, INC.
ENGINEERS, ARCHITECTS, PLANNERS, SURVEYORS & LANDSCAPE ARCHITECTS
3445-A BOX HILL CORPORATE CENTER DRIVE
ABINGDON, MARYLAND 21009
(410) 515-9000
FAX (410) 515-9002
www.mragta.com

TRADEPOINT ATLANTIC
1600 SPARROWS POINT BOULEVARD
BALTIMORE, MARYLAND 21219

ARCO NATIONAL CONSTRUCTION
900 N. ROCK HILL ROAD
ST. LOUIS, MISSOURI 63119

Rev	Date	Description

DEVELOPMENT PLAN
ATLANTIC FOREST PRODUCTS SITE
at Tradepoint Atlantic

Project No.:	19296
Date:	OCT. 4, 2016
Drawn By:	DCR
Checked By:	JMK/AGD
Scale:	1"=60'

DEVELOPMENT PLAN

D-1

APPENDIX F

GEO-TECHNOLOGY ASSOCIATES, INC.

GEOTECHNICAL AND
ENVIRONMENTAL CONSULTANTS

A Practicing Geoprofessional Business Association Member Firm

March 10, 2017

Arco National Construction
900 N. Rock Hill Road
St. Louis, MO 63119

Attn: Mr. Andrew Campbell

Re: ***Tradepoint Atlantic – Atlantic Forest Products***
Pavement Summary
Baltimore County, Maryland
Project No.: 19296

Dear Andrew:

Pursuant to your request, Geo-Technology Associates, Inc. (GTA) has prepared a summary of the pavement section constructed during the period of October through November 2016, at the referenced project. In conjunction with our services, GTA was provided with the *Grading Plan, Atlantic Forest Products at Tradepoint Atlantic,* prepared by Morris & Ritchie Associates, Inc. (MRA) dated September 14, 2016. GTA was also provided with the asphalt coring logs prepared by the contractor, dated October 27, through November 8, 2016. Based on our observations and review of the coring logs, it is GTA's opinion that the pavement areas were prepared in general accordance with the referenced plan.

This Report has been prepared for the exclusive use of ARCO National Construction pursuant to the agreement between GTA and ARCO National Construction, dated August 23, 2016, in accordance with generally accepted engineering practices. All terms and conditions set forth in the agreement are incorporated herein. No warranty, express or implied, is made herein. Use and reproduction of this Report by any other person is unauthorized.

GTA appreciates the opportunity to have been of assistance to you on this project. Should you have any questions or require any additional information, please contact our office at (410) 515-9446.

Sincerely,
GEO-TECHNOLOGY ASSOCIATES, INC.

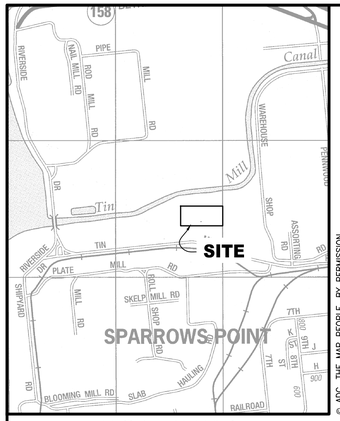
Christopher M. Standish
Senior Project Manager

STATE OF MARYLAND
THOMAS MICHAEL WIRTH
No. 33973
PROFESSIONAL ENGINEER

Thomas M. Wirth, P.E.
Vice President

CMS/TMW/mlw
19296
L:\Shared\Geo\2016 Projects\(MAR) 19296 TPA AFP\19296 TPA AFP Pavement Summ.doc

APPENDIX G



VICINITY MAP

SCALE: 1" = 1,200'

LEGEND

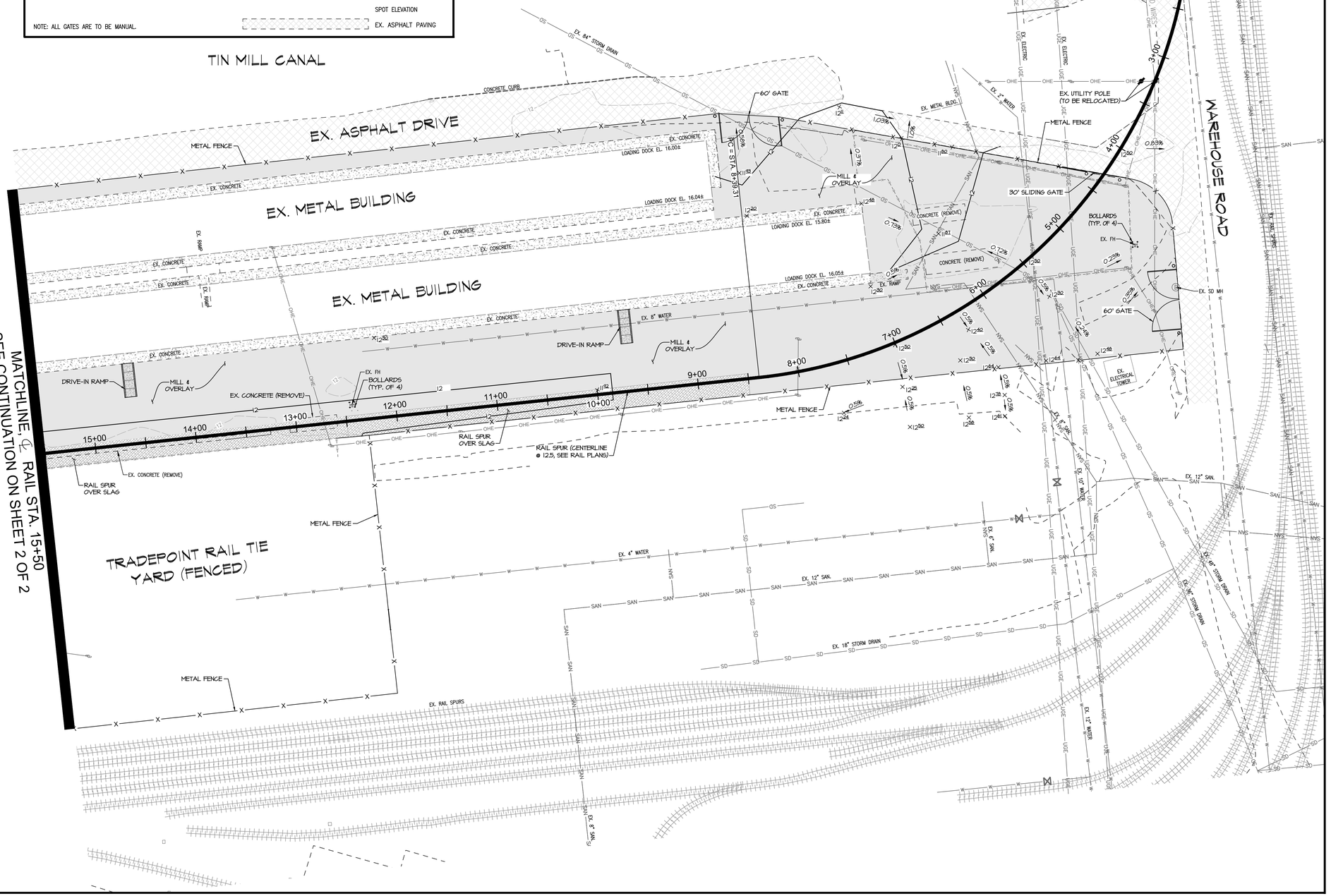
PROPOSED	EXISTING
PROPERTY LINE	PROPERTY LINE
RIGHT OF WAY	RIGHT OF WAY
CL OF ROAD/STATIONS	CL OF ROAD
EDGE OF PAVING	EDGE OF PAVING
CURB	CURB
2' CONTOUR	BUILDING
5' CONTOUR	1' CONTOURS
RAIL SPUR	5' CONTOURS
PAVEMENT W/ 8' CHAIN LINK FENCE	WETLANDS
PROP. MILL AND OVERLAY 3"	25' WETLANDS BUFFER
PROP. RAIL SPUR OVER SLAG	WATERS OF THE U.S.
PROP. LIGHT DUTY 4" PAVING	STREAM BUFFER
PROP. HEAVY DUTY 7" PAVING	STREAM
PROP. SPOT ELEVATION	STORM DRAIN
	WATER
	SANITARY SEWER
	GAS MAIN
	ELECTRIC-OVERHEAD
	ELECTRIC-UNDERGROUND
	WOODS
	FENCE
	RAILROAD
	SPOT ELEVATION
	EX. ASPHALT PAVING

NOTE: ALL GATES ARE TO BE MANUAL.

