



ARM Group LLC

Engineers and Scientists

January 20, 2022

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

Re: Lead Excavation Work Plan
Area B: Parcel B18 (B18-043-SB)
Tradepoint Atlantic
Sparrows Point, MD 21219

Dear Ms. Brown:

ARM Group LLC (ARM), on behalf of Tradepoint Atlantic (TPA), has prepared this Work Plan to conduct excavation activities inside Parcel B18 (the Site) on the Tradepoint Atlantic (TPA) property located in Sparrows Point, Maryland. Following review and approval of this Work Plan by the Maryland Department of the Environment (MDE) and the United States Environmental Protection Agency (USEPA), the excavation will be completed at the Site to address known areas of lead impacted soil (in the vicinity of B18-043-SB).

Project Background

ARM completed the Phase II Investigation of Parcel B18 (the Site) between September 2016 and August 2017. The Phase II Investigation Report (Revision 0) was submitted to the MDE and the USEPA on August 3, 2020. The analytical soil results from the Phase II Investigation identified an elevated lead concentration (9,580 mg/kg) in subsurface sample B18-043-SB-5, which was collected from boring B18-043-SB in the interval from 4 to 5 feet below ground surface (bgs).

Additional sampling was proposed under the Work Plan for Delineation/Characterization of Lead Impacted Soil at B18-043-SB (February 16, 2018). Agency approval was received on February 27, 2018. Soil sampling was conducted in May and June 2018, with the results reported to the agencies within an Interim Submittal dated September 5, 2018. Agency comments requested additional groundwater sampling in the area and Toxicity Characteristic Leaching Procedure (TCLP) sampling in discrete soil samples in the area with elevated lead. Additional sampling was proposed in the Work Plan for Characterization of Groundwater & TCLP Analysis (Revision 1, September 5, 2019). Agency approval was received on February 3, 2020. Additional sampling

was conducted in June 2020, with the results reported to the agencies within the No. 10 Tank Area Investigation Report dated January 6, 2020.

From the Phase II Investigation, the original intermediate soil sample (B18-043-SB-5) had a lead concentration of 9,580 mg/kg. This location was resampled during the characterization activities in 2018, and the replicated soil sample had a significantly lower lead concentration of only 1,020 mg/kg. During the soil characterization activities completed in 2018, three soil samples contained elevated concentrations of lead (over 8,000 mg/kg). These samples include B18-043A-SB-5, B18-043B-SB-5, and B18-043C-SB-1 with lead concentrations of 10,300 mg/kg, 8,270 mg/kg, and 10,000, respectively. During the additional soil characterization activities completed in 2020, B18-084-SB-1 had a lead concentration of 11,600 mg/kg. All 34 remaining soil samples collected during the Phase II Investigation and the supplemental characterization activities contained significantly lower lead concentrations, most of which were below 1,000 mg/kg. The lead impacts appear to be limited to a relatively small area. Refer to **Figure 1** for results from soil sampling.

One soil sample B18-085-SB-5 had a TCLP-lead concentration of 8.5 mg/L, which is above the characteristically hazardous threshold of 5 mg/L. Waste soil generated from the June 4, 2020 mobilization was determined to exceed the TCLP limit for lead and was classified as characteristically hazardous. The groundwater samples had undetectable concentrations of lead, indicating a lack of impacts to groundwater resulting from lead-contaminated soils in the area.

Excavation Methods

As illustrated in **Figure 2**, there are multiple historic utilities in the vicinity of the proposed excavation. ARM will take appropriate precautions to avoid subsurface utilities and structures during the site work. Prior to initiating any subsurface work, TPA will attempt to determine the location of all private utilities in the project area. If TPA is unable to adequately identify all utilities, then TPA may engage a private utility locator to perform an additional private utility mark-out utilities in the investigation area. If it is found that the utility lines are in close proximity to the proposed excavations – the ultimate depth and locations of the excavations will be modified so as to not compromise their integrity.

The proposed excavation limits (as shown on **Figure 2**) will be located in the field via GPS and staked. Prior to beginning earthwork, erosion and sediment controls (silt fence) will be installed along the north and west portions of the proposed excavation area (bordering the water). Existing vegetation within the limits of disturbance will be removed and segregated from the area to be excavated. There will be one excavation area encompassing B18-043A, B18-043B, B18-043C, B18-084-SB, and B18-085-SB. While B18-085-SB is not above 8,000 mg/kg, it is located between two soil borings with lead concentrations above 8,000 mg/kg at 5 feet bgs, and the TCLP-lead sample collected from this location was above the characteristically hazardous threshold of 5 mg/L. B18-043-SB has not been included due to the results of the resampling in 2018.

In the southwestern portion of the excavation (in the vicinity of B18-043C and B18-084-SB) the total depth of excavation will be 3 feet bgs (lead concentrations detected in the 5 ft bgs soil samples



were significantly lower than the lead concentrations detected in the 1 ft bgs soil samples). This portion of the excavation is approximately 18 feet by 20 feet. The material associated with this excavation (approximately 40 cubic yards) will be stockpiled as detailed below.

In the northeastern portion of the excavation (in the vicinity of B18-043A, B18-043B, and B18-085-SB) the total depth of excavation will be 8 feet bgs. This portion of the excavation is approximately 18 ft by 28 feet. The material will be excavated in 2-foot lifts. The material associated with each lift (approximately 40 cubic yards in each lift from 0-2 ft bgs, 2-4 ft bgs, 4-6 ft bgs, and for 6-8 ft bgs) will be placed into individual stockpiles. Based on the shallow concentrations in the northeastern portion of the proposed excavation area, it is anticipated that soils from 0-2 ft may be suitable for re-use. Each stockpile will be tracked and labelled according to the lift and area from which the material is removed. This procedure proposes the use of relatively small stockpiles in order to minimize the volume of material which may potentially be characterized as a hazardous waste, and to facilitate the reclamation of material containing acceptable concentrations of lead.

A total of 5 stockpiles will be generated, and each stockpile will be tested per the sampling and disposal protocols outlined below. Each stockpile will be placed on polyethylene sheeting to protect the ground surface, and multiple straw-bales will be placed around the stockpiles to be used as berms. Each stockpile will be covered at the end of each day with polyethylene sheeting, and will remain covered when it is not being used in order to minimize the generation of dust and prevent run-on/off. A weighted cover system shall be used to keep the covers in place.

Dust Monitoring

To limit worker exposures to contaminants borne on dust and windblown particulates, dust control measures will be implemented if dust concentrations exceed 3.0 mg/m^3 . To ensure that this threshold is not exceeded during the lead excavation activities, a real-time dust meter (ThermoElectron Corporation Personal Data RAM 1000AN; Met One Instruments, Inc. E-Sampler; or another equivalent real-time air monitoring device) will be used to monitor the concentration of dust generated while excavating impacted material. Daily calibration of all field instrumentation (such as the real-time dust meter) will be conducted to ensure the accuracy of the equipment. Dust concentrations will be recorded in the field book by field personnel every 15 minutes during intrusive activities, if monitoring is required.

Excavated Material Sampling and Disposal

A composite sample will be generated from each of the excavation stockpiles. Each composite sample will consist of 10 randomly selected grab aliquots from the designated stockpile. Based on the excavation procedure outlined above, a total of 5 composite samples are anticipated. The composite samples will then be submitted for TCLP analysis and lead analysis (via USEPA Method 6010C) to facilitate proper disposal or to confirm that the material is suitable to be reclaimed.



If the analytical results from each composite sample indicate that the material in the associated stockpile is non-hazardous (does not exceed a TCLP lead concentration of 5 mg/kg), the material may be reclaimed. However, the composite sampling results must be submitted to, and approved by, the MDE prior to reclaiming this material.

Any excavated material which is not suitable to be reclaimed will be disposed of according to the following guidelines: non-hazardous material will be disposed of at a non-hazardous industrial landfill (which may include the on-site Greys Landfill); and hazardous material, if any, will be disposed of at an appropriate off-site hazardous landfill and the agencies will be notified. Disposal locations and quantities for all excavated material, including any material reclaimed, will also be submitted to the agencies within completion documentation associated with this excavation project.

MDE Approval Process

Once excavation activities have been completed, eight confirmation soil samples will be collected. This will include six sidewall confirmation samples and two base (or bottom) samples. Refer to **Figure 2** for proposed confirmation sampling locations. All confirmation samples will be submitted to an accredited laboratory and analyzed for lead by EPA Method 6010C.

Confirmation sample results, locations, and depths will be provided to the MDE in an email transmittal for review once the excavation is completed. The results of the composite sampling from the stockpiles will also be provided to the MDE to verify the suitability of any stockpiled material designated to be reclaimed. During the waiting period prior to receiving MDE approval, the excavation boundary will be marked with caution tape (or similar).

Reporting

A Completion Letter Report will be submitted to the MDE upon finishing the project. The report will include supplemental figures with the final excavation boundary and confirmation sample locations; a summary of the field methods used during excavation; quantities and disposal locations (including reclamation) of all excavated material; dust monitoring results; descriptions of any notable occurrences; analytical laboratory report(s); and other information as appropriate.



If you have questions regarding any information covered in this document, please feel free to contact Peter Haid at Tradepoint Atlantic: 443-649-5055.