N W E S

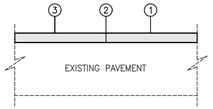
50 0 50 100

SCALE : 1"=50' (FULL SIZE)



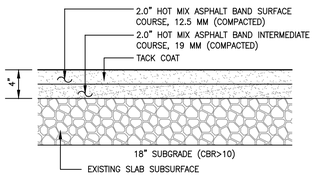
LEGEND

1. 3" HOT MIX ASPHALT SUPERPAVE MODIFIED 19 mm FOR SURFACE, PG 64.22, LEVEL 2.
2. TOP OF EXISTING PAVEMENT BEFORE 3" MILL.
3. TOP OF EXISTING PAVEMENT AFTER 3" MILL.



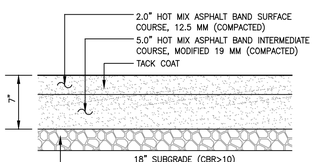
MILL & OVERLAY

NOT TO SCALE



LIGHT DUTY PAVING

NOT TO SCALE



HEAVY DUTY PAVING

NOT TO SCALE

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adipietro@mragta.com

TRADEPOINT ATLANTIC
1600 SPARROWS POINT BOULEVARD
BALTIMORE, MARYLAND 21219

ARCO NATIONAL CONSTRUCTION
900 N. ROCK HILL ROAD
ST. LOUIS, MISSOURI 63119

Rev	Description
6/21/17	ADDED AS-BUILT FEATURES

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. 34672, EXPIRATION DATE: 08/23/2017."

GRADING PLAN
FOR
ATLANTIC FOREST PRODUCTS SITE
at Tradepoint Atlantic

TAX MAP XX, PARCEL XX

BALTIMORE COUNTY, MD

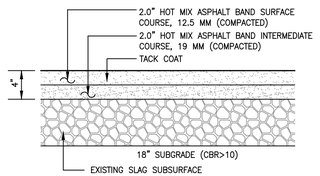
Project No.:	19296
Date:	January 5th, 2017
Drawn By:	AJH
Design By:	AJH
Review By:	/AGD
Scale:	1" = 50'

GRADING PLAN

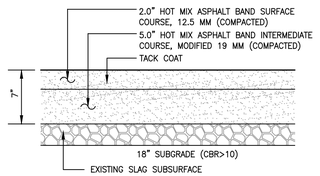
LEGEND

PROPOSED	EXISTING
PROPERTY LINE	PROPERTY LINE
RIGHT OF WAY	RIGHT OF WAY
CL OF ROAD/STATIONS	CL OF ROAD
EDGE OF PAVING	EDGE OF PAVING
CURB	CURB
2' CONTOUR	BUILDING
5' CONTOUR	1' CONTOURS
RAIL SPUR	5' CONTOURS
PAVEMENT W/ 8' CHAIN LINK FENCE	WETLANDS
PROP. MILL AND OVERLAY 3"	25' WETLANDS BUFFER
PROP. RAIL SPUR OVER SLAG	WATERS OF THE U.S.
PROP. LIGHT DUTY 4" PAVING	STREAM BUFFER
PROP. HEAVY DUTY 7" PAVING	STREAM
PROP. SPOT ELEVATION	STORM DRAIN
	WATER
	SANITARY SEWER
	GAS MAIN
	ELECTRIC-OVERHEAD
	ELECTRIC-UNDERGROUND
	WOODS
	FENCE
	RAILROAD
	SPOT ELEVATION
	EX. ASPHALT PAVING

NOTE: ALL GATES ARE TO BE MANUAL.



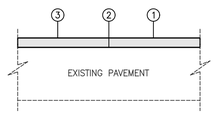
LIGHT DUTY PAVING
NOT TO SCALE



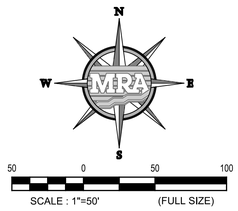
HEAVY DUTY PAVING
NOT TO SCALE

LEGEND

1. 3" HOT MIX ASPHALT SUPERPAVE MODIFIED 19 mm FOR SURFACE, PG 64.22, LEVEL 2.
2. TOP OF EXISTING PAVEMENT BEFORE 3" MILL.
3. TOP OF EXISTING PAVEMENT AFTER 3" MILL.



MILL & OVERLAY
NOT TO SCALE



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adipietro@mragta.com

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ARCO
ARCO NATIONAL CONSTRUCTION
900 N. ROCK HILL ROAD
ST. LOUIS, MISSOURI 63119

Rev	Description
	6/21/17 - ADDED AS-BUILT FEATURES

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. 34672, EXPIRATION DATE: 08/23/2017."

GRADING PLAN
FOR
ATLANTIC FOREST PRODUCTS SITE
at Tradepoint Atlantic

TAX MAP XX, PARCEL XX
BALTIMORE COUNTY, MD

Project No.:	19296
Date:	January 5th, 2017
Drawn By:	AJH
Design By:	AJH
Review By:	/AGD
Scale:	1" = 50'

GRADING PLAN

2 OF 2

APPENDIX H

GEO-TECHNOLOGY ASSOCIATES, INC.

GEOTECHNICAL AND
ENVIRONMENTAL CONSULTANTS

A Practicing Geoprofessional Business Association Member Firm

July 20, 2017

Tradepoint Atlantic
1600 Sparrows Point Boulevard
Baltimore, Maryland 21219

Attn: Mr. John M. Martin, III, P.E.

Re: ***Atlantic Forest Products, Phase II***
Pavement/Cap Summary, Revised
Baltimore County, Maryland

Dear Mr. Martin:

Pursuant to your request, Geo-Technology Associates, Inc. (GTA) has prepared a summary of the pavement section, or Cap, constructed for the referenced project during the period of April 14 through April 27, 2017. The scope of the work was to expand the existing Cap with light duty paving to provide a 4-inch asphalt cape in the area indicated on the approved plan. Plans referenced for the work consisted of a *Grading Plan for Atlantic Forest Products Site,* prepared by Morris & Ritchie Associates, Inc. (MRA) dated January 5, 2017, with latest revision date of June 21, 2017. Our services during this period consisted of observing prepared subgrades, in-place density testing of the compacted bituminous concrete and measuring core thicknesses cut by the paving contractor.

GTA observed proof roll tests of the prepared aggregate base course with a fully loaded tandem axel dump truck prior to placement of the asphalt base course. The existing aggregate base layer was previously confirmed to measure a minimum of 18 inches. The prepared subgrades were observed to be stable. In-place density test results for the asphalt base and surface courses indicated adequate compaction, and were summarized in our field reports that were previously transmitted to representatives of Tradepoint Atlantic and the ARM Group. Based on our measurements of the referenced asphalt cores, the completed bituminous concrete cap measured a minimum of 4 inches. Based on our observations and testing, it is GTA's professional opinion that the light duty pavement section, or Cap, was constructed in general accordance with the referenced plans.

This Report has been prepared for the exclusive use of Tradepoint Atlantic, pursuant to the agreement between GTA and Tradepoint Atlantic, dated April 12, 2017, and in accordance with generally accepted engineering practices. All terms and conditions set forth in the agreement are incorporated herein. No warranty, express or implied, is made herein. Use and reproduction of this Report by any other person is unauthorized.

GTA appreciates the opportunity to have been of assistance to you on this project. Should you have any questions or require any additional information, please contact our office at (410) 515-9446.

Sincerely,
GEO-TECHNOLOGY ASSOCIATES, INC.

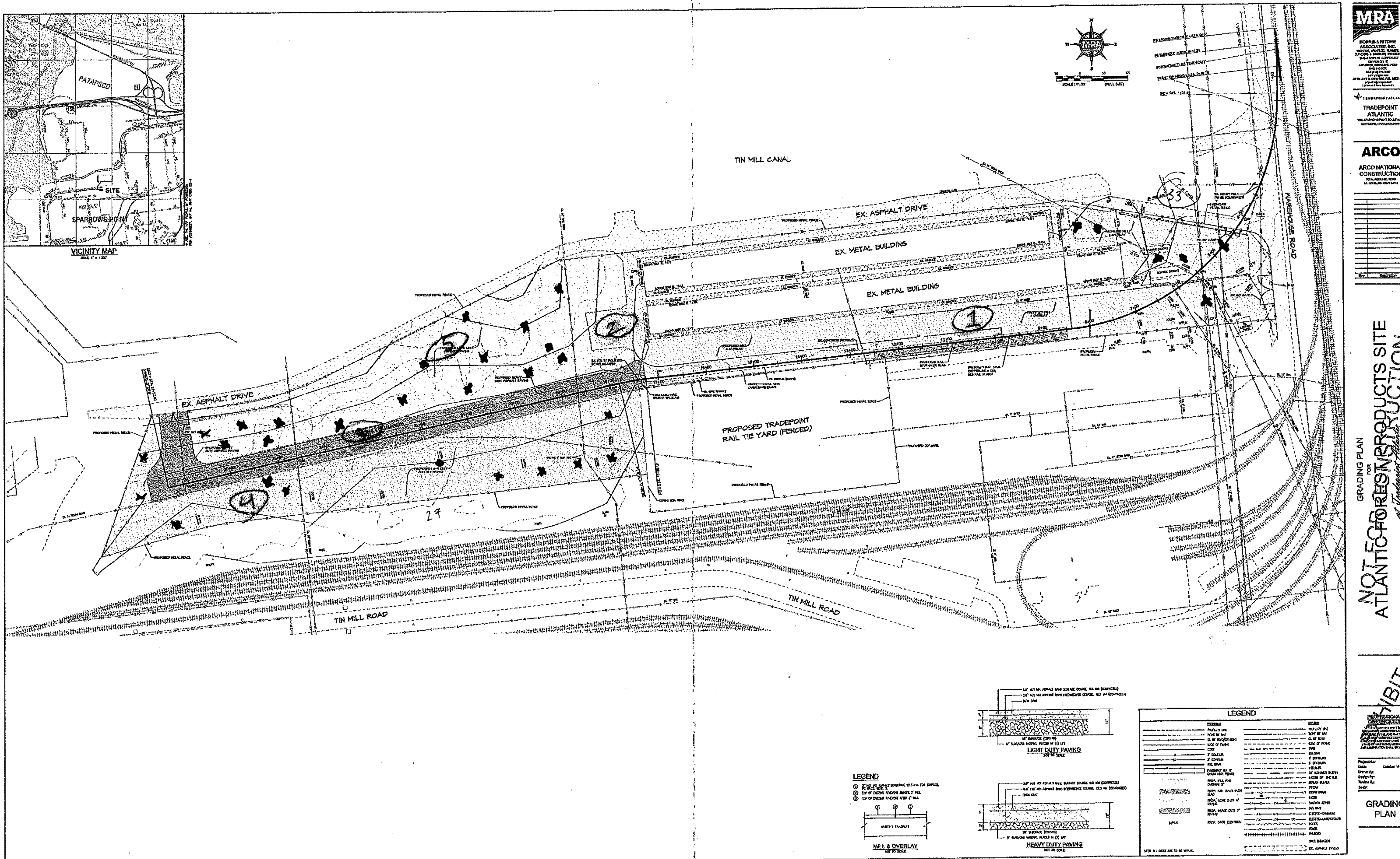
Christopher M. Standish
Senior Project Manager

Thomas M. Wirth, P.E.
Vice President

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.: 33973, Expiration Date: 06/14/2019. TMW

CMS/TMW/cds
31170758
L:\Shared\Project Files\2017\31170758 - AFP Expansion Project\Doc\31170758 TPA AFP Phase II Pavement Summ Revised.doc

APPENDIX I



VICINITY MAP
PATAPSCO
SITE
SPARROWS POINT
TIN MILL CANAL
EX. ASPHALT DRIVE
EX. METAL BUILDING
EX. METAL BUILDING
EX. ASPHALT DRIVE
PROPOSED TRADEPOINT
RAIL TIE YARD (FENCED)
WAREHOUSE ROAD
TIN MILL ROAD
TIN MILL ROAD
LIGHT DUTY PAVING
HEAVY DUTY PAVING
MILL & OVERLAY
LEGEND
LEGEND
MRA
MORRIS & RITCHIE ASSOCIATES, INC.
TRADEPOINT ATLANTIC
ARCO
ARCO NATIONAL CONSTRUCTION
GRADING PLAN
FOR
ATLANTIC FOREST PRODUCTS SITE
at Tradepoint Atlantic
NOT FOR CONSTRUCTION
BALTIMORE COUNTY, MD
EXHIBIT
PROFESSIONAL CERTIFICATION
Date: October 14th, 2015
GRADING PLAN

PR TE

HMA FIELD COMPACTION REPORT - CORE METHOD

QC:
Acceptance:
I.A.S.T.:
Other:

Job Name: TPA-AFP (sparrows point)

Date Sampled: 11-8-2016 Contract No: J.O. No: Plant Location: MP Rosedale

Mix Design No: H123A12B1C03 Depth: 2in Laid Over: existing Cut By: Leah Haptak

Lot Size: Lot No: Mix Lot No: Mix Sublot No:

Witnessed By: Tested By: MTA 331-MD

CORE SAMPLE NUMBER	DATE & TIME TONNAGE LAID	LOCATION (Indicate Station Number per MSMT 418)	THICKNESS	MAXIMUM GRAVITY 2.615 WEIGHT - GRAMS in Air	in Water	SSD in Air	VOLUME in cc	BULK SPECIFIC GRAVITY	% DENSITY	SUBLOT AVERAGE % DENSITY	PWSL =
1	11-8 11:30 AM	AFP	2in	illegible	1301.7	2191.7	892.0	2.460	94.1	94.1	PAY FACTOR =
2	11-8 11:45 AM	PARKING	2in	2233.9	1324.6	2246.2	916.2	2.435	93.2	93.2	REMARKS:
3	11-8 12:00 PM	LOT	2in	1660.0	1010.0	1700.4	690.4	2.457	94.0	94.0	

PROJECT ENGINEER: Send first 3 copies to Plant with cores.

PLANT CONTROL TECHNICIAN: Original to QA folder
First carbon to Project
Second carbon for Plant records
Third carbon for Project

CORE LOT AVERAGE
STANDARD DEVIATION

Sheet ____ of ____

PR TE

HMA FIELD COMPACTION REPORT - CORE METHOD

QC:
Acceptance:
I.A.S.T.:
Other:

Job Name: TPA - AFP (Sparrows point)

Date Sampled: 11-7-2016 Contract No: J.O. No: Plant Location: MP Rosedale

Mix Design No: H123A12R1C03 Depth: 2in Laid Over: existing Cut By: Leah Haptak

Lot Size: Lot No: Mix Lot No: Mix Sublot No:

Witnessed By: Tested By: MTA 334-MD

CORE SAMPLE NUMBER	DATE & TIME TONNAGE LAID	LOCATION (Indicate Station Number per MSMT 418)	THICKNESS	MAXIMUM GRAVITY 2.619 WEIGHT - GRAMS in Air	in Water	SSD in Air	VOLUME in cc	BULK SPECIFIC GRAVITY	% DENSITY	SUBLOT AVERAGE % DENSITY	PWSL =
1	11-7 10:00 AM	AFP	2in	2017.3	1221.6	2035.1	833.5	2.451	93.9	93.8	PAY FACTOR =
2	11-7 10:30 AM	PARKING	2in	2216.5	1325.6	2222.4	896.5	2.472	94.4	94.4	REMARKS:
3	11-7 11:30 AM	LOT	2in	2104.2	1263.5	2112.3	848.8	2.479	94.7	94.7	

PROJECT ENGINEER: Send first 3 copies to Plant with cores.

PLANT CONTROL TECHNICIAN: Original to QA folder
First carbon to Project
Second carbon for Plant records
Third carbon for Project

CORE LOT AVERAGE

STANDARD DEVIATION

Sheet ____ of ____

PF TE

HMA FIELD COMPACTION REPORT - CORE METHOD

QC:
Acceptance:
I.A.S.T.:
Other:

Job Name: TPA - AFP (sparrows point)

Date Sampled: 11-5-2016 Contract No: J.O. No: Plant Location: MP Rosedale

Mix Design No: H123A12R1 COB Depth: 2in Laid Over: existing Cut By: Leah Haptak

Lot Size: Lot No: Mix Lot No: Mix Sublot No:

Witnessed By: Tested By: MTA 334-MD

CORE SAMPLE NUMBER	DATE & TIME TONNAGE LAID	LOCATION (Indicate Station Number per MSMT 418)	THICKNESS	MAXIMUM GRAVITY 2,615 WEIGHT - GRAMS in Air	in Water	SSD in Air	VOLUME in cc	BULK SPECIFIC GRAVITY	% DENSITY	SUBLOT AVERAGE % DENSITY	PWSL =
1	11-5 9:15 AM	AFP	2in	2348.8	1397.5	2359.8	966.3	2.431	93.0	93.0	PAY FACTOR =
2	11-5 10:30 AM	PARKING	2in	1771.1	1108.4	1796.1	797.7	2.474	94.6	94.6	REMARKS:
3	11-5 11:45 AM	LOT	2in	2184.1	1301.4	2187.6	880.2	2.481	94.9	94.9	

PROJECT ENGINEER: Send first 3 copies to Plant with cores.