Respectfully Submitted,
ARM Group LLC



Kaye Guille, P.E., PMP
Senior Engineer



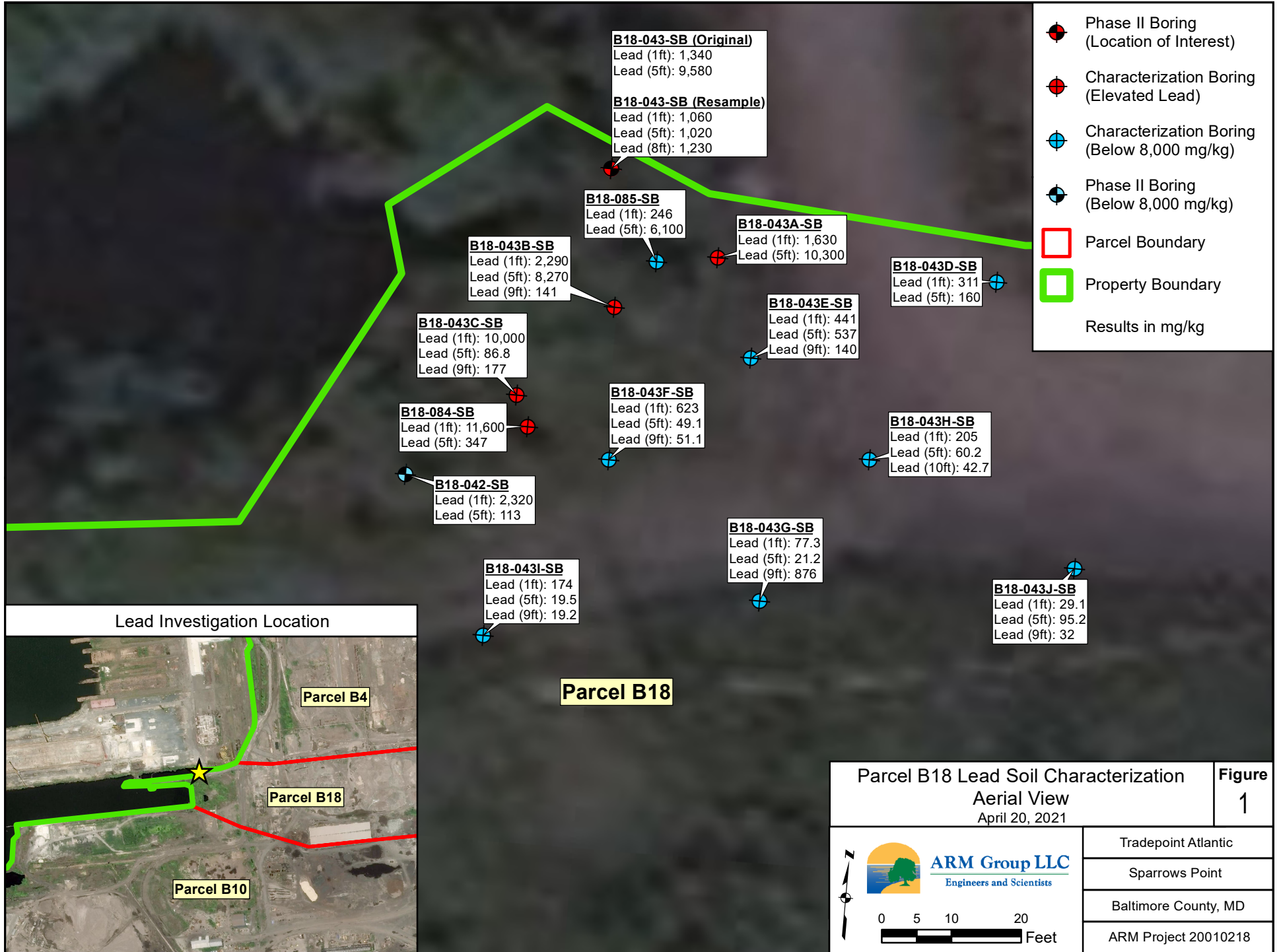
Eric Magdar, P.G.
Vice President
QA Reviewer

Attachments:

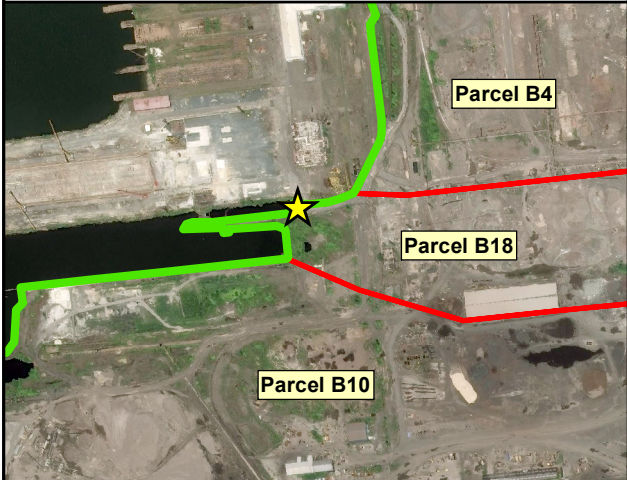
Figure 1: Parcel B18 Lead Soil Characterization