PLANT CONTROL TECHNICIAN: Original to QA folder
First carbon to Project
Second carbon for Plant records
Third carbon for Project

CORE LOT AVERAGE
STANDARD DEVIATION

Sheet ____ of ____

PRIV/

HMA FIELD COMPACTION REPORT - CORE METHOD

QC:
Acceptance:
I.A.S.T.:
Other:

Job Name: TPA- AFP (sparrows point)

Date Sampled: 11-4-16 Contract No: J.O. No: Plant Location: MP Rosedale

Mix Design No: H123A12R1C03 Depth: 2in Laid Over: existing Cut By: Leah Haptak

Lot Size: Lot No: Mix Lot No: Mix Sublot No:

Witnessed By: Tested By: MTK 334-220

CORE SAMPLE NUMBER	DATE & TIME TONNAGE LAID	LOCATION (Indicate Station Number per MSMT 418)	THICKNESS	MAXIMUM GRAVITY 2.618 WEIGHT - GRAMS in Air	in Water	SSD in Air	VOLUME in cc	BULK SPECIFIC GRAVITY	% DENSITY	SUBLOT AVERAGE % DENSITY	PWSL =
1	11-4 11:00 AM	AFP	2in	2741.7	1624.2	2753.2	1127.0	2.428	92.7	92.7	PAY FACTOR =
2	11-4 11:30 AM	PARKING	2in	1980.8	1172.1	1991.4	819.3	2.417	92.3	92.3	REMARKS:
3	11-4 12:00 AM	LOT	2in	2182.9	1313.1	2185.7	872.6	2.502	95.6	95.6	

CORE LOT AVERAGE

STANDARD DEVIATION

PROJECT ENGINEER: Send first 3 copies to Plant with cores.

PLANT CONTROL TECHNICIAN: Original to QA folder
First carbon to Project
Second carbon for Plant records
Third carbon for Project

Sheet ____ of ____

PRIVATE

HMA FIELD COMPACTION REPORT - CORE METHOD

QC: ____
Lance: ____
I.A.S.T.: ____
Other: ____

Job Name: TPA - AFP (sparrows point)

Date Sampled: 11-3-16 Contract No: ____ J.O. No: ____ Plant Location: MP Rosedale

Mix Design No: H123A12R1C03 Depth: 2in Laid Over: existing Cut By: Leah Hoptak

Lot Size: ____ Lot No: ____ Mix Lot No: ____ Mix Sublot No: ____

Witnessed By: ____ Tested By: MHA 334-MD

CORE SAMPLE NUMBER	DATE & TIME TONNAGE LAID	LOCATION (Indicate Station Number per MSMT 418)	THICKNESS	MAXIMUM GRAVITY 2.615 WEIGHT - GRAMS in Air	in Water	SSD in Air	VOLUME in cc	BULK SPECIFIC GRAVITY	% DENSITY	SUBLOT AVERAGE % DENSITY	PWSL =
1	11-3 12:00 PM	AFP	2in	2231.2	1323.7	2239.0	915.3	2.438	93.2	93.2	PAY FACTOR =
2	11-3 12:30 PM	PARKING	2in	2447.5	1456.6	2456.1	999.5	2.449	93.7	93.7	REMARKS:
3	11-3 1:00 PM	LOT	2in	2140.6	1274.1	2146.7	872.6	2.453	93.8	93.8	

CORE LOT AVERAGE ____

STANDARD DEVIATION ____

PROJECT ENGINEER: Send first 3 copies to Plant with cores.

PLANT CONTROL TECHNICIAN: Original to QA folder
First carbon to Project
Second carbon for Plant records
Third carbon for Project

Sheet ____ of ____

PR TE

HMA FIELD COMPACTION REPORT - CORE METHOD

QC:
Acceptance:
I.A.S.T.:
Other:

Job Name: TPA-AFP (sparrows point)

Date Sampled: 11-2-16 Contract No: J.O. No: Plant Location: MP Rosedale

Mix Design No: 19 mm MOD Depth: 2 in Laid Over: GAB Cut By: Leah Hoptak

Lot Size: Lot No: Mix Lot No: Mix Sublot No:

Witnessed By: Tested By: MTA 334-MD

CORE SAMPLE NUMBER	DATE & TIME TONNAGE LAID	LOCATION (Indicate Station Number per MSMT 418)	THICKNESS	MAXIMUM GRAVITY 2.619 WEIGHT - GRAMS in Air	in Water	SSD in Air	VOLUME in cc	BULK SPECIFIC GRAVITY	% DENSITY	SUBLOT AVERAGE % DENSITY	PWSL =
1	11-2 10:00 AM	AFP	2 in	2378.0	1406.1	2390.7	984.7	2.410	92.0	92.0	PAY FACTOR =
2	11-2 10:15 AM	PARKING	2 in	3488.3	2020.3	3511.1	1440.8	2.428	92.7	92.7	REMARKS:
3	11-2 11:30 AM	LOT	2 in	2311.1	1376.5	2325.8	949.3	2.460	93.9	93.9	

PROJECT ENGINEER: Send first 3 copies to Plant with cores.

PLANT CONTROL TECHNICIAN: Original to QA folder
First carbon to Project
Second carbon for Plant records
Third carbon for Project

CORE LOT AVERAGE
STANDARD DEVIATION

Sheet ____ of ____

PF TE

HMA FIELD COMPACTION REPORT - CORE METHOD

QC:
Acceptance:
I.A.S.T.:
Other:

Job Name: TPA-AFP (sparrows point)

Date Sampled: 11-1-2016 Contract No: J.O. No: Plant Location: MP Rosedale

Mix Design No: 19 mm MOD Depth: 2in Laid Over: GAB Cut By: Leah Hoptak

Lot Size: Lot No: Mix Lot No: Mix Sublot No:

Witnessed By: Tested By: MTR 334-MD

CORE SAMPLE NUMBER	DATE & TIME TONNAGE LAID	LOCATION (Indicate Station Number per MSMT 418)	THICKNESS	MAXIMUM GRAVITY 2.630 WEIGHT - GRAMS in Air	in Water	SSD in Air	VOLUME in cc	BULK SPECIFIC GRAVITY	% DENSITY	SUBLOT AVERAGE % DENSITY	PWSL =
1	10:00 PM	AFP	2in	2054.5	1213.8	2065.7	852.1	2.411	91.7	91.7	PAY FACTOR =
2	10:30 PM	PARKING	2in	1805.7	1063.7	1811.4	742.5	2.432	92.5	92.5	REMARKS:
3	11:00 PM	LOT	2in	2153.5	1265.1	2167.9	887.8	2.426	92.3	92.3	

PROJECT ENGINEER: Send first 3 copies to Plant with cores.

PLANT CONTROL TECHNICIAN: Original to QA folder
First carbon to Project
Second carbon for Plant records
Third carbon for Project

CORE LOT AVERAGE

STANDARD DEVIATION

Sheet ____ of ____

BALTIMORE COUNTY
HMA FIELD COMPACTION REPORT - CORE METHOD

QC: ____
Acceptance: ____
I.A.S.T.: ____
Other: ____

Job Name: TPA-AFP (sparrows point)

Date Sampled: 10-31-2016 Contract No: ____ J.O. No: ____ Plant Location: MP Rosedale

Mix Design No: 19 mm MOD Depth: 2in Laid Over: GAB Cut By: Leah Hoptak

Lot Size: ____ Lot No: ____ Mix Lot No: ____ Mix Sublot No: ____

Witnessed By: ____ Tested By: MTAD 334-MD

CORE SAMPLE NUMBER	DATE & TIME TONNAGE LAID	LOCATION (Indicate Station Number per MSMT 418)	THICKNESS	MAXIMUM GRAVITY 2.630 WEIGHT - GRAMS in Air	in Water	SSD in Air	VOLUME in cc	BULK SPECIFIC GRAVITY	% DENSITY	SUBLOT AVERAGE % DENSITY	PWSL =
1	1:00 PM	AFP	2"	2373.2	1418.4	2402.7	789.3	2.421	92.1	92.1	PAY FACTOR =
2	1:15 PM	PARKING	2"	2265.4	1676.4	2286.6	1180.1	2.425	92.3	92.3	REMARKS:
3	1:30 PM	LOT	2"	2311.1	1682.4	2296.7	1174.5	2.419	92.0	92.0	

PROJECT ENGINEER: Send first 3 copies to Plant with cores.

PLANT CONTROL TECHNICIAN: Original to QA folder
First carbon to Project
Second carbon for Plant records
Third carbon for project

CORE LOT AVERAGE ____

STANDARD DEVIATION ____

Sheet ____ of ____

American Forestry
TPA - AFP

SHA .0-1N
Revised May, 1995

MARYLAND
STATE HIGHWAY ADMINISTRATION
OFFICE OF MATERIALS & RESEARCH

QC: ____
Acceptance: ____
I.A.S.T.: ____
Other: ____

HMA FIELD COMPACTION REPORT - NUCLEAR/CORE METHOD

Date Sampled: 10-29-16 Contract No: ____ F.A.P. No: ____ Plant Location: Md Paving Rosedale

Mix Design No: 19mm Modified Gauge Type: Troxler Serial No: 1453 Model No: 4640 B)

Depth: 3" Laid Over: Stone Lot No: ____ Lot Size: ____ Max. Spec. Gravity: 2.605

Operator: Gray & Son Witnessed By: ____ Tested By: ____

SUBLOT NUMBER	READING NO. 1 A pcf	READING NO. 1 B % Density	READING NO. 2 C pcf	READING NO. 2 D % Density	AVERAGE (B + D)/2 = E % Density	AVERAGE (A + C)/2 = F pcf	SUBLOT AVERAGE % DENSITY	CORE DENSITY pcf	AVERAGE 3 CORE DENSITY pcf (G)	AVERAGE 3 CORRESPONDING NUCLEAR DENSITIES pcf (F)	G - F pcf
	152.5	93.99	151.9	93.51	93.70	152.2					
Core 1*	152.2	93.70	151.3	93.13	93.42	151.8	93.56	93.0			
	152.8	94.06	153.0	94.15	94.11	152.9			PSWL=		
	151.8	93.45	152.5	93.88	93.67	152.2	93.89		PAY FACTOR =		
	151.0	92.94	150.9	92.91	92.93	151.0					
Core 2*	152.1	93.63	152.7	94.02	93.83	152.4	93.38	93.8			
	154.7	95.20	153.5	94.46	94.83	154.1					
	151.4	93.19	152.0	93.55	93.37	151.7	94.10				
Core 3*	152.8	94.07	151.5	93.24	93.66	152.2		92.9			
	150.9	92.90	150.6	92.71	92.81	150.8	93.24				
	153.9	94.73	154.3	94.98	94.86	154.1					
	154.6	95.16	152.9	94.09	94.63	153.8	94.75				

CERTIFIED TECHNICIAN

1. Notify Project Engineer & Regional Lab if G - F > 3.0 pcf
2. Original to QA Folder
3. First carbon to Project
4. Second carbon to Plant Records
5. Third carbon for Project

PROJECT ENGINEER

1. Circle location where cores were taken.
2. Send first 3 copies to plant with cores.

AVERAGE ____
STANDARD DEVIATION ____

Attach location worksheet per MSMT 418

Sheet ____ of ____

BALTIMORE COUNTY
HMA FIELD COMPACTION REPORT - CORE METHOD

QC:
Acceptance:
I.A.S.T.:
Other:

Job Name: TPA-AFP (sparrows point)

Date Sampled: 10-28-2016 Contract No: J.O. No: Plant Location: MP Rosedale

Mix Design No: 19mm MOD Depth: 3in Laid Over: GAB Cut By: Leah Haptak

Lot Size: Lot No: Mix Lot No: Mix Sublot No:

Witnessed By: Tested By:

CORE SAMPLE NUMBER	DATE & TIME TONNAGE LAID	LOCATION (Indicate Station Number per MSMT 418)	THICKNESS	MAXIMUM GRAVITY 2.628 WEIGHT - GRAMS in Air	in Water	SSD in Air	VOLUME in cc	BULK SPECIFIC GRAVITY	% DENSITY	SUBLOT AVERAGE % DENSITY	PWSL =
1	10-28 10:00 AM	AFP	3in				1152.3	2.426	92.1	92.1	PAY FACTOR =
2	10-28 10:30 AM	PARKING	3in				1154.8	2.433	92.6	92.6	REMARKS:
3	10-28 10:45 AM	LOT	3in	2614.6	1544.3	2622.2	1016.1	2.425	92.4	92.9	

PROJECT ENGINEER: Send first 3 copies to Plant with cores.

PLANT CONTROL TECHNICIAN: Original to QA folder
First carbon to Project
Second carbon for Plant records
Third carbon for project

CORE LOT AVERAGE

STANDARD DEVIATION

Sheet ____ of ____

BALTIMORE COUNTY
HMA FIELD COMPACTION REPORT - CORE METHOD

QC: ____
Acceptance: ____
I.A.S.T.: ____
Other: ____

Job Name: IPA - AFP (sparrows point)

Date Sampled: 10/27/2016 Contract No: ____ J.O. No: ____ Plant Location: MP ROSEDALE

Mix Design No: 19 MM MOD Depth: 3 in Laid Over: GAB Cut By: Leah Hoptak

Lot Size: ____ Lot No: ____ Mix Lot No: ____ Mix Sublot No: ____

Witnessed By: ____ Tested By: [illegible]

CORE SAMPLE NUMBER	DATE & TIME TONNAGE LAID	LOCATION (Indicate Station Number per MSMT 418)	THICKNESS	MAXIMUM GRAVITY 2.635 WEIGHT - GRAMS in Air	in Water	SSD in Air	VOLUME in cc	BULK SPECIFIC GRAVITY	% DENSITY	SUBLOT AVERAGE % DENSITY	PWSL =
1	10/27 11:30AM	AFP	3in	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	~~93.7~~ 92.6	92.6	PAY FACTOR =
2	10/27 11:30AM	Parking	3in	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	~~92.4~~ 92.7	92.7	REMARKS:
3	10/27 11:30AM	lot	3in	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	~~94.6~~ 93.1	93.1	

PROJECT ENGINEER: Send first 2 copies to Plant with cores.

PLANT CONTROL TECHNICIAN: Original to QA folder
First carbon to Project
Second carbon for Plant records

CORE LOT AVERAGE ____
STANDARD DEVIATION ____

Sheet ____ of ____

APPENDIX J

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

January 16, 2017

Mr. James Calenda
EnviroAnalytics Group, LLC
Sparrows Point Terminal
1430 Sparrows Point Blvd
Sparrows Point, MD 21219

RE: Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

Dear Mr. Calenda:
Enclosed are the analytical results for sample(s) received by the laboratory on January 06, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Samantha Bayura

Samantha Bayura
samantha.bayura@pacelabs.com
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30207327001	**B15 Redevelopment Stockpiles**	Solid	01/05/17 12:30	01/06/17 10:45

Pace Analytical Services, LLC
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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30207327001	**B15 Redevelopment Stockpiles**	EPA 6010C	KAS, PJD	7
		EPA 7470A	PJD	1
		EPA 8270D	EAC	18
		EPA 8260B	JEW	14

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

Method: **EPA 6010C**
Description: 6010C MET ICP, TCLP
Client: EnviroAnalytics Group, LLC
Date: January 16, 2017

General Information:
1 sample was analyzed for EPA 6010C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 245970

B: Analyte was detected in the associated method blank.
- LB for HBN 245833 [TCLP/6735] (Lab ID: 1209399)
  - Chromium

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

Method: **EPA 7470A**
Description: 7470 Mercury, TCLP
Client: EnviroAnalytics Group, LLC
Date: January 16, 2017

General Information:
1 sample was analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
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Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

Method: **EPA 8270D**
Description: 8270D MSSV TCLP Solid Phase
Client: EnviroAnalytics Group, LLC
Date: January 16, 2017

General Information:
1 sample was analyzed for EPA 8270D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3535A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

Method: **EPA 8260B**
Description: 8260B MSV TCLP
Client: EnviroAnalytics Group, LLC
Date: January 16, 2017