Figure 2: Parcel B18 Proposed Soil Excavation Boundaries





Lead Investigation Location

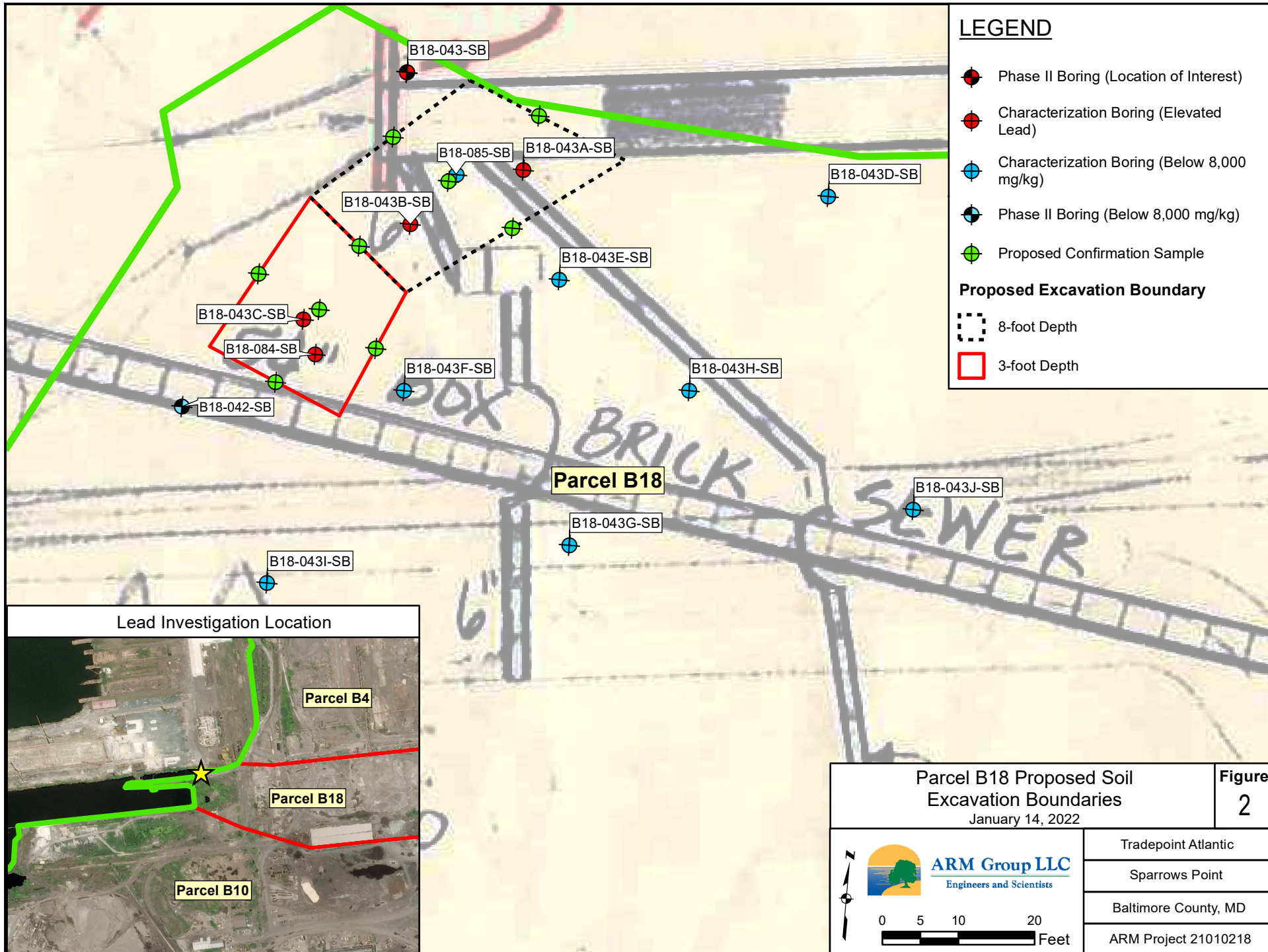


Parcel B18

Parcel B4

Parcel B18

Parcel B10



Lead Investigation Location