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

Sample: B15 Redevelopment Stockpiles **Lab ID: 30207327001** Collected: 01/05/17 12:30 Received: 01/06/17 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP, TCLP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A Leachate Method/Date: EPA 1311; 01/09/17 14:00 Initial pH: 8.61; Final pH: 6.77								
Arsenic	**0.050 U**	mg/L	0.050	0.0040	1	01/10/17 11:16	01/12/17 01:16	7440-38-2	
Barium	**0.52J**	mg/L	1.0	0.00053	1	01/10/17 11:16	01/12/17 01:16	7440-39-3	
Cadmium	**0.0049J**	mg/L	0.050	0.00034	1	01/10/17 11:16	01/12/17 01:16	7440-43-9	
Chromium	**0.0095J**	mg/L	0.050	0.00053	1	01/10/17 11:16	01/12/17 01:16	7440-47-3	B
Lead	**0.25 U**	mg/L	0.25	0.020	5	01/10/17 11:16	01/12/17 01:40	7439-92-1	
Selenium	**0.0063J**	mg/L	0.10	0.0044	1	01/10/17 11:16	01/12/17 19:40	7782-49-2	
Silver	**0.050 U**	mg/L	0.050	0.00056	1	01/10/17 11:16	01/12/17 01:16	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 01/09/17 14:00 Initial pH: 8.61; Final pH: 6.77								
Mercury	**1.0 U**	ug/L	1.0	0.046	1	01/10/17 11:45	01/10/17 22:24	7439-97-6	
8270D MSSV TCLP Solid Phase	Analytical Method: EPA 8270D Preparation Method: EPA 3535A Leachate Method/Date: EPA 1311; 01/09/17 14:00 Initial pH: 8.61; Final pH: 6.77								
1,4-Dichlorobenzene	**500 U**	ug/L	500	22.4	1	01/10/17 12:15	01/11/17 17:38	106-46-7	
2,4-Dinitrotoluene	**100 U**	ug/L	100	29.2	1	01/10/17 12:15	01/11/17 17:38	121-14-2	
Hexachloro-1,3-butadiene	**100 U**	ug/L	100	20.9	1	01/10/17 12:15	01/11/17 17:38	87-68-3	
Hexachlorobenzene	**100 U**	ug/L	100	15.0	1	01/10/17 12:15	01/11/17 17:38	118-74-1	
Hexachloroethane	**500 U**	ug/L	500	21.9	1	01/10/17 12:15	01/11/17 17:38	67-72-1	
2-Methylphenol(o-Cresol)	**2000 U**	ug/L	2000	7.4	1	01/10/17 12:15	01/11/17 17:38	95-48-7	
3&4-Methylphenol(m&p Cresol)	**2000 U**	ug/L	2000	22.2	1	01/10/17 12:15	01/11/17 17:38		
Nitrobenzene	**100 U**	ug/L	100	16.7	1	01/10/17 12:15	01/11/17 17:38	98-95-3	
Pentachlorophenol	**5000 U**	ug/L	5000	96.1	1	01/10/17 12:15	01/11/17 17:38	87-86-5	
Pyridine	**500 U**	ug/L	500	15.9	1	01/10/17 12:15	01/11/17 17:38	110-86-1	
2,4,5-Trichlorophenol	**5000 U**	ug/L	5000	12.2	1	01/10/17 12:15	01/11/17 17:38	95-95-4	
2,4,6-Trichlorophenol	**100 U**	ug/L	100	14.0	1	01/10/17 12:15	01/11/17 17:38	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	79	%	38-129		1	01/10/17 12:15	01/11/17 17:38	4165-60-0	
2-Fluorobiphenyl (S)	69	%	49-105		1	01/10/17 12:15	01/11/17 17:38	321-60-8	
Terphenyl-d14 (S)	72	%	10-101		1	01/10/17 12:15	01/11/17 17:38	1718-51-0	
Phenol-d6 (S)	84	%	48-121		1	01/10/17 12:15	01/11/17 17:38	13127-88-3	
2-Fluorophenol (S)	89	%	51-128		1	01/10/17 12:15	01/11/17 17:38	367-12-4	
2,4,6-Tribromophenol (S)	76	%	64-115		1	01/10/17 12:15	01/11/17 17:38	118-79-6	
8260B MSV TCLP	Analytical Method: EPA 8260B Leachate Method/Date: EPA 1311; 01/09/17 14:00								
Benzene	**50.0 U**	ug/L	50.0	1.6	10		01/11/17 13:36	71-43-2	
2-Butanone (MEK)	**5000 U**	ug/L	5000	24.1	10		01/11/17 13:36	78-93-3	
Carbon tetrachloride	**50.0 U**	ug/L	50.0	2.2	10		01/11/17 13:36	56-23-5	
Chlorobenzene	**1000 U**	ug/L	1000	1.3	10		01/11/17 13:36	108-90-7	
Chloroform	**500 U**	ug/L	500	1.9	10		01/11/17 13:36	67-66-3	
1,2-Dichloroethane	**50.0 U**	ug/L	50.0	3.6	10		01/11/17 13:36	107-06-2	
1,1-Dichloroethene	**50.0 U**	ug/L	50.0	2.6	10		01/11/17 13:36	75-35-4	
Tetrachloroethene	**50.0 U**	ug/L	50.0	2.9	10		01/11/17 13:36	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

Sample: B15 Redevelopment Stockpiles **Lab ID: 30207327001** Collected: 01/05/17 12:30 Received: 01/06/17 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV TCLP	Analytical Method: EPA 8260B Leachate Method/Date: EPA 1311; 01/09/17 14:00								
Trichloroethene	**50.0 U**	ug/L	50.0	3.3	10		01/11/17 13:36	79-01-6	
Vinyl chloride	**50.0 U**	ug/L	50.0	2.0	10		01/11/17 13:36	75-01-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	91	%	77-126		10		01/11/17 13:36	17060-07-0	
Toluene-d8 (S)	99	%	84-115		10		01/11/17 13:36	2037-26-5	
4-Bromofluorobenzene (S)	96	%	81-119		10		01/11/17 13:36	460-00-4	
Dibromofluoromethane (S)	96	%	70-130		10		01/11/17 13:36	1868-53-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

QC Batch: 245980 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury TCLP
Associated Lab Samples: 30207327001

METHOD BLANK: 1209839 Matrix: Water
Associated Lab Samples: 30207327001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	1.0 U	1.0	0.046	01/10/17 22:09	

METHOD BLANK: 1209399 Matrix: Water
Associated Lab Samples: 30207327001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	1.0 U	1.0	0.046	01/10/17 22:12	

METHOD BLANK: 1209400 Matrix: Water
Associated Lab Samples: 30207327001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	1.0 U	1.0	0.046	01/10/17 22:14	

LABORATORY CONTROL SAMPLE: 1209840

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.1	113	85-115	

MATRIX SPIKE SAMPLE: 1209842

Parameter	Units	30207296001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1.0 U	2.5	2.5	101	75-125	

SAMPLE DUPLICATE: 1209841

Parameter	Units	30207296001 Result	Dup Result	RPD	Max RPD	Qualifiers
Mercury	ug/L	1.0 U	1.0 U		20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

QC Batch: 245970 Analysis Method: EPA 6010C
QC Batch Method: EPA 3005A Analysis Description: 6010C MET TCLP
Associated Lab Samples: 30207327001

METHOD BLANK: 1209809 Matrix: Water
Associated Lab Samples: 30207327001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	0.050 U	0.050	0.0040	01/12/17 01:08	
Barium	mg/L	0.00055J	1.0	0.00053	01/12/17 01:08	
Cadmium	mg/L	0.050 U	0.050	0.00034	01/12/17 01:08	
Chromium	mg/L	0.050 U	0.050	0.00053	01/12/17 01:08	
Lead	mg/L	0.050 U	0.050	0.0040	01/12/17 01:08	
Selenium	mg/L	0.10 U	0.10	0.0044	01/12/17 19:33	
Silver	mg/L	0.050 U	0.050	0.00056	01/12/17 01:08	

METHOD BLANK: 1209399 Matrix: Water
Associated Lab Samples: 30207327001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	0.050 U	0.050	0.0040	01/12/17 01:13	
Barium	mg/L	0.0072J	1.0	0.00053	01/12/17 01:13	
Cadmium	mg/L	0.050 U	0.050	0.00034	01/12/17 01:13	
Chromium	mg/L	0.0019J	0.050	0.00053	01/12/17 01:13	
Lead	mg/L	0.25 U	0.25	0.020	01/12/17 01:30	
Selenium	mg/L	0.10 U	0.10	0.0044	01/12/17 19:37	
Silver	mg/L	0.050 U	0.050	0.00056	01/12/17 01:13	

LABORATORY CONTROL SAMPLE: 1209810

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.5	0.54	108	80-120	
Barium	mg/L	.5	0.54J	107	80-120	
Cadmium	mg/L	.5	0.56	112	80-120	
Chromium	mg/L	.5	0.54	108	80-120	
Lead	mg/L	.5	0.51	102	80-120	
Selenium	mg/L	.5	0.55	109	80-120	
Silver	mg/L	.25	0.27	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1209812 1209813

Parameter	Units	30207327001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.050 U	.5	.5	0.59	0.59	117	117	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1209812 1209813

Parameter	Units	30207327001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	0.52J	.5	.5	1.0	1.1	105	109	75-125	2	20	
Cadmium	mg/L	0.0049J	.5	.5	0.58	0.59	116	116	75-125	0	20	
Chromium	mg/L	0.0095J	.5	.5	0.53	0.53	103	103	75-125	0	20	
Lead	mg/L	0.25 U	.5	.5	0.52	0.53	103	106	75-125	2	20	
Selenium	mg/L	0.0063J	.5	.5	0.59	0.59	116	116	75-125	1	20	
Silver	mg/L	0.050 U	.25	.25	0.30	0.30	119	119	75-125	0	20	

SAMPLE DUPLICATE: 1209811

Parameter	Units	30207327001 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic	mg/L	0.050 U	0.050 U		20	
Barium	mg/L	0.52J	0.52J		20	
Cadmium	mg/L	0.0049J	0.0050J		20	
Chromium	mg/L	0.0095J	0.0095J		20	
Lead	mg/L	0.25 U	0.25 U		20	
Selenium	mg/L	0.0063J	0.10 U		20	
Silver	mg/L	0.050 U	0.050 U		20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

QC Batch: 246057 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV TCLP
Associated Lab Samples: 30207327001

METHOD BLANK: 1209401 Matrix: Solid
Associated Lab Samples: 30207327001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1-Dichloroethene	ug/L	50.0 U	50.0	2.6	01/11/17 11:01	
1,2-Dichloroethane	ug/L	50.0 U	50.0	3.6	01/11/17 11:01	
2-Butanone (MEK)	ug/L	5000 U	5000	24.1	01/11/17 11:01	
Benzene	ug/L	50.0 U	50.0	1.6	01/11/17 11:01	
Carbon tetrachloride	ug/L	50.0 U	50.0	2.2	01/11/17 11:01	
Chlorobenzene	ug/L	1000 U	1000	1.3	01/11/17 11:01	
Chloroform	ug/L	500 U	500	1.9	01/11/17 11:01	
Tetrachloroethene	ug/L	50.0 U	50.0	2.9	01/11/17 11:01	
Trichloroethene	ug/L	50.0 U	50.0	3.3	01/11/17 11:01	
Vinyl chloride	ug/L	50.0 U	50.0	2.0	01/11/17 11:01	
1,2-Dichloroethane-d4 (S)	%	91	77-126		01/11/17 11:01	
4-Bromofluorobenzene (S)	%	98	81-119		01/11/17 11:01	
Dibromofluoromethane (S)	%	95	70-130		01/11/17 11:01	
Toluene-d8 (S)	%	100	84-115		01/11/17 11:01	

LABORATORY CONTROL SAMPLE: 1210310

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	20	17.5	87	59-133	
1,2-Dichloroethane	ug/L	20	16.7	84	66-123	
2-Butanone (MEK)	ug/L	20	15.9J	79	57-126	
Benzene	ug/L	20	19.1	95	69-115	
Carbon tetrachloride	ug/L	20	19.0	95	65-138	
Chlorobenzene	ug/L	20	19.3J	96	69-120	
Chloroform	ug/L	20	18.4J	92	67-123	
Tetrachloroethene	ug/L	20	19.8	99	62-122	
Trichloroethene	ug/L	20	18.6	93	61-126	
Vinyl chloride	ug/L	20	17.6	88	58-127	
1,2-Dichloroethane-d4 (S)	%			90	77-126	
4-Bromofluorobenzene (S)	%			96	81-119	
Dibromofluoromethane (S)	%			98	70-130	
Toluene-d8 (S)	%			99	84-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1210311 1210312

Parameter	Units	30207205001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethene	ug/L	ND	200	200	142	133	71	66	48-141	7	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1210311 1210312

Parameter	Units	30207205001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dichloroethane	ug/L	ND	200	200	154	150	77	75	58-123	3	30	
2-Butanone (MEK)	ug/L	ND	200	200	151J	163J	76	81	43-128		30	
Benzene	ug/L	ND	200	200	157	152	79	76	63-123	3	30	
Carbon tetrachloride	ug/L	ND	200	200	137	129	68	65	44-155	5	30	
Chlorobenzene	ug/L	ND	200	200	166J	163J	83	82	57-121		30	
Chloroform	ug/L	ND	200	200	153J	150J	77	75	56-132		30	
Tetrachloroethene	ug/L	ND	200	200	150	148	75	74	53-125	1	30	
Trichloroethene	ug/L	ND	200	200	148	143	74	71	50-127	4	30	
Vinyl chloride	ug/L	ND	200	200	123	131	61	66	54-149	7	30	
1,2-Dichloroethane-d4 (S)	%						91	90	77-126			
4-Bromofluorobenzene (S)	%						98	98	81-119			
Dibromofluoromethane (S)	%						98	97	70-130			
Toluene-d8 (S)	%						100	100	84-115			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

QC Batch: 245967
QC Batch Method: EPA 3535A
Associated Lab Samples: 30207327001

Analysis Method: EPA 8270D
Analysis Description: 8270D TCLP MSSV

METHOD BLANK: 1209398
Associated Lab Samples: 30207327001

Matrix: Water

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,4-Dichlorobenzene	ug/L	500 U	500	22.4	01/11/17 16:57	
2,4,5-Trichlorophenol	ug/L	5000 U	5000	12.2	01/11/17 16:57	
2,4,6-Trichlorophenol	ug/L	100 U	100	14.0	01/11/17 16:57	
2,4-Dinitrotoluene	ug/L	100 U	100	29.2	01/11/17 16:57	
2-Methylphenol(o-Cresol)	ug/L	2000 U	2000	7.4	01/11/17 16:57	
3&4-Methylphenol(m&p Cresol)	ug/L	2000 U	2000	22.2	01/11/17 16:57	
Hexachloro-1,3-butadiene	ug/L	100 U	100	20.9	01/11/17 16:57	
Hexachlorobenzene	ug/L	100 U	100	15.0	01/11/17 16:57	
Hexachloroethane	ug/L	500 U	500	21.9	01/11/17 16:57	
Nitrobenzene	ug/L	100 U	100	16.7	01/11/17 16:57	
Pentachlorophenol	ug/L	5000 U	5000	96.1	01/11/17 16:57	
Pyridine	ug/L	500 U	500	15.9	01/11/17 16:57	
2,4,6-Tribromophenol (S)	%	72	64-115		01/11/17 16:57	
2-Fluorobiphenyl (S)	%	63	49-105		01/11/17 16:57	
2-Fluorophenol (S)	%	78	51-128		01/11/17 16:57	
Nitrobenzene-d5 (S)	%	75	38-129		01/11/17 16:57	
Phenol-d6 (S)	%	62	48-121		01/11/17 16:57	
Terphenyl-d14 (S)	%	60	10-101		01/11/17 16:57	

LABORATORY CONTROL SAMPLE: 1209796

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	500	370J	74	49-85	
2,4,5-Trichlorophenol	ug/L	500	462J	92	63-117	
2,4,6-Trichlorophenol	ug/L	500	460	92	61-110	
2,4-Dinitrotoluene	ug/L	500	342	68	51-113	
2-Methylphenol(o-Cresol)	ug/L	500	455J	91	64-109	
3&4-Methylphenol(m&p Cresol)	ug/L	1000	922J	92	64-113	
Hexachloro-1,3-butadiene	ug/L	500	381	76	43-95	
Hexachlorobenzene	ug/L	500	342	68	33-80	
Hexachloroethane	ug/L	500	355J	71	44-93	
Nitrobenzene	ug/L	500	448	90	61-126	
Pentachlorophenol	ug/L	500	339J	68	40-111	
Pyridine	ug/L	500	239J	48	10-63	
2,4,6-Tribromophenol (S)	%			86	64-115	
2-Fluorobiphenyl (S)	%			70	49-105	
2-Fluorophenol (S)	%			92	51-128	
Nitrobenzene-d5 (S)	%			85	38-129	
Phenol-d6 (S)	%			88	48-121	
Terphenyl-d14 (S)	%			72	10-101	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1209797 1209798

Parameter	Units	30207327001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dichlorobenzene	ug/L	500 U	500	500	306J	352J	61	70	49-85		46	
2,4,5-Trichlorophenol	ug/L	5000 U	500	500	476J	466J	95	93	63-117		38	
2,4,6-Trichlorophenol	ug/L	100 U	500	500	453	471	91	94	61-110	4	36	
2,4-Dinitrotoluene	ug/L	100 U	500	500	392	386	78	77	51-113	1	43	
2-Methylphenol(o-Cresol)	ug/L	2000 U	500	500	466J	476J	93	95	64-109		33	
3&4-Methylphenol(m&p Cresol)	ug/L	2000 U	1000	1000	960J	981J	96	98	64-113		33	
Hexachloro-1,3-butadiene	ug/L	100 U	500	500	325	371	65	74	43-95	13	49	
Hexachlorobenzene	ug/L	100 U	500	500	351	350	70	70	33-80	0	62	
Hexachloroethane	ug/L	500 U	500	500	299J	342J	60	68	44-93		53	
Nitrobenzene	ug/L	100 U	500	500	429	452	86	90	61-126	5	38	
Pentachlorophenol	ug/L	5000 U	500	500	356J	365J	71	73	40-111		46	
Pyridine	ug/L	500 U	500	500	266J	275J	53	55	10-63		51	
2,4,6-Tribromophenol (S)	%						85	87	64-115			
2-Fluorobiphenyl (S)	%						77	75	49-105			
2-Fluorophenol (S)	%						92	93	51-128			
Nitrobenzene-d5 (S)	%						91	88	38-129			
Phenol-d6 (S)	%						89	90	48-121			
Terphenyl-d14 (S)	%						79	73	10-101			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Area B Parcel B15 Phase II
Pace Project No.: 30207327

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30207327001	**B15 Redevelopment Stockpiles**	EPA 3005A	245970	EPA 6010C	246032
30207327001	**B15 Redevelopment Stockpiles**	EPA 7470A	245980	EPA 7470A	246001
30207327001	**B15 Redevelopment Stockpiles**	EPA 3535A	245967	EPA 8270D	246145
30207327001	**B15 Redevelopment Stockpiles**	EPA 8260B	246057		

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WO# : 30207327

30207327

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completed accurately.

Page: 1 of 1

Section A
Required Client Information:

Company:	EnviroAnalytics Group
Address:	1430 Sparrows Point Blvd
	Sparrows Point, MD 21219
Email To:	jcalenda@enviroanalyticsgroup.com
Phone: 314-620-3056	Fax:
Requested Due Date/TAT:	1-12-17

Section B
Required Project Information:

Report To:	James Calenda
Copy To:	
PO Number:	EAG-SPT-5305
Project Name:	Area B, Parcel B15 Phase II
Project Number:	150300M-23-3

Invoice Information:

Attention:	Laura Sargent
Company Name:	EnviroAnalytics Group
Address:	1650 Des Peres Road, Suite 303 St. Louis, MO 63131
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location
STATE: MD

Section D
Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW WT
WATER	WW
WASTE WATER	P
PRODUCT	SL
SOIL/SOLID	OL
OIL	WP
WIPE	AR
AIR	OT
OTHER	TS
TISSUE	

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Analysis Test	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N			
1	B15 Redevelopment Stockpiles	SL	C			1-5-17	1230		2	X								N	TCLP Metals		001
2																		N	TCLP VOCs		
3																		N	TCLP SVOCs		
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Data Package Required? (Y/N):	Lisa Perrin	1-5-17	1553	Ashley Rose/Pace	1-6-17	1045	2.7	Y	N	Y
Data Validation Required? (Y/N):										
If data package is required, attach data package checklist.										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:	Lisa Perrin		
SIGNATURE of SAMPLER:	Lisa Perrin	**DATE Signed (MM/DD/YY):**	1-5-17

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Sample Condition Upon Receipt Pittsburgh

Pace Analytical

30207327

Client Name: Enviroatna Project #

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other

Tracking #: 7781 0559 3074

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Thermometer Used 8 Type of Ice: (Wet) Blue None

Cooler Temperature Observed Temp 2.5 °C Correction Factor: +0.2 °C Final Temp: 2.7 °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: DMH 1-6-17

Comments:	Yes	No	N/A	
Chain of Custody Present:	X			1.
Chain of Custody Filled Out:	X			2.
Chain of Custody Relinquished:	X			3.
Sampler Name & Signature on COC:	X			4.
Sample Labels match COC: -Includes date/time/ID Matrix: SL	X			5.
Samples Arrived within Hold Time:	X			6.
Short Hold Time Analysis (<72hr remaining):		X		7.
Rush Turn Around Time Requested:	X			8.
Sufficient Volume:	X			9.
Correct Containers Used:	X			10.
-Pace Containers Used:		X		
Containers Intact:	X			11.
Orthophosphate field filtered			X	12.
Organic Samples checked for dechlorination:			X	13.
Filtered volume received for Dissolved tests			X	14.
All containers have been checked for preservation.			X	15.
All containers needing preservation are found to be in compliance with EPA recommendation.			X	
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed MMR Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			X	16.
Trip Blank Present:		X		17.
Trip Blank Custody Seals Present			X	
Rad Aqueous Samples Screened > 0.5 mrem/hr			X	Initial when completed: Date:

Client Notification/ Resolution:

Person Contacted: Date/Time: Contacted By:

Comments/ Resolution:

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

***PM review** is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

APPENDIX K

CONTAINMENT REMEDY OPERATIONS AND MAINTENANCE PLAN
PARCEL B15 FORMER SPARROWS POINT STEEL MILL

Containment Remedy Operations and Maintenance Overview

In accordance with the Parcel B15 Response and Development Completion Report for development on a designated portion of the Sparrows Point Peninsula in Sparrows Point, MD (the Site), post remediation care requirements include compliance with the conditions placed on the No Further Action Letter, Certificate of Completion, and deed restrictions recorded for the Site. In addition, maintenance will be performed on the capped areas to control degradation and exposure to the underlying soil. Inspections of the capped areas will be conducted annually. The responsible party will perform cap inspections, maintenance of the cap, and retain cap inspection records. Maintenance records will include the date of the inspection, name of the inspector, any noted issues, and subsequent resolution of the issues. Maintenance records will be maintained in a designated area at the Site for Maryland Department of the Environment (MDE) inspection and review, if requested.

The containment remedy (cap) has been constructed as described in the Parcel B15 Response and Development Completion Report. The following sections provide details of the Operations and Maintenance Plan (O&M Plan) procedures to be followed at the Site to assess when maintenance of the capped areas is necessary.

Designated Pavement Area Inspections

The designated paved areas, as identified in the Response and Development Completion Report, will be maintained to ensure integrity of the cap. Paved areas subject to this O&M Plan include both exterior pavements (parking lots and roads) and interior pavements (building slabs).

Pavement area inspections will be conducted on an annual basis to ensure that the capped areas are maintained as needed. During the inspection, the capped surfaces will be inspected to check for the following potential conditions:

- Differential settlement and significant surface-water ponding;
- Erosion or cracking of the cap materials; and
- Obstruction or blocking of drainage facilities.

When inspections indicate that cap repair is necessary, repairs will be completed as soon as practically possible in compliance with any recorded deed restrictions. The work will be documented on a form similar to the attached example Pavement Inspection Form. The inspection documentation will include the results of each inspection, recommended maintenance actions, and the actual maintenance/repair implemented. The responsible party will maintain inspection forms and any resulting repair records.

Pavement Inspection Protocol

A pavement management system (pavement condition index) will be implemented in the designated areas of the Site. The purpose of this system is to plan and prioritize future pavement maintenance needs. The system is based on a numerical rating of pavement distresses as published by the United States Army Corps of Engineers. The following chart will be used to provide an index of the pavement condition.

PAVEMENT CONDITION INDEX (PCI)		
PCI	**Characterization**	**Description**
1	New crack-free surface	Black in color, smooth texture
2	Oxidation has started	Short hairline cracks start to develop; dark gray color.
3	Oxidation in advanced state	Hairline cracks are longer and wider; gray in color
4	Oxidation complete	Cracked area 0.25 inch wide and crack lines have found base faults
5	Moisture penetrating through 0.25 inch cracks; loose material, stone and sand, evident	Texture of surface becoming rough; Preventative maintenance
6	Cracks widen and join	Cracks and shrinkage evident at curb and gutter lines
7	Potholes develop in low spots	Gatoring areas begin to break up; overall texture very rough.
8	Potholes developing	Pavement breaking up
9	Heaving due to excessive moisture in base	Distorts entire surface

PAVEMENT CONDITION INDEX (PCI)		
PCI	**Characterization**	**Description**
10	General breakup of surface	General breakup of surface

An inspection indicating a PCI of 4 or greater for designated areas of the Site will require maintenance. The intent is that repairs should be completed before the pavement degrades beyond a PCI of 4. MDE will be notified in a timely manner of any repairs that are the result of a PCI of 4 or greater. The notification will include documentation of the conditions being repaired and the location of the repair.

PAVEMENT INSPECTION FORM	Parcel B15 Development Fmr. Sparrows Point Steel Mill
Date:	Time:
Weather Conditions:	
General Pavement Conditions:	

PCI		Characterization	Description
1		New crack-free surface	Black in color, smooth texture
2		Oxidation has started	Short hairline cracks start to develop; dark gray color
3		Oxidation in advanced state	Hairline cracks are longer and wider; gray in color
RESPONSE REQUIRED	4	Oxidation complete	Crack area 0.25 inch wide and crack lines have found base faults
	5	Moisture penetrating through 0.25-inch cracks; loose material, stone and sand, evident	Texture of surface becoming rough; preventative maintenance
	6	Cracks widen and join	Cracks and shrinkage evident at curb and gutter lines
	7	Potholes develop in low spots	Gatoring areas begin to break up; overall texture very rough
	8	Potholes developing	Pavement breaking up
	9	Heaving due to excessive moisture in base	Distorts entire surface
	10	General breakup of surface	General breakup of surface

PAVEMENT INSPECTION FORM	Parcel B15 Development Fmr. Sparrows Point Steel Mill

CURB CONDITION	☐ Exists ☐ Sound ☐ Cracked ☐ Root Intrusion ☐ Deteriorated Comments:_____
SIDEWALK CONDITION	Comments:_____
RESPONSE REQUIRED	
WORK COMPLETED	
PHOTOGRAPHS / FIGURES ATTACHED	_____
RESPONSE CONTRACTOR	Work Completed By: _____Date: Signature: