National Grid

Pre-Design Investigation Report

Gloversville (Hill Street) Former Manufactured Gas Plant
Gloversville, New York
Site No. 5-18-021

January 2022; Revised February 2024

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I, Michael Benoit, certify that I am currently a New York State-registered Professional Engineer, that this Pre-Design Investigation Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10), and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

Michael Benoit, PE
Principal Engineer

February 5, 2024
Date

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Acronyms and Abbreviations

Arcadis	Arcadis of New York, Inc.
ASP	Analytical Services Protocol
ASTM	American Society for Testing and Materials
ATV	all-terrain vehicle
bgs	Below Ground Surface
BOD5	5-day biological oxygen demand
CAMP	Community Air Monitoring Plan
CFR	Code of Federal Regulations
cfs	cubic feet per second
COC	constituent of concern
COD	chemical oxygen demand
cy	cubic yard
Dig Safely	Dig Safely of New York
DUSR	Data Usability Summary Reports
EC	Electric Conductivity
FSP	Field Sampling Plan
GPR	ground-penetrating radar
HASP	Health and Safety Plan
HPT	Hydraulic Profiling Tool
HSA	hollow-stem auger
IRM	Interim Remedial Measure
K	hydraulic conductivity
MB	mid-bank
MGP	Manufactured Gas Plant
MHWL	mean high-water level
NAPL	non-aqueous phase liquid
NBW	NAPL barrier wall
NWP	Nationwide Permit
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health

OD	outside diameter
O&M	operation and maintenance
OIP	Optical Imaging Profiler
PAH	polycyclic aromatic hydrocarbons
Parratt-Wolff	Parratt-Wolff, Inc.
PCA	principle component analysis
PDI	Pre-Design Investigation
PID	photoionization detector
PVC	polyvinyl chloride
QAPP	Quality Assurance Project Plan
RDWP	Remedial Design Work Plan
RF	radio frequency
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SCOs	soil clean-up objectives
SMP	Site Management Plan
SPT	standard penetration testing
SVOC	semi-volatile organic compound
TAL	target analyte list
TCL	Target Compound List
TDS	total dissolved solids
TIC	total ion chromatograms
TKN	total kjeldahl nitrogen
TOC	total organic carbon
TSS	total suspended solids
TTO	total toxic organics
UMC	unresolved mixture curve
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VOC	volatile organic compound

1 Introduction

This Pre-Design Investigation (PDI) report summarizes the PDI activities and findings for the Gloversville (Hill Street) Former Manufactured Gas Plant (MGP) site (the site) located in Gloversville, New York (Site No. 5-18-021). This report supersedes the January 2022 PDI Report and incorporates the results of a Supplemental PDI conducted in 2022. The Supplemental PDI was conducted at the request of the New York State Department of Environmental Conservation (NYSDEC) based on their review of the January 2022 report. Appendix A provides the correspondence with the NYSDEC regarding the scope, results, and conclusions of Supplemental PDI. Arcadis of New York, Inc. (Arcadis) conducted the initial PDI field activities between September 2020 and April 2021 and Supplemental PDI activities in November and December 2022. The PDI was performed in accordance with the Remedial Design Work Plan (Arcadis, 2020) (“the RDWP”), which was approved by the NYSDEC in a letter to National Grid dated July 9, 2020. The overall PDI objective is to obtain necessary information to support remedial design preparation. This goal was achieved by the activities summarized herein.

1.1 PDI Report Organization

This report has been organized as presented in Table 1.1, below.

Table 1.1 PDI Report Organization

Section	Description
Section 1 – Introduction	Presents PDI objective and a summary of the selected site remedy
Section 2 – Pre-Design Investigation Activities	Presents the scope and rationale for PDI activities completed in support of the remedial design
Section 3 – Pre-Design Investigation Results	Describes the findings of the PDI and presents conclusions and recommendations based on the PDI results
Section 4 – Remedial Design Schedule	Presents the anticipated project schedule for preparing the remedial design and implementing the proposed remedy
Section 5 – References	Presents a list of the documents cited in the report

1.2 Description of Selected Remedy

The NYSDEC-selected site remedy, as presented in the Record of Decision (ROD), consists of the remedial components listed below. Soil removal volumes presented below will be revised in the remedial design to incorporate the PDI findings.

- Excavating and transporting the following contaminant source materials for off-site disposal:
  - Approximately 17,100 cubic yards (cy) of source material containing non aqueous phase liquid (NAPL) identified above the silt layer approximately 14 feet below grade in the impacted area downgradient of the NAPL barrier wall and within the western bank of Cayadutta Creek
  - Approximately 3,000 cy of shallow purifier waste located along the eastern service center area fence line to approximately 5 feet below grade
  - Approximately 520 cy of soil to facilitate the construction of a permeable NAPL barrier wall (NBW)

  - Shallow soil (to 2 feet below grade) containing constituents of concern (COCs) at concentrations exceeding residential use Soil Cleanup Objectives (SCOs) presented in 6 NYCRR Part 375-6 residential located on-site but outside the fenced service center area
  - Shallow soil (to 2 feet below grade) containing COCs at concentrations exceeding protection of ecological resources SCOs located in the southern area
  - Off-site soils containing COCs at concentrations exceed unrestricted SCOs, as defined by 6 NYCRR Part 375-6.8(a)
- Backfilling excavation areas with fill materials meeting 6 NYCRR Part 375-6.7(d) as follows:
  - Commercial Use – in the fenced service center limits
  - Protection of ecological resources – In the ecological resources area
  - Unrestricted use – in off-site areas
- Constructing a site cover consisting of (but not limited to) pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs or soil cover in areas where the upper 1 foot of exposed surface soil will exceed the applicable SCOs. Where the soil cover is required, it will consist of a minimum of 1 foot of soil meeting the applicable SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d). The soil cover will be placed over a demarcation layer, with the upper 6 inches of the soil of sufficient quality to maintain a vegetation layer.
- Excavating and transporting for off-site disposal Cayadutta Creek bank soil and sediment:
  - that is grossly contaminated, as defined in 6 NYCRR Part 375-1.2(u)
  - that contains visual impacts of non-aqueous phase liquids, sheen or which produce a visible sheen when agitated in-situ
  - that are discolored and smell like coal tar
  - bank soils adjacent to upland NAPL containing areas[1]
  - sediment impacted by site-related polycyclic aromatic hydrocarbons (PAHs) at concentrations greater than background levels
- Restoring disturbed portions of the Cayadutta Creek bed and bank with materials consistent to existing and meeting protection of ecological resource SCOs specified in 6 NYCRR Part 375-6.8(b) in accordance with a habitat restoration plan. The goal of the habitat restoration is goal of the restoration plan to restore in kind to the extent practical the bed bathymetry and floodplain topography including appropriate stream bed material, natural stream channel design techniques, and replacement plantings. If present, submerged aquatic vegetation in the remediation area will also be restored. The design will include a monitoring plan for areas disturbed by the remedy and all activities will be consistent with the requirements of 6 NYCRR Part 608.
- Constructing an NBW perpendicular to the groundwater flow in the northwest corner of the southern area to prevent future off-site migration of NAPL to Cayadutta Creek and enable NAPL recovery to the extent practicable. The NBW will be keyed into the silt unit to intercept and collect mobile NAPL, if present, in recovery wells.
- Installing and operating NAPL recovery wells in the NBW and in service center locations where NAPL was previously observed to collect in groundwater monitoring wells to facilitate NAPL collection and recovery.

[1] A modification to the ROD was approved by the NYSDEC, as documented in a December 19, 2023 letter (Appendix A), to change bank soil remediation from “excavating bank soils which exceed unrestricted use SCOs to “excavating bank soils adjacent to upland NAPL containing areas”.

- Continued operation of the existing groundwater and storm water collection and treatment systems.
- Implementing institutional controls in the form of an environmental easement for the controlled property that:
  - requires the remedial party or site owner to complete and submit to the NYSDEC a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3)
  - allows the use and development of the controlled property for commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws
  - restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the New York State Department of Health (NYSDOH) or County Department of Health
  - requires compliance with the NYSDEC-approved Site Management Plan (SMP)
- Developing an SMP that includes the following:
  - An Institutional and Engineering Control Plan identifying all use restrictions and engineering controls for the site and any offsite impacts, and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
    - Institutional Controls (as described above)
    - Engineering Controls (the soil cover, NBW, NAPL recovery system, and existing groundwater and storm water collection and treatment).

    This plan includes, but may not be limited to:
    - an Excavation Plan detailing the provisions for management of future excavations in areas of remaining impacted material
    - descriptions of the provisions in the environmental easement including land use and groundwater use restrictions
    - a provision for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible
    - a provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion
    - provisions for the management and assessment of implemented engineering controls
    - maintaining site access controls and NYSDEC notification
    - the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls
  - A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
    - groundwater and surface water monitoring and NAPL monitoring and recovery to assess the remedy performance and effectiveness of the remedy
    - Cayadutta Creek monitoring to assess the stream and habitat restoration effectiveness, including repair and replacement action as necessary
    - vapor intrusion monitoring for any occupied existing or future buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above

- a monitoring schedule and frequency of submittals to the Department
- engineering controls

o An Operation and Maintenance (O&M) Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- procedures for operating and maintaining the remedy
- procedures for, and collection of appropriate data to optimize the system on a periodic basis
- compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting
- maintaining site access controls and NYSDEC notification
- providing the NYSDEC access to the site and O&M records

2 Pre-Design Investigation

This section summarizes the PDI activities and results. The PDI was conducted to address the following general data needs:

- Location and extent of utilities in the vicinity of the remediation areas
- Soil and sediment sampling and analysis to further delineate removal areas and support the NBW design
- Geotechnical soil and sediment sampling and testing to facilitate excavation support and NBW design
- Ecological characterization to identify potential impacts to the remediation area vegetative and wildlife species
- Site surveying to document PDI locations and develop a design-level topographic site plan

The above data needs were addressed by completing the following PDI tasks:

- PDI Task 1 – Utility Survey
- PDI Task 2 – Purifier Waste Area Investigation
- PDI Task 3 – Southern Excavation Area and NAPL Barrier Wall Investigation
- PDI Task 4 – Cayadutta Creek Investigation
- PDI Task 5 – Ecological Characterization
- PDI Task 6 – Survey

Figure 1 presents the locations of the various PDI investigations.

The various methodologies and procedures followed during the PDI are presented in the following RDWP supporting documents:

- Field Sampling Plan (FSP; RDWP Appendix A)
- Quality Assurance Project Plan (QAPP; RDWP Appendix B)
- Health and Safety Plan (HASP; RDWP Appendix C)

Community air monitoring activities were performed consistent with DER-10 Appendix 1A – NYSDOH Generic Community Air Monitoring Plan (CAMP) general requirements (RDWP Appendix D).

Descriptions of the work completed under each PDI task are presented below.

2.1 PDI Task 1 – Utility Survey

Utility presence and location that may impact remedial construction were identified in coordination with National Grid, City of Gloversville, and a telecommunication company. Utilities known to be at the site include overhead and sub-grade electrical transmission and distribution lines, and subsurface communication, natural gas, water, storm sewer, sanitary sewer lines, and associated manholes/vaults. Prior to implementing intrusive PDI activities, the following activities were conducted to identify overhead and subsurface utilities/structures within and near the proposed remedial limits:

- Reviewed available drawings showing utility locations
- Performed a detailed visual site inspection to identify existing utilities present in the area
- Flagged/marked proposed subsurface investigation locations with white paint

- Contacted Dig Safely of New York (Dig Safely) to identify and mark locations of all underground utilities at and near the proposed investigation/remediation areas
- Marked out utilities by utility owners
- Performed geophysical survey using ground-penetrating radar (GPR) and radio frequency (RF) methods (i.e., non-intrusive methods) in vicinity of the proposed investigation/remediation areas

Although most of the identified utilities are not present in the remediation areas, two soil boring locations (PDI-DPB-1 and PDI-GTB-6) were adjusted to maintain safe setback distances from identified utilities. Locations of utilities will be included on the Remedial Design drawings.

2.2 PDI Task 2 – Purifier Waste Area Investigation

As discussed in the RDWP, based on previous investigation activity results, additional pre-design investigations were not warranted to delineate the purifier waste extent. The only PDI activity conducted in the Purifier Waste Area was the identification of the natural gas main running roughly north to south in this area. The gas line was located using RF and GPR geophysical surveying techniques. The gas line location will be shown on Remedial Design drawings. National Grid is currently evaluating an approach to relocate the gas line during remedial activities.

2.3 PDI Task 3 – Southern Excavation Area and NAPL Barrier Wall Investigation

The following PDI activities were conducted under this task to further delineate excavation extent, obtain geotechnical and hydrogeologic data to facilitate excavation support and NBW design components, and obtain groundwater quality data to support temporary treatment system design:

- Geotechnical soil sampling
- Direct-push soil boring
- Cayadutta Creek boring
- Soil sample analytical analysis
- Monitoring well installation
- Fluid-level monitoring
- Hydraulic conductivity testing
- Storm water and detention basin sediment sampling
- Groundwater treatability sampling

Arcadis' drilling subcontractor, Parratt-Wolff, Inc. (Parratt-Wolff) conducted PDI drilling activities. An Arcadis field geologist was onsite full-time to characterize soil recovered from borings, evaluate real-time data collected using direct-push instruments and imaging, and collect and process samples for laboratory analysis in accordance with the RDWP.

Eleven soil borings locations PDI-DPB-2, PDI-DPB-3, PDI-DPB-4 PDI-DPB-5, PDI-DPB-11, PDI-DPB-14, PDI-DPB-18, PDI-GTB-4, PDI-GTB-5, PDI-MW-6, and PDI-MW-10 were relocated (relative to the proposed locations depicted in the RDWP) due to access issues primarily associated with uneven/steep terrain. Prior to drilling, Parratt-Wolff precleared each boring to a depth of approximately 5 feet below ground surface (bgs) using an air knife/vacuum excavator as an additional precautionary measure beyond the geophysical survey and the other above-described subsurface utility location efforts.

Activities performed under this task are described in the following subsections.

2.3.1 Geotechnical Soil Sampling

Geotechnical soil sampling and associated laboratory testing were conducted to support the remedial design for the southern excavation areas (both east and west of Cayadutta Creek) and the NBW. The geotechnical borings were completed to:

- evaluate geologic stratigraphy with a focus on the silt unit thickness and surface topography along the proposed NBW alignment and in the excavation areas
- develop a soil strength profile to facilitate excavation shoring system, excavation stability, and excavation technique evaluation
- generate soil data and collect soil samples to facilitate NBW collection system (e.g., backfill gradation, perforated piping) design and support the NBW depth and configuration evaluation

Ten geotechnical borings (PDI-GTB-1 through PDI-GTB-10) were drilled through the silt unit to depths ranging from approximately 20 to 49 feet below grade. The surveyed locations of the geotechnical borings are presented on Figure 1. The borings were positioned to supplement existing borings (i.e., borings already having geotechnical data) in this area of the site. Parratt-Wolff drilled five geotechnical borings (PDI-GTP-1, PDI-GTB-3, PDI-GTB-4, PDI-GTB-6, and PDI-GTB-9) at approximate 100-foot intervals along the proposed NBW alignment. The remaining five geotechnical borings (PDI-GTP-2, PDI-GTB-5, PDI-GTB-7, PDI-GTB-8, and PDI-GTB-10) to supplement existing geotechnical information in the excavation areas.

Geotechnical borings were drilled using an all-terrain vehicle- (ATV-) mounted drill rig equipped with 4.25-inch inner diameter hollow-stem augers (HSAs). Continuous soil samples were collected using 2-inch-diameter split-spoon sampling equipment advanced ahead of the HSA. Standard penetration testing (SPT) was conducted following American Society for Testing and Materials (ASTM) D1586. Soil recovered from each sample interval was visually characterized for soil type, color, texture, and moisture content and field screened with a photoionization detector (PID). A field geologist noted the presence of visible staining, sheen, NAPL, and obvious odors encountered in the soil. Following completion, each soil boring was tremie-grouted to grade.

The following samples were collected for geotechnical testing:

- Two undisturbed soil samples (PDI-GTB-3 (20-22 ft) and PDI-GTB-5 (14-16 ft)) were collected within the silt unit using a thin-walled sampler (i.e., Shelby Tube) in accordance with ASTM D1587 and submitted for laboratory testing for:
  - unit weight (ASTM D2937)
  - unconsolidated-undrained triaxial strength testing (ASTM D2850)
- Four samples (PDI-GTB-3 (5-6), (6-7), (12-14), and (32-34)) were selected to represent each of the geologic units present within the southern excavation limits. These geotechnical soil samples were submitted for laboratory analysis for:

- classification (ASTM D2487)
- grain size (ASTM D6913)
- moisture content (ASTM D2216)
- Atterberg limits (ASTM D4318)
- specific gravity (ASTM D854)

The SPT data, field descriptions, and geotechnical laboratory testing results will be used to facilitate excavation shoring system, excavation stability, and NBW design. Geotechnical boring logs are presented in Appendix B. Geotechnical testing results are provided Appendix C.

2.3.2 Upland Direct-Push Soil Borings

Parratt-Wolff advanced 27 soil borings using direct-push technology (DPT) in the southern excavation area and along the proposed NBW alignment (Figure 1). These upland direct-push soil borings included 21 borings equipped with direct-image-equipped tooling (PDI-DPB-1A and PDI-DPB-1 through PDI-DPB-20), five collocated direct-push soil confirmation borings (PDI-DPB-2, PDI-DPB-4, PDI-DPB-5, PDI-DPB-16, and PDI-DPB-18) and one step-out confirmation boring (PDI-DPB-2(SO)) to delineate the extent of NAPL in the northwest corner of the area. These soil borings were advanced to:

- facilitate additional soil permeability evaluation
- evaluate silt thickness and surface topography
- further evaluate/delineate the presence and extent of NAPL impacted soil

The information from the DPT drilling will be used to support the excavation depth, support, and stability design; and NBW depth and backfill material design.

High-resolution real-time data were collected at the 21 locations using the following direct-image tooling:

- Hydraulic Profiling Tool (HPT): The HPT is a logging tool that measures the pressure required to inject water into the soil as the probe is advanced into the subsurface. The resulting injection pressure log provides an indicator of formation permeability. The HPT also measures hydrostatic pressure under a “zero flow” condition, allowing the development of an absolute piezometric pressure profile for the log and predicts the position of the water table. The piezometric profile can be used to calculate the corrected HPT pressure, which along with the flow rate, can then be used to calculate a saturated formation hydraulic conductivity (K) estimate.
- Electrical Conductivity (EC): The EC probe measures the electrical conductance of the formation and was used to evaluate stratigraphy, specifically the top and bottom of the silt unit.
- Optical Imaging Profiler (OIP): The OIP equipped with an OIP-G (green wavelength) probe was used to detect and delineate the presence of coal tar. As the probe is advanced into the subsurface, the green light source induces coal tar-associated PAH fluorescence. An onboard camera captures this fluorescence at 30 images per second (~20 per foot). The soil fluorescence images and still photos are saved throughout the advancement of the log and can be reviewed after the log is complete.

Except in locations where silt was not found, each direct-push boring was advanced until the silt unit was fully penetrated (ranging from approximately 12 to 44 feet below grade) as evidenced by data collected using the HPT, EC, and OIP tooling. Once completed, each boring was tremie-grouted to grade.

As indicated above, collocated direct push soil borings were advanced at five locations to confirm information obtained with the direct-image tooling. Confirmation boring logs are included as Appendix B and the direct imaging logs are included as Appendix D.

2.3.3 Cayadutta Creek Borings

Parratt-Wolff advanced thirty-one direct-push soil borings in Cayadutta Creek to delineate the extent of MGP-related impacts beneath the creek (Figure 1). These creek borings included 11 direct push borings (PDI-CRB-1 through PDI-CRB-11) equipped with the same direct-image tooling as described in Section 2.3.2, 11 collocated (PDI-CRB-1 through PDI-CRB-11) and one additional (PDI-CRB-12) direct-push confirmation soil borings, and 6 step-out direct-push soil borings (PDI-CRB-4(SO), PDI-CRB-5(SO), PDI-CRB-7(SO), PDI-CRB-9(SO), PDI-CRB-10/11(SO), and PDI-CRB-10/11(SO-2)) located on the opposite bank of the confirmation borings where impacts were observed.

Drilling in the creek was completed following the requirements of Nationwide Permit 6 (NWP-6) Survey Activities. The borings were positioned approximately 5 to 10 feet from the eastern creek bank. A track-mounted rig with a platform designed for drilling in shallow surface water was used to access and drill borings at each location. The following measures were implemented to limit potential impacts to the creek prior to drilling:

- A surface casing was driven several feet into the creek bed at each boring location.
- An oil absorbent boom was placed downstream of the work area.

The direct push borings equipped with direct imaging tooling were advanced until the silt unit was fully penetrated as evidenced by data collected using the HPT, EC, and OIP tooling. In locations where the silt unit was not found, each boring was advanced to approximately 40 feet bgs. Confirmation and step-out borings were advanced into the upper few feet of the silt layer. Once completed, each boring was tremie-grouting to the creek bed. Confirmation and step out borings Direct push confirmation and step-out creek boring logs are presented in Appendix B and direct imaging creek boring logs are included in Appendix D.

2.3.4 Soil Analytical Sampling

Arcadis' field geologist collected and submitted soil samples from the following locations (as shown on Figure 1) for laboratory analysis to further delineate soil removal limits:

- Four Geotechnical Soil Borings:
  - PDI-GTB-1 and PDI-GTB-2: to define the extent of impacts along the northern boundary of the southern excavation area
  - PDI-GTB-6: to define the extent of impacts along southeast edge of the southern excavation area
  - PDI-GTB-10: to define the extent of impacts along the western edge of the small excavation area on the west side of Cayadutta Creek
- Six Direct-Push Soil Borings:
  - PDI-DPB-2(SO): to delineate the northwest extent of NAPL observed at boring PDI-DPB-2
  - PDI-DPB-13, PDI-DPB-14, and PDI-DPB-15: to define the extent of impacts along the southern edge of the southern excavation area

  - PDI-DPB-16 and PDI-DPB-18: to define the extent of impacts in the northern and southern portion of the small excavation area on the west side of Cayadutta Creek
  - PDI-MW-10(SO): to define the southeast extent of impacts observed in monitoring well PDI-MW-10 soil samples
- Eleven Cayadutta Creek Soil Borings:
  - Seven borings (PDI-CRB-1 through PDI-CRB-3, PDI-CRB-6, PDI-CRB-8, PDI-CRB-9, and PDI-CRB-12) to evaluate potential impacts in the soil beneath Cayadutta Creek
  - Four step-out borings (PDI-CRB-4(SO), PDI-CRB-5(SO), PDI-CRB-7(SO), and PDI-CRB-10/11(SO-2)) to evaluate the western extent of impacts observed in the original creek boring locations

The majority of the samples were collected from the interval immediately above, or a few feet into, the silt unit. Samples were submitted to Eurofins in South Burlington, Vermont for laboratory analysis for semi-volatile organic compounds (SVOCs) using United States Environmental Protection Agency (USEPA) SW-846 Method 8270. Laboratory analytical results were validated, and Data Usability Summary Reports (DUSRs) were prepared in accordance with NYSDEC Analytical Services Protocol (ASP). The data validation indicated that the results are usable for the intended purpose. Soil sampling results are provided in Table 7.

2.3.5 Monitoring Well Installation

Ten new monitoring wells (PDI-MW-1 through PDI-MW-10) were installed to supplement the existing monitoring well network in the southern excavation and NBW area (Figure 1). The new and existing monitoring wells in this area were incorporated into a fluid-level monitoring program (detailed in Section 2.3.6 below) to evaluate the groundwater flow field near the proposed NBW alignment and monitor for accumulated NAPL.

Monitoring well borings were drilled using an ATV track-mounted drill rig equipped with a 4.25-inch HSA. Following SPT protocols (ASTM D1586), the drill crew advanced 2-foot long, 2-inch-diameter split-spoon sampling equipment ahead of the HSA continuously collecting soil samples to the depth of the soil boring. A field geologist field screened recovered soil samples with a PID and visually characterized soil from each sample interval for visible staining, sheen, NAPL, and odors along with soil type, color, texture, and moisture content.

Monitoring wells were constructed using 2-inch outside diameter (OD) Schedule 40 polyvinyl chloride (PVC) with 5-foot or 10-foot long, 0.020-inch slotted screens and a 2-foot long sump fitted to the bottom of each well. Monitoring wells were installed to monitor water levels and NAPL accumulations above the silt unit, and as such, the bottom few inches of each well screen were positioned below the top of silt and the sump was tremie-grouted in place from the bottom of the boring to the bottom of the well screen. Grade #1 filter sand was installed above the grouted sump in the annular space between the PVC well screen and riser pipe to approximately 2 feet above the top of the well screen. An approximate 2-foot bentonite seal was installed above the sand pack and the remaining annular space above the bentonite seal was tremie-grouted to grade with a cement/bentonite seal. A locking well cap was installed on the PVC stick-up pipe. A permanent steel outer protective casing was not installed as these wells are temporary and will be abandoned prior to remedial construction. Monitoring well construction logs are provided in Appendix B.

2.3.6 Fluid-Level Monitoring

Arcadis implemented a fluid-level monitoring program over approximately 5 months (November 12, 2020 to April 8, 2021). Seven events were conducted over the course of the 5 months of monitoring, During each monitoring event, field personnel measured water levels and monitored for NAPL accumulations at the 10 new monitoring wells (PDI-MW-1 through PDI-MW-10) and seven existing monitoring wells (monitoring wells MW-9S, MW-15S, MW-16S, MW-17S, MW-32S, MW-38, and PZ-416) located in and around the southern excavation area and NBW alignment, and a new creek gauge (SG-1) installed adjacent to the southern excavation area. Water levels were measured and recorded using a combination of automatic pressure transducers/data loggers (continuously at one-hour intervals) and manual measurements (biweekly/twice per month). A barometric pressure logger was deployed and used to compensate for the effects of atmospheric pressure on water levels. During each manual fluid-level measuring round, the total well depth and the NAPL accumulation presence/thickness/volume were also checked. For instances where NAPL thicknesses were greater than the length of the sump (i.e., NAPL was over-topping the sump), the NAPL was removed and stored in a 55-gallon drum using a bottom-loading bailer and the approximate volume removed was recorded. Measurable quantities of NAPL were observed in wells MW-15S, PDI-MW-4 and PDI-MW-5 during all seven monitoring events; however, NAPL was only removed from PDI-MW-4 and PDI-MW-5 on March 3, 2021.

A summary of manual fluid-level measurements (including NAPL accumulation measurements and removal volumes) is provided in Table 1.

The pressure transducer data was evaluated by preparing a series of hydrographs organized into five well “transects” with each transect consisting of a set of three monitoring wells oriented perpendicular to the proposed NBW aligned (i.e., approximately parallel with groundwater flow). The transects, from north to south along the approximate NBW alignment, consist of:

- Transect 1: MW-15S, PDI-MW-1, PDI-MW-2
- Transect 2: MW-9S, PDI-MW-3, PZ-416
- Transect 3: MW-16S, PDI-MW-4, PDI-MW-5
- Transect 4: MW-17S, PDI-MW-6, PDI-MW-10
- Transect 5: PDI-MW-7, PDI-MW-8, PDI-MW-9

The wells were organized into transects as a means to evaluate changes to the hydraulic flow field over the course of the 5-month monitoring period. Hydrographs for the transects and the transect locations are provided in Appendix E.

Water-level contour maps were prepared to represent the groundwater flow field for high, low, and average water levels measured during the 5-month monitoring program. The water-level measurements exhibiting the highest levels was obtained on March 12, 2021, and the water-level measurements exhibiting the lowest levels were obtained on February 8, 2021. The average water level condition was calculated by averaging the full transducer data set for each well for the 5-month period. The water-level contour maps based on these three water level conditions are presented on Figure 2.

The hydrographs and contour maps will be evaluated to determine the final NBW alignment. The NBW will be positioned approximately perpendicular to groundwater flow (i.e., approximately parallel with an equipotential line) above the silt unit.

2.3.6.1 Supplemental PDI Sampling at MW-15S

Arcadis’ January 2022 PDI Report indicated that “Measurable quantities of NAPL were observed in wells MW-15S, PDI-MW-4 and PDI-MW-5 during all seven monitoring events…” NYSDEC correctly noted in their March 3, 2022 PDI comment letter (Appendix A) that MW-15S is located outside the delineated "Probable NAPL Containing Area" and requested that the area around MW-15S be further investigated and the probable NAPL containing limits be adjusted. Arcadis noted that these MW-15S observations appeared inconsistent as previous collected groundwater samples at the well did not contain site-related constituents at concentrations exceeding the NYSDEC drinking water standards presented in the Technical and Operational Guidance Series Memorandum 1.1.1. As discussed in the March 18, 2022 response letter (Appendix A), Arcadis proposed, as part of the supplemental PDI activities, additional gauging and groundwater sampling at MW-15S to confirm NAPL presence. Further, Arcadis postulated that if coal tar NAPL had entered the well at any point in the past and/or is present in the formation near the well screen, it would be reasonable to expect elevated dissolved-phase benzene, toluene, ethylbenzene, and xylenes (BTEX) and PAH concentrations would be detected in the groundwater sample.

Arcadis conducted supplemental PDI monitoring well MW-15S gauging and groundwater sampling on November 1, 2022. No indications of NAPL were noted during the well gauging. Arcadis collected a groundwater sample using low flow sampling techniques in compliance with the RDWP. Arcadis submitted the groundwater sample to Eurofins in Buffalo, NY for laboratory analysis for Target Compound List (TCL) volatile organic compounds (VOCs) and TCL SVOCs. With the exception of acetone, no SVOCs or VOCs were detected at concentrations above quantitation limits. Acetone was detected at a concentration of 5 parts per billion (ppb) but is not a noted site constituent of concern and is a common laboratory contaminant. Groundwater analytical results are included in Table 2.

2.3.7 Hydraulic-Conductivity Testing

The NBW backfill material will be designed with a hydraulic conductivity at least one order of magnitude higher than the hydraulic conductivity of the formation material in which NAPL is moving. Therefore, the hydraulic conductivity of the NAPL-impacted formation near the NBW alignment will be evaluated using a combination of the HPT data collected during the direct-push drilling (described above in Section 2.3.2) and in-situ hydraulic-conductivity tests performed on the ten new monitoring wells installed along the NBW alignment (PDI-MW-1 through PDI-MW-10). The in-situ hydraulic conductivity tests were performed using the slug-test procedures described in the FSP (Appendix A of the RDWP). Slug test data were collected using a combination of dataloggers/transducers and manual measurements. The datalogger and manual measurement data were analyzed using AQTESOLV for Windows® (Duffield, 2007) to obtain near-well hydraulic conductivity estimates. The hydraulic conductivity estimates are summarized in Table 3 and AQTESOLV solution plots are provided in Appendix F.

2.3.8 Storm Water and Detention Basin Sediment Sampling

One storm water grab sample (DETENTION_BASIN_GW_120220) and one sediment grab sample (DETENTION_BASIN_SO_120220) were collected from the stormwater detention basin located in the southwestern portion of the fenced service center area. The storm water and sediment samples were submitted for analysis of the following:

- Target Compound List (TCL) volatile organic compounds (VOCs)
- TCL SVOCs
- Target Analyte List (TAL) inorganics and cyanide (SW846 6010, 7470, 9012)

The results of these analyses will be used to support preparation of a permit for discharging storm water directly to Cayadutta Creek during remedial construction and potentially to facilitate a realigned and permanent new post-remediation discharge/outfall. Analytical results for the storm water and detention basin sediment samples are provided in Tables 4 and 5, respectively.

2.3.9 Groundwater Treatability Sampling

Groundwater samples were collected and submitted for laboratory analysis to support the design of a temporary water treatment system. Arcadis anticipates the need for a temporary water treatment system to support soil excavation activities based on the elevation of the water table and a review of the existing soil characteristics. Five groundwater samples were collected from monitoring wells (MW-16S, MW-38, PDI-MW-5, PDI-MW-10, and PZ-416) within the proposed excavation limits to characterize groundwater quality within the southern excavation areas. Groundwater sampling procedures are described in the FSP (see Appendix A of the RDWP). Groundwater samples were submitted for analysis of the following treatability parameters:

- Total Toxic Organics (TTO) (EPA 608/624/625)
- TAL inorganics and cyanide (filtered and unfiltered samples) (SW846 6010/9012)
- Oil and grease (EPA 1664)
- Total suspended solids (TSS) (SM2540D)
- Total dissolved solids (TDS) (SM2540C)
- 5-Day biological oxygen demand (BOD5) (SM5210B)
- Chemical oxygen demand (COD) (EPA 410.4)
- Bioactivity (via iron-reducing, sulfate-reducing, and slime-forming bacteria)
- Total kjeldahl nitrogen (TKN) (EPA 351.3)
- Hardness (EPA 130.1)
- pH (EPA 150.1)

Analytical results will be used to evaluate and select components of a temporary water treatment system that will treat groundwater removed during remedial excavation. Analytical results for the groundwater treatability samples are presented in Table 6.

2.4 PDI Task 4 – Cayadutta Creek Investigation

PDI investigations were conducted to characterize Cayadutta Creek sediment and bank soils upstream, adjacent to, and/or downstream of the delineated upland probable NAPL containing area. Figure 3 shows the location of the reaches of creek that were investigated during the PDI. The PDI activities completed in Cayadutta Creek consisted of:

- Creek Flow Study
- Creek Reconnaissance
- Sediment Sampling
- Bank Soil Sampling

These activities are summarized below.

2.4.1 Creek Flow Study

A creek flow study was conducted to support the design of a potential temporarily bypass system to enable work in Cayadutta Creek during remedial construction. A flow gauging station (SG-1) was established just downstream of where a small perennial stream enters the creek in Reach 3 (Figure 3). The station consisted of an automatic pressure transducer inserted into the bottom of a stream gauge and a transect for manually measuring stream velocities (at the approximate midpoint of the water column) and stream depths. Stream flow was measured at 2-foot intervals along the SG-1 transect during seven monitoring events from December 12, 2020 to April 8, 2021. The flow calculated at the 2-foot intervals was summed to calculate the flow for the entire cross section of the creek. The transducer was programmed to measure the creek stage at a frequency of one reading every 30 minutes for a period of approximately 5 months (November 19, 2020 to April 8, 2021). The SG-1 stream stage and manual stream flow data are provided in Table 8.

A rating curve will be developed to support the remedial design using the data collected at SG-1 (Appendix E). The stream stage data and creek flow measurements will be compared to estimated flows under similar conditions predicted by United States Geological Survey (USGS) StreamStats model. StreamStats is a web-based tool that provides streamflow statistics, drainage-basin characteristics, and other information for USGS stream gauging stations and for user-selected ungauged sites on streams.

2.4.2 Creek Reconnaissance

Arcadis conducted creek reconnaissance from August 17 to 20, 2020 at 30 probing transects established in five defined “reaches” (Reaches 1 through 5) extending from approximately 1,700 feet upstream from the site to the Harrison Street bridge approximately 2,600 feet downstream from the site, as follows:

- Reach 1 and Reach 2: Upstream
- Reach 3: Adjacent
- Reach 4 and Reach 5: Downstream

Spot probing was completed between transects to characterize the creek, identify depositional areas and check for obvious impacts to sediments in areas between the transects. Figures 4 through 8 show the reach locations and probing transects.

The reconnaissance was conducted to characterize streambed morphology, map sediment deposits and identify the locations of existing outfalls and drains to Cayadutta Creek. The following information was recorded and/or mapped during the reconnaissance:

- Sediment and Creek Characteristics:
  - Substrate and bottom characteristics, including locations of aggrading (depositional)/degrading (erosional) conditions and silt presence/surface
  - Sediment visual impacts – Manually probing sediment deposits and measuring and recording extent, depth, sediment classification, and the presence of potential impacts such as NAPL, sheen, or obvious odors
  - Channel dimensions and orientation
  - Water surface elevation
  - Bank-full and mean high-water level (MHWL) indicators

  - Pool and riffle sequencing
  - Presence of in-stream structures
- Bank Characteristics:
  - Bank reaches stabilized by vegetation or riprap
  - Bank reaches potentially prone to erosion during high flow events
  - Areas of potential fill

During the creek reconnaissance, sediment deposits were probed and in-stream structures and bank characteristics were observed while walking the creek reaches of interest. Periodic measurements (e.g., channel dimensions/orientation, surface water elevation, bank-full/MHWL indicators) were recorded every 75 feet in the upper portion of Reach 3, every 100 feet in the lower portion of Reach 3, and every 200 feet in Reaches 1, 2, 4 and 5.

Upon completion of the creek reconnaissance, National Grid submitted an email proposal for selected sediment sampling locations to the NYSDEC on October 2, 2020 including a figure showing sediment depositional areas, observed impacted areas, and proposed sampling locations. The NYSDEC provided comments in an October 13, 2020 email and National Grid provided an October 15, 2020 response that was subsequently approved by NYSDEC on October 16, 2020. The October 2020 correspondence regarding the sediment sampling locations is provided in Appendix G. Approved sampling locations consisted of the following:

- Twenty background locations (Reaches 1 and 2)
  - Twelve depositional
  - Eight riffle/run
- Twenty adjacent locations (Reach 3)
  - Ten depositional
  - Ten riffle/run
- Twenty downstream locations (Reaches 4 and 5)
  - Reach 4
    - Six depositional
    - Six riffle/run
  - Reach 5
    - Four depositional
    - Four riffle/run

2.4.3 Sediment Sampling

Arcadis conducted sediment sampling from January 19 through January 21, 2021 at the NYSDEC-approved locations. Sediment cores were collected by manually driving a 2-inch diameter steel sampling barrel containing a disposable PVC liner through sediment to refusal using a slide hammer. Refusal was encountered within 2 feet of the sediment surface at each sampling location. Each core was divided into 1-foot segments (or increments defined by notable changes in stratigraphy). Field personnel field screened each sample with a PID prior to visually characterizing samples for the presence of NAPL, sheen, and staining. A total of 69 samples were collected, as follows:

- Reach 1: 8 cores/8 samples
- Reach 2: 12 cores/12 samples
- Reach 3: 19 cores/20 samples
- Reach 4: 13 cores/17 samples
- Reach 5: 8 cores/12 samples

Following sediment core retrieval, field personnel surveyed each sampling location and elevation using GPS relative to New York State Plane East Zone coordinate system (North American Datum 1983) (NAD 83) and North American Vertical Datum 1988 (NAVD 88), respectively.

Samples were submitted for laboratory analysis for:

- The 16 parent and 18 groups of alkyl PAHs (PAH_{34}) by USEPA SW-846 Method 8270
- Total Organic Carbon (TOC) by USEPA SW-846 Method 9060A

Laboratory analytical results were validated, and DUSRs were prepared in accordance with NYSDEC ASP. The data validation indicated that the results are usable for the intended purpose.

Geotechnical samples were also selected from three depositional areas and two riffle run areas from Reach 3, and one depositional area and one riffle run area (respectively) from Reaches 4 and 5. Each sample was tested for grain size analysis using sieve and hydrometer, as necessary, to facilitate the creek restoration design. Geotechnical samples were selected from sample cores collected at R3-PDI-SED-24, 25, 28, 29, 36, R4-PDI-SED-43, 46, R5-PDI-SED-55 and 60. Grain size data for these samples are provided in Appendix C.

2.4.4 Bank Soil Sampling

Arcadis collected bank soil samples in Reach 3 on February 3 and 4, 2021 from the following locations:

- Along the western bank within the portion of Reach 3 adjacent to the eastern probable NAPL containing area
- Along the eastern bank within the portion of Reach 3 adjacent to the western probable NAPL containing area
- Along both banks within Reach 3 starting at the downstream end of the probable NAPL containing area and extending approximately 200 feet downstream

A total of 31 bank soil samples were collected from 18 soil cores along six transects, as follows:

- Transect T-11: 1 mid-bank (MB) and 1 mean high-water level (MHWL) on the western bank
- Transect T-12: 2 MB and 2 MHWL on the western bank
- Transect T-15: 2 MB and 2 MHWL on the eastern bank
- Transect T-16: 2 MB and 1 MHWL on the western bank
- Transect T-16: 1 MB and 3 MHWL on the eastern bank
- Transect T-17: 2 MB and 2 MHWL on the western bank
- Transect T-17: 2 MB and 1 MHWL on the eastern bank
- Transect T-18: 2 MB and 1 MHWL on the western bank
- Transect T-18: 2 MB and 2 MHWL on the eastern bank

Bank soil sampling locations are shown on Figure 9.

Arcadis field personnel collected vertical soil cores at each location by manually driving a 2-inch diameter steel sampling barrel containing a disposable PVC liner through bank soils to refusal using a slide hammer (generally encountered 1 to 2 feet below ground surface). The MHWL was determined prior to sampling by an Arcadis biologist. MHWL cores were collected at the location of the MHWL along the transect and the MB cores were collected approximately halfway between the MHWL elevation and the top of the bank. Each core was segmented into 0-6, 6-12, and 12-24 inch sample intervals (or other intervals less than 6 inches if changes in stratigraphy were noted or if refusal was encountered). Field personnel visually characterized each soil core for the presence of NAPL, sheen, staining, and field screen for elevated PID readings. Following retrieval of the bank soil cores, a surveyor used a GPS to record the position and elevation of each sampling location relative to New York State Plane East Zone coordinate system NAD 83 and NAVD 88, respectively.

Per the RDWP, samples from the top two intervals were generally submitted for PAHs using USEPA SW-846 Method 8270. Laboratory analytical results were validated, and DUSRs were prepared in accordance with NYSDEC ASP. The data validation indicated that the results are usable for the intended purpose.

Bank soil samples were also selected for grain size testing at three locations on the eastern bank (PDI-T-12-RB-MHWL, PDI-T-13-RB-MB, and PDI-T-14-RB-MHWL) and three locations on the western bank (PDI-T-13-LB-MHWL, PDI-T-14-LB-MB, and PDI-T-15-LB-MHWL). Samples were collected and submitted for grainsize testing from the two upper-most sampling intervals (typically 0-6 and 6-12 inch below grade) at each location (with the exception of PDI-T-12-RB-MHWL and PDI-T-12-LB-MHWL, where only samples from the shallowest interval were submitted). Grain size testing results are provided in Appendix C. The grain size data will be used in the restoration design for the creek.

2.4.5 Supplemental PDI Bank Soil Sampling

Arcadis conducted Supplemental PDI bank soil sampling activities in November and December 2022 in accordance with the Supplemental PDI Letter Work Plan dated August 24, 2022. The purpose of the additional bank soil sampling was to:

- Establish a site-specific background PAH concentration in upstream Cayadutta Creek bank soils.
- Obtain a current PAH source signature in upland impacted site-soils.

The results of the Supplemental PDI activities were presented in the May 16, 2023 Interim Supplemental PDI Submittal (Appendix A). The additional sampling consisted of:

- Collecting background samples from banks upstream of the NAPL-impacted area (i.e., Reach 2).
- Collecting fresh soil samples containing heavy Site-related impacts.
- Conducting statistical and forensic evaluations to determine the extent of bank soils adjacent to the Site and bordering NAPL containing upland areas (i.e., Reach 3) that may be impacted by MGP-related residuals.

A description of the activities is provided below. Figure 9a shows the background bank soil sampling locations.

2.4.5.1 Background Bank Soil Sampling

Arcadis collected samples along PDI sediment sampling Transects 5, 6, and 7 (Figure 9a). Two 2-foot (or to refusal) vertical soil cores were collected on each bank along each transect for a total of 12 cores. Cores were collected at the mean high-water level (MHWL) and along the bank approximately halfway between the MHWL elevation and the top of the bank (referred to as “mid-bank”). The cores were segmented into 0-0.5 foot, 0.5-1 foot, and 1-1.5 foot sample increments. A sampling summary including soil descriptions is presented in Table 9.

Field personnel did not observe visual impacts (sheen, staining, NAPLs, odor) in the background bank soil samples. Arcadis submitted soil samples to Eurofins laboratory in Buffalo, NY (Eurofins) for laboratory analysis. The upper two sampling intervals (i.e., 0-6 and 6-12 inches) were analyzed for a target compound list of 16 parent (non-alkylated) PAHs (PAH-16) using USEPA SW-846 Method 8270, while the lower sampling increments (i.e., 12-24 inches) were archived for potential analysis. Based on the analytical results, none of the 12-24 sampling interval samples were released for analysis.

2.4.5.2 PAH Source Sampling

Arcadis advanced three soil borings (PDI-DPB-4, PDI-DPB-7, and PDI-DPB-8) in known impacted areas and at the same locations as the initial 2020 PDI efforts using a direct-push drilling rig to approximately 12 feet below ground surface (bgs). Boring logs are provided in Appendix B. Sample depths from each boring were selected based on the presence of visually impacted media. A sampling summary is presented in Table 9.

Arcadis submitted three samples to Eurofins for laboratory analysis for 18 specific non-alkylated PAHs (or parent PAHs) and 16 generic alkylated PAHs (PAH-34) using USEPA SW-846 Method 8270. PAH-34 represents the PAHs identified in the Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures (USEPA 2003) and referenced in Screening and Assessment of Contaminated Sediment (NYSDEC 2014).

2.5 PDI Task 5 – Ecological Characterization

Ecological characterization activities were conducted during the PDI to identify potential federally regulated wetlands, existing aquatic drainage features, vegetative communities, and potential threatened and endangered species that could be impacted by the remedial activities. An Ecological Characterization Report is included as Appendix H.

3 Pre-Design Investigation Findings

This section summarizes the PDI investigation results. PDI monitoring and analytical data (i.e., geotechnical, hydraulic, ecological characterization, temporary water treatment system, creek pumping bypass) are provided in the appendices, and will be evaluated and incorporated into the remedial design. The remaining PDI data was used to delineate the soil and sediment removal limits and support the NAPL barrier wall alignment. A PDI data summary supporting soil and sediment removal and the NBW alignment are presented in the following sections:

- Southern Excavation Area Limits
- NBW Alignment
- Cayadutta Creek Investigation Results

3.1 Southern Excavation Area Limits

Arcadis completed soil borings and collected soil samples within and around the perimeter of the proposed soil removal areas east and west of Cayadutta Creek and within the creek below the sediment to confirm/refine the horizontal and vertical excavation limits. PDI soil boring locations are shown on Figure 1, which also shows the approximate excavation limits and NBW alignment as presented in the RDWP; the revised excavation limits and NBW alignment based on the PDI findings are presented on Figures 10 through 13. As presented in Section 2, soil borings were drilled to evaluate the following in the previously defined “probable NAPL-containing area” southwest of the NBW:

- PAH concentrations in soil above the silt unit and at the edges of the area
- Presence/absence of visual impacts (i.e., NAPL) within the area
- Silt unit presence/absence, topographic surface, and thickness

Figures 10 through 13 present the revised excavation limits and silt unit presence, thickness, and surface topography interpretations based on a review of the PDI data and historical data collected in the southern area, as follows:

- Table 7 – Presents soil sample PAH analytical results to refine the lateral limits of excavation.
- Figure 10 – Presents PDI soil sampling locations; locations where NAPL was observed; and the proposed revised excavation limits (i.e., soil exceeding total PAH concentrations greater than 500 ppm or exhibiting NAPL presence).
- Figure 11 – Presents silt unit surface topography. The silt generally serves as a confining unit to the downward migration of NAPL. The top of silt along the NBW alignment will also be considered during the Remedial Design for locating NAPL collection points.
- Figure 12 – Presents a silt unit isopach illustrating thickness variations within the silt unit. The silt thickness is important when considering the technical feasibility of various excavation shoring designs.
- Figure 13 – Presents contours of the depth to the silt unit below grade. The depth to silt is important for understanding the depth of excavations to be considered while developing the remedial design.

Key observations based on review of these figures are summarized below:

- The previously defined excavation limits (as presented in the ROD) are expanded to include NAPL-impacted soil observed beneath Cayadutta Creek at borings PDI-CRB-10, PDI-CRB-11, PDI-10/11(SO) in the north and PDI-CRB-4, PDI-CRB-5, and PDI-CRB-7 in the south. The only upland area requiring expansion is at PDI-MW-10 in the east. Total PAHs were not detected at concentration greater than 500 ppm in any of the 22 soil samples collected/analyzed to delineate excavation limits.
- NAPL was encountered above the silt at the majority of PDI locations. The exception is at PDI-DPB-4, PDI-DPB-5, and PDI-CRB-10, where NAPL was encountered above the silt and several feet into the silt. Review of the site history suggests that NAPL was conveyed from the service center area to the PDI-DPB-4/PDI-DPB-5/PDI-CRB-10 area via an open ditch thus providing a continual source of NAPL to the area. The area has since undergone two interim remedial measures (IRMs) to mitigate NAPL discharge to the area.
- The elevation of the top of the silt in the southern excavation area generally ranges from approximately 732 to 741 feet AMSL. A depression is apparent in the southern portion of the area (at SB-274/PZ-279) where the silt surface is approximately 10 feet lower (722 feet AMSL) than the rest of the area. As observed during previous investigations, the PDI confirmed that a silt window is present mostly south of the excavation area; however, it appears a small portion of the excavation area overlaps with the silt window at PDI-CRB-4 and previous boring SB-441.
- The depth to the top silt in the excavation area ranges from approximately 2 to 14 feet bgs. The exception is silt surface depression at SB-274/PZ-279 where the depth to the silt is approximately 21 ft bgs. The depth to the silt layer is least in borings advanced within Cayadutta creek with an average depth of approximately 3.5 feet bgs.
- The silt thickness across the southern excavation area ranges from approximately 2 to 37 feet. The silt is thinnest near the silt window and in the southern excavation area on the west side of the creek. The average thickness of the silt is approximately 16 feet.

3.2 NBW Alignment

A component of the selected remedy consists of a passive NBW that will prevent future NAPL migration toward Cayadutta Creek and facilitate collection and removal of potentially mobile NAPL. The NBW will be installed by excavating a linear trench oriented perpendicular to groundwater flow and installing a NAPL collection system in the trench consisting of permeable backfill material, collection piping, and recovery sumps. The hydraulic conductivity of the trench backfill material will be considerably higher than that of the native sand and gravel located above the silt, allowing groundwater to flow freely through the trench. DNAPL entering the trench will settle to the bottom due to its density contrast with the groundwater and the decrease in hydraulic gradient in the trench caused by the permeable backfill. The trench will be keyed into the top of the silt unit and collection sumps will be positioned at low points in the silt surface. The following PDI activities were completed to support the NBW design:

- Drilling 14 (DPT, geotechnical, and well borings) soil borings along the approximate NBW alignment to evaluate the silt surface topography and thickness
- Collecting high-resolution real-time hydraulic and lithologic data at several DPT borings to evaluate the silt surface topography and thickness and subsurface soil permeability

- Installing 10 monitoring wells along the approximate NBW alignment to facilitate collecting hydraulic data to support the backfill material design and NBW alignment
- Collecting soil samples across four depth intervals at PDI-GTB-3 for grain size analysis to support the permeable backfill material design
- Conducting a 5-month water-level monitoring program to evaluate the groundwater flow field along the approximate NBW alignment
- Conducting in-situ hydraulic conductivity tests at the 10 new monitoring wells to support the permeable backfill design

Hydraulic conductivity and geotechnical data collected during the PDI and previous investigation activities will be evaluated in the remedial design. The silt surface/thickness data (Figures 11 through 13) discussed in Section 3.1 will be evaluated to determine the depth of the passive NBW and positioning of collection sumps within the wall. The remainder of this section focuses on the passive NBW alignment based on the results of the water-level monitoring program. The NBW will be positioned perpendicular to groundwater flow (along a line of equal hydraulic head) to create a “zero” gradient condition along the length of the wall. The approximate location of the NBW was shown on figures presented in the FS, ROD, and RDWP. The revised position of the NBW based on the PDI data is shown on Figures 10 through 13. The NBW location was determined based on review of 5 months of transducer data/manual water-level measurements, hydrographs presented in Appendix E, and the low, high, and average condition water-level contours presented on Figure 2. Based on the observations stated below, the 743 ft AMSL contour represented by the average groundwater level condition was chosen as the final alignment of the NBW.

Key observations based on review of transducer data, hydrographs, and Figure 2 are summarized below:

- Summary statistics for the 5 months of transducer water-level data indicate that there is little seasonal variability in the water levels along the NBW alignment. Water levels along the NBW ranged by an average approximately 2 feet with a standard deviation of 0.49 feet.
- With the exception of PDI-MW-9, increases and decreases in water levels due to precipitation events and dry periods were approximately the same magnitude and responded in unison at each well in the data set (i.e., if well X increased by 0.2 feet on a given date, well Y also increased by approximately 0.2 feet on the same date). Water levels at PDI-MW-9 appear to be influenced by an elevated silt surface combined with a relatively thin saturated sand and gravel above the silt in the area.
- Given that water levels along the NBW alignment tend to act in unison due to stresses, the horizontal hydraulic is not expected to change significantly during stresses to the flow system. This suggests that a NBW located along a line of equal head (as determined by a single gauging event) should remain along a line of equal head regardless of stresses on the flow system.
- The low, high, and average condition water-level contours presented on Figure 2 exhibit essentially the same flow pattern, confirming the validity of the viewpoint in the above bullet.

3.3 Cayadutta Creek Investigation Results

The Cayadutta Creek PDI investigation was conducted to evaluate creek flow near the site and characterize sediment and bank soils upstream, adjacent to, and/or downstream of the delineated upland probable NAPL containing area. Figure 3 shows the creek flow gauging location (SG-1) and creek reaches that were investigated during the PDI. Creek flow study and sediment and bank soil sampling results are presented below.

3.3.1 Creek Flow Study

A creek flow study was conducted to support the design of a potential temporarily bypass system to enable work in Cayadutta Creek during remedial construction. A flow gauging station (SG-1) was established just downstream of where the perennial stream enters the creek in Reach 3 (Figure 3). During seven events from December 2, 2020 to April 8, 2021, field personnel manually measured creek flow using an instrument that calculated flow based on creek cross-sectional area. Creek flow/discharge was measured at the SG-1 station location for each of these events, and the results are included in Table 8 and Appendix E. As shown in Appendix E, stream discharge measurements ranged from approximately 10 cubic feet per second (cfs) on February 11, 2021 to 31 cfs on December 2, 2020. A 20 cfs average stream discharge was measured for the seven monitoring events.

3.3.2 Creek Reconnaissance

As discussed in Section 2.4.2, a creek reconnaissance was conducted from August 17 to 20, 2020 to map various physical creek characteristics and select sediment sampling locations. A total of 20 outfalls, 11 bridge drains (Hill Street bridge), three drainage swales, and 30 depositional areas were identified during the reconnaissance, as shown on Figures 4 through 8. Based on the reconnaissance, field personnel noted gravel and cobble as the dominant creek bed substrate. Sands and silts were also noted in relatively small quantities in the cobble matrix. There are few soft-sediment deposits present, with the larger deposits located where perturbation of flow is present due to obstructions like bridge structures and woody debris. Smaller deposits are generally located along the banks as point bars or aggrading terraces and some mid-channel deposits. Where present, soft sediment deposits are generally thin with thicknesses ranging from approximately 0.1 to 1 foot.

The reconnaissance identified areas exhibiting sheen mostly along the edge of water starting in Reach 3 and extending to the end of Reach 5 (Figures 6 through 8). Sheen was also generated while probing sediment deposits in the following seven isolated areas located in Reaches 3 through 5:

- **Reach 3**: One large sand bar deposit along the eastern bank just downstream from Transect 13 and two small deposits located along the east and west banks between Transects 15 and 16. NAPL blebs were also observed in the large deposit located along the site side (east bank) of the creek downstream from Transect T13.
- **Reach 4**: One large sand bar deposit located along the west bank near Transect 24.
- **Reach 5**: A cut bank area between Transects 27 and 28 exhibiting a heavy sheen and strong petroleum-like odor. The area appeared to be an active ongoing source of impacts to the creek.
- **Reach 5**: Two large sand bar deposits located near the Harrison Street bridges by Transect 30.

Sheen was also observed after agitating the sediment/edge of water during probing conducted during the reconnaissance. The sheen along the water's edge is interpreted to be a trace quantity and transient in nature. The sheen along the water's edge does not appear to extend into the creek banks, rather is thin coating along the edge.

3.3.3 Sediment Sampling

Arcadis conducted sediment sampling from January 19 through January 21, 2021 at the NYSDEC-approved locations per the October 2020 correspondence. A total of 69 samples were collected from five reaches. Twenty of these samples were collected from Reaches 1 and 2 to represent background conditions upstream from the site. Samples were analyzed for PAH_{34} and TOC. All but two samples were collected from less than 1-foot below the sediment surface due to refusal. Sediment sampling PAH results are presented in Table 10 and on Figures 4 through 8. Figures 4 through 8 present total priority pollutant PAH (PAH_{16}) concentrations.

PAHs were detected at relatively low concentrations in sediment samples collected from all five reaches of the creek. Total PAH_{34} and PAH_{16} concentrations ranged from 0.20 to 181.4 mg/kg and 0.09 to 85 mg/kg, respectively. Arcadis prepared a technical memorandum summarizing the methods and results of a statistical background evaluation and forensic analysis for the sediment and bank soil PAH results. The technical memorandum is provided in Appendix I.

As presented in the memorandum provided in Appendix I, a statistical analysis was performed to evaluate spatial trends in the data and calculate a representative background concentration (from Reach 1 and 2 samples) to provide a basis for comparing Reach 3 through Reach 5 sample analytical results. The evaluation found the average sediment sample total PAH_{16} and PAH_{34} concentrations were qualitatively higher in the downstream direction of the creek, with lower concentrations in Reach 1 samples and generally higher concentrations in Reach 5. However, a statistical evaluation (by lognormal ANOVA) concluded that there is a potential PAH source in Reach 5 that is different than background sources. The statistical evaluation also found that depositional sediments had statistically significant higher average total PAH concentrations than riffle/run sediments, although riffle/run sediments had higher minimum and maximum total concentrations.

The statistically derived 95th percentile (USEPA 2015) PAH_{34} and PAH_{16} background concentrations (65.6 and 56.4 mg/kg, respectively) for Reach 1 and Reach 2 (upstream) samples are selected as the representative statistically derived sediment background as they are the most conservative (i.e., lowest) of the statistical methods typically used to develop background concentrations in New York. As discussed in Appendix I, total PAHs (PAH_{34}) were detected in four of 69 sediment samples collected from Reaches 1 through 5 at concentrations exceeding the 65.6 mg/kg background concentration: one background sample in Reach 2 (R2-PDI-SED-18DEP(0-0.4)), one sample in Reach 3 (R3-PDI-SED-28DEP(0-0.8)), and two samples in Reach 5 (R5-PDI-SED-55RR(0-1) and R5-PDI-SED-55RR(1-1.3)). Total PAHs (PAH_{16}) were detected in two of 69 sediment samples exceeding 56.4 mg/kg background concentration: one background sample in Reach 2 (R2-PDI-SED-18DEP(0-0.4)) and one sample in Reach 5 (R5-PDI-SED-55RR(1-1.3)). The samples collected in Reach 5 (R5-PDI-SED-55RR(0-1) and R5-PDI-SED-55RR(1-1.3)) are located immediately downstream from a creek area where heavy petroleum-like impacts were observed emanating from a cut bank on the west side of the creek (see Figure 8). It's likely that that background exceedances exhibited by these samples may be associated with the apparent petroleum-related impacts.

The forensic evaluation found that sediment samples in Reaches 3 through 5 appear to have dominant contributions from the background pyrogenic PAHs detected in Reaches 1 and 2. Some samples collected in Reaches 3 through 5 appear to have a mixture of pyrogenic and petrogenic sources. The forensic evaluation concluded that it is possible that multiple PAH sources are present, particularly in Reach 5; however, six Reach 3 samples closest to the site (R3-PDI-SED-25DEP, R3-PDI-SED-26DEP, R3-PDI-SED-27RR, R3-PDI-SED-28DEP, R3-PDI-SED-29RR, and R3-PDI-SED-30DEP) have compositional patterns and PAH signatures closer to the site source samples. No other sediment samples collected during the PDI have a chemical signature consistent with impacted upland site soil samples.

3.3.4 Bank Soil Sampling

As presented in Section 2.4.4, bank soil sampling was conducted adjacent to the Site in Reach 3 on February 3 and 4, 2021. A total of 31 bank soil samples were collected and submitted for PAH analysis from 18 soil cores along six transects. Banks soil sampling locations and analytical results are shown in Table 11 and on Figure 9. Total PAH_{16} in bank soil samples ranged from non-detect to 53.5 mg/kg. As shown in Table 11, 19 of the 31 bank soil samples contained PAHs at concentrations exceeding NYSDEC Part 375 unrestricted SCOs; however, visual (staining, sheen, NAPL) impacts or odors were not observed and PID readings were non-detect in the collected bank soil samples.

The forensic analysis (Appendix I) also evaluated bank soil sampling results as they compare to site – related PAHs and PAHs in sediments. As discussed in Appendix I, bank soils have statistically significant higher total PAH_{16} concentrations than sediments. The forensic evaluation concluded that bank soil samples have a pyrogenic signature but lack naphthalene signatures present in the impacted upland samples. This indicates that the PAHs detected in bank soils are not related to site sources.

3.3.5 Supplemental PDI Background Bank Soil Sampling

The Supplemental PDI background bank soil sampling results were presented in the May 16, 2023 Interim Supplemental PDI Submittal (Appendix A). The discussion below is largely from the Interim Supplemental PDI Submittal. Figure 9a shows the background bank soil sampling locations in Reach 2 and Table 12 provides the background bank soil sampling results. Arcadis reviewed the supplemental PDI sampling analytical results and conducted the following statistical evaluations:

- Upper limit statistics to establish a statistically derived site-specific background concentration and comparison of this site-specific background concentration to bank soil samples adjacent to and downstream from the Site,
- Hypothesis testing to determine spatial patterns between the total PAH-16 concentrations in background bank soils to the total PAH-16 concentrations within the investigation area,

3.3.5.1 Statistically Derived Background Bank Soil PAH-16 Concentration

Arcadis statistically derived a total PAH-16 background bank soil concentration using the supplemental PDI Reach 2 bank soil sampling results. Statistical analyses were performed in the 'R' statistical language (R Core Team 2022) and with ProUCL version 5.2 (USEPA 2022). The following statistical metrics were considered:

- 95th percentiles
- 95th percent Upper Prediction Limits (95 UPLs)
- 95/95 Upper Threshold Limits (95/95 UTLs)

No significant outliers were identified by Dixon's test or examination of QQ plots. The data were normally distributed by Shapiro Wilk and Lilliefors tests, so the background upper limit statistics were computed using normal distribution methods. The background concentration statistical evaluation upper limit results are summarized in the following table:

Upper Limits of Background Bank Soil Total PAH-16 Concentration – Statistical Results Summary

PAH Mixture	95th Percentile[1] (mg/kg)	95 UPL[2] (mg/kg)	95/95 UTL[3] (mg/kg)
Background Bank Soil			
Total PAH-16	31.4	29.5	36.7

Notes:

1. 95th percentiles were calculated using the Type 7 Method (USEPA 2015).
2. Bank soil dataset was normally distributed by Shapiro Wilk and Lilliefors tests. 95 Upper Prediction Limits (UPLs) were calculated using the normal 95th Percentile (z) method (USEPA 2015).
3. 95/95 Upper Tolerance Limits (UTLs) were calculated using the 95% BCA Bootstrap UTL with 95% Coverage method (USEPA 2015).

The 95 UPL total PAH-16 concentration of 29.5 mg/kg was selected to use as the statistically derived sediment background concentrations from Reach 2, as it is the most conservative of the upper tail estimates. The statistically derived background concentrations were used as a basis against which Reach 3 bank soil sample total PAH-16 concentrations were compared.

Total PAH-16 were detected at concentrations exceeding the 29.5 mg/kg background concentration in the following 6 of 55 PDI Reach 2 and 3 bank soil samples:

Reach	Sample ID	Total PAH-16 (mg/kg)
2[2]	T-05-LB-MHWL (0-0.5)	32 J[1]
	T-07-LB-MHWL (0-0.5)	37 J
3[3]	PDI-T-17-RB-MB (0.5-0.7)	36.9 J
	PDI-T-18-LB-MHWL (0-0.5)	53.5 J
	PDI-T-18-LB-MB (0-0.5)	30.9 J
	PDI-T-18-RB-MB (0-0.5)	32.9 J

Notes:

1. J = indicates that individual PAHs in the sample were positively identified; however, the associated numerical value is an estimated concentration only.
2. Reach 2 is background (i.e., upstream”) of the delineated upland NAPL containing area where it encounters Cayadutta Creek, due west of the service center area.
3. Reach 3 is adjacent to the NAPL containing area where it encounters Cayadutta Creek and extends approximately 500 feet beyond the National Grid-owned southern property boundary.

3.3.5.2 Average Total PAH-16 Concentration Spatial Pattern Evaluation

Arcadis used hypothesis testing to evaluate similarities or differences between the Reach 2 and Reach 3 bank soil total PAH-16 datasets. Due to the non-detect total PAH-16 result at PDI-T-16-LB-MB (0.5-0.8'), Arcadis conducted this evaluation using generalized Wilcoxon test methods for censored data for the Reach 2 and Reach 3 data distributions. The generalized Wilcoxon test, as formulated by Peto and Peto, can be used to evaluate differences between the distributions of two or more groups of independent censored observations (Peto and Peto 1972). The results of the hypothesis testing showed no statistically significant differences (p-value = 0.711) between Reach 2 background bank soil total PAH-16 concentrations and Reach 3 bank soil total PAH-16 concentrations. A summary of total PAH-16 concentrations in Reach 2 background bank soils, Reach 3 bank soils is presented in the following table.

Detected Bank Soil Total PAH-16 Concentrations

Sample Media	Median Total PAH-16 (mg/kg)	Total PAH-16 Range (mg/kg)
Reach 2 Bank Soil	11.6	0.18 – 36.7
Reach 3 Bank Soil	15.3	0.73 – 53.5

3.3.5.3 Supplemental PDI Forensic Evaluation

Arcadis conducted a supplemental forensic evaluation consisting of the following:

- Bank soil versus Site source soil PAH-16 compositional fingerprint distribution comparison
- Bank soil versus Site source soils PAH Double Ratio Plot comparison
- Principal Component Analysis (PCA) and cluster analyses to group sampling locations based on their overall similarity.

Descriptions and evaluation findings are presented below.

Compositional Fingerprint Distribution

PAH-16 compositional fingerprints (i.e., distributions) were evaluated for similarities between bank soils and Site source soils. Table 13 presents the site source sampling results for samples collected as discussed in Section 2.5.4.2. A visual comparison of the PAH compositional fingerprints (see Attachment 2 of the May 16, 2023 Interim Supplemental PDI Submittal [Appendix A]) indicates that the Reach 2 background bank soils ("Background") and Reach 3 bank soils ("Site") have similar PAH distributions. This distribution is characterized by the presence and compositional similarities of parent PAH compounds with medium to heavy molecular weights (3-6 rings), such as phenanthrene ("PO"), fluoranthene ("FLO"), pyrene ("PYO"), benzo(a)anthracene ("BAO"), chrysene (CO"), benzofluoranthenes ("BBF" and "BKF"), benzo(a)pyrene ("BAP"), indeno(1,2,3-cd)pyrene ("IND"), and benzo(g,h,i)perylene ("GHI"). The PAH compounds with low molecular weights, such as naphthalene, acenaphthylene, acenaphthene, anthracene, and fluorene, are generally not present in the soil bank samples or are present at low concentrations near their respective detection limits in both Reach 2 background and Reach 3 samples.

In contrast, the Site source samples PAH compositional fingerprints are characterized by parent PAH compounds with low to medium molecular weights (2-3 rings) such as naphthalene ("NO"), acenaphthene ("AY"), acenaphthylene ("AE"), anthracene ("AO") and fluorene ("FO") with naphthalene as the most dominant PAH. The PAH compounds with high molecular weights (4-6 rings), such as benzofluoranthenes, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene, are generally not detected in the source soil samples or are present at low concentrations. Figure 2 of the May 16, 2023 Interim Supplemental PDI Submittal (Appendix A) illustrates the Reach 2 and 3 bank soils average PAH compositional fingerprint similarities and distinct bank soil and Site source soil PAH compositional fingerprint differences.

PAH Double Ratio Plots

Select PAH diagnostic ratio values were calculated and plotted for each bank soil and Site source soil sample. Arcadis prepared benzo(a)anthracene/chrysene versus fluoranthene/pyrene and benzo(a)anthracene/

(benzo(a)anthracene + chrysene) versus anthracene / (anthracene + phenanthrene) PAH double-ratio plots, which are the most common ratios used in PAH source evaluations (Costa et al. 2004; Costa and Sauer 2005; Yunker et al. 2002).

As indicated on Figure 3 of the May 16, 2023 Interim Supplemental PDI Submittal (Appendix A), the diagnostic ratio plot of benzo(a)anthracene/chrysene versus fluoranthene/pyrene concentrations shows a cluster of bank soil samples from both Reach 2 background and Reach 3 that is distinctly different than the similar PAH concentration ratios for Site source area soils. Although both bank soils and source soil ratios both fell in the pyrogenic and mixed source zones, bank soils had distinctly higher fluoranthene/pyrene ratios than Site source soil samples.

Anthracene was only detected in 6 of 24 (25%) supplemental PDI background bank soils. Where detected, anthracene concentrations were below NYSDEC Part 375-6 Unrestricted Use Soil Cleanup Objectives (SCOs). Therefore, the diagnostic ratio plot of benzo(a)anthracene/ (benzo(a)anthracene + chrysene) versus anthracene / (anthracene + phenanthrene) has limited value for evaluation purposes and is not presented in this report.

PCA Statistical Analysis

Arcadis completed PCA and hierarchical cluster analyses (HCA) to further evaluate the bank and source soil data sets. PCA is used to reduce the dimensionality of a dataset with many interrelated variables. The HCA was conducted to group similar PCA results into subsets (or clusters). Statistical analyses were performed in the 'R' statistical language (R Core Team 2022).

Prior to PCA analysis, detected PAH-16 compound concentrations were transformed to a fraction of total PAH concentration, to focus the evaluation on the PAH signature rather than concentration magnitude, then scaled and centered to a mean of zero and unit variance. These normalization procedures remove bias due to different PAH concentrations between samples (EPRI 2008). In support of these evaluations, non-detect PAH concentrations in a sample were set to zero in the fraction of total PAH calculation.

Two principal components (i.e., PC-1 and PC-2) explaining 71.7% of the variance were retained through the PCA to the HCA. Arcadis then conducted an agglomerative HCA on the two retained PCs using the Ward Method. The HCA identified two distinct data clusters. Figure 4 of the May 16, 2023 Interim Supplemental PDI Submittal (Appendix A) presents the PCA scores and loadings along with the data clusters.

Cluster 1 is characterized by samples with:

- Higher proportions of acenaphthene, anthracene, acenaphthylene, fluorene, naphthalene, and phenanthrene.
- Lower proportions of benzo(b)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene, benzo(a)anthracene, benzo(k)fluoranthene, chrysene, dibenzo(a,h) anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene.

Cluster 2 is characterized by samples with:

- Higher proportions of benzo(g,h,i)perylene, benzo(k)fluoranthene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(a)anthracene, chrysene, dibenzo(a,h) anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene.
- Lower proportions of acenaphthene, anthracene, acenaphthylene fluorene, naphthalene, and phenanthrene.

A data cluster evaluation relative to sample location indicates that Cluster 1 is associated with the Site source soil samples while Cluster 2 is primarily associated with the Reach 2 background soil samples.

3.3.5.4 Supplemental PDI Background Bank Soil Conclusions

The results of the statistical and forensic bank soil PAH-16 evaluations indicate that the low-level PAH concentrations detected in Reach 3 bank soil samples during the initial PDI effort are related to background sources and not the former MGP Site based on the following lines of evidence:

- Only four of 31 Reach 3 bank soil samples and two of 24 Reach 2 background bank soils contain total PAH-16 at concentrations exceeding the lowest statistical background concentration.
- The total PAH-16 concentrations and ranges are similar between Reach 2 background and Reach 3 bank samples.
- Hypothesis testing show no statistically significant differences between Reach 2 background and Reach 3 bank soil total PAH-16 concentrations.
- PAH compositional fingerprints indicate that the Reach 2 background and Reach 3 bank soils have similar higher ring PAH distributions, while the Site source samples were characterized by lower ring PAHs with naphthalene dominance.
- Reach 2 background and Reach 3 bank soils have distinctly higher fluoranthene/pyrene ratios compared to Site source soil samples.
- PCA statistical analysis indicates that the Reach 2 background and Reach 3 bank soils are associated with one cluster with higher proportions of higher ring PAHs (Cluster 2) while the Site source soils are associated with higher proportions of lower ring PAHs (Cluster 1).

Based on these evaluations, in the May 16, 2023 Interim Supplemental PDI Submittal National Grid requested NYSDEC approve a ROD modification to revise the bank soil cleanup objective from “[excavating] bank soils which exceed unrestricted use SCOs” to “excavating bank soils adjacent to upland NAPL containing areas”. The NYSDEC approved this request as documented in their December 19, 2023 letter (Appendix A).

3.3.6 Proposed Cayadutta Creek Sediment Remedial Action

The NYSDEC-selected remedy for Cayadutta Creek sediments, as presented in the ROD, consists of excavating and transporting for off-site disposal sediment:

- that is grossly contaminated, as defined in 6 NYCRR Part 375-1.2(u)
- that contains visual impacts of non-aqueous phase liquids, sheen or which produce a visible sheen when agitated in-situ
- that are discolored and smell like coal tar
- sediment impacted by site-related PAHs at concentrations greater than background levels

It is apparent that site-related impacts are present in Cayadutta Creek sediments in the form of sheens and trace amounts of NAPL (adjacent to the site); however, all but 1 of the 49 sediment samples collected from Reaches 3 through 5 contain concentrations less than the 95th percentile PAH_{16} background concentration of 56.4 mg/kg. The one sample ((R5-PDI-SED-55RR(1-1.3); 57 J mg/kg) was collected from Reach 5 in an area immediately downstream from an apparent ongoing petroleum-like source. Furthermore, the forensic evaluation (Appendix I) concluded there is likely another source of PAHs in Reach 5. The forensic evaluation combined with the visual/olfactory observations immediately upstream from this sample suggests that the PAHs in this sample are not site-related. The forensic evaluation also concluded that only six samples located adjacent to the site in

Reach 3 (R3-PDI-SED-25DEP, R3-PDI-SED-26DEP, R3-PDI-SED-27RR, R3-PDI-SED-28DEP, R3-PDI-SED-29RR, and R3-PDI-SED-30DEP) likely contain PAHs related to the site. Two of these samples (R3-PDI-SED-26DEP and R3-PDI-SED-28DEP) also contained visible evidence of impacts in the form of sheen and trace amounts of NAPL; however, the PAH_{16} concentration for these samples was below the 95^{th} percentile PAH_{16} background concentration of 56.4 mg/kg (23 J mg/kg and 38 J mg/kg, respectively). Trace amounts of sheen were also observed at the edge of water in several areas and within six isolated sediment deposits in Reaches 3 through 5. The sheen at the edge of water is interpreted to be transient and not present further into the creek bank. The sheen in the sediment deposits could persist for longer periods given the size and depth of the deposits.

Given this information, in the January 2022 PDI Report National Grid proposed the following remedial actions for Cayadutta Creek sediments:

- Remove sediments located near/at the two sediment samples containing sheen/trace NAPL and PAHs with a site signature (R3-PDI-SED-26DEP and R3-PDI-SED-28DEP).
- Remove the three sediment deposits in Reach 3 and one sediment deposit in Reach 4 that contain sheen.
- Monitor the absence/presence of sheen on a periodic basis after the upland remediation and impacted creek sediments (above two bullets) have been removed.
- Evaluate potential additional future remedial measures in the creek should sheen persist along the water's edge as evidenced by the post-remediation monitoring program.

The NYSDEC approved this proposal as documented in their December 19, 2023 letter (Appendix A).

3.4 Ecological Characterization

Arcadis conducted an ecological characterization study to determine the extent and location of waters of the United States and characterize the vegetative community at/near the project area. Field visits were conducted on August 17, 27, 28, and 31, 2020 to support the study. The field visits consisted of:

- characterizing and delineating wetlands as defined by the United States Army Corps of Engineers (USACE) and the USEPA
- characterizing site upland and riparian vegetation communities
- characterizing the unnamed tributary in the southern portion of the site including characterization of the wetted width, water depth, habitats, substrate, bank conditions, vegetation, and observations of aquatic biota

Study methods, findings, and conclusions are presented in the Ecological Characterization Report included as Appendix H.

4 Remedial Design Schedule

The PDI data are sufficient to proceed with the Remedial Design preparation. The anticipated Remedial Design schedule is presented in Table 4.1, below.

Table 4.1 Anticipated Remedial Design Schedule

Schedule Component	Date
Submit Final PDI Report	By February 5, 2024
NYSDEC PDI Report Approval	Q1 2024
Submit Preliminary Remedial Design Report	Q4 2024
Receive NYSDEC Comments	Q1 2025
Submit Draft Final Remedial Design Report	Q2 2025
Receive NYSDEC Comments	Q3 2025
Submit Final Remedial Design Report	Q4 2025
NYSDEC Approval of Final Remedial Design Report	Q4 2025
Remedial Contractor Procurement (includes bid document preparation)	Q4 2025 – Q2 2026
Initiate Remedial Construction	2026

The project schedule is subject to change based on NYSDEC review/approval schedule.

5 References

Arcadis 2020 *Remedial Design Work Plan*, Gloversville (Hill Street) Former Manufactured Gas Plant Site No. 5-18-021, Prepared for National Grid, June 2020.

Duffield 2007 AQTESOLV for Windows User's Guide. Version 4.5, HydroSOLVE, Inc., Reston.

Tables

Table 1
Fluid-Level Measurements

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Monitoring Well ID	Measuring Point Elevation (Ft AMSL)	11/17/2020		12/1/2020		12/18/2020		1/12/2021		2/11/2021		3/3/2021		4/8/2021	
		Groundwater Elevation (Ft AMSL)	NAPL Thickness (Ft)	Groundwater Elevation (Ft AMSL)	NAPL Thickness (Ft)	Groundwater Elevation (Ft AMSL)	NAPL Thickness (Ft)	Groundwater Elevation (Ft AMSL)	NAPL Thickness (Ft)	Groundwater Elevation (Ft AMSL)	NAPL Thickness (Ft)	Groundwater Elevation (Ft AMSL)	NAPL Thickness (Ft)	Groundwater Elevation (Ft AMSL)	NAPL Thickness (Ft)
MW-9S	747.96	742.92	0.0	743.59	0.0	742.14	0.0	742.28	0.0	742.12	0.0	742.80	0.0	742.62	0.0
MW-15S	753.64	743.25	0.7*	743.52	0.4*	743.12	0.4*	742.68	0.2*	742.60	0.0	742.96	0.0	742.75	0.0
MW-16S	746.06	739.53	0.0	739.63	0.0	739.35	0.0	739.41	0.0	739.24	0.0	739.52	0.0	739.47	0.0
MW-17S	748.35	743.19	0.0	743.33	0.0	742.54	0.0	742.50	0.0	742.66	0.0	742.97	0.0	742.79	0.0
MW-32S	748.68	744.19	0.0	744.44	0.0	743.59	0.0	743.85	0.0	743.56	0.0	744.23	0.0	744.11	0.0
MW-38	750.38	741.92	0.1	742.10	0.0	741.88	0.0	740.15	0.0	745.37	0.0	741.17	0.0	744.84	0.0
PZ-416	748.27	740.26	0.0	740.55	0.0	739.95	0.0	740.00	0.0	739.86	0.0	740.22	0.0	740.06	0.0
PDI-MW-1	750.20	746.85	0.0	747.18	0.0	746.81	0.0	745.98	0.0	746.58	0.0	746.68	0.0	746.02	0.0
PDI-MW-2	750.90	746.36	0.0	746.77	0.0	746.29	0.0	745.58	0.0	746.33	0.0	746.15	0.0	745.58	0.0
PDI-MW-3	750.24	746.06	0.0	746.41	0.0	745.55	0.0	745.78	0.0	745.48	0.0	746.07	0.0	746.06	0.0
PDI-MW-4	748.40	742.99	0.5	743.27	0.5	742.38	0.6	742.56	0.5	742.26	2.1	742.98	2.8	742.90	0.4
PDI-MW-5	747.68	741.35	1.4	741.67	1.3	740.84	1.5	740.94	1.3	740.70	2.6	741.26	3.5	741.11	1.7
PDI-MW-6	749.74	745.68	0.0	745.96	0.0	745.32	0.0	745.32	0.0	745.08	0.0	745.59	0.0	745.38	0.0
PDI-MW-7	749.88	744.36	0.0	744.41	0.0	743.07	0.0	743.30	0.0	742.92	0.0	743.95	0.0	743.89	0.0
PDI-MW-8	749.48	745.34	0.0	745.94	0.0	744.46	0.0	744.62	0.0	744.36	0.0	745.23	0.0	744.63	0.0
PDI-MW-9	749.32	744.45	0.0	745.03	0.0	742.68	0.0	743.17	0.0	741.96	0.0	744.10	0.0	743.06	0.0
PDI-MW-10	748.19	739.18	0.0	739.38	0.0	738.93	0.0	739.14	0.0	738.83	0.0	739.28	0.0	739.42	0.0
SG-1	742.72	738.08	NA	738.33	NA	738.01	NA	738.02	NA	737.94	NA	738.03	NA	738.03	NA
SG-2	760.21	748.06	NA	748.71	NA	747.83	NA	747.35	NA	748.01	NA	748.28	NA	748.33	NA
SG-3	747.31	739.61	NA	740.08	NA	739.49	NA	739.48	NA	738.61	NA	739.83	NA	739.82	NA
SG-4	734.40	728.56	NA	726.88	NA	728.37	NA	724.93	NA	725.48	NA	725.76	NA	725.77	NA

Notes:
1. AMSL = Above Mean Sea Level
2. Ft = Feet
3. NAPL = Non-Aqueous Phase Liquid
4. Approximately 0.79 and 0.87 gallons of NAPL were removed by bailer from PDI-MW-4 and PDI-MW-5 on 3/3/2021
5. * The NAPL thickness measurements at MW-15S were erroneous. NAPL gauging and groundwater sampling were conducted at MW-15S during a Supplemental PDI. The results of the additional gauging and sampling indicated NAPL was not present at the well and groundwater did not contain detected MGP-related constituents. Table 2 provides the groundwater sampling results.

Table 2
MW-15 Groundwater Sampling Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Date Collected:	Units	MW-15S 11/1/22
Volatile Organics		
1,1,1-Trichloroethane	ug/L	0.82 U
1,1,2,2-Tetrachloroethane	ug/L	0.21 U
1,1,2-trichloro-1,2,2-trifluoroethane	ug/L	0.31 U
1,1,2-Trichloroethane	ug/L	0.23 U
1,1-Dichloroethane	ug/L	0.38 U
1,1-Dichloroethene	ug/L	0.29 U
1,2,4-Trichlorobenzene	ug/L	0.41 U
1,2-Dibromo-3-chloropropane	ug/L	0.39 U
1,2-Dibromoethane	ug/L	0.73 U
1,2-Dichlorobenzene	ug/L	0.79 U
1,2-Dichloroethane	ug/L	0.21 U
1,2-Dichloropropane	ug/L	0.72 U
1,3-Dichlorobenzene	ug/L	0.78 U
1,4-Dichlorobenzene	ug/L	0.84 U
2-Butanone	ug/L	1.3 U
2-Hexanone	ug/L	1.2 U
4-Methyl-2-pentanone	ug/L	2.1 U
Acetone	ug/L	5.0 J
Benzene	ug/L	0.41 U
Bromodichloromethane	ug/L	0.39 U
Bromoform	ug/L	0.26 U
Bromomethane	ug/L	0.69 U
Carbon Disulfide	ug/L	0.19 U
Carbon Tetrachloride	ug/L	0.27 U
Chlorobenzene	ug/L	0.75 U
Chloroethane	ug/L	0.32 U
Chloroform	ug/L	0.34 U
Chloromethane	ug/L	0.35 U
cis-1,2-Dichloroethene	ug/L	0.81 U
cis-1,3-Dichloropropene	ug/L	0.36 U
Cyclohexane	ug/L	0.18 U
Dibromochloromethane	ug/L	0.32 U
Dichlorodifluoromethane	ug/L	0.68 U
Ethylbenzene	ug/L	0.74 U
Isopropylbenzene	ug/L	0.79 U
Methyl acetate	ug/L	1.3 U
Methyl tert-butyl ether	ug/L	0.16 U
Methylcyclohexane	ug/L	0.16 U
Methylene Chloride	ug/L	0.44 U
Styrene	ug/L	0.73 U
Tetrachloroethene	ug/L	0.36 U
Toluene	ug/L	0.51 U
trans-1,2-Dichloroethene	ug/L	0.90 U
trans-1,3-Dichloropropene	ug/L	0.37 U
Trichloroethene	ug/L	0.46 U
Trichlorofluoromethane	ug/L	0.88 U
Vinyl Chloride	ug/L	0.90 U
Xylenes (total)	ug/L	0.66 U
Semivolatile Organics		
1,1'-Biphenyl	ug/L	0.65 U
2,2'-Oxybis(1-Chloropropane)	ug/L	0.52 U
2,4,5-Trichlorophenol	ug/L	0.48 U
2,4,6-Trichlorophenol	ug/L	0.61 U

See Notes on Page 3.

Table 2
MW-15 Groundwater Sampling Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Date Collected:	Units	MW-15S 11/1/22
Semivolatile Organics (cont.)		
2,4-Dichlorophenol	ug/L	0.51 U
2,4-Dimethylphenol	ug/L	0.50 U
2,4-Dinitrophenol	ug/L	2.2 U
2,4-Dinitrotoluene	ug/L	0.45 U
2,6-Dinitrotoluene	ug/L	0.40 U
2-Chloronaphthalene	ug/L	0.46 U
2-Chlorophenol	ug/L	0.53 U
2-Methylnaphthalene	ug/L	0.60 U
2-Methylphenol	ug/L	0.40 U
2-Nitroaniline	ug/L	0.42 U
2-Nitrophenol	ug/L	0.48 U
3,3'-Dichlorobenzidine	ug/L	0.40 U
3-Nitroaniline	ug/L	0.48 U
4,6-Dinitro-2-methylphenol	ug/L	2.2 U
4-Bromophenyl-phenylether	ug/L	0.45 U
4-Chloro-3-Methylphenol	ug/L	0.45 U
4-Chloroaniline	ug/L	0.59 U
4-Chlorophenyl-phenylether	ug/L	0.35 U
4-Methylphenol	ug/L	0.36 U
4-Nitroaniline	ug/L	0.25 U
4-Nitrophenol	ug/L	1.5 U
Acenaphthene	ug/L	0.41 U
Acenaphthylene	ug/L	0.38 U
Acetophenone	ug/L	0.54 U
Anthracene	ug/L	0.28 U
Atrazine	ug/L	0.46 U
Benzaldehyde	ug/L	0.27 U
Benzo(a)anthracene	ug/L	0.36 U
Benzo(a)pyrene	ug/L	0.47 U
Benzo(b)fluoranthene	ug/L	0.34 U
Benzo(g,h,i)perylene	ug/L	0.35 U
Benzo(k)fluoranthene	ug/L	0.73 U
bis(2-Chloroethoxy)methane	ug/L	0.35 U
bis(2-Chloroethyl)ether	ug/L	0.40 U
bis(2-Ethylhexyl)phthalate	ug/L	2.2 U
Butylbenzylphthalate	ug/L	1.0 U
Caprolactam	ug/L	2.2 U
Carbazole	ug/L	0.30 U
Chrysene	ug/L	0.33 U
Dibenzo(a,h)anthracene	ug/L	0.42 U
Dibenzofuran	ug/L	0.51 U
Diethylphthalate	ug/L	0.22 U
Dimethylphthalate	ug/L	0.36 U
Di-n-Butylphthalate	ug/L	0.31 U
Di-n-Octylphthalate	ug/L	0.47 U
Fluoranthene	ug/L	0.40 U
Fluorene	ug/L	0.36 U
Hexachlorobenzene	ug/L	0.51 U
Hexachlorobutadiene	ug/L	0.68 U
Hexachlorocyclopentadiene	ug/L	0.59 U
Hexachloroethane	ug/L	0.59 U
Indeno(1,2,3-cd)pyrene	ug/L	0.47 U
Isophorone	ug/L	0.43 U

See Notes on Page 3.

Table 2
MW-15 Groundwater Sampling Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Date Collected:	Units	MW-15S 11/1/22
Semivolatile Organics (cont.)		
Naphthalene	ug/L	0.76 U
Nitrobenzene	ug/L	0.29 U
N-Nitroso-di-n-propylamine	ug/L	0.54 U
N-Nitrosodiphenylamine	ug/L	0.51 U
Pentachlorophenol	ug/L	2.2 U
Phenanthrene	ug/L	0.44 U
Phenol	ug/L	0.39 U
Pyrene	ug/L	0.34 U
Total PAH16	ug/L	0.76 U

Notes:

1. Arcadis collected samples on date indicated.
2. Samples analyzed by Eurofins laboratory in Buffalo, NY.
3. Results are presented in micrograms per liter (ug/L), which is equivalent to parts per billion (ppb).
4. J - detected concentration is less than the calibration level but greater than the instrument detection limit. This value is estimated.
5. U - Compound was analyzed for but not detected. The presented value is the compound quantitation limit.

Table 3
Hydraulic Conductivity Estimates

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

ARCADIS

Monitoring Wells	Test Type	Analytical Solution	Hydraulic Conductivity, K (ft/day)	Geomean K (ft/day)
PDI-MW-1	Rising Head	Bouwer-Rice	0.87	1.2
		Hvorslev	1.4	
		Springer-Gelhar	1.3	
PDI-MW-2	Rising Head	Bouwer-Rice	0.07	0.11
		Hvorslev	0.13	
		Springer-Gelhar	0.15	
PDI-MW-3	Rising Head	Bouwer-Rice	1.2	1.6
		Hvorslev	1.8	
		Springer-Gelhar	1.8	
PDI-MW-4	Rising Head	Bouwer-Rice	3.7	4.4
		Hvorslev	4.8	
		Springer-Gelhar	4.9	
PDI-MW-5	Rising Head	Hvorslev	26	27
		Springer-Gelhar	29	
PDI-MW-6	Rising Head	Bouwer-Rice	1.0	1.4
		Hvorslev	1.4	
		Springer-Gelhar	2.1	
PDI-MW-7	Rising Head	Bouwer-Rice	0.72	0.89
		Hvorslev	1.1	
PDI-MW-8	Rising Head	Bouwer-Rice	0.21	1.2
		Hvorslev	0.41	
PDI-MW-9	Rising Head	Bouwer-Rice	0.078	0.093
		Hvorslev	0.11	
PDI-MW-10	Rising Head	Bouwer-Rice	2.9	4.8
		Hvorslev	4.2	
		Springer-Gelhar	8.9	

Notes:
ft^2/day = square feet per day
ft/day = feet per day

Table 4
Detention Basin Storm Water Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample ID: Date Collected:	Units	Storm Water Detention Basin DETENTION_BASIN_GW_120220 12/02/20
Volatile Organics		
1,1,1-Trichloroethane	mg/L	0.00082 U
1,1,2,2-Tetrachloroethane	mg/L	0.00021 U
1,1,2-trichloro-1,2,2-trifluoroethane	mg/L	0.00031 U
1,1,2-Trichloroethane	mg/L	0.00023 U
1,1-Dichloroethane	mg/L	0.00038 U
1,1-Dichloroethene	mg/L	0.00029 U
1,2,4-Trichlorobenzene	mg/L	0.00041 U
1,2-Dibromo-3-chloropropane	mg/L	0.00039 U
1,2-Dibromoethane	mg/L	0.00073 U
1,2-Dichlorobenzene	mg/L	0.00079 U
1,2-Dichloroethane	mg/L	0.00021 U
1,2-Dichloropropane	mg/L	0.00072 U
1,3-Dichlorobenzene	mg/L	0.00078 U
1,4-Dichlorobenzene	mg/L	0.00084 U
2-Butanone	mg/L	0.0013 U
2-Hexanone	mg/L	0.0012 U
4-Methyl-2-pentanone	mg/L	0.0021 U
Acetone	mg/L	0.0030 U
Benzene	mg/L	0.00054 J
Bromodichloromethane	mg/L	0.00039 U
Bromoform	mg/L	0.00026 U
Bromomethane	mg/L	0.00069 U
Carbon Disulfide	mg/L	0.00019 U
Carbon Tetrachloride	mg/L	0.00027 U
Chlorobenzene	mg/L	0.00075 U
Chloroethane	mg/L	0.00032 U
Chloroform	mg/L	0.00034 U
Chloromethane	mg/L	0.00035 U
cis-1,2-Dichloroethene	mg/L	0.00081 U
cis-1,3-Dichloropropene	mg/L	0.00036 U
Cyclohexane	mg/L	0.00018 U
Dibromochloromethane	mg/L	0.00032 U
Dichlorodifluoromethane	mg/L	0.00068 U
Ethylbenzene	mg/L	0.00081 J
Isopropylbenzene	mg/L	0.00079 U
Methyl acetate	mg/L	0.0013 U
Methyl tert-butyl ether	mg/L	0.00016 U
Methylcyclohexane	mg/L	0.00016 U
Methylene Chloride	mg/L	0.00044 U
Styrene	mg/L	0.00073 U
Tetrachloroethene	mg/L	0.00036 U
Toluene	mg/L	0.00051 U
trans-1,2-Dichloroethene	mg/L	0.00090 U
trans-1,3-Dichloropropene	mg/L	0.00037 U
Trichloroethene	mg/L	0.00046 U
Trichlorofluoromethane	mg/L	0.00088 U
Vinyl Chloride	mg/L	0.00090 U
Xylenes (total)	mg/L	0.00066 U
Semivolatile Organics		
1,1'-Biphenyl	mg/L	0.00065 U
2,2'-Oxybis(1-Chloropropane)	mg/L	0.00052 U
2,4,5-Trichlorophenol	mg/L	0.00048 U
2,4,6-Trichlorophenol	mg/L	0.00061 U
2,4-Dichlorophenol	mg/L	0.00051 U
2,4-Dimethylphenol	mg/L	0.00050 U
2,4-Dinitrophenol	mg/L	0.0022 U
2,4-Dinitrotoluene	mg/L	0.00045 U
2,6-Dinitrotoluene	mg/L	0.00040 U
2-Chloronaphthalene	mg/L	0.00046 U
2-Chlorophenol	mg/L	0.00053 U
2-Methylnaphthalene	mg/L	0.00060 U
2-Methylphenol	mg/L	0.00040 U
2-Nitroaniline	mg/L	0.00042 U

See Notes on Page 3.

Table 4
Detention Basin Storm Water Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample ID: Date Collected:	Units	Storm Water Detention Basin DETENTION_BASIN_GW_120220 12/02/20
Semivolatile Organics (cont'd)		
2-Nitrophenol	mg/L	0.00048 U
3,3'-Dichlorobenzidine	mg/L	0.00040 U
3-Nitroaniline	mg/L	0.00048 U
4,6-Dinitro-2-methylphenol	mg/L	0.0022 U
4-Bromophenyl-phenylether	mg/L	0.00045 U
4-Chloro-3-Methylphenol	mg/L	0.00045 U
4-Chloroaniline	mg/L	0.00059 U
4-Chlorophenyl-phenylether	mg/L	0.00035 U
4-Methylphenol	mg/L	0.00036 U
4-Nitroaniline	mg/L	0.00025 U
4-Nitrophenol	mg/L	0.0015 U
Acenaphthene	mg/L	0.00075 J
Acenaphthylene	mg/L	0.00038 U
Acetophenone	mg/L	0.00054 U
Anthracene	mg/L	0.00028 U
Atrazine	mg/L	0.00046 U
Benzaldehyde	mg/L	0.00027 U
Benzo(a)anthracene	mg/L	0.00036 U
Benzo(a)pyrene	mg/L	0.00047 U
Benzo(b)fluoranthene	mg/L	0.00034 U*+
Benzo(g,h,i)perylene	mg/L	0.00035 U
Benzo(k)fluoranthene	mg/L	0.00073 U*+
bis(2-Chloroethoxy)methane	mg/L	0.00035 U
bis(2-Chloroethyl)ether	mg/L	0.00040 U
bis(2-Ethylhexyl)phthalate	mg/L	0.0022 U
Butylbenzylphthalate	mg/L	0.0010 U
Caprolactam	mg/L	0.0022 U
Carbazole	mg/L	0.00030 U
Chrysene	mg/L	0.00033 U
Dibenzo(a,h)anthracene	mg/L	0.00042 U
Dibenzofuran	mg/L	0.00051 U
Diethylphthalate	mg/L	0.00022 U
Dimethylphthalate	mg/L	0.00036 U
Di-n-Butylphthalate	mg/L	0.00031 U
Di-n-Octylphthalate	mg/L	0.00047 U
Fluoranthene	mg/L	0.00040 U
Fluorene	mg/L	0.00036 U
Hexachlorobenzene	mg/L	0.00051 U
Hexachlorobutadiene	mg/L	0.00068 U
Hexachlorocyclopentadiene	mg/L	0.00059 U
Hexachloroethane	mg/L	0.00059 U
Indeno(1,2,3-cd)pyrene	mg/L	0.00047 U
Isophorone	mg/L	0.00043 U
Naphthalene	mg/L	0.00076 U
Nitrobenzene	mg/L	0.00029 U
N-Nitroso-di-n-propylamine	mg/L	0.00054 U
N-Nitrosodiphenylamine	mg/L	0.00051 U
Pentachlorophenol	mg/L	0.0065 J
Phenanthrene	mg/L	0.00044 U
Phenol	mg/L	0.00039 U
Pyrene	mg/L	0.00034 U
Total SVOCs	mg/L	0.0073 J
Total TPAHs	mg/L	0.00075 J
Inorganics		
Aluminum	mg/L	0.870
Antimony	mg/L	0.00680 U
Arsenic	mg/L	0.00560 U
Barium	mg/L	0.280 ^
Beryllium	mg/L	0.000300 U
Cadmium	mg/L	0.000500 U
Calcium	mg/L	53.4
Chromium	mg/L	0.00190 J
Cobalt	mg/L	0.000630 U

See Notes on Page 3.

Table 4
Detention Basin Storm Water Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample ID: Date Collected:	Units	Storm Water Detention Basin DETENTION_BASIN_GW_120220 12/02/20
Inorganics (cont'd)		
Copper	mg/L	0.00230 J
Cyanide	mg/L	0.0530 F1
Iron	mg/L	2.30
Lead	mg/L	0.00300 U
Magnesium	mg/L	9.00
Manganese	mg/L	0.160
Mercury	mg/L	0.000120 U
Nickel	mg/L	0.00150 J
Potassium	mg/L	2.20
Selenium	mg/L	0.00870 U
Silver	mg/L	0.00170 U
Sodium	mg/L	377
Thallium	mg/L	0.0100 U
Vanadium	mg/L	0.00230 J
Zinc	mg/L	0.0330

Notes:
1. U = The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
2. J = Estimated Concentration. Presented concentration is less than the method detection limit but greater than the instrument detection limit.
3. *+ = LCS and/or LCSD is outside acceptable limits.
4. ^ = ICV, CCV, ICB, CCB, ISA, ISB, CRI, CRA, DLCK, or MRL standard: Instrument related QC is outside acceptance limit.
5. F1 = MS and/or MSD recovery exceeds control limits.

Table 5
Detention Basin Sediment Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample ID: Date Collected:	Units	Storm Water Detention Basin DETENTION_BASIN_SO_120220 12/02/20
Volatile Organics		
1,1,1-Trichloroethane	mg/kg	0.00070 Uvs
1,1,2,2-Tetrachloroethane	mg/kg	0.0016 Uvs
1,1,2-trichloro-1,2,2-trifluoroethane	mg/kg	0.0022 Uvs
1,1,2-Trichloroethane	mg/kg	0.0013 Uvs
1,1-Dichloroethane	mg/kg	0.0012 Uvs
1,1-Dichloroethene	mg/kg	0.0012 Uvs
1,2,4-Trichlorobenzene	mg/kg	0.00059 Uvs
1,2-Dibromo-3-chloropropane	mg/kg	0.0048 Uvs
1,2-Dibromoethane	mg/kg	0.0012 Uvs
1,2-Dichlorobenzene	mg/kg	0.00076 Uvs
1,2-Dichloroethane	mg/kg	0.00049 Uvs
1,2-Dichloropropane	mg/kg	0.0048 Uvs
1,3-Dichlorobenzene	mg/kg	0.00050 Uvs
1,4-Dichlorobenzene	mg/kg	0.0014 Uvs
2-Butanone	mg/kg	0.015 Jvs
2-Hexanone	mg/kg	0.0048 Uvs
4-Methyl-2-pentanone	mg/kg	0.0032 Uvs
Acetone	mg/kg	0.062 vs
Benzene	mg/kg	0.00048 Uvs
Bromodichloromethane	mg/kg	0.0013 Uvs
Bromoform	mg/kg	0.0048 Uvs
Bromomethane	mg/kg	0.00087 Uvs
Carbon Disulfide	mg/kg	0.0048 Uvs
Carbon Tetrachloride	mg/kg	0.00094 Uvs
Chlorobenzene	mg/kg	0.0013 Uvs
Chloroethane	mg/kg	0.0022 Uvs
Chloroform	mg/kg	0.00060 Uvs
Chloromethane	mg/kg	0.00059 Uvs
cis-1,2-Dichloroethene	mg/kg	0.0012 Uvs
cis-1,3-Dichloropropene	mg/kg	0.0014 Uvs
Cyclohexane	mg/kg	0.0014 Uvs
Dibromochloromethane	mg/kg	0.0012 Uvs
Dichlorodifluoromethane	mg/kg	0.00080 Uvs
Ethylbenzene	mg/kg	0.00067 Uvs
Isopropylbenzene	mg/kg	0.0015 Uvs
Methyl acetate	mg/kg	0.0059 Uvs
Methyl tert-butyl ether	mg/kg	0.00095 Uvs
Methylcyclohexane	mg/kg	0.0015 Uvs
Methylene Chloride	mg/kg	0.0045 Uvs
Styrene	mg/kg	0.00048 Uvs
Tetrachloroethene	mg/kg	0.0013 Uvs
Toluene	mg/kg	0.00073 Uvs
trans-1,2-Dichloroethene	mg/kg	0.0010 Uvs
trans-1,3-Dichloropropene	mg/kg	0.0043 Uvs
Trichloroethene	mg/kg	0.0021 Uvs
Trichlorofluoromethane	mg/kg	0.00092 Uvs
Vinyl Chloride	mg/kg	0.0012 Uvs
Xylenes (total)	mg/kg	0.0016 Uvs
Semivolatile Organics		
1,1'-Biphenyl	mg/kg	0.96 U
2,2'-Oxybis(1-Chloropropane)	mg/kg	1.3 U
2,4,5-Trichlorophenol	mg/kg	1.8 U
2,4,6-Trichlorophenol	mg/kg	1.3 U
2,4-Dichlorophenol	mg/kg	0.69 U
2,4-Dimethylphenol	mg/kg	1.6 U
2,4-Dinitrophenol	mg/kg	30 U
2,4-Dinitrotoluene	mg/kg	1.3 U
2,6-Dinitrotoluene	mg/kg	0.77 U
2-Chloronaphthalene	mg/kg	1.1 U
2-Chlorophenol	mg/kg	1.2 U
2-Methylnaphthalene	mg/kg	1.3 U
2-Methylphenol	mg/kg	0.77 U

See Notes on Page 3.

Table 5
Detention Basin Sediment Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample ID: Date Collected:	Units	Storm Water Detention Basin DETENTION_BASIN_SO_120220 12/02/20
Semivolatile Organics (cont'd)		
2-Nitroaniline	mg/kg	0.96 U
2-Nitrophenol	mg/kg	1.8 U
3,3'-Dichlorobenzidine	mg/kg	7.7 U
3-Nitroaniline	mg/kg	1.8 U
4,6-Dinitro-2-methylphenol	mg/kg	6.5 U
4-Bromophenyl-phenylether	mg/kg	0.92 U
4-Chloro-3-Methylphenol	mg/kg	1.6 U
4-Chloroaniline	mg/kg	1.6 U
4-Chlorophenyl-phenylether	mg/kg	0.81 U
4-Methylphenol	mg/kg	0.77 U
4-Nitroaniline	mg/kg	3.4 U
4-Nitrophenol	mg/kg	4.6 U
Acenaphthene	mg/kg	0.96 U
Acenaphthylene	mg/kg	0.85 U
Acetophenone	mg/kg	0.89 U
Anthracene	mg/kg	1.6 U
Atrazine	mg/kg	2.3 U
Benzaldehyde	mg/kg	5.2 U
Benzo(a)anthracene	mg/kg	0.65 U
Benzo(a)pyrene	mg/kg	0.96 U
Benzo(b)fluoranthene	mg/kg	1.0 U
Benzo(g,h,i)perylene	mg/kg	0.69 U
Benzo(k)fluoranthene	mg/kg	0.85 U
bis(2-Chloroethoxy)methane	mg/kg	1.4 U
bis(2-Chloroethyl)ether	mg/kg	0.85 U
bis(2-Ethylhexyl)phthalate	mg/kg	2.2 U
Butylbenzylphthalate	mg/kg	1.1 U
Caprolactam	mg/kg	2.0 U
Carbazole	mg/kg	0.77 U
Chrysene	mg/kg	1.5 U
Dibenzo(a,h)anthracene	mg/kg	1.2 U
Dibenzofuran	mg/kg	0.77 U
Diethylphthalate	mg/kg	0.85 U
Dimethylphthalate	mg/kg	0.77 U
Di-n-Butylphthalate	mg/kg	1.1 U
Di-n-Octylphthalate	mg/kg	0.77 U
Fluoranthene	mg/kg	0.93 J
Fluorene	mg/kg	0.77 U
Hexachlorobenzene	mg/kg	0.89 U
Hexachlorobutadiene	mg/kg	0.96 U
Hexachlorocyclopentadiene	mg/kg	0.89 U
Hexachloroethane	mg/kg	0.85 U
Indeno(1,2,3-cd)pyrene	mg/kg	0.81 U
Isophorone	mg/kg	1.4 U
Naphthalene	mg/kg	0.85 U
Nitrobenzene	mg/kg	0.73 U
N-Nitroso-di-n-propylamine	mg/kg	1.1 U
N-Nitrosodiphenylamine	mg/kg	5.3 U
Pentachlorophenol	mg/kg	6.5 U
Phenanthrene	mg/kg	0.96 U
Phenol	mg/kg	1.0 U
Pyrene	mg/kg	0.77 U
Total SVOCs	mg/kg	0.93 J
Total TPAHs	mg/kg	0.93 J
Inorganics		
Aluminum	mg/kg	14,800
Antimony	mg/kg	0.760 U
Arsenic	mg/kg	8.20
Barium	mg/kg	108 ^6+
Beryllium	mg/kg	0.930
Cadmium	mg/kg	0.280 J
Calcium	mg/kg	58,500 B

See Notes on Page 3.

Table 5
Detention Basin Sediment Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample ID: Date Collected:	Units	Storm Water Detention Basin DETENTION_BASIN_SO_120220 12/02/20
Inorganics (cont'd)		
Chromium	mg/kg	23.9
Cobalt	mg/kg	10.7
Copper	mg/kg	24.1
Cyanide	mg/kg	2.10
Iron	mg/kg	22,800
Lead	mg/kg	31.0
Magnesium	mg/kg	19,100
Manganese	mg/kg	635
Mercury	mg/kg	0.0430
Nickel	mg/kg	23.6
Potassium	mg/kg	4,330
Selenium	mg/kg	1.90 J
Silver	mg/kg	0.390 J
Sodium	mg/kg	2,870 B
Thallium	mg/kg	0.570 U
Vanadium	mg/kg	35.6
Zinc	mg/kg	201

Notes:

1. U = The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
2. J = Estimated Concentration. Presented concentration is less than the method detection limit but greater than the instrument detection limit.
3. B = Compound was found in blank and sample.
4. vs = Reported analyte concentration are below 200 ug/kg and may be biased low due to not being collected according to 5035A-L low-level specifications.
5. ^6+ = Interference check standard (ICSA and/or ICSAB) is outside acceptance limits, high biased.

Table 6
Groundwater Treatability Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: / Date Collected:	Units	MW-16S 12/03/20	MW-38 12/03/20	PDI-MW-5 12/03/20	PDI-MW-10 12/03/20	PZ-416 12/04/20
Volatile Organics						
1,1,1-Trichloroethane	mg/L	0.00024 U	0.00024 U	0.00048 U	0.00024 U	0.00048 U
1,1,2,2-Tetrachloroethane	mg/L	0.00037 U	0.00037 U	0.00073 U	0.00037 U	0.00073 U
1,1,2-Trichloroethane	mg/L	0.00015 U	0.00015 U	0.00030 U	0.00015 U	0.00030 U
1,1-Dichloroethane	mg/L	0.00026 U	0.00026 U	0.00053 U	0.00026 U	0.00053 U
1,1-Dichloroethene	mg/L	0.00012 U	0.00012 U	0.00023 U	0.00012 U	0.00023 U
1,2-Dichlorobenzene	mg/L	0.00019 U	0.00019 U	0.00037 U	0.00019 U	0.00037 U
1,2-Dichloroethane	mg/L	0.00084 U	0.00084 U	0.0017 U	0.00084 U	0.0017 U
1,2-Dichloroethene (total)	mg/L	0.00044 U	0.00044 U	0.00087 U	0.00044 U	0.00087 U
1,2-Dichloropropane	mg/L	0.00035 U	0.00035 U	0.00071 U	0.00035 U	0.00071 U
1,3-Dichlorobenzene	mg/L	0.00013 U	0.00013 U	0.00026 U	0.00013 U	0.00026 U
1,4-Dichlorobenzene	mg/L	0.00018 U	0.00018 U	0.00035 U	0.00018 U	0.00035 U
2-Chloroethylvinylether	mg/L	0.00091 U	0.00091 U	0.0018 U	0.00091 U	0.0018 U
Acrolein	mg/L	0.0011 U	0.0011 U	0.0022 U	0.0011 U	0.0022 U
Acrylonitrile	mg/L	0.00077 U	0.00077 U	0.0015 U	0.00077 U	0.0015 U
Benzene	mg/L	0.0026	0.020	0.24	0.00068 J	0.30
Bromodichloromethane	mg/L	0.00034 U	0.00034 U	0.00069 U	0.00034 U	0.00069 U
Bromoform	mg/L	0.00054 U*	0.00054 U*	0.0011 U*	0.00054 U*	0.0011 U*
Bromomethane	mg/L	0.00045 U	0.00045 U	0.00090 U	0.00045 U	0.00090 U
Carbon Tetrachloride	mg/L	0.00021 U*	0.00021 U*	0.00042 U*	0.00021 U*	0.00042 U*
Chlorobenzene	mg/L	0.00038 U	0.00038 U	0.00075 U	0.00038 U	0.00075 U
Chloroethane	mg/L	0.00032 U	0.00032 U	0.00064 U	0.00032 U	0.00064 U
Chloroform	mg/L	0.00033 U	0.00033 U	0.00065 U	0.00033 U	0.00065 U
Chloromethane	mg/L	0.00043 U	0.00043 U	0.00087 U	0.00043 U	0.00087 U
cis-1,3-Dichloropropene	mg/L	0.00046 U	0.00046 U	0.00091 U	0.00046 U	0.00091 U
Dibromochloromethane	mg/L	0.00013 U	0.00013 U	0.00026 U	0.00013 U	0.00026 U
Ethylbenzene	mg/L	0.0047	0.020	0.91	0.0063	0.66
Methylene Chloride	mg/L	0.00032 U	0.00032 U	0.00078 J	0.00032 U	0.00065 J
Tetrachloroethene	mg/L	0.00025 U	0.00025 U	0.00050 U	0.00025 U	0.00050 U
Toluene	mg/L	0.00038 U	0.00083 J	0.037	0.00038 U	0.021
trans-1,2-Dichloroethene	mg/L	0.00024 U	0.00024 U	0.00047 U	0.00024 U	0.00047 U
trans-1,3-Dichloropropene	mg/L	0.00022 U	0.00022 U	0.00043 U	0.00022 U	0.00043 U
Trichloroethene	mg/L	0.00031 U	0.00031 U	0.00063 U	0.00031 U	0.00063 U
Vinyl Chloride	mg/L	0.00034 U	0.00034 U	0.00068 U	0.00034 U	0.00068 U
Pesticides/PCBs						
4,4'-DDD	mg/L	0.000004 U	0.000004 U	0.000004 U	0.000004 U	0.000004 U
4,4'-DDE	mg/L	0.000002 U	0.000002 U	0.000002 U	0.000002 U	0.000002 U
4,4'-DDT	mg/L	0.000004 U	0.000004 U	0.000004 U	0.000004 U	0.000004 U
Aldrin	mg/L	0.000003 U	0.000003 U	0.000003 U	0.000003 U	0.000003 U
Alpha-BHC	mg/L	0.000013 U	0.000013 U	0.000013 U	0.000013 U	0.000013 U
Aroclor-1016	mg/L	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U
Aroclor-1221	mg/L	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U
Aroclor-1232	mg/L	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U
Aroclor-1242	mg/L	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U
Aroclor-1248	mg/L	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U
Aroclor-1254	mg/L	0.000069 U	0.000069 U	0.000069 U	0.000069 U	0.000069 U
Aroclor-1260	mg/L	0.000069 U	0.000069 U	0.000069 U	0.000069 U	0.000069 U
Aroclor-1262	mg/L	0.000069 U	0.000069 U	0.000069 U	0.000069 U	0.000069 U
Aroclor-1268	mg/L	0.000069 U	0.000069 U	0.000069 U	0.000069 U	0.000069 U
Beta-BHC	mg/L	0.000013 U	0.000013 U	0.000013 U	0.000013 U	0.000013 U
Delta-BHC	mg/L	0.000002 U	0.000002 U	0.000002 U	0.000002 U	0.000002 U
Dieldrin	mg/L	0.000008 U	0.000008 U	0.000008 U	0.000008 U	0.000008 U
Endosulfan I	mg/L	0.000023 U	0.000023 U	0.000023 U	0.000023 U	0.000023 U
Endosulfan II	mg/L	0.000006 U	0.000006 U	0.000006 U	0.000006 U	0.000006 U
Endosulfan Sulfate	mg/L	0.000006 U	0.000006 U	0.000006 U	0.000006 U	0.000006 U
Endrin	mg/L	0.000025 U	0.000025 U	0.000025 U	0.000025 U	0.000025 U
Endrin Aldehyde	mg/L	0.000003 U	0.000003 U	0.000003 U	0.000003 U	0.000003 U
Gamma-BHC (Lindane)	mg/L	0.000003 U	0.000003 U	0.000003 U	0.000003 U	0.000003 U
Heptachlor	mg/L	0.000008 U	0.000008 U	0.000008 U	0.000008 U	0.000008 U
Heptachlor Epoxide	mg/L	0.000004 U	0.000004 U	0.000004 U	0.000004 U	0.000004 U
Technical Chlordane	mg/L	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U
Toxaphene	mg/L	0.000035 U	0.000035 U	0.000035 U	0.000035 U	0.000035 U
Semivolatile Organics						
1,2,4-Trichlorobenzene	mg/L	0.0013 U	0.0025 U	0.025 U	0.0013 U	0.0063 U
1,2-Dichlorobenzene	mg/L	0.00060 U	0.0012 U	0.012 U	0.00060 U	0.0030 U
1,2-Diphenylhydrazine	mg/L	0.00037 U	0.00074 U	0.0074 U	0.00037 U	0.0019 U

See Notes on Page 3.

Table 6
Groundwater Treatability Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Date Collected:	Units	MW-16S 12/03/20	MW-38 12/03/20	PDI-MW-5 12/03/20	PDI-MW-10 12/03/20	PZ-416 12/04/20
Semivolatile Organics (cont'd)						
1,3-Dichlorobenzene	mg/L	0.0020 U	0.0041 U	0.041 U	0.0020 U	0.010 U
1,4-Dichlorobenzene	mg/L	0.00052 U	0.0010 U	0.010 U	0.00052 U	0.0026 U
2,2'-Oxybis(1-Chloropropane)	mg/L	0.00063 U	0.0013 U	0.013 U	0.00063 U	0.0031 U
2,4,6-Trichlorophenol	mg/L	0.00070 U	0.0014 U	0.014 U	0.00070 U	0.0035 U
2,4-Dichlorophenol	mg/L	0.0012 U	0.0025 U	0.025 U	0.0012 U	0.0062 U
2,4-Dimethylphenol	mg/L	0.00066 U	0.0013 U	0.013 U	0.00066 U	0.0033 U
2,4-Dinitrophenol	mg/L	0.0020 U	0.0039 U	0.039 U	0.0020 U	0.0098 U
2,4-Dinitrotoluene	mg/L	0.0010 U	0.0021 U	0.021 U	0.0010 U	0.0052 U
2,6-Dinitrotoluene	mg/L	0.0014 U	0.0028 U	0.028 U	0.0014 U	0.0071 U
2-Chloronaphthalene	mg/L	0.0012 U	0.0024 U	0.024 U	0.0012 U	0.0059 U
2-Chlorophenol	mg/L	0.00038 U	0.00075 U	0.0075 U	0.00038 U	0.0019 U
2-Nitrophenol	mg/L	0.0019 U	0.0038 U	0.038 U	0.0019 U	0.0096 U
3,3'-Dichlorobenzidine	mg/L	0.0033 U	0.0066 U	0.066 U	0.0033 U	0.017 U
4,6-Dinitro-2-methylphenol	mg/L	0.0034 U	0.0069 U	0.069 U	0.0034 U	0.017 U
4-Bromophenyl-phenylether	mg/L	0.00075 U	0.0015 U	0.015 U	0.00075 U	0.0037 U
4-Chloro-3-Methylphenol	mg/L	0.0012 U	0.0025 U	0.025 U	0.0012 U	0.0062 U
4-Chlorophenyl-phenylether	mg/L	0.0013 U	0.0026 U	0.026 U	0.0013 U	0.0064 U
4-Nitrophenol	mg/L	0.0017 U	0.0034 U	0.034 U	0.0017 U	0.0086 U
Acenaphthene	mg/L	0.0011 U	0.057	0.11 J	0.020	0.085
Acenaphthylene	mg/L	0.00082 U	0.0016 U	0.016 U	0.00082 U	0.0041 U
Anthracene	mg/L	0.0013 U	0.0033 J	0.026 U	0.0013 U	0.0065 U
Benzidine	mg/L	0.00070 U*1	0.0014 U*1	0.014 U*1	0.00070 U*1	0.0035 U*1
Benzo(a)anthracene	mg/L	0.00059 U	0.0012 U	0.012 U	0.00059 U	0.0030 U
Benzo(a)pyrene	mg/L	0.00068 U	0.0014 U	0.014 U	0.00068 U	0.0034 U
Benzo(b)fluoranthene	mg/L	0.0014 U	0.0029 U	0.029 U	0.0014 U	0.0072 U
Benzo(g,h,i)perylene	mg/L	0.0013 U	0.0026 U	0.026 U	0.0013 U	0.0066 U
Benzo(k)fluoranthene	mg/L	0.00067 U	0.0013 U	0.013 U	0.00067 U	0.0034 U
bis(2-Chloroethoxy)methane	mg/L	0.00064 U	0.0013 U	0.013 U	0.00064 U	0.0032 U
bis(2-Chloroethyl)ether	mg/L	0.00069 U	0.0014 U	0.014 U	0.00069 U	0.0034 U
bis(2-Ethylhexyl)phthalate	mg/L	0.0010 U	0.0020 U	0.020 U	0.0010 U	0.0051 U
Butylbenzylphthalate	mg/L	0.00085 U	0.0017 U	0.017 U	0.00085 U	0.0043 U
Chrysene	mg/L	0.00091 U	0.0018 U	0.018 U	0.00091 U	0.0045 U
Dibenzo(a,h)anthracene	mg/L	0.00074 U	0.0015 U	0.015 U	0.00074 U	0.0037 U
Diethylphthalate	mg/L	0.00098 U	0.0020 U	0.020 U	0.00098 U	0.0049 U
Dimethylphthalate	mg/L	0.0016 U	0.0033 U	0.033 U	0.0016 U	0.0082 U
Di-n-Butylphthalate	mg/L	0.00075 U	0.0015 U	0.015 U	0.00075 U	0.0038 U
Di-n-Octylphthalate	mg/L	0.0014 U	0.0029 U	0.029 U	0.0014 U	0.0072 U
Fluoranthene	mg/L	0.00084 U	0.0017 U	0.017 U	0.00084 U	0.0042 U
Fluorene	mg/L	0.00091 U	0.020	0.028 J	0.0036 J	0.022 J
Hexachlorobenzene	mg/L	0.00091 U	0.0018 U	0.018 U	0.00091 U	0.0045 U
Hexachlorobutadiene	mg/L	0.00044 U	0.00088 U	0.0088 U	0.00044 U	0.0022 U
Hexachlorocyclopentadiene	mg/L	0.0017 U	0.0034 U	0.034 U	0.0017 U	0.0086 U
Hexachloroethane	mg/L	0.0012 U	0.0024 U	0.024 U	0.0012 U	0.0060 U
Indeno(1,2,3-cd)pyrene	mg/L	0.0013 U	0.0026 U	0.026 U	0.0013 U	0.0065 U
Isophorone	mg/L	0.0019 U	0.0038 U	0.038 U	0.0019 U	0.0095 U
Naphthalene	mg/L	0.0011 U	0.22	2.3	0.0069	0.68
Nitrobenzene	mg/L	0.0016 U	0.0031 U	0.031 U	0.0016 U	0.0078 U
N-Nitrosodimethylamine	mg/L	0.00064 U	0.0013 U	0.013 U	0.00064 U	0.0032 U
N-Nitroso-di-n-propylamine	mg/L	0.00098 U	0.0020 U	0.020 U	0.00098 U	0.0049 U
N-Nitrosodiphenylamine	mg/L	0.00089 U	0.0018 U	0.018 U	0.00089 U	0.0045 U
Pentachlorophenol	mg/L	0.0030 U	0.0061 U	0.061 U	0.0030 U	0.015 U
Phenanthrene	mg/L	0.0015 U	0.019 J	0.030 U	0.0015 U	0.017 J
Phenol	mg/L	0.0012 U	0.0025 U	0.025 U	0.0012 U	0.0062 U
Pyrene	mg/L	0.0016 U	0.0033 U	0.033 U	0.0016 U	0.0082 U
Total SVOCs	mg/L	0.0034 U	0.32 J	2.4 J	0.031 J	0.80 J
Total TPAHs	mg/L	0.0016 U	0.32 J	2.4 J	0.031 J	0.80 J
Inorganics						
Aluminum	mg/L	0.0207 U	0.0224 J	0.0453 J	0.0207 U	1.20
Antimony	mg/L	0.00590 U	0.00590 U	0.00740 J	0.00640 J	0.00590 U
Arsenic	mg/L	0.00720 J	0.00680 J	0.00830 J	0.00360 U	0.00450 J
Barium	mg/L	0.0183 J	0.222	0.305	0.0722 J	0.310
Beryllium	mg/L	0.000300 U	0.000300 U	0.000300 U	0.000300 U	0.000300 U
Cadmium	mg/L	0.000310 U	0.000310 U	0.000310 U	0.000310 U	0.000310 U
Calcium	mg/L	73.4	300	267	195	184
Chromium	mg/L	0.00570 U	0.00570 U	0.00570 U	0.00570 U	0.00570 U

See Notes on Page 3.

Table 6
Groundwater Treatability Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Date Collected:	Units	MW-16S 12/03/20	MW-38 12/03/20	PDI-MW-5 12/03/20	PDI-MW-10 12/03/20	PZ-416 12/04/20
Inorganics (cont'd)						
Cobalt	mg/L	0.00150 U	0.00150 U	0.00150 U	0.00150 U	0.00160 J
Copper	mg/L	0.00550 U	0.00550 U	0.00550 U	0.00550 U	0.00700 J
Iron	mg/L	0.206	11.4	12.2	4.99	2.60
Lead	mg/L	0.00310 U	0.00340 J	0.00510	0.00350 J	0.0110
Magnesium	mg/L	17.0	26.4	37.3	17.9	34.3
Manganese	mg/L	0.102	0.557	1.69	1.36	0.330
Nickel	mg/L	0.00210 U	0.00210 U	0.00210 U	0.00210 U	0.00300 J
Potassium	mg/L	0.912 J	2.14 J	8.00	3.58 J	5.60
Selenium	mg/L	0.00490 U	0.00490 U	0.00590 J	0.00490 U	0.00490 U
Silver	mg/L	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U
Sodium	mg/L	22.4	200	495	53.1	182
Thallium	mg/L	0.00280 U	0.00460 J	0.00690 J	0.00540 J	0.00320 J
Vanadium	mg/L	0.00390 U	0.00390 U	0.00390 U	0.00390 U	0.00470 J
Zinc	mg/L	0.00260 U	0.00410 J	0.00340 J	0.00440 J	0.0330
Inorganics-Filtered						
Aluminum	mg/L	0.0207 U	0.0207 U	0.0207 U	0.0207 U	0.0210 U
Antimony	mg/L	0.00590 U	0.00590 U	0.00720 J	0.00630 J	0.00590 U
Arsenic	mg/L	0.00560 J	0.00360 U	0.00360 U	0.00360 U	0.00360 U
Barium	mg/L	0.0190 J	0.173 J	0.240	0.0581 J	0.100 J
Beryllium	mg/L	0.000300 U	0.000300 U	0.000300 U	0.000300 U	0.000300 U
Cadmium	mg/L	0.000310 U	0.000310 U	0.000310 U	0.000310 U	0.000310 U
Calcium	mg/L	73.4	266	241	167	77.2
Chromium	mg/L	0.00570 U	0.00570 U	0.00570 U	0.00570 U	0.00570 U
Cobalt	mg/L	0.00150 U	0.00150 U	0.00150 U	0.00150 U	0.00150 U
Copper	mg/L	0.00550 U	0.00550 U	0.00550 U	0.00550 U	0.00550 U
Iron	mg/L	0.0768 U	0.101 J	0.238	0.0768 U	0.0770 U
Lead	mg/L	0.00310 U	0.00310 U	0.00310 U	0.00310 U	0.00310 U
Magnesium	mg/L	16.7	23.8	33.1	16.7	15.0
Manganese	mg/L	0.0743	0.522	1.53	1.16	0.140
Nickel	mg/L	0.00210 U	0.00210 U	0.00210 U	0.00210 U	0.00210 U
Potassium	mg/L	0.875 J	2.13 J	6.93	3.10 J	2.10 J
Selenium	mg/L	0.00490 U	0.00490 U	0.00530 J	0.00490 U	0.00490 U
Silver	mg/L	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U
Sodium	mg/L	26.6	186	433	47.0	75.1
Thallium	mg/L	0.00280 U	0.00440 J	0.00600 J	0.00540 J	0.00320 J
Vanadium	mg/L	0.00390 U	0.00390 U	0.00390 U	0.00390 U	0.00390 U
Zinc	mg/L	0.00260 U	0.00290 J	0.00450 J	0.00440 J	0.00280 J
Miscellaneous						
Biochemical Oxygen Demand	mg/L	1.1	6.5	46.2	1.6	7.6
Chemical Oxygen Demand	mg/L	4.9 J	32.2	96	14.1	47.1
Corrosivity	SU	8.2 HF	7.6 HF	7.6 HF	7.5 HF	7.7 HF
Cyanide	mg/L	0.012	0.29	0.66	0.031 F1	0.36
Hardness	mg/L	240	752	760	540	556
Mercury	mg/L	0.000091 U	0.000091 U	0.000091 U	0.000091 U	0.000091 U
Oil & Grease	mg/L	5 U	5 U	5 U	5 U	5 U
Temperature	°C	19.9 HF	19.8 HF	20 HF	20.1 HF	20.4 HF
Total Dissolved Solids	mg/L	438	1,590	2,560	760	1,400
Total Kjeldahl Nitrogen	mg/L	0.2	1.1	2.1	1	1.6
Total Suspended Solids	mg/L	2.5 U	33	31.2	8.6	47.3
Miscellaneous-Filtered						
Cyanide	mg/L	0.014	0.27	0.65	0.033	0.36
Mercury	mg/L	0.000091 U	0.000091 U	0.000091 U	0.000091 U	0.000091 U
TOC						
Total Toxic Organics	mg/L	0.0073 J	0.36	3.6	0.037	1.8

Notes:
1. U = The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
2. J = Estimated Concentration. Presented concentration is less than the method detection limit but greater than the instrument detection limit.
3. HF = Field parameter with a holding time of 15 minutes. Test performed beyond holding time.
4. U* = Laboratory Control Sample (LCS) or Laboratory Control Sample Duplicate (LCSD) is outside acceptance limits.
5. U *1 = LCS / LCSD Relative Percent Difference (RPD) exceeds control limits.
6. F1 = MS and/or MSD recovery exceeds control limits.

Table 7
PAH Subsurface Soil Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID:		PDI-CRB-1	PDI-CRB-2	PDI-CRB-3	PDI-CRB-4 (SO)	PDI-CRB-5 (SO)	PDI-CRB-6	PDI-CRB-7 (SO)	PDI-CRB-8	PDI-CRB-9	PDI-CRB-10/11(SO)
Sample Depth(Feet):		6 - 8	4 - 6	8 - 10	0 - 2	0 - 1.75	2 - 4	0.5 - 2.5	0 - 1.5	1 - 3	10 - 12
Date Collected:	Units	11/05/20	11/05/20	11/05/20	11/05/20	11/05/20	11/06/20	11/06/20	11/06/20	11/09/20	11/10/20
Semivolatile Organics											
1,1'-Biphenyl	mg/kg	0.054 J	0.029 U [0.029 U]	0.028 U	0.20 J [0.39]	0.28 U	0.033 U	0.14 U	0.14 U	0.032 U [0.032 U]	0.027 U
2,2'-Oxybis(1-Chloropropane)	mg/kg	0.037 U	0.040 U [0.039 U]	0.038 U	0.18 U [0.038 U]	0.39 U	0.045 UJ	0.19 UJ	0.19 UJ	0.044 U [0.044 U]	0.037 UJ
2,4,5-Trichlorophenol	mg/kg	0.050 U	0.054 U [0.053 U]	0.051 U	0.25 U [0.052 U]	0.52 U	0.060 U	0.25 U	0.25 U	0.059 U [0.059 U]	0.050 U
2,4,6-Trichlorophenol	mg/kg	0.037 U	0.040 U [0.039 U]	0.038 U	0.18 U [0.038 U]	0.39 U	0.045 U	0.19 U	0.19 U	0.044 U [0.044 U]	0.037 U
2,4-Dichlorophenol	mg/kg	0.020 U	0.021 U [0.021 U]	0.020 U	0.097 U [0.020 U]	0.20 U	0.024 U	0.099 U	0.10 U	0.023 U [0.023 U]	0.019 U
2,4-Dimethylphenol	mg/kg	0.044 U	0.048 U [0.047 U]	0.046 U	0.22 U [0.046 U]	0.47 U	0.054 U	0.23 U	0.23 U	0.053 U [0.053 U]	0.044 U
2,4-Dinitrophenol	mg/kg	0.85 U	0.92 U [0.91 U]	0.87 U	4.2 U [0.88 U]	8.9 U	1.0 U	4.3 U	4.3 U	1.0 U [1.0 U]	0.84 U
2,4-Dinitrotoluene	mg/kg	0.038 U	0.041 U [0.040 U]	0.039 U	0.19 U [0.039 U]	0.40 U	0.046 U	0.19 U	0.19 U	0.045 U [0.045 U]	0.038 U
2,6-Dinitrotoluene	mg/kg	0.022 U	0.023 U [0.023 U]	0.022 U	0.11 U [0.022 U]	0.23 U	0.026 U	0.11 U	0.11 U	0.026 U [0.026 U]	0.022 U
2-Chloronaphthalene	mg/kg	0.030 U	0.033 U [0.032 U]	0.031 U	0.15 U [0.031 U]	0.32 U	0.037 U	0.15 U	0.16 U	0.036 U [0.036 U]	0.030 U
2-Chlorophenol	mg/kg	0.034 U	0.036 U [0.036 U]	0.035 U	0.17 U [0.035 U]	0.35 U	0.041 U	0.17 U	0.17 U	0.040 U [0.040 U]	0.033 U
2-Methylnaphthalene	mg/kg	0.055 J	0.040 U [0.039 U]	0.038 U	0.18 U [0.087 J]	0.39 U	0.045 U	0.19 U	0.19 U	0.044 U [0.044 U]	0.037 U
2-Methylphenol	mg/kg	0.022 U	0.023 U [0.023 U]	0.022 U	0.11 U [0.022 U]	0.23 U	0.026 U	0.11 U	0.11 U	0.026 U [0.026 U]	0.022 U
2-Nitroaniline	mg/kg	0.027 U	0.029 U [0.029 U]	0.028 U	0.13 U [0.028 U]	0.28 U	0.033 U	0.14 U	0.14 U	0.032 U [0.032 U]	0.027 U
2-Nitrophenol	mg/kg	0.052 U	0.056 U [0.055 U]	0.054 U	0.26 U [0.054 U]	0.55 U	0.063 U	0.26 U	0.27 U	0.062 U [0.062 U]	0.052 U
3,3'-Dichlorobenzidine	mg/kg	0.22 U	0.23 U [0.23 U]	0.22 U	1.1 U [0.22 U]	2.3 U	0.26 U	1.1 U	1.1 U	0.26 U [0.26 U]	0.22 U
3-Nitroaniline	mg/kg	0.051 U	0.055 U [0.054 U]	0.052 U	0.25 U [0.053 U]	0.53 U	0.062 U	0.26 U	0.26 U	0.060 U [0.060 U]	0.051 U
4,6-Dinitro-2-methylphenol	mg/kg	0.18 U	0.20 U [0.20 U]	0.19 U	0.91 U [0.19 U]	1.9 U	0.22 U	0.93 U	0.94 U	0.22 U [0.22 U]	0.18 U
4-Bromophenyl-phenylether	mg/kg	0.026 U	0.028 U [0.028 U]	0.027 U	0.13 U [0.027 U]	0.27 U	0.031 U	0.13 U	0.13 U	0.031 U [0.031 U]	0.026 U
4-Chloro-3-Methylphenol	mg/kg	0.046 U	0.049 U [0.049 U]	0.047 U	0.23 U [0.047 U]	0.48 U	0.055 U	0.23 U	0.23 U	0.054 U [0.054 U]	0.045 U
4-Chloroaniline	mg/kg	0.046 U	0.049 U [0.049 U]	0.047 U	0.23 U [0.047 U]	0.48 U	0.055 U	0.23 U	0.23 U	0.054 U [0.054 U]	0.045 U
4-Chlorophenyl-phenylether	mg/kg	0.023 U	0.025 U [0.024 U]	0.023 U	0.11 U [0.024 U]	0.24 U	0.027 U	0.12 U	0.12 U	0.027 U [0.027 U]	0.023 U
4-Methylphenol	mg/kg	0.022 U	0.023 U [0.023 U]	0.022 U	0.11 U [0.022 U]	0.23 U	0.026 U	0.11 U	0.11 U	0.026 U [0.026 U]	0.022 U
4-Nitroaniline	mg/kg	0.096 U	0.10 U [0.10 U]	0.099 U	0.48 U [0.10 U]	1.0 U	0.12 U	0.49 U	0.49 U	0.11 U [0.11 U]	0.096 U
4-Nitrophenol	mg/kg	0.13 U	0.14 U [0.14 U]	0.13 U	0.64 U [0.13 U]	1.4 U	0.16 U	0.65 U	0.66 U	0.15 U [0.15 U]	0.13 U
Acenaphthene	mg/kg	0.045 J	0.029 U [0.029 U]	0.028 U	1.8 [3.2]	0.28 U	0.033 U	0.14 U	0.14 U	0.045 J [0.052 J]	0.027 U
Acenaphthylene	mg/kg	0.062 J	0.026 U [0.025 U]	0.025 U	0.93 [1.1]	0.25 U	0.029 U	0.12 U	0.12 U	0.028 U [0.028 U]	0.024 U
Acetophenone	mg/kg	0.025 U	0.027 U [0.027 U]	0.026 U	0.12 U [0.066 J]	0.26 U	0.030 U	0.13 U	0.13 U	0.030 U [0.030 U]	0.025 U
Anthracene	mg/kg	0.26	0.049 U [0.049 U]	0.047 U	0.38 J [0.097 J]	0.48 U	0.055 U	0.23 U	0.23 U	0.054 U [0.054 U]	0.045 U
Atrazine	mg/kg	0.064 U	0.069 U [0.068 U]	0.066 U	0.32 U [0.066 U]	0.67 U	0.077 U	0.32 U	0.33 U	0.076 U [0.076 U]	0.064 U
Benzaldehyde	mg/kg	0.15 U	0.16 U [0.16 U]	0.15 U	0.72 U [0.15 U]	1.5 U	0.18 U	0.74 U	0.75 U	0.17 U [0.17 U]	0.15 UJ
Benzo(a)anthracene	mg/kg	1.1	0.020 U [0.020 U]	0.019 U	1.3 [0.35]	0.19 U	0.022 U	0.23 J	0.33 J	0.022 U [0.022 U]	0.018 U
Benzo(a)pyrene	mg/kg	0.20	0.029 U [0.029 U]	0.028 U	1.0 [0.30]	0.28 U	0.033 U	0.23 J	0.37 J	0.032 U [0.032 U]	0.027 U
Benzo(b)fluoranthene	mg/kg	0.19	0.032 U [0.031 U]	0.030 U	0.66 J [0.21]	0.31 U	0.035 U	0.37 J	0.37 J	0.035 U [0.035 U]	0.029 U
Benzo(g,h,i)perylene	mg/kg	0.020 U	0.021 U [0.021 U]	0.020 U	0.34 J [0.12 J]	0.20 U	0.024 U	0.13 J	0.21 J	0.023 U [0.023 U]	0.019 U
Benzo(k)fluoranthene	mg/kg	0.059 J	0.026 U [0.025 U]	0.025 U	0.30 J [0.086 J]	0.25 U	0.029 U	0.12 U	0.20 J	0.028 U [0.028 U]	0.024 U
bis(2-Chloroethoxy)methane	mg/kg	0.039 U	0.042 U [0.042 U]	0.040 U	0.19 U [0.040 U]	0.41 U	0.047 U	0.20 U	0.20 U	0.046 U [0.046 U]	0.039 U
bis(2-Chloroethyl)ether	mg/kg	0.024 U	0.026 U [0.025 U]	0.025 U	0.12 U [0.025 U]	0.25 U	0.029 U	0.12 U	0.12 U	0.028 U [0.028 U]	0.024 U
bis(2-Ethylhexyl)phthalate	mg/kg	0.063 U	0.068 U [0.067 U]	0.065 U	0.31 U [0.065 U]	0.66 U	0.076 U	0.32 U	0.32 U	0.074 U [0.075 U]	0.062 U
Butylbenzylphthalate	mg/kg	0.030 U	0.033 U [0.032 U]	0.39 J	0.15 U [0.031 U]	0.32 U	0.037 U	0.15 U	0.16 U	0.036 U [0.036 U]	0.030 U
Caprolactam	mg/kg	0.055 U	0.060 U [0.059 U]	0.057 U	0.27 U [0.057 U]	0.58 U	0.067 U	0.28 U	0.28 U	0.065 U [0.066 U]	0.055 U
Carbazole	mg/kg	0.022 U	0.023 U [0.023 U]	0.022 U	0.11 U [0.022 U]	0.23 U	0.026 U	0.11 U	0.11 U	0.026 U [0.026 U]	0.022 U
Chrysene	mg/kg	0.67	0.045 U [0.044 U]	0.042 U	1.0 [0.33]	0.43 U	0.050 U	0.23 J	0.34 J	0.049 U [0.049 U]	0.041 U

See Notes on Page 4.

Table 7
PAH Subsurface Soil Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample Depth(Feet): Date Collected:	Units	PDI-CRB-1 6 - 8 11/05/20	PDI-CRB-2 4 - 6 11/05/20	PDI-CRB-3 8 - 10 11/05/20	PDI-CRB-4 (SO) 0 - 2 11/05/20	PDI-CRB-5 (SO) 0 - 1.75 11/05/20	PDI-CRB-6 2 - 4 11/06/20	PDI-CRB-7 (SO) 0.5 - 2.5 11/06/20	PDI-CRB-8 0 - 1.5 11/06/20	PDI-CRB-9 1 - 3 11/09/20	PDI-CRB-10/11(SO) 10 - 12 11/10/20
Semivolatile Organics											
Dibenzo(a,h)anthracene	mg/kg	0.033 U	0.035 U [0.035 U]	0.033 U	0.16 U [0.036 J]	0.34 U	0.039 U	0.16 U	0.17 U	0.039 U [0.039 U]	0.032 U
Dibenzofuran	mg/kg	0.022 U	0.023 U [0.023 U]	0.022 U	0.11 U [0.033 J]	0.23 U	0.026 U	0.11 U	0.11 U	0.026 U [0.026 U]	0.022 U
Diethylphthalate	mg/kg	0.024 U	0.026 U [0.025 U]	0.025 U	0.12 U [0.025 U]	0.25 U	0.029 U	0.12 U	0.12 U	0.028 U [0.028 U]	0.024 U
Dimethylphthalate	mg/kg	0.022 U	0.023 U [0.023 U]	0.022 U	0.11 U [0.022 U]	0.23 U	0.026 U	0.11 U	0.11 U	0.026 U [0.026 U]	0.022 U
Di-n-Butylphthalate	mg/kg	0.031 U	0.034 U [0.034 U]	0.032 U	0.16 U [0.033 U]	0.33 U	0.038 U	0.16 U	0.16 U	0.037 U [0.037 U]	0.031 U
Di-n-Octylphthalate	mg/kg	0.022 U	0.023 U [0.023 U]	0.022 U	0.11 U [0.022 U]	0.23 U	0.026 U	0.11 U	0.11 U	0.026 U [0.026 U]	0.022 U
Fluoranthene	mg/kg	0.95	0.023 J [0.021 U]	0.024 J	1.4 [0.36]	0.21 J	0.024 U	0.59 J	0.61 J	0.027 J [0.033 J]	0.019 U
Fluorene	mg/kg	0.16 J	0.023 U [0.023 U]	0.022 U	0.41 J [0.52]	0.23 U	0.026 U	0.11 U	0.11 U	0.026 U [0.026 U]	0.022 U
Hexachlorobenzene	mg/kg	0.025 U	0.027 U [0.027 U]	0.026 U	0.12 U [0.026 U]	0.26 U	0.030 U	0.13 U	0.13 U	0.030 U [0.030 U]	0.025 U
Hexachlorobutadiene	mg/kg	0.027 U	0.029 U [0.029 U]	0.028 U	0.13 U [0.028 U]	0.28 U	0.033 U	0.14 U	0.14 U	0.032 U [0.032 U]	0.027 U
Hexachlorocyclopentadiene	mg/kg	0.025 U	0.027 U [0.027 U]	0.026 U	0.12 U [0.026 U]	0.26 U	0.030 U	0.13 U	0.13 U	0.030 UJ [0.030 U]	0.025 UJ
Hexachloroethane	mg/kg	0.024 U	0.026 U [0.025 U]	0.025 U	0.12 U [0.025 U]	0.25 U	0.029 U	0.12 U	0.12 U	0.028 U [0.028 U]	0.024 U
Indeno(1,2,3-cd)pyrene	mg/kg	0.023 U	0.025 U [0.024 U]	0.023 U	0.25 J [0.086 J]	0.24 U	0.027 U	0.15 J	0.18 J	0.027 U [0.027 U]	0.023 U
Isophorone	mg/kg	0.039 U	0.042 U [0.042 U]	0.040 U	0.19 U [0.040 U]	0.41 U	0.047 U	0.20 U	0.20 U	0.046 U [0.046 U]	0.039 U
Naphthalene	mg/kg	0.12 J	0.092 J [0.058 J]	0.033 J	0.83 J [1.5]	0.25 U	0.029 UJ	0.12 U	0.12 U	0.060 J [0.049 J]	0.024 U
Nitrobenzene	mg/kg	0.021 U	0.022 U [0.022 U]	0.021 U	0.10 U [0.021 U]	0.22 U	0.025 U	0.10 U	0.11 U	0.024 U [0.024 U]	0.020 U
N-Nitroso-di-n-propylamine	mg/kg	0.031 U	0.034 U [0.034 U]	0.032 U	0.16 U [0.033 U]	0.33 U	0.038 U	0.16 U	0.16 U	0.037 U [0.037 U]	0.031 U
N-Nitrosodiphenylamine	mg/kg	0.15 U	0.16 U [0.16 U]	0.15 U	0.74 U [0.16 U]	1.6 U	0.18 U	0.76 U	0.76 U	0.18 U [0.18 U]	0.15 U
Pentachlorophenol	mg/kg	0.18 U	0.20 U [0.20 U]	0.19 U	0.91 U [0.19 U]	1.9 U	0.22 U	0.93 U	0.94 U	0.22 U [0.22 U]	0.18 U
Phenanthrene	mg/kg	0.93	0.029 U [0.029 U]	0.028 U	0.22 J [0.15 J]	0.28 U	0.033 U	0.29 J	0.44 J	0.052 J [0.076 J]	0.027 U
Phenol	mg/kg	0.028 U	0.030 U [0.030 U]	0.029 U	0.14 U [0.029 U]	0.30 U	0.034 U	0.14 U	0.14 U	0.033 U [0.033 U]	0.028 U
Pyrene	mg/kg	1.9	0.023 U [0.023 U]	0.048 J	2.4 [0.61]	0.23 U	0.026 U	0.43 J	0.56 J	0.026 U [0.036 J]	0.022 U
Total SVOCs	mg/kg	6.8 J	0.12 J [0.058 J]	0.50 J	13 J [9.6 J]	0.21 J	1.0 U	2.7 J	3.6 J	0.18 J [0.25 J]	0.84 U
Total TPAHs	mg/kg	6.7 J	0.12 J [0.058 J]	0.11 J	13 J [9.1 J]	0.21 J	0.055 U	2.7 J	3.6 J	0.18 J [0.25 J]	0.045 U

See Notes on Page 4.

Table 7
PAH Subsurface Soil Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample Depth(Feet): Date Collected:	Units	PDI-CRB-12 10 - 12 11/10/20	PDI-DPB-2 7 - 9 11/04/20	PDI-DPB-13 6 - 8 10/23/20	PDI-DPB-14 10 - 12 10/23/20	PDI-DPB-15 6.5 - 8 10/23/20	PDI-DPB-16 9 - 10 11/03/20	PDI-DPB-18 2 - 4 11/03/20	PDI-GTB-1 10 - 11.5 10/06/20	PDI-GTB-2 12 - 14 10/06/20	PDI-GTB-6 12 - 13.5 09/29/20	PDI-GTB-10 5 - 6.5 10/07/20	PDI-MW-10 (SO) 4.5 - 6.5 11/02/20
Semivolatile Organics													
1,1'-Biphenyl	mg/kg	0.026 U	0.027 U	0.032 U	0.030 U	0.87 J	0.70 J	0.027 U	0.20 U	0.22 U	1.1	0.20 U	0.029 U
2,2'-Oxybis(1-Chloropropane)	mg/kg	0.035 UJ	0.036 U	0.043 UJ	0.041 UJ	1.1 UJ	0.18 U	0.036 U	0.20 U	0.22 U	0.99 U	0.20 U	0.040 U
2,4,5-Trichlorophenol	mg/kg	0.048 U	0.049 U	0.059 U	0.056 U	1.5 U	0.24 U	0.049 U	0.20 U	0.22 U	0.99 U	0.20 U	0.054 U
2,4,6-Trichlorophenol	mg/kg	0.035 U	0.036 U	0.043 U	0.041 U	1.1 U	0.18 U	0.036 U	0.20 U	0.22 U	0.99 U	0.20 U	0.040 U
2,4-Dichlorophenol	mg/kg	0.019 U	0.019 U	0.023 U	0.022 U	0.60 U	0.095 U	0.019 U	0.20 U	0.22 U	0.99 U	0.20 U	0.021 U
2,4-Dimethylphenol	mg/kg	0.043 U	0.044 U	0.052 U	0.050 U	1.4 U	0.22 U	0.044 U	0.20 U	0.22 U	0.99 U	0.20 U	0.048 U
2,4-Dinitrophenol	mg/kg	0.82 U	0.84 U	1.0 U	0.95 U	26 U	4.1 U	0.83 U	1.9 U	2.2 U	9.7 U	1.9 U	0.92 U
2,4-Dinitrotoluene	mg/kg	0.037 U	0.037 U	0.045 U	0.043 U	1.2 U	0.18 U	0.037 U	0.20 U	0.22 U	0.99 U	0.20 U	0.041 U
2,6-Dinitrotoluene	mg/kg	0.021 U	0.021 U	0.026 U	0.024 U	0.66 U	0.11 U	0.021 U	0.20 U	0.22 U	0.99 U	0.20 U	0.023 U
2-Chloronaphthalene	mg/kg	0.029 U	0.030 U	0.036 U	0.034 U	0.93 U	0.15 U	0.030 U	0.20 U	0.22 U	0.99 U	0.20 U	0.033 U
2-Chlorophenol	mg/kg	0.032 U	0.033 U	0.040 U	0.038 U	1.0 U	0.16 U	0.033 U	0.39 U	0.44 U	1.9 U	0.38 U	0.036 U
2-Methylnaphthalene	mg/kg	0.035 U	0.036 U	0.043 U	0.041 U	1.1 U	0.68 J	0.036 U	0.10 J	0.22 U	3.8	0.20 U	0.040 U
2-Methylphenol	mg/kg	0.021 U	0.021 U	0.026 U	0.024 U	0.66 U	0.11 U	0.021 U	0.20 U	0.22 U	0.99 U	0.20 U	0.023 U
2-Nitroaniline	mg/kg	0.026 U	0.027 U	0.032 U	0.030 U	0.83 U	0.13 U	0.027 U	0.39 U	0.44 U	1.9 U	0.38 U	0.029 U
2-Nitrophenol	mg/kg	0.050 U	0.051 U	0.061 U	0.058 U	1.6 U	0.25 U	0.051 U	0.20 U	0.22 U	0.99 U	0.20 U	0.056 U
3,3'-Dichlorobenzidine	mg/kg	0.21 U	0.21 U	0.26 U	0.24 U	6.6 U	1.1 U	0.21 U	0.39 U	0.44 U	1.9 U	0.38 U	0.23 U
3-Nitroaniline	mg/kg	0.049 U	0.050 U	0.060 U	0.057 U	1.6 U	0.25 U	0.050 U	0.39 U	0.44 U	1.9 U	0.38 U	0.055 U
4,6-Dinitro-2-methylphenol	mg/kg	0.18 U	0.18 U	0.22 U	0.21 U	5.6 U	0.89 U	0.18 U	0.39 U	0.44 U	1.9 U	0.38 U	0.20 U
4-Bromophenyl-phenylether	mg/kg	0.025 U	0.026 U	0.031 U	0.029 U	0.80 U	0.13 U	0.025 U	0.20 U	0.22 U	0.99 U	0.20 U	0.028 U
4-Chloro-3-Methylphenol	mg/kg	0.044 U	0.045 U	0.054 U	0.051 U	1.4 U	0.22 U	0.045 U	0.20 U	0.22 U	0.99 U	0.20 U	0.049 U
4-Chloroaniline	mg/kg	0.044 U	0.045 U	0.054 U	0.051 U	1.4 U	0.22 U	0.045 U	0.20 U	0.22 U	0.99 U	0.20 U	0.049 U
4-Chlorophenyl-phenylether	mg/kg	0.022 U	0.022 U	0.027 U	0.026 U	0.70 U	0.11 U	0.022 U	0.20 U	0.22 U	0.99 U	0.20 U	0.025 U
4-Methylphenol	mg/kg	0.021 U	0.021 U	0.026 U	0.024 U	0.66 U	0.11 U	0.021 U	0.39 U	0.44 U	1.9 U	0.38 U	0.023 U
4-Nitroaniline	mg/kg	0.093 U	0.095 U	0.11 U	0.11 U	3.0 U	0.47 U	0.095 U	0.39 U	0.44 U	1.9 U	0.38 U	0.10 U
4-Nitrophenol	mg/kg	0.12 U	0.13 U	0.15 UJ	0.14 UJ	3.9 UJ	0.63 U	0.13 U	0.39 UJ	0.44 UJ	1.9 U	0.38 UJ	0.14 U
Acenaphthene	mg/kg	0.026 U	0.045 J	0.032 U	0.030 U	5.2 J	8.5	0.027 U	0.15 J	0.22 U	6.5	0.031 J	0.029 U
Acenaphthylene	mg/kg	0.023 U	0.023 U	0.028 U	0.027 U	5.5 J	2.7	0.023 U	0.20 U	0.22 U	1.8	0.20 U	0.048 J
Acetophenone	mg/kg	0.024 U	0.025 U	0.029 U	0.028 U	0.76 U	0.12 U	0.024 U	0.20 U	0.22 U	0.99 U	0.20 U	0.027 U
Anthracene	mg/kg	0.044 U	0.045 U	0.054 U	0.051 U	13	5.5	0.045 U	0.20 U	0.22 U	7.4	0.052 J	0.049 U
Atrazine	mg/kg	0.062 U	0.063 U	0.075 U	0.072 U	2.0 U	0.31 U	0.063 U	0.20 U	0.22 U	0.99 U	0.20 U	0.069 U
Benzaldehyde	mg/kg	0.14 UJ	0.14 U	0.17 U	0.16 U	4.5 U	0.71 U	0.14 U	0.20 U	0.22 U	0.99 U	0.20 U	0.16 U
Benzo(a)anthracene	mg/kg	0.018 U	0.018 U	0.022 U	0.021 U	18	7.8	0.018 U	0.028 J	0.22 U	5.5	0.14 J	0.020 U
Benzo(a)pyrene	mg/kg	0.026 U	0.027 U	0.032 U	0.030 U	11	4.9	0.027 U	0.20 U	0.22 U	3.1	0.14 J	0.088 J
Benzo(b)fluoranthene	mg/kg	0.028 U	0.029 U	0.035 U	0.033 U	7.2	3.1	0.029 U	0.20 U	0.22 U	2.1	0.14 J	0.049 J
Benzo(g,h,i)perylene	mg/kg	0.019 U	0.019 U	0.023 U	0.022 U	3.5 J	1.7	0.019 U	0.20 U	0.22 U	1.2	0.062 J	0.032 J
Benzo(k)fluoranthene	mg/kg	0.023 U	0.023 U	0.028 U	0.027 U	2.6 J	1.5	0.023 U	0.20 U	0.22 U	0.83 J	0.060 J	0.026 U
bis(2-Chloroethoxy)methane	mg/kg	0.038 U	0.038 U	0.046 U	0.044 U	1.2 U	0.19 U	0.038 U	0.20 U	0.22 U	0.99 U	0.20 U	0.042 U
bis(2-Chloroethyl)ether	mg/kg	0.023 U	0.023 U	0.028 U	0.027 U	0.73 U	0.12 U	0.023 U	0.20 U	0.22 U	0.99 U	0.20 U	0.026 U
bis(2-Ethylhexyl)phthalate	mg/kg	0.061 U	0.062 U	0.074 U	0.070 U	1.9 U	0.30 U	0.062 U	0.20 U	0.22 U	0.99 U	0.20 U	0.068 U
Butylbenzylphthalate	mg/kg	0.029 U	0.030 U	0.036 U	0.034 U	0.93 U	0.15 U	0.030 U	0.20 U	0.22 U	0.99 U	0.20 U	0.033 U
Caprolactam	mg/kg	0.053 U	0.054 U	0.065 U	0.062 U	1.7 U	0.27 U	0.054 U	0.20 U	0.22 U	0.99 U	0.20 U	0.060 U
Carbazole	mg/kg	0.021 U	0.021 U	0.026 U	0.024 U	0.66 U	0.11 U	0.021 U	0.20 U	0.22 U	0.99 U	0.20 U	0.023 U
Chrysene	mg/kg	0.040 U	0.041 U	0.049 U	0.046 U	17	8.1	0.040 U	0.20 U	0.22 U	5.2	0.12 J	0.045 U

See Notes on Page 4.

Table 7
PAH Subsurface Soil Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample Depth(Feet): Date Collected:	Units	PDI-CRB-12 10 - 12 11/10/20	PDI-DPB-2 7 - 9 11/04/20	PDI-DPB-13 6 - 8 10/23/20	PDI-DPB-14 10 - 12 10/23/20	PDI-DPB-15 6.5 - 8 10/23/20	PDI-DPB-16 9 - 10 11/03/20	PDI-DPB-18 2 - 4 11/03/20	PDI-GTB-1 10 - 11.5 10/06/20	PDI-GTB-2 12 - 14 10/06/20	PDI-GTB-6 12 - 13.5 09/29/20	PDI-GTB-10 5 - 6.5 10/07/20	PDI-MW-10 (SO) 4.5 - 6.5 11/02/20
Semivolatile Organics													
Dibenzo(a,h)anthracene	mg/kg	0.031 U	0.032 U	0.038 U	0.036 U	1.4 J	0.73 J	0.032 U	0.20 U	0.22 U	0.45 J	0.20 U	0.035 U
Dibenzofuran	mg/kg	0.021 U	0.021 U	0.026 U	0.024 U	0.66 U	0.21 J	0.021 U	0.20 U	0.22 U	0.99 U	0.20 U	0.023 U
Diethylphthalate	mg/kg	0.023 U	0.023 U	0.028 U	0.027 U	0.73 U	0.12 U	0.023 U	0.20 U	0.22 U	0.99 U	0.20 U	0.026 U
Dimethylphthalate	mg/kg	0.021 U	0.021 U	0.026 U	0.024 U	0.66 U	0.11 U	0.021 U	0.20 U	0.22 U	0.99 U	0.20 U	0.023 U
Di-n-Butylphthalate	mg/kg	0.030 U	0.031 U	0.037 U	0.035 U	0.96 U	0.15 U	0.031 U	0.20 U	0.22 U	0.99 U	0.20 U	200 UB
Di-n-Octylphthalate	mg/kg	0.021 U	0.021 U	0.026 UJ	0.024 UJ	0.66 UJ	0.11 U	0.021 U	0.20 U	0.22 U	0.99 U	0.20 U	0.023 U
Fluoranthene	mg/kg	0.019 U	0.019 U	0.023 U	0.096 J	26	8.7	0.020 J	0.031 J	0.22 U	7.0	0.24	0.029 J
Fluorene	mg/kg	0.021 U	0.021 U	0.026 U	0.024 U	6.6	3.1	0.021 U	0.059 J	0.22 U	5.2	0.20 U	0.023 U
Hexachlorobenzene	mg/kg	0.024 U	0.025 U	0.029 U	0.028 U	0.76 U	0.12 U	0.024 U	0.20 U	0.22 U	0.99 U	0.20 U	0.027 U
Hexachlorobutadiene	mg/kg	0.026 U	0.027 U	0.032 U	0.030 U	0.83 U	0.13 U	0.027 U	0.20 U	0.22 U	0.99 U	0.20 U	0.029 U
Hexachlorocyclopentadiene	mg/kg	0.024 U	0.025 U	0.029 UJ	0.028 UJ	0.76 UJ	0.12 U	0.024 U	0.20 UJ	0.22 UJ	0.99 U	0.20 UJ	0.027 U
Hexachloroethane	mg/kg	0.023 U	0.023 U	0.028 U	0.027 U	0.73 U	0.12 U	0.023 U	0.20 U	0.22 U	0.99 U	0.20 U	0.026 U
Indeno(1,2,3-cd)pyrene	mg/kg	0.022 U	0.022 U	0.027 U	0.026 U	2.8 J	1.3	0.022 U	0.20 U	0.22 U	0.89 J	0.054 J	0.025 U
Isophorone	mg/kg	0.038 U	0.038 U	0.046 U	0.044 U	1.2 U	0.19 U	0.038 U	0.20 U	0.22 U	0.99 U	0.20 U	0.042 U
Naphthalene	mg/kg	0.023 U	0.023 U	1.2	0.027 U	0.73 U	1.7	0.023 U	0.20	0.22 U	2.7	0.20 U	0.026 U
Nitrobenzene	mg/kg	0.020 U	0.020 U	0.024 U	0.023 U	0.63 U	0.10 U	0.020 U	0.20 U	0.22 U	0.99 U	0.20 U	0.022 U
N-Nitroso-di-n-propylamine	mg/kg	0.030 U	0.031 U	0.037 U	0.035 U	0.96 U	0.15 U	0.031 U	0.20 U	0.22 U	0.99 U	0.20 U	0.034 U
N-Nitrosodiphenylamine	mg/kg	0.14 U	0.15 U	0.18 U	0.17 U	4.6 U	0.73 U	0.15 U	0.20 U	0.22 U	1.2	0.20 U	0.16 U
Pentachlorophenol	mg/kg	0.18 U	0.18 U	0.22 UJ	0.21 UJ	5.6 UJ	0.89 U	0.18 U	0.39 U	0.44 U	1.9 U	0.38 U	0.20 U
Phenanthrene	mg/kg	0.026 U	0.027 U	0.032 U	0.15 J	37	15	0.027 U	0.086 J	0.22 U	22	0.14 J	0.14 J
Phenol	mg/kg	0.027 U	0.028 U	0.033 U	0.032 U	0.86 U	0.14 U	0.028 U	0.20 U	0.22 U	0.99 U	0.20 U	0.030 U
Pyrene	mg/kg	0.021 U	0.021 U	0.026 U	0.24	40	14	0.021 U	0.042 J	0.22 U	11	0.19 J	0.030 J
Total SVOCs	mg/kg	0.82 U	0.045 J	1.2	0.49 J	200 J	90 J	0.020 J	0.70 J	2.2 U	89 J	1.4 J	0.46 J
Total TPAHs	mg/kg	0.044 U	0.045 J	1.2	0.49 J	200 J	89 J	0.020 J	0.70 J	0.22 U	87 J	1.4 J	0.42 J

Notes:

1. Samples collected by Arcadis on the dates shown.
2. Samples analyzed by Eurofins of South Burlington, Vermont.
3. U = The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
4. J = Estimated Concentration. Presented concentration is less than the method detection limit but greater than the instrument detection limit.
5. B = Compound was found in blank and sample.

Table 8
Creek Flow Study Measurements

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Date	12/2/2020	12/3/2020	12/18/2020	1/12/2021	2/11/2021	3/3/2021	4/8/2021
SG-1 Depth to Water (ft)	4.52	4.65	4.71	4.70	4.78	4.69	4.69
SG-1 Elevation (ft AMSL)	738.20	738.07	738.01	738.02	737.94	738.03	738.03
Average Stage Above Stream Bottom (ft)	0.72	0.67	0.62	0.57	0.53	0.58	0.62
Total Cross-Sectional Area (ft^2)	22.10	19.60	21.90	18.30	17.10	19.70	18.40
Stream Discharge (cfs)	31.40	25.10	15.78	13.75	9.97	20.42	20.83

Notes:
1. AMSL = Above Mean Sea Level
2. ft = Feet
3. ft^2 = Square Feet
4. cfs = Cubic Feet Per Second

Table 9
Supplemental PDI Sampling Summary

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Sample ID	Sample Interval (in)	PAH 16		PAH 34	TCL VOC	TCL SVOC	Description
		Analyzed	Arch				
Groundwater							
MW-15S					x	x	
Bank Soil							
T-05-LB-MB	0-6	x					Very dark grayish brown medium fine sand, little silt, little organics (roots), wet, medium firm
	6-12	x					
	12-24		x				
T-05-LB-MHWL	0-6	x					Very dark grayish brown medium fine sand, little silt, little organics (roots), wet, soft
	6-12	x					
	12-24		x				
T-05-RB-MB	0-6	x					Very dark grayish brown medium fine sand, some fine sub-round gravel, little silt, wet, loose/soft
	6-12	x					
	12-24		x				
T-05-RB-MHWL	0-6	x					Dark brown medium fine sand. Some silt, little organics (roots), trace fine sub-round gravel, wet, soft loose
	6-12	x					
	12-24		x				
T-06-LB-MB	0-6	x					Very dark grayish brown medium fine sand and silt, little organics (roots), trace fine sub-round gravel, wet, soft/loose
	6-12	x					
	12-24		x				
T-06-LB-MHWL	0-6	x					Very dark gray silt and fine sand, little organics (roots), soft, some fine sub-round gravel, wet/loose
	6-12	x					
	12-24		x				
T-06-RB-MB	0-6	x					Very dark grayish brown fine sand, some silt, little organics (roots), wet, soft
	6-12	x					
	12-24		x				
T-06-RB-MHWL	0-6	x					Very dark gray silt and medium-fine sand, some organics (roots, leaves), wet, soft
	6-12	x					
	12-24		x				
T-07-LB-MB	0-6	x					Very dark grayish brown silt and medium fine sand, little organics (roots), trace fine sub-rounded gravel, little silt, wet, loose
	6-12	x					
	12-24		x				
T-07-LB-MHWL	0-6	x					Very dark gray medium fine sand, some silt, little organics (roots, leaves), wet, soft
	6-12	x					
	12-24		x				
T-07-RB-MB	0-6	x					Very dark gray silt, some fine sand, little organics (roots), wet soft
	6-12	x					
	12-24		x				
T-07-RB-MHWL	0-6	x					Dark gray silt and medium fine sand, some to little organics (roots, leaves), wet, soft
	6-12	x					
	12-24		x				
Site Source (Impacted) Soil							
PDI-DPB-4	3-12			x		x	Sheen, odor, PID (≤ 10 ppm)
PDI-DPB-7	4-8.5			x		x	Sheen, odor, PID (≤ 40 ppm)
PDI-DPB-8	0.8- 8.5			x		x	Sheen, odor, PID (≤ 10.1 ppm)

Notes:
1. Samples submitted to Eurofins laboratory in Buffalo, NY.
2. Samples submitted to Eurofins laboratory in Buffalo, NY.
3. PAH 16 - target compound list of 16 parent (non-alkylated) PAHs analyzed using USEPA SW-846 Method 8270.
4. PAH 34 - 18 specific non-alkylated PAHs (or parent PAHs) and 16 generic alkylated PAHs (PAH-34) analyzed using USEPA SW-846 Method 8270.

Acronyms and Abbreviations:
T = Transect
LB = Left Bank
RB = Right Bank
MB = Mid-Bank
MHWL = Mean High Water Level
ppm = parts per million

Table 10
Cayadutta Creek Sediment Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample Depth(feet): Date Collected: Sample Name:	95th Percentile Background[1]	Units	R1-PDI-SED-1RR 0 - 0.3 01/21/21 R1-PDI-SED-1RR(0-0.3)	R1-PDI-SED-2DEP 0 - 0.9 01/21/21 R1-PDI-SED-2DEP(0-0.9)	R1-PDI-SED-3RR 0 - 0.3 01/21/21 R1-PDI-SED-3RR(0-0.3)	R1-PDI-SED-4DEP 0 - 0.2 01/21/21 R1-PDI-SED-4DEP(0-0.2)	R1-PDI-SED-5RR 0 - 0.2 01/21/21 R1-PDI-SED-5RR(0-0.2)
SVOCs-SIM							
1-Methylnaphthalene	- -	mg/kg	0.00340 U	0.00720 J	0.00180 U	0.00230 J	0.00180 U
2-Methylnaphthalene	- -	mg/kg	0.00390 U	0.00850	0.00200 U	0.00310 J	0.00200 U
Acenaphthene	- -	mg/kg	0.0100 J	0.0600	0.00360 J	0.0110	0.00850
Acenaphthylene	- -	mg/kg	0.00480 J	0.0120	0.00230 U	0.00240 J	0.00230 U
Anthracene	- -	mg/kg	0.0550	0.250	0.0330	0.0350	0.0400
Benzo(a)anthracene	- -	mg/kg	0.250	2.00 D	0.330	0.160	0.220
Benzo(a)pyrene	- -	mg/kg	0.240	2.00 D	0.280	0.170	0.220
Benzo(b)fluoranthene	- -	mg/kg	0.300	2.20 D	0.340	0.210	0.270
Benzo(e)pyrene	- -	mg/kg	0.160	1.30 D	0.180	0.120	0.150
Benzo(g,h,i)perylene	- -	mg/kg	0.0730	0.700 D	0.0760	0.0510	0.0700
Benzo(k)fluoranthene	- -	mg/kg	0.180	1.80 D	0.240	0.140	0.180
C1-Chrysenes	- -	mg/kg	0.0670	0.360	0.0570	0.0430	0.0530
C1-Fluoranthenes/pyrene	- -	mg/kg	0.220	1.20	0.220	0.130	0.150
C1-Fluorenes	- -	mg/kg	0.0160 U	0.0350	0.00840 U	0.00750 U	0.00850 U
C1-Phenanthrenes/Anthracenes	- -	mg/kg	0.100	0.520	0.0590	0.0530	0.0500
C2-Chrysenes	- -	mg/kg	0.0360	0.140	0.0220	0.0280	0.0320
C2-Fluorenes	- -	mg/kg	0.0160 U	0.0520	0.00840 U	0.00750 U	0.00850 U
C2-Naphthalenes	- -	mg/kg	0.0160 U	0.0270	0.00840 U	0.0110	0.00850 U
C2-Phenanthrenes/Anthracenes	- -	mg/kg	0.0560	0.280	0.0360	0.0300	0.0290
C3-Chrysenes	- -	mg/kg	0.0250	0.0550	0.00840 U	0.0210	0.0160
C3-Fluorenes	- -	mg/kg	0.0160 U	0.310	0.0180	0.0170	0.0250
C3-Naphthalenes	- -	mg/kg	0.0160 U	0.0390	0.00840 U	0.0110	0.00850 U
C3-Phenanthrenes/Anthracenes	- -	mg/kg	0.0280	0.130	0.0150	0.0150	0.0150
C4-Chrysenes	- -	mg/kg	0.0160 U	0.0230	0.00840 U	0.0100	0.00850 U
C4-Naphthalenes	- -	mg/kg	0.0160 U	0.0360	0.00840 U	0.00800	0.00850 U
C4-Phenanthrenes/Anthracenes	- -	mg/kg	0.0160	0.0510	0.00840 U	0.00940	0.00850 U
Chrysene	- -	mg/kg	0.260	2.20 D	0.290	0.170	0.210
Dibenzo(a,h)anthracene	- -	mg/kg	0.0280 J	0.200 J	0.0330 J	0.0200 J	0.0260 J
Fluoranthene	- -	mg/kg	0.560	5.00 D	0.550 D	0.360	0.530
Fluorene	- -	mg/kg	0.0210	0.110	0.00510 J	0.0120	0.0110
Indeno(1,2,3-cd)pyrene	- -	mg/kg	0.0750	0.790 D	0.0860	0.0550	0.0760
Naphthalene	- -	mg/kg	0.0100 U	0.0100	0.00540 U	0.00480 U	0.00540 U
Perylene	- -	mg/kg	0.0590	0.350	0.0630	0.0460	0.0540
Phenanthrene	- -	mg/kg	0.370	2.60 D	0.120	0.190	0.210
Pyrene	- -	mg/kg	0.430	3.90 D	0.450 D	0.320	0.430
Total PAH16	56.4	mg/kg	2.86 J	23.8 J	2.84 J	1.91 J	2.50 J
Total PAH34	- -	mg/kg	3.62 J	28.8 J	3.51 J	2.46 J	3.08 J
Miscellaneous							
Total Organic Carbon	- -	mg/kg	4,320 J	3,440 J	3,650 J	2,980 J	2,770 J

See Notes on Page 15.

Table 10
Cayadutta Creek Sediment Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample Depth(feet): Date Collected: Sample Name:	95th Percentile Background[1]	Units	R1-PDI-SED-6DEP 0 - 0.5 01/21/21 R1-PDI-SED-6DEP(0-0.5)	R1-PDI-SED-7DEP 0 - 0.4 01/21/21 R1-PDI-SED-7DEP(0-0.4)	R1-PDI-SED-8RR 0 - 0.2 01/21/21 R1-PDI-SED-8RR(0-0.2)	R2-PDI-SED-9DEP 0 - 0.5 01/21/21 R2-PDI-SED-9DEP(0-0.5)	R2-PDI-SED-10DEP 0 - 0.3 01/21/21 R2-PDI-SED-10DEP(0-0.3)
SVOCs-SIM							
1-Methylnaphthalene	- -	mg/kg	0.00640 J	0.00100 J	0.000810 J	0.0360 J	0.0500 UJ
2-Methylnaphthalene	- -	mg/kg	0.00510 J	0.00150 J	0.00150 J	0.0400 UJ	0.0570 UJ
Acenaphthene	- -	mg/kg	0.0470	0.00130 U	0.000870 J	0.230 J	0.240 J
Acenaphthylene	- -	mg/kg	0.00690 J	0.000840 U	0.000890 J	0.0450 UJ	0.0640 UJ
Anthracene	- -	mg/kg	0.150	0.00520	0.00420	0.780 J	0.700 J
Benzo(a)anthracene	- -	mg/kg	0.840 D	0.0360	0.0240	2.10 J	3.10 J
Benzo(a)pyrene	- -	mg/kg	0.810 D	0.0460	0.0310	2.00 J	3.00 J
Benzo(b)fluoranthene	- -	mg/kg	1.00 D	0.0650	0.0490	2.30 J	3.90 J
Benzo(e)pyrene	- -	mg/kg	0.540 D	0.0380	0.0300	1.30 J	2.00 J
Benzo(g,h,i)perylene	- -	mg/kg	0.230	0.0160	0.0130	0.600 J	0.920 J
Benzo(k)fluoranthene	- -	mg/kg	0.700 D	0.0380	0.0310	1.70 J	2.50 J
C1-Chrysenes	- -	mg/kg	0.200	0.0120	0.0130	0.410 J	0.740 J
C1-Fluoranthenes/pyrene	- -	mg/kg	0.590	0.0280	0.0230	1.70 J	2.50 J
C1-Fluorenes	- -	mg/kg	0.0190	0.00310 U	0.00160 U	0.170 UJ	0.240 UJ
C1-Phenanthrenes/Anthracenes	- -	mg/kg	0.260	0.0100	0.00730	0.820 J	1.10 J
C2-Chrysenes	- -	mg/kg	0.0890	0.00990	0.0140	0.170 UJ	0.260 J
C2-Fluorenes	- -	mg/kg	0.0250	0.00310 U	0.00160 U	0.170 UJ	0.240 UJ
C2-Naphthalenes	- -	mg/kg	0.0250	0.00520	0.00500	0.170 UJ	0.240 UJ
C2-Phenanthrenes/Anthracenes	- -	mg/kg	0.130	0.00750	0.00730	0.370 J	0.610 J
C3-Chrysenes	- -	mg/kg	0.0250	0.00890	0.0130	0.170 UJ	0.240 UJ
C3-Fluorenes	- -	mg/kg	0.130	0.00310 U	0.00160 U	0.220 J	0.400 J
C3-Naphthalenes	- -	mg/kg	0.0260	0.00490	0.00440	0.170 UJ	0.240 UJ
C3-Phenanthrenes/Anthracenes	- -	mg/kg	0.0540	0.00520	0.00740	0.170 UJ	0.250 J
C4-Chrysenes	- -	mg/kg	0.00960 U	0.00310 U	0.00830	0.170 UJ	0.240 UJ
C4-Naphthalenes	- -	mg/kg	0.0170	0.00310 U	0.00290	0.170 UJ	0.240 UJ
C4-Phenanthrenes/Anthracenes	- -	mg/kg	0.0190	0.00400	0.00620	0.170 UJ	0.240 UJ
Chrysene	- -	mg/kg	0.900 D	0.0480	0.0350	2.10 J	3.20 J
Dibenzo(a,h)anthracene	- -	mg/kg	0.100 J	0.00550 J	0.00490 J	0.250 J	0.390 J
Fluoranthene	- -	mg/kg	2.00 D	0.0800	0.0520	5.60 J	7.40 J
Fluorene	- -	mg/kg	0.0600	0.00150 U	0.00120 J	0.330 J	0.320 J
Indeno(1,2,3-cd)pyrene	- -	mg/kg	0.270	0.0160	0.0130	0.640 J	1.00 J
Naphthalene	- -	mg/kg	0.00620 U	0.00200 U	0.00130 J	0.110 UJ	0.150 UJ
Perylene	- -	mg/kg	0.180	0.0130	0.00890	0.490 J	0.670 J
Phenanthrene	- -	mg/kg	1.00 D	0.0250	0.0150	3.60 J	4.10 J
Pyrene	- -	mg/kg	1.60 D	0.0640	0.0440	4.10 J	5.70 J
Total PAH16	56.4	mg/kg	9.71 J	0.445 J	0.320 J	26.3 J	36.5 J
Total PAH34	- -	mg/kg	12.1 J	0.594 J	0.473 J	31.7 J	45.0 J
Miscellaneous							
Total Organic Carbon	- -	mg/kg	4,290	5,510	6,270	5,180	29,500

See Notes on Page 15.

Table 10
Cayadutta Creek Sediment Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample Depth(feet): Date Collected: Sample Name:	95th Percentile Background[1]	Units	R2-PDI-SED-11RR 0 - 0.3 01/21/21 R2-PDI-SED-11RR(0-0.3)	R2-PDI-SED-12DEP 0 - 0.3 01/21/21 R2-PDI-SED-12DEP(0-0.3)	R2-PDI-SED-13RR 0 - 0.3 01/21/21 R2-PDI-SED-13RR(0-0.3)	R2-PDI-SED-14DEP 0 - 0.5 01/21/21 R2-PDI-SED-14DEP(0-0.5)	R2-PDI-SED-15RR 0 - 0.2 01/21/21 R2-PDI-SED-15RR(0-0.2)
SVOCs-SIM							
1-Methylnaphthalene	- -	mg/kg	0.00120 J	0.0100 UJ	0.00100 U	0.130 J	0.00110 U
2-Methylnaphthalene	- -	mg/kg	0.00190 J	0.0120 UJ	0.00120 U	0.110 J	0.00120 U
Acenaphthene	- -	mg/kg	0.00320 J	0.0730 J	0.00430 J	1.20 J	0.00220 J
Acenaphthylene	- -	mg/kg	0.00110 U	0.0130 UJ	0.00160 J	0.110 UJ	0.00140 U
Anthracene	- -	mg/kg	0.0290	0.220 J	0.0150	3.30 J	0.0200
Benzo(a)anthracene	- -	mg/kg	0.0750	0.980 J	0.0920	3.50 J	0.120
Benzo(a)pyrene	- -	mg/kg	0.0630	1.10 J	0.100	3.10 J	0.130
Benzo(b)fluoranthene	- -	mg/kg	0.0710	1.40 J	0.140	2.90 J	0.160
Benzo(e)pyrene	- -	mg/kg	0.0510	0.710 J	0.0740	1.80 J	0.0920
Benzo(g,h,i)perylene	- -	mg/kg	0.0180	0.330 J	0.0330	0.900 J	0.0370
Benzo(k)fluoranthene	- -	mg/kg	0.0540	0.900 J	0.0970	2.90 J	0.0980
C1-Chrysenes	- -	mg/kg	0.0300	0.250 J	0.0270	0.550 J	0.0290
C1-Fluoranthenes/pyrene	- -	mg/kg	0.0740	0.800 J	0.0720	3.10 J	0.0900
C1-Fluorenes	- -	mg/kg	0.00410 U	0.0490 UJ	0.00490 U	0.420 UJ	0.00510 U
C1-Phenanthrenes/Anthracenes	- -	mg/kg	0.0290	0.310 J	0.0250	1.70 J	0.0250
C2-Chrysenes	- -	mg/kg	0.0310	0.0700 J	0.00980	0.420 UJ	0.0170
C2-Fluorenes	- -	mg/kg	0.00460	0.0490 UJ	0.00490 U	0.420 UJ	0.00510 U
C2-Naphthalenes	- -	mg/kg	0.00670	0.0490 UJ	0.00490 U	0.420 UJ	0.00860
C2-Phenanthrenes/Anthracenes	- -	mg/kg	0.0230	0.150 J	0.0150	0.590 J	0.0150
C3-Chrysenes	- -	mg/kg	0.0330	0.0490 UJ	0.00490 U	0.420 UJ	0.0130
C3-Fluorenes	- -	mg/kg	0.00610	0.0490 UJ	0.00490 U	0.420 UJ	0.00510 U
C3-Naphthalenes	- -	mg/kg	0.00820	0.0490 UJ	0.00550	0.420 UJ	0.00510 U
C3-Phenanthrenes/Anthracenes	- -	mg/kg	0.0180	0.0650 J	0.00760	0.420 UJ	0.00930
C4-Chrysenes	- -	mg/kg	0.0170	0.0490 UJ	0.00490 U	0.420 UJ	0.00510 U
C4-Naphthalenes	- -	mg/kg	0.00950	0.0490 UJ	0.00490 U	0.420 UJ	0.00510 U
C4-Phenanthrenes/Anthracenes	- -	mg/kg	0.0150	0.0490 UJ	0.00490 U	0.420 UJ	0.00660
Chrysene	- -	mg/kg	0.0690	1.10 J	0.110	3.30 J	0.120
Dibenzo(a,h)anthracene	- -	mg/kg	0.00710 J	0.110 J	0.0110 J	0.260 J	0.0130 J
Fluoranthene	- -	mg/kg	0.150	2.40 J	0.190	11.0 J	0.220
Fluorene	- -	mg/kg	0.00630	0.0950 J	0.00480 J	1.60 J	0.00380 J
Indeno(1,2,3-cd)pyrene	- -	mg/kg	0.0180	0.340 J	0.0350 J	0.870 J	0.0400 J
Naphthalene	- -	mg/kg	0.00270 U	0.0320 UJ	0.00310 U	0.270 UJ	0.00330 U
Perylene	- -	mg/kg	0.0210	0.270 J	0.0240	0.790 J	0.0370
Phenanthrene	- -	mg/kg	0.0820	1.20 J	0.0770	11.0 J	0.0720
Pyrene	- -	mg/kg	0.150	2.00 J	0.170	9.10 J	0.190
Total PAH16	56.4	mg/kg	0.796 J	12.2 J	1.08 J	54.9 J	1.23 J
Total PAH34	- -	mg/kg	1.18 J	14.9 J	1.34 J	63.7 J	1.57 J
Miscellaneous							
Total Organic Carbon	- -	mg/kg	30,100	7,360	2,190	3,840	3,820

See Notes on Page 15.

Table 10
Cayadutta Creek Sediment Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample Depth(feet): Date Collected: Sample Name:	95th Percentile Background[1]	Units	R2-PDI-SED-16DEP 0 - 0.3 01/20/21 R2-PDI-SED-16DEP(0-0.3)	R2-PDI-SED-17DEP 0 - 0.7 01/20/21 R2-PDI-SED-17DEP(0-0.7)	R2-PDI-SED-18DEP 0 - 0.4 01/20/21 R2-PDI-SED-18DEP(0-0.4)	R2-PDI-SED-19DEP 0 - 0.5 01/20/21 R2-PDI-SED-19DEP(0-0.5)	R2-PDI-SED-20RR 0 - 0.3 01/20/21 R2-PDI-SED-20RR(0-0.3)
SVOCs-SIM							
1-Methylnaphthalene	- -	mg/kg	0.00220 J	0.00120 J	0.160 J	0.0180 J	0.000800 J
2-Methylnaphthalene	- -	mg/kg	0.00260 J	0.00160 J	0.160 J	0.0220	0.00130 J
Acenaphthene	- -	mg/kg	0.00880	0.00570 J	1.50 J	0.0580	0.000760 J
Acenaphthylene	- -	mg/kg	0.00150 U	0.00240 J	0.0980 UJ	0.00650 J	0.00130 J
Anthracene	- -	mg/kg	0.0220	0.0210	3.30 J	0.160	0.00420
Benzo(a)anthracene	- -	mg/kg	0.100	0.100	6.50 J	0.440	0.0360
Benzo(a)pyrene	- -	mg/kg	0.110	0.110	5.80 J	0.420	0.0420
Benzo(b)fluoranthene	- -	mg/kg	0.140	0.140	6.10 J	0.450	0.0580
Benzo(e)pyrene	- -	mg/kg	0.0890	0.0820	3.60 J	0.270	0.0360
Benzo(g,h,i)perylene	- -	mg/kg	0.0380	0.0390	1.70 J	0.130	0.0160
Benzo(k)fluoranthene	- -	mg/kg	0.0930	0.0980	5.00 J	0.380	0.0370
C1-Chrysenes	- -	mg/kg	0.0470	0.0330	1.30 J	0.120	0.0160
C1-Fluoranthenes/pyrene	- -	mg/kg	0.0980	0.0900	4.80 J	0.340	0.0310
C1-Fluorenes	- -	mg/kg	0.00570 U	0.00580 U	0.360 UJ	0.0190 U	0.00180 U
C1-Phenanthrenes/Anthracenes	- -	mg/kg	0.0380	0.0320	2.30 J	0.170	0.0100
C2-Chrysenes	- -	mg/kg	0.0400	0.0180	0.360 UJ	0.0450	0.0150
C2-Fluorenes	- -	mg/kg	0.00570 U	0.00580 U	0.360 UJ	0.0190 U	0.00190
C2-Naphthalenes	- -	mg/kg	0.00870	0.00610	0.360 J	0.0350	0.00490
C2-Phenanthrenes/Anthracenes	- -	mg/kg	0.0270	0.0190	1.00 J	0.0900	0.00980
C3-Chrysenes	- -	mg/kg	0.0360	0.0130	0.360 UJ	0.0190	0.0170
C3-Fluorenes	- -	mg/kg	0.00570 U	0.00580 U	0.360 UJ	0.0190 U	0.00410
C3-Naphthalenes	- -	mg/kg	0.00800	0.00650	0.360 UJ	0.0280	0.00510
C3-Phenanthrenes/Anthracenes	- -	mg/kg	0.0190	0.0120	0.400 J	0.0400	0.00740
C4-Chrysenes	- -	mg/kg	0.0200	0.00580 U	0.360 UJ	0.0190 U	0.0110
C4-Naphthalenes	- -	mg/kg	0.00680	0.00580 U	0.360 UJ	0.0190 U	0.00330
C4-Phenanthrenes/Anthracenes	- -	mg/kg	0.0180	0.00850	0.360 UJ	0.0190	0.00590
Chrysene	- -	mg/kg	0.130	0.130	6.10 J	0.440	0.0450
Dibenzo(a,h)anthracene	- -	mg/kg	0.0140 J	0.0130 J	0.500 J	0.0440 J	0.00570 J
Fluoranthene	- -	mg/kg	0.230	0.270	18.0 J	0.880	0.0640
Fluorene	- -	mg/kg	0.0120	0.00810	1.50 J	0.0700	0.00120 J
Indeno(1,2,3-cd)pyrene	- -	mg/kg	0.0400 J	0.0400 J	1.80 J	0.140 J	0.0160
Naphthalene	- -	mg/kg	0.00370 U	0.00450 J	0.330 J	0.0480	0.00150 J
Perylene	- -	mg/kg	0.0320	0.0270	1.40 J	0.0920	0.0130
Phenanthrene	- -	mg/kg	0.130	0.130	13.0 J	0.560	0.0190
Pyrene	- -	mg/kg	0.200	0.220	14.0 J	0.710	0.0530
Total PAH16	56.4	mg/kg	1.27 J	1.33 J	**85.1 J**	4.94 J	0.401 J
Total PAH34	- -	mg/kg	1.76 J	1.68 J	101 J	6.24 J	0.594 J
Miscellaneous							
Total Organic Carbon	- -	mg/kg	18,800	2,950 UBJ	13,100	5,100 J	3,460 UBJ

See Notes on Page 15.

Table 10
Cayadutta Creek Sediment Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: / Sample Depth(feet): / Date Collected: / Sample Name:	95th Percentile Background[1]	Units	R3-PDI-SED-21RR / 0 - 0.3 / 01/20/21 / R3-PDI-SED-21RR(0-0.3)	R3-PDI-SED-22DEP / 0 - 0.3 / 01/20/21 / R3-PDI-SED-22DEP(0-0.3)	R3-PDI-SED-23DEP / 0 - 0.6 / 01/20/21 / R3-PDI-SED-23DEP(0-0.6)	R3-PDI-SED-24DEP / 0 - 1 / 01/20/21 / R3-PDI-SED-24DEP(0-1)	R3-PDI-SED-24DEP / 1 - 1.8 / 01/20/21 / R3-PDI-SED-24DEP(1-1.8)
SVOCs-SIM							
1-Methylnaphthalene	- -	mg/kg	0.000860 J	0.00400 J	0.0430 UJ	0.0360 UJ	0.00810 UJ
2-Methylnaphthalene	- -	mg/kg	0.00180	0.00450 J	0.0490 UJ	0.0410 UJ	0.00920 UJ
Acenaphthene	- -	mg/kg	0.000710 U	0.0190	0.200 J	0.0870 J	0.0280 J
Acenaphthylene	- -	mg/kg	0.000810 J	0.00960 J	0.0550 UJ	0.0470 UJ	0.0180 J
Anthracene	- -	mg/kg	0.00320	0.0860	0.730 J	0.810 J	0.120 J
Benzo(a)anthracene	- -	mg/kg	0.0320	0.490	2.60 J	1.80 J	0.510 J
Benzo(a)pyrene	- -	mg/kg	0.0410	0.520	2.50 J	1.40 J	0.520 J
Benzo(b)fluoranthene	- -	mg/kg	0.0580	0.500	2.70 J	1.50 J	0.550 J
Benzo(e)pyrene	- -	mg/kg	0.0380	0.310	1.60 J	0.910 J	0.340 J
Benzo(g,h,i)perylene	- -	mg/kg	0.0180	0.170	0.890 J	0.400 J	0.180 J
Benzo(k)fluoranthene	- -	mg/kg	0.0380	0.430	2.20 J	1.30 J	0.430 J
C1-Chrysenes	- -	mg/kg	0.0180	0.150	0.650 J	0.420 J	0.150 J
C1-Fluoranthenes/pyrene	- -	mg/kg	0.0270	0.300	1.80 J	1.20 J	0.350 J
C1-Fluorenes	- -	mg/kg	0.00180 U	0.0180 U	0.200 UJ	0.170 UJ	0.0390 UJ
C1-Phenanthrenes/Anthracenes	- -	mg/kg	0.0100	0.0970	0.880 J	0.650 J	0.130 J
C2-Chrysenes	- -	mg/kg	0.0170	0.0720	0.200 J	0.170 UJ	0.0620 J
C2-Fluorenes	- -	mg/kg	0.00230	0.0180 U	0.200 UJ	0.170 UJ	0.0390 UJ
C2-Naphthalenes	- -	mg/kg	0.00570	0.0180 U	0.200 UJ	0.170 UJ	0.0390 UJ
C2-Phenanthrenes/Anthracenes	- -	mg/kg	0.0100	0.0720	0.420 J	0.310 J	0.0820 J
C3-Chrysenes	- -	mg/kg	0.0190	0.0430	0.200 UJ	0.170 UJ	0.0390 UJ
C3-Fluorenes	- -	mg/kg	0.00540	0.0180 U	0.200 UJ	0.170 UJ	0.0390 UJ
C3-Naphthalenes	- -	mg/kg	0.00610	0.0180 U	0.200 UJ	0.170 UJ	0.0390 UJ
C3-Phenanthrenes/Anthracenes	- -	mg/kg	0.00860	0.0430	0.200 UJ	0.170 UJ	0.0430 J
C4-Chrysenes	- -	mg/kg	0.0120	0.0180 U	0.200 UJ	0.170 UJ	0.0390 UJ
C4-Naphthalenes	- -	mg/kg	0.00390	0.0180 U	0.200 UJ	0.170 UJ	0.0390 UJ
C4-Phenanthrenes/Anthracenes	- -	mg/kg	0.00740	0.0260	0.200 UJ	0.170 UJ	0.0390 UJ
Chrysene	- -	mg/kg	0.0420	0.450	2.70 J	1.70 J	0.520 J
Dibenzo(a,h)anthracene	- -	mg/kg	0.00670 J	0.0650 J	0.280 J	0.150 J	0.0580 J
Fluoranthene	- -	mg/kg	0.0600	0.720	6.60 J	4.40 J	1.10 J
Fluorene	- -	mg/kg	0.00120 J	0.0230	0.260 J	0.150 J	0.0320 J
Indeno(1,2,3-cd)pyrene	- -	mg/kg	0.0180	0.200 J	0.910 J	0.430 J	0.190 J
Naphthalene	- -	mg/kg	0.00130 J	0.0120 U	0.130 UJ	0.110 UJ	0.0250 UJ
Perylene	- -	mg/kg	0.0120	0.120	0.590 J	0.370 J	0.140 J
Phenanthrene	- -	mg/kg	0.0170	0.250	3.70 J	2.40 J	0.520 J
Pyrene	- -	mg/kg	0.0480	0.550	4.90 J	3.20 J	0.910 J
Total PAH16	56.4	mg/kg	0.385 J	4.48 J	31.2 J	19.7 J	5.69 J
Total PAH34	- -	mg/kg	0.590 J	5.72 J	37.3 J	23.6 J	6.98 J
Miscellaneous							
Total Organic Carbon	- -	mg/kg	4,660 J	11,200 J	11,500 J	3,380	4,910 J

See Notes on Page 15.

Table 10
Cayadutta Creek Sediment Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample Depth(feet): Date Collected: Sample Name:	95th Percentile Background[1]	Units	R3-PDI-SED-25DEP 0 - 0.3 01/20/21 R3-PDI-SED-25DEP(0-0.3)	R3-PDI-SED-26DEP 0 - 0.4 01/20/21 R3-PDI-SED-26DEP(0-0.4)	R3-PDI-SED-27RR 0 - 0.4 01/20/21 R3-PDI-SED-27RR(0-0.4)	R3-PDI-SED-28DEP 0 - 0.8 01/20/21 R3-PDI-SED-28DEP(0-0.8)	R3-PDI-SED-29RR 0 - 0.2 01/20/21 R3-PDI-SED-29RR(0-0.2)
SVOCs-SIM							
1-Methylnaphthalene	- -	mg/kg	0.0410	2.50 J	0.260	4.60 J	0.100
2-Methylnaphthalene	- -	mg/kg	0.0350	0.950 J	0.300	2.00 J	0.0690
Acenaphthene	- -	mg/kg	0.0390	2.50 J	0.190	5.50 J	0.140
Acenaphthylene	- -	mg/kg	0.0110	0.220 J	0.0170	0.680 J	0.120
Anthracene	- -	mg/kg	0.0260	1.00 J	0.0660	2.70 J	0.170
Benzo(a)anthracene	- -	mg/kg	0.0470	1.50 J	0.150	2.10 J	0.410
Benzo(a)pyrene	- -	mg/kg	0.0460	1.40 J	0.140	1.60 J	0.360
Benzo(b)fluoranthene	- -	mg/kg	0.0400	1.40 J	0.120	1.20 J	0.250
Benzo(e)pyrene	- -	mg/kg	0.0340	0.840 J	0.0880	0.910 J	0.200
Benzo(g,h,i)perylene	- -	mg/kg	0.0150	0.400 J	0.0600	0.410 J	0.0840
Benzo(k)fluoranthene	- -	mg/kg	0.0310	1.00 J	0.110	1.10 J	0.230
C1-Chrysenes	- -	mg/kg	0.0280	0.510 J	0.0690	1.40 J	0.320
C1-Fluoranthenes/pyrene	- -	mg/kg	0.0800	1.60 J	0.150	4.60 J	0.820
C1-Fluorenes	- -	mg/kg	0.0140	0.770 J	0.0290	3.30 J	0.150
C1-Phenanthrenes/Anthracenes	- -	mg/kg	0.0760	1.70 J	0.130	7.40 J	0.560
C2-Chrysenes	- -	mg/kg	0.0200	0.190 UJ	0.0370	0.480 J	0.150
C2-Fluorenes	- -	mg/kg	0.0160	0.390 J	0.0170	1.90 J	0.160
C2-Naphthalenes	- -	mg/kg	0.0600	6.90 J	0.200	14.0 J	0.460
C2-Phenanthrenes/Anthracenes	- -	mg/kg	0.0480	0.770 J	0.0610	3.50 J	0.430
C3-Chrysenes	- -	mg/kg	0.0200	0.190 UJ	0.0310	0.190 UJ	0.0600
C3-Fluorenes	- -	mg/kg	0.00800	0.240 J	0.0110 U	0.610 J	0.0870
C3-Naphthalenes	- -	mg/kg	0.0310	2.80 J	0.0810	10.0 J	0.370
C3-Phenanthrenes/Anthracenes	- -	mg/kg	0.0190	0.300 J	0.0260	1.20 J	0.210
C4-Chrysenes	- -	mg/kg	0.0120	0.190 UJ	0.0110 U	0.190 UJ	0.0270
C4-Naphthalenes	- -	mg/kg	0.0150	0.510 J	0.0280	2.20 J	0.160
C4-Phenanthrenes/Anthracenes	- -	mg/kg	0.00800	0.190 UJ	0.0130	0.280 J	0.0560
Chrysene	- -	mg/kg	0.0470	1.40 J	0.150	2.00 J	0.400
Dibenzo(a,h)anthracene	- -	mg/kg	0.00520 J	0.150 J	0.0210 J	0.180 J	0.0360
Fluoranthene	- -	mg/kg	0.0750	3.40 J	0.280	3.70 J	0.520
Fluorene	- -	mg/kg	0.0190	1.30 J	0.0510	3.50 J	0.100
Indeno(1,2,3-cd)pyrene	- -	mg/kg	0.0140 J	0.380 J	0.0600 J	0.410 J	0.0890
Naphthalene	- -	mg/kg	0.0620	0.610 J	0.340	0.260 J	0.100
Perylene	- -	mg/kg	0.0130	0.310 J	0.0320	0.300 J	0.0630
Phenanthrene	- -	mg/kg	0.0590	3.70 J	0.220	8.50 DJ	0.480
Pyrene	- -	mg/kg	0.0870	2.80 J	0.240	4.60 J	0.730
Total PAH16	56.4	mg/kg	0.623 J	23.2 J	2.22 J	38.4 J	4.22
Total PAH34	- -	mg/kg	1.20 J	44.3 J	3.77 J	97.1 J	8.67
Miscellaneous							
Total Organic Carbon	- -	mg/kg	7,640	3,500	5,610	13,000	5,700 J

See Notes on Page 15.

Table 10
Cayadutta Creek Sediment Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample Depth(feet): Date Collected: Sample Name:	95th Percentile Background[1]	Units	R3-PDI-SED-30DEP 0 - 0.6 01/20/21 R3-PDI-SED-30DEP(0-0.6)	R3-PDI-SED-31DEP 0 - 0.6 01/20/21 R3-PDI-SED-31DEP(0-0.6)	R3-PDI-SED-32RR 0 - 0.4 01/20/21 R3-PDI-SED-32RR(0-0.4)	R3-PDI-SED-33RR 0 - 0.3 01/20/21 R3-PDI-SED-33RR(0-0.3)	R3-PDI-SED-34DEP 0 - 0.4 01/20/21 R3-PDI-SED-34DEP(0-0.4)
SVOCs-SIM							
1-Methylnaphthalene	- -	mg/kg	0.770 J	0.0660 J	0.0340 J	0.170 J	0.0480
2-Methylnaphthalene	- -	mg/kg	0.770 J	0.0740 J	0.0330 J	0.120 J	0.0490
Acenaphthene	- -	mg/kg	0.650 J	0.140 J	0.0720 J	0.260 J	0.0610
Acenaphthylene	- -	mg/kg	0.140 J	0.0860 J	0.0320 J	0.0370 J	0.0420
Anthracene	- -	mg/kg	0.500 J	0.220 J	0.160 J	0.590 J	0.0800
Benzo(a)anthracene	- -	mg/kg	0.640 J	0.810 J	0.390 J	1.10 J	0.240
Benzo(a)pyrene	- -	mg/kg	0.560 J	0.770 J	0.420 J	0.810 J	0.230
Benzo(b)fluoranthene	- -	mg/kg	0.410 J	0.760 J	0.370 J	0.790 J	0.260
Benzo(e)pyrene	- -	mg/kg	0.320 J	0.470 J	0.270 J	0.450 J	0.160
Benzo(g,h,i)perylene	- -	mg/kg	0.280 J	0.180 J	0.240 J	0.210 J	0.0580
Benzo(k)fluoranthene	- -	mg/kg	0.330 J	0.670 J	0.290 J	0.570 J	0.190
C1-Chrysenes	- -	mg/kg	0.410 J	0.260 J	0.170 J	0.310 J	0.100
C1-Fluoranthenes/pyrene	- -	mg/kg	1.30 J	0.950 J	0.430 J	0.940 J	0.350
C1-Fluorenes	- -	mg/kg	0.350 J	0.0860 J	0.0540 J	0.110 J	0.0420
C1-Phenanthrenes/Anthracenes	- -	mg/kg	1.40 J	0.480 J	0.300 J	0.730 J	0.220
C2-Chrysenes	- -	mg/kg	0.150 J	0.0710 J	0.0760 J	0.110 J	0.0390
C2-Fluorenes	- -	mg/kg	0.310 J	0.0860 J	0.0460 J	0.0950 J	0.0450
C2-Naphthalenes	- -	mg/kg	1.70 J	0.210 J	0.130 J	0.260 J	0.130
C2-Phenanthrenes/Anthracenes	- -	mg/kg	0.840 J	0.330 J	0.170 J	0.340 J	0.150
C3-Chrysenes	- -	mg/kg	0.0480 J	0.0440 UJ	0.0440 J	0.0500 J	0.0150
C3-Fluorenes	- -	mg/kg	0.150 J	0.0840 J	0.0520 J	0.120 J	0.0380
C3-Naphthalenes	- -	mg/kg	1.00 J	0.170 J	0.110 J	0.200 J	0.0900
C3-Phenanthrenes/Anthracenes	- -	mg/kg	0.300 J	0.140 J	0.0850 J	0.130 J	0.0680
C4-Chrysenes	- -	mg/kg	0.0420 UJ	0.0440 UJ	0.0290 UJ	0.0470 UJ	0.00810 U
C4-Naphthalenes	- -	mg/kg	0.380 J	0.0890 J	0.0600 J	0.0870 J	0.0400
C4-Phenanthrenes/Anthracenes	- -	mg/kg	0.0980 J	0.0480 J	0.0390 J	0.0480 J	0.0240
Chrysene	- -	mg/kg	0.600 J	0.760 J	0.390 J	0.920 J	0.240
Dibenzo(a,h)anthracene	- -	mg/kg	0.0850 J	0.0590 J	0.0800 J	0.0900 J	0.0200
Fluoranthene	- -	mg/kg	1.20 J	1.60 J	0.770 J	2.20 J	0.460 D
Fluorene	- -	mg/kg	0.390 J	0.130 J	0.0750 J	0.300 J	0.0460
Indeno(1,2,3-cd)pyrene	- -	mg/kg	0.250 J	0.180 J	0.230 J	0.240 J	0.0620
Naphthalene	- -	mg/kg	0.460 J	0.0610 J	0.0280 J	0.260 J	0.0810
Perylene	- -	mg/kg	0.110 J	0.180 J	0.100 J	0.170 J	0.0550
Phenanthrene	- -	mg/kg	1.40 J	0.950 J	0.540 J	2.10 J	0.270
Pyrene	- -	mg/kg	1.30 J	1.60 J	0.700 J	1.80 J	0.460 D
Total PAH16	56.4	mg/kg	9.20 J	8.98 J	4.79 J	12.3 J	2.80
Total PAH34	- -	mg/kg	19.6 J	12.8 J	6.99 J	16.7 J	4.46
Miscellaneous							
Total Organic Carbon	- -	mg/kg	20,400 B^2	12,500	4,170 J	3,930 J	5,310 J

See Notes on Page 15.

Table 10
Cayadutta Creek Sediment Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample Depth(feet): Date Collected: Sample Name:	95th Percentile Background[1]	Units	R3-PDI-SED-35RR 0 - 0.2 01/20/21 R3-PDI-SED-35RR(0-0.2)	R3-PDI-SED-36RR 0 - 0.3 01/20/21 R3-PDI-SED-36RR(0-0.3)	R3-PDI-SED-37RR 0 - 0.3 01/20/21 R3-PDI-SED-37RR(0-0.3)	R3-PDI-SED-38DEP 0 - 0.6 01/20/21 R3-PDI-SED-38DEP(0-0.6)	R3-PDI-SED-39RR 0 - 0.3 01/20/21 R3-PDI-SED-39RR(0-0.3)
SVOCs-SIM							
1-Methylnaphthalene	- -	mg/kg	0.0280	0.0620	0.0230 J	0.0290 J [0.0430 J]	0.00860 J
2-Methylnaphthalene	- -	mg/kg	0.0150	0.0210	0.0170 J	0.0280 J [0.0350 J]	0.00430 J
Acenaphthene	- -	mg/kg	0.0290	0.0820	0.0280 J	0.110 J [0.0890 J]	0.0220
Acenaphthylene	- -	mg/kg	0.0220	0.0660	0.210 J	0.290 J [0.330 J]	0.0210
Anthracene	- -	mg/kg	0.0530	0.100	0.0790 J	0.410 J [0.380 J]	0.130
Benzo(a)anthracene	- -	mg/kg	0.110	0.170	0.620 J	1.80 J [1.20 J]	0.410
Benzo(a)pyrene	- -	mg/kg	0.120	0.190	0.420 J	1.70 J [1.30 J]	0.360
Benzo(b)fluoranthene	- -	mg/kg	0.110	0.150	0.250 J	1.60 J [1.30 J]	0.390
Benzo(e)pyrene	- -	mg/kg	0.0790	0.110	0.220 J	1.00 J [0.780 J]	0.220
Benzo(g,h,i)perylene	- -	mg/kg	0.0350	0.0400	0.0700 J	0.400 J [0.320 J]	0.0940
Benzo(k)fluoranthene	- -	mg/kg	0.0960	0.140	0.280 J	1.30 J [0.870 J]	0.290
C1-Chrysenes	- -	mg/kg	0.0510	0.130	0.500 J	0.920 J [0.720 J]	0.130
C1-Fluoranthenes/pyrene	- -	mg/kg	0.180	0.370	1.70 J	2.80 J [1.90 J]	0.400
C1-Fluorenes	- -	mg/kg	0.0220	0.0610	0.120 J	0.120 J [0.170 J]	0.0200
C1-Phenanthrenes/Anthracenes	- -	mg/kg	0.140	0.270	0.590 J	1.10 J [1.00 J]	0.230
C2-Chrysenes	- -	mg/kg	0.0190	0.0530	0.150 J	0.270 J [0.290 J]	0.0470
C2-Fluorenes	- -	mg/kg	0.0230	0.0620	0.340 J	0.290 J [0.260 J]	0.0330
C2-Naphthalenes	- -	mg/kg	0.0700	0.190	0.110 J	0.130 J [0.200 J]	0.0250
C2-Phenanthrenes/Anthracenes	- -	mg/kg	0.0780	0.170	1.10 J	1.10 J [0.810 J]	0.150
C3-Chrysenes	- -	mg/kg	0.00930	0.0220	0.0360 UJ	0.0890 UJ [0.0850 J]	0.0200
C3-Fluorenes	- -	mg/kg	0.0190	0.0340	0.190 J	0.260 J [0.200 J]	0.0410
C3-Naphthalenes	- -	mg/kg	0.0530	0.180	0.270 J	0.220 J [0.300 J]	0.0370
C3-Phenanthrenes/Anthracenes	- -	mg/kg	0.0350	0.0880	0.450 J	0.530 J [0.450 J]	0.0650
C4-Chrysenes	- -	mg/kg	0.00800 U	0.00860 U	0.0360 UJ	0.0890 UJ [0.0450 UJ]	0.0180 U
C4-Naphthalenes	- -	mg/kg	0.0270	0.0730	0.390 J	0.300 J [0.220 J]	0.0320
C4-Phenanthrenes/Anthracenes	- -	mg/kg	0.0140	0.0320	0.130 J	0.180 J [0.140 J]	0.0240
Chrysene	- -	mg/kg	0.110	0.170	0.570 J	1.80 J [1.30 J]	0.380
Dibenzo(a,h)anthracene	- -	mg/kg	0.0100	0.0170	0.0270 J	0.140 J [0.140 J]	0.0380
Fluoranthene	- -	mg/kg	0.240	0.250	0.710 J	3.20 J [2.20 J]	0.800
Fluorene	- -	mg/kg	0.0200	0.0540	0.0170 UJ	0.140 J [0.110 J]	0.0330
Indeno(1,2,3-cd)pyrene	- -	mg/kg	0.0330	0.0420	0.0620 J	0.400 J [0.350 J]	0.100
Naphthalene	- -	mg/kg	0.0130	0.0170	0.0260 J	0.0570 UJ [0.0290 J]	0.0110 U
Perylene	- -	mg/kg	0.0310	0.0350	0.0550 J	0.390 J [0.250 J]	0.0780
Phenanthrene	- -	mg/kg	0.200	0.260	0.120 J	1.60 J [1.30 J]	0.500
Pyrene	- -	mg/kg	0.270	0.340	1.30 J	3.30 J [2.10 J]	0.740
Total PAH16	56.4	mg/kg	1.47	2.09	4.77 J	18.2 J [13.3 J]	4.31
Total PAH34	- -	mg/kg	2.36	4.05	11.1 J	27.9 J [21.2 J]	5.87 J
Miscellaneous							
Total Organic Carbon	- -	mg/kg	3,980 J	5,440 J	10,800	5,710 J [3,250]	4,580 J

See Notes on Page 15.

Table 10
Cayadutta Creek Sediment Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: / Sample Depth(feet): / Date Collected: / Sample Name:	95th Percentile Background[1]	Units	R4-PDI-SED-40RR / 0 - 0.3 / 01/20/21 / R4-PDI-SED-40RR(0-0.3)	R4-PDI-SED-41RR / 0 - 0.02 / 01/20/21 / R4-PDI-SED-41RR(0-0.2)	R4-PDI-SED-42DEP / 0 - 0.2 / 01/20/21 / R4-PDI-SED-42DEP(0-0.2)	R4-PDI-SED-43DEP / 0 - 1 / 01/20/21 / R4-PDI-SED-43DEP(0-1)	R4-PDI-SED-43DEP / 1 - 1.2 / 01/20/21 / R4-PDI-SED-43DEP(1-1.2)
SVOCs-SIM							
1-Methylnaphthalene	- -	mg/kg	0.00490	0.0140 J	0.00650	0.0930 J	0.120 J
2-Methylnaphthalene	- -	mg/kg	0.00360	0.0120 J	0.00480	0.0740 J	0.0500 J
Acenaphthene	- -	mg/kg	0.00370	0.0210	0.0100	0.220 J	0.360 J
Acenaphthylene	- -	mg/kg	0.0100	0.0770	0.0250	0.110 J	0.160 J
Anthracene	- -	mg/kg	0.0130	0.150	0.0210	0.370 J	0.980 J
Benzo(a)anthracene	- -	mg/kg	0.0530	0.520	0.0850	1.10 J	2.80 J
Benzo(a)pyrene	- -	mg/kg	0.0570	0.430	0.0840	0.980 J	2.60 J
Benzo(b)fluoranthene	- -	mg/kg	0.0510	0.340	0.0790	1.00 J	3.00 J
Benzo(e)pyrene	- -	mg/kg	0.0370	0.230	0.0590	0.590 J	1.60 J
Benzo(g,h,i)perylene	- -	mg/kg	0.0210	0.0850	0.0210	0.290 J	0.790 J
Benzo(k)fluoranthene	- -	mg/kg	0.0410	0.330	0.0620	0.710 J	1.90 J
C1-Chrysenes	- -	mg/kg	0.0330	0.300	0.0720	0.410 J	0.880 J
C1-Fluoranthenes/pyrene	- -	mg/kg	0.0750	0.720	0.170	1.30 J	2.80 J
C1-Fluorenes	- -	mg/kg	0.00630	0.0390	0.0140	0.150 J	0.340 J
C1-Phenanthrenes/Anthracenes	- -	mg/kg	0.0400	0.300	0.0730	0.900 J	1.90 J
C2-Chrysenes	- -	mg/kg	0.0170	0.100	0.0380	0.120 J	0.260 J
C2-Fluorenes	- -	mg/kg	0.00890	0.0580	0.0210	0.170 J	0.320 J
C2-Naphthalenes	- -	mg/kg	0.0130	0.0680	0.0290	0.330 J	0.780 J
C2-Phenanthrenes/Anthracenes	- -	mg/kg	0.0320	0.280	0.0740	0.550 J	1.00 J
C3-Chrysenes	- -	mg/kg	0.0110	0.0230	0.0210	0.0460 UJ	0.0930 UJ
C3-Fluorenes	- -	mg/kg	0.00750	0.0470	0.0190	0.150 J	0.370 J
C3-Naphthalenes	- -	mg/kg	0.0160	0.0740	0.0340	0.330 J	0.930 J
C3-Phenanthrenes/Anthracenes	- -	mg/kg	0.0180	0.160	0.0500	0.220 J	0.400 J
C4-Chrysenes	- -	mg/kg	0.00710	0.0150 U	0.0110	0.0460 UJ	0.0930 UJ
C4-Naphthalenes	- -	mg/kg	0.0110	0.0480	0.0220	0.170 J	0.380 J
C4-Phenanthrenes/Anthracenes	- -	mg/kg	0.00730	0.0580	0.0210	0.0710 J	0.120 J
Chrysene	- -	mg/kg	0.0550	0.420	0.0900	1.00 J	2.70 J
Dibenzo(a,h)anthracene	- -	mg/kg	0.00800	0.0390	0.00790	0.100 J	0.290 J
Fluoranthene	- -	mg/kg	0.0720	0.670	0.110	2.10 J	6.20 DJ
Fluorene	- -	mg/kg	0.00320	0.0400	0.00980	0.170 J	0.420 J
Indeno(1,2,3-cd)pyrene	- -	mg/kg	0.0210	0.0930	0.0190	0.300 J	0.800 J
Naphthalene	- -	mg/kg	0.00490	0.0160	0.00560	0.0670 J	0.0600 UJ
Perylene	- -	mg/kg	0.0130	0.0890	0.0180	0.210 J	0.550 J
Phenanthrene	- -	mg/kg	0.0330	0.340	0.0610	1.40 J	4.00 J
Pyrene	- -	mg/kg	0.0790	0.690	0.150	2.10 J	5.50 DJ
Total PAH16	56.4	mg/kg	0.526	4.26	0.840	12.0 J	32.5 J
Total PAH34	- -	mg/kg	0.887	6.88 J	1.60	17.9 J	45.3 J
Miscellaneous							
Total Organic Carbon	- -	mg/kg	3,250 UBJ	3,730 J	19,400 J	2,760 J	11,800 J

See Notes on Page 15.

Table 10
Cayadutta Creek Sediment Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample Depth(feet): Date Collected: Sample Name:	95th Percentile Background[1]	Units	R4-PDI-SED-44DEP 0 - 1 01/20/21 R4-PDI-SED-44DEP(0-1)	R4-PDI-SED-44DEP 1 - 1.4 01/20/21 R4-PDI-SED-44DEP(1-1.4)	R4-PDI-SED-45RR 0 - 0.2 01/20/21 R4-PDI-SED-45RR(0-0.2)	R4-PDI-SED-46RR 0 - 0.2 01/20/21 R4-PDI-SED-46RR(0-0.2)	R4-PDI-SED-47RR 0 - 0.2 01/20/21 R4-PDI-SED-47RR(0-0.2)
SVOCs-SIM							
1-Methylnaphthalene	- -	mg/kg	0.0250 J [0.0270]	0.0830	0.0240 J	0.0170	0.0600 J
2-Methylnaphthalene	- -	mg/kg	0.0160 J [0.0160]	0.0170	0.0150 J	0.0160	0.0450 J
Acenaphthene	- -	mg/kg	0.0460 J [0.0470]	0.100	0.0400 J	0.0210	0.240 J
Acenaphthylene	- -	mg/kg	0.0300 J [0.0350]	0.00960	0.0350 J	0.0130	0.0560 J
Anthracene	- -	mg/kg	0.0920 [0.0930]	0.0500	0.120 J	0.0470	0.430 J
Benzo(a)anthracene	- -	mg/kg	0.240 [0.270]	0.200	0.780 J	0.180	1.10 J
Benzo(a)pyrene	- -	mg/kg	0.250 [0.250]	0.190	0.740 J	0.160	1.10 J
Benzo(b)fluoranthene	- -	mg/kg	0.260 [0.280]	0.240	0.910 J	0.180	0.970 J
Benzo(e)pyrene	- -	mg/kg	0.160 [0.160]	0.140	0.520 J	0.110	0.620 J
Benzo(g,h,i)perylene	- -	mg/kg	0.0880 [0.0700]	0.0640	0.260 J	0.0480	0.410 J
Benzo(k)fluoranthene	- -	mg/kg	0.170 [0.180]	0.160	0.610 J	0.130	0.760 J
C1-Chrysenes	- -	mg/kg	0.110 [0.120]	0.0660	0.230 J	0.0750	0.340 J
C1-Fluoranthenes/pyrene	- -	mg/kg	0.310 [0.320]	0.170	0.580 J	0.180	0.960 J
C1-Fluorenes	- -	mg/kg	0.0590 [0.0620]	0.0220	0.0440 UJ	0.0180	0.0800 UJ
C1-Phenanthrenes/Anthracenes	- -	mg/kg	0.290 [0.260]	0.0960	0.270 J	0.120	0.540 J
C2-Chrysenes	- -	mg/kg	0.0450 [0.0510]	0.0300	0.0700 J	0.0310	0.130 J
C2-Fluorenes	- -	mg/kg	0.0620 [0.0600]	0.0150	0.0440 UJ	0.0190	0.0800 UJ
C2-Naphthalenes	- -	mg/kg	0.140 [0.140]	0.210	0.0630 J	0.0600	0.160 J
C2-Phenanthrenes/Anthracenes	- -	mg/kg	0.170 [0.170]	0.0510	0.180 J	0.0740	0.350 J
C3-Chrysenes	- -	mg/kg	0.0200 [0.0220]	0.0190	0.0440 UJ	0.0190	0.0800 UJ
C3-Fluorenes	- -	mg/kg	0.0440 [0.0420]	0.0230	0.0920 J	0.0200	0.160 J
C3-Naphthalenes	- -	mg/kg	0.180 [0.170]	0.0800	0.0820 J	0.0560	0.130 J
C3-Phenanthrenes/Anthracenes	- -	mg/kg	0.0670 [0.0750]	0.0240	0.0880 J	0.0340	0.170 J
C4-Chrysenes	- -	mg/kg	0.00880 U [0.00870 U]	0.00920 U	0.0440 UJ	0.00730 U	0.0800 UJ
C4-Naphthalenes	- -	mg/kg	0.0800 [0.0720]	0.0230	0.0510 J	0.0290	0.0800 UJ
C4-Phenanthrenes/Anthracenes	- -	mg/kg	0.0230 [0.0230]	0.0130	0.0440 UJ	0.0140	0.0800 UJ
Chrysene	- -	mg/kg	0.250 [0.270]	0.210	0.820 J	0.170	1.00 J
Dibenzo(a,h)anthracene	- -	mg/kg	0.0330 J [0.0280]	0.0210	0.100 J	0.0190	0.120 J
Fluoranthene	- -	mg/kg	0.440 D [0.470 D]	0.430	1.60 J	0.300	2.80 J
Fluorene	- -	mg/kg	0.0460 J [0.0470]	0.0510	0.0360 J	0.0180	0.240 J
Indeno(1,2,3-cd)pyrene	- -	mg/kg	0.0930 [0.0790]	0.0650	0.280 J	0.0530	0.420 J
Naphthalene	- -	mg/kg	0.0130 [0.00960]	0.00790 J	0.0280 UJ	0.0150	0.0510 UJ
Perylene	- -	mg/kg	0.0580 J [0.0540]	0.0440	0.180 J	0.0380	0.240 J
Phenanthrene	- -	mg/kg	0.310 [0.320]	0.230	0.580 J	0.160	2.00 J
Pyrene	- -	mg/kg	0.440 [0.450 D]	0.370	1.30 J	0.280	2.30 J
Total PAH16	56.4	mg/kg	2.80 J [2.90]	2.40 J	8.21 J	1.79	13.9 J
Total PAH34	- -	mg/kg	4.66 J [4.74]	3.52 J	10.7 J	2.72	17.9 J
Miscellaneous							
Total Organic Carbon	- -	mg/kg	2,990 UBJ [1,910]	3,690 J	2,730 J	5,860 J	3,240 J

See Notes on Page 15.

Table 10
Cayadutta Creek Sediment Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample Depth(feet): Date Collected: Sample Name:	95th Percentile Background[1]	Units	R4-PDI-SED-48RR 0 - 0.3 01/20/21 R4-PDI-SED-48RR(0-0.3)	R4-PDI-SED-49DEP 0 - 0.1 01/19/21 R4-PDI-SED-49DEP(0-1)	R4-PDI-SED-50RR 0 - 1 01/19/21 R4-PDI-SED-50RR(0-1)	R4-PDI-SED-51DEP 0 - 1 01/19/21 R4-PDI-SED-51DEP(0-1)	R4-PDI-SED-51DEP 1 - 1.2 01/19/21 R4-PDI-SED-51DEP(1-1.2)
SVOCs-SIM							
1-Methylnaphthalene	- -	mg/kg	0.0490 J	0.0100	0.0470	0.00410 J	0.00430
2-Methylnaphthalene	- -	mg/kg	0.0430 J	0.00820 J	0.0170	0.00480	0.00580
Acenaphthene	- -	mg/kg	0.200 J	0.0120	0.0690	0.00790	0.00460
Acenaphthylene	- -	mg/kg	0.0410 J	0.0490	0.0630	0.00860	0.00210
Anthracene	- -	mg/kg	0.430 J	0.0610	0.160	0.0330	0.00470
Benzo(a)anthracene	- -	mg/kg	1.30 J	0.270	0.520	0.0790	0.00610
Benzo(a)pyrene	- -	mg/kg	1.20 J	0.240	0.470	0.0570	0.00390
Benzo(b)fluoranthene	- -	mg/kg	1.20 J	0.190	0.520	0.0470	0.00550
Benzo(e)pyrene	- -	mg/kg	0.770 J	0.140	0.300	0.0330	0.00380
Benzo(g,h,i)perylene	- -	mg/kg	0.480 J	0.0850	0.130	0.0120 J	0.000920 J
Benzo(k)fluoranthene	- -	mg/kg	0.910 J	0.180	0.330	0.0450	0.00290
C1-Chrysenes	- -	mg/kg	0.340 J	0.170	0.230	0.0310	0.00560
C1-Fluoranthenes/pyrene	- -	mg/kg	1.00 J	0.390	0.580	0.0880	0.0140
C1-Fluorenes	- -	mg/kg	0.0920 UJ	0.0320	0.0840	0.00650	0.00400
C1-Phenanthrenes/Anthracenes	- -	mg/kg	0.560 J	0.200	0.420	0.0510	0.0140
C2-Chrysenes	- -	mg/kg	0.100 J	0.0650	0.0820	0.0110	0.00250
C2-Fluorenes	- -	mg/kg	0.0920 UJ	0.0500	0.0900	0.0120	0.00530
C2-Naphthalenes	- -	mg/kg	0.170 J	0.0420	0.190	0.0110	0.0110
C2-Phenanthrenes/Anthracenes	- -	mg/kg	0.240 J	0.180	0.260	0.0370	0.0100
C3-Chrysenes	- -	mg/kg	0.0920 UJ	0.0240	0.0260	0.00480 U	0.00110 U
C3-Fluorenes	- -	mg/kg	0.0920 UJ	0.0420	0.0830	0.00890	0.00420
C3-Naphthalenes	- -	mg/kg	0.130 J	0.0860	0.230	0.0110	0.0100
C3-Phenanthrenes/Anthracenes	- -	mg/kg	0.100 J	0.0920	0.120	0.0210	0.00610
C4-Chrysenes	- -	mg/kg	0.0920 UJ	0.00930 U	0.0170 U	0.00480 U	0.00110 U
C4-Naphthalenes	- -	mg/kg	0.0920 UJ	0.0700	0.110	0.00950	0.00520
C4-Phenanthrenes/Anthracenes	- -	mg/kg	0.0920 UJ	0.0340	0.0410	0.00850	0.00450
Chrysene	- -	mg/kg	1.30 J	0.250	0.530	0.0680	0.00690
Dibenzo(a,h)anthracene	- -	mg/kg	0.160 J	0.0340	0.0500	0.00440 J	0.000270 J
Fluoranthene	- -	mg/kg	3.20 J	0.440	1.10 D	0.180	0.0120
Fluorene	- -	mg/kg	0.250 J	0.0130	0.0680	0.0110	0.00360
Indeno(1,2,3-cd)pyrene	- -	mg/kg	0.480 J	0.0860	0.150	0.0120	0.000490 J
Naphthalene	- -	mg/kg	0.0590 UJ	0.00870 J	0.0110 J	0.00510	0.00400
Perylene	- -	mg/kg	0.310 J	0.0460	0.0970	0.0150	0.00650
Phenanthrene	- -	mg/kg	2.40 J	0.160	0.640	0.120	0.0150
Pyrene	- -	mg/kg	2.60 J	0.430	1.00 D	0.150	0.0140
Total PAH16	56.4	mg/kg	16.2 J	2.51 J	5.81 J	0.840 J	0.0870 J
Total PAH34	- -	mg/kg	20.0 J	4.19 J	8.82 J	1.20 J	0.204 J
Miscellaneous							
Total Organic Carbon	- -	mg/kg	5,330 J	2,520 J	2,460 ^2B	4,120 J	4,370 J

See Notes on Page 15.

Table 10
Cayadutta Creek Sediment Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample Depth(feet): Date Collected: Sample Name:	95th Percentile Background[1]	Units	R4-PDI-SED-52DEP 0 - 1 01/19/21 R4-PDI-SED-52DEP(0-1)	R4-PDI-SED-52DEP 1 - 1.7 01/19/21 R4-PDI-SED-52DEP(1-1.7)	R5-PDI-SED-53RR 0 - 0.7 01/19/21 R5-PDI-SED-53RR-(0-0.7)	R5-PDI-SED-54RR 0 - 0.5 01/19/21 R5-PDI-SED-54RR(0-0.5)	R5-PDI-SED-55RR 0 - 1 01/19/21 R5-PDI-SED-55RR(0-1)
SVOCs-SIM							
1-Methylnaphthalene	- -	mg/kg	0.0740 J [0.620 J]	0.350 J	0.140	1.70 J	2.50 J
2-Methylnaphthalene	- -	mg/kg	0.0710 J [0.840 J]	0.380 J	0.0900	0.600 J	0.670 J
Acenaphthene	- -	mg/kg	0.180 J [0.970 J]	0.390 J	0.140	0.220 J	1.70 J
Acenaphthylene	- -	mg/kg	0.150 J [0.200 J]	0.140 J	0.0410	0.190 J	0.410 J
Anthracene	- -	mg/kg	0.480 J [0.980 J]	0.610 J	0.130	0.120 J	3.20 J
Benzo(a)anthracene	- -	mg/kg	1.40 J [1.20 J]	2.10 J	0.280	0.400 J	1.70 J
Benzo(a)pyrene	- -	mg/kg	1.20 J [1.00 J]	2.10 J	0.230	0.340 J	1.10 J
Benzo(b)fluoranthene	- -	mg/kg	1.10 J [0.760 J]	1.90 J	0.200	0.340 J	0.940 J
Benzo(e)pyrene	- -	mg/kg	0.730 J [0.580 J]	1.30 J	0.130	0.280 J	0.750 J
Benzo(g,h,i)perylene	- -	mg/kg	0.330 J [0.300 J]	0.980 J	0.0590 J	0.110 J	0.320 J
Benzo(k)fluoranthene	- -	mg/kg	0.930 J [0.810 J]	1.60 J	0.160	0.280 J	0.750 J
C1-Chrysenes	- -	mg/kg	0.540 J [0.460 J]	0.820 J	0.150	0.810 J	2.40 J
C1-Fluoranthenes/pyrene	- -	mg/kg	1.60 J [1.80 J]	2.30 J	0.440	0.870 J	4.50 J
C1-Fluorenes	- -	mg/kg	0.190 J [0.440 J]	0.280 J	0.0830	0.500 J	3.00 J
C1-Phenanthrenes/Anthracenes	- -	mg/kg	1.10 J [2.10 J]	1.70 J	0.390	1.00 J	8.90 J
C2-Chrysenes	- -	mg/kg	0.160 J [0.140 J]	0.340 J	0.0560	0.770 J	1.80 J
C2-Fluorenes	- -	mg/kg	0.210 J [0.340 J]	0.320 J	0.0830	1.10 J	4.20 J
C2-Naphthalenes	- -	mg/kg	0.390 J [1.60 J]	1.30 J	0.350	10.0 J	23.0 J
C2-Phenanthrenes/Anthracenes	- -	mg/kg	0.710 J [1.10 J]	1.10 J	0.240	1.80 J	7.20 J
C3-Chrysenes	- -	mg/kg	0.0770 UJ [0.0970 UJ]	0.110 UJ	0.0160 U	0.420 J	0.790 J
C3-Fluorenes	- -	mg/kg	0.150 J [0.190 J]	0.270 J	0.0480	1.20 J	3.60 J
C3-Naphthalenes	- -	mg/kg	0.400 J [0.850 J]	0.900 J	0.290	13.0 J	37.0 J
C3-Phenanthrenes/Anthracenes	- -	mg/kg	0.310 J [0.340 J]	0.460 J	0.120	2.30 J	6.50 J
C4-Chrysenes	- -	mg/kg	0.0770 UJ [0.0970 UJ]	0.110 UJ	0.0160 U	0.180 J	0.430 UJ
C4-Naphthalenes	- -	mg/kg	0.220 J [0.340 J]	0.380 J	0.130	10.0 J	28.0 J
C4-Phenanthrenes/Anthracenes	- -	mg/kg	0.0950 J [0.110 J]	0.170 J	0.110	2.00 J	5.00 J
Chrysene	- -	mg/kg	1.30 J [1.10 J]	2.20 J	0.240	0.500 J	1.70 J
Dibenzo(a,h)anthracene	- -	mg/kg	0.120 J [0.0970 J]	0.330 J	0.0210	0.0370 J	0.0910 J
Fluoranthene	- -	mg/kg	2.60 J [2.30 J]	4.50 J	0.490	0.690 J	6.70 J
Fluorene	- -	mg/kg	0.160 J [0.670 J]	0.310 J	0.110	0.260 J	2.90 J
Indeno(1,2,3-cd)pyrene	- -	mg/kg	0.360 J [0.300 J]	1.00 J	0.0620	0.130 J	0.330 J
Naphthalene	- -	mg/kg	0.0490 J [0.300 J]	0.120 J	0.0250	0.620 J	1.60 J
Perylene	- -	mg/kg	0.260 J [0.210 J]	0.530 J	0.0710	0.0680 J	0.200 J
Phenanthrene	- -	mg/kg	1.50 J [3.10 J]	2.40 J	0.430	0.470 J	12.0 J
Pyrene	- -	mg/kg	2.30 J [2.30 J]	3.90 J	0.480	0.750 J	5.80 J
Total PAH16	56.4	mg/kg	14.2 J [16.4 J]	24.6 J	3.10 J	5.46 J	41.2 J
Total PAH34	- -	mg/kg	21.4 J [28.4 J]	37.5 J	6.02 J	54.1 J	181 J
Miscellaneous							
Total Organic Carbon	- -	mg/kg	11,200 [9,300 J]	22,900	22,000	79,300	135,000 J

See Notes on Page 15.

Table 10
Cayadutta Creek Sediment Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: / Sample Depth(feet): / Date Collected: / Sample Name:	95th Percentile Background[1]	Units	R5-PDI-SED-55RR 1 - 1.3 01/19/21 R5-PDI-SED-55RR(1-1.3)	R5-PDI-SED-56DEP 0 - 1 01/19/21 R5-PDI-SED-56DEP(0-1)	R5-PDI-SED-56DEP 1 - 1.2 01/19/21 R5-PDI-SED-56DEP(1-1.2)	R5-PDI-SED-57DEP 0 - 0.5 01/19/21 R5-PDI-SED-57DEP(0-0.5)	R5-PDI-SED-58RR 0 - 0.4 01/19/21 R5-PDI-SED-58RR(0-0.4)
SVOCs-SIM							
1-Methylnaphthalene	- -	mg/kg	0.270 J	0.0700 J [0.0220 J]	0.110 J	0.0350 J	0.0240
2-Methylnaphthalene	- -	mg/kg	0.200 J	0.0410 J [0.0140 J]	0.0530 UJ	0.0180 J	0.0230
Acenaphthene	- -	mg/kg	0.350 J	0.210 J [0.0810 J]	0.700 J	0.0420 J	0.0190
Acenaphthylene	- -	mg/kg	0.530 J	0.110 J [0.0430 J]	0.0700 J	0.0590 J	0.00780 J
Anthracene	- -	mg/kg	1.30 J	0.490 J [0.180 J]	1.70 J	0.150 J	0.0390
Benzo(a)anthracene	- -	mg/kg	6.40 J	1.30 J [0.500 J]	2.60 J	0.400 J	0.130
Benzo(a)pyrene	- -	mg/kg	5.00 J	1.10 J [0.470 J]	1.90 J	0.380 J	0.120
Benzo(b)fluoranthene	- -	mg/kg	4.00 J	1.00 J [0.480 J]	1.80 J	0.360 J	0.120
Benzo(e)pyrene	- -	mg/kg	2.70 J	0.660 J [0.300 J]	1.20 J	0.240 J	0.0840
Benzo(g,h,i)perylene	- -	mg/kg	1.40 J	0.320 J [0.130 J]	0.640 J	0.120 J	0.0550
Benzo(k)fluoranthene	- -	mg/kg	3.40 J	0.830 J [0.380 J]	1.70 J	0.270 J	0.0880
C1-Chrysenes	- -	mg/kg	3.70 J	0.550 J [0.170 J]	0.500 J	0.210 J	0.0460
C1-Fluoranthenes/pyrene	- -	mg/kg	9.50 J	1.50 J [0.490 J]	1.60 J	0.510 J	0.130
C1-Fluorenes	- -	mg/kg	1.10 J	0.140 J [0.0480 J]	0.220 UJ	0.0680 J	0.0140
C1-Phenanthrenes/Anthracenes	- -	mg/kg	6.40 J	0.900 J [0.300 J]	1.20 J	0.370 J	0.0820
C2-Chrysenes	- -	mg/kg	1.40 J	0.180 J [0.0610 J]	0.220 UJ	0.0860 J	0.0230
C2-Fluorenes	- -	mg/kg	2.40 J	0.140 J [0.0470 J]	0.220 UJ	0.0740 J	0.0130
C2-Naphthalenes	- -	mg/kg	1.30 J	0.250 J [0.0810 J]	0.250 J	0.160 J	0.0680
C2-Phenanthrenes/Anthracenes	- -	mg/kg	7.10 J	0.580 J [0.180 J]	0.430 J	0.220 J	0.0440
C3-Chrysenes	- -	mg/kg	0.340 J	0.0860 UJ [0.0360 UJ]	0.220 UJ	0.0310 J	0.0190
C3-Fluorenes	- -	mg/kg	1.70 J	0.140 J [0.0710 J]	0.220 UJ	0.0580 J	0.0150
C3-Naphthalenes	- -	mg/kg	2.70 J	0.240 J [0.0790 J]	0.220 UJ	0.200 J	0.0450
C3-Phenanthrenes/Anthracenes	- -	mg/kg	4.10 J	0.260 J [0.0810 J]	0.220 UJ	0.110 J	0.0210
C4-Chrysenes	- -	mg/kg	0.300 UJ	0.0860 UJ [0.0360 UJ]	0.220 UJ	0.0200 UJ	0.00810 U
C4-Naphthalenes	- -	mg/kg	3.60 J	0.150 J [0.0450 J]	0.220 UJ	0.0990 J	0.0180
C4-Phenanthrenes/Anthracenes	- -	mg/kg	1.80 J	0.0870 J [0.0360 UJ]	0.220 UJ	0.0380 J	0.0100
Chrysene	- -	mg/kg	5.70 J	1.30 J [0.500 J]	2.20 J	0.410 J	0.130
Dibenzo(a,h)anthracene	- -	mg/kg	0.540 J	0.130 J [0.0530 J]	0.210 J	0.0490 J	0.0170
Fluoranthene	- -	mg/kg	9.80 J	2.70 J [1.20 J]	7.00 J	0.800 J	0.260
Fluorene	- -	mg/kg	0.610 J	0.230 J [0.0980 J]	0.810 J	0.0530 J	0.0150
Indeno(1,2,3-cd)pyrene	- -	mg/kg	1.40 J	0.350 J [0.130 J]	0.650 J	0.140 J	0.0530
Naphthalene	- -	mg/kg	2.10 J	0.0550 UJ [0.0230 UJ]	0.140 UJ	0.0460 J	0.0240
Perylene	- -	mg/kg	0.940 J	0.250 J [0.100 J]	0.570 J	0.0780 J	0.0320
Phenanthrene	- -	mg/kg	2.40 J	2.10 J [0.880 J]	6.80 J	0.530 J	0.150
Pyrene	- -	mg/kg	12.0 J	2.30 J [0.890 J]	5.10 J	0.720 J	0.260
Total PAH16	56.4	mg/kg	**56.9 J**	14.5 J [6.02 J]	33.9 J	4.53 J	1.49 J
Total PAH34	- -	mg/kg	108 J	20.6 J [8.10 J]	39.7 J	7.13 J	2.20 J
Miscellaneous							
Total Organic Carbon	- -	mg/kg	70,100	3,870 ^2B [3,700 J]	11,700	5,960 J	3,480 J

See Notes on Page 15.

Table 10
Cayadutta Creek Sediment Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: / Sample Depth(feet): / Date Collected: / Sample Name:	95th Percentile Background[1]	Units	R5-PDI-SED-59DEP 0 - 1 01/19/21 R5-PDI-SED-59DEP(0-1)	R5-PDI-SED-59DEP 1 - 1.2 01/19/21 R5-PDI-SED-59DEP(1-1.2)	R5-PDI-SED-60DEP 0 - 1 01/19/21 R5-PDI-SED-60DEP(0-1)	R5-PDI-SED-60DEP 1 - 1.9 01/19/21 R5-PDI-SED-60DEP(1-1.9)
SVOCs-SIM						
1-Methylnaphthalene	- -	mg/kg	0.0230 J	0.140 J	0.0680 J [0.840 J]	1.50 J
2-Methylnaphthalene	- -	mg/kg	0.0200 UJ	0.100 J	0.0510 J [0.760 J]	1.50 J
Acenaphthene	- -	mg/kg	0.0960 J	0.530 J	0.170 J [0.550 J]	1.10 J
Acenaphthylene	- -	mg/kg	0.0700 J	0.100 J	0.0410 J [0.0950 J]	0.280 J
Anthracene	- -	mg/kg	0.300 J	1.70 J	0.470 J [0.710 J]	1.20 J
Benzo(a)anthracene	- -	mg/kg	0.970 J	3.50 J	1.10 J [1.70 J]	2.40 J
Benzo(a)pyrene	- -	mg/kg	0.900 J	2.90 J	1.00 J [1.50 J]	2.50 J
Benzo(b)fluoranthene	- -	mg/kg	0.770 J	2.60 J	0.890 J [1.70 J]	2.70 J
Benzo(e)pyrene	- -	mg/kg	0.560 J	1.60 J	0.600 J [0.960 J]	1.60 J
Benzo(g,h,i)perylene	- -	mg/kg	0.350 J	1.00 J	0.420 J [0.510 J]	1.10 J
Benzo(k)fluoranthene	- -	mg/kg	0.730 J	2.30 J	0.800 J [1.20 J]	1.70 J
C1-Chrysenes	- -	mg/kg	0.320 J	0.950 J	0.300 J [0.570 J]	1.00 J
C1-Fluoranthenes/pyrene	- -	mg/kg	0.840 J	2.80 J	0.950 J [1.70 J]	3.00 J
C1-Fluorenes	- -	mg/kg	0.0830 UJ	0.230 J	0.0890 UJ [0.280 J]	0.680 J
C1-Phenanthrenes/Anthracenes	- -	mg/kg	0.450 J	2.00 J	0.550 J [1.40 J]	3.00 J
C2-Chrysenes	- -	mg/kg	0.100 J	0.310 J	0.0890 UJ [0.170 J]	0.320 J
C2-Fluorenes	- -	mg/kg	0.0830 UJ	0.230 UJ	0.0890 UJ [0.230 J]	0.530 J
C2-Naphthalenes	- -	mg/kg	0.110 J	0.380 J	0.190 J [1.70 J]	3.80 J
C2-Phenanthrenes/Anthracenes	- -	mg/kg	0.270 J	0.920 J	0.300 J [0.720 J]	1.50 J
C3-Chrysenes	- -	mg/kg	0.0830 UJ	0.230 UJ	0.0890 UJ [0.110 J]	0.220 UJ
C3-Fluorenes	- -	mg/kg	0.0830 UJ	0.230 UJ	0.130 J [0.190 J]	0.440 J
C3-Naphthalenes	- -	mg/kg	0.120 J	0.400 J	0.200 J [0.910 J]	2.20 J
C3-Phenanthrenes/Anthracenes	- -	mg/kg	0.140 J	0.390 J	0.140 J [0.290 J]	0.600 J
C4-Chrysenes	- -	mg/kg	0.0830 UJ	0.230 UJ	0.0890 UJ [0.110 UJ]	0.220 UJ
C4-Naphthalenes	- -	mg/kg	0.0830 UJ	0.230 UJ	0.110 J [0.340 J]	0.720 J
C4-Phenanthrenes/Anthracenes	- -	mg/kg	0.0830 UJ	0.230 UJ	0.0890 UJ [0.110 UJ]	0.220 UJ
Chrysene	- -	mg/kg	0.950 J	3.20 J	1.00 J [1.70 J]	2.70 J
Dibenzo(a,h)anthracene	- -	mg/kg	0.120 J	0.390 J	0.140 J [0.170 J]	0.370 J
Fluoranthene	- -	mg/kg	2.30 J	8.60 J	2.60 J [3.60 J]	5.90 J
Fluorene	- -	mg/kg	0.100 J	0.750 J	0.180 J [0.370 J]	0.720 J
Indeno(1,2,3-cd)pyrene	- -	mg/kg	0.360 J	1.00 J	0.420 J [0.520 J]	1.10 J
Naphthalene	- -	mg/kg	0.0530 UJ	0.230 J	0.0570 UJ [0.330 J]	0.680 J
Perylene	- -	mg/kg	0.220 J	0.630 J	0.260 J [0.370 J]	0.580 J
Phenanthrene	- -	mg/kg	1.40 J	7.20 J	1.60 J [2.50 J]	4.70 J
Pyrene	- -	mg/kg	1.80 J	6.50 J	2.00 J [3.00 J]	5.10 J
Total PAH16	56.4	mg/kg	11.2 J	42.5 J	12.8 J [20.2 J]	34.3 J
Total PAH34	- -	mg/kg	14.4 J	53.4 J	16.7 J [31.7 J]	57.2 J
Miscellaneous						
Total Organic Carbon	- -	mg/kg	4,880 J	22,300	4,080 J [10,800 J]	23,200

See Notes on Page 15.

Table 10
Cayadutta Creek Sediment Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Notes:

1. Calculated 95th percentile background concentration.
2. Duplicate samples are in brackets [ ].
3. U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
4. J - Indicates an estimated value.
5. mg/kg - milligrams per kilogram.
6. SIM = Selective Ion Monitoring.
7. PAH - Polycyclic aromatic hydrocarbons.

Table 11
Cayadutta Creek Bank Soil Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: / Sample Depth(feet): / Date Collected:	NYSDEC Table 375-6: Unrestricted Use SCO	Units	PDI-T-11-LB-MB 0 - 0.3 02/04/21	PDI-T-11-LB-MHWL 0 - 0.4 02/04/21	PDI-T-12-LB-MB 0 - 0.5 02/04/21	PDI-T-12-LB-MB 0.5 - 0.8 02/04/21	PDI-T-12-LB-MHWL 0 - 0.5 02/04/21	PDI-T-12-LB-MHWL 0.5 - 0.7 02/04/21
Semivolatile Organics								
Acenaphthene	20	mg/kg	0.16 U	0.70 U	0.15 U	0.15 U	0.18 U	0.041 U
Acenaphthylene	100	mg/kg	0.14 U	0.61 U	0.13 U	0.13 U	0.16 U	0.036 U
Anthracene	100	mg/kg	0.27 U	1.2 U	0.25 U	0.25 U	0.30 U	0.10 J
Benzo(a)anthracene	1	mg/kg	0.76 J	**1.7 J**	0.63 J	0.35 J	0.95 J	0.45
Benzo(a)pyrene	1	mg/kg	0.77 J	**1.8 J**	0.52 J	0.34 J	0.66 J	0.47
Benzo(b)fluoranthene	1	mg/kg	0.92 J	**2.1 J**	0.77 J	0.38 J	0.91 J	0.50
Benzo(g,h,i)perylene	100	mg/kg	0.11 U	1.3 J	0.37 J	0.25 J	0.40 J	0.33
Benzo(k)fluoranthene	0.8	mg/kg	0.46 J	**1.2 J**	0.13 U	0.17 J	0.38 J	0.30
Chrysene	1	mg/kg	0.89 J	**2.1 J**	0.50 J	0.34 J	0.80 J	0.50
Dibenzo(a,h)anthracene	0.33	mg/kg	0.19 U	0.84 U	0.18 U	0.18 U	0.21 U	0.087 J
Fluoranthene	100	mg/kg	2.2	4.7 J	1.1	0.50 J	1.6	0.95
Fluorene	30	mg/kg	0.13 U	0.56 U	0.12 U	0.12 U	0.14 U	0.051 J
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	0.46 J	**1.2 J**	0.32 J	0.19 J	0.39 J	0.31
Naphthalene	12	mg/kg	0.14 U	0.61 U	0.13 U	0.13 U	0.16 U	0.11 J
Phenanthrene	100	mg/kg	1.0 J	2.8 J	0.57 J	0.22 J	1.2	0.76
Pyrene	100	mg/kg	1.6	3.7 J	0.94 J	0.53 J	1.4	0.92
Total SVOCs	- -	mg/kg	9.1 J	23 J	5.7 J	3.3 J	8.7 J	5.8 J
Total TPAHs	- -	mg/kg	9.1 J	23 J	5.7 J	3.3 J	8.7 J	5.8 J
SVOCs-SIM								
Total PAH16	- -	mg/kg	9.06 J	22.6 J	5.72 J	3.27 J	8.69 J	5.84 J

See Notes on Page 5.

Table 11
Cayadutta Creek Bank Soil Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID:	NYSDEC Table 375-6: Unrestricted Use SCO	Units	PDI-T-15-RB-MB		PDI-T-15-RB-MHWL		PDI-T-16-LB-MB		PDI-T-16-LB-MHWL	PDI-T-16-RB-MB
Sample Depth(feet):			0 - 0.5	0.5 - 0.7	0 - 0.5	0.5 - 0.8	0 - 0.5	0.5 - 0.8	0 - 0.3	0 - 0.5
Date Collected:			02/03/21	02/03/21	02/03/21	02/03/21	02/03/21	02/03/21	02/03/21	02/03/21
Semivolatile Organics										
Acenaphthene	20	mg/kg	0.39 U	0.42 U	0.36 U	0.33 U	0.032 U	0.032 U	0.43 U	0.17 U
Acenaphthylene	100	mg/kg	0.34 U	0.37 U	0.32 U	0.43 J	0.028 U	0.028 U	0.38 U	0.17 J
Anthracene	100	mg/kg	0.65 U	0.70 U	0.61 U	0.56 U	0.053 U	0.053 U	0.72 U	0.41 J
Benzo(a)anthracene	1	mg/kg	**1.2 J**	**1.7 J**	**1.8 J**	**1.3 J**	0.26	0.021 U	**2.2 J**	**1.3**
Benzo(a)pyrene	1	mg/kg	**1.5 J**	**1.6 J**	**2.2 J**	**1.4 J**	0.28	0.032 U	**2.5 J**	**1.3**
Benzo(b)fluoranthene	1	mg/kg	**1.7 J**	**1.6 J**	**2.7**	**1.3 J**	0.34	0.034 U	**2.9**	**1.4**
Benzo(g,h,i)perylene	100	mg/kg	1.1 J	1.1 J	1.7 J	0.86 J	0.21	0.023 U	1.9 J	0.84 J
Benzo(k)fluoranthene	0.8	mg/kg	**0.81 J**	**0.90 J**	**1.4 J**	0.65 J	0.17 J	0.028 U	**1.5 J**	0.75 J
Chrysene	1	mg/kg	**1.7 J**	**1.7 J**	**2.5**	**1.5 J**	0.31	0.048 U	**2.9**	**1.4**
Dibenzo(a,h)anthracene	0.33	mg/kg	0.46 U	0.50 U	**0.45 J**	0.40 U	0.054 J	0.038 U	0.51 U	0.25 J
Fluoranthene	100	mg/kg	3.2	3.0	4.7	1.7 J	0.54	0.023 U	5.3	2.5
Fluorene	30	mg/kg	0.31 U	0.33 U	0.29 U	0.27 U	0.025 U	0.025 U	0.34 U	0.13 U
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	**1.0 J**	**1.1 J**	**1.4 J**	**0.77 J**	0.18 J	0.027 U	**1.6 J**	**0.74 J**
Naphthalene	12	mg/kg	0.34 U	0.37 U	0.32 U	0.29 U	0.028 U	0.028 U	0.38 U	0.20 J
Phenanthrene	100	mg/kg	1.5 J	1.8 J	1.8 J	0.95 J	0.19 J	0.032 U	2.5 J	1.5
Pyrene	100	mg/kg	2.3 J	2.3 J	3.5	1.3 J	0.41	0.025 U	4.1	1.9
Total SVOCs	- -	mg/kg	16 J	17 J	24 J	12 J	2.9 J	0.053 U	27 J	15 J
Total TPAHs	- -	mg/kg	16 J	17 J	24 J	12 J	2.9 J	0.053 U	27 J	15 J
SVOCs-SIM										
Total PAH16	- -	mg/kg	16.0 J	16.8 J	24.2 J	12.2 J	2.94 J	0.0530 U	27.4 J	14.7 J

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Table 11
Cayadutta Creek Bank Soil Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: / Sample Depth(feet): / Date Collected:	NYSDEC Table 375-6: Unrestricted Use SCO	Units	PDI-T-16-RB-MHWL 0 - 0.5 02/03/21	PDI-T-16-RB-MHWL 0.5 - 1 02/03/21	PDI-T-16-RB-MHWL 1 - 1.8 02/03/21	PDI-T-17-LB-MB 0 - 0.5 02/03/21	PDI-T-17-LB-MB 0.5 - 0.8 02/03/21	PDI-T-17-LB-MHWL 0 - 0.5 02/03/21	PDI-T-17-LB-MHWL 0.5 - 0.9 02/03/21
Semivolatile Organics									
Acenaphthene	20	mg/kg	0.15 U [0.52 U]	0.035 U	0.035 U	0.17 U [0.35 U]	0.17 U	0.68 J	0.35 J
Acenaphthylene	100	mg/kg	0.71 J [0.95 J]	0.031 U	0.030 U	0.15 U [0.31 U]	0.15 U	0.34 U	0.31 U
Anthracene	100	mg/kg	0.25 U [0.87 U]	0.059 U	0.058 U	0.29 UJ [0.60 U]	0.28 U	0.65 U	0.60 U
Benzo(a)anthracene	1	mg/kg	**0.98 J [2.6 J]**	0.052 J	0.088 J	**1.2 J [1.9 J]**	0.64 J	**1.5 J**	**1.4 J**
Benzo(a)pyrene	1	mg/kg	**1.2 [2.8 J]**	0.048 J	0.073 J	**1.3 J [2.2 J]**	0.66 J	**1.6 J**	**1.5 J**
Benzo(b)fluoranthene	1	mg/kg	**0.98 J [2.4 J]**	0.055 J	0.093 J	**1.6 J [2.4]**	0.54 J	**2.0 J**	**1.7 J**
Benzo(g,h,i)perylene	100	mg/kg	0.40 J [1.4 J]	0.035 J	0.048 J	0.83 J [1.2 J]	0.32 J	0.90 J	0.88 J
Benzo(k)fluoranthene	0.8	mg/kg	**0.34 J [1.1 J]**	0.031 U	0.044 J	**0.71 J [1.0 J]**	0.44 J	0.61 J	**0.84 J**
Chrysene	1	mg/kg	**1.2 [2.8 J]**	0.059 J	0.10 J	**1.4 J [2.4]**	0.67 J	**1.8 J**	**1.7 J**
Dibenzo(a,h)anthracene	0.33	mg/kg	0.18 U [0.62 U]	0.042 U	0.042 U	0.22 J [0.43 U]	0.20 U	0.47 U	0.43 U
Fluoranthene	100	mg/kg	1.1 [3.4 J]	0.080 J	0.19 J	2.9 J [4.5]	1.3	3.3	2.9
Fluorene	30	mg/kg	0.12 U [0.42 U]	0.028 U	0.028 U	0.14 U [0.28 U]	0.14 U	0.38 J	0.28 U
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	**0.32 J [1.2 J]**	0.034 J	0.046 J	**0.72 J [1.1 J]**	0.27 J	**0.71 J**	**0.79 J**
Naphthalene	12	mg/kg	0.13 U [0.46 U]	0.22 J	0.030 U	0.15 U [0.31 U]	0.15 U	0.34 U	0.31 U
Phenanthrene	100	mg/kg	0.33 J [0.83 J]	0.046 J	0.15 J	1.3 J [2.2 J]	0.75 J	2.8	1.9 J
Pyrene	100	mg/kg	1.4 [3.7]	0.10 J	0.15 J	2.4 J [3.6]	1.1 J	3.5	2.9
Total SVOCs	- -	mg/kg	9.0 J [23 J]	0.73 J	0.98 J	15 J [23 J]	6.7 J	20 J	17 J
Total TPAHs	- -	mg/kg	9.0 J [23 J]	0.73 J	0.98 J	15 J [23 J]	6.7 J	20 J	17 J
SVOCs-SIM									
Total PAH16	- -	mg/kg	8.96 J [23.2 J]	0.729 J	0.982 J	14.6 J [22.5 J]	6.69 J	19.8 J	16.9 J

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Table 11
Cayadutta Creek Bank Soil Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID:	NYSDEC Table 375-6: Unrestricted Use SCO	Units	PDI-T-17-RB-MB		PDI-T-17-RB-MHWL	PDI-T-18-LB-MB		PDI-T-18-LB-MHWL
Sample Depth(feet):			0 - 0.5	0.5 - 0.7	0 - 0.4	0 - 0.5	0.5 - 0.9	0 - 0.5
Date Collected:			02/03/21	02/03/21	02/03/21	02/03/21	02/03/21	02/03/21
Semivolatile Organics								
Acenaphthene	20	mg/kg	0.37 U	0.46 J	0.34 U	0.26 U	0.17 U	0.85 J
Acenaphthylene	100	mg/kg	0.50 J	0.82 J	0.34 J	0.23 J	0.15 U	1.2 J
Anthracene	100	mg/kg	0.63 U	1.2 J	0.58 U	0.43 U	0.28 U	1.3 J
Benzo(a)anthracene	1	mg/kg	**1.5 J**	**3.1**	**2.0 J**	**1.9**	0.59 J	**4.1**
Benzo(a)pyrene	1	mg/kg	**1.7 J**	**3.2**	**2.3**	**2.0**	0.70 J	**4.8**
Benzo(b)fluoranthene	1	mg/kg	**1.8 J**	**4.3**	**2.7**	**2.9**	0.83 J	**4.2**
Benzo(g,h,i)perylene	100	mg/kg	0.86 J	1.3 J	1.3 J	1.3 J	0.45 J	2.6 J
Benzo(k)fluoranthene	0.8	mg/kg	**0.95 J**	0.28 U	**0.85 J**	**1.0 J**	0.29 J	**2.1 J**
Chrysene	1	mg/kg	**1.9 J**	**3.2**	**2.4**	**3.0**	0.73 J	**5.3**
Dibenzo(a,h)anthracene	0.33	mg/kg	0.45 U	**0.43 J**	**0.42 J**	0.31 U	0.20 U	0.61 U
Fluoranthene	100	mg/kg	2.9	6.5	3.9	7.6	1.4	8.9
Fluorene	30	mg/kg	0.30 U	0.59 J	0.28 U	0.20 U	0.13 U	0.83 J
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	**0.85 J**	**1.3 J**	**1.1 J**	**1.2 J**	0.38 J	**2.1 J**
Naphthalene	12	mg/kg	0.33 U	0.37 J	0.30 U	0.23 U	0.15 U	0.44 U
Phenanthrene	100	mg/kg	1.3 J	5.0	1.6 J	4.2	0.60 J	5.9
Pyrene	100	mg/kg	2.5	5.1	3.3	5.6	1.2	9.3
Total SVOCs	- -	mg/kg	17 J	37 J	22 J	31 J	7.2 J	53 J
Total TPAHs	- -	mg/kg	17 J	37 J	22 J	31 J	7.2 J	53 J
SVOCs-SIM								
Total PAH16	- -	mg/kg	16.8 J	36.9 J	22.2 J	30.9 J	7.17 J	53.5 J

See Notes on Page 5.

Table 11
Cayadutta Creek Bank Soil Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID:	NYSDEC Table 375-6:		PDI-T-18-RB-MB		PDI-T-18-RB-MHWL	
Sample Depth(feet):	Unrestricted		0 - 0.5	0.5 - 0.6	0 - 0.5	0.5 - 1
Date Collected:	Use SCO	Units	02/03/21	02/03/21	02/03/21	02/03/21
Semivolatile Organics						
Acenaphthene	20	mg/kg	0.25 J	0.35 U	0.17 U	0.17 U
Acenaphthylene	100	mg/kg	0.24 J	0.31 U	0.15 U	0.15 U
Anthracene	100	mg/kg	0.71 J	0.60 J	0.29 U	0.29 U
Benzo(a)anthracene	1	mg/kg	**2.4**	**1.9 J**	**1.4**	0.12 U
Benzo(a)pyrene	1	mg/kg	**2.6**	**2.1 J**	**1.4**	0.40 J
Benzo(b)fluoranthene	1	mg/kg	**2.8**	**2.5**	**1.6**	0.49 J
Benzo(g,h,i)perylene	100	mg/kg	1.7	1.4 J	0.95 J	0.25 J
Benzo(k)fluoranthene	0.8	mg/kg	**1.5**	**1.2 J**	0.75 J	0.19 J
Chrysene	1	mg/kg	**3.1**	**2.2 J**	**1.5**	0.46 J
Dibenzo(a,h)anthracene	0.33	mg/kg	**0.52 J**	0.42 U	0.21 U	0.21 U
Fluoranthene	100	mg/kg	6.6	4.4	3.2	0.80 J
Fluorene	30	mg/kg	0.31 J	0.28 U	0.14 U	0.14 U
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	**1.5**	**1.2 J**	**0.83 J**	0.19 J
Naphthalene	12	mg/kg	0.19 U	0.31 U	0.15 U	0.15 U
Phenanthrene	100	mg/kg	3.6	2.4	1.4	0.38 J
Pyrene	100	mg/kg	5.1	3.8	2.9	0.80 J
Total SVOCs	- -	mg/kg	33 J	24 J	16 J	4.0 J
Total TPAHs	- -	mg/kg	33 J	24 J	16 J	4.0 J
SVOCs-SIM						
Total PAH16	- -	mg/kg	32.9 J	23.7 J	15.9 J	3.96 J

Notes:
1. Screening criteria unrestricted use soil cleanup objectives (SCOs) from NYSDEC (2006) 6 NYCRR Part 375-6.
2. Shaded and bold indicates data exceeded associated unrestricted use SCO.
3. U = The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
4. J = Estimated Concentration. Presented concentration is less than the method detection limit but greater than the instrument detection limit.

Table 12
Supplemental PDI Background Bank Soil Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID:	Unrestricted		T-05-LB-MB		T-05-LB-MHWL		T-05-RB-MB		T-05-RB-MHWL		T-06-LB-MB		T-06-LB-MHWL	
Sample Depth(feet):	Use		0 - 6	6 - 12	0 - 6	6 - 12	0 - 6	6 - 12	0 - 6	6 - 12	0 - 6	6 - 12	0 - 6	6 - 12
Date Collected:	SCOs	Units	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22
Semivolatile Organics														
Acenaphthene	20	mg/kg	0.32 U	0.31 U	0.36 U	0.39 U	0.030 U	0.028 U	0.16 U	0.027 U	0.15 U	0.14 U	0.15 U	0.14 U
Acenaphthylene	100	mg/kg	0.28 U	0.27 U	0.31 U	0.34 U	0.026 U	0.025 U	0.14 U	0.024 U	0.13 U	0.12 U	0.13 U	0.12 U
Anthracene	100	mg/kg	0.53 U	0.51 U	0.85 J	0.66 U	0.050 U	0.048 U	0.27 U	0.046 U	0.28 J	0.23 U	0.25 U	0.23 UJ
Benzo(a)anthracene	1	mg/kg	**1.3 J**	0.79 J	**2.3 J**	**1.1 J**	0.044 J	0.024 J	0.77 J	0.044 J	**1.1**	0.59 J	1.0	0.57 J
Benzo(a)pyrene	1	mg/kg	**1.4 J**	0.94 J	**2.2 J**	**1.2 J**	0.047 J	0.028 J	0.85 J	0.055 J	0.96 J	0.55 J	1.0	0.52 J
Benzo(b)fluoranthene	1	mg/kg	**2.0 J**	**1.3 J**	**3.1**	**1.6 J**	0.058 J	0.035 J	**1.2**	0.078 J	**1.2**	0.65 J	**1.3**	0.67 J
Benzo(g,h,i)perylene	100	mg/kg	0.99 J	0.63 J	1.4 J	0.75 J	0.032 J	0.020 U	0.58 J	0.042 J	0.52 J	0.29 J	0.54 J	0.31 J
Benzo(k)fluoranthene	0.8	mg/kg	**0.81 J**	0.53 J	**1.2 J**	0.60 J	0.026 J	0.025 U	0.47 J	0.033 J	0.51 J	0.30 J	0.56 J	0.29 J
Chrysene	1	mg/kg	**1.6 J**	1.0 J	**2.6**	**1.3 J**	0.047 J	0.043 U	0.93 J	0.059 J	0.97 J	0.56 J	**1.1**	0.54 J
Dibenzo(a,h)anthracene	0.33	mg/kg	0.38 U	0.37 U	**0.48 J**	0.47 U	0.036 U	0.034 U	0.19 J	0.033 U	0.20 J	0.17 U	0.22 J	0.16 U
Fluoranthene	100	mg/kg	3.6	2.2	6.7	3.0	0.087 J	0.051 J	2.0 J	0.10 J	1.9	1.1	1.9	0.99 J
Fluorene	30	mg/kg	0.25 U	0.24 U	0.38 J	0.31 U	0.024 U	0.023 U	0.13 U	0.022 U	0.12 U	0.11 U	0.12 U	0.11 U
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	**0.91 J**	**0.59 J**	**1.3 J**	**0.71 J**	0.028 J	0.024 U	0.47 J	0.039 J	**0.55 J**	0.27 J	**0.52 J**	0.30 J
Naphthalene	12	mg/kg	0.28 U	0.27 U	0.31 U	0.34 U	0.026 U	0.025 U	0.14 U	0.024 U	0.13 U	0.12 U	0.13 U	0.12 U
Phenanthrene	100	mg/kg	1.5 J	0.98 J	4.4	1.5 J	0.033 J	0.028 U	0.92 J	0.036 J	0.80 J	0.37 J	0.63 J	0.46 J
Pyrene	100	mg/kg	2.6	1.6 J	4.8	2.2 J	0.066 J	0.039 J	1.5	0.084 J	1.4	0.86 J	1.5	0.80 J
Total TPAHs	- -	mg/kg	17 J	11 J	32 J	14 J	0.47 J	0.18 J	9.9 J	0.57 J	10 J	5.5 J	10 J	5.5 J

See Notes on Page 2.

Table 12
Supplemental PDI Background Bank Soil Sampling Analytical Results

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National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID:	Unrestricted Use SCOs	Units	T-06-RB-MB		T-06-RB-MHWL		T-07-LB-MB		T-07-LB-MHWL		T-07-RB-MB		T-07-RB-MHWL	
Sample Depth(feet):			0 - 6	6 - 12	0 - 6	6 - 12	0 - 6	6 - 12	0 - 6	6 - 12	0 - 6	6 - 12	0 - 6	6 - 12
Date Collected:			12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22
Semivolatile Organics														
Acenaphthene	20	mg/kg	0.41 U	0.38 U [0.38 U]	0.41 U	0.41 U	0.42 U	0.40 U	0.89 U	0.20 U	0.19 U [0.37 U]	0.32 U	0.17 J	0.16 U
Acenaphthylene	100	mg/kg	0.36 U	0.34 U [0.33 U]	0.36 U	0.36 U	0.37 U	0.35 U	0.78 U	0.18 U	0.16 U [0.33 U]	0.28 U	0.15 J	0.14 U
Anthracene	100	mg/kg	0.70 U	0.65 U [0.63 U]	0.69 U	0.68 U	0.71 U	0.67 U	1.5 U	0.41 J	0.31 U [0.63 U]	0.62 J	0.58 J	0.30 J
Benzo(a)anthracene	1	mg/kg	**1.1 J**	**0.71 J [1.1 J]**	**1.5 J**	**2.2 J**	1.0 J	1.0 J	**2.9 J**	**1.7**	0.91 J [1.0 J]	**1.8 J**	**1.8**	**1.4**
Benzo(a)pyrene	1	mg/kg	**1.3 J**	**0.81 J [1.4 J]**	**1.7 J**	**2.5 J**	**1.1 J**	**1.1 J**	**3.4 J**	**1.7**	**1.0 J [1.1 J]**	**1.8 J**	**1.8**	**1.4**
Benzo(b)fluoranthene	1	mg/kg	**1.7 J**	**1.1 J [1.8 J]**	**2.3 J**	**3.3**	**1.5 J**	**1.3 J**	**4.6 J**	**2.1**	**1.3 [1.4 J]**	**2.2**	**2.2**	**1.7**
Benzo(g,h,i)perylene	100	mg/kg	0.75 J	0.46 J [0.89 J]	1.1 J	1.3 J	0.61 J	0.51 J	2.3 J	0.99 J	0.62 J [0.67 J]	1.1 J	1.1 J	0.84 J
Benzo(k)fluoranthene	0.8	mg/kg	0.72 J	0.44 J [0.78 J]	**0.99 J**	**1.4 J**	0.61 J	0.60 J	**1.9 J**	**0.90 J**	0.55 J [0.65 J]	**0.96 J**	**0.88 J**	0.72 J
Chrysene	1	mg/kg	**1.4 J**	**0.88 J [1.4 J]**	**1.9 J**	**2.9**	**1.2 J**	**1.1 J**	**3.5 J**	**1.8**	**0.95 J [1.1 J]**	**1.7 J**	**1.8**	**1.5**
Dibenzo(a,h)anthracene	0.33	mg/kg	0.50 U	0.46 U [0.45 U]	0.49 U	0.49 U	0.50 U	0.48 U	1.1 U	0.33 J	0.22 U [0.45 U]	0.38 U	**0.34 J**	0.27 J
Fluoranthene	100	mg/kg	3.0	1.8 J [3.2]	4.5	6.5	2.4 J	2.3 J	7.5	3.6	1.9 [2.2 J]	3.8	3.9	2.8
Fluorene	30	mg/kg	0.33 U	0.31 U [0.30 U]	0.33 U	0.33 U	0.34 U	0.32 U	0.71 U	0.16 U	0.15 U [0.30 U]	0.26 J	0.23 J	0.12 U
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	**0.71 J**	**0.43 J [0.79 J]**	**0.98 J**	**1.3 J**	**0.59 J**	**0.53 J**	**2.0 J**	**0.88 J**	**0.60 J [0.68 J]**	**1.0 J**	**0.99 J**	**0.82 J**
Naphthalene	12	mg/kg	0.36 U	0.34 U [0.33 U]	0.36 U	0.36 U	0.37 U	0.35 U	0.78 U	0.18 U	0.16 U [0.33 U]	0.28 U	0.15 J	0.14 U
Phenanthrene	100	mg/kg	1.2 J	0.80 J [1.5 J]	2.3 J	3.5	1.1 J	1.1 J	3.0 J	1.7	0.93 J [0.87 J]	2.3	2.5	1.1
Pyrene	100	mg/kg	2.0 J	1.3 J [2.3 J]	3.2	4.5	1.9 J	1.7 J	5.6 J	2.9	1.5 [1.6 J]	2.8	3.2	2.1
Total TPAHs	- -	mg/kg	14 J	8.7 J [15 J]	20 J	29 J	12 J	11 J	37 J	19 J	10 J [11 J]	20 J	22 J	15 J

Notes:
1. Arcadis collected samples on dates indicated.
2. Samples analyzed by Eurofins laboratory in Buffalo, NY.
3. Results are presented in milligrams per kilogram (mg/kg), which is equivalent to parts per million (ppm).
4. Results compared to NYSDEC Part 375-6 Unrestricted Use Soil Cleanup Objectives (SCOs).
5. Shaded and bolded values indicate concentrations exceeding NYSDEC Part 365 unrestricted SCOs.
6. J - detected concentration is less than the calibration level but greater than the instrument detection limit. This value is estimated.
7. U - Compound was analyzed for but not detected. The presented value is the compound quantitation limit.

Table 13
Supplemental PDI Site Source Sampling Analytical Results

Pre-Design Investigation Report
National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Location ID: Sample Depth(feet): Date Collected:	Units	PDI-DPB-4 3 - 12 11/1/22	PDI-DPB-7 4 - 8.5 11/1/22	PDI-DPB-8 0.8 - 8.5 11/1/22
PAHs				
Total PAH16	mg/kg	140 J	360 J	220 J
Total PAH-34	mg/kg	180 J	470 J	280 J
PAHs-SIM				
1-Methylnaphthalene	mg/kg	24.0 J	94.0 J	51.0 J
2-Methylnaphthalene	mg/kg	34.0 J	110 J	61.0 J
Acenaphthene	mg/kg	16.0 J	48.0 J	33.0 J
Acenaphthylene	mg/kg	2.40 J	4.20 J	2.20 J
Anthracene	mg/kg	11.0 J	24.0 J	16.0 J
Benzo(a)anthracene	mg/kg	5.10 J	11.0 J	8.80 J
Benzo(a)pyrene	mg/kg	3.30 J	6.20 J	4.90 J
Benzo(b)fluoranthene	mg/kg	1.60 J	4.20 UJ	2.40 J
Benzo(e)pyrene	mg/kg	1.80 J	3.50 J	2.80 J
Benzo(g,h,i)perylene	mg/kg	0.450 J	1.60 UJ	0.690 J
Benzo(k)fluoranthene	mg/kg	2.00 J	3.80 J	2.80 J
C1-Chrysenes	mg/kg	3.90 J	8.80 J	8.60 J
C1-Fluoranthenes/pyrene	mg/kg	17.0 J	33.0 J	33.0 J
C1-Fluorenes	mg/kg	8.50 J	27.0 J	18.0 J
C1-Phenanthrenes/Anthracenes	mg/kg	26.0 J	70.0 J	53.0 J
C2-Chrysenes	mg/kg	1.60 J	8.30 UJ	4.20 J
C2-Fluorenes	mg/kg	6.60 J	17.0 J	12.0 J
C2-Naphthalenes	mg/kg	49.0 J	180 J	99.0 J
C2-Phenanthrenes/Anthracenes	mg/kg	13.0 J	30.0 J	32.0 J
C3-Chrysenes	mg/kg	0.780 UJ	8.30 UJ	1.10 UJ
C3-Fluorenes	mg/kg	2.20 J	8.30 UJ	5.90 J
C3-Naphthalenes	mg/kg	20.0 J	88.0 J	50.0 J
C3-Phenanthrenes/Anthracenes	mg/kg	4.10 J	9.40 J	12.0 J
C4-Chrysenes	mg/kg	1.00 J	8.30 UJ	1.10 UJ
C4-Naphthalenes	mg/kg	6.10 J	23.0 J	17.0 J
C4-Phenanthrenes/Anthracenes	mg/kg	1.30 J	8.30 UJ	3.60 J
Chrysene	mg/kg	4.50 J	12.0 J	8.50 J
Dibenzo(a,h)anthracene	mg/kg	0.180 J	1.60 UJ	0.380 J
Fluoranthene	mg/kg	8.50 J	18.0 J	14.0 J
Fluorene	mg/kg	10.0 J	25.0 J	18.0 J
Indeno(1,2,3-cd)pyrene	mg/kg	0.470 J	2.00 UJ	0.770 J
Naphthalene	mg/kg	37.0 J	110 J	38.0 J
Perylene	mg/kg	0.450 J	2.00 UJ	1.00 J
Phenanthrene	mg/kg	29.0 J	74.0 J	43.0 J
Pyrene	mg/kg	12.0 J	28.0 J	22.0 J

Notes:
1. Arcadis collected samples on dates indicated.
2. Samples analyzed by Eurofins laboratory in Buffalo, NY.
3. Results are presented in milligrams per kilogram (mg/kg), which is equivalent to parts per million (ppm).
4. J - detected concentration is less than the calibration level but greater than the instrument detection limit.
   This value is estimated.
5. U - Compound was analyzed for but not detected. The presented value is the compound quantitation limit.

Figures

C:\Users\mwasilewski\ACCDocs\Arcadis\AUS-NATIONAL GRID-GLOVERSVILLE FORMER MGP-GLOVERSVILLE New York\Project Files\2021\01-In Progress\01-DWG\PDIR-FIG01 INVESTIGATION LOCATIONS.DWG LAYOUT: 1 SAVED: 8/19/2021 5:08 PM ACADVER: 23.1S (LMS TECH) PAGESETUP: ----
PLOTSTYLETABLE: ---- PLOTTED: 8/19/2021 5:25 PM BY: WASILEWSKI, MATT

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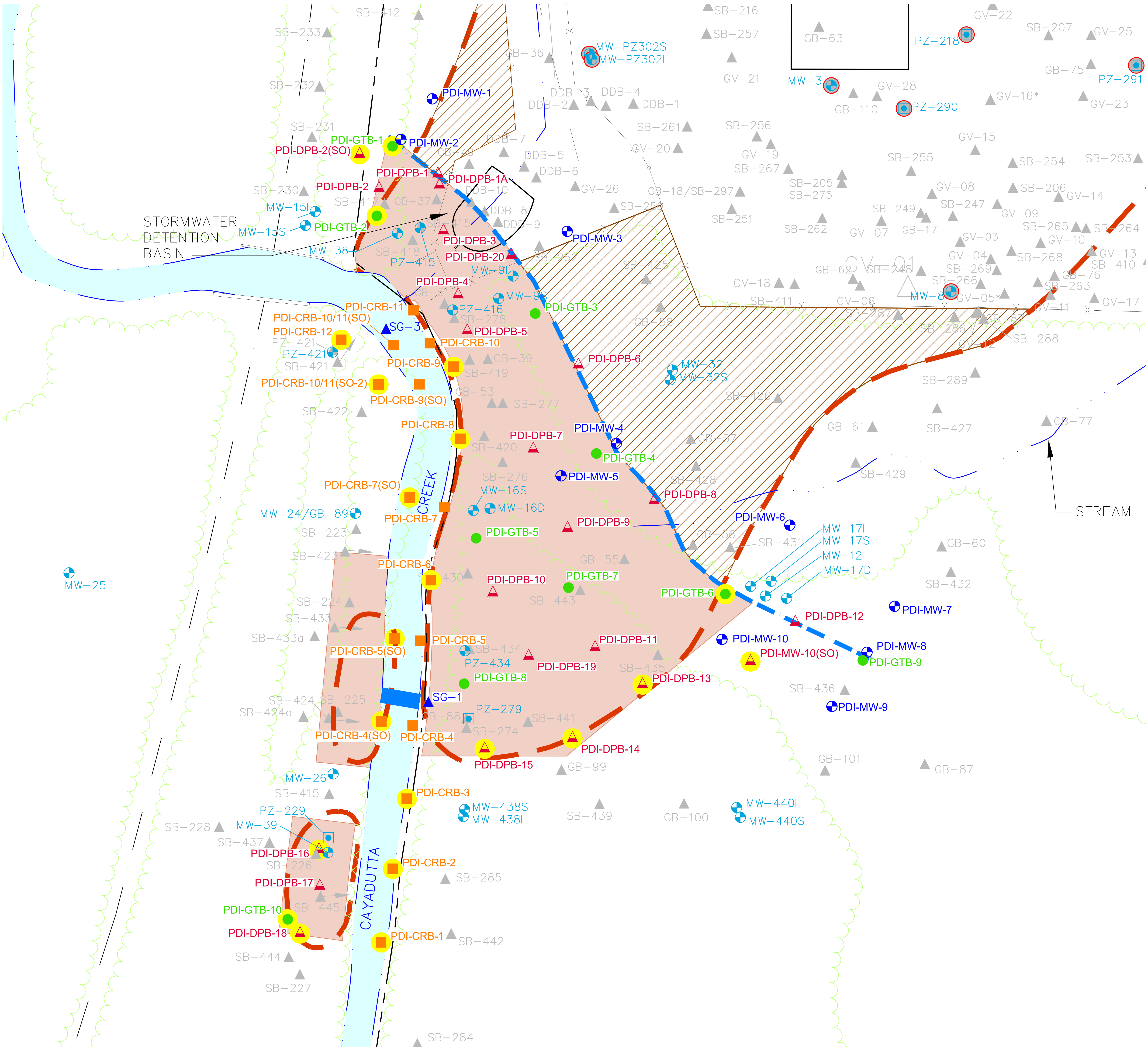
RDWP-X-CONTOURS
RDWP-X-UTILS-1
PDIR-X-TITLE-DP



LEGEND:

- PDI DIRECT–PUSH BORING
- PDI CREEK BORING
- PDI GEOTECHNICAL BORING
- PDI BORING SELECTED FOR SVOC SOIL SAMPLING
- PDI MONITORING WELL
- PDI STAFF GAUGE
- PZ–434 PREVIOUS MONITORING WELL
- PZ–279 PREVIOUS PIEZOMETER
- ABANDONED MONITORING WELL / PIEZOMETER
- SB–423 PREVIOUS SOIL BORING
- SB–445 PREVIOUS ANGLED SOIL BORING, ARROW INDICATES DIRECTION OF ANGLE
- PDI TRANSECT FOR MANUALLY MEASURING CREEK VELOCITIES AND DEPTHS
- PROBABLE NAPL–CONTAINING AREA
- PROPOSED NAPL BARRIER WALL ALIGNMENT AS PRESENTED IN THE RDWP
- EXCAVATION AREA LIMITS AS PRESENTED IN THE RDWP
- LIMITS OF SURFACE SOIL EXCAVATION AND SOIL COVER AS PRESENTED IN THE RDWP
- APPROXIMATE PROPERTY LINE LIMITS
- PAVED BIKE PATH
- WATER
- TREE LINE
- FENCE
- UTILITY POLE
- SANITARY SEWER

NOTES:

1. ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.
2. THE NATIONAL GRID PROPERTY LINE SHOWN IS APPROXIMATE.
3. ALL LOCATIONS ARE APPROXIMATE.
4. BASEMAP PREPARED FROM ELECTRONIC SURVEY FILE PROVIDED BY NIAGARA MOHAWK ON 7/23/01. PRIMARY SURVEY CONTROL FOR PHOTOGRAMMETIC MAPPING WAS ESTABLISHED FROM AN ON THE GROUND SURVEY, PERFORMED ON JULY 28, 1994 USING THE GLOBAL POSITIONING SYSTEM (GPS) AND CONFORMS TO ORDER 2 CLASS 2 FGCS ACCURACY SPECIFICATIONS. THE HORIZONTAL REFERENCE DATUM NORTH AMERICAN DATUM OF 1983 (NAD 83) ON REFERENCE ELLIPSOID ASSOCIATED WITH THE GEODETIC REFERENCE SYSTEM OF 1980 (GRS 80). THE COORDINATES ARE BASED ON THE NEW YORK STATE PLANE GEODETIC SYSTEM OF 1983 (EASTERN ZONE 3101).
5. ALL SVOC SOIL SAMPLES WERE COLLECTED BETWEEN SEPTEMBER 29, 2020 AND NOVEMBER 10, 2020 AND SUBMITTED TO EUROFINS TESTAMERICA BUFFALO FOR ANALYSIS.

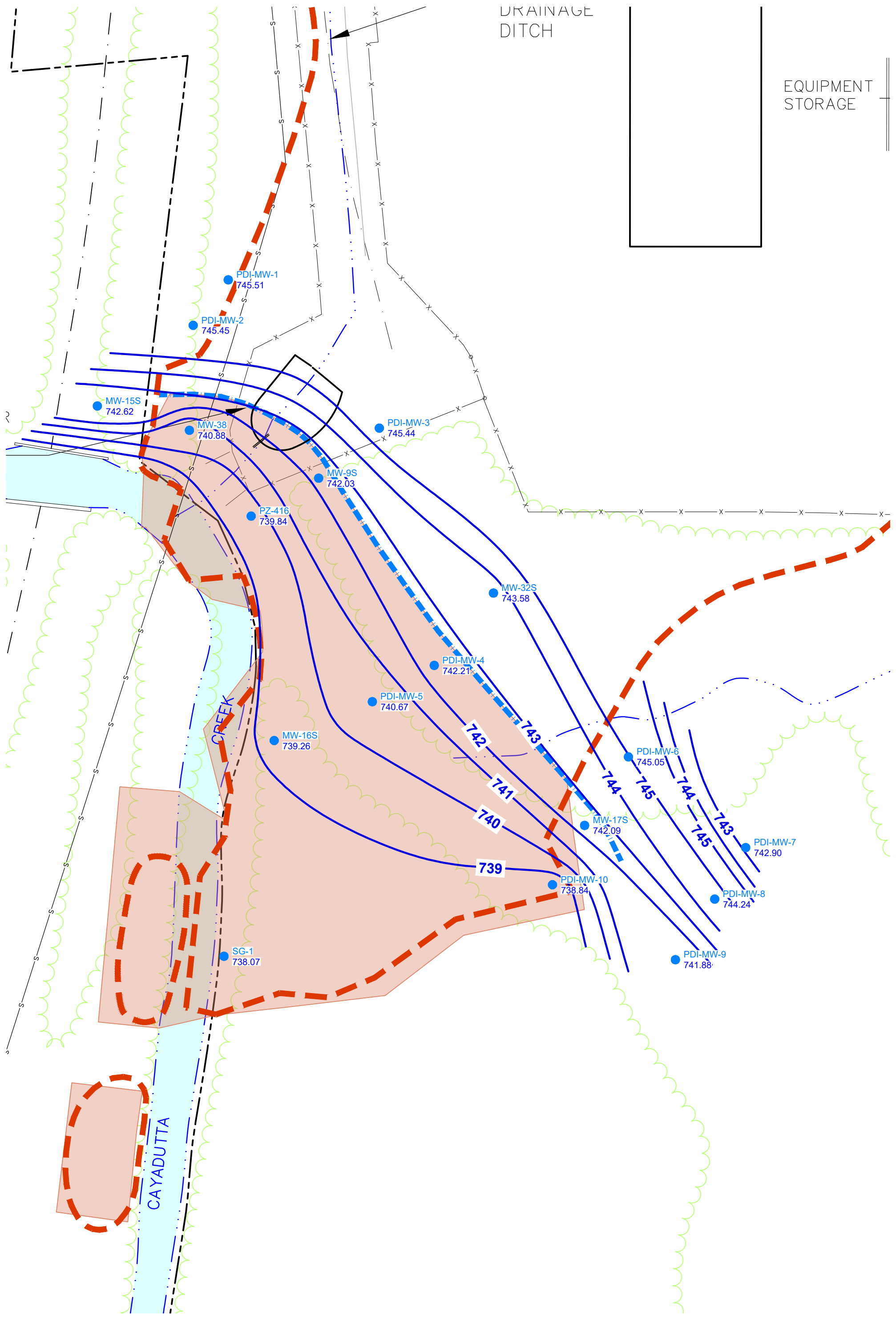
0 30' 60'
GRAPHIC SCALE

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
PRE-DESIGN INVESTIGATION REPORT

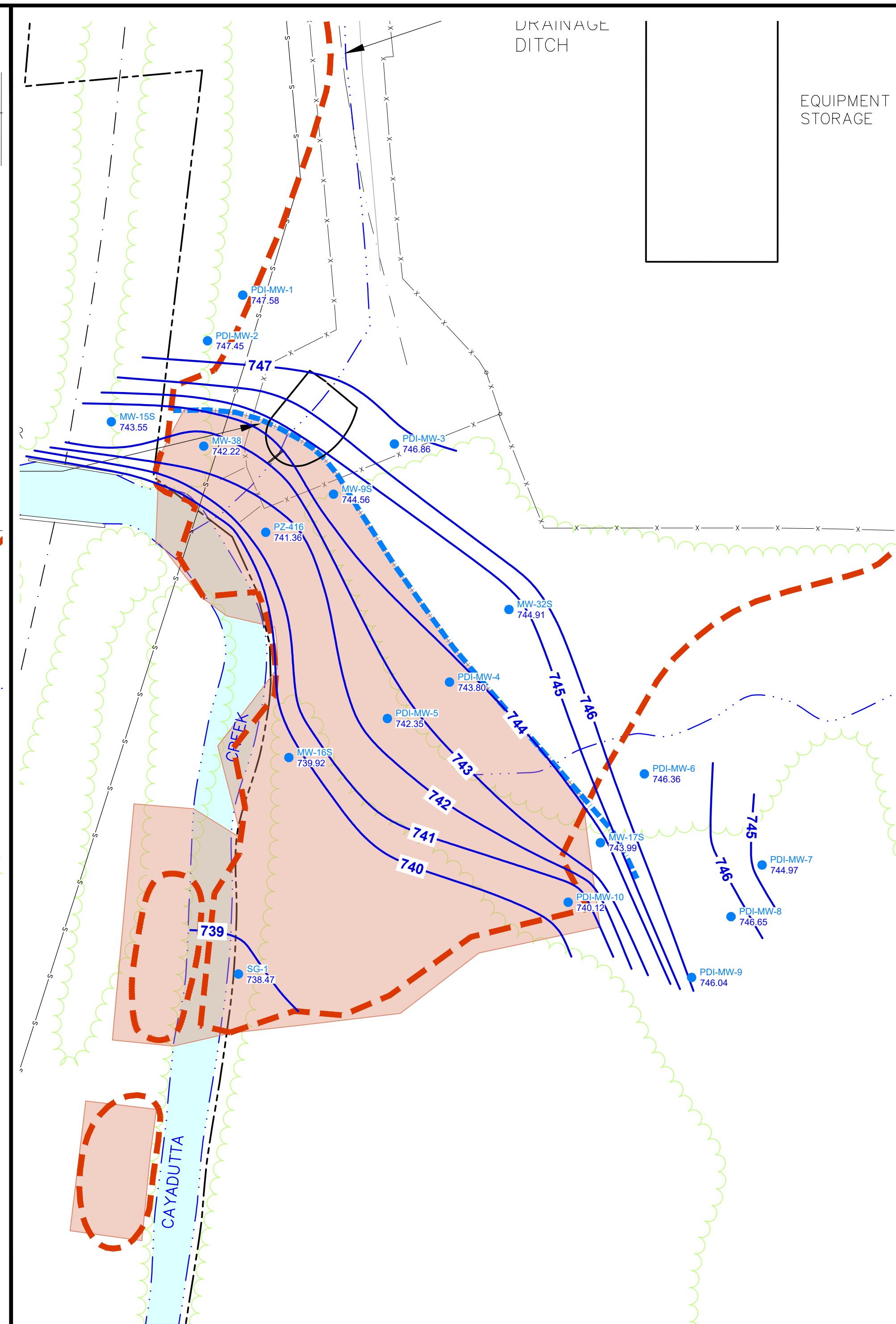
INVESTIGATION LOCATIONS

ARCADIS

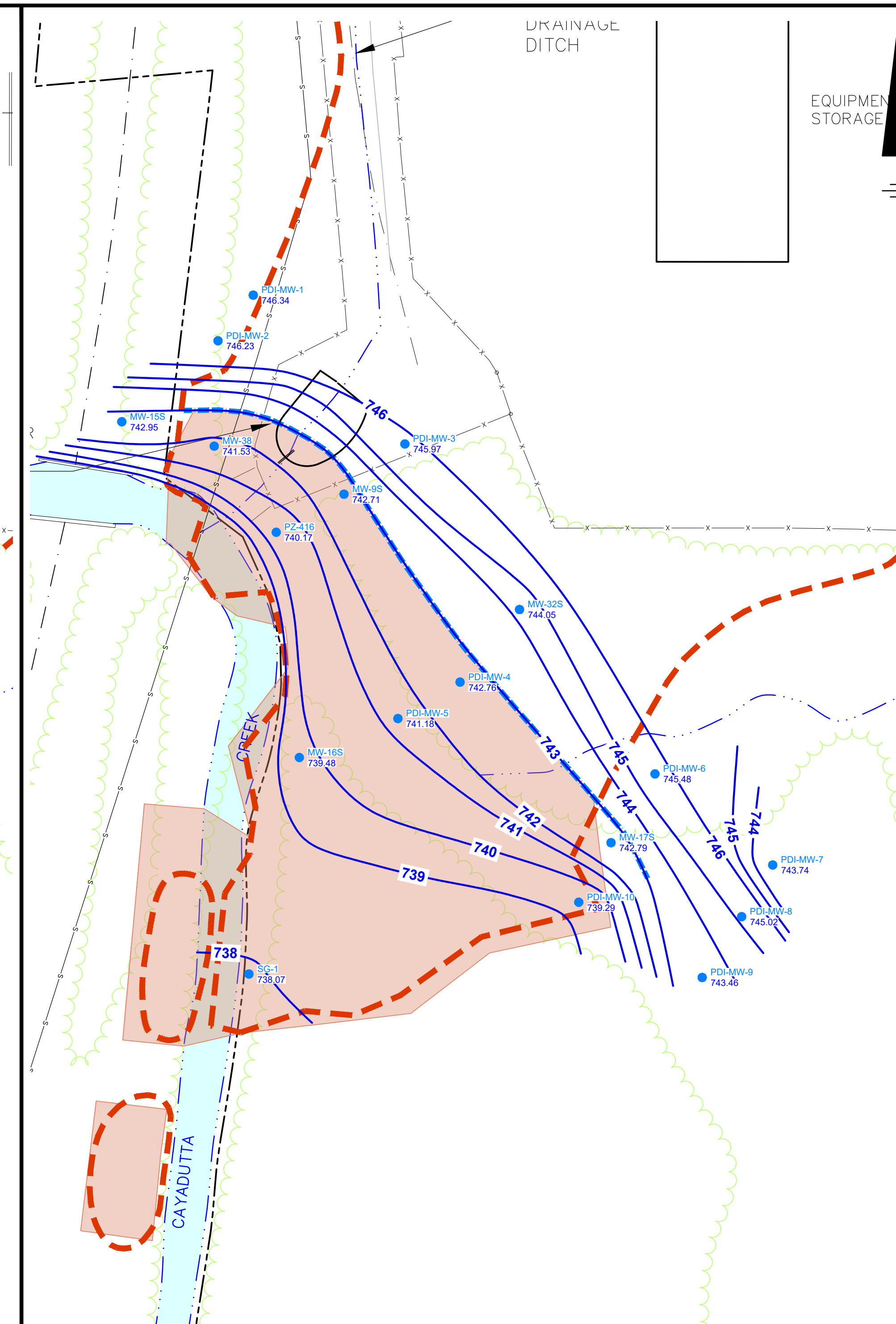
FIGURE
1



FEBRUARY 8, 2021 - GROUNDWATER CONTOURS (LOWEST GROUNDWATER ELEVATIONS)



MARCH 12, 2021 - GROUNDWATER CONTOURS (HIGHEST GROUNDWATER ELEVATION)



AVERAGE ELEVATION - GROUNDWATER CONTOURS

LEGEND:

PDI-MW-9	MONITORING WELLS
741.88	GROUNDWATER ELEVATION
740	GROUNDWATER ELEVATION CONTOUR LINE
	PROBABLE NAPL–CONTAINING AREA
	PROPOSED NAPL BARRIER WALL ALIGNMENT
	EXCAVATION AREA LIMITS
	APPROXIMATE PROPERTY LINE LIMITS
	PAVED BIKE PATH
	WATER
	TREE LINE
	FENCE
	SANITARY SEWER

0 40' 80'
GRAPHIC SCALE

NOTES:

1. ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.
2. THE NATIONAL GRID PROPERTY LINE SHOWN IS APPROXIMATE.
3. ALL LOCATIONS ARE APPROXIMATE.
4. BASEMAP PREPARED FROM ELECTRONIC SURVEY FILE PROVIDED BY NIAGARA MOHAWK ON 7/23/01. PRIMARY SURVEY CONTROL FOR PHOTOGRAMMETIC MAPPING WAS ESTABLISHED FROM AN ON THE GROUND SURVEY, PERFORMED ON JULY 28, 1994 USING THE GLOBAL POSITIONING SYSTEM (GPS) AND CONFORMS TO ORDER 2 CLASS 2 FGCS ACCURACY SPECIFICATIONS. THE HORIZONTAL REFERENCE DATUM NORTH AMERICAN DATUM OF 1983 (NAD 83) ON REFERENCE ELLIPSOID ASSOCIATED WITH THE GEODETIC REFERENCE SYSTEM OF 1980 (GRS 80). THE COORDINATES ARE BASED ON THE NEW YORK STATE PLANE GEODETIC SYSTEM OF 1983 (EASTERN ZONE 3101).
5. THE FEBRUARY 8, 2021 CONTOURS REPRESENT THE LOWEST GROUNDWATER ELEVATIONS MEASURED BY THE PRESSURE TRANSDUCERS DURING THE PDI
6. THE MARCH 12, 2021 CONTOURS REPRESENT THE HIGHEST GROUNDWATER ELEVATIONS MEASURED BY THE PRESSURE TRANSDUCERS DURING THE PDI
7. THE AVERAGE GROUNDWATER CONTOURS REPRESENT THE AVERAGE GROUNDWATER ELEVATIONS MEASURED BY THE PRESSURE TRANSDUCERS DURING THE PDI FROM NOVEMBER 18, 2020 THROUGH APRIL 8, 2021

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
PRE-DESIGN INVESTIGATION REPORT

GROUNDWATER CONTOURS FOR THE LOWEST, HIGHEST, AND AVERAGE WATER-LEVEL CONDITION

ARCADIS

FIGURE
2

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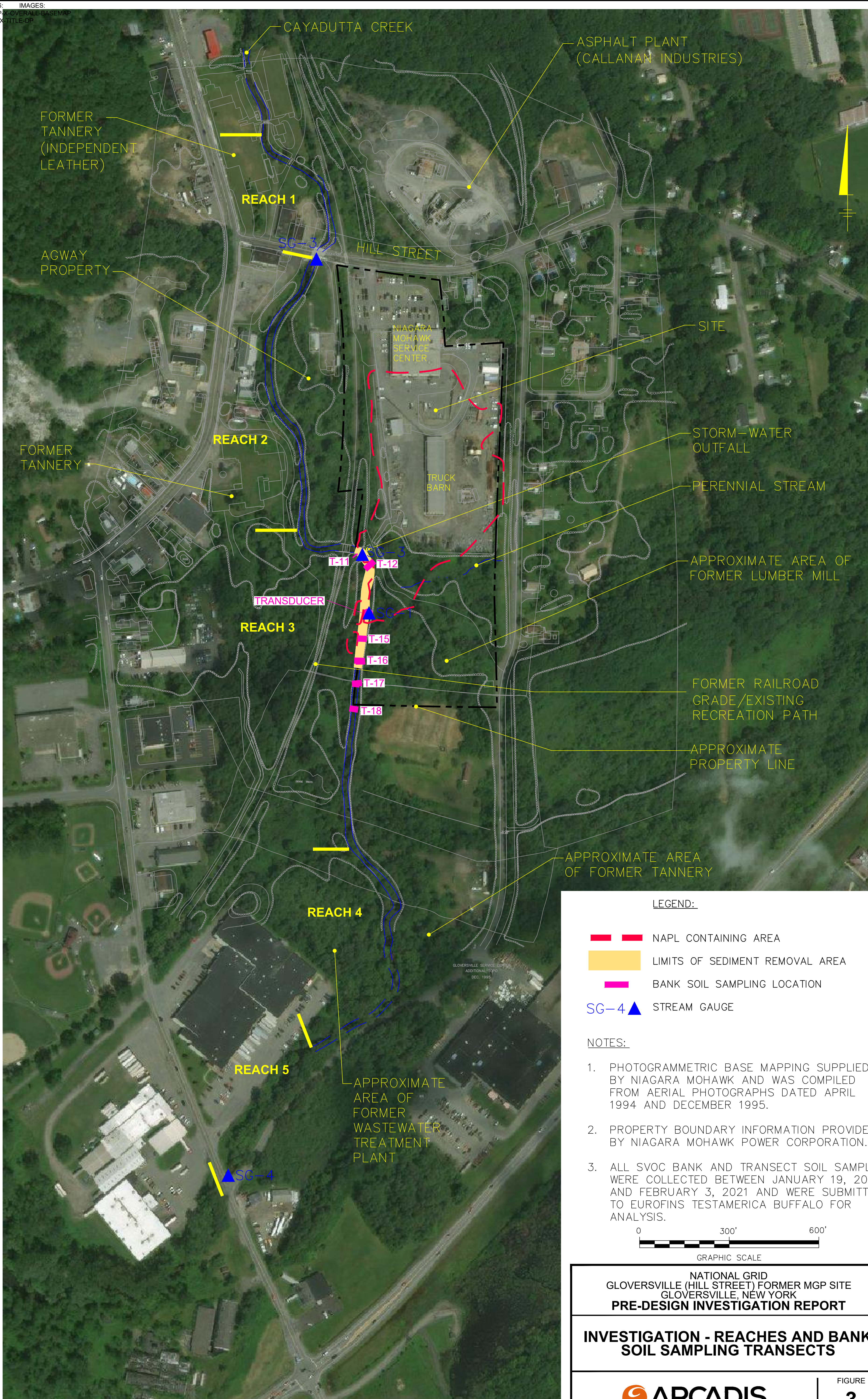

NOTES:

1. PHOTOGRAMMETRIC BASE MAPPING SUPPLIED BY NIAGARA MOHAWK AND WAS COMPILED FROM AERIAL PHOTOGRAPHS DATED APRIL 1994 AND DECEMBER 1995.
2. PROPERTY BOUNDARY INFORMATION PROVIDED BY NIAGARA MOHAWK POWER CORPORATION.
3. ALL SVOC BANK AND TRANSECT SOIL SAMPLES WERE COLLECTED BETWEEN JANUARY 19, 2021 AND FEBRUARY 3, 2021 AND WERE SUBMITTED TO EUROFINS TESTAMERICA BUFFALO FOR ANALYSIS.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
PRE-DESIGN INVESTIGATION REPORT

INVESTIGATION - REACHES AND BANK SOIL SAMPLING TRANSECTS

ARCADIS

FIGURE
3

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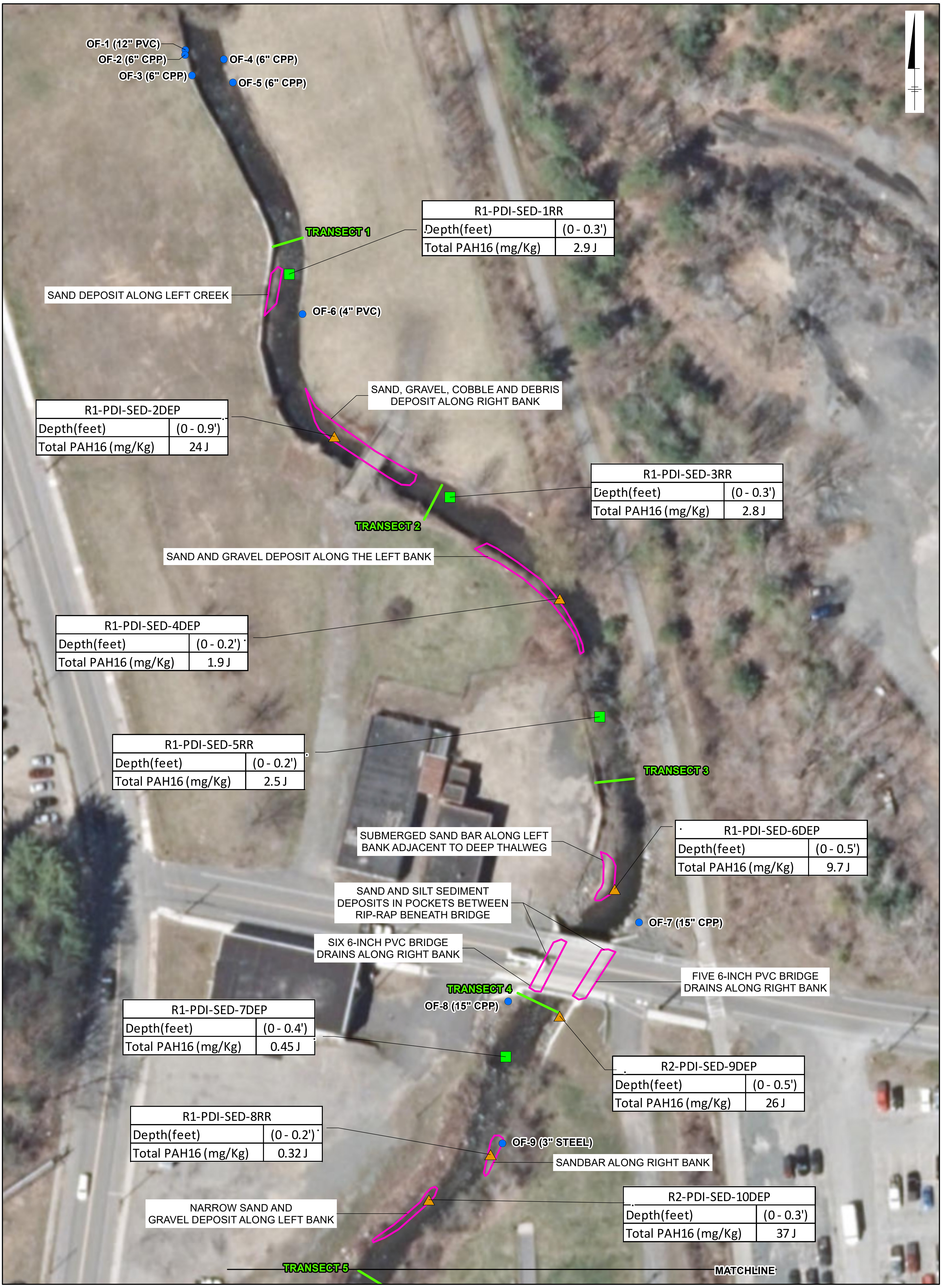

LEGEND:

- DEPOSITIONAL SEDIMENT SAMPLING LOCATION
- RIFFLE/RUN SEDIMENT SAMPLING LOCATION
- OUTFALL LOCATION
- CREEK RECONNAISANCE TRANSECT
- DEPOSITIONAL AREA

NOTES:

1. PHOTOGRAMMETRIC BASE MAPPING SUPPLIED BY NIAGARA MOHAWK AND WAS COMPILED FROM AERIAL PHOTOGRAPHS DATED APRIL 1994 AND DECEMBER 1995.
2. ACRONYMS:
   CPP = CORRUGATED PLASTIC PIPE
   CSP = CORRUGATED STEEL PIPE
   CTP = CLAY TILE PIPE
   mg/Kg = MILIGRAMS PER KILOGRAM
   PVC = POLYVINYL CHLORIDE PIPE
   RCP = REINFORCED CONCRETE PIPE
3. ESRI IMAGERY FROM NYS ITS GIS PROGRAM OFFICE DATED 2017.
4. ALL SVOC REACH SEDIMENT SAMPLES WERE COLLECTED BETWEEN JANUARY 19, 2021 AND JANUARY 21, 2021 AND WERE SUBMITTED TO EUROFINS TESTAMERICA BUFFALO FOR ANALYSIS.

0 60 120 Feet

GRAPHIC SCALE

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
PRE-DESIGN INVESTIGATION REPORT

REACH 1

ARCADIS

FIGURE
4

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LEGEND:

- DEPOSITIONAL SEDIMENT SAMPLING LOCATION
- RIFFLE/RUN SEDIMENT SAMPLING LOCATION
- OUTFALL LOCATION
- CREEK RECONNAISANCE TRANSECT
- DEPOSITIONAL AREA

NOTES:

1. PHOTOGRAMMETRIC BASE MAPPING SUPPLIED BY NIAGARA MOHAWK AND WAS COMPILED FROM AERIAL PHOTOGRAPHS DATED APRIL 1994 AND DECEMBER 1995.
2. ACRONYMS:
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   CTP = CLAY TILE PIPE
   mg/Kg = MILIGRAMS PER KILOGRAM
   PVC = POLYVINYL CHLORIDE PIPE
   RCP = REINFORCED CONCRETE PIPE
3. ESRI IMAGERY FROM NYS ITS GIS PROGRAM OFFICE DATED 2017.
4. ALL SVOC REACH SEDIMENT SAMPLES WERE COLLECTED BETWEEN JANUARY 19, 2021 AND JANUARY 21, 2021 AND WERE SUBMITTED TO EUROFINS TESTAMERICA BUFFALO FOR ANALYSIS.

0 60 120 Feet
GRAPHIC SCALE

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
PRE-DESIGN INVESTIGATION REPORT

REACH 2

ARCADIS

FIGURE
5

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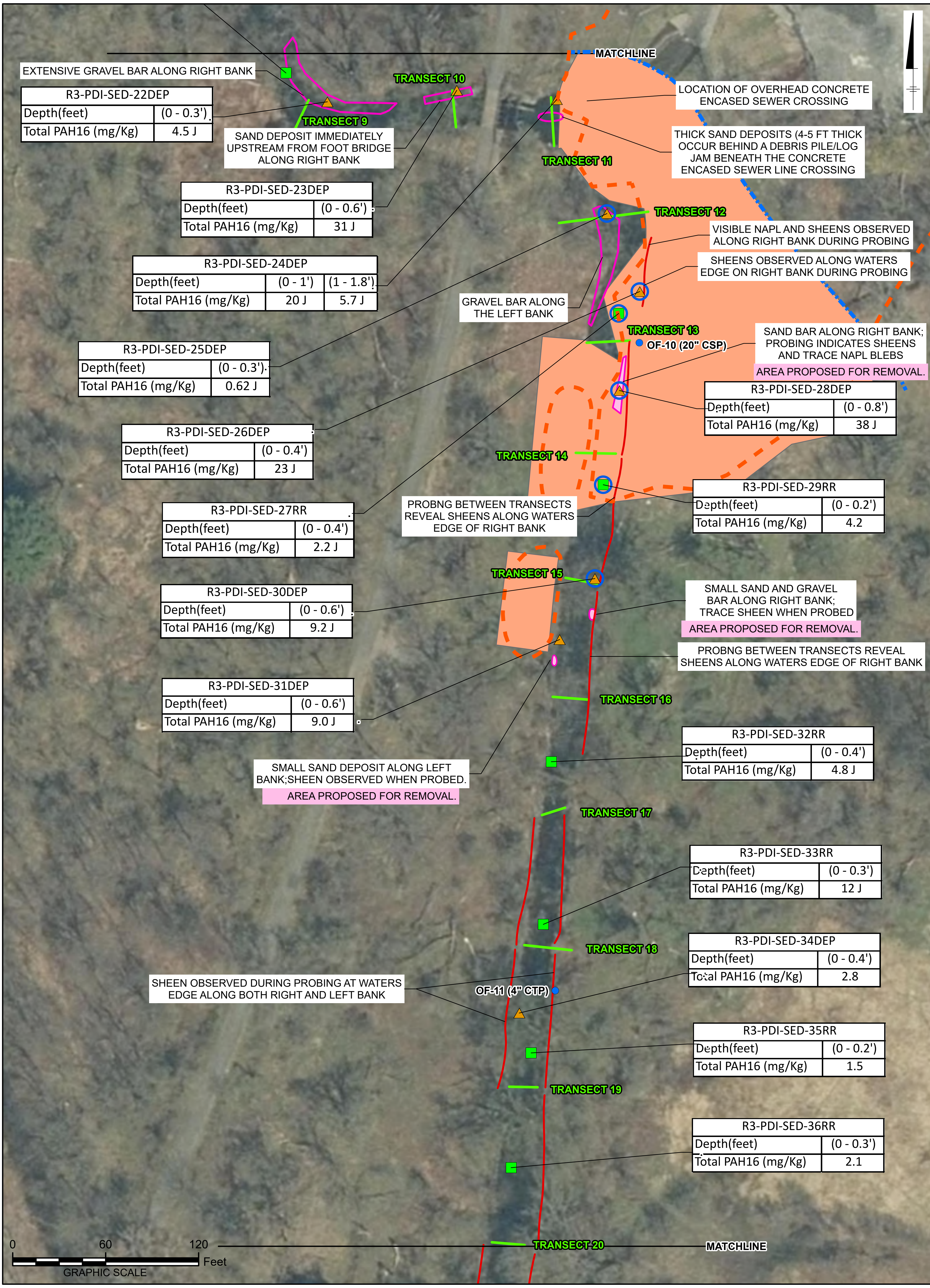

LEGEND:

- DEPOSITIONAL SEDIMENT SAMPLING LOCATION
- RIFFLE/RUN SEDIMENT SAMPLING LOCATION
- OUTFALL LOCATION
- CREEK RECONNAISANCE TRANSECT
- VISUALLY OBSERVED IMPACTS
- SAMPLES HAVE A COMPOSITIONAL SIGNATURE SIMILAR TO IMPACTED UPLAND SITE SOIL SAMPLES
- PROPOSED NAPL BARRIER WALL ALIGNMENT
- PROBABLE NAPL - CONTAINING AREA
- EXCAVATION AREA LIMIT
- DEPOSITIONAL AREA
- AREA PROPOSED FOR REMOVAL

NOTES:

1. PHOTOGRAMMETRIC BASE MAPPING SUPPLIED BY NIAGARA MOHAWK AND WAS COMPILED FROM AERIAL PHOTOGRAPHS DATED APRIL 1994 AND DECEMBER 1995.
2. ACRONYMS:
   CPP = CORRUGATED PLASTIC PIPE
   CSP = CORRUGATED STEEL PIPE
   CTP = CLAY TILE PIPE
   mg/Kg = MILIGRAMS PER KILOGRAM
   PVC = POLYVINYL CHLORIDE PIPE
   RCP = REINFORCED CONCRETE PIPE
3. ESRI IMAGERY FROM NYS ITS GIS PROGRAM OFFICE DATED 2022.
4. ALL SVOC REACH SEDIMENT SAMPLES WERE COLLECTED BETWEEN JANUARY 19, 2021 AND JANUARY 21, 2021 AND WERE SUBMITTED TO EUROFINS TESTAMERICA BUFFALO FOR ANALYSIS.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
PRE-DESIGN INVESTIGATION REPORT

REACH 6

ARCADIS

FIGURE
6

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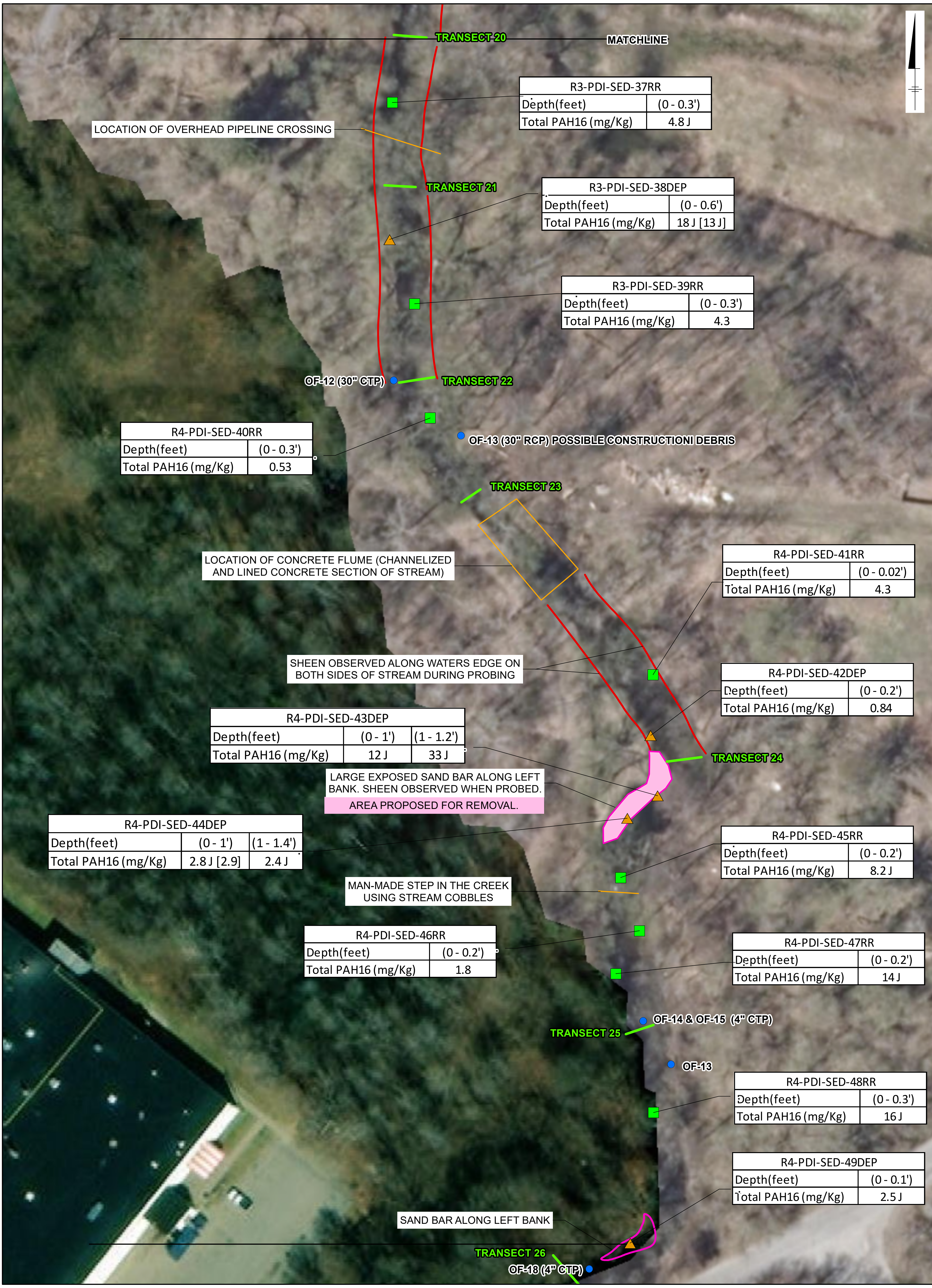

LEGEND:

- DEPOSITIONAL SEDIMENT SAMPLING LOCATION
- RIFFLE/RUN SEDIMENT SAMPLING LOCATION
- OUTFALL LOCATION
- CREEK RECONNAISANCE TRANSECT
- VISUALLY OBSERVED IMPACTS
- DEPOSITIONAL AREA
- AREA PROPOSED FOR REMOVAL

NOTES:

1. PHOTOGRAMMETRIC BASE MAPPING SUPPLIED BY NIAGARA MOHAWK AND WAS COMPILED FROM AERIAL PHOTOGRAPHS DATED APRIL 1994 AND DECEMBER 1995.
2. ACRONYMS:
   CPP = CORRUGATED PLASTIC PIPE
   CSP = CORRUGATED STEEL PIPE
   CTP = CLAY TILE PIPE
   mg/Kg = MILIGRAMS PER KILOGRAM
   PVC = POLYVINYL CHLORIDE PIPE
   RCP = REINFORCED CONCRETE PIPE
3. ESRI IMAGERY FROM NYS ITS GIS PROGRAM OFFICE DATED 2017.
4. ALL SVOC REACH SEDIMENT SAMPLES WERE COLLECTED BETWEEN JANUARY 19, 2021 AND JANUARY 21, 2021 AND WERE SUBMITTED TO EUROFINS TESTAMERICA BUFFALO FOR ANALYSIS.

0 60 120 Feet

GRAPHIC SCALE

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
PRE-DESIGN INVESTIGATION REPORT

REACH 4

ARCADIS

FIGURE
7

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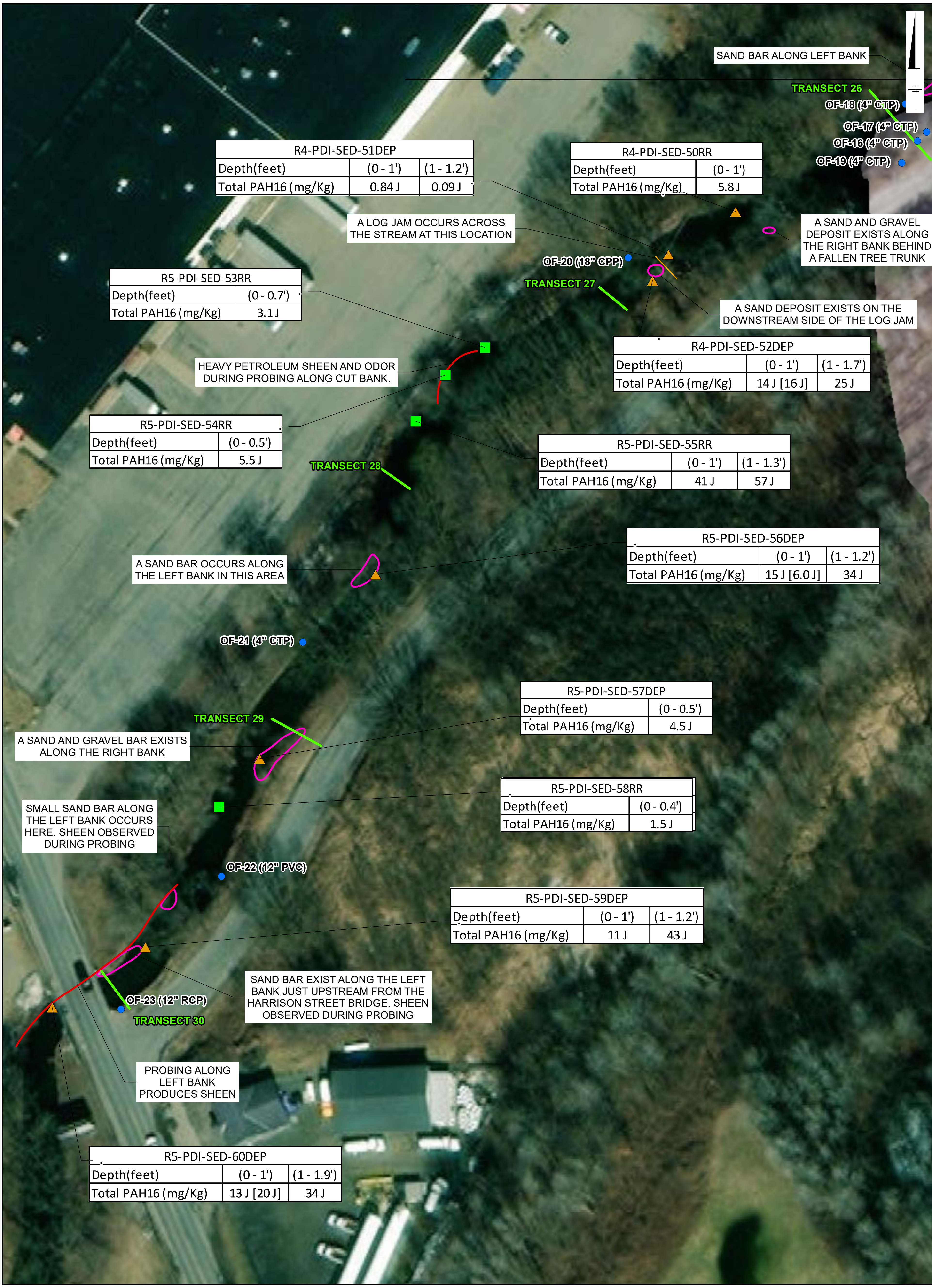


R4-PDI-SED-51DEP		
Depth(feet)	(0 - 1')	(1 - 1.2')
Total PAH16 (mg/Kg)	0.84 J	0.09 J

R4-PDI-SED-50RR	
Depth(feet)	(0 - 1')
Total PAH16 (mg/Kg)	5.8 J

R5-PDI-SED-53RR	
Depth(feet)	(0 - 0.7')
Total PAH16 (mg/Kg)	3.1 J

R4-PDI-SED-52DEP		
Depth(feet)	(0 - 1')	(1 - 1.7')
Total PAH16 (mg/Kg)	14 J [16 J]	25 J

R5-PDI-SED-54RR	
Depth(feet)	(0 - 0.5')
Total PAH16 (mg/Kg)	5.5 J

R5-PDI-SED-55RR		
Depth(feet)	(0 - 1')	(1 - 1.3')
Total PAH16 (mg/Kg)	41 J	57 J

R5-PDI-SED-56DEP		
Depth(feet)	(0 - 1')	(1 - 1.2')
Total PAH16 (mg/Kg)	15 J [6.0 J]	34 J

R5-PDI-SED-57DEP	
Depth(feet)	(0 - 0.5')
Total PAH16 (mg/Kg)	4.5 J

R5-PDI-SED-58RR	
Depth(feet)	(0 - 0.4')
Total PAH16 (mg/Kg)	1.5 J

R5-PDI-SED-59DEP		
Depth(feet)	(0 - 1')	(1 - 1.2')
Total PAH16 (mg/Kg)	11 J	43 J

R5-PDI-SED-60DEP		
Depth(feet)	(0 - 1')	(1 - 1.9')
Total PAH16 (mg/Kg)	13 J [20 J]	34 J

LEGEND:

- DEPOSITIONAL SEDIMENT SAMPLING LOCATION
- RIFFLE/RUN SEDIMENT SAMPLING LOCATION
- OUTFALL LOCATION
- CREEK RECONNAISANCE TRANSECT
- VISUALLY OBSERVED IMPACTS
- DEPOSITIONAL AREA

NOTES:

1. PHOTOGRAMMETRIC BASE MAPPING SUPPLIED BY NIAGARA MOHAWK AND WAS COMPILED FROM AERIAL PHOTOGRAPHS DATED APRIL 1994 AND DECEMBER 1995.
2. ACRONYMS:
   CPP = CORRUGATED PLASTIC PIPE
   CSP = CORRUGATED STEEL PIPE
   CTP = CLAY TILE PIPE
   mg/Kg = MILIGRAMS PER KILOGRAM
   PVC = POLYVINYL CHLORIDE PIPE
   RCP = REINFORCED CONCRETE PIPE
3. ESRI IMAGERY FROM NYS ITS GIS PROGRAM OFFICE DATED 2017.
4. ALL SVOC REACH SEDIMENT SAMPLES WERE COLLECTED BETWEEN JANUARY 19, 2021 AND JANUARY 21, 2021 AND WERE SUBMITTED TO EUROFINS TESTAMERICA BUFFALO FOR ANALYSIS.

0 60 120 Feet

GRAPHIC SCALE

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
PRE-DESIGN INVESTIGATION REPORT

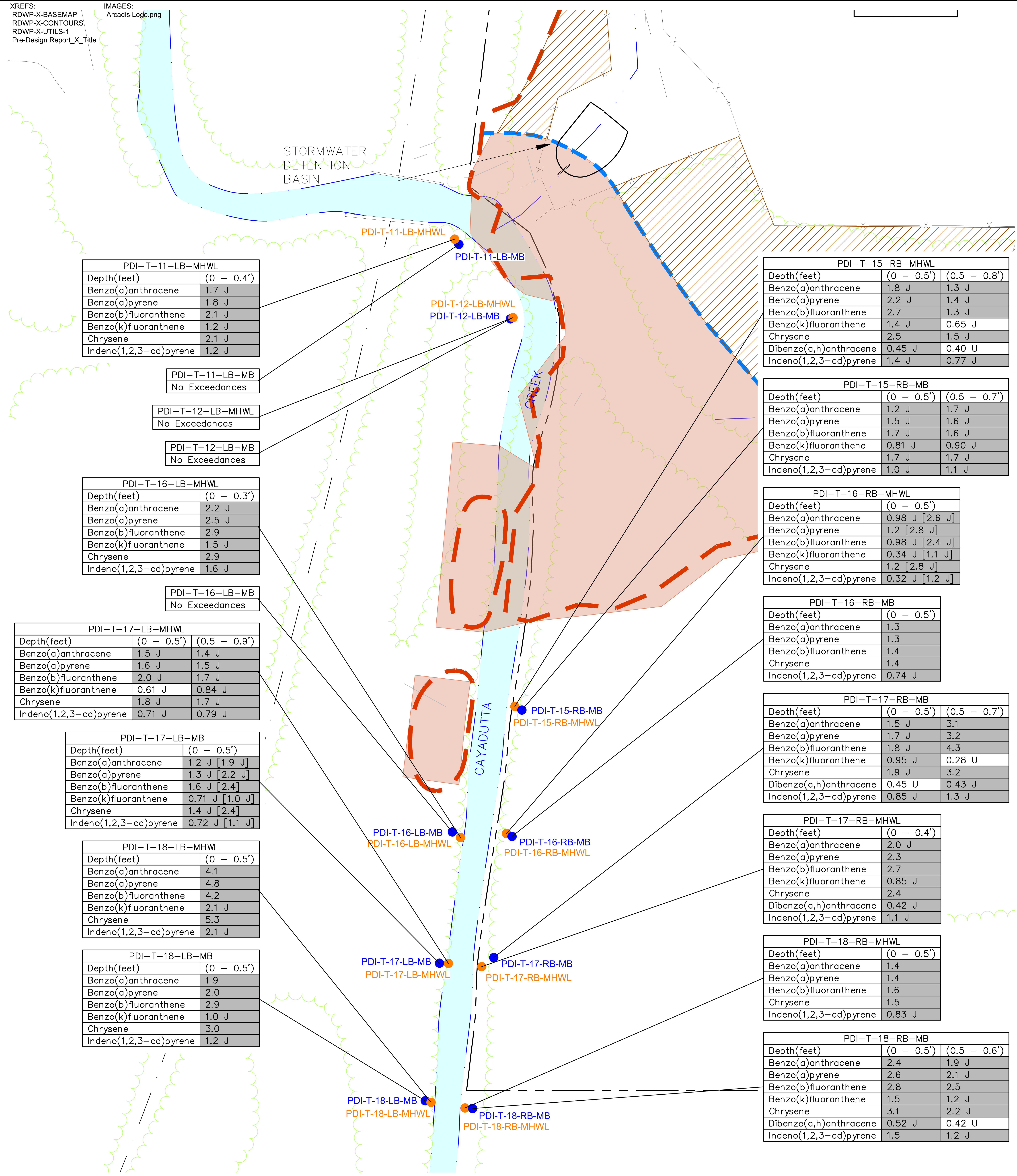
REACH 5

ARCADIS

FIGURE
8

XREFS:
RDWP-X-BASEMAP
RDWP-X-CONTOURS
RDWP-X-UTILS-1
Pre-Design Report_X_Title

IMAGES:
Arcadis Logo.png



PDI–T–11–LB–MHWL	
Depth(feet)	(0 – 0.4')
Benzo(a)anthracene	1.7 J
Benzo(a)pyrene	1.8 J
Benzo(b)fluoranthene	2.1 J
Benzo(k)fluoranthene	1.2 J
Chrysene	2.1 J
Indeno(1,2,3–cd)pyrene	1.2 J

PDI–T–11–LB–MB
No Exceedances

PDI–T–12–LB–MHWL
No Exceedances

PDI–T–12–LB–MB
No Exceedances

PDI–T–16–LB–MHWL	
Depth(feet)	(0 – 0.3')
Benzo(a)anthracene	2.2 J
Benzo(a)pyrene	2.5 J
Benzo(b)fluoranthene	2.9
Benzo(k)fluoranthene	1.5 J
Chrysene	2.9
Indeno(1,2,3–cd)pyrene	1.6 J

PDI–T–16–LB–MB
No Exceedances

PDI–T–17–LB–MHWL		
Depth(feet)	(0 – 0.5')	(0.5 – 0.9')
Benzo(a)anthracene	1.5 J	1.4 J
Benzo(a)pyrene	1.6 J	1.5 J
Benzo(b)fluoranthene	2.0 J	1.7 J
Benzo(k)fluoranthene	0.61 J	0.84 J
Chrysene	1.8 J	1.7 J
Indeno(1,2,3–cd)pyrene	0.71 J	0.79 J

PDI–T–17–LB–MB	
Depth(feet)	(0 – 0.5')
Benzo(a)anthracene	1.2 J [1.9 J]
Benzo(a)pyrene	1.3 J [2.2 J]
Benzo(b)fluoranthene	1.6 J [2.4]
Benzo(k)fluoranthene	0.71 J [1.0 J]
Chrysene	1.4 J [2.4]
Indeno(1,2,3–cd)pyrene	0.72 J [1.1 J]

PDI–T–18–LB–MHWL	
Depth(feet)	(0 – 0.5')
Benzo(a)anthracene	4.1
Benzo(a)pyrene	4.8
Benzo(b)fluoranthene	4.2
Benzo(k)fluoranthene	2.1 J
Chrysene	5.3
Indeno(1,2,3–cd)pyrene	2.1 J

PDI–T–18–LB–MB	
Depth(feet)	(0 – 0.5')
Benzo(a)anthracene	1.9
Benzo(a)pyrene	2.0
Benzo(b)fluoranthene	2.9
Benzo(k)fluoranthene	1.0 J
Chrysene	3.0
Indeno(1,2,3–cd)pyrene	1.2 J

PDI–T–15–RB–MHWL		
Depth(feet)	(0 – 0.5')	(0.5 – 0.8')
Benzo(a)anthracene	1.8 J	1.3 J
Benzo(a)pyrene	2.2 J	1.4 J
Benzo(b)fluoranthene	2.7	1.3 J
Benzo(k)fluoranthene	1.4 J	0.65 J
Chrysene	2.5	1.5 J
Dibenzo(a,h)anthracene	0.45 J	0.40 U
Indeno(1,2,3–cd)pyrene	1.4 J	0.77 J

PDI–T–15–RB–MB		
Depth(feet)	(0 – 0.5')	(0.5 – 0.7')
Benzo(a)anthracene	1.2 J	1.7 J
Benzo(a)pyrene	1.5 J	1.6 J
Benzo(b)fluoranthene	1.7 J	1.6 J
Benzo(k)fluoranthene	0.81 J	0.90 J
Chrysene	1.7 J	1.7 J
Indeno(1,2,3–cd)pyrene	1.0 J	1.1 J

PDI–T–16–RB–MHWL	
Depth(feet)	(0 – 0.5')
Benzo(a)anthracene	0.98 J [2.6 J]
Benzo(a)pyrene	1.2 [2.8 J]
Benzo(b)fluoranthene	0.98 J [2.4 J]
Benzo(k)fluoranthene	0.34 J [1.1 J]
Chrysene	1.2 [2.8 J]
Indeno(1,2,3–cd)pyrene	0.32 J [1.2 J]

PDI–T–16–RB–MB	
Depth(feet)	(0 – 0.5')
Benzo(a)anthracene	1.3
Benzo(a)pyrene	1.3
Benzo(b)fluoranthene	1.4
Chrysene	1.4
Indeno(1,2,3–cd)pyrene	0.74 J

PDI–T–17–RB–MB		
Depth(feet)	(0 – 0.5')	(0.5 – 0.7')
Benzo(a)anthracene	1.5 J	3.1
Benzo(a)pyrene	1.7 J	3.2
Benzo(b)fluoranthene	1.8 J	4.3
Benzo(k)fluoranthene	0.95 J	0.28 U
Chrysene	1.9 J	3.2
Dibenzo(a,h)anthracene	0.45 U	0.43 J
Indeno(1,2,3–cd)pyrene	0.85 J	1.3 J

PDI–T–17–RB–MHWL	
Depth(feet)	(0 – 0.4')
Benzo(a)anthracene	2.0 J
Benzo(a)pyrene	2.3
Benzo(b)fluoranthene	2.7
Benzo(k)fluoranthene	0.85 J
Chrysene	2.4
Dibenzo(a,h)anthracene	0.42 J
Indeno(1,2,3–cd)pyrene	1.1 J

PDI–T–18–RB–MHWL	
Depth(feet)	(0 – 0.5')
Benzo(a)anthracene	1.4
Benzo(a)pyrene	1.4
Benzo(b)fluoranthene	1.6
Chrysene	1.5
Indeno(1,2,3–cd)pyrene	0.83 J

PDI–T–18–RB–MB		
Depth(feet)	(0 – 0.5')	(0.5 – 0.6')
Benzo(a)anthracene	2.4	1.9 J
Benzo(a)pyrene	2.6	2.1 J
Benzo(b)fluoranthene	2.8	2.5
Benzo(k)fluoranthene	1.5	1.2 J
Chrysene	3.1	2.2 J
Dibenzo(a,h)anthracene	0.52 J	0.42 U
Indeno(1,2,3–cd)pyrene	1.5	1.2 J

NOTES:

1. ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.
2. THE NATIONAL GRID PROPERTY LINE SHOWN IS APPROXIMATE.
3. ALL LOCATIONS ARE APPROXIMATE.
4. BASEMAP PREPARED FROM ELECTRONIC SURVEY FILE PROVIDED BY NIAGARA MOHAWK ON 7/23/01. PRIMARY SURVEY CONTROL FOR PHOTOGRAMMETRIC MAPPING WAS ESTABLISHED FROM AN ON THE GROUND SURVEY, PERFORMED ON JULY 28, 1994 USING THE GLOBAL POSITIONING SYSTEM (GPS) AND CONFORMS TO ORDER 2 CLASS 2 FGCS ACCURACY SPECIFICATIONS. THE HORIZONTAL REFERENCE DATUM NORTH AMERICAN DATUM OF 1983 (NAD 83) ON REFERENCE ELLIPSOID ASSOCIATED WITH THE GEODETIC REFERENCE SYSTEM OF 1980 (GRS 80). THE COORDINATES ARE BASED ON THE NEW YORK STATE PLANE GEODETIC SYSTEM OF 1983 (EASTERN ZONE 3101).
5. CONCENTRATIONS PROVIDED IN MILLIGRAMS PER KILOGRAM (MG/KG), EQUIVALENT TO PARTS PER MILLION (PPM).
6. SCREENING CRITERIA UNRESTRICTED USE SOIL CLEANUP OBJECTIVES (SCOS) FROM NYSDEC (2006) 6 NYCRR PART 375-6.
7. SHADING INDICATES VALUE EXCEEDS ASSOCIATED UNRESTRICTED USE SCO.
8. U = THE COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. THE ASSOCIATED VALUE IS THE COMPOUND QUANTITATION LIMIT.
9. J = ESTIMATED CONCENTRATION. PRESENTED CONCENTRATION IS LESS THAN THE METHOD DETECTION LIMIT BUT GREATER THAN THE INSTRUMENT DETECTION LIMIT.

LEGEND:

MEAN HIGH WATER LEVEL BANK SOIL SAMPLE LOCATION
MID-BANK SOIL SAMPLE LOCATION
PROBABLE NAPL-CONTAINING AREA
PROPOSED NAPL BARRIER WALL ALIGNMENT
EXCAVATION AREA LIMITS
LIMITS OF SURFACE SOIL EXCAVATION AND SOIL COVER
APPROXIMATE PROPERTY LINE LIMITS
PAVED BIKE PATH
WATER
TREE LINE
FENCE
UTILITY POLE

PAH Compound	NYSDEC Table 375–6: Unrestricted Use SCO (ppm)
Acenaphthene	20
Acenaphthylene	100
Anthracene	100
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(g,h,i)perylene	100
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenzo(a,h)anthracene	0.33
Fluoranthene	100
Fluorene	30
Indeno(1,2,3–cd)pyrene	0.5
Naphthalene	12
Phenanthrene	100
Pyrene	100

0 30' 60'
GRAPHIC SCALE

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
PRE-DESIGN INVESTIGATION REPORT

BANK SOIL SAMPLING LOCATIONS ADJACENT TO SITE

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FIGURE
9

XREFS: Pre-Design Report_X_Title
IMAGES: aerial.jpg Arcadis Logo.png

PDI–T–5–LB–MB		
Depth(Inches)	(0 – 6)	(6 – 12)
SVOCs		
Benzo(a)anthracene (mg/kg)	1.3 J	0.79 J
Benzo(a)pyrene (mg/kg)	1.4 J	0.94 J
Benzo(b)fluoranthene (mg/kg)	2.0 J	1.3 J
Benzo(k)fluoranthene (mg/kg)	0.81 J	0.53 J
Chrysene (mg/kg)	1.6 J	1.0 J
Indeno(1,2,3–cd)pyrene (mg/kg)	0.91 J	0.59 J

PDI–T–5–LB–MHWL		
Depth(Inches)	(0 – 6)	(6 – 12)
SVOCs		
Benzo(a)anthracene (mg/kg)	2.3 J	1.1 J
Benzo(a)pyrene (mg/kg)	2.2 J	1.2 J
Benzo(b)fluoranthene (mg/kg)	3.1	1.6 J
Benzo(k)fluoranthene (mg/kg)	1.2 J	0.60 J
Chrysene (mg/kg)	2.6	1.3 J
Dibenzo(a,h)anthracene (mg/kg)	0.48 J	0.47 U
Indeno(1,2,3–cd)pyrene (mg/kg)	1.3 J	0.71 J

PDI–T–5–RB–MB		
Depth(Inches)	(0 – 6)	(6 – 12)
All Analytes	No Exceedances	No Exceedances

PDI–T–5–RB–MHWL		
Depth(Inches)	(0 – 6)	(6 – 12)
SVOCs		
Benzo(b)fluoranthene (mg/kg)	1.2	0.078 J

PDI–T–6–LB–MHWL		
Depth(Inches)	(0 – 6)	(6 – 12)
SVOCs		
Benzo(b)fluoranthene (mg/kg)	1.3	0.67 J
Chrysene (mg/kg)	1.1	0.54 J
Indeno(1,2,3–cd)pyrene (mg/kg)	0.52 J	0.30 J

PDI–T–6–LB–MB		
Depth(Inches)	(0 – 6)	(6 – 12)
SVOCs		
Benzo(a)anthracene (mg/kg)	1.1	0.59 J
Benzo(b)fluoranthene (mg/kg)	1.2	0.65 J
Indeno(1,2,3–cd)pyrene (mg/kg)	0.55 J	0.27 J

PDI–T–7–RB–MB		
Depth(Inches)	(0 – 6)	(6 – 12)
SVOCs		
Benzo(a)anthracene (mg/kg)	0.91 J [1.0 J]	1.8 J
Benzo(a)pyrene (mg/kg)	1.0 J [1.1 J]	1.8 J
Benzo(b)fluoranthene (mg/kg)	1.3 [1.4 J]	2.2
Benzo(k)fluoranthene (mg/kg)	0.55 J [0.65 J]	0.96 J
Chrysene (mg/kg)	0.95 J [1.1 J]	1.7 J
Indeno(1,2,3–cd)pyrene (mg/kg)	0.60 J [0.68 J]	1.0 J

PDI–T–7–RB–MHWL		
Depth(Inches)	(0 – 6)	(6 – 12)
SVOCs		
Benzo(a)anthracene (mg/kg)	1.8	1.4
Benzo(a)pyrene (mg/kg)	1.8	1.4
Benzo(b)fluoranthene (mg/kg)	2.2	1.7
Benzo(k)fluoranthene (mg/kg)	0.88 J	0.72 J
Chrysene (mg/kg)	1.8	1.5
Dibenzo(a,h)anthracene (mg/kg)	0.34 J	0.27 J
Indeno(1,2,3–cd)pyrene (mg/kg)	0.99 J	0.82 J

PDI–T–6–RB–MB		
Depth(Inches)	(0 – 6)	(6 – 12)
SVOCs		
Benzo(a)anthracene (mg/kg)	1.1 J	0.71 J [1.1 J]
Benzo(a)pyrene (mg/kg)	1.3 J	0.81 J [1.4 J]
Benzo(b)fluoranthene (mg/kg)	1.7 J	1.1 J [1.8 J]
Chrysene (mg/kg)	1.4 J	0.88 J [1.4 J]
Indeno(1,2,3–cd)pyrene (mg/kg)	0.71 J	0.43 J [0.79 J]

PDI–T–6–RB–MHWL		
Depth(Inches)	(0 – 6)	(6 – 12)
SVOCs		
Benzo(a)anthracene (mg/kg)	1.5 J	2.2 J
Benzo(a)pyrene (mg/kg)	1.7 J	2.5 J
Benzo(b)fluoranthene (mg/kg)	2.3 J	3.3
Benzo(k)fluoranthene (mg/kg)	0.99 J	1.4 J
Chrysene (mg/kg)	1.9 J	2.9
Indeno(1,2,3–cd)pyrene (mg/kg)	0.98 J	1.3 J

PDI–T–7–LB–MHWL		
Depth(Inches)	(0 – 6)	(6 – 12)
SVOCs		
Benzo(a)anthracene (mg/kg)	2.9 J	1.7
Benzo(a)pyrene (mg/kg)	3.4 J	1.7
Benzo(b)fluoranthene (mg/kg)	4.6 J	2.1
Benzo(k)fluoranthene (mg/kg)	1.9 J	0.90 J
Chrysene (mg/kg)	3.5 J	1.8
Indeno(1,2,3–cd)pyrene (mg/kg)	2.0 J	0.88 J

PDI–T–7–LB–MB		
Depth(Inches)	(0 – 6)	(6 – 12)
SVOCs		
Benzo(a)pyrene (mg/kg)	1.1 J	1.1 J
Benzo(b)fluoranthene (mg/kg)	1.5 J	1.3 J
Chrysene (mg/kg)	1.2 J	1.1 J
Indeno(1,2,3–cd)pyrene (mg/kg)	0.59 J	0.53 J

LEGEND:

- MEAN HIGH WATER LEVEL BANK SOIL SAMPLE LOCATION
- MID-BANK SOIL SAMPLE LOCATION
- CREEK RECONNAISSANCE TRANSECT

NOTE:

ESRI IMAGERY FROM NYS ITS GIS PROGRAM OFFICE DATED 2017.

PAH Compound	NYSDEC Table 375–6: Unrestricted Use SCO (ppm)
Acenaphthene	20
Acenaphthylene	100
Anthracene	100
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(g,h,i)perylene	100
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenzo(a,h)anthracene	0.33
Fluoranthene	100
Fluorene	30
Indeno(1,2,3–cd)pyrene	0.5
Naphthalene	12
Phenanthrene	100
Pyrene	100

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
PRE-DESIGN INVESTIGATION REPORT

BACKGROUND BANK SOIL SAMPLING LOCATIONS

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FIGURE
9a

C:\Users\mwasilewski\ACCDocs\Arcadis\AUS-NATIONAL GRID-GLOVERSVILLE FORMER MGP-GLOVERSVILLE New York\Project Files\2021\01-In Progress\01-DWG\PDIR-FIG10 EXCAVATION AND NBW.DWG LAYOUT: 10 SAVED: 8/25/2021 2:08 PM ACADVER: 23.1S (LMS TECH) PAGESETUP: ----
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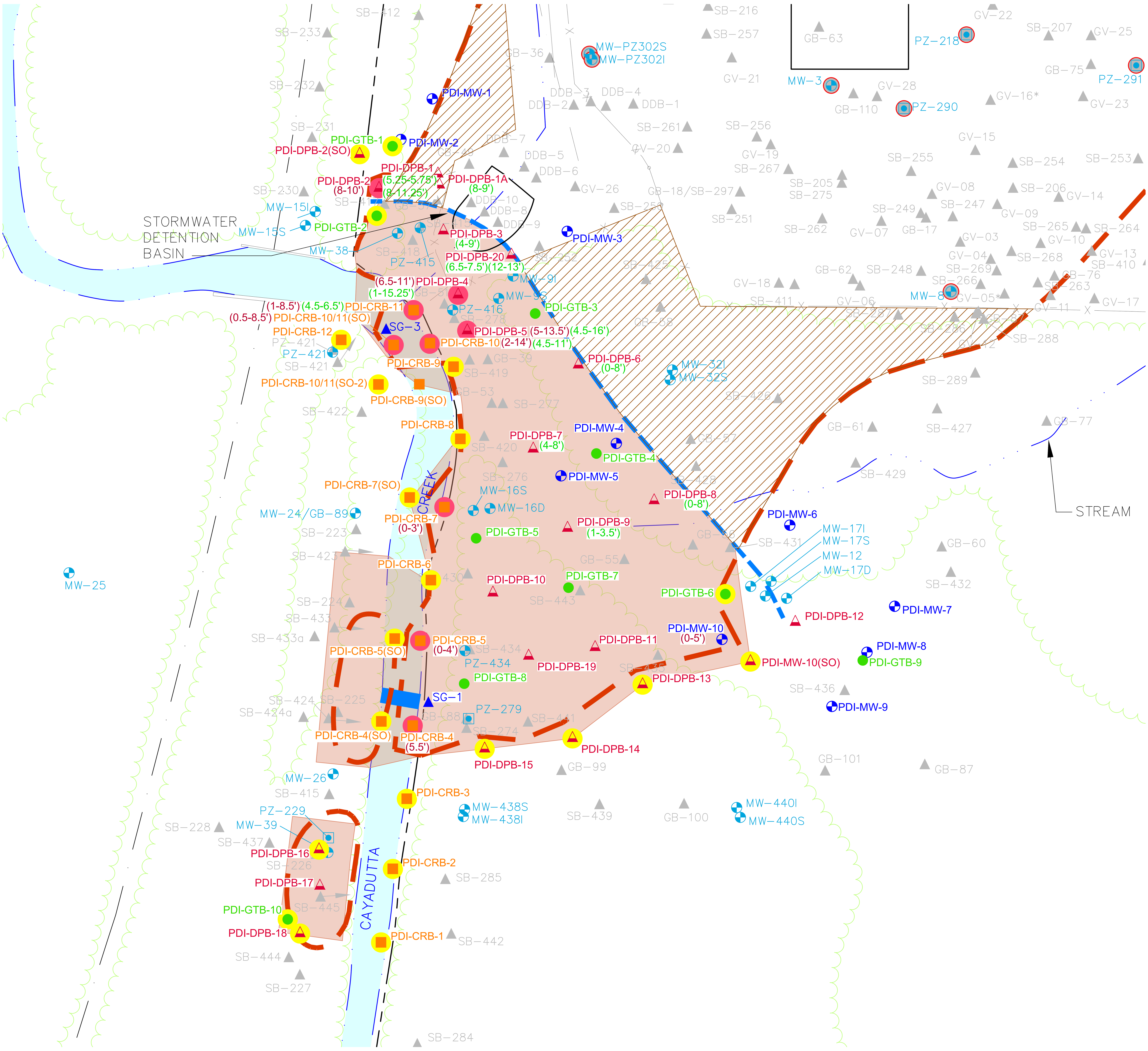
RDWP-X-CONTOURS
RDWP-X-UTILS-1
PDIR-X-TITLE-DP



LEGEND:

- PDI DIRECT-PUSH BORING
- PDI CREEK BORING
- PDI GEOTECHNICAL BORING
- PDI BORING SELECTED FOR SVOC SOIL SAMPLING
- PDI BORING LOCATIONS WITH VISUALLY OBSERVED NAPL
- PDI MONITORING WELL
- PDI STAFF GAUGE
- PZ-434 PREVIOUS MONITORING WELL
- PZ-279 PREVIOUS PIEZOMETER
- ABANDONED MONITORING WELL / PIEZOMETER
- (6.5-11') INTERVAL WITH VISUALLY OBSERVED IMPACTS
- (1-15.25') INTERVAL WITH LIKELY IMPACTS INFERRED FROM OIP LOG
- SB-423 PREVIOUS SOIL BORING
- SB-445 PREVIOUS ANGLED SOIL BORING, ARROW INDICATES DIRECTION OF ANGLE
- PDI TRANSECT FOR MANUALLY MEASURING CREEK VELOCITIES AND DEPTHS
- PROBABLE NAPL-CONTAINING AREA
- PROPOSED NAPL BARRIER WALL ALIGNMENT
- EXCAVATION AREA LIMITS
- LIMITS OF SURFACE SOIL EXCAVATION AND SOIL COVER
- APPROXIMATE PROPERTY LINE LIMITS
- PAVED BIKE PATH
- WATER
- TREE LINE
- FENCE
- UTILITY POLE

NOTES:

1. ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.
2. THE NATIONAL GRID PROPERTY LINE SHOWN IS APPROXIMATE.
3. ALL LOCATIONS ARE APPROXIMATE.
4. BASEMAP PREPARED FROM ELECTRONIC SURVEY FILE PROVIDED BY NIAGARA MOHAWK ON 7/23/01. PRIMARY SURVEY CONTROL FOR PHOTOGRAMMETIC MAPPING WAS ESTABLISHED FROM AN ON THE GROUND SURVEY, PERFORMED ON JULY 28, 1994 USING THE GLOBAL POSITIONING SYSTEM (GPS) AND CONFORMS TO ORDER 2 CLASS 2 FGCS ACCURACY SPECIFICATIONS. THE HORIZONTAL REFERENCE DATUM NORTH AMERICAN DATUM OF 1983 (NAD 83) ON REFERENCE ELLIPSOID ASSOCIATED WITH THE GEODETIC REFERENCE SYSTEM OF 1980 (GRS 80). THE COORDINATES ARE BASED ON THE NEW YORK STATE PLANE GEODETIC SYSTEM OF 1983 (EASTERN ZONE 3101).
5. OIP BORINGS WITH PERCENT FLUORESCENCE ABOVE 25% ARE INFERRED TO CONTAIN IMPACTS BASED ON COMPARISONS WITH CO-LOCATED SOIL BORINGS THAT WERE VISUALLY OBSERVED TO CONTAIN IMPACTS.

0 30' 60'
GRAPHIC SCALE

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
PRE-DESIGN INVESTIGATION REPORT

REVISED EXCAVATION AREA LIMITS AND NBW ALIGNMENT

ARCADIS

FIGURE
10

XREFS: IMAGES:
RDWP-X-BASEMAP
RDWP-X-CONTOURS
RDWP-X-UTILS-1
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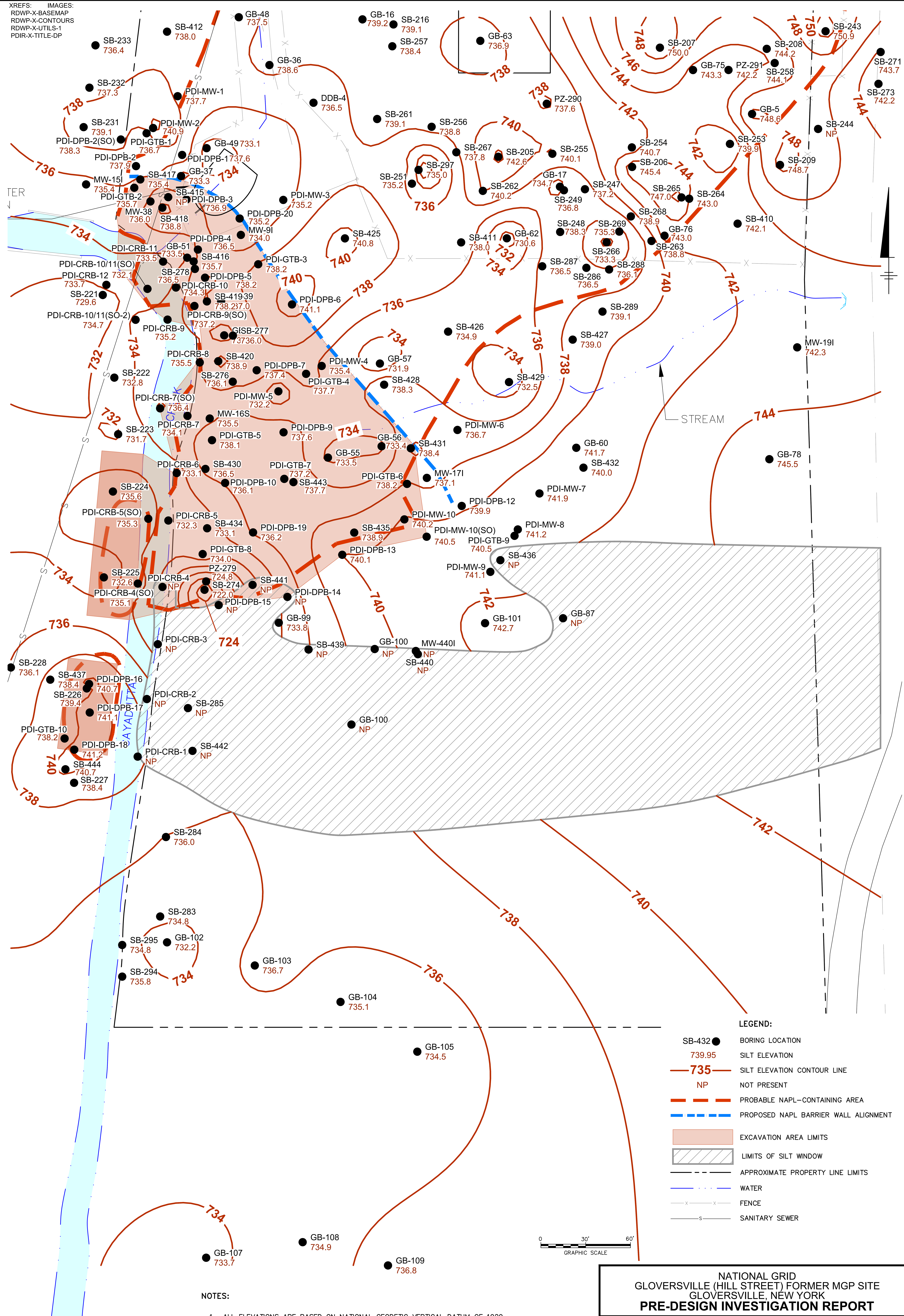

NOTES:

1. ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.
2. THE NATIONAL GRID PROPERTY LINE SHOWN IS APPROXIMATE.
3. ALL LOCATIONS ARE APPROXIMATE.
4. BASEMAP PREPARED FROM ELECTRONIC SURVEY FILE PROVIDED BY NIAGARA MOHAWK ON 7/23/01. PRIMARY SURVEY CONTROL FOR PHOTOGRAMMETIC MAPPING WAS ESTABLISHED FROM AN ON THE GROUND SURVEY, PERFORMED ON JULY 28, 1994 USING THE GLOBAL POSITIONING SYSTEM (GPS) AND CONFORMS TO ORDER 2 CLASS 2 FGCS ACCURACY SPECIFICATIONS. THE HORIZONTAL REFERENCE DATUM NORTH AMERICAN DATUM OF 1983 (NAD 83) ON REFERENCE ELLIPSOID ASSOCIATED WITH THE GEODETIC REFERENCE SYSTEM OF 1980 (GRS 80). THE COORDINATES ARE BASED ON THE NEW YORK STATE PLANE GEODETIC SYSTEM OF 1983 (EASTERN ZONE 3101).

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
PRE-DESIGN INVESTIGATION REPORT

SILT SURFACE TOPOGRAPHY

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FIGURE
11

C:\Users\mwasilewski\ACCDocs\Arcadis\AUS-NATIONAL GRID-GLOVERSVILLE FORMER MGP-GLOVERSVILLE New York\Project Files\2021\01-In Progress\01-DWG\PDIR-FIG12 ISOPACH SILT UNIT.dwg LAYOUT: 12 SAVED: 8/25/2021 3:03 PM ACADVER: 23.1S (LMS TECH) PAGESETUP: ----
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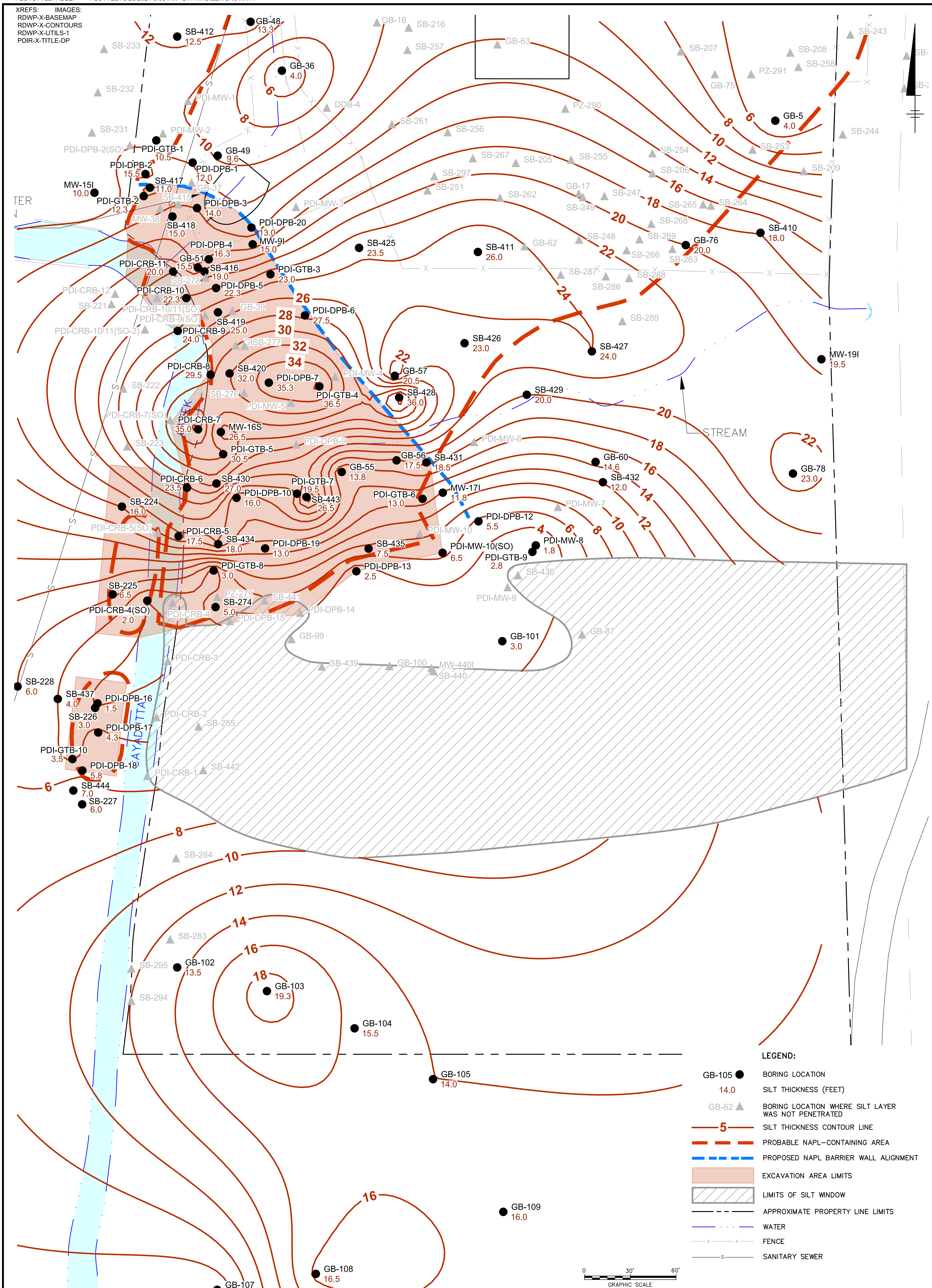

NOTES:

1. ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.
2. THE NATIONAL GRID PROPERTY LINE SHOWN IS APPROXIMATE.
3. ALL LOCATIONS ARE APPROXIMATE.
4. BASEMAP PREPARED FROM ELECTRONIC SURVEY FILE PROVIDED BY NIAGARA MOHAWK ON 7/23/01. PRIMARY SURVEY CONTROL FOR PHOTOGRAMMETRIC MAPPING WAS ESTABLISHED FROM AN ON THE GROUND SURVEY, PERFORMED ON JULY 28, 1994 USING THE GLOBAL POSITIONING SYSTEM (GPS) AND CONFORMS TO ORDER 2 CLASS 2 FGCS ACCURACY SPECIFICATIONS. THE HORIZONTAL REFERENCE DATUM NORTH AMERICAN DATUM OF 1983 (NAD 83) ON REFERENCE ELLIPSOID ASSOCIATED WITH THE GEODETIC REFERENCE SYSTEM OF 1980 (GRS 80). THE COORDINATES ARE BASED ON THE NEW YORK STATE PLANE GEODETIC SYSTEM OF 1983 (EASTERN ZONE 3101).

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
PRE-DESIGN INVESTIGATION REPORT

ISOPACH MAP OF SILT UNIT

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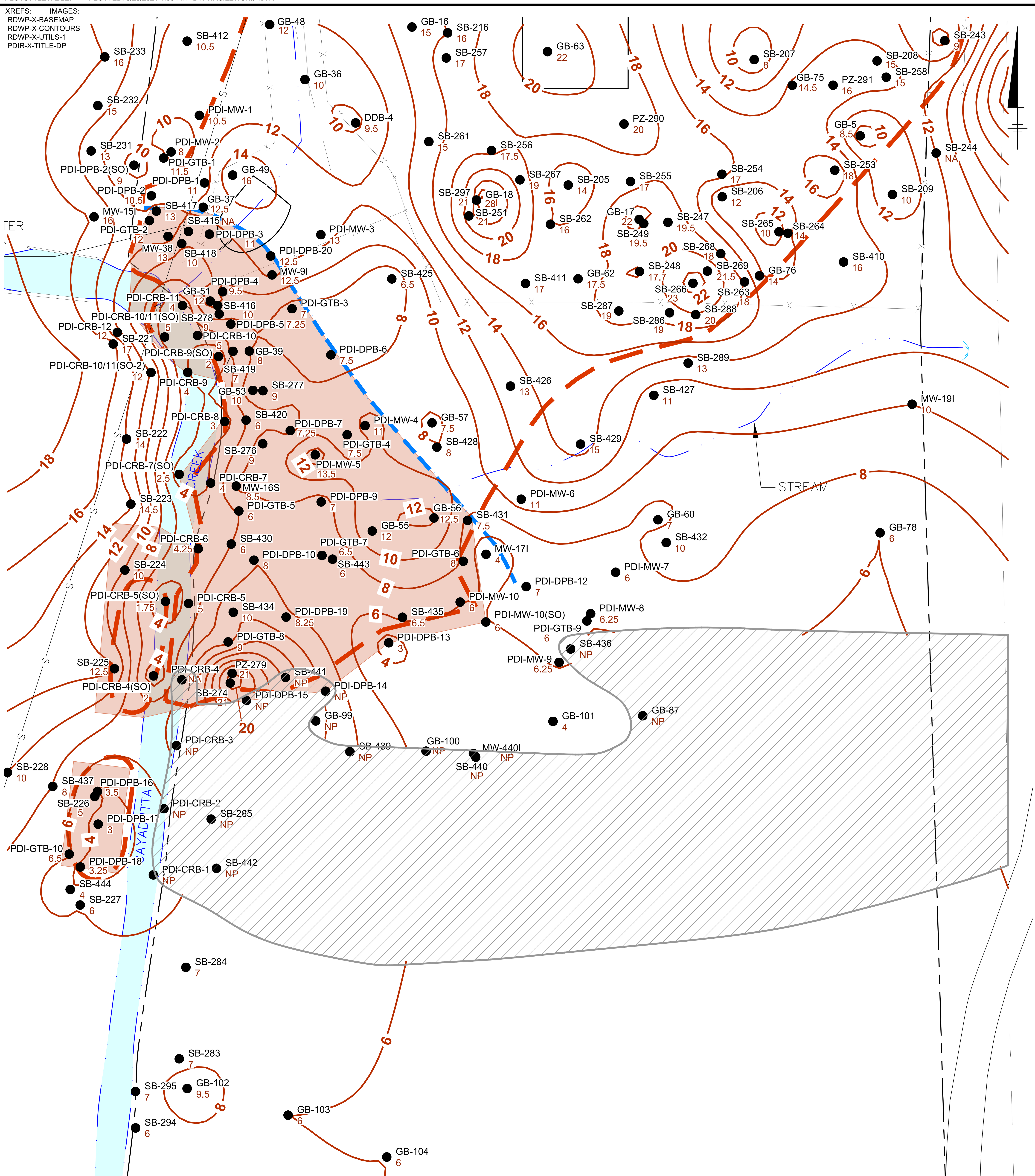
FIGURE
12

C:\Users\mwasilewski\ACCDocs\Arcadis\AUS-NATIONAL GRID-GLOVERSVILLE FORMER MGP-GLOVERSVILLE New York\Project Files\2021\01-In Progress\01-DWG\PDIR-FIG13 DEPTH TO T-O SILT.dwg LAYOUT: 13 SAVED: 8/25/2021 4:05 PM ACADVER: 23.1S (LMS TECH) PAGESETUP: ----
PLOTSTYLETABLE: ---- PLOTTED: 8/25/2021 4:06 PM BY: WASILEWSKI, MATT

XREFS: RDWP-X-BASEMAP RDWP-X-CONTOURS RDWP-X-UTILS-1 PDIR-X-TITLE-DP
IMAGES:



LEGEND:

PDI-DPB-6 ●	BORING LOCATION
7.5	DEPTH TO TOP OF SILT
NP	NOT PRESENT
—10—	DEPTH TO TOP OF SILT CONTOUR LINE
	PROBABLE NAPL–CONTAINING AREA
	PROPOSED NAPL BARRIER WALL ALIGNMENT
	EXCAVATION AREA LIMITS
	LIMITS OF SILT WINDOW
	APPROXIMATE PROPERTY LINE LIMITS
	WATER
—x—x—	FENCE
—s—	SANITARY SEWER

0 30' 60'
GRAPHIC SCALE

NOTES:

1. ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.
2. THE NATIONAL GRID PROPERTY LINE SHOWN IS APPROXIMATE.
3. ALL LOCATIONS ARE APPROXIMATE.
4. BASEMAP PREPARED FROM ELECTRONIC SURVEY FILE PROVIDED BY NIAGARA MOHAWK ON 7/23/01. PRIMARY SURVEY CONTROL FOR PHOTOGRAMMETRIC MAPPING WAS ESTABLISHED FROM AN ON THE GROUND SURVEY, PERFORMED ON JULY 28, 1994 USING THE GLOBAL POSITIONING SYSTEM (GPS) AND CONFORMS TO ORDER 2 CLASS 2 FGCS ACCURACY SPECIFICATIONS. THE HORIZONTAL REFERENCE DATUM NORTH AMERICAN DATUM OF 1983 (NAD 83) ON REFERENCE ELLIPSOID ASSOCIATED WITH THE GEODETIC REFERENCE SYSTEM OF 1980 (GRS 80). THE COORDINATES ARE BASED ON THE NEW YORK STATE PLANE GEODETIC SYSTEM OF 1983 (EASTERN ZONE 3101).

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
PRE-DESIGN INVESTIGATION REPORT

DEPTH TO TOP OF SILT

ARCADIS

FIGURE
13

Appendix A

Supplemental PDI Correspondence

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau C
625 Broadway, 12th Floor, Albany, NY 12233-7014
P: (518) 402-9662 I F: (518) 402-9679
www.dec.ny.gov

March 3, 2022

Transmitted Via E-mail ONLY

Mr. Steven Dilella
Project Manager
Nation Grid
300 Erie Boulevard, West A-3
Syracuse, NY 13202
Steven.Dilella@nationalgrid.com

Reference: National Grid, Gloversville
Hill Street former MGP site
Site Id: 518021
Subject: Draft Pre-Design Investigation Report, January 2022

Dear Mr. Dilella,

The New York State Department of Environmental Conservation (the Department) in consultation with New York State Department of Health (DOH) has received and reviewed Pre-Design Investigation Report dated January 2022 prepared by Arcadis on behalf of National Grid. The Department is requesting that the draft PDI report be modified to address below comments:

1. Section 2.3.3 Cayadutta Creek borings: Please confirm 31 direct push soil borings were installed in the creek, only 29 are described in the text.

2. Section 2.3.6 Fluid level monitoring: The text indicates that non-aqueous phase liquid (NAPL) was observed in well MW-15S. The extent of NAPL around MW-15S will need to be delineated. Consequently, the boundary of the NAPL containing area will need to be revised and addressed in the remedial design.

3. Section 2.4.2 Creek Reconnaissance: Please provide the creek characteristics data collected during the reconnaissance including any field notes, photographs taken to record the potential impacts (e.g. NAPL, sheen, odor etc.). Channel dimensions, Mean high water level (MHWL) indicators, and any data not captured in Figures 4-8, should be provided. Additionally, any data associated with the delineated MHWL, as described in Section 2.4.4, should be provided (e.g., coordinates of MHWL flagging if available, any photographs taken).

4. Section 3.3.5 Proposed Cayadutta Creek Remedial Action: In the Remedial Design Workplan (RDWP), poly-cyclic aromatic hydrocarbons (PAH)

fingerprinting was not proposed or approved for bank soils. Further, as stated in the RDWP, the fingerprinting analysis was performed to determine if sediment PAHs are above background concentrations, which is a condition in the Record of Decision (ROD) for remediation of sediments only. Therefore, PAH fingerprinting of bank soils is not supported by the ROD and should not be used to determine the extent of bank soil removal. The extent of bank soil removal should be determined by the criteria provided in the ROD (i.e., gross contamination, PAH concentrations above unrestricted soil cleanup objectives [SCOs]).

Note that PAHs exceed unrestricted SCOs at the most downstream bank soil Transect 18, and so additional downstream bank soil delineation is needed.

5. Table 5: Please highlight the constituents exceeding groundwater standards.

6. Table 6: Please highlight the compounds detected and exceeded applicable SOCs.

7. Figure 4: It appears that the labels for R1-PDI-SED-7DEP, R1-PDI-SED-8RR, and R2-PDI-SED-9DEP are incorrectly placed. Please correct this.
Per the October 13, 2020, comments from the Department (shown in Appendix F), sample R2-PDI-SED-9DEP was moved so that it was not located directly downstream of outfall OF-9. However, in Figure 4, the sample appears to be located directly downstream of the outfall again. Please confirm the location of this sample. If it was taken directly downstream of the outfall, it should be removed from the dataset and the background concentration should be recalculated without it.

8. Figure 6: Per the ROD, sediment must be removed if it is grossly contaminated, sheen-producing, or containing PAH concentrations greater than background. Between Transects 11 and 16, sediments are attributed to the site and sheens are produced along the eastern bank during probing. However, only a few small depositional areas are proposed for sediment remediation. All sheen-producing sediments in this area should be remediated, according to the ROD.

9. Figure 9: In the RDWP, 8 bank soil transects were proposed. Please provide an explanation for why only 6 transects were completed. It appears the western bank samples from transects 13 and 14 are missing.

10. Appendix H: Sediment Background and Forensic Evaluation:
General comment: The number, location, and depths of the impacted upland soil samples were not proposed or approved in the RDWP. It is unclear how these sample locations and depths were chosen. The number of impacted upland soil samples (n = 4) is low and the depths of most samples were deep (>6 ft), compared to the surface samples taken from the creek. While these samples

may be used in this analysis, direct comparisons between creek samples and these impacted upland soil samples should be avoided.

11. Appendix H, Section 2.2 Evaluation Techniques: Setting non-detects to 0 may incorrectly bias the analyses. Using a value one-half the detection limit is more appropriate. There are also more sophisticated statistical techniques that can be employed to generate a proxy ND value. Also, include the table showing ratio calculations.

12. Appendix H, Section 3.1 Background Evaluation: Per the RDWP, outliers were supposed to be calculated as any value greater than the 75th percentile plus 1.5 times the interquartile range or less than the 25th percentile minus 1.5 times the interquartile range. Please redo the outlier determination using this methodology and recalculate the background concentration.

    Additionally, per the RDWP, the 90th percentile was supposed to be used as the background concentration, not the 95th percentile. Please recalculate the background concentration using the correct methodology and show the calculations performed to derive the percentiles.

13. Appendix H, Conclusions: If multiple PAH sources are present, particularly in Reach 5, is there confidence that the site is not one of these sources? It is unclear whether PAHs in the downstream reaches are not attributed to the site at all or if the PAH signatures suggest mixed sources, including the site. Please clarify this.

In accordance with the Order on Consent and 6NYCRR 375-1.6(d), please indicate within 15 days whether you will modify the PDI report and submit modified report within 30 days of the date of this letter. Along with the revised PDI report and itemized response, also please submit the redline and strikeout version of the document to show the revisions made to address above comments. If you have any questions, please contact me at 518-402-9662 or write to me at parag.amin@dec.ny.gov.

Sincerely,

`

Parag Amin
Project Manager

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Date: March 18, 2022
Our Ref: 30044656
Subject: National Grid Gloversville (Hill St.) former MGP Site
Draft Pre-Design Investigation Report

Dear Mr. Amin,

Arcadis has prepared this letter on behalf of National Grid providing responses to New York State Department of Environmental Conservation's (NYSDEC's) March 3, 2022 letter providing comments on the Draft Pre-design Investigation Letter Report for the Gloversville (Hill St.) former Manufactured Gas Plant Site in Gloversville, New York.

NYSDEC's comments are presented below followed by National Grid's responses.

Comment 1. Section 2.3.3 Cayadutta Creek borings: Please confirm 31 direct push soil borings were installed in the creek, only 29 are described in the text.

National Grid Response:

Twenty-nine (29) direct-push borings were drilled in the creek. Section 2.3.3 of the PDI Report will be revised accordingly.

Comment 2. Section 2.3.6 Fluid level monitoring: The text indicates that non-aqueous phase liquid (NAPL) was observed in well MW-15S. The extent of NAPL around MW-15S will need to be delineated. Consequently, the boundary of the NAPL containing area will need to be revised and addressed in the remedial design.

National Grid Response:

The PDI Report text indicates the presence of NAPL at MW-15S; however, previous groundwater sampling events conducted at this well show that groundwater from this well does not contain site related constituents at concentrations exceeding the NYSDEC drinking water standards presented in the Technical and Operational Guidance Series Memorandum 1.1.1 (refer to the 2016 Remedial Investigation Report). We believe the NAPL measurements presented in the PDI Report may be erroneous. National Grid proposes to collect a groundwater sample from this well to confirm/refute the presence of NAPL. The sample will be analyzed for Target Compound List (TCL) Volatile Organic Compounds (VOCs) and TCL Semi-Volatile Organic Compounds (SVOCs). The PDI Report will be revised accordingly based on the results of the sampling event.

Comment 3. Section 2.4.2 Creek Reconnaissance: Please provide the creek characteristics data collected during the reconnaissance including any field notes, photographs taken to record the potential impacts (e.g. NAPL, sheen, odor etc.). Channel dimensions, Mean high water level (MHWL) indicators, and any data not captured in Figures 4-8, should be provided. Additionally, any data associated with the delineated MHWL, as described in Section 2.4.4, should be provided (e.g., coordinates of MHWL flagging if available, any photographs taken).

National Grid Response:

Arcadis will upload available field notes, photographs, and coordinates via NYSDEC's file transfer service. We will notify Mr. Parag Amin when the files have been uploaded.

Arcadis performed a Cayadutta Creek MHWL assessment on January 21, 2021. MHWL determination was recorded every 75 feet in the upper portion of Reach 3, every 100 feet in the lower portion of Reach 3, and every 200 feet in Reaches 1, 2, 4 and 5. This corresponded to delineation of MHWL at each of the established transect locations to support bank soil sampling from T11 to T18. MHWL determination was made on both banks at each transect. Visual indicators on the banks were determined consistent with the definition from 6 NYCRR Part 608.1. The MHWL is defined as the level for a given body of water at a given location that distinguishes between predominantly aquatic and predominantly terrestrial habitat. These include known hydrological data on recurrence intervals for the water body, vegetation characteristics (e.g., location, presence, absence, or destruction of terrestrial or aquatic vegetation), and physical characteristics (e.g., clear natural line impressed on a bank, scouring, shelving, or the presence of sediments, litter or debris).

Arcadis field staff met with NYSDEC oversight to discuss the MHWL activities being conducted. NYSDEC staff (Mr. Parag Amin) observed the assessment of the MHWL along the initial stretch of shoreline of near T11 and T12. Elevations relative to existing flow conditions and general delineation notes were made at each location. Clear vegetation distinctions were made on natural banks and physical evaluation of indentations and stone stain lines were made on banks influenced by man-made rock wall retaining structures. Arcadis MHWL elevations were marked on the bank with pin flags to support formal survey and aid in collection of future bank sampling. Arcadis will provide MHWL flagging coordinates in the files uploaded to the NYSDEC's file transfer service.

Comment 4. Section 3.3.5 Proposed Cayadutta Creek Remedial Action: In the Remedial Design Workplan (RDWP), poly-cyclic aromatic hydrocarbons (PAH) fingerprinting was not proposed or approved for bank soils. Further, as stated in the RDWP, the fingerprinting analysis was performed to determine if sediment PAHs are above background concentrations, which is a condition in the Record of Decision (ROD) for remediation of sediments only. Therefore, PAH fingerprinting of bank soils is not supported by the ROD and should not be used to determine the extent of bank soil removal. The extent of bank soil removal should be determined by the criteria provided in the ROD (i.e., gross contamination, PAH concentrations above unrestricted soil cleanup objectives [SCOs]).

Note that PAHs exceed unrestricted SCOs at the most downstream bank soil Transect 18, and so additional downstream bank soil delineation is needed.

National Grid Response:

Bank soils include sediment deposited when the creek was at a higher stage. Total PAH16 bank soil concentrations are all less than sediment background concentrations. The forensic evaluation provides further support that urban background is the source of bank soil PAHs and not the former MGP site.

Although the ROD indicates that bank soils exceeding Unrestricted Use SCOs require remediation, there needs to be a mechanism to distinguish site-related PAHs from PAHs attributed to urban runoff so that National Grid is not remediating bank soils attributed to other (background) sources. The forensic evaluation of bank soils was performed to distinguish site-related PAHs from background PAHs.

Comment 5. Table 5: Please highlight the constituents exceeding groundwater standards.

National Grid Response:

Table 5 of the PDI Report will be revised accordingly.

Comment 6. Table 6: Please highlight the compounds detected and exceeded applicable SOCs.

National Grid Response:

Table 6 of the PDI Report will be revised to include a column for the soil cleanup criteria defined in the Record of Decision (ROD).

Comment 7. Figure 4: It appears that the labels for R1-PDI-SED-7DEP, R1-PDI-SED-8RR, and R2-PDI-SED-9DEP are incorrectly placed. Please correct this. Per the October 13, 2020, comments from the Department (shown in Appendix F), sample R2-PDI-SED-9DEP was moved so that it was not located directly downstream of outfall OF-9. However, in Figure 4, the sample appears to be located directly downstream of the outfall again. Please confirm the location of this sample. If it was taken directly downstream of the outfall, it should be removed from the dataset and the background concentration should be recalculated without it.

National Grid Response:

Figure 4 of the PDI Report will be revised to reflect the correct sediment sample IDs. The location of the sandbar sediment sample downstream from OF-9 is correctly depicted on Figure 4. Arcadis did not identify sufficient fine-grained sediment at the proposed sampling location. Therefore, the location was moved downstream from OF-9 on the western edge of the sandbar. This location was selected based on:

- OF-9 contained no effluent and no obvious indication of containing effluent (see attached photo).
- OF-9 appears to be an old defunct drain for the dilapidated remnant stone and mortar wall along the east bank. Due to the condition of the wall, it is likely that water moves freely through the wall and no longer through the pipe.
- Stream water moves past the sandbar on both the west and east sides of the sandbar, therefore, any potential effluent that could come from the pipe should move past the east side of the bar under normal stream flow conditions.

National Grid believes this location is representative of upstream background conditions and is not likely influenced by OF-9; however, if NYSDEC disagrees, National Grid will remove the location from the background calculation or attempt resampling the location upstream from OF-9.

Comment 8. Figure 6: Per the ROD, sediment must be removed if it is grossly contaminated, sheen-producing, or containing PAH concentrations greater than background. Between Transects 11 and 16, sediments are attributed to the site and sheens are produced along the eastern bank during probing. However, only a few small depositional areas are proposed for sediment remediation. All sheen-producing sediments in this area should be remediated, according to the ROD.

National Grid Response:

The sheen-producing depositional areas proposed for remediation were selected as they likely contain a larger mass of site-related constituents entrained in the sediments and that the mass could remain in the deposits after the upland soils are removed from the site. The sheen observed along the edge of water is interpreted to be minor accumulation and transient in nature. It is reasonable to assume that this sheen will dissipate and naturally degrade after the source (i.e., upland soils and larger depositional areas) is removed because it is shallow and exposed to the atmosphere. As discussed in the PDI Report, National Grid proposes to monitor the sheen along the water's edge as part of post-construction monitoring to determine if the sheen persists or naturally degrades. If the sheen is determined to persist, National Grid will propose an active remedy to remove sheen generating material along the water's edge. This approach to remediation is compliant with the intent of the ROD.

Comment 9. Figure 9: In the RDWP, 8 bank soil transects were proposed. Please provide an explanation for why only 6 transects were completed. It appears the western bank samples from transects 13 and 14 are missing.

National Grid Response:

The bank soil samples that were eliminated from the sampling program were proposed in creek bank areas that will be removed during remediation. These include samples on the eastern bank of Transect 11 and 12, all samples of Transects 13 and 14, and the samples on the western bank of Transect 15. The data generated from these samples would not be used for any purpose (i.e., it has already been determined that the soil beneath the banks of these areas is impacted and will be removed during remediation).

Comment 10. Appendix H: Sediment Background and Forensic Evaluation:

General comment: The number, location, and depths of the impacted upland soil samples were not proposed or approved in the RDWP. It is unclear how these sample locations and depths were chosen. The number of impacted upland soil samples (n = 4) is low and the depths of most samples were deep (>6 ft), compared to the surface samples taken from the creek. While these samples may be used in this analysis, direct comparisons between creek samples and these impacted upland soil samples should be avoided.

National Grid Response:

The upland soil samples were selected from impacted samples (collected in 1994) with visual NAPL impacts and elevated PAH concentrations indicative of NAPL to represent MGP source materials that are present at the site. Comparing the PAH characteristics of source materials to those in sediments and soils is standard procedure in forensic evaluations. This procedure will be explained further in Appendix H, and the upland soil samples will be referred to as MGP source samples.

Comment 11. Appendix H, Section 2.2 Evaluation Techniques: Setting non-detects to 0 may incorrectly bias the analyses. Using a value one-half the detection limit is more appropriate. There are also more sophisticated statistical techniques that can be employed to generate a proxy ND value. Also, include the table showing ratio calculations.

National Grid Response:

Non-detects are typically set to zero for PAH analysis because of low but variable detection limits across samples and compounds. Particularly when detected values are close to non-detect reporting limits (e.g., J-flagged data). Using half the detection limit for non-detects can potentially bias the fingerprinting analyses by distorting (inflating) the relative contribution of the non-detect compounds. For example, a sample with only pyrogenic PAHs detected a low level may incorrectly appear to have mixed sources if including all the non-detect petrogenic PAHs at half their reporting limits. For this and other reasons, both EPA Unified Guidance (2009) and the ProUCL Technical Guide (2015) agree that the 1/2RL method is not always appropriate and is only recommended in specific circumstances.

More sophisticated statistical techniques such as rROS or Kaplan Meier estimation are available, but those are not substitution methods, don't generate a meaningful value for an individual non-detect, and are only useful at the level of a sample distribution. Thus, while they are suitable for summary statistics such as background estimation upper percentiles and not fingerprinting or double ratios.

We could use a different non-detect imputation method for the background evaluation (referenced in comment 12) but selecting 0 instead of half the reporting limit or another technique is conservative, as it biases the estimates low as compared to other methods, as well as being consistent with our fingerprinting methods.

Comment 12. Appendix H, Section 3.1 Background Evaluation: Per the RDWP, outliers were supposed to be calculated as any value greater than the 75th percentile plus 1.5 times the interquartile range or less than the 25th percentile minus 1.5 times the interquartile range. Please redo the outlier determination using this methodology and recalculate the background concentration.

Additionally, per the RDWP, the 90th percentile was supposed to be used as the background concentration, not the 95th percentile. Please recalculate the background concentration using the correct methodology and show the calculations performed to derive the percentiles.

National Grid Response:

Arcadis ran a preliminary IQR testing of the log-transformed background data using the method above did not reveal any significant outliers, consistent with the other outlier tests. The background concentrations don't need to be recalculated because of outliers.

If NYSDEC is requesting IQR testing of the untransformed data, it doesn't work. Although an IQR test is quasi-non-parametric, it does assume a roughly symmetrical dataset. As the background data are lognormally distributed, they are highly right-skewed and this assumption is not valid unless the data are log transformed, as with our other outlier testing. When IQR testing is conducted for untransformed data, three additional data points are identified as outliers, but if you remove them and do IQR testing again, three additional points get labeled as outliers. Eventually, 7 of the 20 data points get removed, which is clearly erroneous.

Arcadis understands the concern about using the 90th percentile, but the 95th percentile is already a very conservative estimate of background concentrations as compared to UPLs or UTLs. A 90th percentile of background is extremely conservative, as a full 10% of true background samples would exceed this value. This represents, in our view, an unacceptably high false positive rate; 10% of true background sites would require remediation based on this criterion.

Comment 13. Appendix H, Conclusions: If multiple PAH sources are present, particularly in Reach 5, is there confidence that the site is not one of these sources? It is unclear whether PAHs in the downstream reaches are not attributed to the site at all or if the PAH signatures suggest mixed sources, including the site. Please clarify this.

National Grid Response:

The forensic evaluation's compositional and principal component analyses indicate a different origin of alkyl PAHs in Reach 5 at locations R5-PDI-SED-54RR and R5-PDI-SED-55RR compared to locations in Reach 3 adjacent to the site. These results are further supported by field observations of sheens and petroleum odors during probing in Reach 5. Therefore, the source of PAHs above background concentrations at R5-PDI-SED-55RR is not attributed to the site.

Following NYSDEC review, National Grid would be willing to have a call to discuss further comments to minimize further back and forth written correspondence. National Grid plans on submitting a revised PDI to incorporate proposed revisions and additional data (as appropriate). Please feel free to contact Steven DiLella (585.520.5192) or Jason Brien (313.671.9114) if you have any questions.

Sincerely,
Arcadis of New York, Inc.

Jason Brien, P.E.
Principal Engineer

Email: jason.brien@arcadis.com
Direct Line: 315.671.9114
Mobile: 315.263.5898

CC. Steven Dilella, National Grid
Scott Powlin, Arcadis

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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April 28, 2022

Transmitted Via E-mail ONLY

Mr. Steven Dilella
Project Manager
Nation Grid
300 Erie Boulevard, West A-3
Syracuse, NY 13202
Steven.Dilella@nationalgrid.com

Reference: National Grid, Gloversville
Hill Street former MGP site
Site Id: 518021
Subject: Draft Pre-Design Investigation (PDI) Report, January 2022

Dear Mr. Dilella,

The New York State Department of Environmental Conservation (the Department) has received and reviewed the correspondence dated March 18th, 2022, prepared by Arcadis on behalf of National Grid (NG) in response to the Department's letter dated March 3rd, 2002, pertaining to subject draft PDI report. Following are the Department's comments on the NG's response to unresolved issues:

1. Section 2.3.6 Fluid level monitoring: The referenced Table 1 indicates that the NAPL was observed in well MW-15S during four out of seven fluid measurement events. Hence non-aqueous phase liquid (NAPL) is present in the well MW-15S.

   However, as proposed, NG may perform additional rounds of periodic fluid measurement and/or collect a groundwater sample(s) from well MW-15S for chemical analysis to definitively confirm the presence or absence of NAPL. However, please note that regardless of the analytical results, if the NAPL is observed during any of the periodic fluid measurement events, additional investigation will be warranted to delineate the full extent of NAPL around MW-15S.

2. Section 3.3.5 Proposed Cayadutta Creek Remedial Action-Bank Soil: The Record of Decision (ROD) requires that the bank soil which exceeds unrestricted soil cleanup objective (USCOs) must be excavated and disposed off-site. However, Arcadis in their response indicates that the total PAH16 bank soil concentrations are all less than sediment background concentrations. The

forensic evaluation provides further support that urban background is the source of bank soil PAHs and not the former MGP site. As a result, NG is objecting to remediating bank soils attributed to background conditions.

The Department believes that the additional data is needed to further substantiate that the PAHs detected in the bank soils are not associated with the site. More recent upland PAH data is needed to perform meaningful fingerprint analysis. Secondly, the Department also believes that background bank soil PAH data from the upstream stretches is needed (as supposed to sediment data) to demonstrate that the PAHs detected in bank soil abutting the site is attributable to background conditions. Any such background evaluation will need to comply with the requirement of DER-10 Chapter 3.5.3.

3. Figure 6-8 Sheen along the water edge: The ROD requires that all sheen-producing sediments must be excavated and disposed off-site. However, Arcadis in their response indicates that sheen observed along the water's edge in downstream reaches 3 through 5 are minor and transient and expected to dissipate and naturally degrade once the sources are remediated. The Department accepts NG's proposal to monitor the sheen along the water's edge as part of post-construction monitoring to determine if the sheen persists or naturally degrades. If the sheen is determined to persist, NG will be required to propose an active remedy to remove sheen generating material along the water's edge. The Department will require that the Site Management Plan (SMP) contains provisions for periodic monitoring of the sheen in the creek and along the water's edges downstream of the site and active remediation, if required, to the Department's satisfaction.

If NG chose to perform the supplemental PDI to address comment #1 and 2 above, please submit the work plan containing an implementation schedule and submission of the revised PDI report within 30 days of the date of this letter. Also, please note that based on the site visit scheduled for May 24th, 2022, the Department may provide additional comments. If you have any questions, please contact me at 518-402-9662 or write to me at parag.amin@dec.ny.gov.

Sincerely,

`

Parag Amin, P.E.
Project Manager

ec: J. Brien, Arcadis (Jason.Brien@arcadis.com)
K. Pochini, DFW, DEC (katherine.pochini@dec.ny.gov)
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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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Transmitted Via Email Only

July 5, 2022

Mr. Steven Dilella
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Steven.Dilella@nationalgrid.com

Reference: National Grid, Gloversville
Hill Street former MGP site
Site Id: 518021
Subject: Draft Pre-Design Investigation (PDI) Report, January 2022
Reference: Arcadis response dated June 7th, 2022

Dear Mr. Dilella,

The New York State Department of Environmental Conservation (the Department) has received and reviewed the correspondence dated June 7th, 2022, prepared by Arcadis on behalf of National Grid (NG) in response to the Department's letter dated April 28th, 2002, pertaining to subject draft PDI report and accepts the response except:

Response to NYSDEC Comment 2: PAH Source Sampling: To ensure a more robust forensic evaluation, the Department requests to add one additional PAH source sample for a total of three samples.

If NG chose to perform the supplemental PDI to address above comment, please submit the work plan containing an implementation schedule and submission of the revised PDI report within 30 days of the date of this letter. If you have any questions, please contact me at 518-402-9662 or write to me at parag.amin@dec.ny.gov.

Your sincerely

Parag Amin, P.E.
Project Manager

ec: J. Brien, Arcadis (Jason.Brien@arcadis.com)
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Date: August 24, 2022
Our Ref: 30044656
Subject: National Grid Gloversville (Hill St.) former MGP Site
Supplemental PDI Letter Work Plan

Dear Mr. Amin,

Arcadis of New York, Inc. (Arcadis) has prepared this Supplemental Pre-Design Investigation (PDI) work plan (Work Plan) on behalf of National Grid to support additional pre-design efforts at the National Grid Gloversville (Hill St.) former Manufactured Gas Plant Site in Gloversville, New York. The purpose of the Supplemental PDI is to address data gaps and provide additional rationale/data to support the remedial limits prior to proceeding with the remedial design. Arcadis prepared and submitted to New York State Department of Environmental Conservation (NYSDEC) a draft PDI Report (Arcadis, November 2021). The supplemental PDI tasks presented in this work plan address NYSDEC comments presented in their April 28, 2022 and July 5, 2022 letters.

Supplemental PDI Activities

Supplemental PDI activities will be conducted to further investigate:

- The potential presence of non-aqueous phase liquid in monitoring well MW-15S
- Background polycyclic aromatic hydrocarbon (PAH) concentrations in Cayadutta Creek bank soils
- Upland PAH source signature

Supplemental PDI field activities will be conducted consistent with the protocols presented in the Field Sampling Plan (FSP, Appendix A of the RDWP [Remedial Design Work Plan]). Laboratory analysis will be conducted in accordance with the Quality Assurance Project Plan (QAPP, Appendix B of the RDWP). Arcadis will update the existing site-specific Health and Safety Plan (HASP; Appendix C of the RDWP). Arcadis will also conduct community air monitoring upwind and downwind of the work area during invasive activities to monitor for VOCs and airborne particulates in accordance with the New York State Department of health Generic Community Air Monitoring Plan (CAMP; Appendix D of the RDWP). Proposed supplemental PDI activities are presented in the following subsections.

MW-15S Monitoring

Initial PDI field documentation indicated the presence of non-aqueous phase liquid (NAPL) in monitoring well MW-15S. Previous groundwater samples collected at monitoring well MW-15S (i.e., samples collected on 2/15/00, 5/31/00, 8/16/00, and 5/12/04) did not contain site-related constituents at concentrations exceeding the NYSDEC drinking water standards presented in the Technical and Operational Guidance Series Memorandum 1.1.1 (refer to the 2016 Remedial Investigation Report). This suggests that the interpretation of NAPL in this location is not consistent with previous groundwater sampling results. The objective of the scope of work will be to confirm/refute the presence of dense nonaqueous phase liquid (DNAPL) at MW-15S as reported in the draft PDI Report). Arcadis will conduct the following to confirm the potential presence of NAPL at this well location:

- Gauge MW-15S for the presence of DNAPL using an oil-water interface probe. If DNAPL is present in the well, no additional work will be required to determine DNAPL presence/absence.
- If DNAPL is not observed while gauging MW-15S using an oil-water interface probe, collect a groundwater sample from the well and analyze the sample for Target Compound List (TCL) Volatile Organic Compounds (VOCs) and TCL Semi-Volatile Organic Compounds (SVOCs). The pump intake will be lowered to the approximate bottom foot of the well screen and water will be purged and sampled using low-flow sampling techniques. If coal tar DNAPL had entered the well at any point in the past and/or is present in the formation near the well screen, one would expect that elevated levels of dissolved-phase benzene, toluene, ethylbenzene, and xylenes (BTEX) and polycyclic aromatic hydrocarbons (PAHs) would be detected in the groundwater sample.

If coal tar is observed or elevated BTEX and/or PAHs are detected in the groundwater sample, National Grid will submit, under separate cover, a proposal for delineating DNAPL in the MW-15S area. The results of the delineation efforts will be incorporated into the Remedial Design. If DNAPL or elevated BTEX and/or PAHs in the groundwater sample are not observed, Arcadis proposes that the draft PDI Report be revised to reflect that DNAPL was not observed at MW-15S.

Creek Bank Soil Sampling

As presented in the NYSDEC Record of Decision (NYSDEC March 2019), the selected remedy includes removal of bank soils containing constituents of concern exceeding unrestricted use soil cleanup objectives (SCOs). As indicated in the draft PDI Report, 19 of the 31 bank soil samples contained PAHs at concentrations exceeding NYSDEC Part 375 unrestricted use SCOs; however, visual (staining, sheen, NAPL) impacts or odors were not observed and photoionization detector (PID) readings were non-detect in the collected bank soil samples. Arcadis also presented a forensic evaluation indicating that different PAH signatures were present in bank soils relative to those detected in upland soils, especially noting the absence of a naphthalene spike in bank soils. Finally, Arcadis noted a statistically higher PAH concentrations than those found in sediment samples.

National Grid is proposing to implement the following supplemental PDI activities to further assess the potential presence of site-related PAHs in bank soils at concentrations exceeding unrestricted SCOs:

- Collect background PAH samples from the creek bank at three transects upstream of the NAPL-impacted area (as shown on the figures presented in the draft PDI Report)
- Collect fresh soil samples containing heavy impacts from the site

<u>Background Bank Soil Sampling</u>

Arcadis will collect background bank soil samples along existing PDI sediment sampling Transects 5, 6, and 7 as shown on Figure 1. Two 2-foot (or to refusal) vertical soil cores will be collected on each bank along each transect for a total of 12 soil cores. Similar to the PDI bank soil sampling protocols, on each bank and along each transect, field personnel will collect one core at the approximate Mean High Water Level (MHWL) and a second core at the approximate mid-point between the MHWL and the top of bank. Field personnel will segment the core samples into 0-to-6-inch, 6-to-12-inch, and 12-to-24-inch increments (or other increments if changes in stratigraphy are noted or refusal encountered). Arcadis will visually characterize each core for the presence of NAPL, sheen, staining, and field screen with a PID for elevated VOC levels. The 0-to-6-inch and 6-to-12-inch samples at each location will be submitted for laboratory analysis for PAH16 and the 12-to-24-inch samples will be archived for potential PAH16 analysis pending the results of the overlying sample intervals.

PAH Source Sampling

Arcadis will drill three new direct push soil borings near the locations of existing soil borings PDI-DPB-4, PDI-DPB-7, and PDI-DPB-8 (based on the NAPL impacted soil conditions encountered at these borings from 6.5-11', 4-8', and 0-8', respectively). Proposed site source PAH sampling locations are shown on Figure 2. Arcadis will advance the soil borings until a heavily NAPL-impacted sample is encountered and collect and submit one NAPL-impacted soil sample from each boring for PAH34 analysis using USEPA SW-846 Method 8270. The analytical results from these samples will establish a "fresh" site source PAH fingerprint for site-related PAHs. The site source PAH fingerprint will then be compared to background bank soil sampling results and previously collected bank soil samples (as presented in the draft PDI Report) in a forensic evaluation to distinguish background PAHs from site-related PAHs.

Reporting

Arcadis will prepare a Data Usability Summary Report (DUSR) for the background PAH and site source PAH laboratory data packages in accordance with NYSDEC Analytical Services Protocol (ASP). Arcadis will conduct a statistical analysis on the newly collected background PAH data to establish a representative background bank soil PAH concentration. Arcadis will also conduct a bank soil PAH forensic evaluation to compare the signature of bank soils relative to the signature of the MGP source samples.

Initially, Arcadis will prepare and email the NYSDEC a Supplemental PDI data summary package. The data summary package will transmit relevant tables and figures and include a brief discussion of:

- Monitoring well MW-15S NAPL presence/absence gauging and/or groundwater sampling results
- A PDI bank soil Total PAH16 to background bank soil sample Total PAH16 comparison as the primary evaluation step with additional supporting evaluations below (if needed)
- Principal Component Analysis for bank soil individual PAH16 to sediment and source material individual PAH16
- As appropriate, double ratio plots for bank soil sample vs. source material sample PAH results:
    - benzo(a)anthracene/chrysene vs. fluoranthene/pyrene
    - benzo(a)anthracene/(benzo(a)anthracene + chrysene) vs. anthracene/(anthracene + phenanthrene)

Following this initial submittal, Arcadis and National Grid will participate in a teleconference with the NYSDEC to discuss the results and preliminary conclusions of the Supplemental PDI activities.

Finally, Arcadis will incorporate the Supplemental PDI results into a revised PDI Report. Arcadis will conduct the statistical and forensic evaluations consistent with the approaches used for the PDI sediment data as described in Appendix H of the draft PDI Report.

National Grid is requesting NYSDEC's approval of the proposed Supplemental PDI activities described in this letter. National Grid will implement this scope of work within approximately one-month following the NYSDEC's approval. Please feel free to contact Steven DiLella (585.520.5192) or Jason Brien (313.671.9114) if you have any questions.

Sincerely,
Arcadis of New York, Inc.

Jason Brien
Principal Engineer

Email: jason.brien@arcadis.com
Direct Line: 315.671.9114
Mobile: 315.263.5898

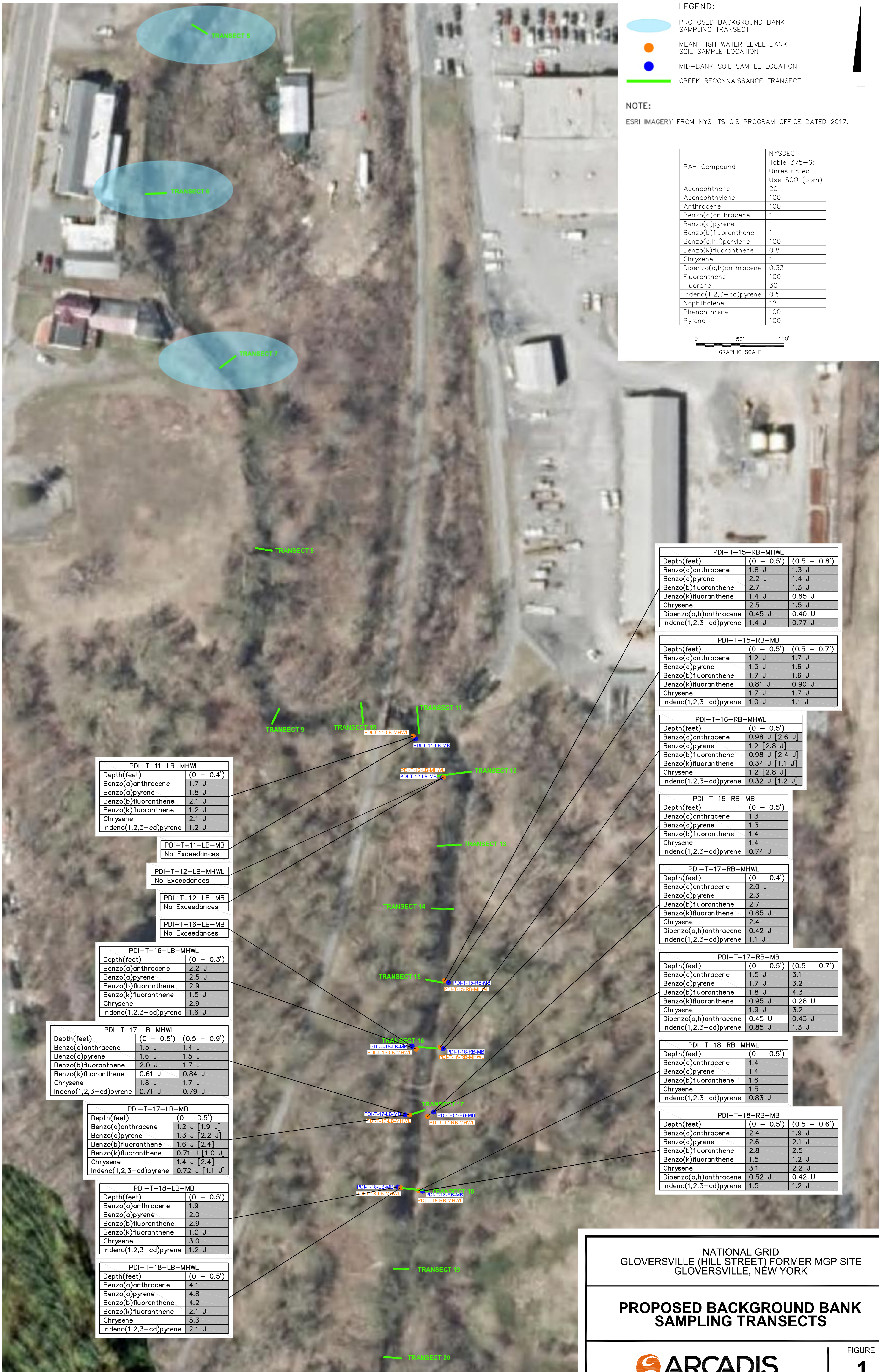
CC. Steven DiLella, National Grid
Scott Powlin, Arcadis
Terry Young, Arcadis

Enclosures:

Figures

1 Proposed Background Bank Sampling Transects
2 Proposed Site Source PAH Sampling Locations

Figures



LEGEND:

- PROPOSED BACKGROUND BANK SAMPLING TRANSECT
- MEAN HIGH WATER LEVEL BANK SOIL SAMPLE LOCATION
- MID–BANK SOIL SAMPLE LOCATION
- CREEK RECONNAISSANCE TRANSECT

NOTE:

ESRI IMAGERY FROM NYS ITS GIS PROGRAM OFFICE DATED 2017.

PAH Compound	NYSDEC Table 375–6: Unrestricted Use SCO (ppm)
Acenaphthene	20
Acenaphthylene	100
Anthracene	100
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(g,h,i)perylene	100
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenzo(a,h)anthracene	0.33
Fluoranthene	100
Fluorene	30
Indeno(1,2,3–cd)pyrene	0.5
Naphthalene	12
Phenanthrene	100
Pyrene	100

PDI–T–11–LB–MHWL	
Depth(feet)	(0 – 0.4')
Benzo(a)anthracene	1.7 J
Benzo(a)pyrene	1.8 J
Benzo(b)fluoranthene	2.1 J
Benzo(k)fluoranthene	1.2 J
Chrysene	2.1 J
Indeno(1,2,3–cd)pyrene	1.2 J

PDI–T–11–LB–MB
No Exceedances

PDI–T–12–LB–MHWL
No Exceedances

PDI–T–12–LB–MB
No Exceedances

PDI–T–16–LB–MB
No Exceedances

PDI–T–16–LB–MHWL	
Depth(feet)	(0 – 0.3')
Benzo(a)anthracene	2.2 J
Benzo(a)pyrene	2.5 J
Benzo(b)fluoranthene	2.9
Benzo(k)fluoranthene	1.5 J
Chrysene	2.9
Indeno(1,2,3–cd)pyrene	1.6 J

PDI–T–17–LB–MHWL		
Depth(feet)	(0 – 0.5')	(0.5 – 0.9')
Benzo(a)anthracene	1.5 J	1.4 J
Benzo(a)pyrene	1.6 J	1.5 J
Benzo(b)fluoranthene	2.0 J	1.7 J
Benzo(k)fluoranthene	0.61 J	0.84 J
Chrysene	1.8 J	1.7 J
Indeno(1,2,3–cd)pyrene	0.71 J	0.79 J

PDI–T–17–LB–MB	
Depth(feet)	(0 – 0.5')
Benzo(a)anthracene	1.2 J [1.9 J]
Benzo(a)pyrene	1.3 J [2.2 J]
Benzo(b)fluoranthene	1.6 J [2.4]
Benzo(k)fluoranthene	0.71 J [1.0 J]
Chrysene	1.4 J [2.4]
Indeno(1,2,3–cd)pyrene	0.72 J [1.1 J]

PDI–T–18–LB–MB	
Depth(feet)	(0 – 0.5')
Benzo(a)anthracene	1.9
Benzo(a)pyrene	2.0
Benzo(b)fluoranthene	2.9
Benzo(k)fluoranthene	1.0 J
Chrysene	3.0
Indeno(1,2,3–cd)pyrene	1.2 J

PDI–T–18–LB–MHWL	
Depth(feet)	(0 – 0.5')
Benzo(a)anthracene	4.1
Benzo(a)pyrene	4.8
Benzo(b)fluoranthene	4.2
Benzo(k)fluoranthene	2.1 J
Chrysene	5.3
Indeno(1,2,3–cd)pyrene	2.1 J

PDI–T–15–RB–MHWL		
Depth(feet)	(0 – 0.5')	(0.5 – 0.8')
Benzo(a)anthracene	1.8 J	1.3 J
Benzo(a)pyrene	2.2 J	1.4 J
Benzo(b)fluoranthene	2.7	1.3 J
Benzo(k)fluoranthene	1.4 J	0.65 J
Chrysene	2.5	1.5 J
Dibenzo(a,h)anthracene	0.45 J	0.40 U
Indeno(1,2,3–cd)pyrene	1.4 J	0.77 J

PDI–T–15–RB–MB		
Depth(feet)	(0 – 0.5')	(0.5 – 0.7')
Benzo(a)anthracene	1.2 J	1.7 J
Benzo(a)pyrene	1.5 J	1.6 J
Benzo(b)fluoranthene	1.7 J	1.6 J
Benzo(k)fluoranthene	0.81 J	0.90 J
Chrysene	1.7 J	1.7 J
Indeno(1,2,3–cd)pyrene	1.0 J	1.1 J

PDI–T–16–RB–MHWL	
Depth(feet)	(0 – 0.5')
Benzo(a)anthracene	0.98 J [2.6 J]
Benzo(a)pyrene	1.2 [2.8 J]
Benzo(b)fluoranthene	0.98 J [2.4 J]
Benzo(k)fluoranthene	0.34 J [1.1 J]
Chrysene	1.2 [2.8 J]
Indeno(1,2,3–cd)pyrene	0.32 J [1.2 J]

PDI–T–16–RB–MB	
Depth(feet)	(0 – 0.5')
Benzo(a)anthracene	1.3
Benzo(a)pyrene	1.3
Benzo(b)fluoranthene	1.4
Chrysene	1.4
Indeno(1,2,3–cd)pyrene	0.74 J

PDI–T–17–RB–MHWL	
Depth(feet)	(0 – 0.4')
Benzo(a)anthracene	2.0 J
Benzo(a)pyrene	2.3
Benzo(b)fluoranthene	2.7
Benzo(k)fluoranthene	0.85 J
Chrysene	2.4
Dibenzo(a,h)anthracene	0.42 J
Indeno(1,2,3–cd)pyrene	1.1 J

PDI–T–17–RB–MB		
Depth(feet)	(0 – 0.5')	(0.5 – 0.7')
Benzo(a)anthracene	1.5 J	3.1
Benzo(a)pyrene	1.7 J	3.2
Benzo(b)fluoranthene	1.8 J	4.3
Benzo(k)fluoranthene	0.95 J	0.28 U
Chrysene	1.9 J	3.2
Dibenzo(a,h)anthracene	0.45 U	0.43 J
Indeno(1,2,3–cd)pyrene	0.85 J	1.3 J

PDI–T–18–RB–MHWL	
Depth(feet)	(0 – 0.5')
Benzo(a)anthracene	1.4
Benzo(a)pyrene	1.4
Benzo(b)fluoranthene	1.6
Chrysene	1.5
Indeno(1,2,3–cd)pyrene	0.83 J

PDI–T–18–RB–MB		
Depth(feet)	(0 – 0.5')	(0.5 – 0.6')
Benzo(a)anthracene	2.4	1.9 J
Benzo(a)pyrene	2.6	2.1 J
Benzo(b)fluoranthene	2.8	2.5
Benzo(k)fluoranthene	1.5	1.2 J
Chrysene	3.1	2.2 J
Dibenzo(a,h)anthracene	0.52 J	0.42 U
Indeno(1,2,3–cd)pyrene	1.5	1.2 J

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK

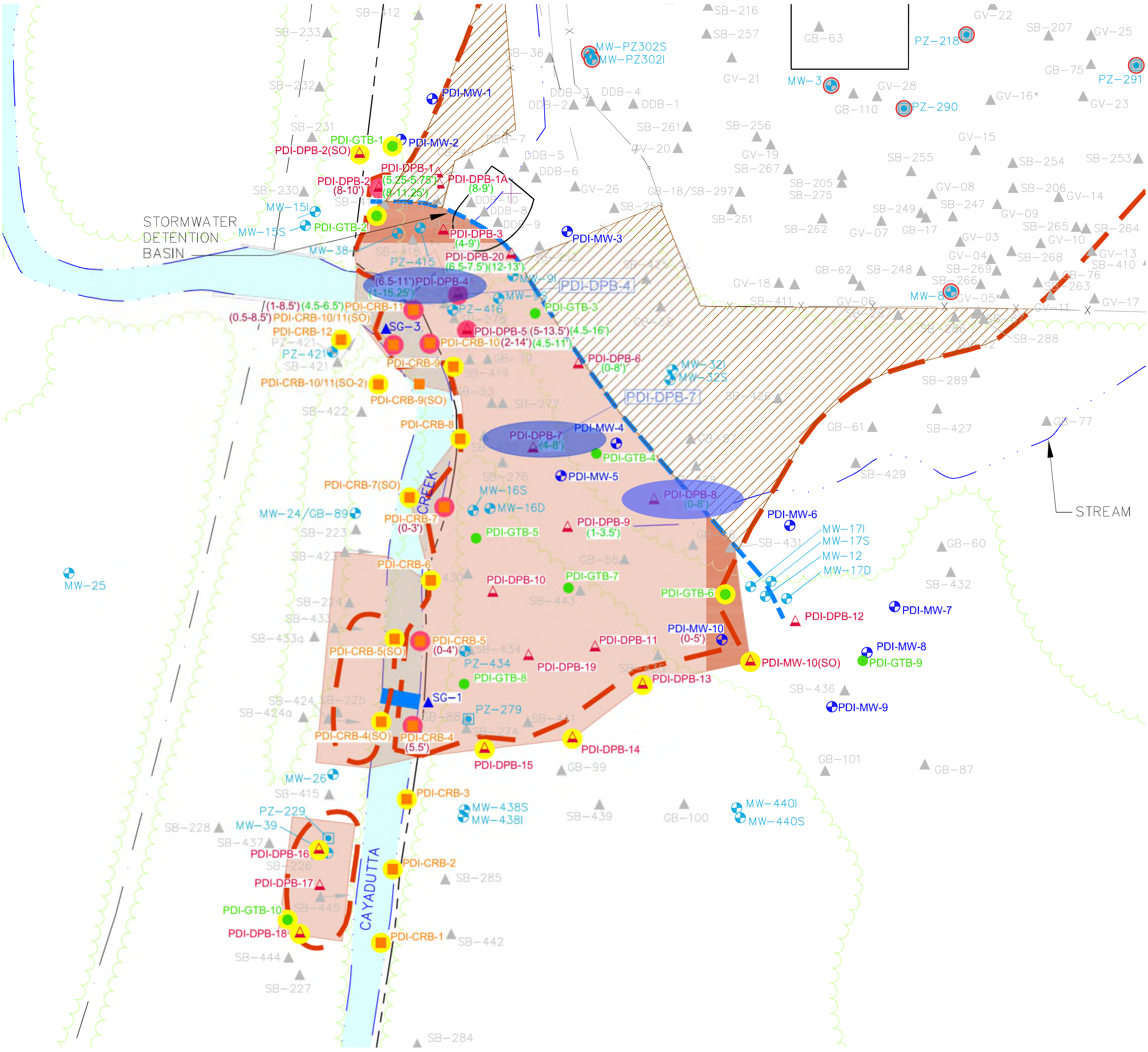
PROPOSED BACKGROUND BANK SAMPLING TRANSECTS

ARCADIS

FIGURE
1

C:\Users\posenauer\ACCDocs\Arcadis\AUS-NATIONAL GRID-GLOVERSVILLE FORMER MGP-GLOVERSVILLE New York\Project Files\2022\01-In Progress\01-DWG\GEN-F02-PP SITE SOURCE PAH SAMPLOCS.dwg LAYOUT: 2 SAVED: 5/3/2022 4:47 PM ACADVER: 24.0S (LMS TECH) PAGESETUP: DP-PDF PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 5/4/2022 10:49 AM BY: POSENAUER, LISA

XREFS:
RDWP-X-BASEMAP
RDWP-X-UTILS-1



LEGEND:

- PROPOSED SITE SOURCE PAH SAMPLING LOCATIONS
- PDI DIRECT-PUSH BORING
- PDI CREEK BORING
- PDI GEOTECHNICAL BORING
- PDI BORING SELECTED FOR SVOC SOIL SAMPLING
- PDI BORING LOCATIONS WITH VISUALLY OBSERVED NAPL
- PDI MONITORING WELL
- PDI STAFF GAUGE
- PZ-434 PREVIOUS MONITORING WELL
- PZ-279 PREVIOUS PIEZOMETER
- ABANDONED MONITORING WELL / PIEZOMETER
- (6.5-11') INTERVAL WITH VISUALLY OBSERVED IMPACTS
- (1-15.25') INTERVAL WITH LIKELY IMPACTS INFERRED FROM OIP LOG
- SB-423 PREVIOUS SOIL BORING
- SB-445 PREVIOUS ANGLED SOIL BORING, ARROW INDICATES DIRECTION OF ANGLE
- PDI TRANSECT FOR MANUALLY MEASURING CREEK VELOCITIES AND DEPTHS
- PROBABLE NAPL-CONTAINING AREA
- PROPOSED NAPL BARRIER WALL ALIGNMENT
- EXCAVATION AREA LIMITS
- LIMITS OF SURFACE SOIL EXCAVATION AND SOIL COVER
- APPROXIMATE PROPERTY LINE LIMITS
- PAVED BIKE PATH
- WATER
- TREE LINE
- FENCE
- UTILITY POLE

NOTES:

1. ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.
2. THE NATIONAL GRID PROPERTY LINE SHOWN IS APPROXIMATE.
3. ALL LOCATIONS ARE APPROXIMATE.
4. BASEMAP PREPARED FROM ELECTRONIC SURVEY FILE PROVIDED BY NIAGARA MOHAWK ON 7/23/01. PRIMARY SURVEY CONTROL FOR PHOTOGRAMMETIC MAPPING WAS ESTABLISHED FROM AN ON THE GROUND SURVEY, PERFORMED ON JULY 28, 1994 USING THE GLOBAL POSITIONING SYSTEM (GPS) AND CONFORMS TO ORDER 2 CLASS 2 FGCS ACCURACY SPECIFICATIONS. THE HORIZONTAL REFERENCE DATUM NORTH AMERICAN DATUM OF 1983 (NAD 83) ON REFERENCE ELLIPSOID ASSOCIATED WITH THE GEODETIC REFERENCE SYSTEM OF 1980 (GRS 80). THE COORDINATES ARE BASED ON THE NEW YORK STATE PLANE GEODETIC SYSTEM OF 1983 (EASTERN ZONE 3101).
5. OIP BORINGS WITH PERCENT FLUORESCENCE ABOVE 25% ARE INFERRED TO CONTAIN IMPACTS BASED ON COMPARISONS WITH CO-LOCATED SOIL BORINGS THAT WERE VISUALLY OBSERVED TO CONTAIN IMPACTS.

0 30' 60'
GRAPHIC SCALE

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK

PROPOSED SITE SOURCE PAH SAMPLING LOCATIONS

ARCADIS

FIGURE
2

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau C
625 Broadway, 12th Floor, Albany, NY 12233-7014
P: (518) 402-9662 I F: (518) 402-9722
www.dec.ny.gov

Transmitted Via Email Only

September 28, 2022

Mr. Steven Dilella
Project Manager
National Grid
300 Erie Boulevard, West A-3
Syracuse, NY 13202
Steven.Dilella@nationalgrid.com

Re: National Grid, Gloversville
Hill Street former MGP site
Site Number: 518021
Supplemental Pre-Design Investigation (PDI) Work Plan

Dear Mr. Dilella:

The New York State Department of Environmental Conservation (the Department) in consultation with New York State Department of Health (DOH) has reviewed the Supplemental PDI Work Plan, dated August 2022, prepared by Arcadis on behalf of National Grid. The Supplemental PDI Work Plan is hereby approved.

Please provide at least seven (7) days advance notice prior to mobilizing on site to perform field work in connection with the approved workplan. Please place the approved work plan and this letter in the document repository established for the site.

If you have any questions, please contact me at 518-402-9662 or via email at parag.amin@dec.ny.gov.

Sincerely,

Parag Amin, P.E.
Project Manager

Ec: J. Brien, Arcadis (Jason.Brien@arcadis.com)
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Mr. Parag Amin
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Date: May 16, 2023
Our Ref: 30044656
Subject: National Grid Gloversville (Hill St.) Former MGP Site
Interim Supplemental PDI Submittal

Dear Mr. Amin,

This interim supplemental pre-design investigation (PDI) submittal presents the results of Arcadis' supplemental PDI for the Gloversville (Hill St.) former Manufactured Gas Plant (MGP) Site in Gloversville, New York as set forth in National Grid's August 24, 2022 Supplemental PDI Letter Work Plan (Work Plan) to the New York State Department of Environmental Conservation (NYSDEC). The investigation provides supplemental data and evaluations to address NYSDEC comments presented in their April 28, 2022 and July 5, 2022 letters to National Grid.

Arcadis conducted a supplemental PDI to:

- Reevaluate the potential presence of non-aqueous phase liquid (NAPL) in monitoring well MW-15S.
- Establish a site-specific background polycyclic aromatic hydrocarbon (PAH) concentration in upstream Cayadutta Creek bank soils.
- Obtain a current PAH source signature in upland impacted site-soils.

The primary supplemental PDI objective was to determine background Cayadutta Creek bank soil conditions to provide a basis for removing MGP-impacted bank soils. The work scope consisted of three tasks:

1. Gauging monitoring well MW-15 for the presence of coal tar NAPL and collecting a groundwater sample for laboratory analysis.
2. Collecting background samples from banks upstream of the NAPL-impacted area (i.e., Reach 2).
3. Collecting fresh soil samples containing heavy Site-related impacts.
4. Conducting statistical and forensic evaluations to determine the extent of bank soils adjacent to the Site and bordering NAPL containing upland areas (i.e., Reach 3) that may be impacted by MGP-related residuals.

Supplemental PDI sampling activities are presented below followed by sampling results and the statistical and forensic evaluation results.

Supplemental PDI Activities and Results

Arcadis conducted activities in accordance with the Work Plan. Supplemental PDI activities and results are presented below followed by statistical and forensic evaluations.

Monitoring Well MW-15S Gauging

Arcadis' November 2021 Draft PDI Summary Report indicated that "Measurable quantities of NAPL were observed in wells MW-15S, PDI-MW-4 and PDI-MW-5 during all seven monitoring events…" NYSDEC correctly noted in their March 3, 2022 PDI comment letter that MW-15S is located outside the delineated "Probable NAPL Containing Area" and requested that the area around MW-15S be further investigated and the probable NAPL containing limits be adjusted. Arcadis noted that these MW-15S observations appeared inconsistent as previous collected groundwater samples at the well did not contain site-related constituents at concentrations exceeding the NYSDEC drinking water standards presented in the Technical and Operational Guidance Series Memorandum 1.1.1. Arcadis proposed, as part of the supplemental PDI activities, additional gauging and groundwater sampling at MW-15S to confirm NAPL presence. Further, Arcadis postulated that if coal tar NAPL had entered the well at any point in the past and/or is present in the formation near the well screen, it would be reasonable to expect elevated dissolved-phase benzene, toluene, ethylbenzene, and xylenes (BTEX) and PAH concentrations would be detected in the groundwater sample.

Arcadis conducted supplemental PDI monitoring well MW-15S gauging and groundwater sampling on November 1, 2022. No indications of NAPL were noted during the well gauging. Arcadis collected a groundwater sample using low flow sampling techniques in compliance with the June 2020 NYSDEC-approved Remedial Design Work Plan (RDWP). As presented in Table 1, Arcadis submitted the groundwater sample to Eurofins in Buffalo, NY for laboratory analysis for TCL VOCs and TCL SVOCs. With the exception of acetone, no SVOCs or VOCs were detected at concentrations above quantitation limits. Acetone was detected at a concentration of 5 parts per billion but is not a noted site constituent of concern and is a common laboratory contaminant. Groundwater analytical results are included in Table 2 and a DUSR prepared in accordance with NYSDEC ASP is provided in Attachment 1.

Background Bank Soil Sampling

Arcadis field personnel collected bank soil samples using the sampling approach described in the RDWP. Field personnel collected samples along PDI sediment sampling Transects 5, 6, and 7 (Figure 1). Two 2-foot (or to refusal) vertical soil cores were collected on each bank along each transect for a total of 12 cores. Cores were collected at the mean high-water level (MHWL) and along the bank approximately halfway between the MHWL elevation and the top of the bank (referred to as "mid-bank"). The cores were segmented into 0-0.5 foot, 0.5-1 foot, and 1-1.5 foot sample increments. A sampling summary including soil descriptions is presented in Table 1.

Field personnel did not observe visual impacts (sheen, staining, NAPLs, odor) in the background bank soil samples. Arcadis submitted soil samples to Eurofins laboratory in Buffalo, NY (Eurofins) for laboratory analysis. The upper two sampling intervals (i.e., 0-6 and 6-12 inches) were analyzed for a target compound list of 16 parent (non-alkylated) PAHs (PAH-16) using USEPA SW-846 Method 8270, while the lower sampling increments (i.e., 12-24 inches) were archived for potential analysis. Based on the analytical results, none of the 12-24 sampling interval samples were released for analysis. The bank soil analytical results are provided in Table 3 and a Data Usability Summary Report (DUSR) prepared in accordance with NYSDEC Analytical Services Protocol (ASP) is provided in Attachment 1.

PAH Source Sampling

Arcadis advanced three soil borings (PDI-DPB-4, PDI-DPB-7, and PDI-DPB-8) in known impacted areas and at the same locations as the initial 2020 PDI efforts using a direct-push drilling rig to approximately 12 feet below ground surface (bgs). Boring logs are provided in Attachment 2. Sample depths from each boring were selected based on the presence of visually impacted media. A sampling summary is presented in Table 1.

Arcadis submitted three samples to Eurofins for laboratory analysis for 18 specific non-alkylated PAHs (or parent PAHs) and 16 generic alkylated PAHs (PAH-34) using USEPA SW-846 Method 8270. PAH-34 represents the PAHs identified in the Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures (USEPA 2003) and referenced in Screening and Assessment of Contaminated Sediment (NYSDEC 2014). The source soil analytical results are provided in Table 4 and a DUSR prepared in accordance with NYSDEC ASP is provided in Attachment 1.

Supplemental PDI Statistical Background Evaluation

Arcadis reviewed the supplemental PDI sampling analytical results and conducted the following statistical evaluations:

- Upper limit statistics to establish a statistically derived site-specific background concentration and comparison of this site-specific background concentration to bank soil samples adjacent to and downstream from the Site
- Hypothesis testing to determine spatial patterns between the total PAH-16 concentrations in background bank soils to the total PAH-16 concentrations within the investigation area

Statistically Derived Background Bank Soil PAH-16 Concentration

Arcadis statistically derived a total PAH-16 background bank soil concentration using the supplemental PDI Reach 2 bank soil sampling results. Statistical analyses were performed in the 'R' statistical language (R Core Team 2022) and with ProUCL version 5.2 (USEPA 2022). The following statistical metrics were considered:

- 95th percentiles
- 95th percent Upper Prediction Limits (95 UPLs)
- 95/95 Upper Threshold Limits (95/95 UTLs)

No significant outliers were identified by Dixon's test or examination of QQ plots. The data were normally distributed by Shapiro Wilk and Lilliefors tests, so the background upper limit statistics were computed using normal distribution methods. The background concentration statistical evaluation upper limit results are summarized in the following table:

Upper Limits of Background Bank Soil Total PAH-16 Concentration – Statistical Results Summary

PAH Mixture	95^{th} Percentile[1] (mg/kg)	95 UPL[2] (mg/kg)	95/95 UTL[3] (mg/kg)
Background Bank Soil			
Total PAH-16	31.4	29.5	36.7

Notes:

1. 95th percentiles were calculated using the Type 7 Method (USEPA 2015).
2. Bank soil dataset was normally distributed by Shapiro Wilk and Lilliefors tests. 95 Upper Prediction Limits (UPLs) were calculated using the normal 95^{th} Percentile (z) method (USEPA 2015).
3. 95/95 Upper Tolerance Limits (UTLs) were calculated using the 95% BCA Bootstrap UTL with 95% Coverage method (USEPA 2015).

The 95 UPL total PAH-16 concentration of 29.5 mg/kg was selected to use as the statistically derived sediment background concentrations from Reach 2, as it is the most conservative of the upper tail estimates. The statistically derived background concentrations were used as a basis against which Reach 3 bank soil sample total PAH-16 concentrations were compared.

Total PAH-16 were detected at concentrations exceeding the 29.5 mg/kg background concentration in the following 6 of 55 PDI Reach 2 and 3 bank soil samples:

Reach	Sample ID	Total PAH-16 (mg/kg)
2[2]	T-05-LB-MHWL (0-0.5)	32 J[1]
	T-07-LB-MHWL (0-0.5)	37 J
3[3]	PDI-T-17-RB-MB (0.5-0.7)	36.9 J
	PDI-T-18-LB-MHWL (0-0.5)	53.5 J
	PDI-T-18-LB-MB (0-0.5)	30.9 J
	PDI-T-18-RB-MB (0-0.5)	32.9 J

Notes:

1. J = indicates that individual PAHs in the sample were positively identified; however, the associated numerical value is an estimated concentration only.
2. Reach 2 is background (i.e., upstream") of the delineated upland NAPL containing area where it encounters Cayadutta Creek, due west of the service center area.
3. Reach 3 is adjacent to the NAPL containing area where it encounters Cayadutta Creek and extends approximately 500 feet beyond the National Grid-owned southern property boundary.

Average Total PAH-16 Concentration Spatial Pattern Evaluation

Arcadis used hypothesis testing to evaluate similarities or differences between the Reach 2 and Reach 3 bank soil total PAH-16 datasets. Due to the non-detect total PAH-16 result at PDI-T-16-LB-MB (0.5-0.8'), Arcadis conducted this evaluation using generalized Wilcoxon test methods for censored data for the Reach 2 and Reach 3 data distributions. The generalized Wilcoxon test, as formulated by Peto and Peto, can be used to evaluate differences between the distributions of two or more groups of independent censored observations (Peto and Peto 1972). The results of the hypothesis testing showed no statistically significant differences (p-value = 0.711) between Reach 2 background bank soil total PAH-16 concentrations and Reach 3 bank soil total PAH-16 concentrations. A summary of total PAH-16 concentrations in Reach 2 background bank soils, Reach 3 bank soils is presented in the following table.

Detected Bank Soil Total PAH-16 Concentrations

Sample Media	Median Total PAH-16 (mg/kg)	Total PAH-16 Range (mg/kg)
Reach 2 Bank Soil	11.6	0.18 – 36.7
Reach 3 Bank Soil	15.3	0.73 – 53.5

Supplemental PDI Forensic Evaluation

Arcadis conducted a supplemental forensic evaluation consisting of the following:

- Bank soil versus Site source soil PAH-16 compositional fingerprint distribution comparison
- Bank soil versus Site source soils PAH Double Ratio Plot comparison
- Principal Component Analysis (PCA) and cluster analyses to group sampling locations based on their overall similarity.

Descriptions and evaluation findings are presented in the following subsections.

Compositional Fingerprint Distribution

PAH-16 compositional fingerprints (i.e., distributions) were evaluated for similarities between bank soils and Site source soils. A visual comparison of the PAH compositional fingerprints (Attachment 2) indicates that the Reach 2 background bank soils ("Background") and Reach 3 bank soils ("Site") have similar PAH distributions. This distribution is characterized by the presence and compositional similarities of parent PAH compounds with medium to heavy molecular weights (3-6 rings), such as phenanthrene ("PO"), fluoranthene ("FLO"), pyrene ("PYO"), benzo(a)anthracene ("BAO"), chrysene (CO"), benzofluoranthenes ("BBF" and "BKF"), benzo(a)pyrene ("BAP"), indeno(1,2,3-cd)pyrene ("IND"), and benzo(g,h,i)perylene ("GHI"). The PAH compounds with low molecular weights, such as naphthalene, acenaphthylene, acenaphthene, anthracene, and fluorene, are generally not present in the soil bank samples or are present at low concentrations near their respective detection limits in both Reach 2 background and Reach 3 samples.

In contrast, the Site source samples PAH compositional fingerprints are characterized by parent PAH compounds with low to medium molecular weights (2-3 rings) such as naphthalene ("NO"), acenaphthene ("AY"), acenaphthylene ("AE"), anthracene ("AO") and fluorene ("FO") with naphthalene as the most dominant PAH. The PAH compounds with high molecular weights (4-6 rings), such as benzofluoranthenes, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene, are generally not detected in the source soil samples or are present at low concentrations. Figure 2 illustrates the Reach 2 and 3 bank soils average PAH compositional fingerprint similarities and distinct bank soil and Site source soil PAH compositional fingerprint differences.

PAH Double Ratio Plots

Select PAH diagnostic ratio values were calculated and plotted for each bank soil and Site source soil sample. Arcadis prepared benzo(a)anthracene/chrysene versus fluoranthene/pyrene and benzo(a)anthracene/ (benzo(a)anthracene + chrysene) versus anthracene / (anthracene + phenanthrene) PAH double-ratio plots, which are the most common ratios used in PAH source evaluations (Costa et al. 2004; Costa and Sauer 2005; Yunker et al. 2002).

As indicated on Figure 3, the diagnostic ratio plot of benzo(a)anthracene/chrysene versus fluoranthene/pyrene concentrations shows a cluster of bank soil samples from both Reach 2 background and Reach 3 that is distinctly different than the similar PAH concentration ratios for Site source area soils. Although both bank soils and source soil ratios both fell in the pyrogenic and mixed source zones, bank soils had distinctly higher fluoranthene/pyrene ratios than Site source soil samples.

Anthracene was only detected in 6 of 24 (25%) supplemental PDI background bank soils. Where detected, anthracene concentrations were below NYSDEC Part 375-6 Unrestricted Use Soil Cleanup Objectives (SCOs). Therefore, the diagnostic ratio plot of benzo(a)anthracene/ (benzo(a)anthracene + chrysene) versus anthracene / (anthracene + phenanthrene) has limited value for evaluation purposes and is not presented in this report.

PCA Statistical Analysis

Arcadis completed PCA and hierarchical cluster analyses (HCA) to further evaluate the bank and source soil data sets. PCA is used to reduce the dimensionality of a dataset with many interrelated variables. The HCA was conducted to group similar PCA results into subsets (or clusters). Statistical analyses were performed in the 'R' statistical language (R Core Team 2022).

Prior to PCA analysis, detected PAH-16 compound concentrations were transformed to a fraction of total PAH concentration, to focus the evaluation on the PAH signature rather than concentration magnitude, then scaled and centered to a mean of zero and unit variance. These normalization procedures remove bias due to different PAH concentrations between samples (EPRI 2008). In support of these evaluations, non-detect PAH concentrations in a sample were set to zero in the fraction of total PAH calculation.

Two principal components (i.e., PC-1 and PC-2) explaining 71.7% of the variance were retained through the PCA to the HCA. Arcadis then conducted an agglomerative HCA on the two retained PCs using the Ward Method. The HCA identified two distinct data clusters. Figure 4 presents the PCA scores and loadings along with the data clusters.

Cluster 1 is characterized by samples with:

- Higher proportions of acenaphthene, anthracene, acenaphthylene, fluorene, naphthalene, and phenanthrene.
- Lower proportions of benzo(b)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene, benzo(a)anthracene, benzo(k)fluoranthene, chrysene, dibenzo(a,h) anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene.

Cluster 2 is characterized by samples with:

- Higher proportions of benzo(g,h,i)perylene, benzo(k)fluoranthene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(a)anthracene, chrysene, dibenzo(a,h) anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene.
- Lower proportions of acenaphthene, anthracene, acenaphthylene fluorene, naphthalene, and phenanthrene.

A data cluster evaluation relative to sample location indicates that Cluster 1 is associated with the Site source soil samples while Cluster 2 is primarily associated with the Reach 2 background soil samples.

Conclusions

The results of the statistical and forensic bank soil PAH-16 evaluations indicate that the low-level PAH concentrations detected in Reach 3 bank soil samples during the initial PDI effort are related to background sources and not the former MGP Site based on the following lines of evidence:

- Only four of 31 Reach 3 bank soil samples and two of 24 Reach 2 background bank soils contain total PAH-16 at concentrations exceeding the lowest statistical background concentration.
- The total PAH-16 concentrations and ranges are similar between Reach 2 background and Reach 3 bank samples.
- Hypothesis testing show no statistically significant differences between Reach 2 background and Reach 3 bank soil total PAH-16 concentrations.
- PAH compositional fingerprints indicate that the Reach 2 background and Reach 3 bank soils have similar higher ring PAH distributions, while the Site source samples were characterized by lower ring PAHs with naphthalene dominance.
- Reach 2 background and Reach 3 bank soils have distinctly higher fluoranthene/pyrene ratios compared to Site source soil samples.
- PCA statistical analysis indicates that the Reach 2 background and Reach 3 bank soils are associated with one cluster with higher proportions of higher ring PAHs (Cluster 2) while the Site source soils are associated with higher proportions of lower ring PAHs (Cluster 1).

Based on these evaluations, National Grid is requesting NYSDEC approval and potential Record of Decision modification to revise the bank soil cleanup objective from “[excavating] bank soils which exceed unrestricted use SCOs” to “excavating bank soils adjacent to upland NAPL containing areas”. This ROD revision would result in removing the extent of bank soils shown on attached Figure 5.

Please contact me or Steve DiLella (585.520.5192) if you have any questions or require additional information. Thank you.

Sincerely,
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Enclosures:

Tables

1 Supplemental PDI – Sampling Summary
2 Supplemental PDI – MW-15 Groundwater Sampling Results
3 Supplemental PDI – Bank Soil Sampling Results
4 Supplemental PDI – Source Sample Results

Figures

1 Supplemental PDI Sampling Locations
2 Average PAH-16 Composition by Sample Area
3 Double Ratio Plot Benzo(a)anthracene/Chrysene vs Fluoranthene/Pyrene
4 Principal Component and Hierarchical Clustering Plot of PAH-16 in Soil Samples
5 Anticipated Bank Soil Removal Areas

Attachments

1 Data Usability Summary Report (DUSR)
2 Supplemental PDI Source Area Soil Boring Logs
3 Bank and Source Material Soil PAH Profiles

References:

Costa, H.J. and Sauer, T.C. (2005), Forensic Approaches and Considerations in Identifying PAH Background Environmental Forensics.

Costa, H.J. and Sauer, T.C. (2004), Forensic Approaches and Considerations in Identifying PAH Background.

Yunker et. al. (2002), PAHs in the Fraser River basin: a critical appraisal of PAH ratios as indicators of PAH source and composition.

Tables

Table 1
Supplemental PDI Sampling Summary
National Grid
Gloversville (Hill St.) Former Manufactured Gas Plant (Site No. 5-18-021)
Gloversville, NY

Sample ID	Sample Interval (in)	PAH 16		PAH 34	TCL VOC	TCL SVOC	Description
		Anlyzd	Arch				
Groundwater							
MW-15S					x	x	
Bank Soil							
T-05-LB-MB	0-6	x					Very dark grayish brown medium fine sand, little silt, little organics (roots), wet, medium firm
	6-12	x					
	12-24		x				
T-05-LB-MHWL	0-6	x					Very dark grayish brown medium fine sand, little silt, little organics (roots), wet, soft
	6-12	x					
	12-24		x				
T-05-RB-MB	0-6	x					Very dark grayish brown medium fine sand, some fine sub-round gravel, little silt, wet, loose/soft
	6-12	x					
	12-24		x				
T-05-RB-MHWL	0-6	x					Dark brown medium fine sand. Some silt, little organics (roots), trace fine sub-round gravel, wet, soft loose
	6-12	x					
	12-24		x				
T-06-LB-MB	0-6	x					Very dark grayish brown medium fine sand and silt, little organics (roots), trace fine sub-round gravel, wet, soft/loose
	6-12	x					
	12-24		x				
T-06-LB-MHWL	0-6	x					Very dark gray silt and fine sand, little organics (roots), soft, some fine sub-round gravel, wet/loose
	6-12	x					
	12-24		x				
T-06-RB-MB	0-6	x					Very dark grayish brown fine sand, some silt, little organics (roots), wet, soft
	6-12	x					
	12-24		x				
T-06-RB-MHWL	0-6	x					Very dark gray silt and medium-fine sand, some organics (roots, leaves), wet, soft
	6-12	x					
	12-24		x				
T-07-LB-MB	0-6	x					Very dark grayish brown silt and medium fine sand, little organics (roots), trace fine sub-rounded gravel, little silt, wet, loose
	6-12	x					
	12-24		x				
T-07-LB-MHWL	0-6	x					Very dark gray medium fine sand, some silt, little organics (roots, leaves), wet, soft
	6-12	x					
	12-24		x				
T-07-RB-MB	0-6	x					Very dark gray silt, some fine sand, little organics (roots), wet soft
	6-12	x					
	12-24		x				
T-07-RB-MHWL	0-6	x					Dark gray silt and medium fine sand, some to little organics (roots, leaves), wet, soft
	6-12	x					
	12-24		x				
Site Source (Impacted) Soil							
PDI-DPB-4	3-12			x		x	Sheen, odor, PID (≤ 10 ppm)
PDI-DPB-7	4-8.5			x		x	Sheen, odor, PID (≤ 40 ppm)
PDI-DPB-8	0.8- 8.5			x		x	Sheen, odor, PID (≤ 10.1 ppm)

Table 1
Supplemental PDI Sampling Summary
National Grid
Gloversville (Hill St.) Former Manufactured Gas Plant (Site No. 5-18-021)
Gloversville, NY

Notes:

1. Samples submitted to Eurofins laboratory in Buffalo, NY.
2. Samples submitted to Eurofins laboratory in Buffalo, NY.
3. PAH 16 - target compound list of 16 parent (non-alkylated) PAHs analyzed using USEPA SW-846 Method 8270.
4. PAH 34 - 18 specific non-alkylated PAHs (or parent PAHs) and 16 generic alkylated PAHs (PAH-34) using USEPA SW-846 Method 8270analyzed using USEPA SW-846 Method 8270.

Acronyms and Abbreviations:

T = Transect
LB = Left Bank
RB = Right Bank
MB = Mid-Bank
MHWL = Mean High Water Level
ppm = parts per million

Table 2
Supplemental PDI - MW-15 Groundwater Sampling Results
National Grid
Gloversville (Hill St.) Former Manufactured Gas Plant (Site No. 5-18-021)
Gloversville, NY

Location ID: Date Collected:	Units	MW-15S 11/1/22
Volatile Organics		
1,1,1-Trichloroethane	ug/L	0.82 U
1,1,2,2-Tetrachloroethane	ug/L	0.21 U
1,1,2-trichloro-1,2,2-trifluoroethane	ug/L	0.31 U
1,1,2-Trichloroethane	ug/L	0.23 U
1,1-Dichloroethane	ug/L	0.38 U
1,1-Dichloroethene	ug/L	0.29 U
1,2,4-Trichlorobenzene	ug/L	0.41 U
1,2-Dibromo-3-chloropropane	ug/L	0.39 U
1,2-Dibromoethane	ug/L	0.73 U
1,2-Dichlorobenzene	ug/L	0.79 U
1,2-Dichloroethane	ug/L	0.21 U
1,2-Dichloropropane	ug/L	0.72 U
1,3-Dichlorobenzene	ug/L	0.78 U
1,4-Dichlorobenzene	ug/L	0.84 U
2-Butanone	ug/L	1.3 U
2-Hexanone	ug/L	1.2 U
4-Methyl-2-pentanone	ug/L	2.1 U
Acetone	ug/L	5.0 J
Benzene	ug/L	0.41 U
Bromodichloromethane	ug/L	0.39 U
Bromoform	ug/L	0.26 U
Bromomethane	ug/L	0.69 U
Carbon Disulfide	ug/L	0.19 U
Carbon Tetrachloride	ug/L	0.27 U
Chlorobenzene	ug/L	0.75 U
Chloroethane	ug/L	0.32 U
Chloroform	ug/L	0.34 U
Chloromethane	ug/L	0.35 U
cis-1,2-Dichloroethene	ug/L	0.81 U
cis-1,3-Dichloropropene	ug/L	0.36 U
Cyclohexane	ug/L	0.18 U
Dibromochloromethane	ug/L	0.32 U
Dichlorodifluoromethane	ug/L	0.68 U
Ethylbenzene	ug/L	0.74 U
Isopropylbenzene	ug/L	0.79 U
Methyl acetate	ug/L	1.3 U
Methyl tert-butyl ether	ug/L	0.16 U
Methylcyclohexane	ug/L	0.16 U
Methylene Chloride	ug/L	0.44 U
Styrene	ug/L	0.73 U
Tetrachloroethene	ug/L	0.36 U
Toluene	ug/L	0.51 U
trans-1,2-Dichloroethene	ug/L	0.90 U
trans-1,3-Dichloropropene	ug/L	0.37 U
Trichloroethene	ug/L	0.46 U
Trichlorofluoromethane	ug/L	0.88 U
Vinyl Chloride	ug/L	0.90 U

Table 2
Supplemental PDI - MW-15 Groundwater Sampling Results
National Grid
Gloversville (Hill St.) Former Manufactured Gas Plant (Site No. 5-18-021)
Gloversville, NY

Location ID: Date Collected:	Units	MW-15S 11/1/22
Xylenes (total)	ug/L	0.66 U
Semivolatile Organics		
1,1'-Biphenyl	ug/L	0.65 U
2,2'-Oxybis(1-Chloropropane)	ug/L	0.52 U
2,4,5-Trichlorophenol	ug/L	0.48 U
2,4,6-Trichlorophenol	ug/L	0.61 U
2,4-Dichlorophenol	ug/L	0.51 U
2,4-Dimethylphenol	ug/L	0.50 U
2,4-Dinitrophenol	ug/L	2.2 U
2,4-Dinitrotoluene	ug/L	0.45 U
2,6-Dinitrotoluene	ug/L	0.40 U
2-Chloronaphthalene	ug/L	0.46 U
2-Chlorophenol	ug/L	0.53 U
2-Methylnaphthalene	ug/L	0.60 U
2-Methylphenol	ug/L	0.40 U
2-Nitroaniline	ug/L	0.42 U
2-Nitrophenol	ug/L	0.48 U
3,3'-Dichlorobenzidine	ug/L	0.40 U
3-Nitroaniline	ug/L	0.48 U
4,6-Dinitro-2-methylphenol	ug/L	2.2 U
4-Bromophenyl-phenylether	ug/L	0.45 U
4-Chloro-3-Methylphenol	ug/L	0.45 U
4-Chloroaniline	ug/L	0.59 U
4-Chlorophenyl-phenylether	ug/L	0.35 U
4-Methylphenol	ug/L	0.36 U
4-Nitroaniline	ug/L	0.25 U
4-Nitrophenol	ug/L	1.5 U
Acenaphthene	ug/L	0.41 U
Acenaphthylene	ug/L	0.38 U
Acetophenone	ug/L	0.54 U
Anthracene	ug/L	0.28 U
Atrazine	ug/L	0.46 U
Benzaldehyde	ug/L	0.27 U
Benzo(a)anthracene	ug/L	0.36 U
Benzo(a)pyrene	ug/L	0.47 U
Benzo(b)fluoranthene	ug/L	0.34 U
Benzo(g,h,i)perylene	ug/L	0.35 U
Benzo(k)fluoranthene	ug/L	0.73 U
bis(2-Chloroethoxy)methane	ug/L	0.35 U
bis(2-Chloroethyl)ether	ug/L	0.40 U
bis(2-Ethylhexyl)phthalate	ug/L	2.2 U
Butylbenzylphthalate	ug/L	1.0 U
Caprolactam	ug/L	2.2 U
Carbazole	ug/L	0.30 U
Chrysene	ug/L	0.33 U
Dibenzo(a,h)anthracene	ug/L	0.42 U
Dibenzofuran	ug/L	0.51 U
Diethylphthalate	ug/L	0.22 U

Table 2
Supplemental PDI - MW-15 Groundwater Sampling Results
National Grid
Gloversville (Hill St.) Former Manufactured Gas Plant (Site No. 5-18-021)
Gloversville, NY

Location ID: Date Collected:	Units	MW-15S 11/1/22
Dimethylphthalate	ug/L	0.36 U
Di-n-Butylphthalate	ug/L	0.31 U
Di-n-Octylphthalate	ug/L	0.47 U
Fluoranthene	ug/L	0.40 U
Fluorene	ug/L	0.36 U
Hexachlorobenzene	ug/L	0.51 U
Hexachlorobutadiene	ug/L	0.68 U
Hexachlorocyclopentadiene	ug/L	0.59 U
Hexachloroethane	ug/L	0.59 U
Indeno(1,2,3-cd)pyrene	ug/L	0.47 U
Isophorone	ug/L	0.43 U
Naphthalene	ug/L	0.76 U
Nitrobenzene	ug/L	0.29 U
N-Nitroso-di-n-propylamine	ug/L	0.54 U
N-Nitrosodiphenylamine	ug/L	0.51 U
Pentachlorophenol	ug/L	2.2 U
Phenanthrene	ug/L	0.44 U
Phenol	ug/L	0.39 U
Pyrene	ug/L	0.34 U
Total PAH16	ug/L	0.76 U

Notes:
1. Arcadis collected samples on date indicated.
2. Samples analyzed by Eurofins laboratory in Buffalo, NY.
3. Results are presented in micrograms per liter (ug/L), which is equivalent to parts per billion (ppb).
4. J - detected concentration is less than the calibration level but greater than the instrument detection limit. This value is estimated.
5. U - Compound was analyzed for but not detected. The presented value is the compound quantitation limit.

Table 3
Supplemental PDI Bank Soil Sampling Results
National Grid
Gloversville (Hill St.) Former Manufactured Gas Plant (Site No. 5-18-021)
Gloversville, NY

Location ID:	Unrestricted Use SCOs		T-05-LB-MB		T-05-LB-MHWL		T-05-RB-MB		T-05-RB-MHWL		T-06-LB-MB	
Sample Depth(feet):			0 - 6	6 - 12	0 - 6	6 - 12	0 - 6	6 - 12	0 - 6	6 - 12	0 - 6	6 - 12
Date Collected:			12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22
Semivolatile Organics												
Acenaphthene	20	mg/kg	0.32 U	0.31 U	0.36 U	0.39 U	0.030 U	0.028 U	0.16 U	0.027 U	0.15 U	0.14 U
Acenaphthylene	100	mg/kg	0.28 U	0.27 U	0.31 U	0.34 U	0.026 U	0.025 U	0.14 U	0.024 U	0.13 U	0.12 U
Anthracene	100	mg/kg	0.53 U	0.51 U	0.85 J	0.66 U	0.050 U	0.048 U	0.27 U	0.046 U	0.28 J	0.23 U
Benzo(a)anthracene	1	mg/kg	**1.3 J**	0.79 J	**2.3 J**	**1.1 J**	0.044 J	0.024 J	0.77 J	0.044 J	**1.1**	0.59 J
Benzo(a)pyrene	1	mg/kg	**1.4 J**	0.94 J	**2.2 J**	**1.2 J**	0.047 J	0.028 J	0.85 J	0.055 J	0.96 J	0.55 J
Benzo(b)fluoranthene	1	mg/kg	**2.0 J**	**1.3 J**	**3.1**	**1.6 J**	0.058 J	0.035 J	**1.2**	0.078 J	**1.2**	0.65 J
Benzo(g,h,i)perylene	100	mg/kg	0.99 J	0.63 J	1.4 J	0.75 J	0.032 J	0.020 U	0.58 J	0.042 J	0.52 J	0.29 J
Benzo(k)fluoranthene	0.8	mg/kg	**0.81 J**	0.53 J	**1.2 J**	0.60 J	0.026 J	0.025 U	0.47 J	0.033 J	0.51 J	0.30 J
Chrysene	1	mg/kg	**1.6 J**	1.0 J	**2.6**	**1.3 J**	0.047 J	0.043 U	0.93 J	0.059 J	0.97 J	0.56 J
Dibenzo(a,h)anthracene	0.33	mg/kg	0.38 U	0.37 U	**0.48 J**	0.47 U	0.036 U	0.034 U	0.19 J	0.033 U	0.20 J	0.17 U
Fluoranthene	100	mg/kg	3.6	2.2	6.7	3.0	0.087 J	0.051 J	2.0 J	0.10 J	1.9	1.1
Fluorene	30	mg/kg	0.25 U	0.24 U	0.38 J	0.31 U	0.024 U	0.023 U	0.13 U	0.022 U	0.12 U	0.11 U
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	**0.91 J**	**0.59 J**	**1.3 J**	**0.71 J**	0.028 J	0.024 U	0.47 J	0.039 J	**0.55 J**	0.27 J
Naphthalene	12	mg/kg	0.28 U	0.27 U	0.31 U	0.34 U	0.026 U	0.025 U	0.14 U	0.024 U	0.13 U	0.12 U
Phenanthrene	100	mg/kg	1.5 J	0.98 J	4.4	1.5 J	0.033 J	0.028 U	0.92 J	0.036 J	0.80 J	0.37 J
Pyrene	100	mg/kg	2.6	1.6 J	4.8	2.2 J	0.066 J	0.039 J	1.5	0.084 J	1.4	0.86 J
Total TPAHs	- -	mg/kg	17 J	11 J	32 J	14 J	0.47 J	0.18 J	9.9 J	0.57 J	10 J	5.5 J

Table 3
Supplemental PDI Bank Soil Sampling Results
National Grid
Gloversville (Hill St.) Former Manufactured Gas Plant (Site No. 5-18-021)
Gloversville, NY

Location ID:	Unrestricted Use SCOs		T-06-LB-MHWL		T-06-RB-MB		T-06-RB-MHWL		T-07-LB-MB		T-07-LB-MHWL	
Sample Depth(feet):			0 - 6	6 - 12	0 - 6	6 - 12	0 - 6	6 - 12	0 - 6	6 - 12	0 - 6	6 - 12
Date Collected:			12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22
Semivolatile Organics												
Acenaphthene	20	mg/kg	0.15 U	0.14 U	0.41 U	0.38 U [0.38 U]	0.41 U	0.41 U	0.42 U	0.40 U	0.89 U	0.20 U
Acenaphthylene	100	mg/kg	0.13 U	0.12 U	0.36 U	0.34 U [0.33 U]	0.36 U	0.36 U	0.37 U	0.35 U	0.78 U	0.18 U
Anthracene	100	mg/kg	0.25 U	0.23 UJ	0.70 U	0.65 U [0.63 U]	0.69 U	0.68 U	0.71 U	0.67 U	1.5 U	0.41 J
Benzo(a)anthracene	1	mg/kg	1.0	0.57 J	**1.1 J**	**0.71 J [1.1 J]**	**1.5 J**	**2.2 J**	1.0 J	1.0 J	**2.9 J**	**1.7**
Benzo(a)pyrene	1	mg/kg	1.0	0.52 J	**1.3 J**	**0.81 J [1.4 J]**	**1.7 J**	**2.5 J**	**1.1 J**	**1.1 J**	**3.4 J**	**1.7**
Benzo(b)fluoranthene	1	mg/kg	**1.3**	0.67 J	**1.7 J**	**1.1 J [1.8 J]**	**2.3 J**	**3.3**	**1.5 J**	**1.3 J**	**4.6 J**	**2.1**
Benzo(g,h,i)perylene	100	mg/kg	0.54 J	0.31 J	0.75 J	0.46 J [0.89 J]	1.1 J	1.3 J	0.61 J	0.51 J	2.3 J	0.99 J
Benzo(k)fluoranthene	0.8	mg/kg	0.56 J	0.29 J	0.72 J	0.44 J [0.78 J]	**0.99 J**	**1.4 J**	0.61 J	0.60 J	**1.9 J**	**0.90 J**
Chrysene	1	mg/kg	**1.1**	0.54 J	**1.4 J**	**0.88 J [1.4 J]**	**1.9 J**	**2.9**	**1.2 J**	**1.1 J**	**3.5 J**	**1.8**
Dibenzo(a,h)anthracene	0.33	mg/kg	0.22 J	0.16 U	0.50 U	0.46 U [0.45 U]	0.49 U	0.49 U	0.50 U	0.48 U	1.1 U	0.33 J
Fluoranthene	100	mg/kg	1.9	0.99 J	3.0	1.8 J [3.2]	4.5	6.5	2.4 J	2.3 J	7.5	3.6
Fluorene	30	mg/kg	0.12 U	0.11 U	0.33 U	0.31 U [0.30 U]	0.33 U	0.33 U	0.34 U	0.32 U	0.71 U	0.16 U
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	**0.52 J**	0.30 J	**0.71 J**	**0.43 J [0.79 J]**	**0.98 J**	**1.3 J**	**0.59 J**	**0.53 J**	**2.0 J**	**0.88 J**
Naphthalene	12	mg/kg	0.13 U	0.12 U	0.36 U	0.34 U [0.33 U]	0.36 U	0.36 U	0.37 U	0.35 U	0.78 U	0.18 U
Phenanthrene	100	mg/kg	0.63 J	0.46 J	1.2 J	0.80 J [1.5 J]	2.3 J	3.5	1.1 J	1.1 J	3.0 J	1.7
Pyrene	100	mg/kg	1.5	0.80 J	2.0 J	1.3 J [2.3 J]	3.2	4.5	1.9 J	1.7 J	5.6 J	2.9
Total TPAHs	- -	mg/kg	10 J	5.5 J	14 J	8.7 J [15 J]	20 J	29 J	12 J	11 J	37 J	19 J

Table 3
Supplemental PDI Bank Soil Sampling Results
National Grid
Gloversville (Hill St.) Former Manufactured Gas Plant (Site No. 5-18-021)
Gloversville, NY

ARCADIS

Location ID:	Unrestricted Use SCOs		T-07-RB-MB		T-07-RB-MHWL	
Sample Depth(feet):			0 - 6	6 - 12	0 - 6	6 - 12
Date Collected:			12/12/22	12/12/22	12/12/22	12/12/22
Semivolatile Organics						
Acenaphthene	20	mg/kg	0.19 U [0.37 U]	0.32 U	0.17 J	0.16 U
Acenaphthylene	100	mg/kg	0.16 U [0.33 U]	0.28 U	0.15 J	0.14 U
Anthracene	100	mg/kg	0.31 U [0.63 U]	0.62 J	0.58 J	0.30 J
Benzo(a)anthracene	1	mg/kg	0.91 J [1.0 J]	**1.8 J**	**1.8**	**1.4**
Benzo(a)pyrene	1	mg/kg	**1.0 J [1.1 J]**	**1.8 J**	**1.8**	**1.4**
Benzo(b)fluoranthene	1	mg/kg	**1.3 [1.4 J]**	**2.2**	**2.2**	**1.7**
Benzo(g,h,i)perylene	100	mg/kg	0.62 J [0.67 J]	1.1 J	1.1 J	0.84 J
Benzo(k)fluoranthene	0.8	mg/kg	0.55 J [0.65 J]	**0.96 J**	**0.88 J**	0.72 J
Chrysene	1	mg/kg	**0.95 J [1.1 J]**	**1.7 J**	**1.8**	**1.5**
Dibenzo(a,h)anthracene	0.33	mg/kg	0.22 U [0.45 U]	0.38 U	**0.34 J**	0.27 J
Fluoranthene	100	mg/kg	1.9 [2.2 J]	3.8	3.9	2.8
Fluorene	30	mg/kg	0.15 U [0.30 U]	0.26 J	0.23 J	0.12 U
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	**0.60 J [0.68 J]**	**1.0 J**	**0.99 J**	**0.82 J**
Naphthalene	12	mg/kg	0.16 U [0.33 U]	0.28 U	0.15 J	0.14 U
Phenanthrene	100	mg/kg	0.93 J [0.87 J]	2.3	2.5	1.1
Pyrene	100	mg/kg	1.5 [1.6 J]	2.8	3.2	2.1
Total TPAHs	- -	mg/kg	10 J [11 J]	20 J	22 J	15 J

Notes:
1. Arcadis collected samples on dates indicated.
2. Samples analyzed by Eurofins laboratory in Buffalo, NY.
3. Results are presented in milligrams per kilogram (mg/kg), which is equivalent to parts per million (ppm).
4. Results compared to NYSDEC Part 375-6 Unrestricted Use Soil Cleanup Objectives (SCOs).
5. Shaded and bolded values indicate concentrations exceeding NYSDEC Part 365 unrestricted SCOs.
6. J - detected concentration is less than the calibration level but greater than the instrument detection limit. This value is estimated.
7. U - Compound was analyzed for but not detected. The presented value is the compound quantitation limit.

Table 4
Supplemental PDI - Source Sample Results
National Grid
Gloversville (Hill St.) Former Manufactured Gas Plant (Site No. 5-18-021)
Gloversville, NY

Location ID: Sample Depth(feet): Date Collected:		PDI-DPB-4 3 - 12 11/1/22	PDI-DPB-7 4 - 8.5 11/1/22	PDI-DPB-8 0.8 - 8.5 11/1/22
PAHs				
Total PAH16	mg/kg	140 J	360 J	220 J
Total PAH-34	mg/kg	180 J	470 J	280 J
PAHs-SIM				
1-Methylnaphthalene	mg/kg	24.0 J	94.0 J	51.0 J
2-Methylnaphthalene	mg/kg	34.0 J	110 J	61.0 J
Acenaphthene	mg/kg	16.0 J	48.0 J	33.0 J
Acenaphthylene	mg/kg	2.40 J	4.20 J	2.20 J
Anthracene	mg/kg	11.0 J	24.0 J	16.0 J
Benzo(a)anthracene	mg/kg	5.10 J	11.0 J	8.80 J
Benzo(a)pyrene	mg/kg	3.30 J	6.20 J	4.90 J
Benzo(b)fluoranthene	mg/kg	1.60 J	4.20 UJ	2.40 J
Benzo(e)pyrene	mg/kg	1.80 J	3.50 J	2.80 J
Benzo(g,h,i)perylene	mg/kg	0.450 J	1.60 UJ	0.690 J
Benzo(k)fluoranthene	mg/kg	2.00 J	3.80 J	2.80 J
C1-Chrysenes	mg/kg	3.90 J	8.80 J	8.60 J
C1-Fluoranthenes/pyrene	mg/kg	17.0 J	33.0 J	33.0 J
C1-Fluorenes	mg/kg	8.50 J	27.0 J	18.0 J
C1-Phenanthrenes/Anthracenes	mg/kg	26.0 J	70.0 J	53.0 J
C2-Chrysenes	mg/kg	1.60 J	8.30 UJ	4.20 J
C2-Fluorenes	mg/kg	6.60 J	17.0 J	12.0 J
C2-Naphthalenes	mg/kg	49.0 J	180 J	99.0 J
C2-Phenanthrenes/Anthracenes	mg/kg	13.0 J	30.0 J	32.0 J
C3-Chrysenes	mg/kg	0.780 UJ	8.30 UJ	1.10 UJ
C3-Fluorenes	mg/kg	2.20 J	8.30 UJ	5.90 J
C3-Naphthalenes	mg/kg	20.0 J	88.0 J	50.0 J
C3-Phenanthrenes/Anthracenes	mg/kg	4.10 J	9.40 J	12.0 J
C4-Chrysenes	mg/kg	1.00 J	8.30 UJ	1.10 UJ
C4-Naphthalenes	mg/kg	6.10 J	23.0 J	17.0 J
C4-Phenanthrenes/Anthracenes	mg/kg	1.30 J	8.30 UJ	3.60 J
Chrysene	mg/kg	4.50 J	12.0 J	8.50 J
Dibenzo(a,h)anthracene	mg/kg	0.180 J	1.60 UJ	0.380 J
Fluoranthene	mg/kg	8.50 J	18.0 J	14.0 J
Fluorene	mg/kg	10.0 J	25.0 J	18.0 J
Indeno(1,2,3-cd)pyrene	mg/kg	0.470 J	2.00 UJ	0.770 J
Naphthalene	mg/kg	37.0 J	110 J	38.0 J
Perylene	mg/kg	0.450 J	2.00 UJ	1.00 J
Phenanthrene	mg/kg	29.0 J	74.0 J	43.0 J
Pyrene	mg/kg	12.0 J	28.0 J	22.0 J

Notes:
1. Arcadis collected samples on dates indicated.
2. Samples analyzed by Eurofins laboratory in Buffalo, NY.
3. Results are presented in milligrams per kilogram (mg/kg), which is equivalent to parts per million (ppm).
4. J - detected concentration is less than the calibration level but greater than the instrument detection limit. This value is estimated.
5. U - Compound was analyzed for but not detected. The presented value is the compound quantitation limit.

Figures

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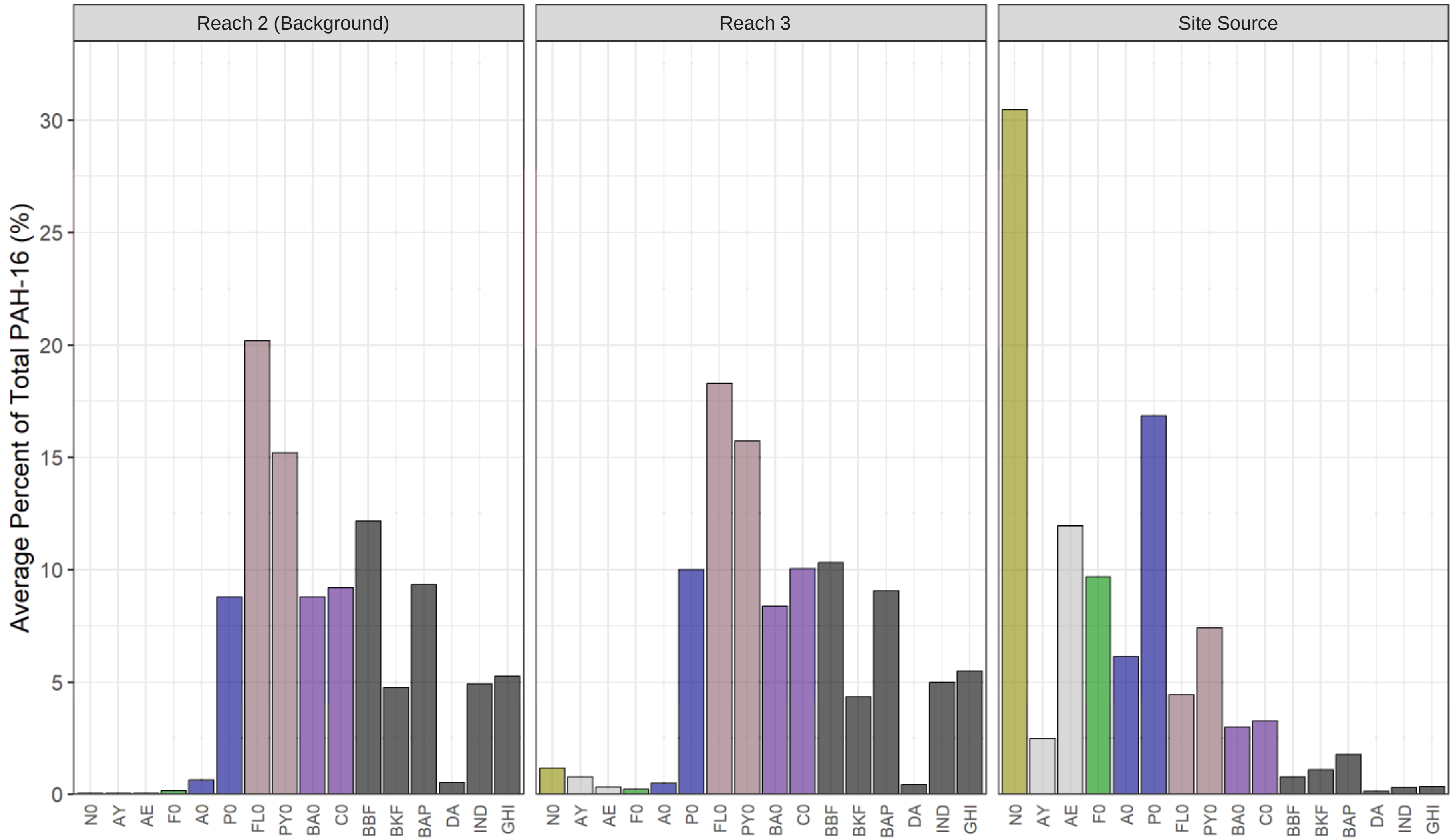
GEN-X-TITLE Aerial.jpg

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK

BACKGROUND BANK SOIL SAMPLING TRANSECT LOCATIONS

ARCADIS

FIGURE
1

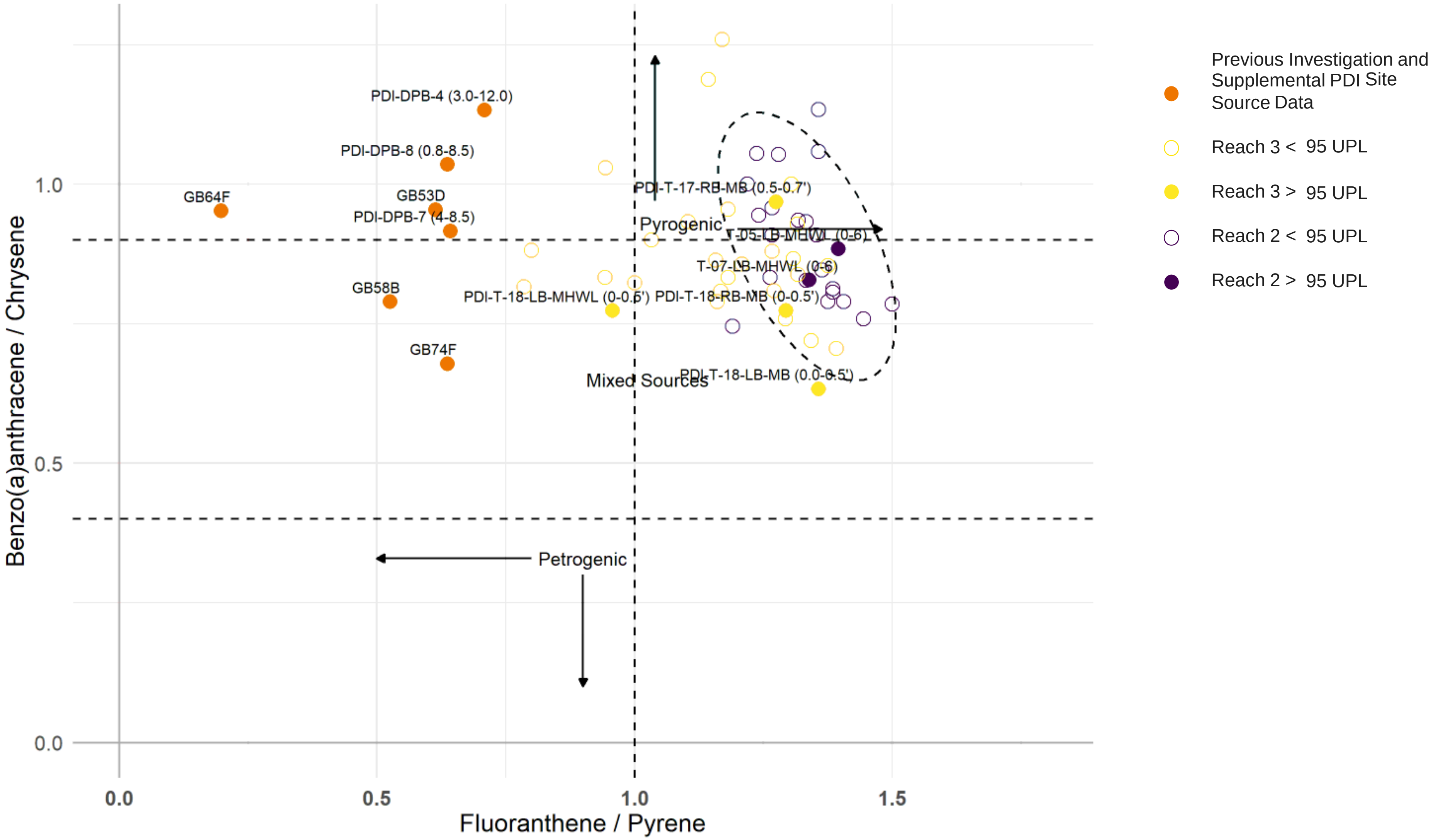


NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
SEDIMENT BACKGROUND AND FORENSIC EVALUATION

AVERAGE PAH-16 COMPOSITION BY SAMPLE AREA

ARCADIS

FIGURE
2



Notes:

• The dotted ellipse represents the 95 percent t-distribution confidence ellipse around the background samples

• Open circles are samples below the 95th percentile background value of total PAH-16 concentrations, 29.5 mg/kg; filled circles are those samples (labeled) that exceeded the 95th percentile background value.

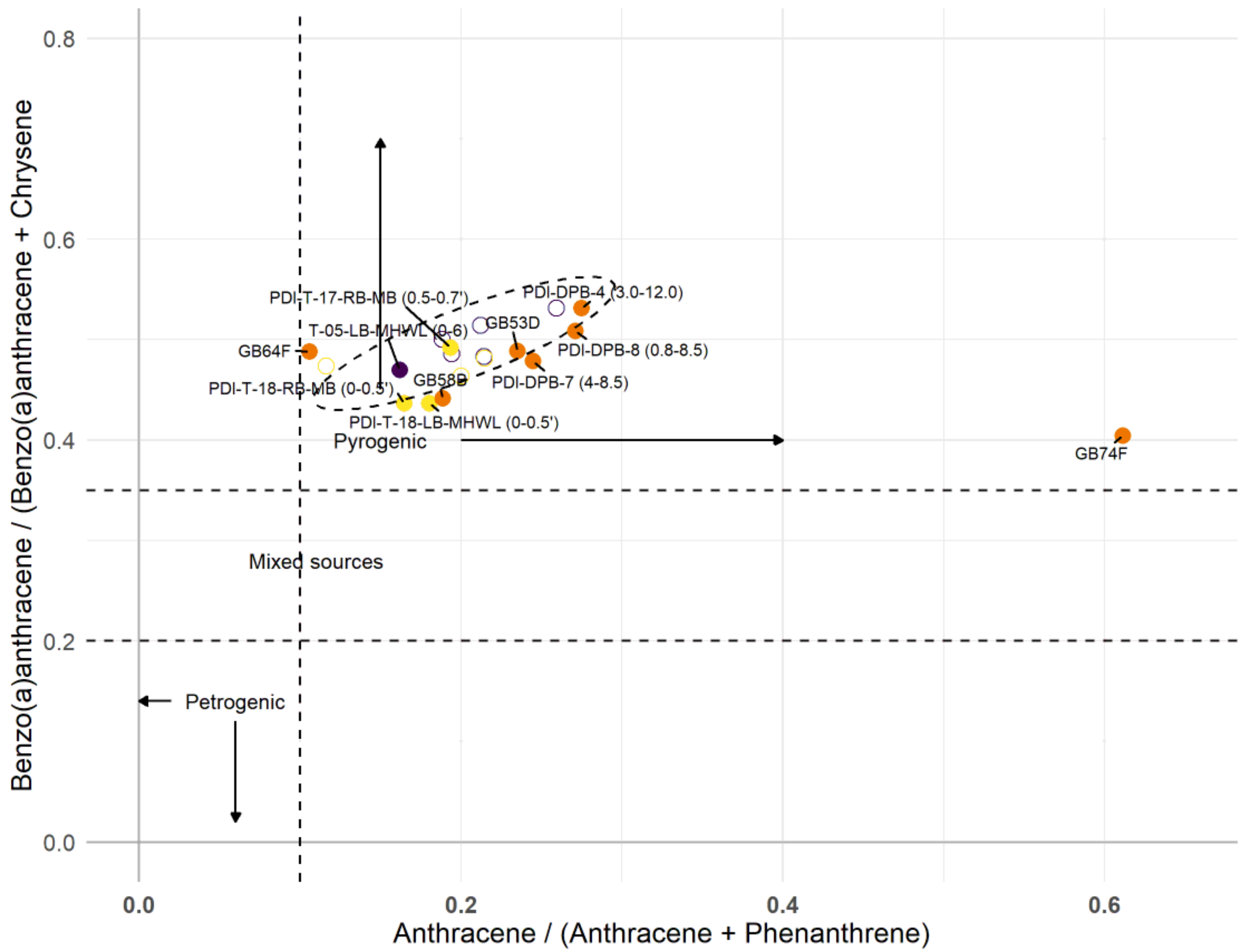
• Only includes ratios with detected concentrations.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
SEDIMENT BACKGROUND AND FORENSIC EVALUATION

DOUBLE RATIO PLOT
Benzo(a)anthracene/Chrysene vs Fluoranthene/Pyrene

ARCADIS

FIGURE
3



Notes:

• The dotted ellipse represents the 95 percent t-distribution confidence ellipse around the background samples

• Open circles are samples below the 95th percentile background value of total PAH-16 concentrations, 29.5 mg/kg; filled circles are those samples (labeled) that exceeded the 95th percentile background value.

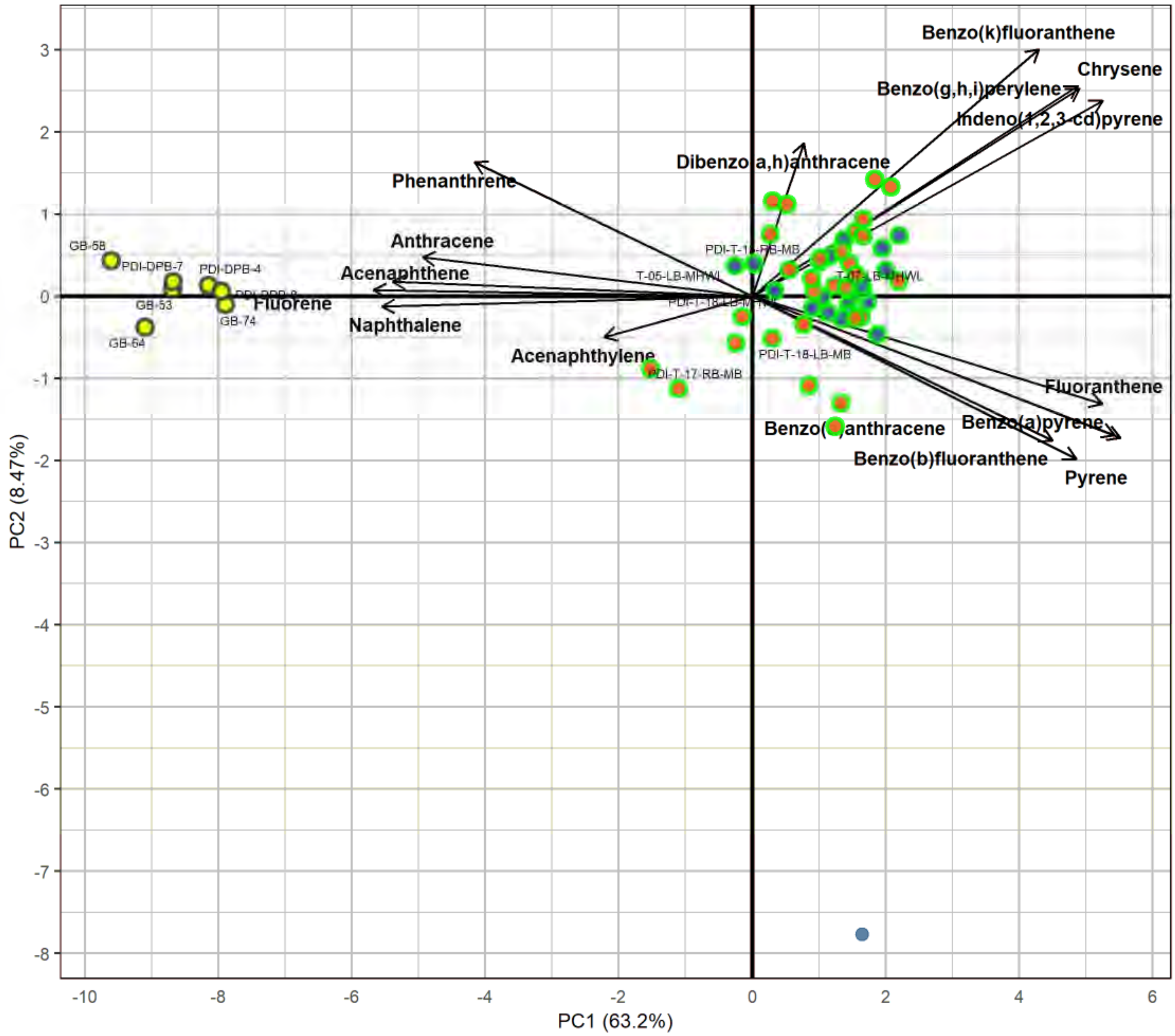
• Only includes ratios with detected concentrations.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

DOUBLE RATIO PLOT 2
SOIL

ARCADIS

FIGURE
X



Location (Point Color)

Location (Point Color)
Reach 2 (Background)
Reach 3 (Site)
Site (Source)

Cluster (Point Halo)

Cluster (Point Halo)
Cluster 1
Cluster 2

Notes:

1. Principal Component Analysis (PCA) is useful technique for reducing the dimensionality of a data set with a large number of interrelated variables.

2. Prior to the PCA, data were converted to fraction of total PAH and then scaled and centered to a mean of zero and unit variance.

3. Agglomerative hierarchical clustering (HCA) was performed on the PCs of the PCA using the Ward Method. The use of the PCs can be viewed as a de-noising method which separates signal and noise.

4. Samples that exceeded the 95th percentile background value (29.5 mg/kg) are labeled.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PRINCIPAL COMPONENT AND HIERARCHICAL CLUSTERING PLOT OF PAH-16 IN SOIL SAMPLES

ARCADIS

FIGURE
4

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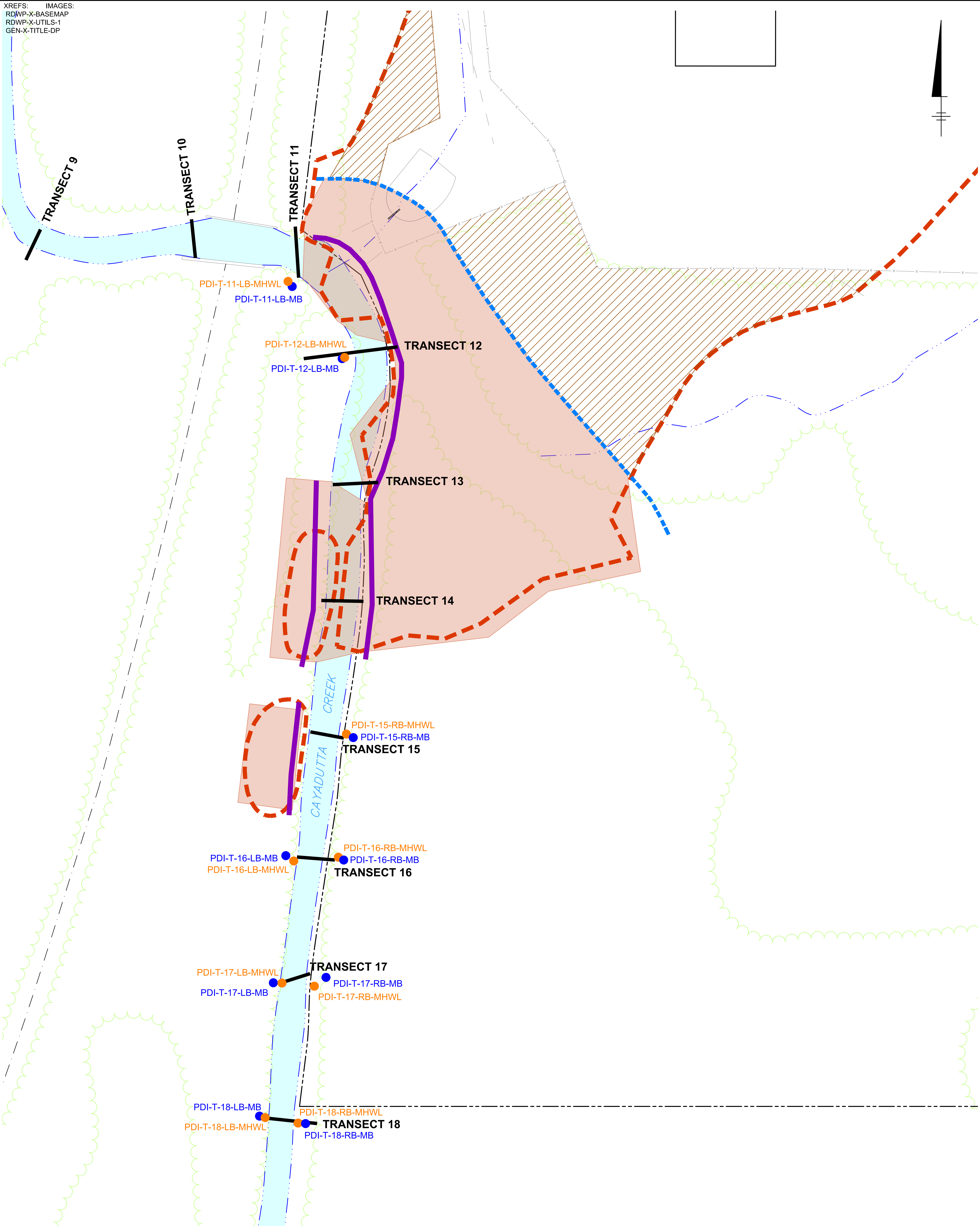

LEGEND:

- PROBABLE NAPL-CONTAINING AREA
- PROPOSED NAPL BARRIER WALL ALIGNMENT
- EXCAVATION AREA LIMITS
- LIMITS OF SURFACE SOIL EXCAVATION AND SOIL COVER
- APPROXIMATE PROPERTY LINE LIMITS
- PAVED BIKE PATH
- EDGE OF WATER
- TREE LINE
- FENCE
- MEAN HIGH WATER LEVEL BANK SOIL SAMPLE LOCATION
- MID-BANK SOIL SAMPLE LOCATION
- CREEK RECONNAISSANCE TRANSECT
- BANK REMOVAL

0 30' 60'
GRAPHIC SCALE

NOTES:

1. THE NATIONAL GRID PROPERTY LINE SHOWN IS APPROXIMATE.
2. ALL LOCATIONS ARE APPROXIMATE.
3. BASEMAP PREPARED FROM ELECTRONIC SURVEY FILE PROVIDED BY NIAGARA MOHAWK ON 7/23/01. PRIMARY SURVEY CONTROL FOR PHOTOGRAMMETRIC MAPPING WAS ESTABLISHED FROM AN ON THE GROUND SURVEY, PERFORMED ON JULY 28, 1994 USING THE GLOBAL POSITIONING SYSTEM (GPS) AND CONFORMS TO ORDER 2 CLASS 2 FGCS ACCURACY SPECIFICATIONS. THE HORIZONTAL REFERENCE DATUM NORTH AMERICAN DATUM OF 1983 (NAD 83) ON REFERENCE ELLIPSOID ASSOCIATED WITH THE GEODETIC REFERENCE SYSTEM OF 1980 (GRS 80). THE COORDINATES ARE BASED ON THE NEW YORK STATE PLANE GEODETIC SYSTEM OF 1983 (EASTERN ZONE 3101).

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK

ANTICIPATED BANK SOIL REMOVAL AREAS

ARCADIS

FIGURE
5

Attachment 1

Data Usability Summary Report (DUSR)

National Grid - Gloversville

DATA USABILITY SUMMARY REPORT (DUSR)

Gloversville, New York

Volatile and Semi-Volatile Analyses

SDG #480-203413-1, 480-204731-1

Analyses Performed By:
Eurofins TestAmerica
Buffalo, NY &
South Burlington, VT

Report #48390R
Review Level: Tier III
Project: 30044656. 710

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 480-203413-1 and 480-204731-1 for samples collected in association with the National Grid Gloversville Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG Number	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis	
						VOC	SVOC
480-203413-1	PDI-DPB-4 (3.0-12.0)	480-203413-1	Soil	11/01/2022			X
	PDI-DPB-7 (4-8.5)	480-203413-2	Soil	11/01/2022			X
	PDI-DPB-8 (0.8-8.5)	480-203413-3	Soil	11/01/2022			X
	MW-15S	480-203413-4	Water	11/01/2022		X	X
	TB	480-203413-5	Water	11/01/2022		X	
480-204731-1	T-05-LB-MB (0-6)	480-204731-1	Soil	12/12/2022			X
	T-05-LB-MB (6-12)	480-204731-2	Soil	12/12/2022			X
	T-05-LB-MHWL (0-6)	480-204731-4	Soil	12/12/2022			X
	T-05-LB-MHWL (6-12)	480-204731-5	Soil	12/12/2022			X
	T-05-RB-MB (0-6)	480-204731-7	Soil	12/12/2022			X
	T-05-RB-MB (6-12)	480-204731-8	Soil	12/12/2022			X
	T-05-RB-MHWL (0-6)	480-204731-10	Soil	12/12/2022			X
	T-05-RB-MHWL (6-12)	480-204731-11	Soil	12/12/2022			X
	T-06-LB-MB (0-6)	480-204731-13	Soil	12/12/2022			X
	T-06-LB-MB (6-12)	480-204731-14	Soil	12/12/2022			X
	T-06-LB-MHWL (0-6)	480-204731-16	Soil	12/12/2022			X
	T-06-LB-MHWL (6-12)	480-204731-17	Soil	12/12/2022			X
	T-06-RB-MB (0-6)	480-204731-19	Soil	12/12/2022			X
	T-06-RB-MB (6-12)	480-204731-20	Soil	12/12/2022			X
	T-06-RB-MHWL (0-6)	480-204731-22	Soil	12/12/2022			X
	T-06-RB-MHWL (6-12)	480-204731-23	Soil	12/12/2022			X
	T-07-LB-MB (0-6)	480-204731-25	Soil	12/12/2022			X
	T-07-LB-MB (6-12)	480-204731-26	Soil	12/12/2022			X
	T-07-LB-MHWL (0-6)	480-204731-28	Soil	12/12/2022			X
	T-07-LB-MHWL (6-12)	480-204731-29	Soil	12/12/2022			X
	T-07-RB-MB (0-6)	480-204731-31	Soil	12/12/2022			X
	T-07-RB-MB (6-12)	480-204731-32	Soil	12/12/2022			X

SDG Number	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis	
						VOC	SVOC
	T-07-RB-MHWL (0-6)	480-204731-34	Soil	12/12/2022			X
	T-07-RB-MHWL (6-12)	480-204731-35	Soil	12/12/2022			X
	DUP-121222-01	480-204731-37	Soil	12/12/2022	T-06-RB-MB (6-12)		X
	DUP-121222-02	480-204731-38	Soil	12/12/2022	T-07-RB-MB (0-6)		X

Note:

1. Sample locations MW-15S (Lab ID 480-203413-4) and the associated Trip Blank, TB (Lab ID 480-203413-5) were not included in this evaluation.
2. The matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample location T-05-RB-MHWL (0-6) and T-06-LB-MHWL (6-12).

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

Note:
QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8270D and 8270E SIM. Data were reviewed in accordance with USEPA National Functional Guidelines for Organic Superfund Methods Data Review, EPA 540-R-20-005, November 2020 (with reference to the historical USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, OSWER 9240.1-05A-P, October 1999), and applicable Region II SOPs. USEPA NFGs and Region II SOPs were followed for qualification purposes.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

SDG# 480-203413-1, 480-204731-1: All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

SDG# 480-203413-1: Compounds were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. Therefore, sample results greater than the BAL resulted in the removal of the laboratory qualifier (B). No other qualification of the sample results was required.

SDG# 480-204731-1: Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

SDG# 480-203413-1, 480-204731-1: All compounds associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits and that all SVOC surrogate recoveries be greater than ten percent.

SDG# 480-203413-1, 480-204731-1: Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

SDGs	Sample IDs	Surrogate	Recovery
480-203413-1	PDI-DPB-4 (3.0-12.0) PDI-DPB-7 (4-8.5) PDI-DPB-8 (0.8-8.5)	2-methylnaphthalene-d10	D
		Benzo(a)pyrene-d12	
		Fluoranthene-d10	
		Fluorene-d10	

Notes:
UL Upper control limit
D Diluted

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Surrogates diluted below the calibration curve due to the high concentration of a target compounds	Non-detect	UJ[1]
	Detect	J[1]

Control Limit	Sample Result	Qualification

Note:

[1] A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

6. Internal Standard Performance

Internal standard performance criteria ensure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

SDG# 480-203413-1, 480-204731-1: All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

SDG# 480-203413-1: MS/MSD analysis was not performed on a sample from this SDG.

SDG# 480-204731-1: MS/MSD analysis was performed on a sample T-05-RB-MHWL (0-6) and T-06-LB-MHWL (6-12). MS/MSD analysis exhibited recoveries and RPDs within the control limits with the exceptions noted below.

SDGs	Sample IDs	Compound	MS Recovery	MSD Recovery
480-204731-1	T-06-LB-MHWL (6-12)	Anthracene	> UL	AC
		Benzo[a]anthracene	> UL	AC
		Benzo[a]pyrene	> UL	AC
		Chrysene	> UL	AC
		Fluoranthene	> UL	AC
		Fluorene	> UL	AC
		Phenanthrene	> UL	AC
		Pyrene	> UL	AC

Note:

AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

Sample locations associated with MS/MSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

SDGs	Sample IDs	Compound
480-204731-1	T-05-RB-MHWL (0-6)	Fluoranthene
	T-06-LB-MHWL (6-12)	Anthracene
		Benzo[a]anthracene
		Benzo[b]fluoranthene
		Chrysene
		Fluoranthene
		Phenanthrene

The criteria used to evaluate the RPD between the MS/MSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

8. Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/ LCSD) Analysis

The LCS/LCSD analysis is used to assess the accuracy and precision of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery and RPDs within the laboratory-established acceptance limits.

SDG# 480-203413-1, 480-204731-1: Sample locations associated with LCS/LCSD analysis exhibited recoveries and RPDs within the control limits.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

SDG# 480-203413-1: A field duplicate sample was not collected from this SDG.

Results for duplicate samples are summarized in the following table.

SDGs	Sample ID/ Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
480-204731-1	T-06-RB-MB (6-12) / DUP-121222-01	Benzo[a]anthracene	710 J	1100 J	AC
		Benzo[a]pyrene	810 J	1400 J	AC
		Benzo[b]fluoranthene	1100 J	1800 J	AC
		Benzo[g,h,i]perylene	460 J	890 J	AC
		Benzo[k]fluoranthene	440 J	780 J	AC
		Chrysene	880 J	1400 J	AC
		Fluoranthene	1800 J	3200	AC
		Indeno[1,2,3-cd]pyrene	430 J	790 J	AC
		Phenanthrene	800 J	1500 J	AC
		Pyrene	1300 J	2300 J	AC
	T-07-RB-MB (0-6) / DUP-121222-02	Benzo[a]anthracene	910 J	1000 J	AC
		Benzo[a]pyrene	1000 J	1100 J	AC
		Benzo[b]fluoranthene	1300	1400 J	AC
		Benzo[g,h,i]perylene	620 J	670 J	AC
		Benzo[k]fluoranthene	550 J	650 J	AC
		Chrysene	950 J	1100 J	AC
		Fluoranthene	1900	2200 J	AC
		Indeno[1,2,3-cd]pyrene	600 J	680 J	AC
		Phenanthrene	930 J	870 J	AC
		Pyrene	1500	1600 J	AC

Note:

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

SDG	Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
480-203413-1	PDI-DPB-8 (0.8-8.5)	2-Methylnaphthalene	--	61000	61000 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

Please note the laboratory states in the following in the case narrative regarding the Alkyl PAHs:

Method 8270E SIM: Total alkyl homologue results are considered estimated. These compounds are identified as eluting within a retention time window established by examining a qualitative mixture of coal tar and crude oil. Quantitation is estimated using a parent PAH response factor. For the total alkyl PAHs, the reporting limit (RL) for the parent PAH is used for both the MDL and the RL. Results for the total alkyl PAHs are not reported below the RL of the parent PAH. These compounds were not included in the calibration standards.

As noted in the case narrative, samples T-07-LB-MHWL (0-6) and T-07-LB-MHWL (6-12) were decanted prior to sample preparation.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks	X				X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X	X		
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X	X		
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	

SVOCs: SW-846 8270	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
D. Quantitation transcriptions/calculations		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

SAMPLE COMPLIANCE REPORT

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1] VOC	Compliancy[1] SVOC	Noncompliance
480-203413-1	11/01/2022	SW846	PDI-DPB-4 (3.0-12.0)	Soil	-	No	SVOC: Surrogate %R
	11/01/2022	SW846	PDI-DPB-8 (0.8-8.5)	Soil	-	No	SVOC: Surrogate %R
	11/01/2022	SW846	PDI-DPB-7 (4-8.5)	Soil	-	No	SVOC: Surrogate %R
480-204731-1	12/12/2022	SW846	T-05-LB-MB (0-6)	Soil	-	Yes	
	12/12/2022	SW846	T-05-LB-MB (6-12)	Soil	-	Yes	
	12/12/2022	SW846	T-05-LB-MHWL (0-6)	Soil	-	Yes	
	12/12/2022	SW846	T-05-LB-MHWL (6-12)	Soil	-	Yes	
	12/12/2022	SW846	T-05-RB-MB (0-6)	Soil	-	Yes	
	12/12/2022	SW846	T-05-RB-MB (6-12)	Soil	-	Yes	
	12/12/2022	SW846	T-05-RB-MHWL (0-6)	Soil	-	No	SVOC: MS/MSD RPD
	12/12/2022	SW846	T-05-RB-MHWL (6-12)	Soil	-	Yes	
	12/12/2022	SW846	T-06-LB-MB (0-6)	Soil	-	Yes	
	12/12/2022	SW846	T-06-LB-MB (6-12)	Soil	-	Yes	
	12/12/2022	SW846	T-06-LB-MHWL (0-6)	Soil	-	Yes	
	12/12/2022	SW846	T-06-LB-MHWL (6-12)	Soil	-	No	SVOC: MS%R, MS/MSD RPD
	12/12/2022	SW846	T-06-RB-MB (0-6)	Soil	-	Yes	
	12/12/2022	SW846	T-06-RB-MB (6-12)	Soil	-	Yes	
	12/12/2022	SW846	T-06-RB-MHWL (0-6)	Soil	-	Yes	
	12/12/2022	SW846	T-06-RB-MHWL (6-12)	Soil	-	Yes	
	12/12/2022	SW846	T-07-LB-MB (0-6)	Soil	-	Yes	
	12/12/2022	SW846	T-07-LB-MB (6-12)	Soil	-	Yes	

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1]		Noncompliance
					VOC	SVOC	
	12/12/2022	SW846	T-07-LB-MHWL (0-6)	Soil	-	Yes	
	12/12/2022	SW846	T-07-LB-MHWL (6-12)	Soil	-	Yes	
	12/12/2022	SW846	T-07-RB-MB (0-6)	Soil	-	Yes	
	12/12/2022	SW846	T-07-RB-MB (6-12)	Soil	-	Yes	
	12/12/2022	SW846	T-07-RB-MHWL (0-6)	Soil	-	Yes	
	12/12/2022	SW846	T-07-RB-MHWL (6-12)	Soil	-	Yes	
	12/12/2022	SW846	DUP-121222-01	Soil	-	Yes	
	12/12/2022	SW846	DUP-121222-02	Soil	-	Yes	

Note:

Samples which are compliant with no added validation qualifiers are listed as "yes". Samples which are non-compliant or which have added qualifiers are listed as "no". A "no" designation does not necessarily indicate that the data have been rejected or are otherwise unusable

Note:

SDG#480-203413-1: Sample locations MW-15S and TB were not included in this evaluation.

VALIDATION PERFORMED BY: Hareesha Naik

SIGNATURE: Halil

DATE: January 20, 2023

PEER REVIEW: Joe Houser

DATE: January 25, 2023

CHAIN OF CUSTODY

CORRECTED SAMPLE ANALYSIS DATA SHEETS

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

Syracuse eurofins Environment Testing

#225

Client Information

Client Contact:	Ms. Makenna Guarnieri
Company:	ARCADIS U.S. Inc
Address:	One Lincoln Center 110 West Fayette St, Suite 300
City:	Syracuse
State, Zip:	NY, 13202
Phone:	315-671-9162(Tel)
Email:	makenna.guarnieri@arcadis.com
Project Name:	National Grid - Gloversville,NY
Site:	National Grid Gloversville

Sampler:	Dan Meandro
Phone:	315-992-0568
PWSID:	
Due Date Requested:	
TAT Requested (days):	Standard 10 Day
Compliance Project:	Δ Yes Δ No
PO #:	B0036652.0009
WO #:	
Project #:	48020236
SSOW#:	

Lab PM:	Schove, John R
E-Mail:	John.Schove@et.eurofinsus.com
Carrier Tracking No(s):	
State of Origin:	NY
COC No:	480-178868-38272.5
Page:	Page 1 of 1
Job #:	

480-203413 Chain of Custody

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270D - PAH Semivolatiles (PAH16)	8270E_SIM_ALK - Alkylated PAHs (PAH 34)	8270D - TCL SVOCs	8260C - TCL VOCs	Total Number of containers	Special Instructions/Note:
				Preservation Code:			N	N	N	A		
~~MW-15~~ or				Solid								
PDI-DPB-4 (3.0-12.0)	11-1-22	1045	C	Solid				X			1	
PDI-DPB-7 (4-8.5)	11-1-22	1130	C	Solid				X			1	
PDI-DPB-8 (0.8-8.5)	11-1-22	1230	C	Solid				X			1	
MW-15S	11-1-22	1240	G	Water					X	X	5	
TRIP BLANK				Water						X	2	

RC 11-1-22

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ________ Months

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Dan Meandro	11-1-22 1600	ARA	R English	11-1-22, 16:00	Syr
R English	11-1-22, 1900	Syr	Andrew Claudo	11/2/22 900	TA

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 2.1 #1 ICE

Ver: 06/08/2021

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12/7/2022

Definitions/Glossary

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample Results

Client: ARCADIS U.S. Inc   Job ID: 480-203413-1
Project/Site: National Grid - Gloversville,NY

Client Sample ID: PDI-DPB-4 (3.0-12.0)   Lab Sample ID: 480-203413-1

Date Collected: 11/01/22 10:45   **Matrix: Solid**
Date Received: 11/02/22 09:00   **Percent Solids: 84.2**

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	24000		780	530	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
2-Methylnaphthalene	34000		780	200	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
Acenaphthene	16000		780	90	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
Acenaphthylene	2400		780	190	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
Anthracene	11000	~~B~~ J	780	99	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
Benzo[a]anthracene	5100	~~B~~	780	140	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
Benzo[a]pyrene	3300		780	96	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
Benzo[b]fluoranthene	1600		780	400	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
Benzo[e]pyrene	1800		780	210	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
Benzo[g,h,i]perylene	450	J	780	150	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
Benzo[k]fluoranthene	2000		780	110	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
C1-Chrysenes	3900		780	780	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
C1-Fluoranthenes/pyrene	17000		780	780	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
C1-Fluorenes	8500		780	780	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
C1-Phenanthrenes/Anthracenes	26000	J	780	780	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
C2-Chrysenes	1600		780	780	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
C2-Fluorenes	6600		780	780	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
C2-Naphthalenes	49000		780	780	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
C2-Phenanthrenes/Anthracenes	13000		780	780	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
C3-Chrysenes	ND	UJ	780	780	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
C3-Fluorenes	2200		780	780	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
C3-Naphthalenes	20000	~~B~~	780	780	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
C3-Phenanthrenes/Anthracenes	4100		780	780	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
C4-Chrysenes	1000	J	780	780	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
C4-Naphthalenes	6100		780	780	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
C4-Phenanthrenes/Anthracenes	1300		780	780	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
Chrysene	4500	~~B~~	780	79	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
Dibenz(a,h)anthracene	180	J	780	150	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
Fluoranthene	8500	~~B~~ J	780	140	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
Fluorene	10000	~~B~~	780	150	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
Indeno[1,2,3-cd]pyrene	470	J	780	190	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
Naphthalene	37000	J	780	460	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
Perylene	450	J	780	190	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
Phenanthrene	29000	~~B~~ J	780	410	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000
Pyrene	12000	~~B~~	780	160	ug/Kg	☼	11/07/22 14:30	12/06/22 01:04	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-methylnaphthalene-d10	*214*	*S1+*	*30 - 120*	*11/07/22 14:30*	*12/06/22 01:04*	*1000*
Benzo(a)pyrene-d12	*0*	*S1-*	*20 - 130*	*11/07/22 14:30*	*12/06/22 01:04*	*1000*
Fluoranthene-d10	*207*	*S1+*	*10 - 165*	*11/07/22 14:30*	*12/06/22 01:04*	*1000*
Fluorene-d10 (Surr)	*208*	*S1+*	*30 - 130*	*11/07/22 14:30*	*12/06/22 01:04*	*1000*

Client Sample Results

Client: ARCADIS U.S. Inc | Job ID: 480-203413-1
Project/Site: National Grid - Gloversville,NY

Client Sample ID: PDI-DPB-7 (4-8.5) | Lab Sample ID: 480-203413-2

Date Collected: 11/01/22 11:30 | **Matrix: Solid**
Date Received: 11/02/22 09:00 | **Percent Solids: 80.5**

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	**94000**	J	8300	5600	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
2-Methylnaphthalene	**110000**	J	8300	2100	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
Acenaphthene	**48000**	J	8300	950	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
Acenaphthylene	**4200**	**J**	8300	2000	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
Anthracene	**24000**	~~**B**~~ J	8300	1100	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
Benzo[a]anthracene	**11000**	~~**B**~~ J	8300	1500	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
Benzo[a]pyrene	**6200**	**J**	8300	1000	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
Benzo[b]fluoranthene	ND	UJ	8300	4200	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
Benzo[e]pyrene	**3500**	**J**	8300	2200	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
Benzo[g,h,i]perylene	ND	UJ	8300	1600	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
Benzo[k]fluoranthene	**3800**	**J**	8300	1100	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
C1-Chrysenes	**8800**	J	8300	8300	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
C1-Fluoranthenes/pyrene	**33000**	J	8300	8300	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
C1-Fluorenes	**27000**	J	8300	8300	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
C1-Phenanthrenes/Anthracenes	**70000**	J	8300	8300	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
C2-Chrysenes	ND	UJ	8300	8300	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
C2-Fluorenes	**17000**	UJ	8300	8300	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
C2-Naphthalenes	**180000**	UJ	8300	8300	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
C2-Phenanthrenes/Anthracenes	**30000**	UJ	8300	8300	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
C3-Chrysenes	ND	UJ	8300	8300	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
C3-Fluorenes	ND	UJ	8300	8300	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
C3-Naphthalenes	**88000**	~~**B**~~ J	8300	8300	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
C3-Phenanthrenes/Anthracenes	**9400**	J	8300	8300	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
C4-Chrysenes	ND	UJ	8300	8300	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
C4-Naphthalenes	**23000**	J	8300	8300	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
C4-Phenanthrenes/Anthracenes	ND	UJ	8300	8300	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
Chrysene	**12000**	~~**B**~~ J	8300	840	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
Dibenz(a,h)anthracene	ND	UJ	8300	1600	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
Fluoranthene	**18000**	~~**B**~~ J	8300	1500	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
Fluorene	**25000**	~~**B**~~ J	8300	1600	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
Indeno[1,2,3-cd]pyrene	ND	UJ	8300	2000	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
Naphthalene	**110000**	J	8300	4800	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
Perylene	ND	UJ	8300	2000	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
Phenanthrene	**74000**	~~**B**~~ UJ	8300	4300	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000
Pyrene	**28000**	~~**B**~~ UJ	8300	1700	ug/Kg	☼	11/07/22 14:30	12/05/22 00:47	10000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-methylnaphthalene-d10	*0*	*S1-*	*30 - 120*	*11/07/22 14:30*	*12/05/22 00:47*	*10000*
Benzo(a)pyrene-d12	*0*	*S1-*	*20 - 130*	*11/07/22 14:30*	*12/05/22 00:47*	*10000*
Fluoranthene-d10	*0*	*S1-*	*10 - 165*	*11/07/22 14:30*	*12/05/22 00:47*	*10000*
Fluorene-d10 (Surr)	*1022*	*S1+*	*30 - 130*	*11/07/22 14:30*	*12/05/22 00:47*	*10000*

Client Sample Results

Client: ARCADIS U.S. Inc Job ID: 480-203413-1
Project/Site: National Grid - Gloversville,NY

Client Sample ID: PDI-DPB-8 (0.8-8.5) Lab Sample ID: 480-203413-3

Date Collected: 11/01/22 12:30 **Matrix: Solid**
Date Received: 11/02/22 09:00 **Percent Solids: 62.5**

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	51000		1100	720	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
Acenaphthene	33000		1100	120	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
Acenaphthylene	2200		1100	260	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
Anthracene	16000	~~B~~ J	1100	140	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
Benzo[a]anthracene	8800	~~B~~	1100	190	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
Benzo[a]pyrene	4900		1100	130	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
Benzo[b]fluoranthene	2400		1100	540	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
Benzo[e]pyrene	2800		1100	290	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
Benzo[g,h,i]perylene	690	J	1100	210	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
Benzo[k]fluoranthene	2800		1100	150	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
C1-Chrysenes	8600		1100	1100	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
C1-Fluoranthenes/pyrene	33000		1100	1100	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
C1-Fluorenes	18000	J	1100	1100	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
C1-Phenanthrenes/Anthracenes	53000		1100	1100	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
C2-Chrysenes	4200		1100	1100	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
C2-Fluorenes	12000		1100	1100	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
C2-Naphthalenes	99000		1100	1100	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
C2-Phenanthrenes/Anthracenes	32000		1100	1100	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
C3-Chrysenes	ND	UJ	1100	1100	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
C3-Fluorenes	5900		1100	1100	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
C3-Naphthalenes	50000	~~B~~ J	1100	1100	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
C3-Phenanthrenes/Anthracenes	12000		1100	1100	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
C4-Chrysenes	ND	UJ	1100	1100	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
C4-Naphthalenes	17000		1100	1100	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
C4-Phenanthrenes/Anthracenes	3600	J	1100	1100	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
Chrysene	8500	~~B~~	1100	110	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
Dibenz(a,h)anthracene	380	J	1100	210	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
Fluoranthene	14000	~~B~~ J	1100	190	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
Fluorene	18000	~~B~~	1100	210	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
Indeno[1,2,3-cd]pyrene	770	J	1100	260	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
Naphthalene	38000	J	1100	620	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
Perylene	1000	J	1100	260	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
Phenanthrene	43000	~~B~~ J	1100	560	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000
Pyrene	22000	~~B~~	1100	220	ug/Kg	☼	11/07/22 14:30	12/06/22 01:57	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-methylnaphthalene-d10	*279*	*S1+*	*30 - 120*	*11/07/22 14:30*	*12/06/22 01:57*	*1000*
Benzo(a)pyrene-d12	*0*	*S1-*	*20 - 130*	*11/07/22 14:30*	*12/06/22 01:57*	*1000*
Fluoranthene-d10	*560*	*S1+*	*10 - 165*	*11/07/22 14:30*	*12/06/22 01:57*	*1000*
Fluorene-d10 (Surr)	*211*	*S1+*	*30 - 130*	*11/07/22 14:30*	*12/06/22 01:57*	*1000*

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	61000	DJ	2100	540	ug/Kg	☼	11/07/22 14:30	12/06/22 02:24	2000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-methylnaphthalene-d10	*385*	*S1+*	*30 - 120*	*11/07/22 14:30*	*12/06/22 02:24*	*2000*
Benzo(a)pyrene-d12	*176*	*S1+*	*20 - 130*	*11/07/22 14:30*	*12/06/22 02:24*	*2000*
Fluoranthene-d10	*506*	*S1+*	*10 - 165*	*11/07/22 14:30*	*12/06/22 02:24*	*2000*
Fluorene-d10 (Surr)	*325*	*S1+*	*30 - 130*	*11/07/22 14:30*	*12/06/22 02:24*	*2000*

Client Sample ID: MW-15S

Date Collected: 11/01/22 12:40
Date Received: 11/02/22 09:00

Lab Sample ID: 480-203413-4

Matrix: Water

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			11/07/22 23:09	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			11/07/22 23:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			11/07/22 23:09	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/07/22 23:09	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			11/07/22 23:09	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			11/07/22 23:09	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			11/07/22 23:09	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			11/07/22 23:09	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			11/07/22 23:09	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			11/07/22 23:09	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			11/07/22 23:09	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			11/07/22 23:09	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			11/07/22 23:09	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			11/07/22 23:09	1
2-Butanone (MEK)	ND		10	1.3	ug/L			11/07/22 23:09	1
2-Hexanone	ND		5.0	1.2	ug/L			11/07/22 23:09	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			11/07/22 23:09	1
Acetone	**5.0**	**J**	10	3.0	ug/L			11/07/22 23:09	1
Benzene	ND		1.0	0.41	ug/L			11/07/22 23:09	1
Bromodichloromethane	ND		1.0	0.39	ug/L			11/07/22 23:09	1
Bromoform	ND		1.0	0.26	ug/L			11/07/22 23:09	1
Bromomethane	ND		1.0	0.69	ug/L			11/07/22 23:09	1
Carbon disulfide	ND		1.0	0.19	ug/L			11/07/22 23:09	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			11/07/22 23:09	1
Chlorobenzene	ND		1.0	0.75	ug/L			11/07/22 23:09	1
Chloroethane	ND		1.0	0.32	ug/L			11/07/22 23:09	1
Chloroform	ND		1.0	0.34	ug/L			11/07/22 23:09	1
Chloromethane	ND		1.0	0.35	ug/L			11/07/22 23:09	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			11/07/22 23:09	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			11/07/22 23:09	1
Cyclohexane	ND		1.0	0.18	ug/L			11/07/22 23:09	1
Dibromochloromethane	ND		1.0	0.32	ug/L			11/07/22 23:09	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			11/07/22 23:09	1
Ethylbenzene	ND		1.0	0.74	ug/L			11/07/22 23:09	1
Isopropylbenzene	ND		1.0	0.79	ug/L			11/07/22 23:09	1
Methyl acetate	ND		2.5	1.3	ug/L			11/07/22 23:09	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			11/07/22 23:09	1
Methylcyclohexane	ND		1.0	0.16	ug/L			11/07/22 23:09	1
Methylene Chloride	ND		1.0	0.44	ug/L			11/07/22 23:09	1
Styrene	ND		1.0	0.73	ug/L			11/07/22 23:09	1
Tetrachloroethene	ND		1.0	0.36	ug/L			11/07/22 23:09	1
Toluene	ND		1.0	0.51	ug/L			11/07/22 23:09	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			11/07/22 23:09	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			11/07/22 23:09	1
Trichloroethene	ND		1.0	0.46	ug/L			11/07/22 23:09	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			11/07/22 23:09	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/07/22 23:09	1
Xylenes, Total	ND		2.0	0.66	ug/L			11/07/22 23:09	1

Client Sample Results

Client: ARCADIS U.S. Inc
Job ID: 480-203413-1
Project/Site: National Grid - Gloversville,NY

Client Sample ID: MW-15S
Lab Sample ID: 480-203413-4

Date Collected: 11/01/22 12:40
Matrix: Water
Date Received: 11/02/22 09:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*77 - 120*		*11/07/22 23:09*	*1*
4-Bromofluorobenzene (Surr)	*94*		*73 - 120*		*11/07/22 23:09*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 123*		*11/07/22 23:09*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/07/22 23:09*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-Trichlorophenol	ND		5.0	0.48	ug/L		11/03/22 08:38	11/04/22 22:20	1
2,4,6-Trichlorophenol	ND		5.0	0.61	ug/L		11/03/22 08:38	11/04/22 22:20	1
2,4-Dichlorophenol	ND		5.0	0.51	ug/L		11/03/22 08:38	11/04/22 22:20	1
2,4-Dimethylphenol	ND		5.0	0.50	ug/L		11/03/22 08:38	11/04/22 22:20	1
2,4-Dinitrophenol	ND		10	2.2	ug/L		11/03/22 08:38	11/04/22 22:20	1
2,4-Dinitrotoluene	ND		5.0	0.45	ug/L		11/03/22 08:38	11/04/22 22:20	1
2,6-Dinitrotoluene	ND		5.0	0.40	ug/L		11/03/22 08:38	11/04/22 22:20	1
2-Chloronaphthalene	ND		5.0	0.46	ug/L		11/03/22 08:38	11/04/22 22:20	1
2-Chlorophenol	ND		5.0	0.53	ug/L		11/03/22 08:38	11/04/22 22:20	1
2-Methylnaphthalene	ND		5.0	0.60	ug/L		11/03/22 08:38	11/04/22 22:20	1
2-Methylphenol	ND		5.0	0.40	ug/L		11/03/22 08:38	11/04/22 22:20	1
2-Nitroaniline	ND		10	0.42	ug/L		11/03/22 08:38	11/04/22 22:20	1
2-Nitrophenol	ND		5.0	0.48	ug/L		11/03/22 08:38	11/04/22 22:20	1
3,3'-Dichlorobenzidine	ND		5.0	0.40	ug/L		11/03/22 08:38	11/04/22 22:20	1
3-Nitroaniline	ND		10	0.48	ug/L		11/03/22 08:38	11/04/22 22:20	1
4,6-Dinitro-2-methylphenol	ND		10	2.2	ug/L		11/03/22 08:38	11/04/22 22:20	1
4-Bromophenyl phenyl ether	ND		5.0	0.45	ug/L		11/03/22 08:38	11/04/22 22:20	1
4-Chloro-3-methylphenol	ND		5.0	0.45	ug/L		11/03/22 08:38	11/04/22 22:20	1
4-Chloroaniline	ND		5.0	0.59	ug/L		11/03/22 08:38	11/04/22 22:20	1
4-Chlorophenyl phenyl ether	ND		5.0	0.35	ug/L		11/03/22 08:38	11/04/22 22:20	1
4-Methylphenol	ND		10	0.36	ug/L		11/03/22 08:38	11/04/22 22:20	1
4-Nitroaniline	ND		10	0.25	ug/L		11/03/22 08:38	11/04/22 22:20	1
4-Nitrophenol	ND		10	1.5	ug/L		11/03/22 08:38	11/04/22 22:20	1
Acenaphthene	ND		5.0	0.41	ug/L		11/03/22 08:38	11/04/22 22:20	1
Acenaphthylene	ND		5.0	0.38	ug/L		11/03/22 08:38	11/04/22 22:20	1
Acetophenone	ND		5.0	0.54	ug/L		11/03/22 08:38	11/04/22 22:20	1
Anthracene	ND		5.0	0.28	ug/L		11/03/22 08:38	11/04/22 22:20	1
Atrazine	ND		5.0	0.46	ug/L		11/03/22 08:38	11/04/22 22:20	1
Benzaldehyde	ND		5.0	0.27	ug/L		11/03/22 08:38	11/04/22 22:20	1
Benzo[a]anthracene	ND		5.0	0.36	ug/L		11/03/22 08:38	11/04/22 22:20	1
Benzo[a]pyrene	ND		5.0	0.47	ug/L		11/03/22 08:38	11/04/22 22:20	1
Benzo[b]fluoranthene	ND		5.0	0.34	ug/L		11/03/22 08:38	11/04/22 22:20	1
Benzo[g,h,i]perylene	ND		5.0	0.35	ug/L		11/03/22 08:38	11/04/22 22:20	1
Benzo[k]fluoranthene	ND		5.0	0.73	ug/L		11/03/22 08:38	11/04/22 22:20	1
Biphenyl	ND		5.0	0.65	ug/L		11/03/22 08:38	11/04/22 22:20	1
bis (2-chloroisopropyl) ether	ND		5.0	0.52	ug/L		11/03/22 08:38	11/04/22 22:20	1
Bis(2-chloroethoxy)methane	ND		5.0	0.35	ug/L		11/03/22 08:38	11/04/22 22:20	1
Bis(2-chloroethyl)ether	ND		5.0	0.40	ug/L		11/03/22 08:38	11/04/22 22:20	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/03/22 08:38	11/04/22 22:20	1
Butyl benzyl phthalate	ND		5.0	1.0	ug/L		11/03/22 08:38	11/04/22 22:20	1
Caprolactam	ND		5.0	2.2	ug/L		11/03/22 08:38	11/04/22 22:20	1
Carbazole	ND		5.0	0.30	ug/L		11/03/22 08:38	11/04/22 22:20	1
Chrysene	ND		5.0	0.33	ug/L		11/03/22 08:38	11/04/22 22:20	1

Client Sample ID: MW-15S

Date Collected: 11/01/22 12:40
Date Received: 11/02/22 09:00

Lab Sample ID: 480-203413-4

Matrix: Water

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		5.0	0.42	ug/L		11/03/22 08:38	11/04/22 22:20	1
Dibenzofuran	ND		10	0.51	ug/L		11/03/22 08:38	11/04/22 22:20	1
Diethyl phthalate	ND		5.0	0.22	ug/L		11/03/22 08:38	11/04/22 22:20	1
Dimethyl phthalate	ND		5.0	0.36	ug/L		11/03/22 08:38	11/04/22 22:20	1
Di-n-butyl phthalate	ND		5.0	0.31	ug/L		11/03/22 08:38	11/04/22 22:20	1
Di-n-octyl phthalate	ND		5.0	0.47	ug/L		11/03/22 08:38	11/04/22 22:20	1
Fluoranthene	ND		5.0	0.40	ug/L		11/03/22 08:38	11/04/22 22:20	1
Fluorene	ND		5.0	0.36	ug/L		11/03/22 08:38	11/04/22 22:20	1
Hexachlorobenzene	ND		5.0	0.51	ug/L		11/03/22 08:38	11/04/22 22:20	1
Hexachlorobutadiene	ND		5.0	0.68	ug/L		11/03/22 08:38	11/04/22 22:20	1
Hexachlorocyclopentadiene	ND		5.0	0.59	ug/L		11/03/22 08:38	11/04/22 22:20	1
Hexachloroethane	ND		5.0	0.59	ug/L		11/03/22 08:38	11/04/22 22:20	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.47	ug/L		11/03/22 08:38	11/04/22 22:20	1
Isophorone	ND		5.0	0.43	ug/L		11/03/22 08:38	11/04/22 22:20	1
Naphthalene	ND		5.0	0.76	ug/L		11/03/22 08:38	11/04/22 22:20	1
Nitrobenzene	ND		5.0	0.29	ug/L		11/03/22 08:38	11/04/22 22:20	1
N-Nitrosodi-n-propylamine	ND		5.0	0.54	ug/L		11/03/22 08:38	11/04/22 22:20	1
N-Nitrosodiphenylamine	ND		5.0	0.51	ug/L		11/03/22 08:38	11/04/22 22:20	1
Pentachlorophenol	ND		10	2.2	ug/L		11/03/22 08:38	11/04/22 22:20	1
Phenanthrene	ND		5.0	0.44	ug/L		11/03/22 08:38	11/04/22 22:20	1
Phenol	ND		5.0	0.39	ug/L		11/03/22 08:38	11/04/22 22:20	1
Pyrene	ND		5.0	0.34	ug/L		11/03/22 08:38	11/04/22 22:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*92*		*41 - 120*	*11/03/22 08:38*	*11/04/22 22:20*	*1*
2-Fluorobiphenyl (Surr)	*91*		*48 - 120*	*11/03/22 08:38*	*11/04/22 22:20*	*1*
2-Fluorophenol (Surr)	*60*		*35 - 120*	*11/03/22 08:38*	*11/04/22 22:20*	*1*
Nitrobenzene-d5 (Surr)	*80*		*46 - 120*	*11/03/22 08:38*	*11/04/22 22:20*	*1*
Phenol-d5 (Surr)	*48*		*22 - 120*	*11/03/22 08:38*	*11/04/22 22:20*	*1*
p-Terphenyl-d14 (Surr)	*87*		*60 - 148*	*11/03/22 08:38*	*11/04/22 22:20*	*1*

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: National Grid - Gloversville,NY

Job ID: 480-203413-1

Client Sample ID: TB

Date Collected: 11/01/22 00:00
Date Received: 11/02/22 09:00

Lab Sample ID: 480-203413-5

Matrix: Water

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			11/07/22 23:33	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			11/07/22 23:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			11/07/22 23:33	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/07/22 23:33	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			11/07/22 23:33	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			11/07/22 23:33	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			11/07/22 23:33	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			11/07/22 23:33	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			11/07/22 23:33	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			11/07/22 23:33	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			11/07/22 23:33	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			11/07/22 23:33	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			11/07/22 23:33	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			11/07/22 23:33	1
2-Butanone (MEK)	ND		10	1.3	ug/L			11/07/22 23:33	1
2-Hexanone	ND		5.0	1.2	ug/L			11/07/22 23:33	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			11/07/22 23:33	1
Acetone	ND		10	3.0	ug/L			11/07/22 23:33	1
Benzene	ND		1.0	0.41	ug/L			11/07/22 23:33	1
Bromodichloromethane	ND		1.0	0.39	ug/L			11/07/22 23:33	1
Bromoform	ND		1.0	0.26	ug/L			11/07/22 23:33	1
Bromomethane	ND		1.0	0.69	ug/L			11/07/22 23:33	1
Carbon disulfide	ND		1.0	0.19	ug/L			11/07/22 23:33	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			11/07/22 23:33	1
Chlorobenzene	ND		1.0	0.75	ug/L			11/07/22 23:33	1
Chloroethane	ND		1.0	0.32	ug/L			11/07/22 23:33	1
Chloroform	ND		1.0	0.34	ug/L			11/07/22 23:33	1
Chloromethane	ND		1.0	0.35	ug/L			11/07/22 23:33	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			11/07/22 23:33	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			11/07/22 23:33	1
Cyclohexane	ND		1.0	0.18	ug/L			11/07/22 23:33	1
Dibromochloromethane	ND		1.0	0.32	ug/L			11/07/22 23:33	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			11/07/22 23:33	1
Ethylbenzene	ND		1.0	0.74	ug/L			11/07/22 23:33	1
Isopropylbenzene	ND		1.0	0.79	ug/L			11/07/22 23:33	1
Methyl acetate	ND		2.5	1.3	ug/L			11/07/22 23:33	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			11/07/22 23:33	1
Methylcyclohexane	ND		1.0	0.16	ug/L			11/07/22 23:33	1
Methylene Chloride	ND		1.0	0.44	ug/L			11/07/22 23:33	1
Styrene	ND		1.0	0.73	ug/L			11/07/22 23:33	1
Tetrachloroethene	ND		1.0	0.36	ug/L			11/07/22 23:33	1
Toluene	ND		1.0	0.51	ug/L			11/07/22 23:33	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			11/07/22 23:33	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			11/07/22 23:33	1
Trichloroethene	ND		1.0	0.46	ug/L			11/07/22 23:33	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			11/07/22 23:33	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/07/22 23:33	1
Xylenes, Total	ND		2.0	0.66	ug/L			11/07/22 23:33	1

Client Sample ID: TB Lab Sample ID: 480-203413-5

Date Collected: 11/01/22 00:00 **Matrix: Water**
Date Received: 11/02/22 09:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		77 - 120		11/07/22 23:33	1
4-Bromofluorobenzene (Surr)	99		73 - 120		11/07/22 23:33	1
Dibromofluoromethane (Surr)	98		75 - 123		11/07/22 23:33	1
Toluene-d8 (Surr)	101		80 - 120		11/07/22 23:33	1

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

Syracuse eurofins | Environment Testing

#225

Client Information	Sampler: Dan Meandro	Lab PM: Schove, John R	Carrier Tracking No(s):	COC No: 480-178868-38272.4
Client Contact: Ms. Makenna Guarnieri	Phone: 315-992-0568	E-Mail: John.Schove@et.eurofinsus.com	State of Origin: NY	Page: ~~Page 4 of 5~~ 1 of 4
Company: ARCADIS U.S. Inc	PWSID:			Job #:
Address: One Lincoln Center 110 West Fayette St, Suite 300	Due Date Requested:			
City: Syracuse	TAT Requested (days): Standard 10 Day			
State, Zip: NY, 13202	Compliance Project: Δ Yes Δ No			
Phone: 315-671-9162(Tel)	PO #: B0036652.0009			
Email: makenna.guarnieri@arcadis.com	WO #:			
Project Name: National Grid - Gloversville,NY	Project #: 48020236			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)

480-204731 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270D - PAH Semivolatiles (PAH16)	8270E_SIM_ALK - Alkylated PAHs (PAH 34)	8270D - TCL SVOCs	8260C - TCL VOCs	Archive	Total Number of containers	Special Instructions/Note:
				Preservation Code:			N	N	N	A			
T-05-LB-MB (0-6)	12-12-22	1030	C	Solid			X					1	
T-05-LB-MB (6-12)	↓	1035	C	Solid			X					1	
T-05-LB-MB (12-24)		1040	C	Solid			X				X	1	
T-05-LB-MHUL (0-6)		1045	C	Solid			X					1	
T-05-LB-MHUL (6-12)		1050	C	Solid			X					1	
T-05-LB-MHUL (12-24)		1055	C	Solid			X				X	1	
T-05-RB-MB (0-6)		1100	C	Solid			X					1	
T-05-RB-MB (6-12)		1105	C	Solid			X					1	
T-05-RB-MB (12-24)		1110	C	Solid			X				X	1	
T-05-RB-MHUL (0-6)		1115	C	Solid		X	X					2	
T-05-RB-MHUL (6-12)	↓	1120	C	Solid			X					1	

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
D. Mal	12-13-22 1430	ANL	R. Einglik	12-13-22 1430	Syr
R. Einglik	12-13-22, 1905	Syr	C. Wallace	12/14/22 1000	TAB

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 3.5 #1 ICE

Ver: 06/08/2021

12/28/2022

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

Syracuse #225

eurofins Environment Testing

Client Information	Sampler: Dan Meandro	Lab PM: Schove, John R	Carrier Tracking No(s):
Client Contact: Ms. Makenna Guarnieri	Phone: 315-992-0568	E-Mail: John.Schove@et.eurofinsus.com	State of Origin: NY
Company: ARCADIS U.S. Inc	PWSID:		
Address: One Lincoln Center 110 West Fayette St, Suite 300	Due Date Requested:		
City: Syracuse	TAT Requested (days): Standard 10 Day		
State, Zip: NY, 13202	Compliance Project: Δ Yes Δ No		
Phone: 315-671-9162(Tel)	PO #: B0036652.0009		
Email: makenna.guarnieri@arcadis.com	WO #:		
Project Name: National Grid - Gloversville,NY	Project #: 48020236		
Site:	SSOW#:		

COC No: 480-178868-38272.1
Page: ~~Page 1 of 5~~ 2 of 4
Job #:

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270D - PAH Semivolatiles (PAH16)	8270E_SIM_ALK - Alkylated PAHs (PAH 34)	8270D - TCL SVOCs	8260C - TCL VOCs	Archive	Total Number of containers	Special Instructions/Note:
				Preservation Code:			N	N	N	A			
T-05-RB-MHWL (12-24)	12-12-22	1125	C	Solid			X				X	1	
T-06-LB-MB (0-6)	↓	1130	C	Solid			X					1	
T-06-LB-MB (6-12)		1135	C	Solid			X					1	
T-06-LB-MB (12-24)		1140	C	Solid							X	1	
T-06-LB-MHWL (0-6)		1145	C	Solid			X					1	
T-06-LB-MHWL (6-12)		1150	C	Solid		X	X					2	
T-06-LB-MHWL (12-24)		1155	C	Solid							X	1	
T-06-RB-MB (0-6)		1200	C	Solid			X					1	
T-06-RB-MB (6-12)		1205	C	Solid			X					1	
T-06-RB-MB (12-24)		1210	C	Solid							X	1	
T-06-RB-MHWL (0-6)	↓	1215	C	Solid			X					1	

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: 13R Date: Time: Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
D. Mat	12-12-22 1430	ANH	R. English	12-13-22 1430	Syr
R. English	12-12-22, 1905	Syr	C. Walker	12/14/22 1000	TAB

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

12/28/2022

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

Syracuse

eurofins | Environment Testing

Client Information	Sampler: Dan Meandro	Lab PM: Schove, John R	Carrier Tracking No(s): #225	COC No: 480-178868-38272.2
Client Contact: Ms. Makenna Guarnieri	Phone: 315-942-0568	E-Mail: John.Schove@et.eurofinsus.com	State of Origin: NY	Page: ~~Page 2 of 5~~ 3 of 4
Company: ARCADIS U.S. Inc	PWSID:			Job #:
Address: One Lincoln Center 110 West Fayette St, Suite 300	Due Date Requested:			
City: Syracuse	TAT Requested (days): Standard 10 Day			
State, Zip: NY, 13202	Compliance Project: Δ Yes Δ No			
Phone: 315-671-9162(Tel)	PO #: B0036652.0009			
Email: makenna.guarnieri@arcadis.com	WO #:			
Project Name: National Grid - Gloversville,NY	Project #: 48020236			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	orm MS/[redacted]s or No)	8270D - PAH Semivolatiles (PAH16)	8270E_SIM_ALK - Alkylated PAHs (PAH 34)	8270D - TCL SVOCs	8260C - TCL VOCs	Archive	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N	N	N	A		X	
T-06-RB-MHUL (6-12)	12-12-22	1220	C	Solid			X					1	
T-06-RB-MHUL (12-24)		1225	C	Solid							X	1	
T-07-LB-MB (0-6)		1230	C	Solid			X					1	
T-07-LB-MB (6-12)		1235	C	Solid			X					1	
T-07-LB-MB (12-24)		1240	C	Solid							X	1	
T-07-LB-MHUL (0-6)		1245	C	Solid			X					1	
T-07-LB-MHWL (6-12)		1250	C	Solid			X					1	
T-07-LB-MHWL (12-24)		1255	C	Solid							X	1	
T-07-RB-MB (0-6)		1300	C	Solid			X					1	
T-07-RB-MB (6-12)		1305	C	Solid			X					1	
T-07-RB-MB (12-24)		1310	C	Solid							X	1	

Possible Hazard Identification
X *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ______ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date: 13 RE	Time:	Method of Shipment:		
Relinquished by: D. M.	Date/Time: 12-~~12~~-22 1430	Company: ANA	Received by: R English	Date/Time: 12-13-22, 1430	Company: Syr
Relinquished by: R English	Date/Time: 12-13-22, 1900	Company: Syr	Received by: 800PG	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 06/08/2021

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

Syracuse

eurofins | Environment Testing

Client Information	Sampler: Dan Meandro	Lab PM: Schove, John R	Carrier Tracking No(s): #225	COC No: 480-178868-38272.3
Client Contact: Ms. Makenna Guarnieri	Phone: 315-992-0568	E-Mail: John.Schove@et.eurofinsus.com	State of Origin: NY	Page: ~~Page 3 of 5~~ 4 of 4
Company: ARCADIS U.S. Inc	PWSID:			Job #:
Address: One Lincoln Center 110 West Fayette St. Suite 300	Due Date Requested:			
City: Syracuse	TAT Requested (days): Standard 10-Day			
State, Zip: NY, 13202	Compliance Project: Δ Yes Δ No			
Phone: 315-671-9162(Tel)	PO #: B0036652.0009			
Email: makenna.guarnieri@arcadis.com	WO #:			
Project Name: National Grid - Gloversville,NY	Project #: 48020236			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270D - PAH Semivolatiles (PAH16)	8270E_SIM_ALK - Alkylated PAHs (PAH 34)	8270D - TCL SVOCs	8260C - TCL VOCs	Archive	Total Number of containers	Special Instructions/Note:
				Preservation Code:			N	N	N	A			
T-07-RB-MHUL (0-6)	12-12-22	1315	C	Solid			X					1	
T-07-RB-MHUL (6-12)	12-12-22	1320	C	Solid			X					1	
T-07-RB-MHUL (12-24)	12-12-22	1325	C	Solid							X	1	
DUP-121222-01	12-12-22	—	C	Solid			X					1	
DUP-121222-02	12-12-22	—	C	Solid			X					1	
				Solid									
				Solid									
				Solid									
				Solid									
				Solid									
				Solid									

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date: 13	Time:	Method of Shipment:	
Relinquished by: [signature]	Date/Time: 12-13-22 1430	Company: ARC	Received by: R English	Date/Time: 12-13-22, 1430	Company: Eyr
Relinquished by: R English	Date/Time: 12-13-22, 1900	Company: Eyr	Received by: [signature]	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

12/28/2022

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample Results

Client: ARCADIS U.S. Inc Job ID: 480-204731-1
Project/Site: National Grid - Gloversville,NY

Client Sample ID: T-05-LB-MB (0-6) **Lab Sample ID: 480-204731-1**
Date Collected: 12/12/22 10:30 **Matrix: Solid**
Date Received: 12/14/22 10:00 **Percent Solids: 78.2**

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		2200	320	ug/Kg	☼	12/14/22 15:54	12/15/22 21:59	10
Acenaphthylene	ND		2200	280	ug/Kg	☼	12/14/22 15:54	12/15/22 21:59	10
Anthracene	ND		2200	530	ug/Kg	☼	12/14/22 15:54	12/15/22 21:59	10
Benzo[a]anthracene	**1300**	**J**	2200	220	ug/Kg	☼	12/14/22 15:54	12/15/22 21:59	10
Benzo[a]pyrene	**1400**	**J**	2200	320	ug/Kg	☼	12/14/22 15:54	12/15/22 21:59	10
Benzo[b]fluoranthene	**2000**	**J**	2200	340	ug/Kg	☼	12/14/22 15:54	12/15/22 21:59	10
Benzo[g,h,i]perylene	**990**	**J**	2200	230	ug/Kg	☼	12/14/22 15:54	12/15/22 21:59	10
Benzo[k]fluoranthene	**810**	**J**	2200	280	ug/Kg	☼	12/14/22 15:54	12/15/22 21:59	10
Chrysene	**1600**	**J**	2200	480	ug/Kg	☼	12/14/22 15:54	12/15/22 21:59	10
Dibenz(a,h)anthracene	ND		2200	380	ug/Kg	☼	12/14/22 15:54	12/15/22 21:59	10
Fluoranthene	**3600**		2200	230	ug/Kg	☼	12/14/22 15:54	12/15/22 21:59	10
Fluorene	ND		2200	250	ug/Kg	☼	12/14/22 15:54	12/15/22 21:59	10
Indeno[1,2,3-cd]pyrene	**910**	**J**	2200	270	ug/Kg	☼	12/14/22 15:54	12/15/22 21:59	10
Naphthalene	ND		2200	280	ug/Kg	☼	12/14/22 15:54	12/15/22 21:59	10
Phenanthrene	**1500**	**J**	2200	320	ug/Kg	☼	12/14/22 15:54	12/15/22 21:59	10
Pyrene	**2600**		2200	250	ug/Kg	☼	12/14/22 15:54	12/15/22 21:59	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*89*		*60 - 120*	*12/14/22 15:54*	*12/15/22 21:59*	*10*
Nitrobenzene-d5 (Surr)	*84*		*53 - 120*	*12/14/22 15:54*	*12/15/22 21:59*	*10*
p-Terphenyl-d14 (Surr)	*105*		*79 - 130*	*12/14/22 15:54*	*12/15/22 21:59*	*10*

Client Sample ID: T-05-LB-MB (6-12)
Date Collected: 12/12/22 10:35
Date Received: 12/14/22 10:00

Lab Sample ID: 480-204731-2
Matrix: Solid
Percent Solids: 79.7

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		2100	310	ug/Kg	☼	12/14/22 15:54	12/15/22 22:23	10
Acenaphthylene	ND		2100	270	ug/Kg	☼	12/14/22 15:54	12/15/22 22:23	10
Anthracene	ND		2100	510	ug/Kg	☼	12/14/22 15:54	12/15/22 22:23	10
Benzo[a]anthracene	**790**	**J**	2100	210	ug/Kg	☼	12/14/22 15:54	12/15/22 22:23	10
Benzo[a]pyrene	**940**	**J**	2100	310	ug/Kg	☼	12/14/22 15:54	12/15/22 22:23	10
Benzo[b]fluoranthene	**1300**	**J**	2100	330	ug/Kg	☼	12/14/22 15:54	12/15/22 22:23	10
Benzo[g,h,i]perylene	**630**	**J**	2100	220	ug/Kg	☼	12/14/22 15:54	12/15/22 22:23	10
Benzo[k]fluoranthene	**530**	**J**	2100	270	ug/Kg	☼	12/14/22 15:54	12/15/22 22:23	10
Chrysene	**1000**	**J**	2100	470	ug/Kg	☼	12/14/22 15:54	12/15/22 22:23	10
Dibenz(a,h)anthracene	ND		2100	370	ug/Kg	☼	12/14/22 15:54	12/15/22 22:23	10
Fluoranthene	**2200**		2100	220	ug/Kg	☼	12/14/22 15:54	12/15/22 22:23	10
Fluorene	ND		2100	240	ug/Kg	☼	12/14/22 15:54	12/15/22 22:23	10
Indeno[1,2,3-cd]pyrene	**590**	**J**	2100	260	ug/Kg	☼	12/14/22 15:54	12/15/22 22:23	10
Naphthalene	ND		2100	270	ug/Kg	☼	12/14/22 15:54	12/15/22 22:23	10
Phenanthrene	**980**	**J**	2100	310	ug/Kg	☼	12/14/22 15:54	12/15/22 22:23	10
Pyrene	**1600**	**J**	2100	240	ug/Kg	☼	12/14/22 15:54	12/15/22 22:23	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*79*		*60 - 120*	*12/14/22 15:54*	*12/15/22 22:23*	*10*
Nitrobenzene-d5 (Surr)	*79*		*53 - 120*	*12/14/22 15:54*	*12/15/22 22:23*	*10*
p-Terphenyl-d14 (Surr)	*97*		*79 - 130*	*12/14/22 15:54*	*12/15/22 22:23*	*10*

Client: ARCADIS U.S. Inc
Project/Site: National Grid - Gloversville,NY

Job ID: 480-204731-1

Client Sample ID: T-05-LB-MHWL (0-6)
Date Collected: 12/12/22 10:45
Date Received: 12/14/22 10:00

Lab Sample ID: 480-204731-4
Matrix: Solid
Percent Solids: 69.7

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		2400	360	ug/Kg	☼	12/14/22 15:54	12/15/22 22:47	10
Acenaphthylene	ND		2400	310	ug/Kg	☼	12/14/22 15:54	12/15/22 22:47	10
Anthracene	**850**	**J**	2400	600	ug/Kg	☼	12/14/22 15:54	12/15/22 22:47	10
Benzo[a]anthracene	**2300**	**J**	2400	240	ug/Kg	☼	12/14/22 15:54	12/15/22 22:47	10
Benzo[a]pyrene	**2200**	**J**	2400	360	ug/Kg	☼	12/14/22 15:54	12/15/22 22:47	10
Benzo[b]fluoranthene	**3100**		2400	380	ug/Kg	☼	12/14/22 15:54	12/15/22 22:47	10
Benzo[g,h,i]perylene	**1400**	**J**	2400	260	ug/Kg	☼	12/14/22 15:54	12/15/22 22:47	10
Benzo[k]fluoranthene	**1200**	**J**	2400	310	ug/Kg	☼	12/14/22 15:54	12/15/22 22:47	10
Chrysene	**2600**		2400	540	ug/Kg	☼	12/14/22 15:54	12/15/22 22:47	10
Dibenz(a,h)anthracene	**480**	**J**	2400	430	ug/Kg	☼	12/14/22 15:54	12/15/22 22:47	10
Fluoranthene	**6700**		2400	260	ug/Kg	☼	12/14/22 15:54	12/15/22 22:47	10
Fluorene	**380**	**J**	2400	280	ug/Kg	☼	12/14/22 15:54	12/15/22 22:47	10
Indeno[1,2,3-cd]pyrene	**1300**	**J**	2400	300	ug/Kg	☼	12/14/22 15:54	12/15/22 22:47	10
Naphthalene	ND		2400	310	ug/Kg	☼	12/14/22 15:54	12/15/22 22:47	10
Phenanthrene	**4400**		2400	360	ug/Kg	☼	12/14/22 15:54	12/15/22 22:47	10
Pyrene	**4800**		2400	280	ug/Kg	☼	12/14/22 15:54	12/15/22 22:47	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*80*		*60 - 120*	*12/14/22 15:54*	*12/15/22 22:47*	*10*
Nitrobenzene-d5 (Surr)	*84*		*53 - 120*	*12/14/22 15:54*	*12/15/22 22:47*	*10*
p-Terphenyl-d14 (Surr)	*96*		*79 - 130*	*12/14/22 15:54*	*12/15/22 22:47*	*10*

Client Sample ID: T-05-LB-MHWL (6-12)

Lab Sample ID: 480-204731-5

Date Collected: 12/12/22 10:50

Matrix: Solid

Date Received: 12/14/22 10:00

Percent Solids: 62.6

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		2700	390	ug/Kg	☼	12/14/22 15:54	12/15/22 23:11	10
Acenaphthylene	ND		2700	340	ug/Kg	☼	12/14/22 15:54	12/15/22 23:11	10
Anthracene	ND		2700	660	ug/Kg	☼	12/14/22 15:54	12/15/22 23:11	10
Benzo[a]anthracene	**1100**	**J**	2700	270	ug/Kg	☼	12/14/22 15:54	12/15/22 23:11	10
Benzo[a]pyrene	**1200**	**J**	2700	390	ug/Kg	☼	12/14/22 15:54	12/15/22 23:11	10
Benzo[b]fluoranthene	**1600**	**J**	2700	420	ug/Kg	☼	12/14/22 15:54	12/15/22 23:11	10
Benzo[g,h,i]perylene	**750**	**J**	2700	280	ug/Kg	☼	12/14/22 15:54	12/15/22 23:11	10
Benzo[k]fluoranthene	**600**	**J**	2700	340	ug/Kg	☼	12/14/22 15:54	12/15/22 23:11	10
Chrysene	**1300**	**J**	2700	590	ug/Kg	☼	12/14/22 15:54	12/15/22 23:11	10
Dibenz(a,h)anthracene	ND		2700	470	ug/Kg	☼	12/14/22 15:54	12/15/22 23:11	10
Fluoranthene	**3000**		2700	280	ug/Kg	☼	12/14/22 15:54	12/15/22 23:11	10
Fluorene	ND		2700	310	ug/Kg	☼	12/14/22 15:54	12/15/22 23:11	10
Indeno[1,2,3-cd]pyrene	**710**	**J**	2700	330	ug/Kg	☼	12/14/22 15:54	12/15/22 23:11	10
Naphthalene	ND		2700	340	ug/Kg	☼	12/14/22 15:54	12/15/22 23:11	10
Phenanthrene	**1500**	**J**	2700	390	ug/Kg	☼	12/14/22 15:54	12/15/22 23:11	10
Pyrene	**2200**	**J**	2700	310	ug/Kg	☼	12/14/22 15:54	12/15/22 23:11	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*77*		*60 - 120*	*12/14/22 15:54*	*12/15/22 23:11*	*10*
Nitrobenzene-d5 (Surr)	*79*		*53 - 120*	*12/14/22 15:54*	*12/15/22 23:11*	*10*
p-Terphenyl-d14 (Surr)	*97*		*79 - 130*	*12/14/22 15:54*	*12/15/22 23:11*	*10*

Client Sample ID: T-05-RB-MB (0-6)
Lab Sample ID: 480-204731-7
Date Collected: 12/12/22 11:00
Matrix: Solid
Date Received: 12/14/22 10:00
Percent Solids: 82.7

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		200	30	ug/Kg	☼	12/14/22 15:54	12/16/22 00:00	1
Acenaphthylene	ND		200	26	ug/Kg	☼	12/14/22 15:54	12/16/22 00:00	1
Anthracene	ND		200	50	ug/Kg	☼	12/14/22 15:54	12/16/22 00:00	1
Benzo[a]anthracene	**44**	**J**	200	20	ug/Kg	☼	12/14/22 15:54	12/16/22 00:00	1
Benzo[a]pyrene	**47**	**J**	200	30	ug/Kg	☼	12/14/22 15:54	12/16/22 00:00	1
Benzo[b]fluoranthene	**58**	**J**	200	32	ug/Kg	☼	12/14/22 15:54	12/16/22 00:00	1
Benzo[g,h,i]perylene	**32**	**J**	200	21	ug/Kg	☼	12/14/22 15:54	12/16/22 00:00	1
Benzo[k]fluoranthene	**26**	**J**	200	26	ug/Kg	☼	12/14/22 15:54	12/16/22 00:00	1
Chrysene	**47**	**J**	200	45	ug/Kg	☼	12/14/22 15:54	12/16/22 00:00	1
Dibenz(a,h)anthracene	ND		200	36	ug/Kg	☼	12/14/22 15:54	12/16/22 00:00	1
Fluoranthene	**87**	**J**	200	21	ug/Kg	☼	12/14/22 15:54	12/16/22 00:00	1
Fluorene	ND		200	24	ug/Kg	☼	12/14/22 15:54	12/16/22 00:00	1
Indeno[1,2,3-cd]pyrene	**28**	**J**	200	25	ug/Kg	☼	12/14/22 15:54	12/16/22 00:00	1
Naphthalene	ND		200	26	ug/Kg	☼	12/14/22 15:54	12/16/22 00:00	1
Phenanthrene	**33**	**J**	200	30	ug/Kg	☼	12/14/22 15:54	12/16/22 00:00	1
Pyrene	**66**	**J**	200	24	ug/Kg	☼	12/14/22 15:54	12/16/22 00:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*61*		*60 - 120*	*12/14/22 15:54*	*12/16/22 00:00*	*1*
Nitrobenzene-d5 (Surr)	*56*		*53 - 120*	*12/14/22 15:54*	*12/16/22 00:00*	*1*
p-Terphenyl-d14 (Surr)	*87*		*79 - 130*	*12/14/22 15:54*	*12/16/22 00:00*	*1*

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: National Grid - Gloversville,NY

Job ID: 480-204731-1

Client Sample ID: T-05-RB-MB (6-12)
Date Collected: 12/12/22 11:05
Date Received: 12/14/22 10:00

Lab Sample ID: 480-204731-8
Matrix: Solid
Percent Solids: 87.1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		190	28	ug/Kg	☼	12/14/22 15:54	12/16/22 00:24	1
Acenaphthylene	ND		190	25	ug/Kg	☼	12/14/22 15:54	12/16/22 00:24	1
Anthracene	ND		190	48	ug/Kg	☼	12/14/22 15:54	12/16/22 00:24	1
Benzo[a]anthracene	**24**	**J**	190	19	ug/Kg	☼	12/14/22 15:54	12/16/22 00:24	1
Benzo[a]pyrene	**28**	**J**	190	28	ug/Kg	☼	12/14/22 15:54	12/16/22 00:24	1
Benzo[b]fluoranthene	**35**	**J**	190	31	ug/Kg	☼	12/14/22 15:54	12/16/22 00:24	1
Benzo[g,h,i]perylene	ND		190	20	ug/Kg	☼	12/14/22 15:54	12/16/22 00:24	1
Benzo[k]fluoranthene	ND		190	25	ug/Kg	☼	12/14/22 15:54	12/16/22 00:24	1
Chrysene	ND		190	43	ug/Kg	☼	12/14/22 15:54	12/16/22 00:24	1
Dibenz(a,h)anthracene	ND		190	34	ug/Kg	☼	12/14/22 15:54	12/16/22 00:24	1
Fluoranthene	**51**	**J**	190	20	ug/Kg	☼	12/14/22 15:54	12/16/22 00:24	1
Fluorene	ND		190	23	ug/Kg	☼	12/14/22 15:54	12/16/22 00:24	1
Indeno[1,2,3-cd]pyrene	ND		190	24	ug/Kg	☼	12/14/22 15:54	12/16/22 00:24	1
Naphthalene	ND		190	25	ug/Kg	☼	12/14/22 15:54	12/16/22 00:24	1
Phenanthrene	ND		190	28	ug/Kg	☼	12/14/22 15:54	12/16/22 00:24	1
Pyrene	**39**	**J**	190	23	ug/Kg	☼	12/14/22 15:54	12/16/22 00:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*77*		*60 - 120*	*12/14/22 15:54*	*12/16/22 00:24*	*1*
Nitrobenzene-d5 (Surr)	*64*		*53 - 120*	*12/14/22 15:54*	*12/16/22 00:24*	*1*
p-Terphenyl-d14 (Surr)	*85*		*79 - 130*	*12/14/22 15:54*	*12/16/22 00:24*	*1*

Client Sample ID: T-05-RB-MHWL (0-6)
Lab Sample ID: 480-204731-10
Date Collected: 12/12/22 11:15
Matrix: Solid
Date Received: 12/14/22 10:00
Percent Solids: 77.2

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		1100	160	ug/Kg	☼	12/14/22 15:54	12/15/22 21:35	5
Acenaphthylene	ND		1100	140	ug/Kg	☼	12/14/22 15:54	12/15/22 21:35	5
Anthracene	ND		1100	270	ug/Kg	☼	12/14/22 15:54	12/15/22 21:35	5
Benzo[a]anthracene	**770**	**J**	1100	110	ug/Kg	☼	12/14/22 15:54	12/15/22 21:35	5
Benzo[a]pyrene	**850**	**J**	1100	160	ug/Kg	☼	12/14/22 15:54	12/15/22 21:35	5
Benzo[b]fluoranthene	**1200**		1100	170	ug/Kg	☼	12/14/22 15:54	12/15/22 21:35	5
Benzo[g,h,i]perylene	**580**	**J**	1100	120	ug/Kg	☼	12/14/22 15:54	12/15/22 21:35	5
Benzo[k]fluoranthene	**470**	**J**	1100	140	ug/Kg	☼	12/14/22 15:54	12/15/22 21:35	5
Chrysene	**930**	**J**	1100	240	ug/Kg	☼	12/14/22 15:54	12/15/22 21:35	5
Dibenz(a,h)anthracene	**190**	**J**	1100	190	ug/Kg	☼	12/14/22 15:54	12/15/22 21:35	5
Fluoranthene	**2000**	~~**F2**~~ J	1100	120	ug/Kg	☼	12/14/22 15:54	12/15/22 21:35	5
Fluorene	ND		1100	130	ug/Kg	☼	12/14/22 15:54	12/15/22 21:35	5
Indeno[1,2,3-cd]pyrene	**470**	**J**	1100	140	ug/Kg	☼	12/14/22 15:54	12/15/22 21:35	5
Naphthalene	ND		1100	140	ug/Kg	☼	12/14/22 15:54	12/15/22 21:35	5
Phenanthrene	**920**	**J**	1100	160	ug/Kg	☼	12/14/22 15:54	12/15/22 21:35	5
Pyrene	**1500**		1100	130	ug/Kg	☼	12/14/22 15:54	12/15/22 21:35	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*76*		*60 - 120*	*12/14/22 15:54*	*12/15/22 21:35*	*5*
Nitrobenzene-d5 (Surr)	*72*		*53 - 120*	*12/14/22 15:54*	*12/15/22 21:35*	*5*
p-Terphenyl-d14 (Surr)	*92*		*79 - 130*	*12/14/22 15:54*	*12/15/22 21:35*	*5*

Client Sample ID: T-05-RB-MHWL (6-12)
Lab Sample ID: 480-204731-11

Date Collected: 12/12/22 11:20
Matrix: Solid
Date Received: 12/14/22 10:00
Percent Solids: 90.7

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		190	27	ug/Kg	☼	12/14/22 15:54	12/16/22 00:49	1
Acenaphthylene	ND		190	24	ug/Kg	☼	12/14/22 15:54	12/16/22 00:49	1
Anthracene	ND		190	46	ug/Kg	☼	12/14/22 15:54	12/16/22 00:49	1
Benzo[a]anthracene	**44**	**J**	190	19	ug/Kg	☼	12/14/22 15:54	12/16/22 00:49	1
Benzo[a]pyrene	**55**	**J**	190	27	ug/Kg	☼	12/14/22 15:54	12/16/22 00:49	1
Benzo[b]fluoranthene	**78**	**J**	190	29	ug/Kg	☼	12/14/22 15:54	12/16/22 00:49	1
Benzo[g,h,i]perylene	**42**	**J**	190	20	ug/Kg	☼	12/14/22 15:54	12/16/22 00:49	1
Benzo[k]fluoranthene	**33**	**J**	190	24	ug/Kg	☼	12/14/22 15:54	12/16/22 00:49	1
Chrysene	**59**	**J**	190	41	ug/Kg	☼	12/14/22 15:54	12/16/22 00:49	1
Dibenz(a,h)anthracene	ND		190	33	ug/Kg	☼	12/14/22 15:54	12/16/22 00:49	1
Fluoranthene	**100**	**J**	190	20	ug/Kg	☼	12/14/22 15:54	12/16/22 00:49	1
Fluorene	ND		190	22	ug/Kg	☼	12/14/22 15:54	12/16/22 00:49	1
Indeno[1,2,3-cd]pyrene	**39**	**J**	190	23	ug/Kg	☼	12/14/22 15:54	12/16/22 00:49	1
Naphthalene	ND		190	24	ug/Kg	☼	12/14/22 15:54	12/16/22 00:49	1
Phenanthrene	**36**	**J**	190	27	ug/Kg	☼	12/14/22 15:54	12/16/22 00:49	1
Pyrene	**84**	**J**	190	22	ug/Kg	☼	12/14/22 15:54	12/16/22 00:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*73*		*60 - 120*	*12/14/22 15:54*	*12/16/22 00:49*	*1*
Nitrobenzene-d5 (Surr)	*65*		*53 - 120*	*12/14/22 15:54*	*12/16/22 00:49*	*1*
p-Terphenyl-d14 (Surr)	*87*		*79 - 130*	*12/14/22 15:54*	*12/16/22 00:49*	*1*

Client: ARCADIS U.S. Inc — Job ID: 480-204731-1
Project/Site: National Grid - Gloversville,NY

Client Sample ID: T-06-LB-MB (0-6) — **Lab Sample ID: 480-204731-13**
Date Collected: 12/12/22 11:30 — **Matrix: Solid**
Date Received: 12/14/22 10:00 — **Percent Solids: 83.7**

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		1000	150	ug/Kg	☼	12/14/22 15:54	12/16/22 01:37	5
Acenaphthylene	ND		1000	130	ug/Kg	☼	12/14/22 15:54	12/16/22 01:37	5
Anthracene	**280**	**J**	1000	250	ug/Kg	☼	12/14/22 15:54	12/16/22 01:37	5
Benzo[a]anthracene	**1100**		1000	100	ug/Kg	☼	12/14/22 15:54	12/16/22 01:37	5
Benzo[a]pyrene	**960**	**J**	1000	150	ug/Kg	☼	12/14/22 15:54	12/16/22 01:37	5
Benzo[b]fluoranthene	**1200**		1000	160	ug/Kg	☼	12/14/22 15:54	12/16/22 01:37	5
Benzo[g,h,i]perylene	**520**	**J**	1000	110	ug/Kg	☼	12/14/22 15:54	12/16/22 01:37	5
Benzo[k]fluoranthene	**510**	**J**	1000	130	ug/Kg	☼	12/14/22 15:54	12/16/22 01:37	5
Chrysene	**970**	**J**	1000	220	ug/Kg	☼	12/14/22 15:54	12/16/22 01:37	5
Dibenz(a,h)anthracene	**200**	**J**	1000	180	ug/Kg	☼	12/14/22 15:54	12/16/22 01:37	5
Fluoranthene	**1900**		1000	110	ug/Kg	☼	12/14/22 15:54	12/16/22 01:37	5
Fluorene	ND		1000	120	ug/Kg	☼	12/14/22 15:54	12/16/22 01:37	5
Indeno[1,2,3-cd]pyrene	**550**	**J**	1000	120	ug/Kg	☼	12/14/22 15:54	12/16/22 01:37	5
Naphthalene	ND		1000	130	ug/Kg	☼	12/14/22 15:54	12/16/22 01:37	5
Phenanthrene	**800**	**J**	1000	150	ug/Kg	☼	12/14/22 15:54	12/16/22 01:37	5
Pyrene	**1400**		1000	120	ug/Kg	☼	12/14/22 15:54	12/16/22 01:37	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*76*		*60 - 120*	*12/14/22 15:54*	*12/16/22 01:37*	*5*
Nitrobenzene-d5 (Surr)	*62*		*53 - 120*	*12/14/22 15:54*	*12/16/22 01:37*	*5*
p-Terphenyl-d14 (Surr)	*99*		*79 - 130*	*12/14/22 15:54*	*12/16/22 01:37*	*5*

Client Sample ID: T-06-LB-MB (6-12)

Lab Sample ID: 480-204731-14

Date Collected: 12/12/22 11:35
Matrix: Solid
Date Received: 12/14/22 10:00
Percent Solids: 88.1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		950	140	ug/Kg	☼	12/14/22 15:54	12/16/22 02:01	5
Acenaphthylene	ND		950	120	ug/Kg	☼	12/14/22 15:54	12/16/22 02:01	5
Anthracene	ND		950	230	ug/Kg	☼	12/14/22 15:54	12/16/22 02:01	5
Benzo[a]anthracene	**590**	**J**	950	95	ug/Kg	☼	12/14/22 15:54	12/16/22 02:01	5
Benzo[a]pyrene	**550**	**J**	950	140	ug/Kg	☼	12/14/22 15:54	12/16/22 02:01	5
Benzo[b]fluoranthene	**650**	**J**	950	150	ug/Kg	☼	12/14/22 15:54	12/16/22 02:01	5
Benzo[g,h,i]perylene	**290**	**J**	950	100	ug/Kg	☼	12/14/22 15:54	12/16/22 02:01	5
Benzo[k]fluoranthene	**300**	**J**	950	120	ug/Kg	☼	12/14/22 15:54	12/16/22 02:01	5
Chrysene	**560**	**J**	950	210	ug/Kg	☼	12/14/22 15:54	12/16/22 02:01	5
Dibenz(a,h)anthracene	ND		950	170	ug/Kg	☼	12/14/22 15:54	12/16/22 02:01	5
Fluoranthene	**1100**		950	100	ug/Kg	☼	12/14/22 15:54	12/16/22 02:01	5
Fluorene	ND		950	110	ug/Kg	☼	12/14/22 15:54	12/16/22 02:01	5
Indeno[1,2,3-cd]pyrene	**270**	**J**	950	120	ug/Kg	☼	12/14/22 15:54	12/16/22 02:01	5
Naphthalene	ND		950	120	ug/Kg	☼	12/14/22 15:54	12/16/22 02:01	5
Phenanthrene	**370**	**J**	950	140	ug/Kg	☼	12/14/22 15:54	12/16/22 02:01	5
Pyrene	**860**	**J**	950	110	ug/Kg	☼	12/14/22 15:54	12/16/22 02:01	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*82*		*60 - 120*	*12/14/22 15:54*	*12/16/22 02:01*	*5*
Nitrobenzene-d5 (Surr)	*74*		*53 - 120*	*12/14/22 15:54*	*12/16/22 02:01*	*5*
p-Terphenyl-d14 (Surr)	*90*		*79 - 130*	*12/14/22 15:54*	*12/16/22 02:01*	*5*

Client Sample ID: T-06-LB-MHWL (0-6)

Lab Sample ID: 480-204731-16

Date Collected: 12/12/22 11:50
Matrix: Solid
Date Received: 12/14/22 10:00
Percent Solids: 83.0

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		1000	150	ug/Kg	☼	12/14/22 15:54	12/16/22 02:26	5
Acenaphthylene	ND		1000	130	ug/Kg	☼	12/14/22 15:54	12/16/22 02:26	5
Anthracene	ND		1000	250	ug/Kg	☼	12/14/22 15:54	12/16/22 02:26	5
Benzo[a]anthracene	**1000**		1000	100	ug/Kg	☼	12/14/22 15:54	12/16/22 02:26	5
Benzo[a]pyrene	**1000**		1000	150	ug/Kg	☼	12/14/22 15:54	12/16/22 02:26	5
Benzo[b]fluoranthene	**1300**		1000	160	ug/Kg	☼	12/14/22 15:54	12/16/22 02:26	5
Benzo[g,h,i]perylene	**540**	**J**	1000	110	ug/Kg	☼	12/14/22 15:54	12/16/22 02:26	5
Benzo[k]fluoranthene	**560**	**J**	1000	130	ug/Kg	☼	12/14/22 15:54	12/16/22 02:26	5
Chrysene	**1100**		1000	230	ug/Kg	☼	12/14/22 15:54	12/16/22 02:26	5
Dibenz(a,h)anthracene	**220**	**J**	1000	180	ug/Kg	☼	12/14/22 15:54	12/16/22 02:26	5
Fluoranthene	**1900**		1000	110	ug/Kg	☼	12/14/22 15:54	12/16/22 02:26	5
Fluorene	ND		1000	120	ug/Kg	☼	12/14/22 15:54	12/16/22 02:26	5
Indeno[1,2,3-cd]pyrene	**520**	**J**	1000	120	ug/Kg	☼	12/14/22 15:54	12/16/22 02:26	5
Naphthalene	ND		1000	130	ug/Kg	☼	12/14/22 15:54	12/16/22 02:26	5
Phenanthrene	**630**	**J**	1000	150	ug/Kg	☼	12/14/22 15:54	12/16/22 02:26	5
Pyrene	**1500**		1000	120	ug/Kg	☼	12/14/22 15:54	12/16/22 02:26	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*69*		*60 - 120*	*12/14/22 15:54*	*12/16/22 02:26*	*5*
Nitrobenzene-d5 (Surr)	*58*		*53 - 120*	*12/14/22 15:54*	*12/16/22 02:26*	*5*
p-Terphenyl-d14 (Surr)	*89*		*79 - 130*	*12/14/22 15:54*	*12/16/22 02:26*	*5*

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: National Grid - Gloversville,NY

Job ID: 480-204731-1

Client Sample ID: T-06-LB-MHWL (6-12)
Date Collected: 12/12/22 11:55
Date Received: 12/14/22 10:00

Lab Sample ID: 480-204731-17
Matrix: Solid
Percent Solids: 89.0

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		930	140	ug/Kg	☼	12/15/22 07:52	12/16/22 16:59	5
Acenaphthylene	ND		930	120	ug/Kg	☼	12/15/22 07:52	12/16/22 16:59	5
Anthracene	ND	~~F1 F2~~ UJ	930	230	ug/Kg	☼	12/15/22 07:52	12/16/22 16:59	5
Benzo[a]anthracene	**570**	**J ~~F1 F2~~**	930	93	ug/Kg	☼	12/15/22 07:52	12/16/22 16:59	5
Benzo[a]pyrene	**520**	**J ~~F1~~**	930	140	ug/Kg	☼	12/15/22 07:52	12/16/22 16:59	5
Benzo[b]fluoranthene	**670**	**J ~~F2~~**	930	150	ug/Kg	☼	12/15/22 07:52	12/16/22 16:59	5
Benzo[g,h,i]perylene	**310**	**J**	930	99	ug/Kg	☼	12/15/22 07:52	12/16/22 16:59	5
Benzo[k]fluoranthene	**290**	**J**	930	120	ug/Kg	☼	12/15/22 07:52	12/16/22 16:59	5
Chrysene	**540**	**J ~~F1 F2~~**	930	210	ug/Kg	☼	12/15/22 07:52	12/16/22 16:59	5
Dibenz(a,h)anthracene	ND		930	160	ug/Kg	☼	12/15/22 07:52	12/16/22 16:59	5
Fluoranthene	**990**	**~~F1 F2~~** J	930	99	ug/Kg	☼	12/15/22 07:52	12/16/22 16:59	5
Fluorene	ND	~~F1~~	930	110	ug/Kg	☼	12/15/22 07:52	12/16/22 16:59	5
Indeno[1,2,3-cd]pyrene	**300**	**J**	930	120	ug/Kg	☼	12/15/22 07:52	12/16/22 16:59	5
Naphthalene	ND		930	120	ug/Kg	☼	12/15/22 07:52	12/16/22 16:59	5
Phenanthrene	**460**	**J ~~F1 F2~~**	930	140	ug/Kg	☼	12/15/22 07:52	12/16/22 16:59	5
Pyrene	**800**	**J ~~F1~~**	930	110	ug/Kg	☼	12/15/22 07:52	12/16/22 16:59	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*104*		*60 - 120*	*12/15/22 07:52*	*12/16/22 16:59*	*5*
Nitrobenzene-d5 (Surr)	*101*		*53 - 120*	*12/15/22 07:52*	*12/16/22 16:59*	*5*
p-Terphenyl-d14 (Surr)	*116*		*79 - 130*	*12/15/22 07:52*	*12/16/22 16:59*	*5*

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: National Grid - Gloversville,NY

Job ID: 480-204731-1

Client Sample ID: T-06-RB-MB (0-6)
Date Collected: 12/12/22 12:05
Date Received: 12/14/22 10:00

Lab Sample ID: 480-204731-19
Matrix: Solid
Percent Solids: 59.6

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		2800	410	ug/Kg	☼	12/14/22 15:54	12/16/22 02:50	10
Acenaphthylene	ND		2800	360	ug/Kg	☼	12/14/22 15:54	12/16/22 02:50	10
Anthracene	ND		2800	700	ug/Kg	☼	12/14/22 15:54	12/16/22 02:50	10
Benzo[a]anthracene	**1100**	**J**	2800	280	ug/Kg	☼	12/14/22 15:54	12/16/22 02:50	10
Benzo[a]pyrene	**1300**	**J**	2800	410	ug/Kg	☼	12/14/22 15:54	12/16/22 02:50	10
Benzo[b]fluoranthene	**1700**	**J**	2800	450	ug/Kg	☼	12/14/22 15:54	12/16/22 02:50	10
Benzo[g,h,i]perylene	**750**	**J**	2800	300	ug/Kg	☼	12/14/22 15:54	12/16/22 02:50	10
Benzo[k]fluoranthene	**720**	**J**	2800	360	ug/Kg	☼	12/14/22 15:54	12/16/22 02:50	10
Chrysene	**1400**	**J**	2800	630	ug/Kg	☼	12/14/22 15:54	12/16/22 02:50	10
Dibenz(a,h)anthracene	ND		2800	500	ug/Kg	☼	12/14/22 15:54	12/16/22 02:50	10
Fluoranthene	**3000**		2800	300	ug/Kg	☼	12/14/22 15:54	12/16/22 02:50	10
Fluorene	ND		2800	330	ug/Kg	☼	12/14/22 15:54	12/16/22 02:50	10
Indeno[1,2,3-cd]pyrene	**710**	**J**	2800	350	ug/Kg	☼	12/14/22 15:54	12/16/22 02:50	10
Naphthalene	ND		2800	360	ug/Kg	☼	12/14/22 15:54	12/16/22 02:50	10
Phenanthrene	**1200**	**J**	2800	410	ug/Kg	☼	12/14/22 15:54	12/16/22 02:50	10
Pyrene	**2000**	**J**	2800	330	ug/Kg	☼	12/14/22 15:54	12/16/22 02:50	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*72*		*60 - 120*	*12/14/22 15:54*	*12/16/22 02:50*	*10*
Nitrobenzene-d5 (Surr)	*68*		*53 - 120*	*12/14/22 15:54*	*12/16/22 02:50*	*10*
p-Terphenyl-d14 (Surr)	*94*		*79 - 130*	*12/14/22 15:54*	*12/16/22 02:50*	*10*

Client: ARCADIS U.S. Inc
Project/Site: National Grid - Gloversville,NY

Job ID: 480-204731-1

Client Sample ID: T-06-RB-MB (6-12)

Date Collected: 12/12/22 12:10
Date Received: 12/14/22 10:00

Lab Sample ID: 480-204731-20
Matrix: Solid
Percent Solids: 64.0

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		2600	380	ug/Kg	☼	12/14/22 15:54	12/16/22 03:14	10
Acenaphthylene	ND		2600	340	ug/Kg	☼	12/14/22 15:54	12/16/22 03:14	10
Anthracene	ND		2600	650	ug/Kg	☼	12/14/22 15:54	12/16/22 03:14	10
Benzo[a]anthracene	**710**	**J**	2600	260	ug/Kg	☼	12/14/22 15:54	12/16/22 03:14	10
Benzo[a]pyrene	**810**	**J**	2600	380	ug/Kg	☼	12/14/22 15:54	12/16/22 03:14	10
Benzo[b]fluoranthene	**1100**	**J**	2600	420	ug/Kg	☼	12/14/22 15:54	12/16/22 03:14	10
Benzo[g,h,i]perylene	**460**	**J**	2600	280	ug/Kg	☼	12/14/22 15:54	12/16/22 03:14	10
Benzo[k]fluoranthene	**440**	**J**	2600	340	ug/Kg	☼	12/14/22 15:54	12/16/22 03:14	10
Chrysene	**880**	**J**	2600	580	ug/Kg	☼	12/14/22 15:54	12/16/22 03:14	10
Dibenz(a,h)anthracene	ND		2600	460	ug/Kg	☼	12/14/22 15:54	12/16/22 03:14	10
Fluoranthene	**1800**	**J**	2600	280	ug/Kg	☼	12/14/22 15:54	12/16/22 03:14	10
Fluorene	ND		2600	310	ug/Kg	☼	12/14/22 15:54	12/16/22 03:14	10
Indeno[1,2,3-cd]pyrene	**430**	**J**	2600	320	ug/Kg	☼	12/14/22 15:54	12/16/22 03:14	10
Naphthalene	ND		2600	340	ug/Kg	☼	12/14/22 15:54	12/16/22 03:14	10
Phenanthrene	**800**	**J**	2600	380	ug/Kg	☼	12/14/22 15:54	12/16/22 03:14	10
Pyrene	**1300**	**J**	2600	310	ug/Kg	☼	12/14/22 15:54	12/16/22 03:14	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*75*		*60 - 120*	*12/14/22 15:54*	*12/16/22 03:14*	*10*
Nitrobenzene-d5 (Surr)	*65*		*53 - 120*	*12/14/22 15:54*	*12/16/22 03:14*	*10*
p-Terphenyl-d14 (Surr)	*96*		*79 - 130*	*12/14/22 15:54*	*12/16/22 03:14*	*10*

Client Sample ID: T-06-RB-MHWL (0-6) — Lab Sample ID: 480-204731-22

Date Collected: 12/12/22 12:20 — **Matrix: Solid**
Date Received: 12/14/22 10:00 — **Percent Solids: 60.1**

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		2800	410	ug/Kg	☼	12/14/22 15:54	12/16/22 03:38	10
Acenaphthylene	ND		2800	360	ug/Kg	☼	12/14/22 15:54	12/16/22 03:38	10
Anthracene	ND		2800	690	ug/Kg	☼	12/14/22 15:54	12/16/22 03:38	10
Benzo[a]anthracene	**1500**	**J**	2800	280	ug/Kg	☼	12/14/22 15:54	12/16/22 03:38	10
Benzo[a]pyrene	**1700**	**J**	2800	410	ug/Kg	☼	12/14/22 15:54	12/16/22 03:38	10
Benzo[b]fluoranthene	**2300**	**J**	2800	440	ug/Kg	☼	12/14/22 15:54	12/16/22 03:38	10
Benzo[g,h,i]perylene	**1100**	**J**	2800	300	ug/Kg	☼	12/14/22 15:54	12/16/22 03:38	10
Benzo[k]fluoranthene	**990**	**J**	2800	360	ug/Kg	☼	12/14/22 15:54	12/16/22 03:38	10
Chrysene	**1900**	**J**	2800	630	ug/Kg	☼	12/14/22 15:54	12/16/22 03:38	10
Dibenz(a,h)anthracene	ND		2800	490	ug/Kg	☼	12/14/22 15:54	12/16/22 03:38	10
Fluoranthene	**4500**		2800	300	ug/Kg	☼	12/14/22 15:54	12/16/22 03:38	10
Fluorene	ND		2800	330	ug/Kg	☼	12/14/22 15:54	12/16/22 03:38	10
Indeno[1,2,3-cd]pyrene	**980**	**J**	2800	350	ug/Kg	☼	12/14/22 15:54	12/16/22 03:38	10
Naphthalene	ND		2800	360	ug/Kg	☼	12/14/22 15:54	12/16/22 03:38	10
Phenanthrene	**2300**	**J**	2800	410	ug/Kg	☼	12/14/22 15:54	12/16/22 03:38	10
Pyrene	**3200**		2800	330	ug/Kg	☼	12/14/22 15:54	12/16/22 03:38	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*72*		*60 - 120*	*12/14/22 15:54*	*12/16/22 03:38*	*10*
Nitrobenzene-d5 (Surr)	*68*		*53 - 120*	*12/14/22 15:54*	*12/16/22 03:38*	*10*
p-Terphenyl-d14 (Surr)	*97*		*79 - 130*	*12/14/22 15:54*	*12/16/22 03:38*	*10*

Client Sample ID: T-06-RB-MHWL (6-12)

Lab Sample ID: 480-204731-23

Date Collected: 12/12/22 12:25
Matrix: Solid
Date Received: 12/14/22 10:00
Percent Solids: 60.3

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		2800	410	ug/Kg	☼	12/14/22 15:54	12/16/22 04:02	10
Acenaphthylene	ND		2800	360	ug/Kg	☼	12/14/22 15:54	12/16/22 04:02	10
Anthracene	ND		2800	680	ug/Kg	☼	12/14/22 15:54	12/16/22 04:02	10
Benzo[a]anthracene	**2200**	**J**	2800	280	ug/Kg	☼	12/14/22 15:54	12/16/22 04:02	10
Benzo[a]pyrene	**2500**	**J**	2800	410	ug/Kg	☼	12/14/22 15:54	12/16/22 04:02	10
Benzo[b]fluoranthene	**3300**		2800	440	ug/Kg	☼	12/14/22 15:54	12/16/22 04:02	10
Benzo[g,h,i]perylene	**1300**	**J**	2800	290	ug/Kg	☼	12/14/22 15:54	12/16/22 04:02	10
Benzo[k]fluoranthene	**1400**	**J**	2800	360	ug/Kg	☼	12/14/22 15:54	12/16/22 04:02	10
Chrysene	**2900**		2800	620	ug/Kg	☼	12/14/22 15:54	12/16/22 04:02	10
Dibenz(a,h)anthracene	ND		2800	490	ug/Kg	☼	12/14/22 15:54	12/16/22 04:02	10
Fluoranthene	**6500**		2800	290	ug/Kg	☼	12/14/22 15:54	12/16/22 04:02	10
Fluorene	ND		2800	330	ug/Kg	☼	12/14/22 15:54	12/16/22 04:02	10
Indeno[1,2,3-cd]pyrene	**1300**	**J**	2800	340	ug/Kg	☼	12/14/22 15:54	12/16/22 04:02	10
Naphthalene	ND		2800	360	ug/Kg	☼	12/14/22 15:54	12/16/22 04:02	10
Phenanthrene	**3500**		2800	410	ug/Kg	☼	12/14/22 15:54	12/16/22 04:02	10
Pyrene	**4500**		2800	330	ug/Kg	☼	12/14/22 15:54	12/16/22 04:02	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*74*		*60 - 120*	*12/14/22 15:54*	*12/16/22 04:02*	*10*
Nitrobenzene-d5 (Surr)	*69*		*53 - 120*	*12/14/22 15:54*	*12/16/22 04:02*	*10*
p-Terphenyl-d14 (Surr)	*91*		*79 - 130*	*12/14/22 15:54*	*12/16/22 04:02*	*10*

Client Sample ID: T-07-LB-MB (0-6)

Date Collected: 12/12/22 12:35
Date Received: 12/14/22 10:00

Lab Sample ID: 480-204731-25
Matrix: Solid
Percent Solids: 58.2

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		2900	420	ug/Kg	☼	12/14/22 15:54	12/16/22 04:26	10
Acenaphthylene	ND		2900	370	ug/Kg	☼	12/14/22 15:54	12/16/22 04:26	10
Anthracene	ND		2900	710	ug/Kg	☼	12/14/22 15:54	12/16/22 04:26	10
Benzo[a]anthracene	**1000**	**J**	2900	290	ug/Kg	☼	12/14/22 15:54	12/16/22 04:26	10
Benzo[a]pyrene	**1100**	**J**	2900	420	ug/Kg	☼	12/14/22 15:54	12/16/22 04:26	10
Benzo[b]fluoranthene	**1500**	**J**	2900	450	ug/Kg	☼	12/14/22 15:54	12/16/22 04:26	10
Benzo[g,h,i]perylene	**610**	**J**	2900	300	ug/Kg	☼	12/14/22 15:54	12/16/22 04:26	10
Benzo[k]fluoranthene	**610**	**J**	2900	370	ug/Kg	☼	12/14/22 15:54	12/16/22 04:26	10
Chrysene	**1200**	**J**	2900	640	ug/Kg	☼	12/14/22 15:54	12/16/22 04:26	10
Dibenz(a,h)anthracene	ND		2900	500	ug/Kg	☼	12/14/22 15:54	12/16/22 04:26	10
Fluoranthene	**2400**	**J**	2900	300	ug/Kg	☼	12/14/22 15:54	12/16/22 04:26	10
Fluorene	ND		2900	340	ug/Kg	☼	12/14/22 15:54	12/16/22 04:26	10
Indeno[1,2,3-cd]pyrene	**590**	**J**	2900	350	ug/Kg	☼	12/14/22 15:54	12/16/22 04:26	10
Naphthalene	ND		2900	370	ug/Kg	☼	12/14/22 15:54	12/16/22 04:26	10
Phenanthrene	**1100**	**J**	2900	420	ug/Kg	☼	12/14/22 15:54	12/16/22 04:26	10
Pyrene	**1900**	**J**	2900	340	ug/Kg	☼	12/14/22 15:54	12/16/22 04:26	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*74*		*60 - 120*	*12/14/22 15:54*	*12/16/22 04:26*	*10*
Nitrobenzene-d5 (Surr)	*69*		*53 - 120*	*12/14/22 15:54*	*12/16/22 04:26*	*10*
p-Terphenyl-d14 (Surr)	*89*		*79 - 130*	*12/14/22 15:54*	*12/16/22 04:26*	*10*

Client Sample ID: T-07-LB-MB (6-12)

Lab Sample ID: 480-204731-26

Date Collected: 12/12/22 12:40
Matrix: Solid
Date Received: 12/14/22 10:00
Percent Solids: 61.3

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		2700	400	ug/Kg	☼	12/14/22 15:54	12/16/22 04:50	10
Acenaphthylene	ND		2700	350	ug/Kg	☼	12/14/22 15:54	12/16/22 04:50	10
Anthracene	ND		2700	670	ug/Kg	☼	12/14/22 15:54	12/16/22 04:50	10
Benzo[a]anthracene	**1000**	**J**	2700	270	ug/Kg	☼	12/14/22 15:54	12/16/22 04:50	10
Benzo[a]pyrene	**1100**	**J**	2700	400	ug/Kg	☼	12/14/22 15:54	12/16/22 04:50	10
Benzo[b]fluoranthene	**1300**	**J**	2700	430	ug/Kg	☼	12/14/22 15:54	12/16/22 04:50	10
Benzo[g,h,i]perylene	**510**	**J**	2700	290	ug/Kg	☼	12/14/22 15:54	12/16/22 04:50	10
Benzo[k]fluoranthene	**600**	**J**	2700	350	ug/Kg	☼	12/14/22 15:54	12/16/22 04:50	10
Chrysene	**1100**	**J**	2700	600	ug/Kg	☼	12/14/22 15:54	12/16/22 04:50	10
Dibenz(a,h)anthracene	ND		2700	480	ug/Kg	☼	12/14/22 15:54	12/16/22 04:50	10
Fluoranthene	**2300**	**J**	2700	290	ug/Kg	☼	12/14/22 15:54	12/16/22 04:50	10
Fluorene	ND		2700	320	ug/Kg	☼	12/14/22 15:54	12/16/22 04:50	10
Indeno[1,2,3-cd]pyrene	**530**	**J**	2700	330	ug/Kg	☼	12/14/22 15:54	12/16/22 04:50	10
Naphthalene	ND		2700	350	ug/Kg	☼	12/14/22 15:54	12/16/22 04:50	10
Phenanthrene	**1100**	**J**	2700	400	ug/Kg	☼	12/14/22 15:54	12/16/22 04:50	10
Pyrene	**1700**	**J**	2700	320	ug/Kg	☼	12/14/22 15:54	12/16/22 04:50	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*79*		*60 - 120*	*12/14/22 15:54*	*12/16/22 04:50*	*10*
Nitrobenzene-d5 (Surr)	*73*		*53 - 120*	*12/14/22 15:54*	*12/16/22 04:50*	*10*
p-Terphenyl-d14 (Surr)	*97*		*79 - 130*	*12/14/22 15:54*	*12/16/22 04:50*	*10*

Client Sample ID: T-07-LB-MHWL (0-6)
Lab Sample ID: 480-204731-28

Date Collected: 12/12/22 12:50
Matrix: Solid
Date Received: 12/14/22 10:00
Percent Solids: 27.9

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		6000	890	ug/Kg	☼	12/15/22 07:52	12/16/22 17:23	10
Acenaphthylene	ND		6000	780	ug/Kg	☼	12/15/22 07:52	12/16/22 17:23	10
Anthracene	ND		6000	1500	ug/Kg	☼	12/15/22 07:52	12/16/22 17:23	10
Benzo[a]anthracene	**2900**	**J**	6000	600	ug/Kg	☼	12/15/22 07:52	12/16/22 17:23	10
Benzo[a]pyrene	**3400**	**J**	6000	890	ug/Kg	☼	12/15/22 07:52	12/16/22 17:23	10
Benzo[b]fluoranthene	**4600**	**J**	6000	960	ug/Kg	☼	12/15/22 07:52	12/16/22 17:23	10
Benzo[g,h,i]perylene	**2300**	**J**	6000	640	ug/Kg	☼	12/15/22 07:52	12/16/22 17:23	10
Benzo[k]fluoranthene	**1900**	**J**	6000	780	ug/Kg	☼	12/15/22 07:52	12/16/22 17:23	10
Chrysene	**3500**	**J**	6000	1400	ug/Kg	☼	12/15/22 07:52	12/16/22 17:23	10
Dibenz(a,h)anthracene	ND		6000	1100	ug/Kg	☼	12/15/22 07:52	12/16/22 17:23	10
Fluoranthene	**7500**		6000	640	ug/Kg	☼	12/15/22 07:52	12/16/22 17:23	10
Fluorene	ND		6000	710	ug/Kg	☼	12/15/22 07:52	12/16/22 17:23	10
Indeno[1,2,3-cd]pyrene	**2000**	**J**	6000	750	ug/Kg	☼	12/15/22 07:52	12/16/22 17:23	10
Naphthalene	ND		6000	780	ug/Kg	☼	12/15/22 07:52	12/16/22 17:23	10
Phenanthrene	**3000**	**J**	6000	890	ug/Kg	☼	12/15/22 07:52	12/16/22 17:23	10
Pyrene	**5600**	**J**	6000	710	ug/Kg	☼	12/15/22 07:52	12/16/22 17:23	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*78*		*60 - 120*	*12/15/22 07:52*	*12/16/22 17:23*	*10*
Nitrobenzene-d5 (Surr)	*80*		*53 - 120*	*12/15/22 07:52*	*12/16/22 17:23*	*10*
p-Terphenyl-d14 (Surr)	*91*		*79 - 130*	*12/15/22 07:52*	*12/16/22 17:23*	*10*

Client Sample ID: T-07-LB-MHWL (6-12) **Lab Sample ID: 480-204731-29**
Date Collected: 12/12/22 12:55 **Matrix: Solid**
Date Received: 12/14/22 10:00 **Percent Solids: 60.4**

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		1400	200	ug/Kg	☼	12/15/22 07:52	12/16/22 17:47	5
Acenaphthylene	ND		1400	180	ug/Kg	☼	12/15/22 07:52	12/16/22 17:47	5
Anthracene	**410**	**J**	1400	340	ug/Kg	☼	12/15/22 07:52	12/16/22 17:47	5
Benzo[a]anthracene	**1700**		1400	140	ug/Kg	☼	12/15/22 07:52	12/16/22 17:47	5
Benzo[a]pyrene	**1700**		1400	200	ug/Kg	☼	12/15/22 07:52	12/16/22 17:47	5
Benzo[b]fluoranthene	**2100**		1400	220	ug/Kg	☼	12/15/22 07:52	12/16/22 17:47	5
Benzo[g,h,i]perylene	**990**	**J**	1400	150	ug/Kg	☼	12/15/22 07:52	12/16/22 17:47	5
Benzo[k]fluoranthene	**900**	**J**	1400	180	ug/Kg	☼	12/15/22 07:52	12/16/22 17:47	5
Chrysene	**1800**		1400	310	ug/Kg	☼	12/15/22 07:52	12/16/22 17:47	5
Dibenz(a,h)anthracene	**330**	**J**	1400	240	ug/Kg	☼	12/15/22 07:52	12/16/22 17:47	5
Fluoranthene	**3600**		1400	150	ug/Kg	☼	12/15/22 07:52	12/16/22 17:47	5
Fluorene	ND		1400	160	ug/Kg	☼	12/15/22 07:52	12/16/22 17:47	5
Indeno[1,2,3-cd]pyrene	**880**	**J**	1400	170	ug/Kg	☼	12/15/22 07:52	12/16/22 17:47	5
Naphthalene	ND		1400	180	ug/Kg	☼	12/15/22 07:52	12/16/22 17:47	5
Phenanthrene	**1700**		1400	200	ug/Kg	☼	12/15/22 07:52	12/16/22 17:47	5
Pyrene	**2900**		1400	160	ug/Kg	☼	12/15/22 07:52	12/16/22 17:47	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*78*		*60 - 120*	*12/15/22 07:52*	*12/16/22 17:47*	*5*
Nitrobenzene-d5 (Surr)	*74*		*53 - 120*	*12/15/22 07:52*	*12/16/22 17:47*	*5*
p-Terphenyl-d14 (Surr)	*87*		*79 - 130*	*12/15/22 07:52*	*12/16/22 17:47*	*5*

Client Sample ID: T-07-RB-MB (0-6)
Date Collected: 12/12/22 13:05
Date Received: 12/14/22 10:00

Lab Sample ID: 480-204731-31
Matrix: Solid
Percent Solids: 67.0

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		1300	190	ug/Kg	☼	12/15/22 07:52	12/16/22 18:11	5
Acenaphthylene	ND		1300	160	ug/Kg	☼	12/15/22 07:52	12/16/22 18:11	5
Anthracene	ND		1300	310	ug/Kg	☼	12/15/22 07:52	12/16/22 18:11	5
Benzo[a]anthracene	**910**	**J**	1300	130	ug/Kg	☼	12/15/22 07:52	12/16/22 18:11	5
Benzo[a]pyrene	**1000**	**J**	1300	190	ug/Kg	☼	12/15/22 07:52	12/16/22 18:11	5
Benzo[b]fluoranthene	**1300**		1300	200	ug/Kg	☼	12/15/22 07:52	12/16/22 18:11	5
Benzo[g,h,i]perylene	**620**	**J**	1300	130	ug/Kg	☼	12/15/22 07:52	12/16/22 18:11	5
Benzo[k]fluoranthene	**550**	**J**	1300	160	ug/Kg	☼	12/15/22 07:52	12/16/22 18:11	5
Chrysene	**950**	**J**	1300	280	ug/Kg	☼	12/15/22 07:52	12/16/22 18:11	5
Dibenz(a,h)anthracene	ND		1300	220	ug/Kg	☼	12/15/22 07:52	12/16/22 18:11	5
Fluoranthene	**1900**		1300	130	ug/Kg	☼	12/15/22 07:52	12/16/22 18:11	5
Fluorene	ND		1300	150	ug/Kg	☼	12/15/22 07:52	12/16/22 18:11	5
Indeno[1,2,3-cd]pyrene	**600**	**J**	1300	160	ug/Kg	☼	12/15/22 07:52	12/16/22 18:11	5
Naphthalene	ND		1300	160	ug/Kg	☼	12/15/22 07:52	12/16/22 18:11	5
Phenanthrene	**930**	**J**	1300	190	ug/Kg	☼	12/15/22 07:52	12/16/22 18:11	5
Pyrene	**1500**		1300	150	ug/Kg	☼	12/15/22 07:52	12/16/22 18:11	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*99*		*60 - 120*	*12/15/22 07:52*	*12/16/22 18:11*	*5*
Nitrobenzene-d5 (Surr)	*94*		*53 - 120*	*12/15/22 07:52*	*12/16/22 18:11*	*5*
p-Terphenyl-d14 (Surr)	*113*		*79 - 130*	*12/15/22 07:52*	*12/16/22 18:11*	*5*

Client: ARCADIS U.S. Inc	Job ID: 480-204731-1
Project/Site: National Grid - Gloversville,NY

Client Sample ID: T-07-RB-MB (6-12) **Lab Sample ID: 480-204731-32**
Date Collected: 12/12/22 13:10 **Matrix: Solid**
Date Received: 12/14/22 10:00 **Percent Solids: 76.5**

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		2200	320	ug/Kg	☼	12/15/22 07:52	12/16/22 18:35	10
Acenaphthylene	ND		2200	280	ug/Kg	☼	12/15/22 07:52	12/16/22 18:35	10
Anthracene	**620**	**J**	2200	540	ug/Kg	☼	12/15/22 07:52	12/16/22 18:35	10
Benzo[a]anthracene	**1800**	**J**	2200	220	ug/Kg	☼	12/15/22 07:52	12/16/22 18:35	10
Benzo[a]pyrene	**1800**	**J**	2200	320	ug/Kg	☼	12/15/22 07:52	12/16/22 18:35	10
Benzo[b]fluoranthene	**2200**		2200	340	ug/Kg	☼	12/15/22 07:52	12/16/22 18:35	10
Benzo[g,h,i]perylene	**1100**	**J**	2200	230	ug/Kg	☼	12/15/22 07:52	12/16/22 18:35	10
Benzo[k]fluoranthene	**960**	**J**	2200	280	ug/Kg	☼	12/15/22 07:52	12/16/22 18:35	10
Chrysene	**1700**	**J**	2200	480	ug/Kg	☼	12/15/22 07:52	12/16/22 18:35	10
Dibenz(a,h)anthracene	ND		2200	380	ug/Kg	☼	12/15/22 07:52	12/16/22 18:35	10
Fluoranthene	**3800**		2200	230	ug/Kg	☼	12/15/22 07:52	12/16/22 18:35	10
Fluorene	**260**	**J**	2200	260	ug/Kg	☼	12/15/22 07:52	12/16/22 18:35	10
Indeno[1,2,3-cd]pyrene	**1000**	**J**	2200	270	ug/Kg	☼	12/15/22 07:52	12/16/22 18:35	10
Naphthalene	ND		2200	280	ug/Kg	☼	12/15/22 07:52	12/16/22 18:35	10
Phenanthrene	**2300**		2200	320	ug/Kg	☼	12/15/22 07:52	12/16/22 18:35	10
Pyrene	**2800**		2200	260	ug/Kg	☼	12/15/22 07:52	12/16/22 18:35	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*85*		*60 - 120*	*12/15/22 07:52*	*12/16/22 18:35*	*10*
Nitrobenzene-d5 (Surr)	*83*		*53 - 120*	*12/15/22 07:52*	*12/16/22 18:35*	*10*
p-Terphenyl-d14 (Surr)	*100*		*79 - 130*	*12/15/22 07:52*	*12/16/22 18:35*	*10*

Client: ARCADIS U.S. Inc
Project/Site: National Grid - Gloversville,NY

Job ID: 480-204731-1

Client Sample ID: T-07-RB-MHWL (0-6)
Date Collected: 12/12/22 13:20
Date Received: 12/14/22 10:00

Lab Sample ID: 480-204731-34
Matrix: Solid
Percent Solids: 71.5

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	170	J	1200	170	ug/Kg	☼	12/15/22 07:52	12/16/22 18:59	5
Acenaphthylene	150	J	1200	150	ug/Kg	☼	12/15/22 07:52	12/16/22 18:59	5
Anthracene	580	J	1200	290	ug/Kg	☼	12/15/22 07:52	12/16/22 18:59	5
Benzo[a]anthracene	1800		1200	120	ug/Kg	☼	12/15/22 07:52	12/16/22 18:59	5
Benzo[a]pyrene	1800		1200	170	ug/Kg	☼	12/15/22 07:52	12/16/22 18:59	5
Benzo[b]fluoranthene	2200		1200	190	ug/Kg	☼	12/15/22 07:52	12/16/22 18:59	5
Benzo[g,h,i]perylene	1100	J	1200	120	ug/Kg	☼	12/15/22 07:52	12/16/22 18:59	5
Benzo[k]fluoranthene	880	J	1200	150	ug/Kg	☼	12/15/22 07:52	12/16/22 18:59	5
Chrysene	1800		1200	260	ug/Kg	☼	12/15/22 07:52	12/16/22 18:59	5
Dibenz(a,h)anthracene	340	J	1200	210	ug/Kg	☼	12/15/22 07:52	12/16/22 18:59	5
Fluoranthene	3900		1200	120	ug/Kg	☼	12/15/22 07:52	12/16/22 18:59	5
Fluorene	230	J	1200	140	ug/Kg	☼	12/15/22 07:52	12/16/22 18:59	5
Indeno[1,2,3-cd]pyrene	990	J	1200	150	ug/Kg	☼	12/15/22 07:52	12/16/22 18:59	5
Naphthalene	150	J	1200	150	ug/Kg	☼	12/15/22 07:52	12/16/22 18:59	5
Phenanthrene	2500		1200	170	ug/Kg	☼	12/15/22 07:52	12/16/22 18:59	5
Pyrene	3200		1200	140	ug/Kg	☼	12/15/22 07:52	12/16/22 18:59	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*96*		*60 - 120*	*12/15/22 07:52*	*12/16/22 18:59*	*5*
Nitrobenzene-d5 (Surr)	*86*		*53 - 120*	*12/15/22 07:52*	*12/16/22 18:59*	*5*
p-Terphenyl-d14 (Surr)	*108*		*79 - 130*	*12/15/22 07:52*	*12/16/22 18:59*	*5*

Client Sample ID: T-07-RB-MHWL (6-12)
Date Collected: 12/12/22 13:25
Date Received: 12/14/22 10:00

Lab Sample ID: 480-204731-35
Matrix: Solid
Percent Solids: 80.1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		1100	160	ug/Kg	☼	12/15/22 07:52	12/16/22 19:23	5
Acenaphthylene	ND		1100	140	ug/Kg	☼	12/15/22 07:52	12/16/22 19:23	5
Anthracene	**300**	**J**	1100	260	ug/Kg	☼	12/15/22 07:52	12/16/22 19:23	5
Benzo[a]anthracene	**1400**		1100	110	ug/Kg	☼	12/15/22 07:52	12/16/22 19:23	5
Benzo[a]pyrene	**1400**		1100	160	ug/Kg	☼	12/15/22 07:52	12/16/22 19:23	5
Benzo[b]fluoranthene	**1700**		1100	170	ug/Kg	☼	12/15/22 07:52	12/16/22 19:23	5
Benzo[g,h,i]perylene	**840**	**J**	1100	110	ug/Kg	☼	12/15/22 07:52	12/16/22 19:23	5
Benzo[k]fluoranthene	**720**	**J**	1100	140	ug/Kg	☼	12/15/22 07:52	12/16/22 19:23	5
Chrysene	**1500**		1100	240	ug/Kg	☼	12/15/22 07:52	12/16/22 19:23	5
Dibenz(a,h)anthracene	**270**	**J**	1100	190	ug/Kg	☼	12/15/22 07:52	12/16/22 19:23	5
Fluoranthene	**2800**		1100	110	ug/Kg	☼	12/15/22 07:52	12/16/22 19:23	5
Fluorene	ND		1100	120	ug/Kg	☼	12/15/22 07:52	12/16/22 19:23	5
Indeno[1,2,3-cd]pyrene	**820**	**J**	1100	130	ug/Kg	☼	12/15/22 07:52	12/16/22 19:23	5
Naphthalene	ND		1100	140	ug/Kg	☼	12/15/22 07:52	12/16/22 19:23	5
Phenanthrene	**1100**		1100	160	ug/Kg	☼	12/15/22 07:52	12/16/22 19:23	5
Pyrene	**2100**		1100	120	ug/Kg	☼	12/15/22 07:52	12/16/22 19:23	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*88*		*60 - 120*	*12/15/22 07:52*	*12/16/22 19:23*	*5*
Nitrobenzene-d5 (Surr)	*85*		*53 - 120*	*12/15/22 07:52*	*12/16/22 19:23*	*5*
p-Terphenyl-d14 (Surr)	*97*		*79 - 130*	*12/15/22 07:52*	*12/16/22 19:23*	*5*

Client Sample ID: DUP-121222-01
Lab Sample ID: 480-204731-37

Date Collected: 12/12/22 00:00
Matrix: Solid
Date Received: 12/14/22 10:00
Percent Solids: 66.2

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		2600	380	ug/Kg	☼	12/15/22 07:52	12/16/22 19:48	10
Acenaphthylene	ND		2600	330	ug/Kg	☼	12/15/22 07:52	12/16/22 19:48	10
Anthracene	ND		2600	630	ug/Kg	☼	12/15/22 07:52	12/16/22 19:48	10
Benzo[a]anthracene	**1100**	**J**	2600	260	ug/Kg	☼	12/15/22 07:52	12/16/22 19:48	10
Benzo[a]pyrene	**1400**	**J**	2600	380	ug/Kg	☼	12/15/22 07:52	12/16/22 19:48	10
Benzo[b]fluoranthene	**1800**	**J**	2600	410	ug/Kg	☼	12/15/22 07:52	12/16/22 19:48	10
Benzo[g,h,i]perylene	**890**	**J**	2600	270	ug/Kg	☼	12/15/22 07:52	12/16/22 19:48	10
Benzo[k]fluoranthene	**780**	**J**	2600	330	ug/Kg	☼	12/15/22 07:52	12/16/22 19:48	10
Chrysene	**1400**	**J**	2600	570	ug/Kg	☼	12/15/22 07:52	12/16/22 19:48	10
Dibenz(a,h)anthracene	ND		2600	450	ug/Kg	☼	12/15/22 07:52	12/16/22 19:48	10
Fluoranthene	**3200**		2600	270	ug/Kg	☼	12/15/22 07:52	12/16/22 19:48	10
Fluorene	ND		2600	300	ug/Kg	☼	12/15/22 07:52	12/16/22 19:48	10
Indeno[1,2,3-cd]pyrene	**790**	**J**	2600	320	ug/Kg	☼	12/15/22 07:52	12/16/22 19:48	10
Naphthalene	ND		2600	330	ug/Kg	☼	12/15/22 07:52	12/16/22 19:48	10
Phenanthrene	**1500**	**J**	2600	380	ug/Kg	☼	12/15/22 07:52	12/16/22 19:48	10
Pyrene	**2300**	**J**	2600	300	ug/Kg	☼	12/15/22 07:52	12/16/22 19:48	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*74*		*60 - 120*	*12/15/22 07:52*	*12/16/22 19:48*	*10*
Nitrobenzene-d5 (Surr)	*76*		*53 - 120*	*12/15/22 07:52*	*12/16/22 19:48*	*10*
p-Terphenyl-d14 (Surr)	*86*		*79 - 130*	*12/15/22 07:52*	*12/16/22 19:48*	*10*

Client Sample ID: DUP-121222-02

Lab Sample ID: 480-204731-38

Date Collected: 12/12/22 00:00
Matrix: Solid
Date Received: 12/14/22 10:00
Percent Solids: 65.8

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		2500	370	ug/Kg	☼	12/15/22 07:52	12/16/22 20:12	10
Acenaphthylene	ND		2500	330	ug/Kg	☼	12/15/22 07:52	12/16/22 20:12	10
Anthracene	ND		2500	630	ug/Kg	☼	12/15/22 07:52	12/16/22 20:12	10
Benzo[a]anthracene	**1000**	**J**	2500	250	ug/Kg	☼	12/15/22 07:52	12/16/22 20:12	10
Benzo[a]pyrene	**1100**	**J**	2500	370	ug/Kg	☼	12/15/22 07:52	12/16/22 20:12	10
Benzo[b]fluoranthene	**1400**	**J**	2500	400	ug/Kg	☼	12/15/22 07:52	12/16/22 20:12	10
Benzo[g,h,i]perylene	**670**	**J**	2500	270	ug/Kg	☼	12/15/22 07:52	12/16/22 20:12	10
Benzo[k]fluoranthene	**650**	**J**	2500	330	ug/Kg	☼	12/15/22 07:52	12/16/22 20:12	10
Chrysene	**1100**	**J**	2500	570	ug/Kg	☼	12/15/22 07:52	12/16/22 20:12	10
Dibenz(a,h)anthracene	ND		2500	450	ug/Kg	☼	12/15/22 07:52	12/16/22 20:12	10
Fluoranthene	**2200**	**J**	2500	270	ug/Kg	☼	12/15/22 07:52	12/16/22 20:12	10
Fluorene	ND		2500	300	ug/Kg	☼	12/15/22 07:52	12/16/22 20:12	10
Indeno[1,2,3-cd]pyrene	**680**	**J**	2500	310	ug/Kg	☼	12/15/22 07:52	12/16/22 20:12	10
Naphthalene	ND		2500	330	ug/Kg	☼	12/15/22 07:52	12/16/22 20:12	10
Phenanthrene	**870**	**J**	2500	370	ug/Kg	☼	12/15/22 07:52	12/16/22 20:12	10
Pyrene	**1600**	**J**	2500	300	ug/Kg	☼	12/15/22 07:52	12/16/22 20:12	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*76*		*60 - 120*	*12/15/22 07:52*	*12/16/22 20:12*	*10*
Nitrobenzene-d5 (Surr)	*74*		*53 - 120*	*12/15/22 07:52*	*12/16/22 20:12*	*10*
p-Terphenyl-d14 (Surr)	*95*		*79 - 130*	*12/15/22 07:52*	*12/16/22 20:12*	*10*

Attachment 2

Supplemental PDI Source Area Soil Boring Logs

Date Start/Finish:	11/02/2022	**Northing:**	1530756.597'	**Well/Boring ID:**	PDI-DPB-4
Drilling Company:	Arcadis	**Easting:**	531913.411'	**Client:**	National Grid
Driller's Name:	D Richmond, T Platt	**Casing Elevation:**	NA		
Drilling Method:	Direct Push	**Surface Elevation:**	745.981'	**Location:**	
Sampling Method:	4' Macrocore	**Borehole Depth:**	12'		Former MGP Site Hill Street Gloversville, NY
Rig Type:	AMS Power Probe VTR 9520	**Descriptions By:**	Dan Meandro		

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	745	1	0-4'	3.9	1.5			Very dark grayish brown (10YR 3/2) fine - medium SAND, some Silt, trace - little fine sub rounded Gravel, moist, medium firm.	
								Black (10YR 2/1) SILT, little fine Sand, trace fine sub angular Gravel, moist, medium firm.	
								Brown (10 YR 4/3) fine - medium SAND, little Silt, moist - wet, odor. Sheen on soil (3.1-5.4' bgs).	
5	740	2	4-8'	3.8	2.7			Black (10YR 2/1) fine - coarse SAND, some fine - medium sub angular - angular Gravel, wet, medium firm, visible sheen, odor.	Borehole backfilled with bentonite chips.
								Dark gray (10YR 4/1) CLAY, some Silt, little fine sub angular Gravel, moist, firm, slight plasticity. SVOC soil sample collected from 3-12' bgs	
10	735	3	8-12'	2.0	10			Very dark gray (10YR 3/1) fine - medium SAND and SILT, some fine - medium sub angular - sub rounded Gravel, moist - wet, medium firm, non-plastic, sheen, odor.	
								End of boring at 12' bgs.	
15	730								

Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).Inches.

ARCADIS Design & Consultancy for natural and built assets

Date Start/Finish: 11/01/2022	**Northing:** 1530675.836'	**Well/Boring ID:** PDI-DPB-7
Drilling Company: Arcadis	**Easting:** 531952.764'	**Client:** National Grid
Driller's Name: D Richmond, T Platt	**Casing Elevation:** NA	
Drilling Method: Direct Push	**Surface Elevation:** 744.678'	**Location:**
Sampling Method: 4' Macrocore	**Borehole Depth:** 12'	Former MGP Site Hill Street Gloversville, NY
Rig Type: AMS Power Probe VTR 9520	**Descriptions By:** Dan Meandro	

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	745								
0		1	0-4'	1.8	0			Brown (10YR 4/3) fine - medium SAND and SILT, little Organics (roots), trace - little fine sub angular - Gravel, moist, medium firm.	
								Light brownish gray (10YR 6/2) fine - coarse SAND, moist, loose.	
								Dark grayish brown (10YR 4/2) SILT and fine - medium SAND, little fine sub angular Gravel, moist, medium firm.	
5	740	2	4-8'	2.1	40	X		Very dark grayish brown (10YR 3/2) fine - coarse SAND, some fine sub rounded - sub angular Gravel, little Silt, wet, loose - medium firm, strong odor, sheen.	Borehole backfilled with bentonite chips.
								Dark grayish brown (10YR 4/2) fine - medium SAND, light sheen, light odor. SVOC soil sample collected from 4-8.5' bgs	
		3	8-12'	3.7	1.2			Very dark gray (10YR 3/1) fine SAND, some Silt, little Clay, trace fine sub rounded Gravel, moist, firm, slight sheen.	
10	735							Very dark gray (10YR 3/1) CLAY, trace - little fine Sand, moist.	
								End of boring at 12' bgs.	
15	730								

ARCADIS Design & Consultancy for natural and built assets

Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).Inches.

Date Start/Finish:	11/01/2022	**Northing:**	1530648.741'	**Well/Boring ID:**	**PDI-DPB-8**
Drilling Company:	Arcadis	**Easting:**	532016.11'	**Client:**	National Grid
Driller's Name:	D Richmond, T Platt	**Casing Elevation:**	NA		
Drilling Method:	Direct Push	**Surface Elevation:**	745.335'	**Location:**	
Sampling Method:	4' Macrocore	**Borehole Depth:**	12'	Former MGP Site Hill Street Gloversville, NY	
Rig Type:	AMS Power Probe VTR 9520	**Descriptions By:**	Dan Meandro		

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	745	1	0-4'	2.8	10.1			Dark brown (10YR 3/3) fine - coarse SAND, little Organics (roots), trace fine sub rounded Gravel, moist, medium firm.	Borehole backfilled with bentonite chips.
								Very dark gray (10YR 3/1) SILT some fine - medium Sand, some Organics (roots), little fine sub angular - sub rounded Gravel, slight sheen, slight odor.	
								Brown (10YR 4/3) fine - medium SAND, little Silt, moist, medium firm, sheen, odor.	
5	740	2	4-8'	2.2	5.0			Very dark brown (10YR 2/2) medium SAND, little Silt, trace - little fine sub rounded Gravel, wet, medium firm, sheen, slight odor. SVOC soil sample collected from 0.8-8.5' bgs	
								Dark gray (10YR 4/1) medium SAND, little Silt, little fine sub rounded Gravel, moist, medium firm, sheen, slight odor.	
10	735	3	8-12'	3.8	2.2			Very dark grayish brown (10YR 4/1) CLAY, some Silt, little fine Sand, dry - moist, firm.	
15	730							End of boring at 12' bgs.	

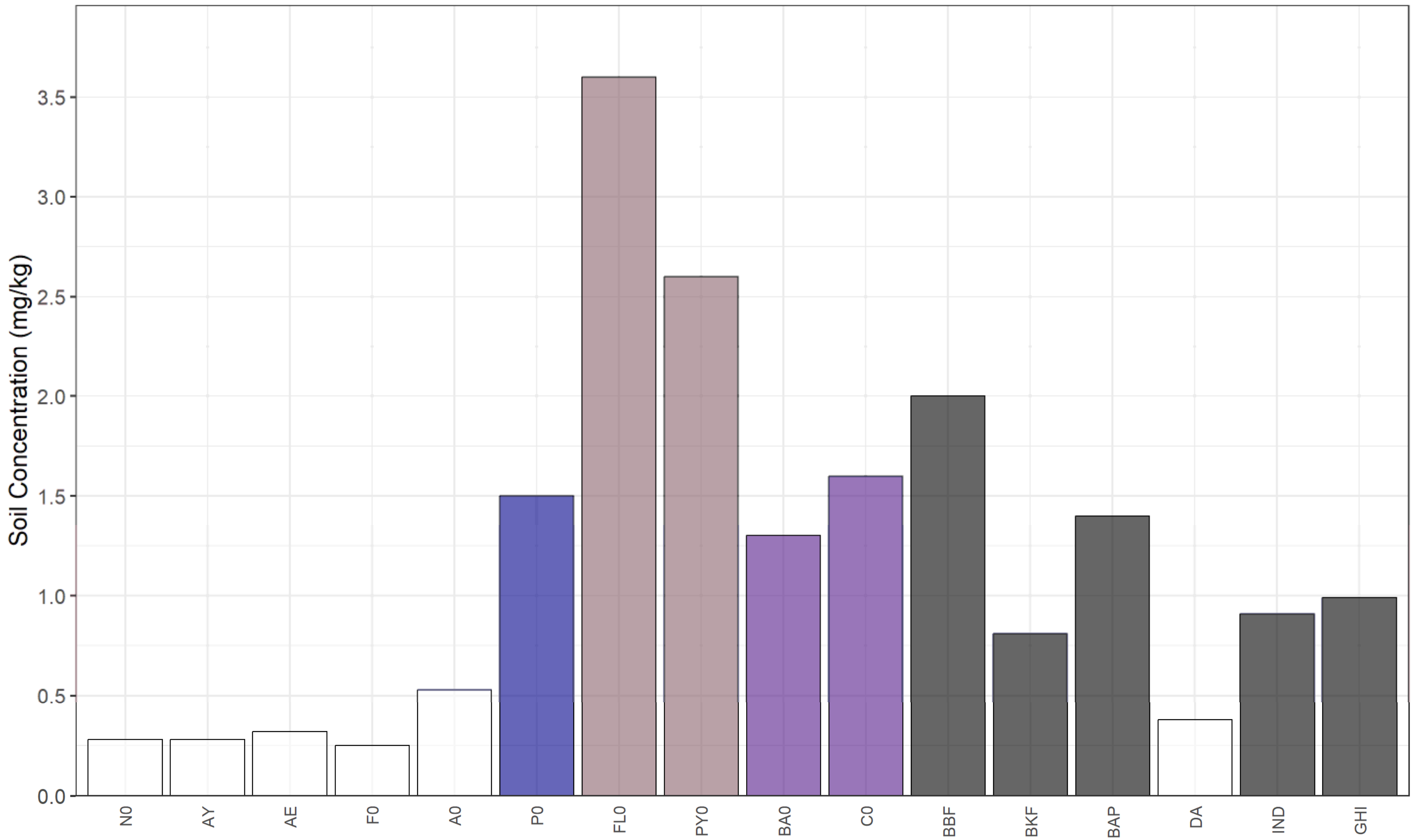
ARCADIS Design & Consultancy for natural and built assets

Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).Inches.

Attachment 3

Bank and Source Material Soil PAH Profiles



Legend

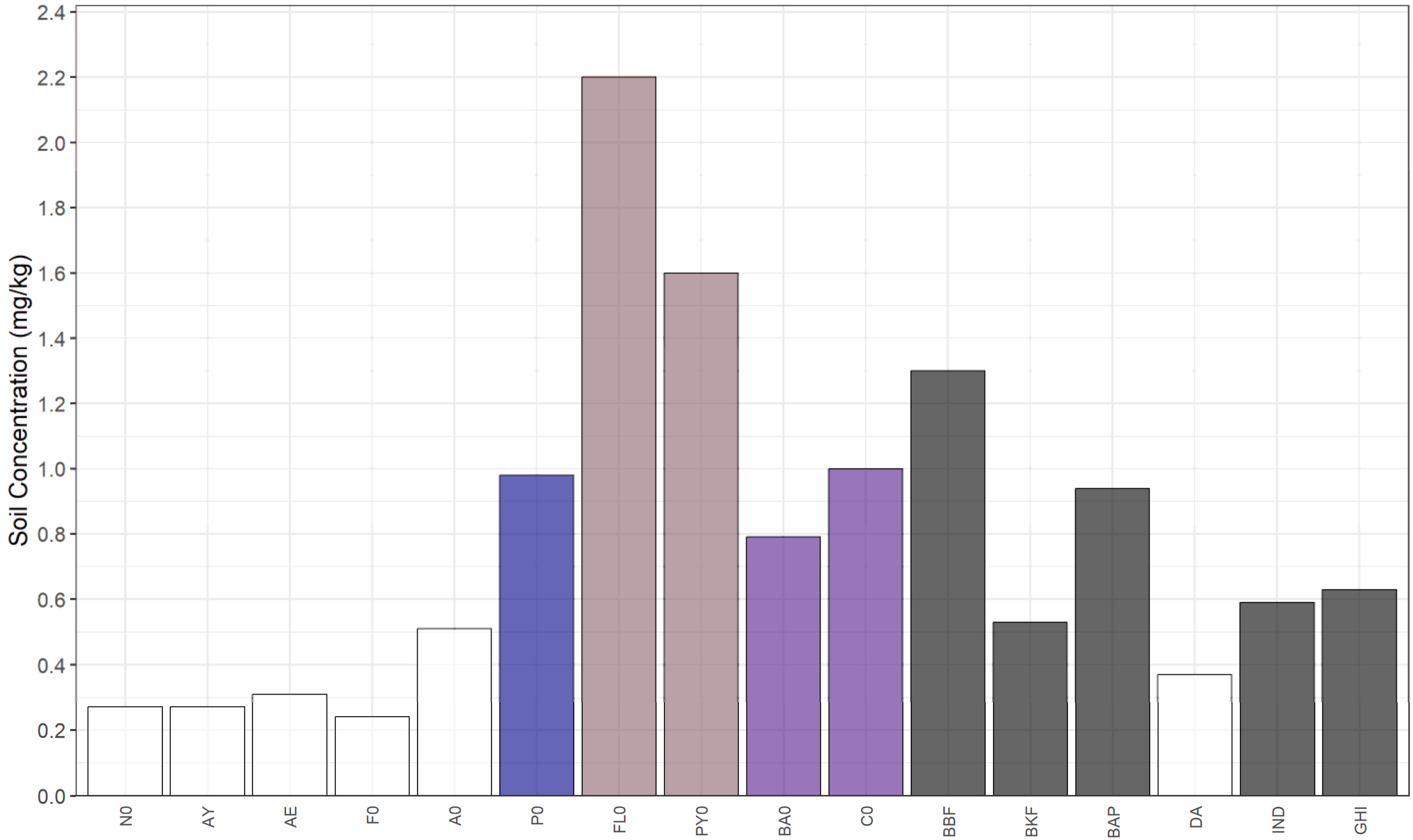
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-05-LB-MB
SAMPLE ID: T-05-LB-MB (0-6)

ARCADIS

FIGURE
X



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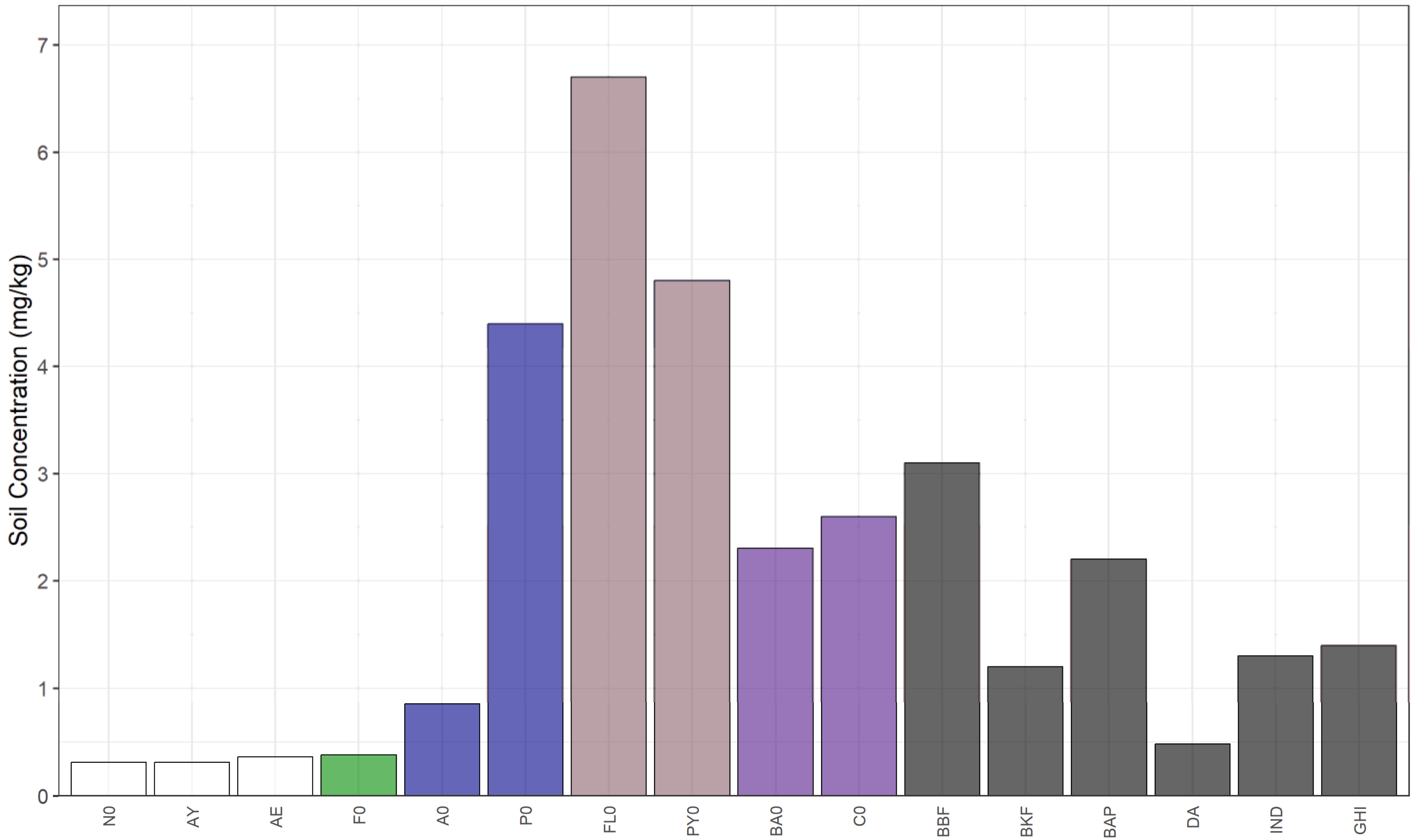
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-05-LB-MB
SAMPLE ID: T-05-LB-MB (6-12)

ARCADIS

FIGURE
X



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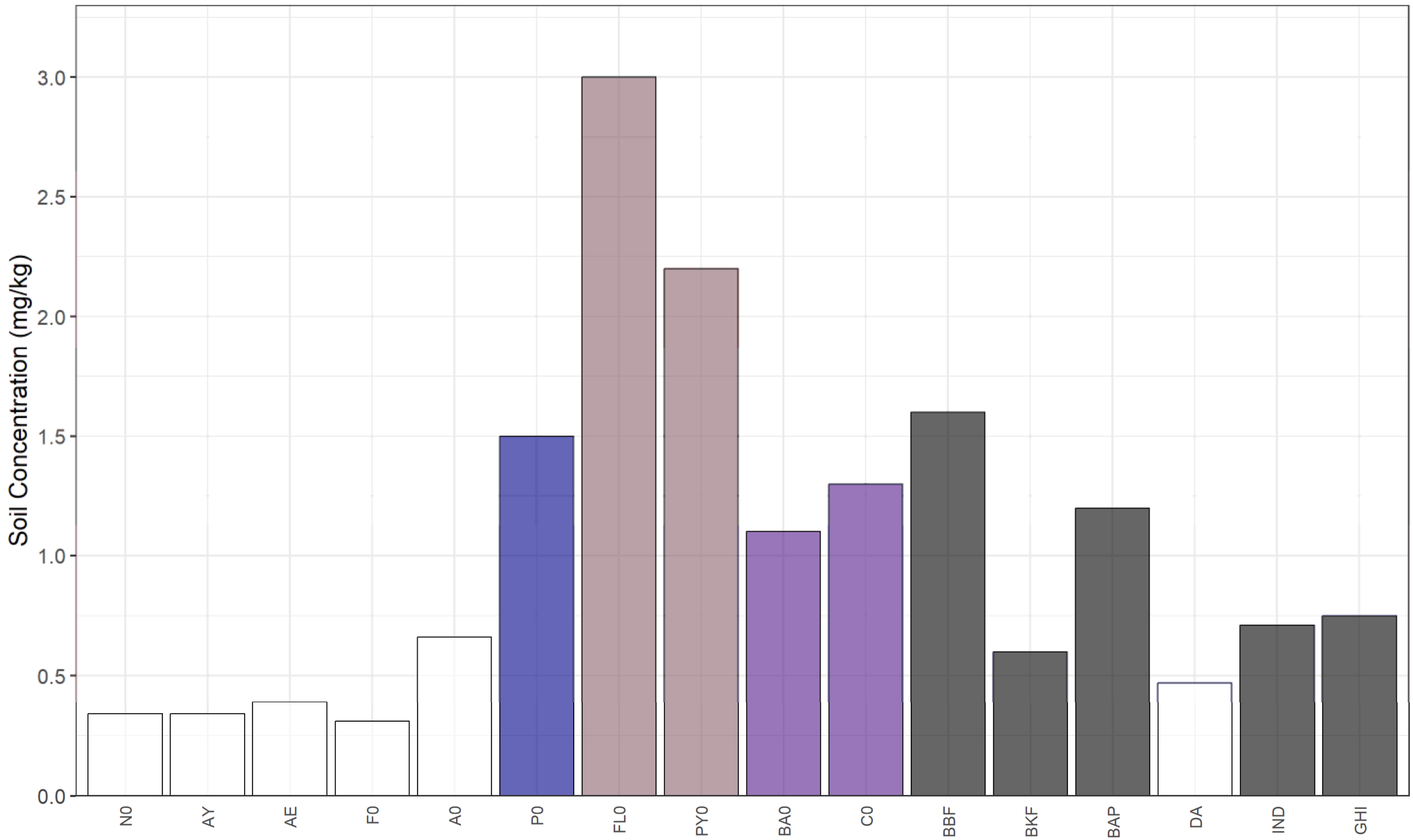
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-05-LB-MHWL
SAMPLE ID: T-05-LB-MHWL (0-6)

ARCADIS

FIGURE
X



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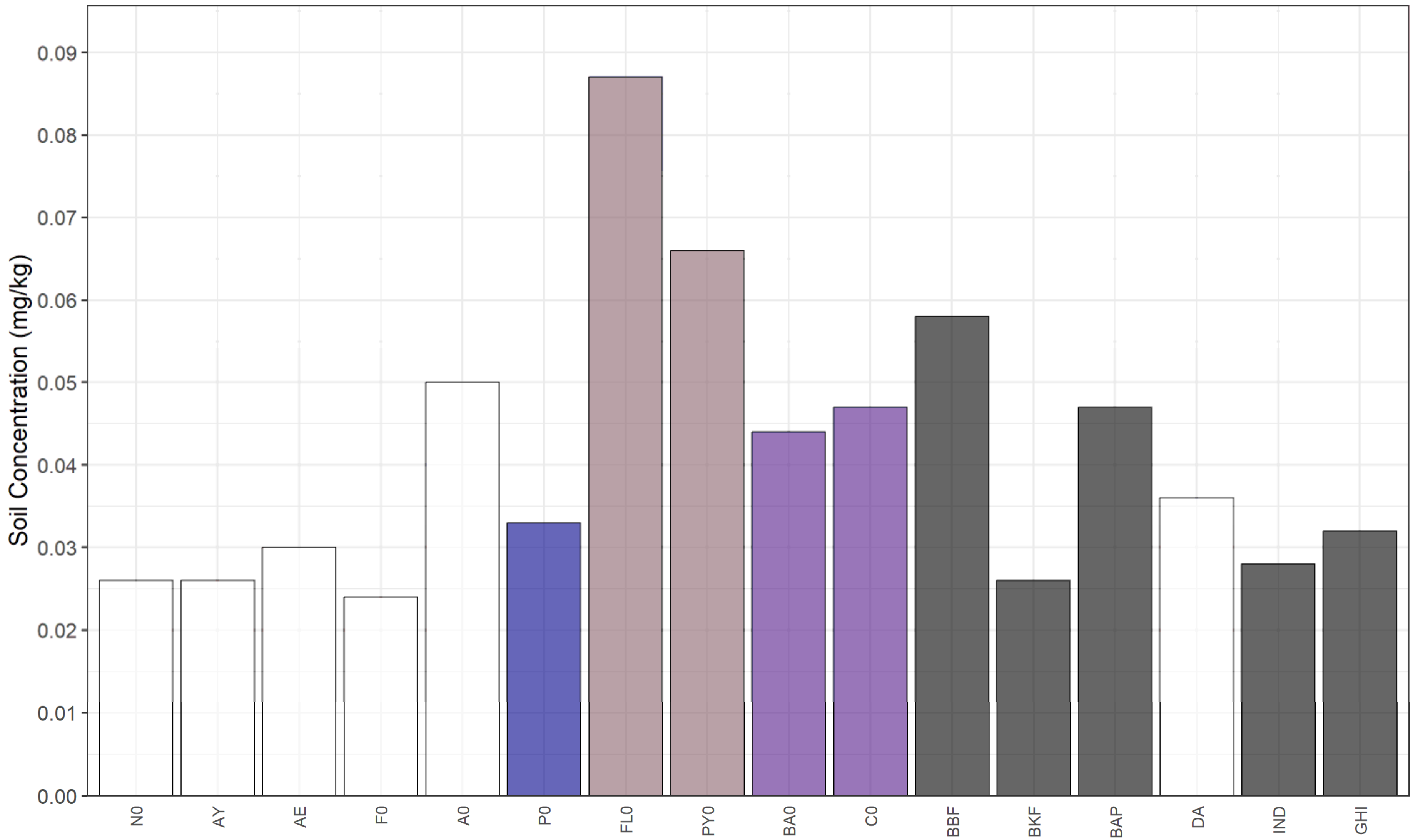
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-05-LB-MHWL
SAMPLE ID: T-05-LB-MHWL (6-12)

ARCADIS

FIGURE
X



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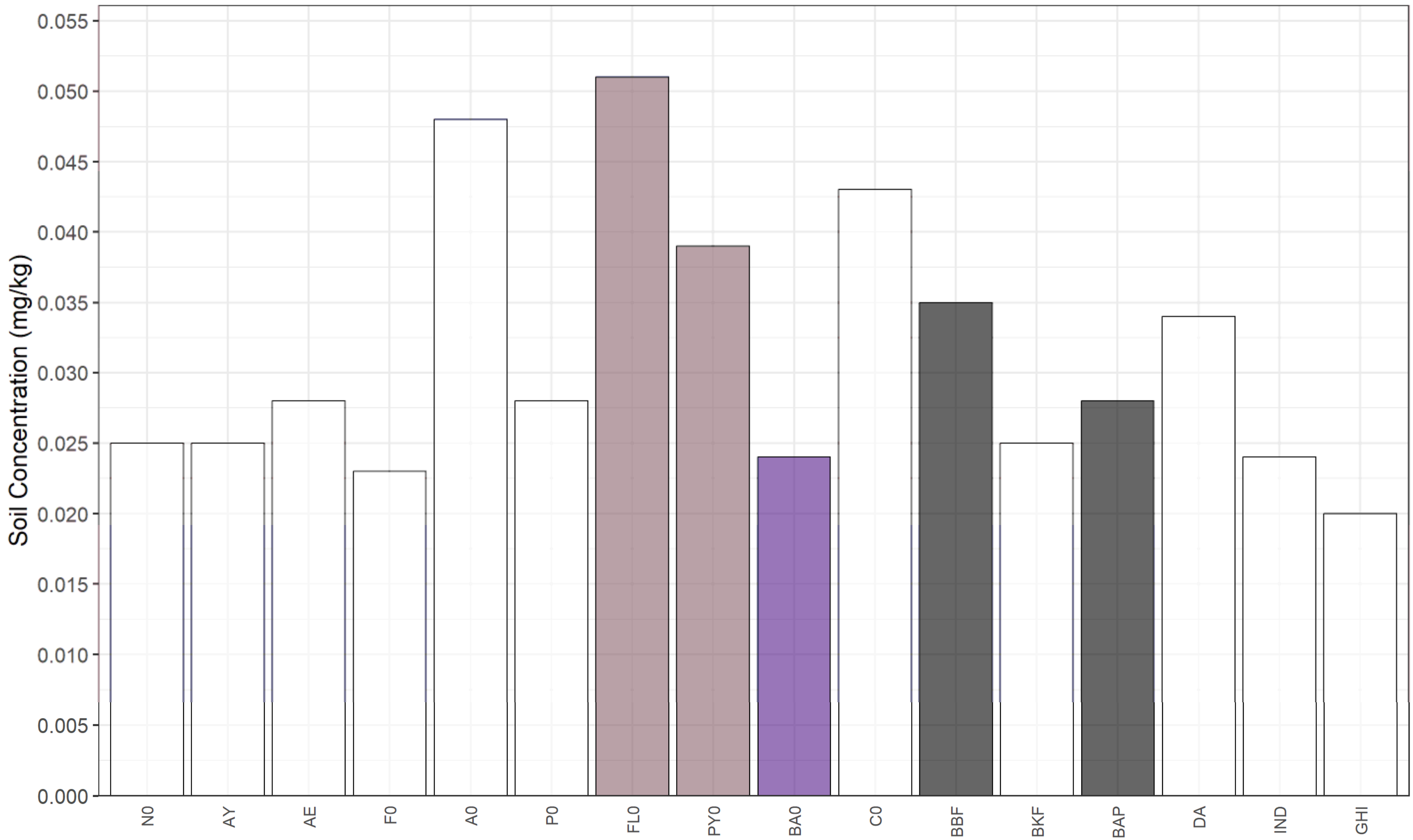
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-05-RB-MB
SAMPLE ID: T-05-RB-MB (0-6)

ARCADIS

FIGURE
X



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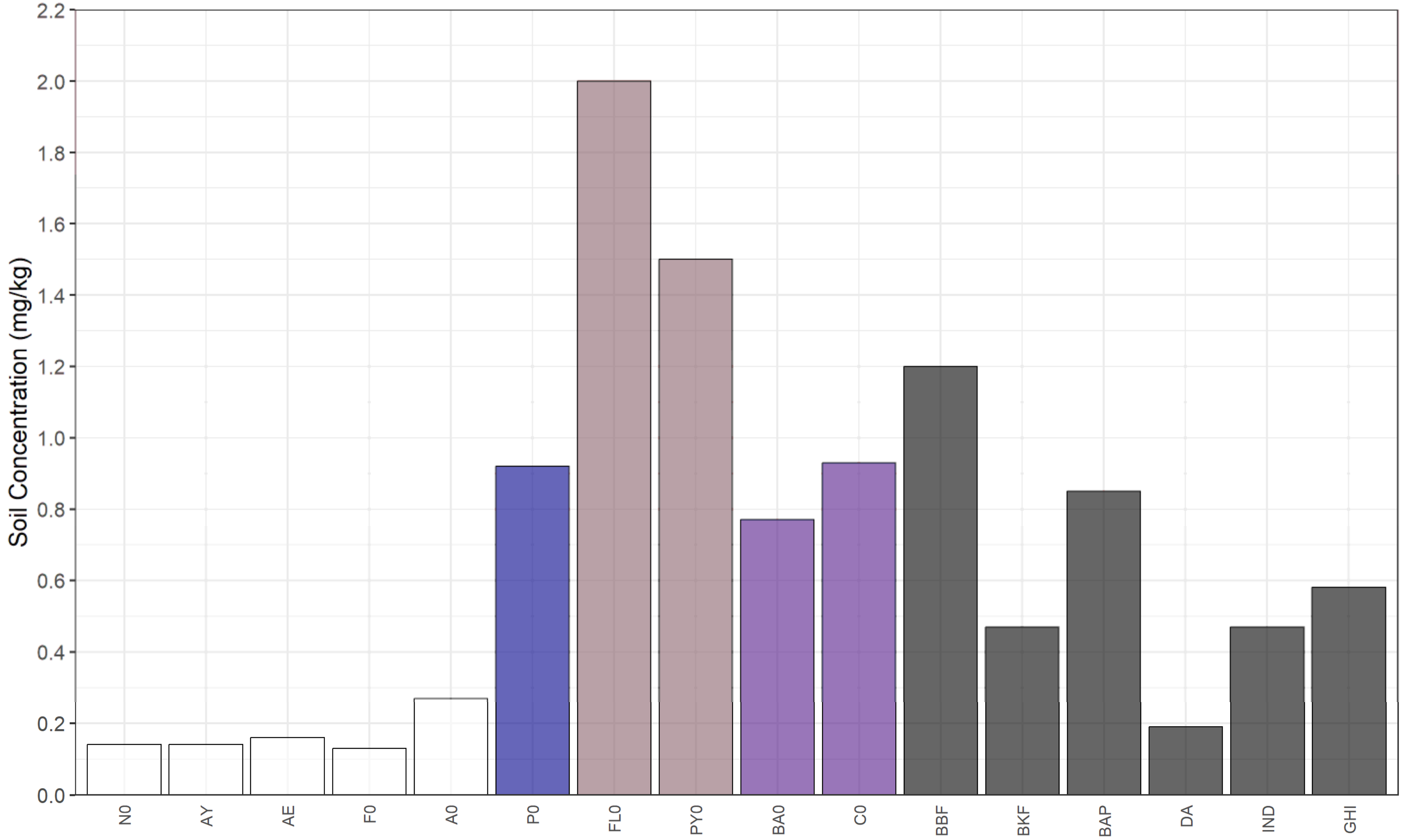
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-05-RB-MB
SAMPLE ID: T-05-RB-MB (6-12)

ARCADIS

FIGURE
X



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NATIONAL GRID
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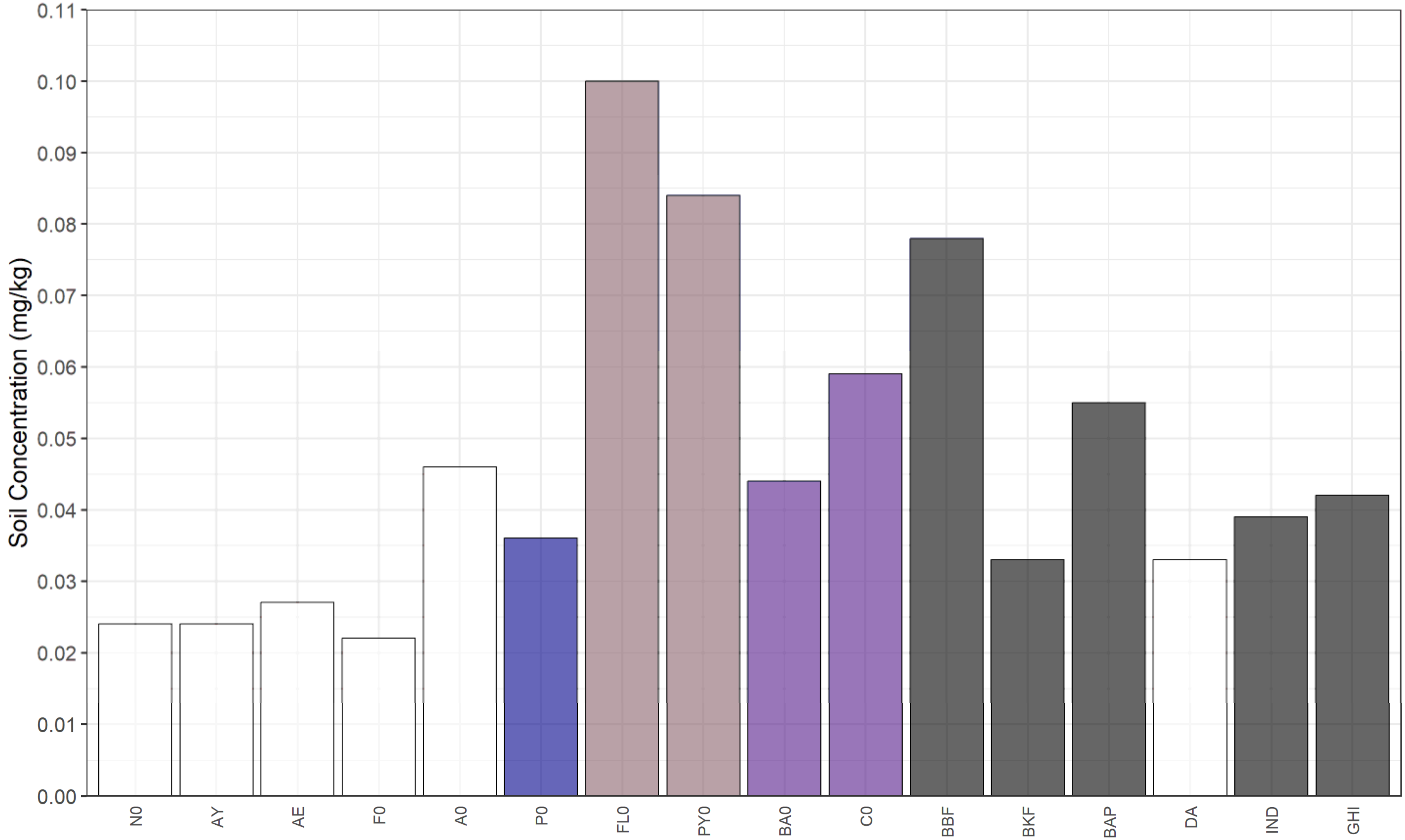
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-05-RB-MHWL
SAMPLE ID: T-05-RB-MHWL (0-6)

ARCADIS

FIGURE
X



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NATIONAL GRID
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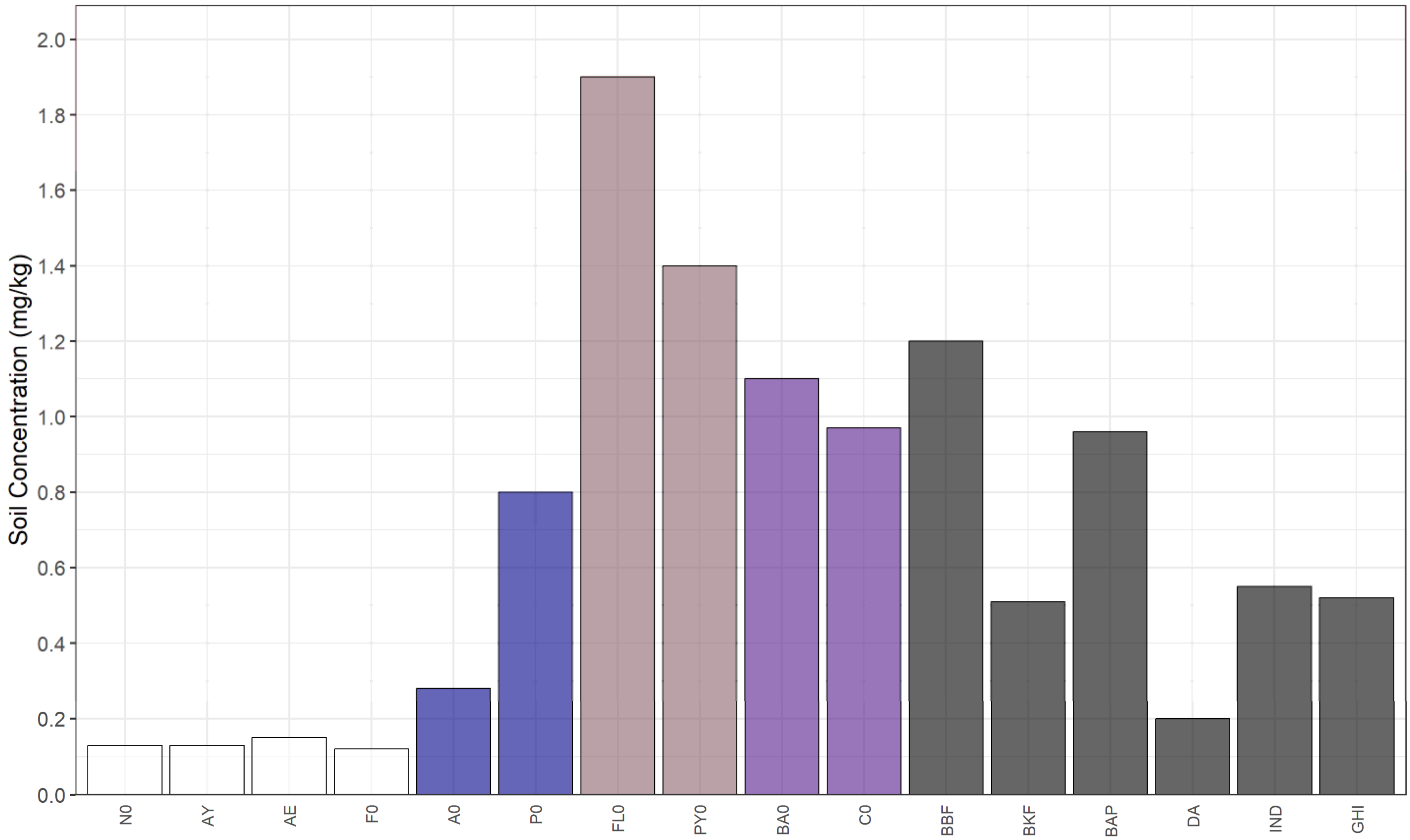
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-05-RB-MHWL
SAMPLE ID: T-05-RB-MHWL (6-12)

ARCADIS

FIGURE
X



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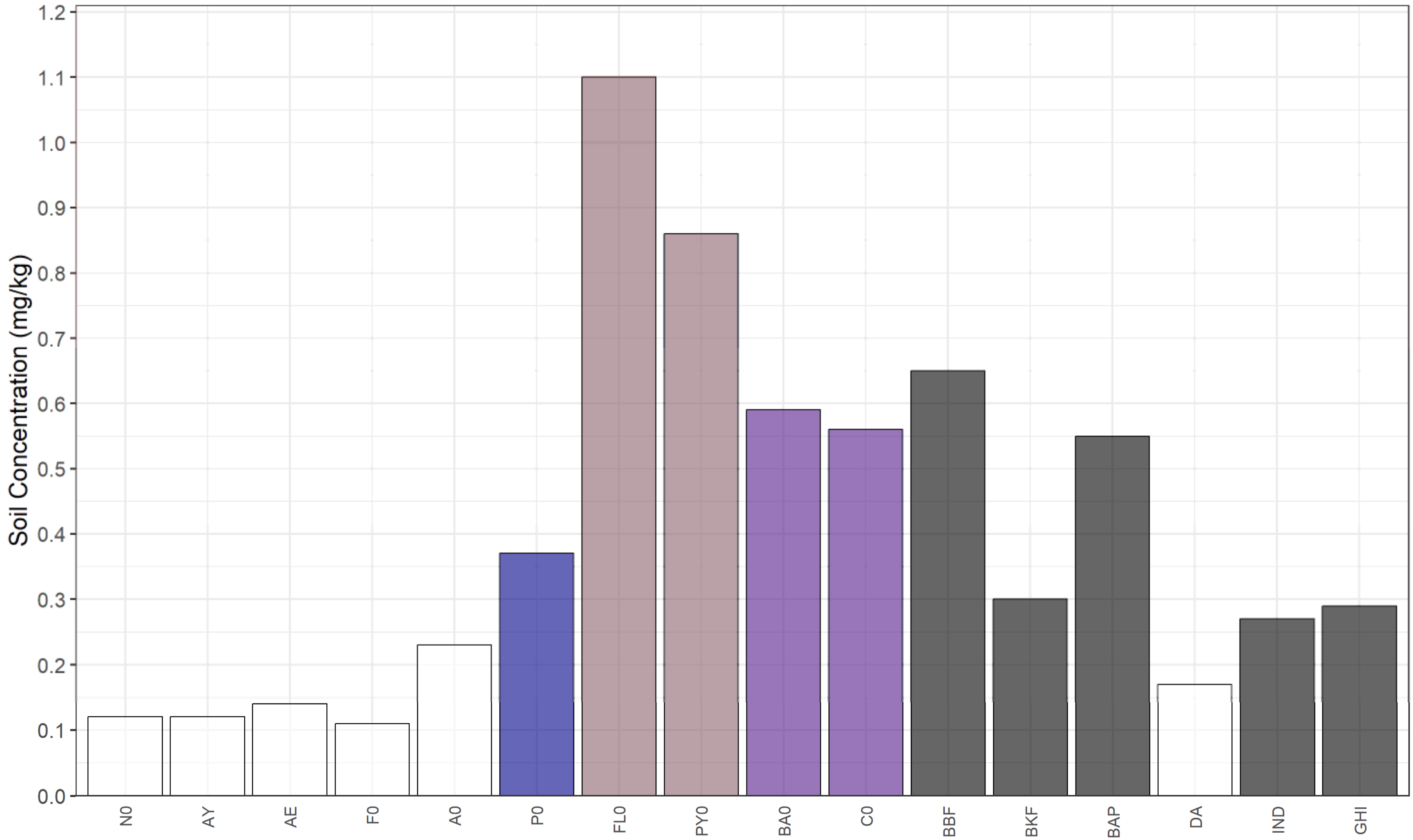
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-06-LB-MB
SAMPLE ID: T-06-LB-MB (0-6)

ARCADIS

FIGURE
X



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NATIONAL GRID
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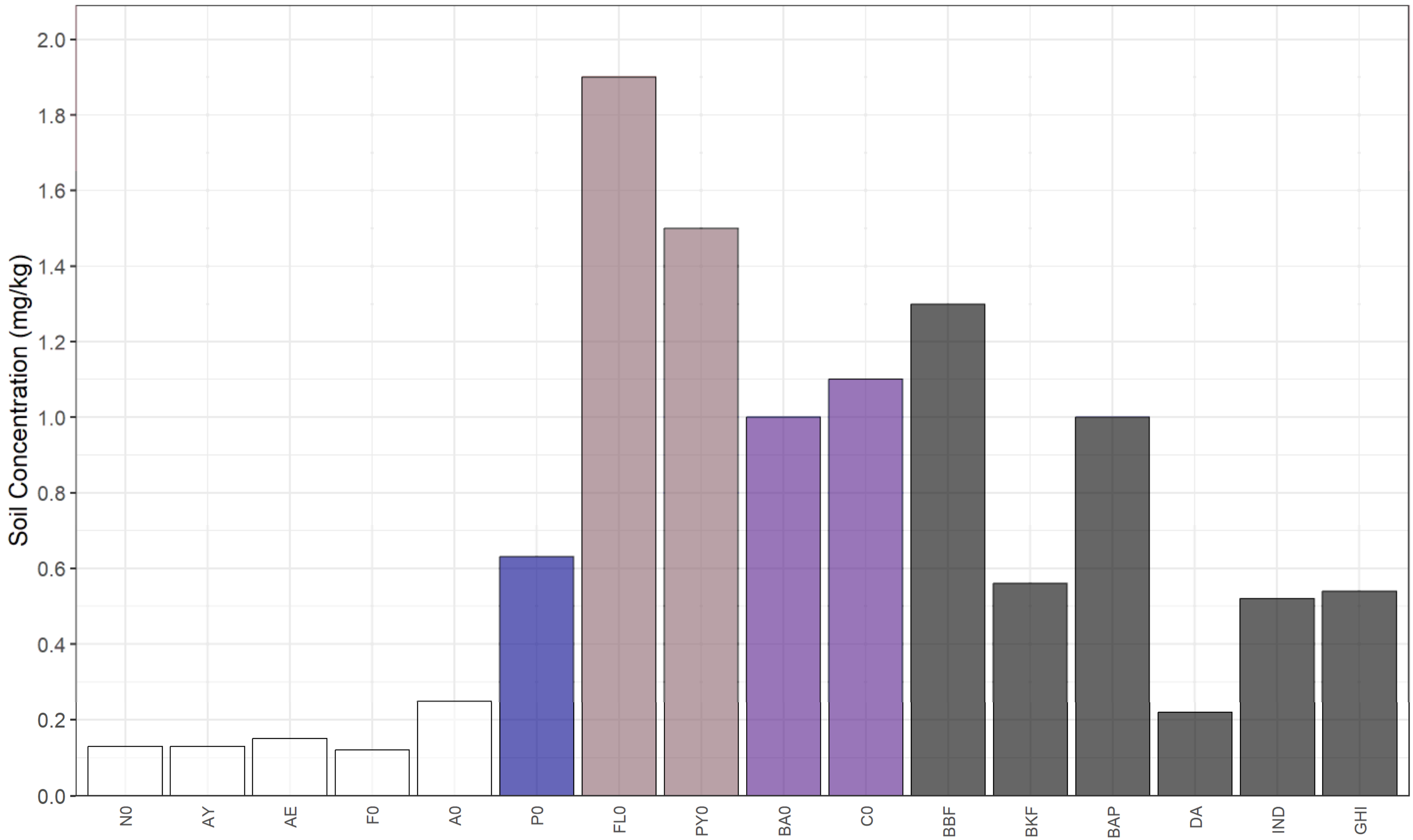
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-06-LB-MB
SAMPLE ID: T-06-LB-MB (6-12)

ARCADIS

FIGURE
X



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NATIONAL GRID
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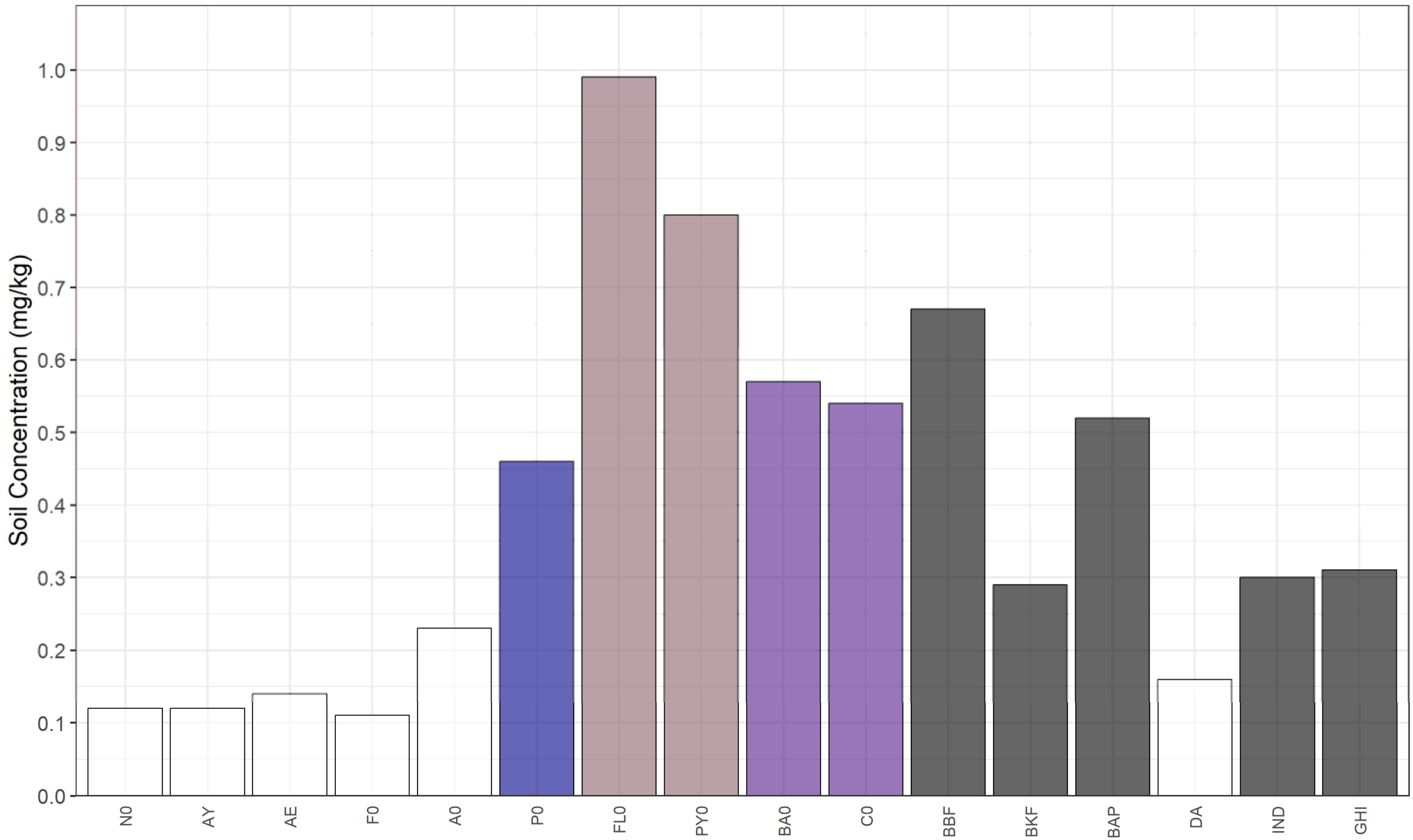
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-06-LB-MHWL
SAMPLE ID: T-06-LB-MHWL (0-6)

ARCADIS

FIGURE
X



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NATIONAL GRID
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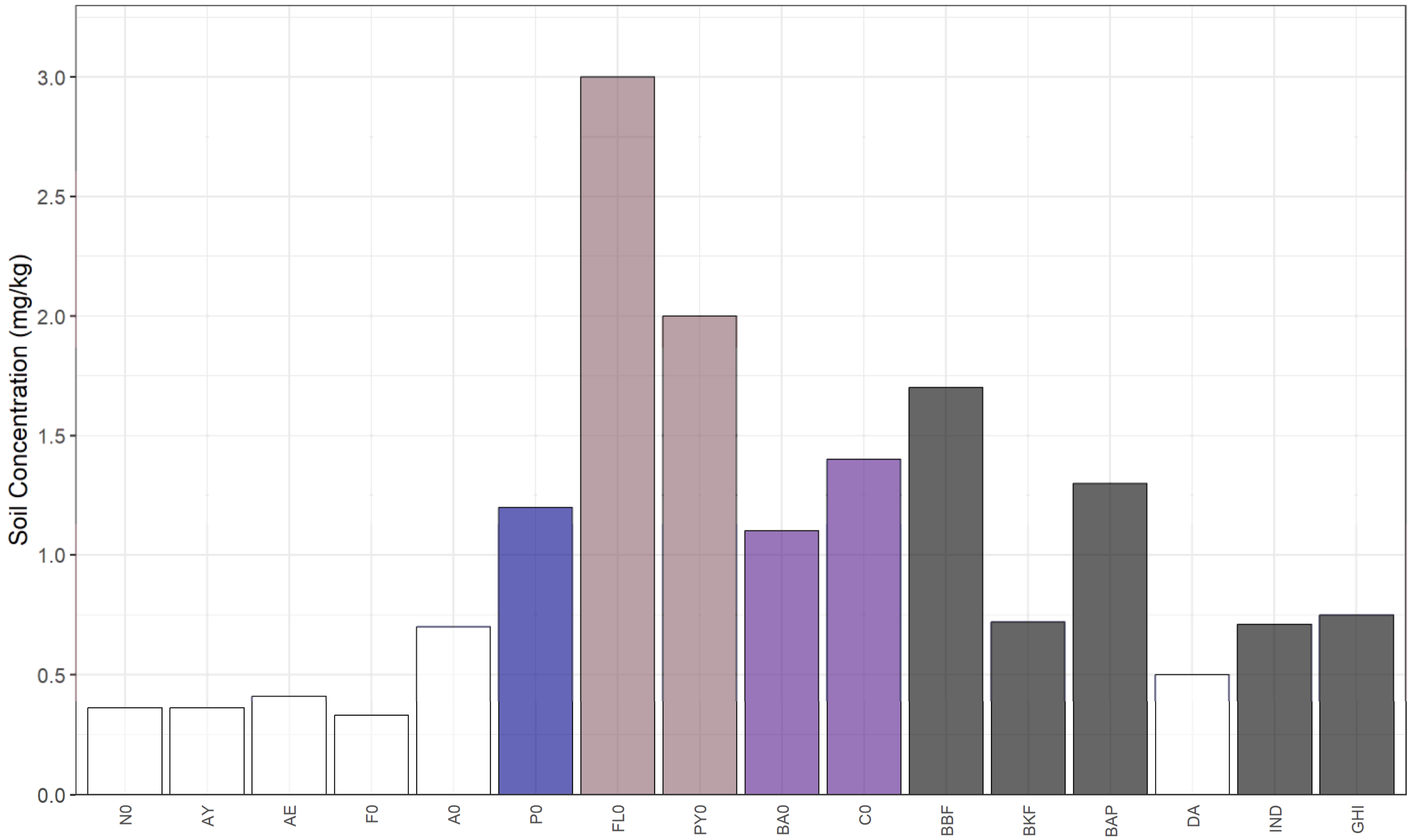
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-06-LB-MHWL
SAMPLE ID: T-06-LB-MHWL (6-12)

ARCADIS

FIGURE
X



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NATIONAL GRID
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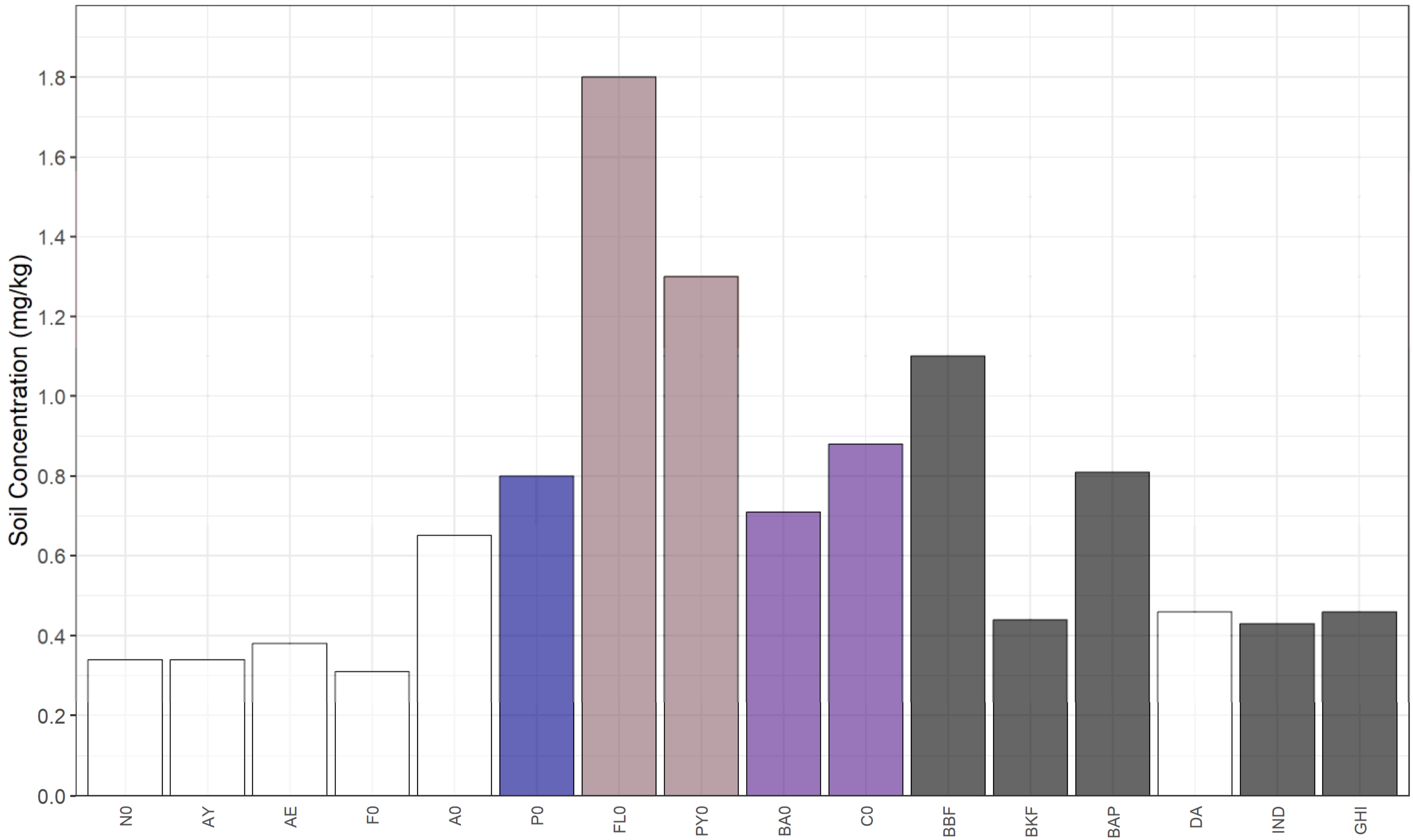
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-06-RB-MB
SAMPLE ID: T-06-RB-MB (0-6)

ARCADIS

FIGURE
X



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NATIONAL GRID
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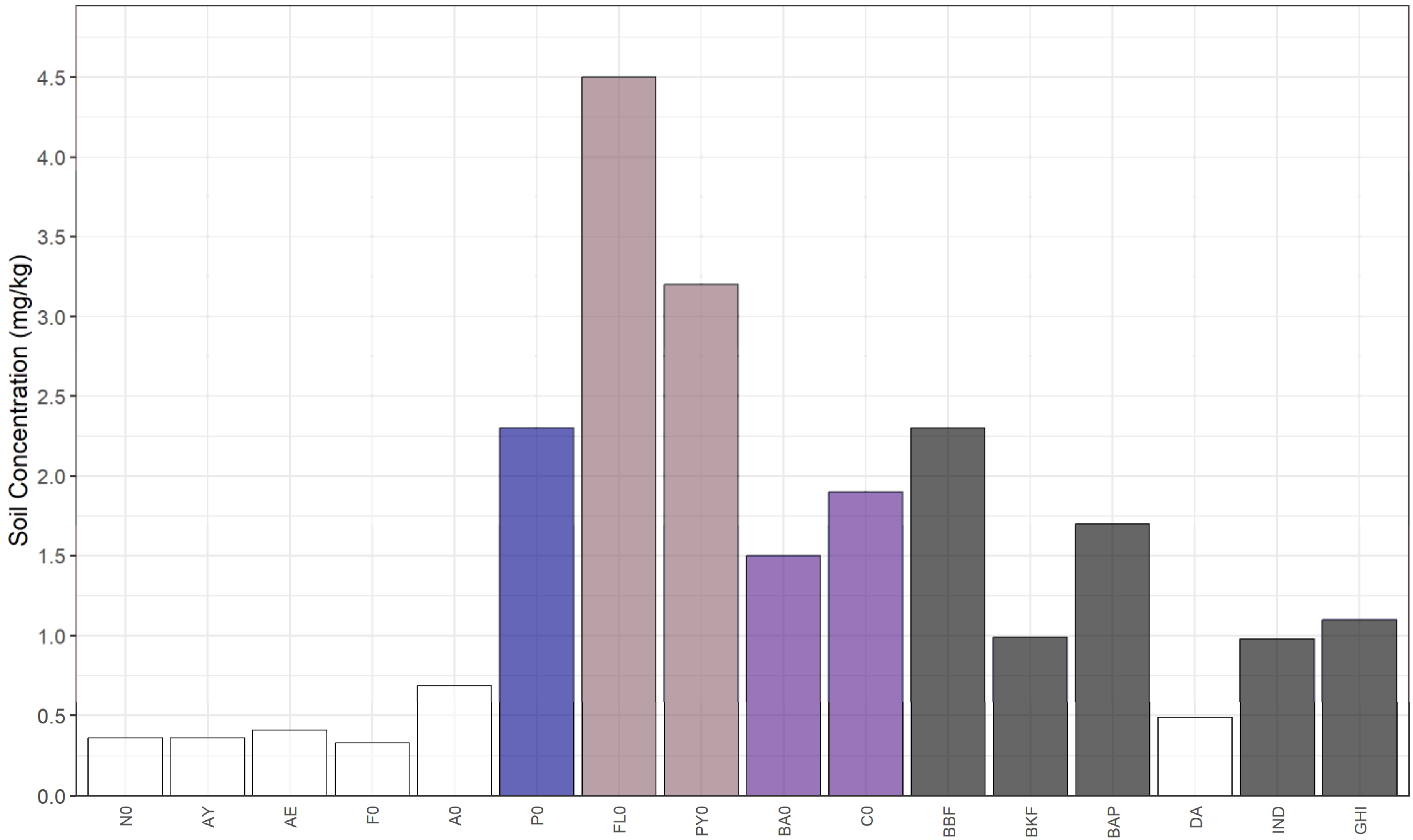
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-06-RB-MB
SAMPLE ID: T-06-RB-MB (6-12)

ARCADIS

FIGURE
X



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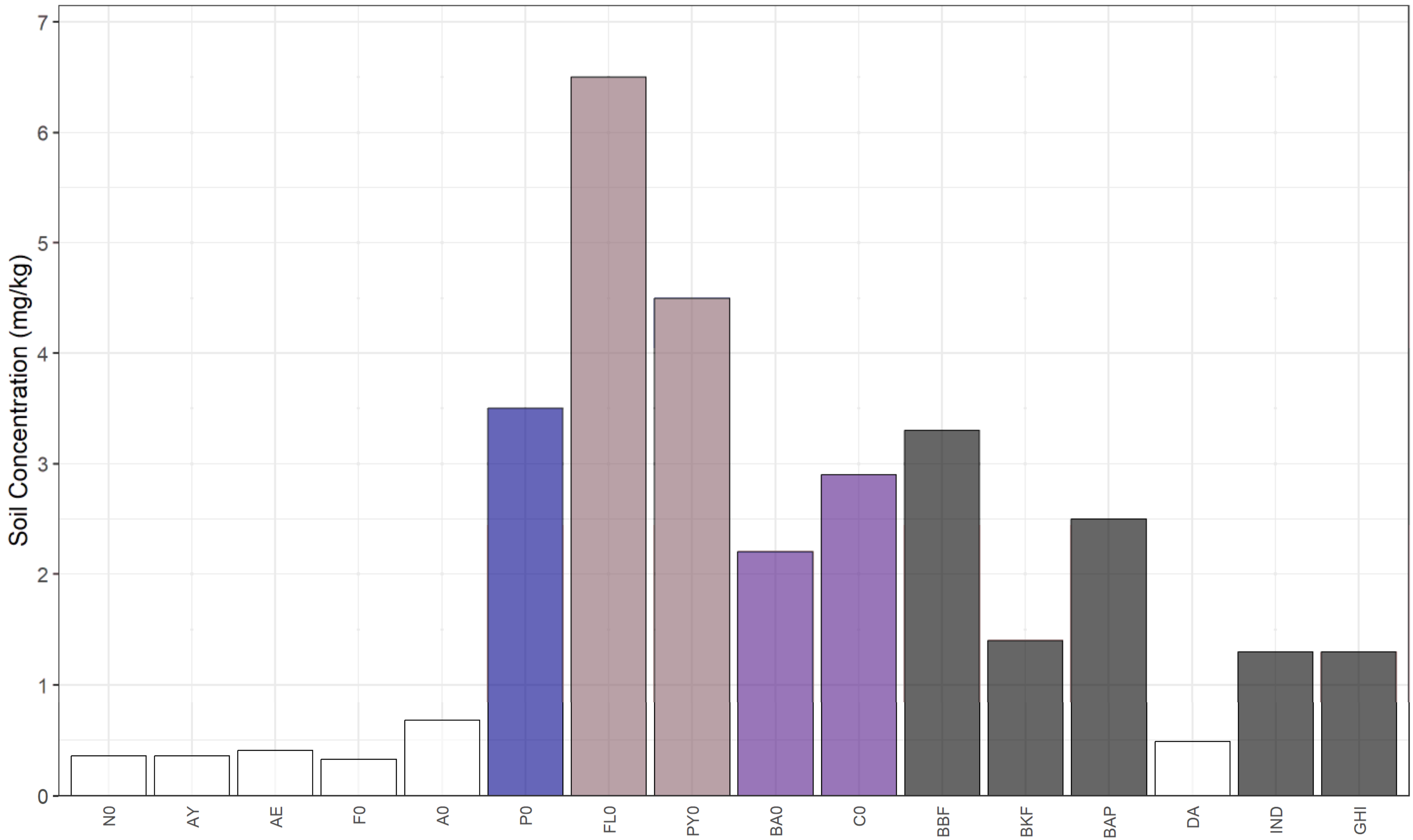
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-06-RB-MHWL
SAMPLE ID: T-06-RB-MHWL (0-6)

ARCADIS

FIGURE
X



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NATIONAL GRID
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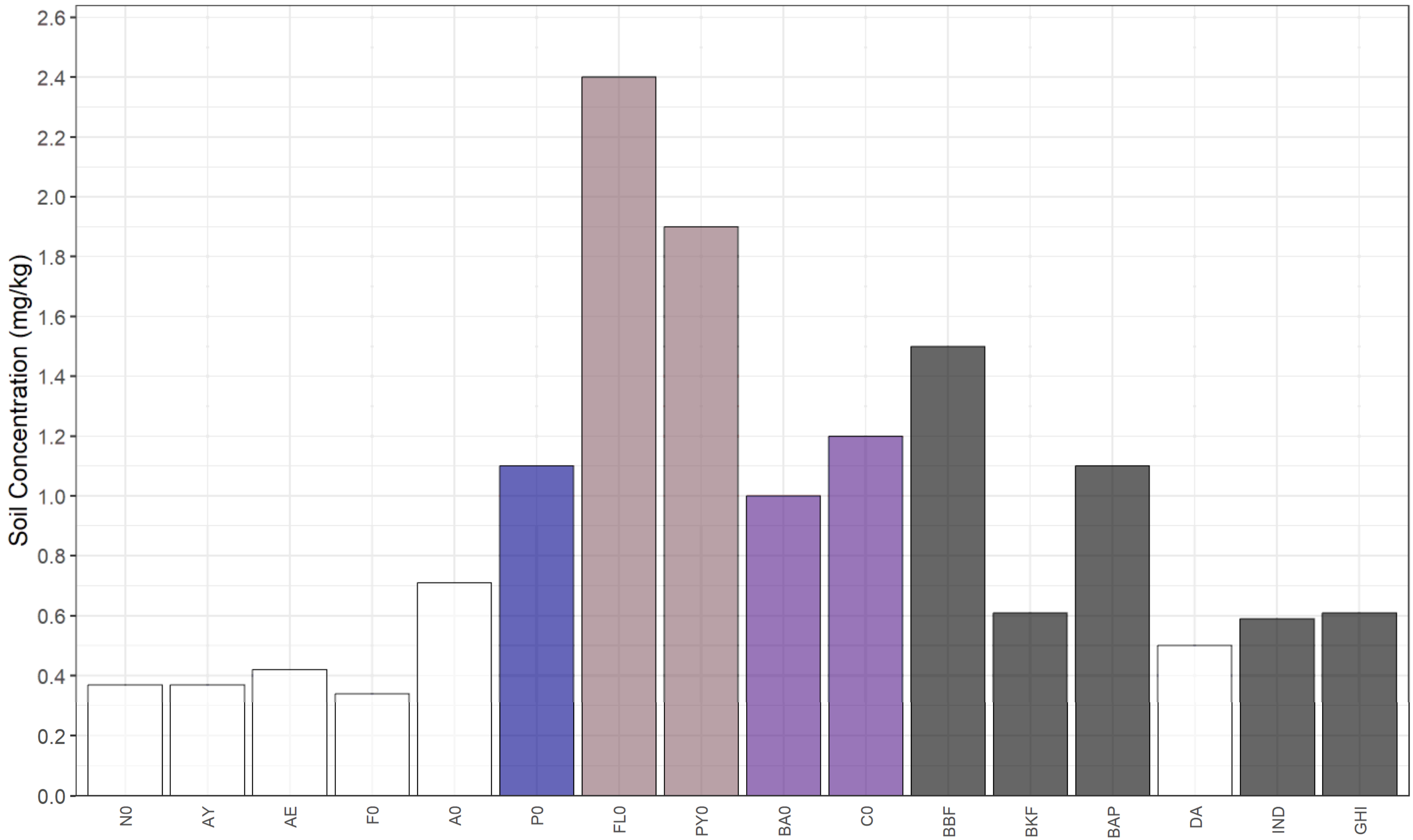
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-06-RB-MHWL
SAMPLE ID: T-06-RB-MHWL (6-12)

ARCADIS

FIGURE
X



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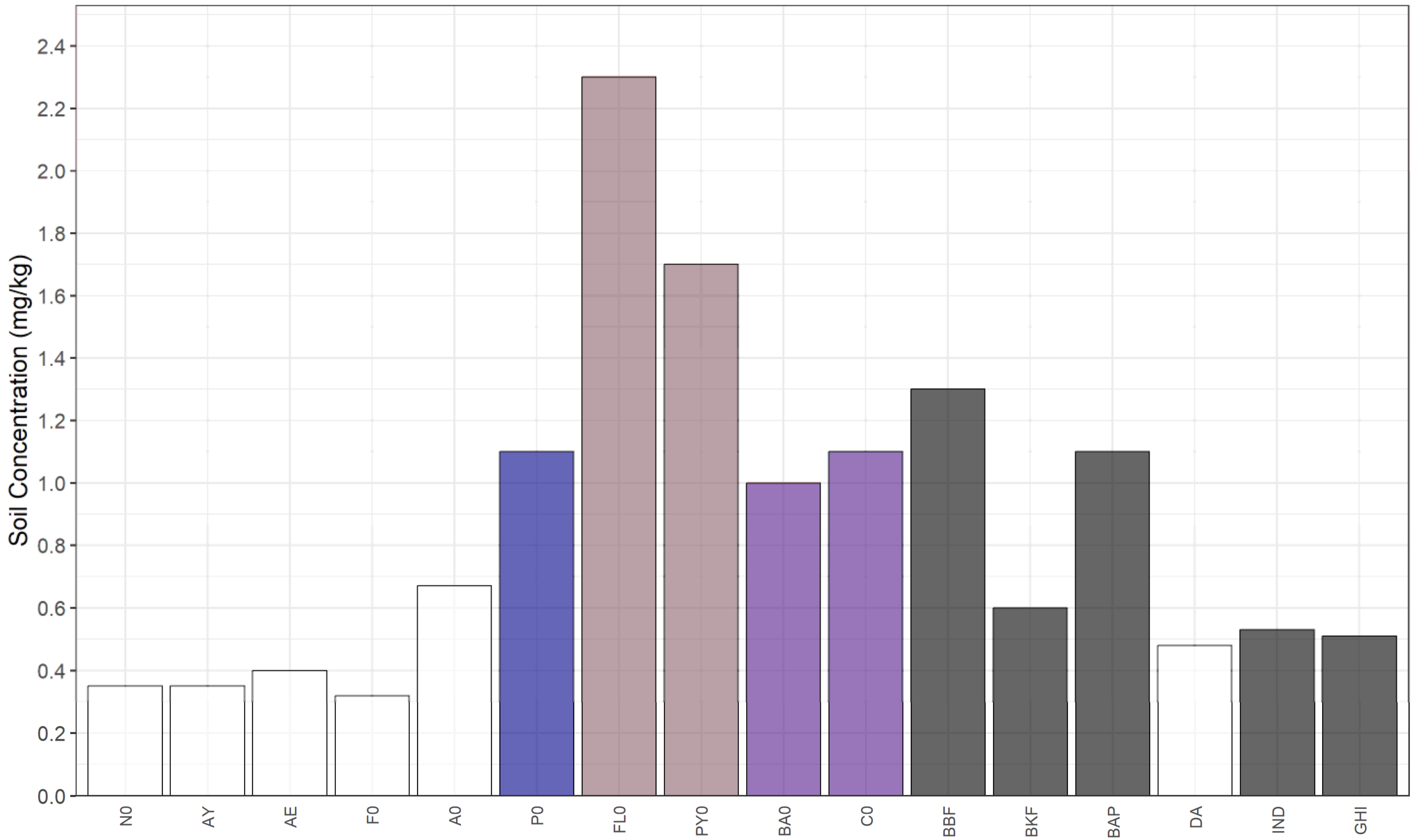
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-07-LB-MB
SAMPLE ID: T-07-LB-MB (0-6)

ARCADIS

FIGURE
X



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NATIONAL GRID
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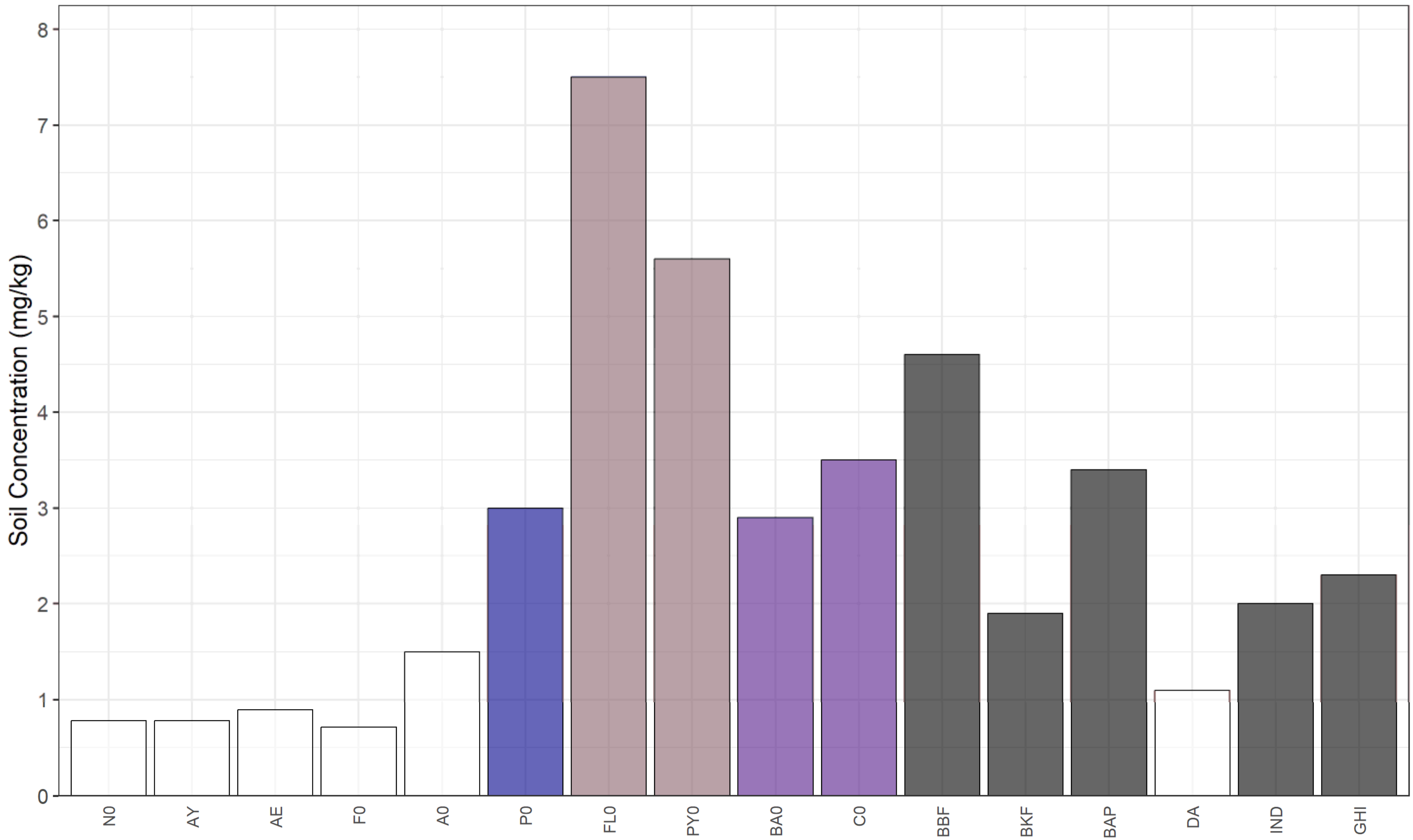
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-07-LB-MB
SAMPLE ID: T-07-LB-MB (6-12)

ARCADIS

FIGURE
X



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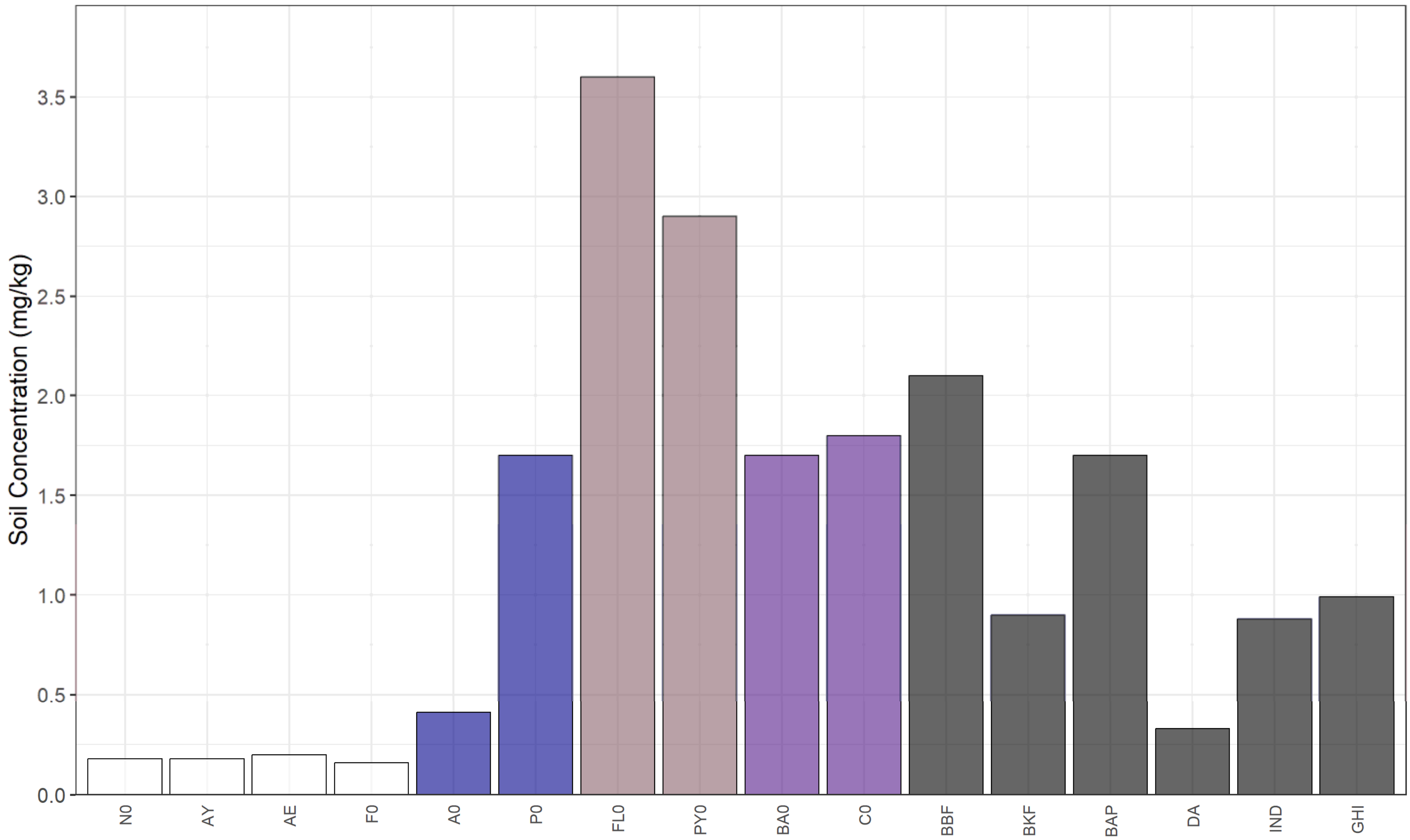
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-07-LB-MHWL
SAMPLE ID: T-07-LB-MHWL (0-6)

ARCADIS

FIGURE
X



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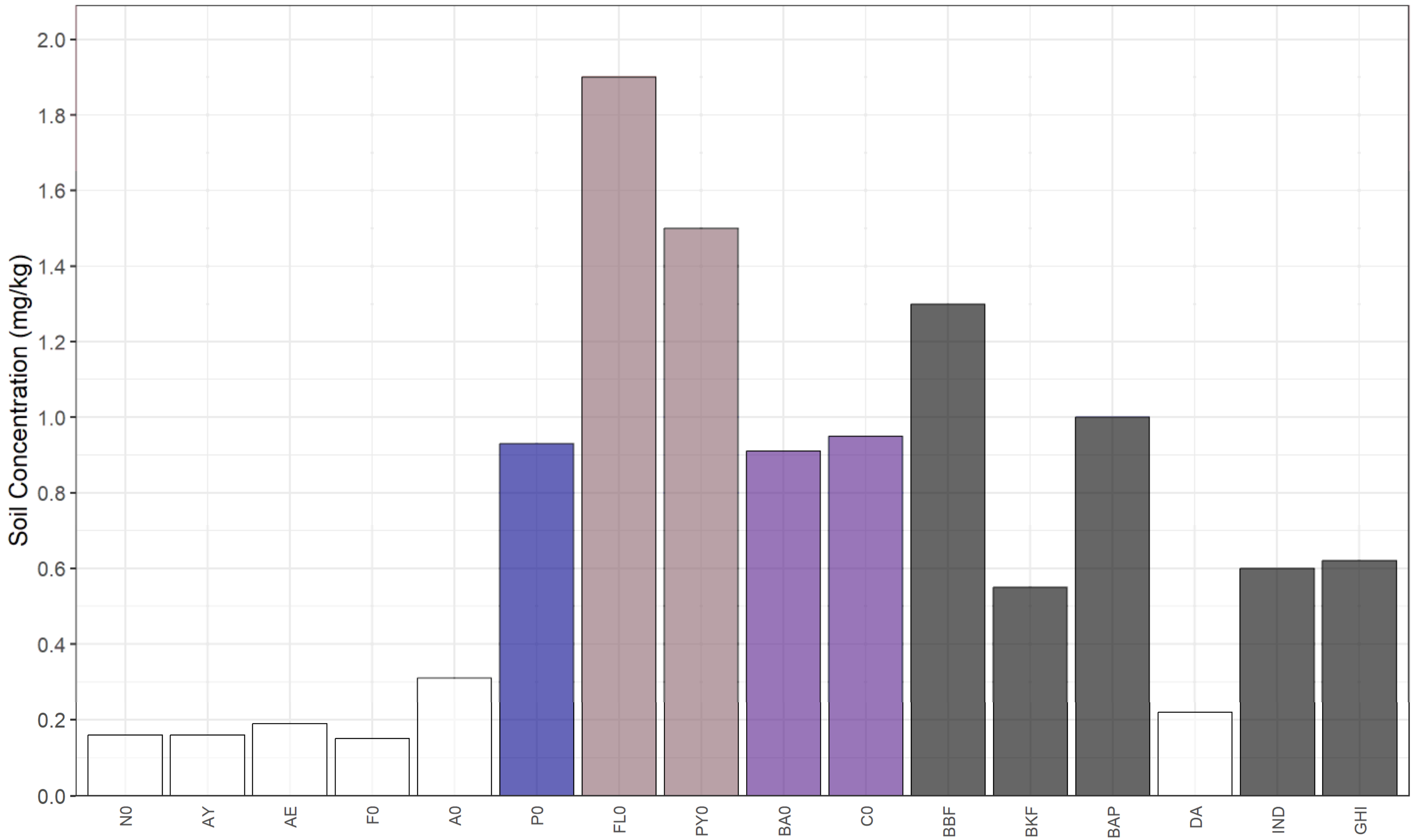
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-07-LB-MHWL
SAMPLE ID: T-07-LB-MHWL (6-12)

ARCADIS

FIGURE
X



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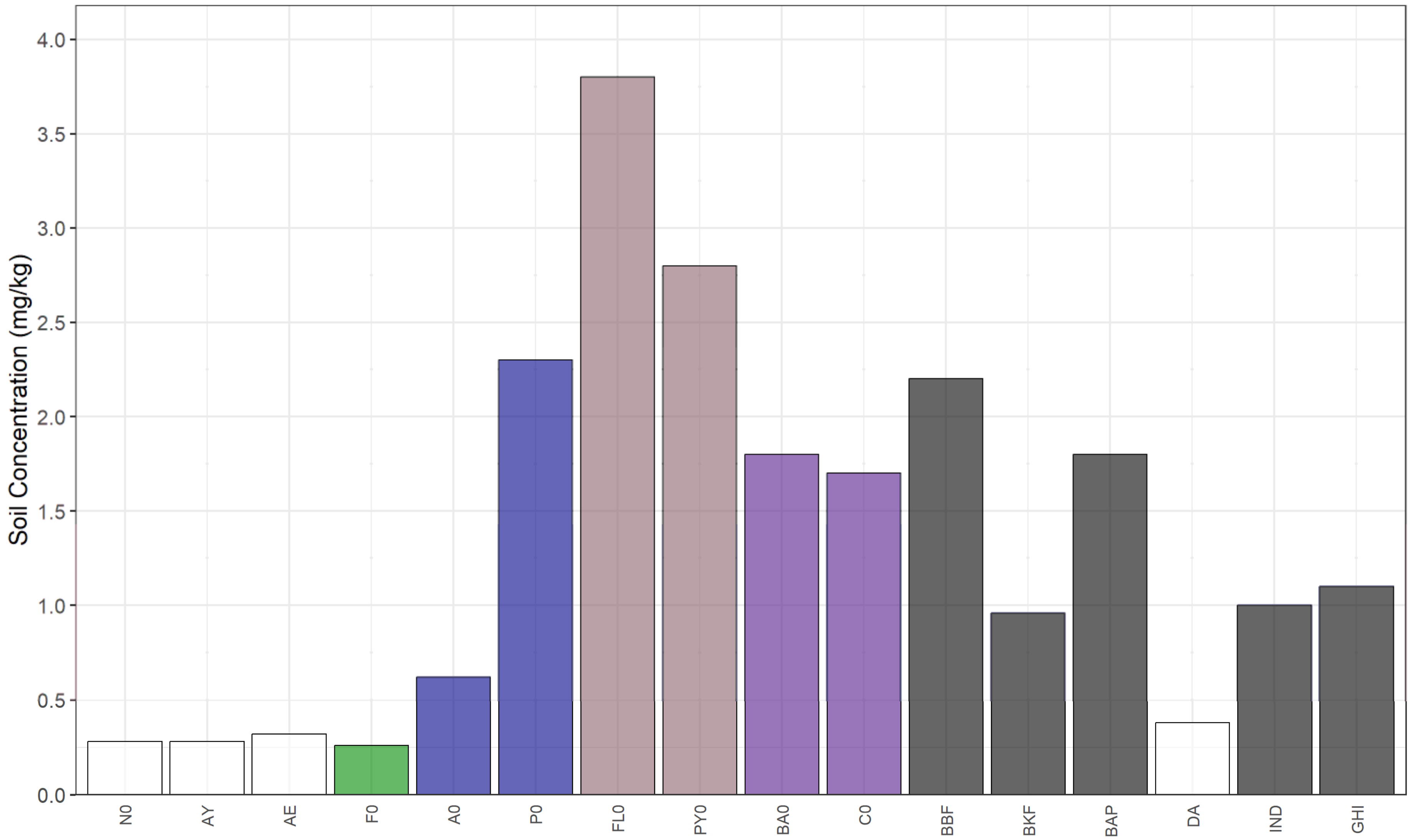
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-07-RB-MB
SAMPLE ID: T-07-RB-MB (0-6)

ARCADIS

FIGURE
X



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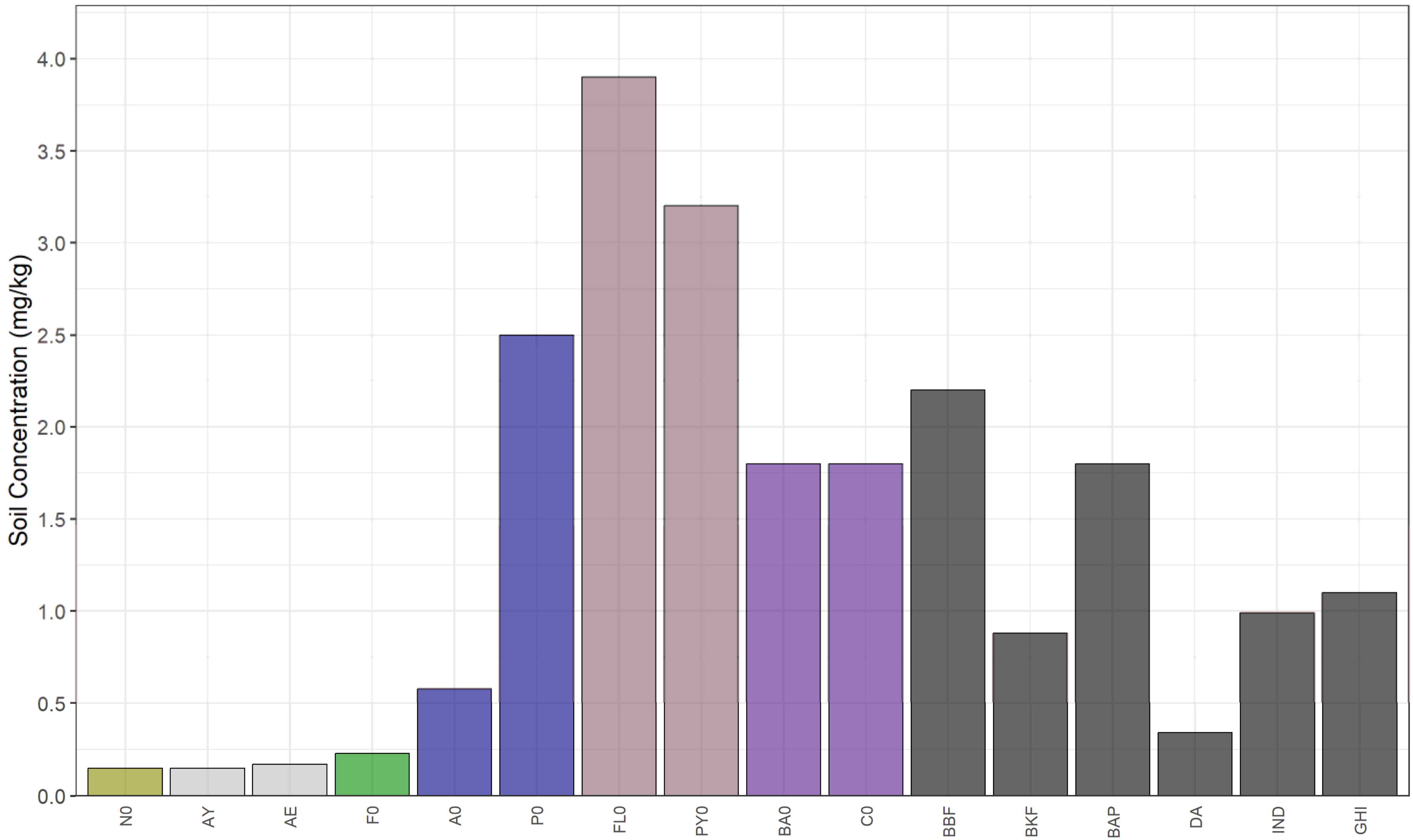
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-07-RB-MB
SAMPLE ID: T-07-RB-MB (6-12)

ARCADIS

FIGURE
X



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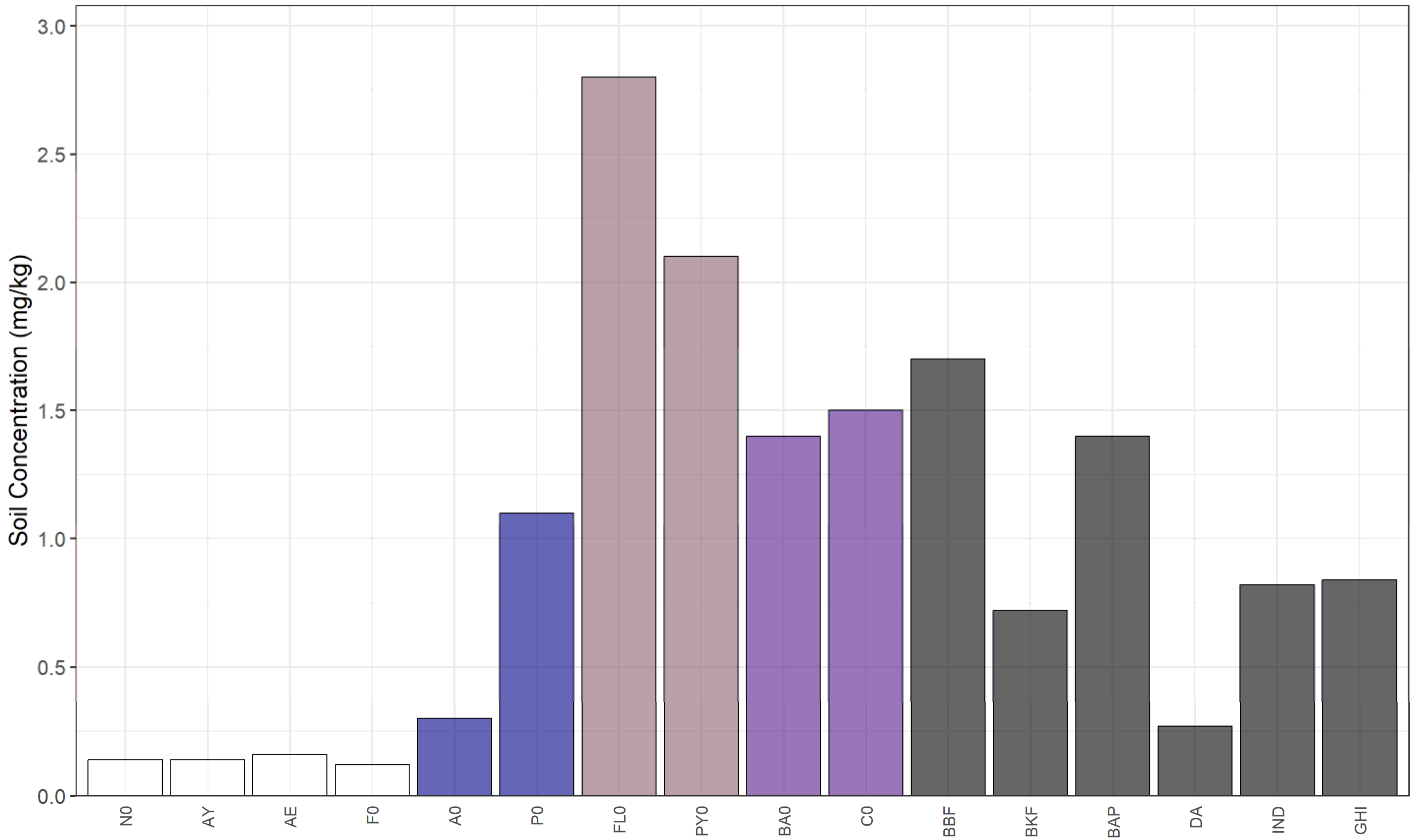
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-07-RB-MHWL
SAMPLE ID: T-07-RB-MHWL (0-6)

ARCADIS

FIGURE
X



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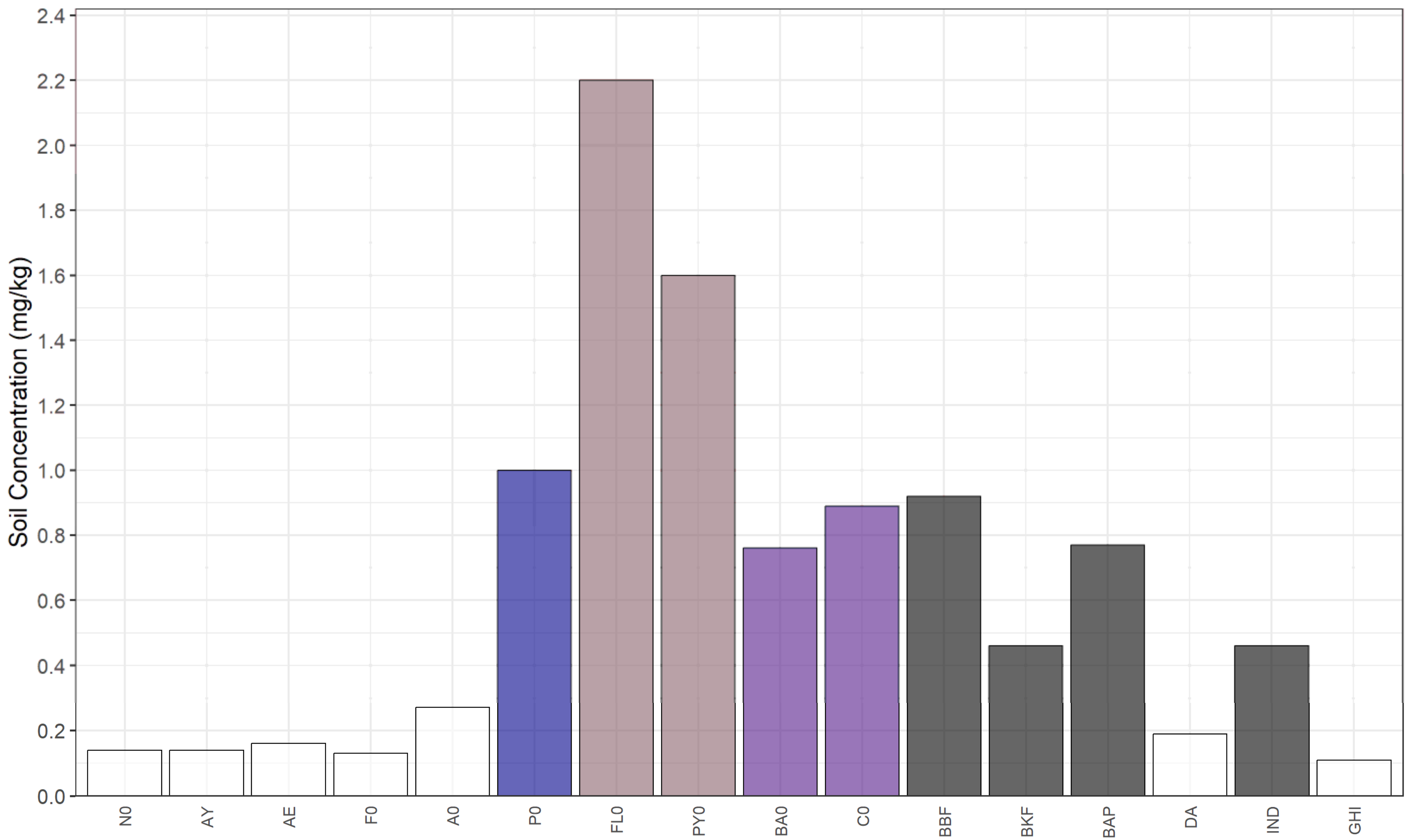
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
BACKGROUND LOCATION: T-07-RB-MHWL
SAMPLE ID: T-07-RB-MHWL (6-12)

ARCADIS

FIGURE
X



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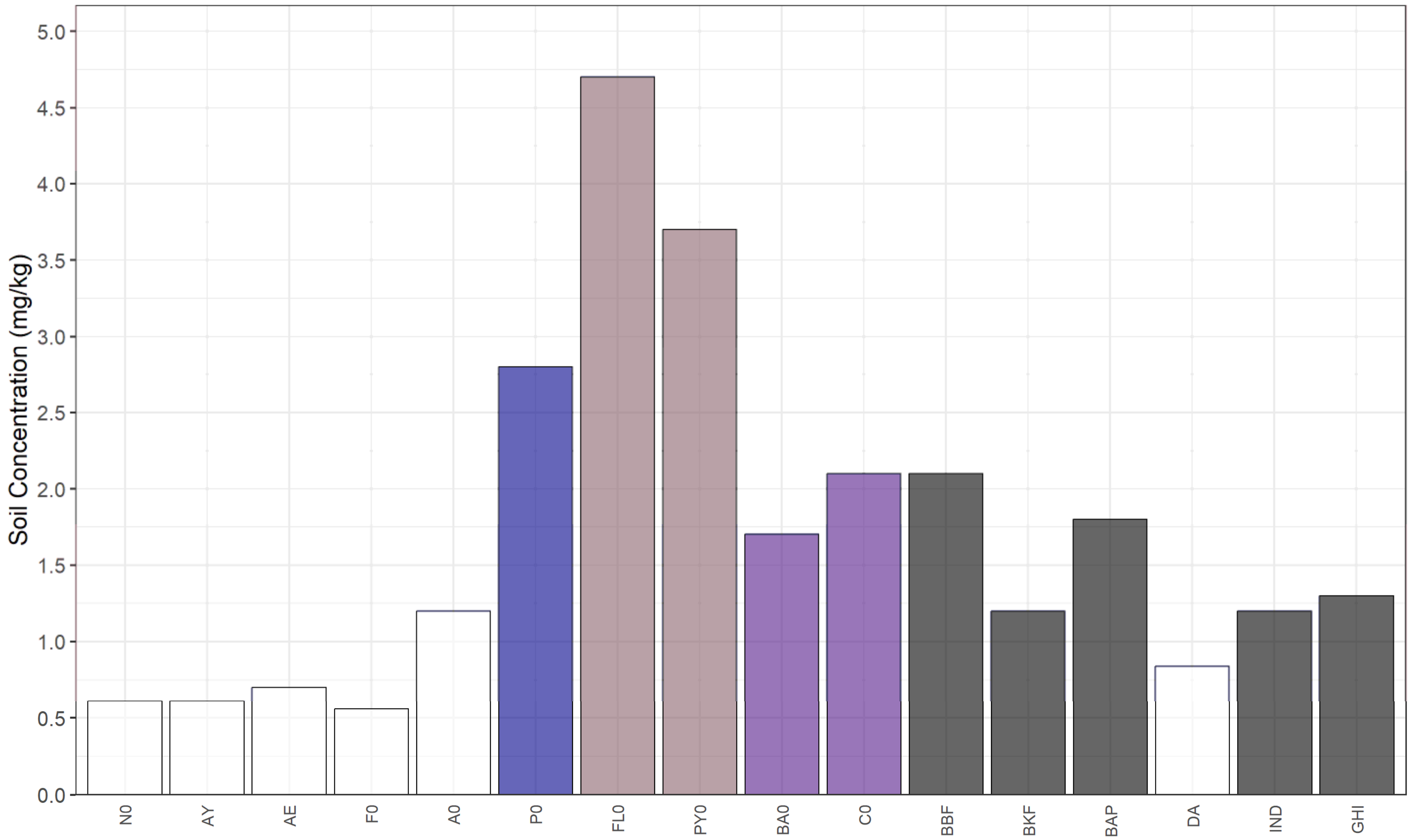
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-11-LB-MB
SAMPLE ID: PDI-T-11-LB-MB (0-0.3')

ARCADIS

FIGURE
X



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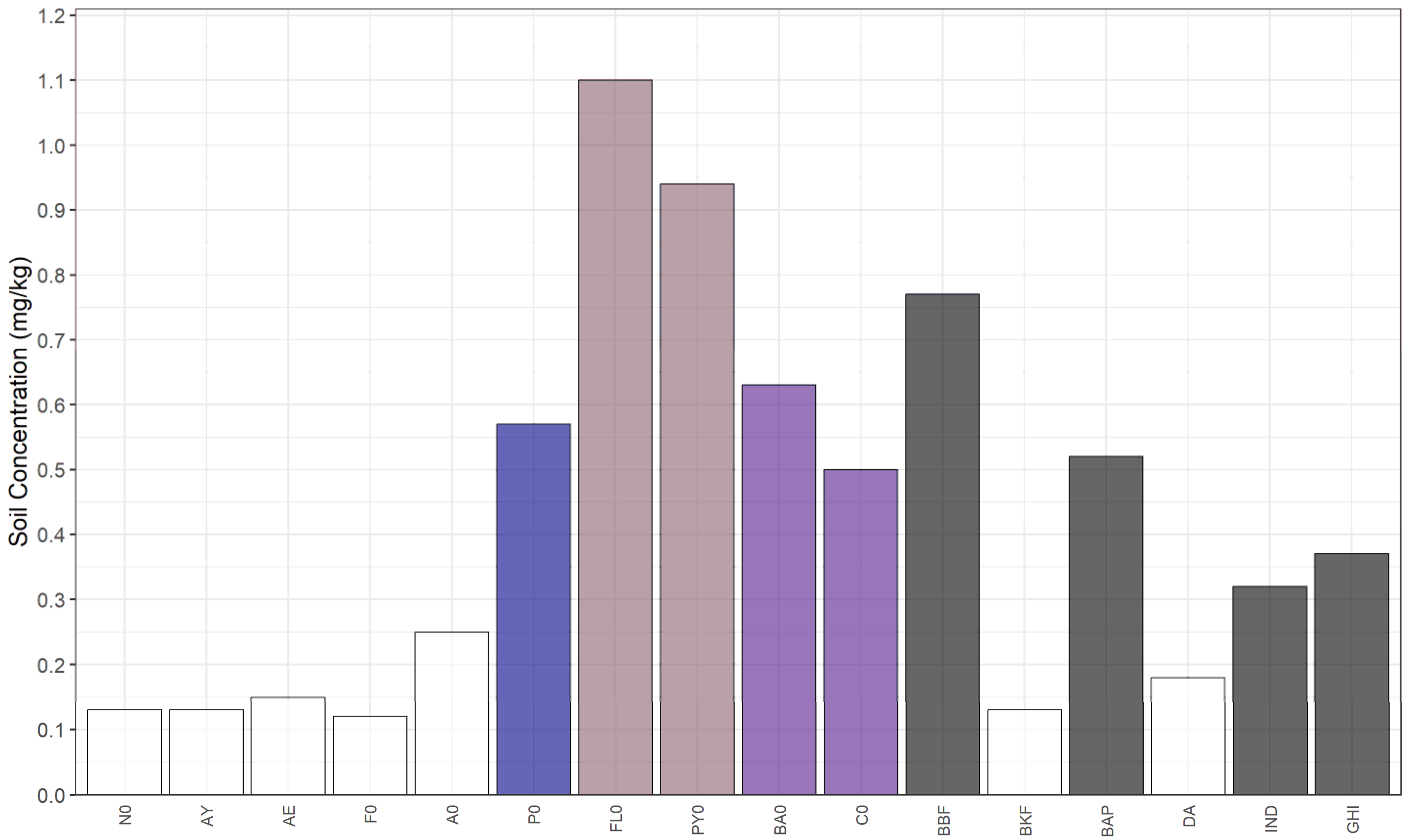
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-11-LB-MHWL
SAMPLE ID: PDI-T-11-LB-MHWL (0-0.4')

ARCADIS

FIGURE
X



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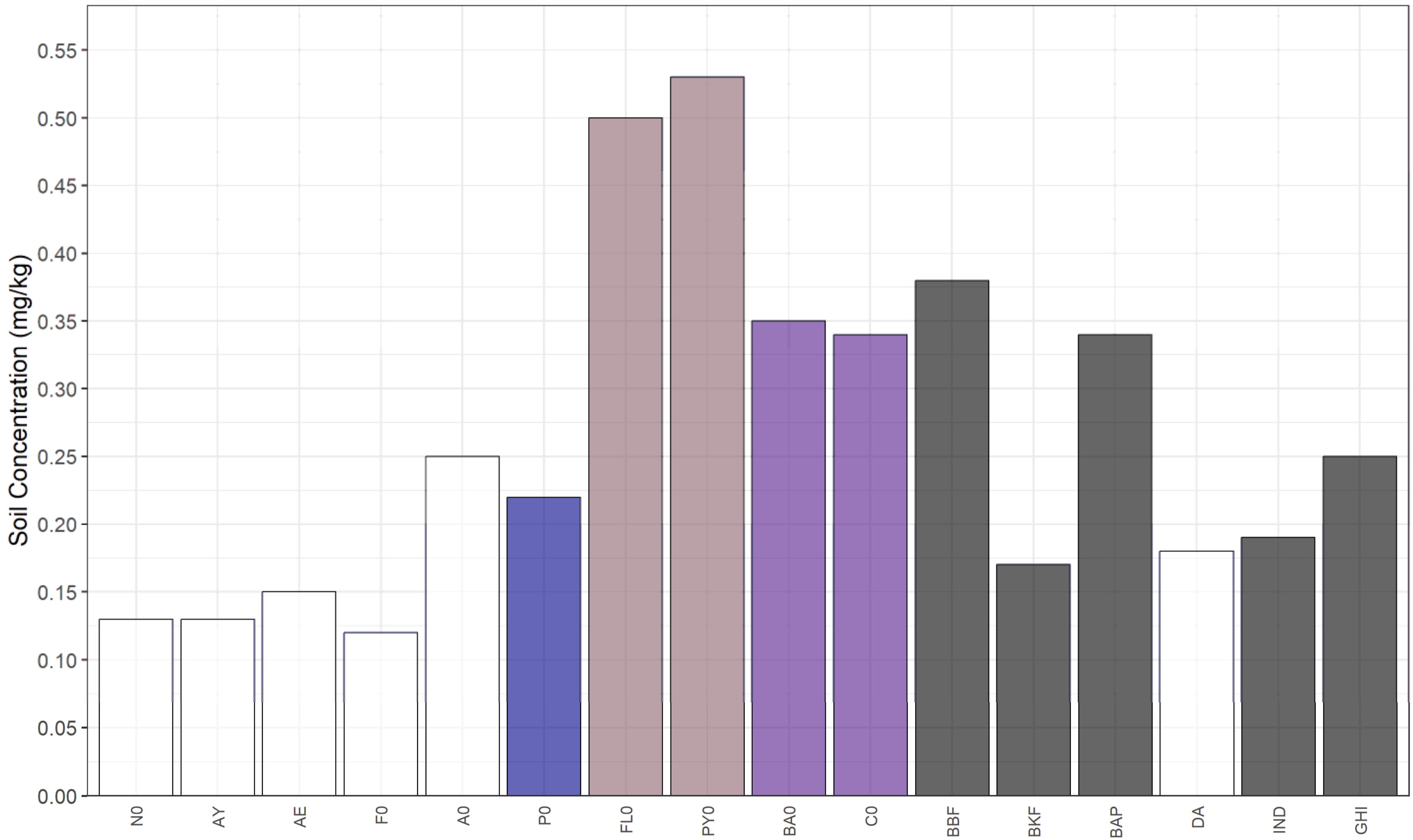
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-12-LB-MB
SAMPLE ID: PDI-T-12-LB-MB (0-0.5")

ARCADIS

FIGURE
X



Legend

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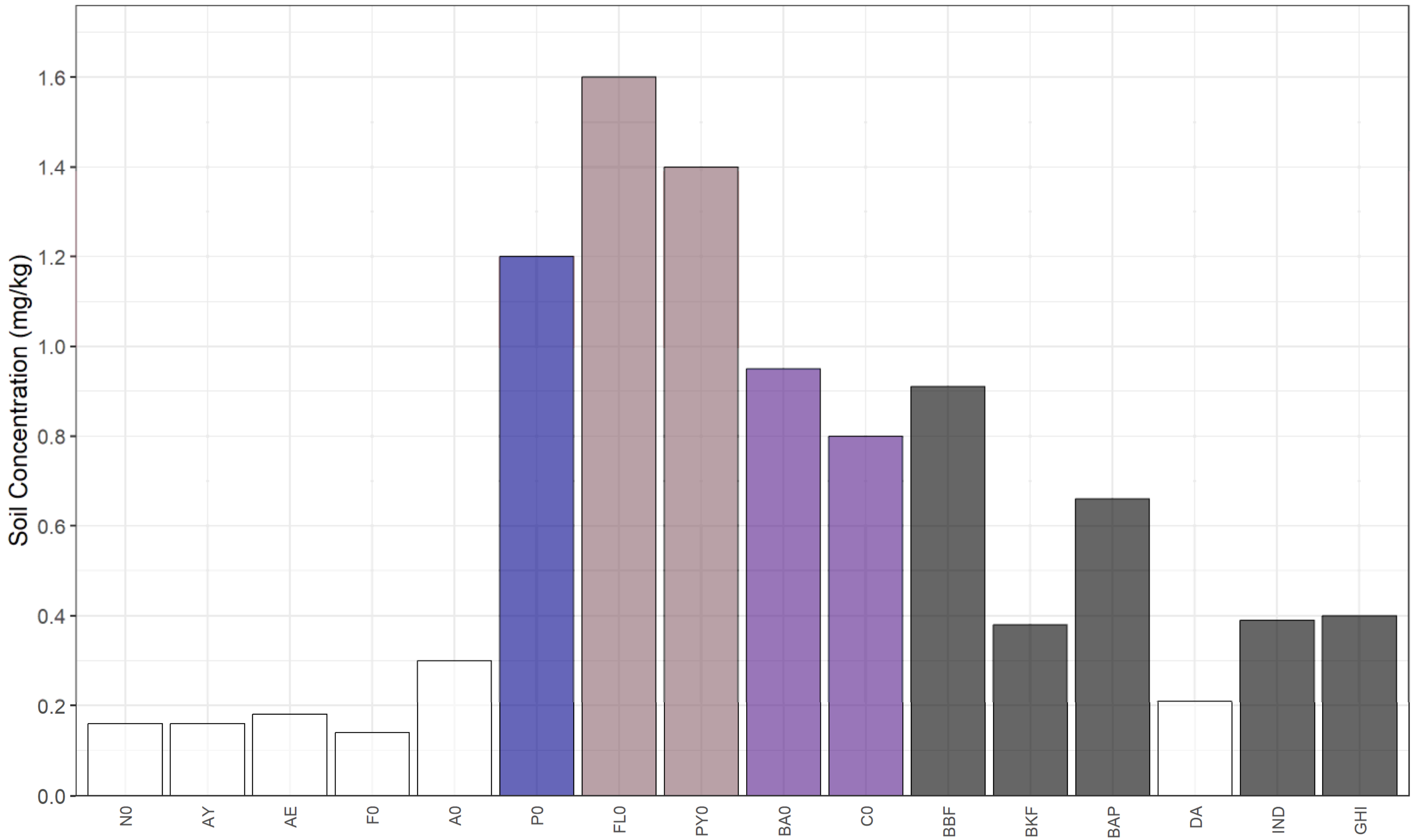
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-12-LB-MB
SAMPLE ID: PDI-T-12-LB-MB (0.5-0.8')

ARCADIS

FIGURE
X



Legend

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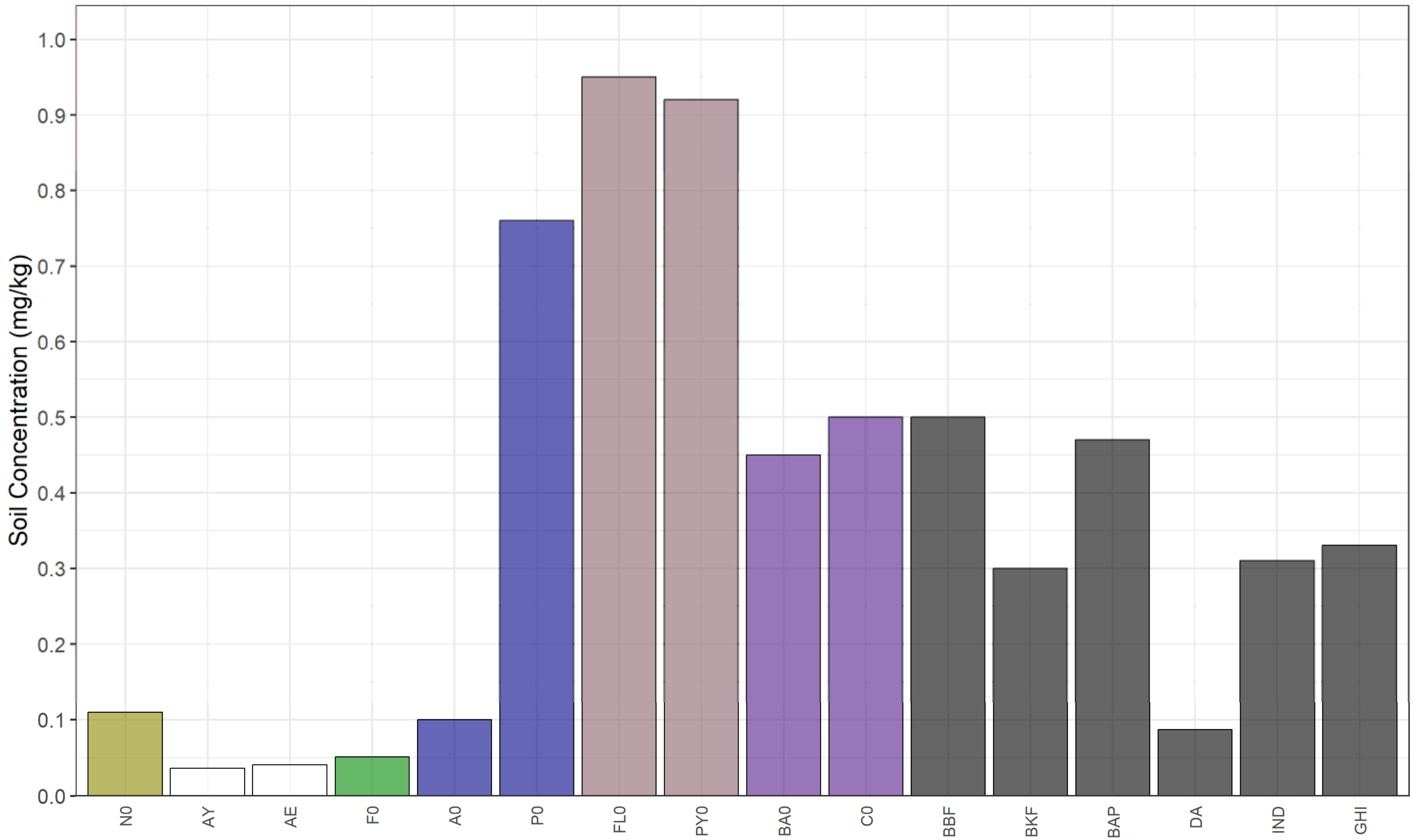
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-12-LB-MHWL
SAMPLE ID: PDI-T-12-LB-MWHL (0-0.5')

ARCADIS

FIGURE
X



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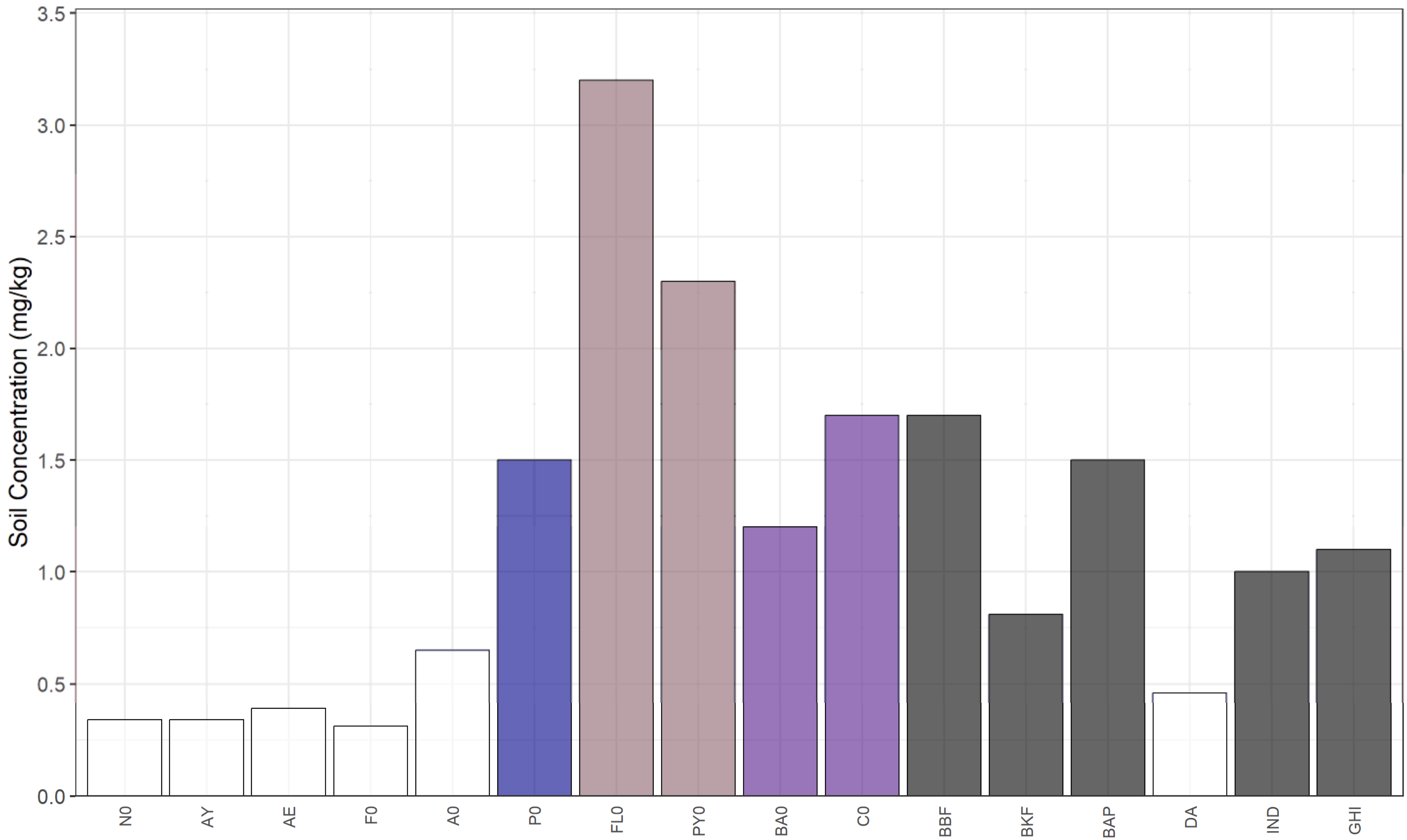
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-12-LB-MHWL
SAMPLE ID: PDI-T-12-LB-MWHL (0.5-0.7')

ARCADIS

FIGURE
X



Legend

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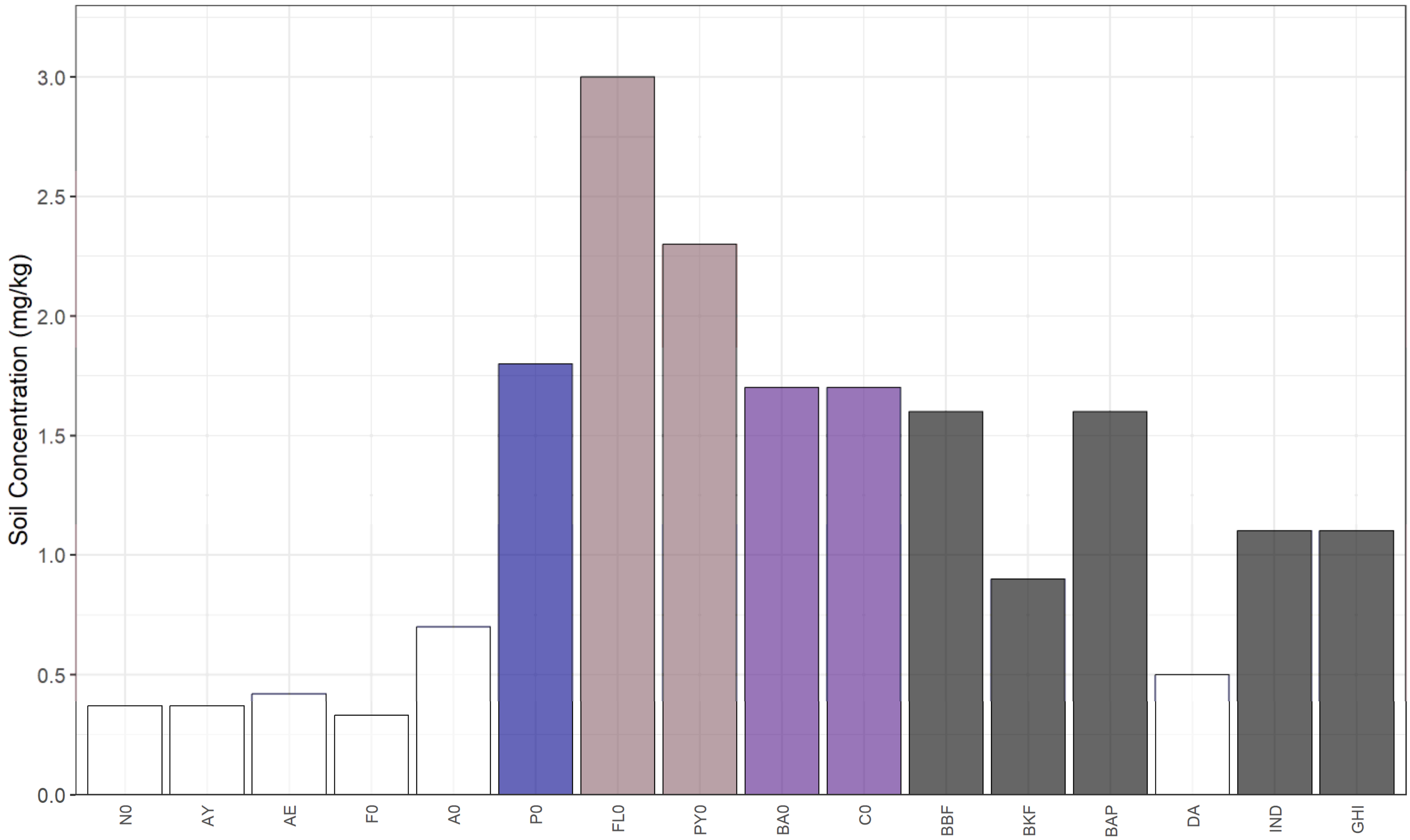
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-15-RB-MB
SAMPLE ID: PDI-T-15-RB-MB (0-0.5')

ARCADIS

FIGURE
X



Legend

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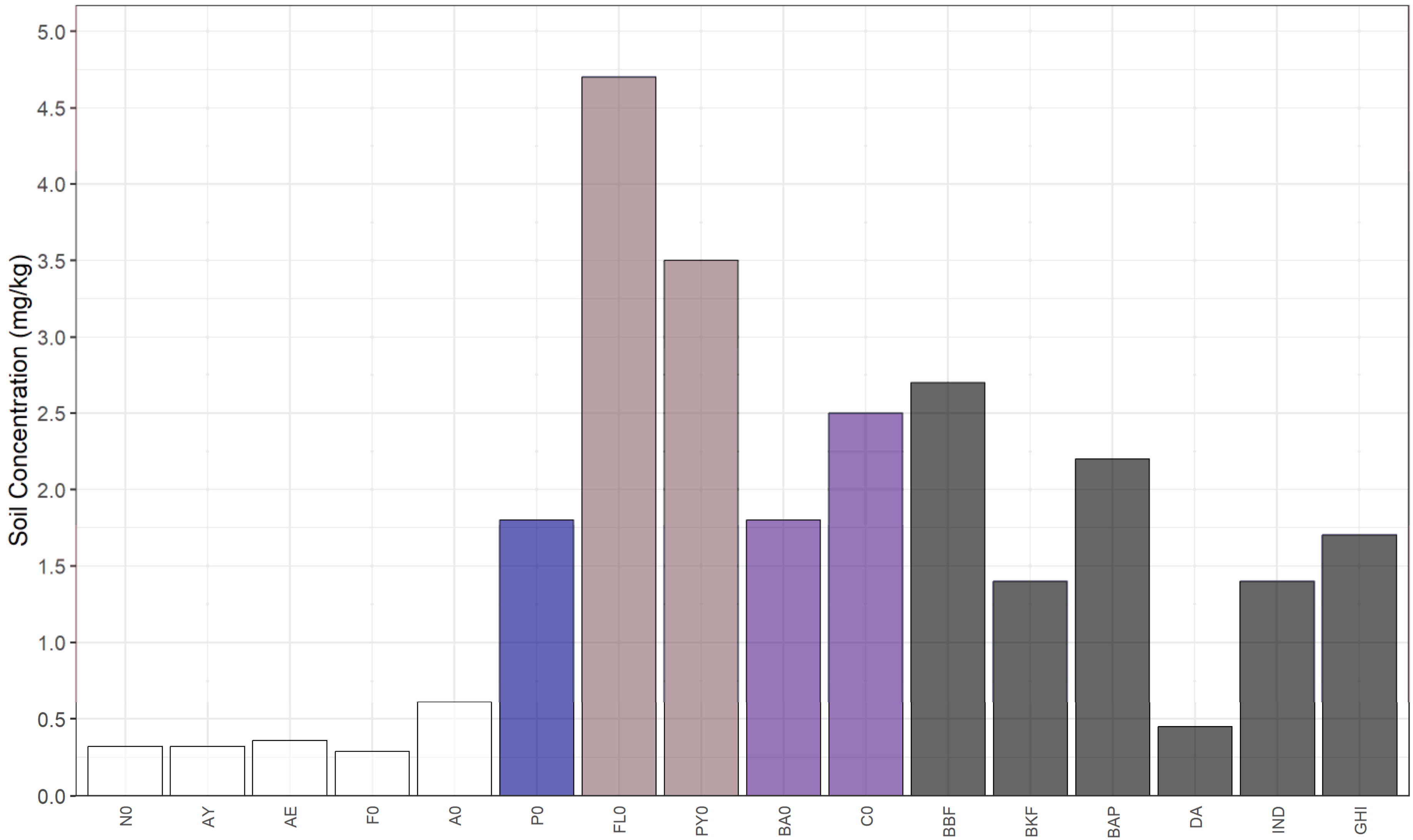
NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-15-RB-MB
SAMPLE ID: PDI-T-15-RB-MB (0.5-0.7')

ARCADIS

FIGURE
X



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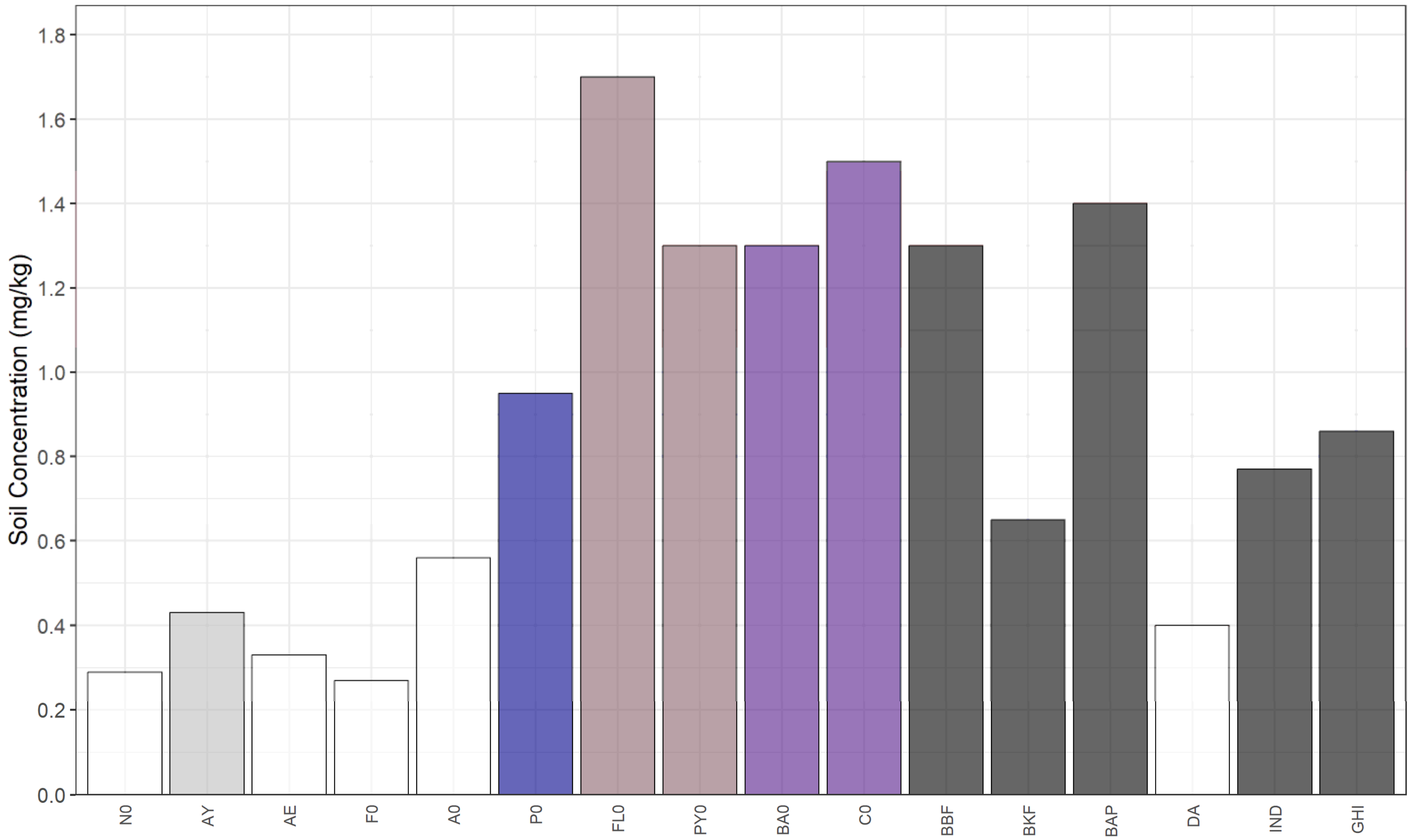
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-15-RB-MHWL
SAMPLE ID: PDI-T-15-RB-MHWL (0-0.5')

ARCADIS

FIGURE
X



Legend

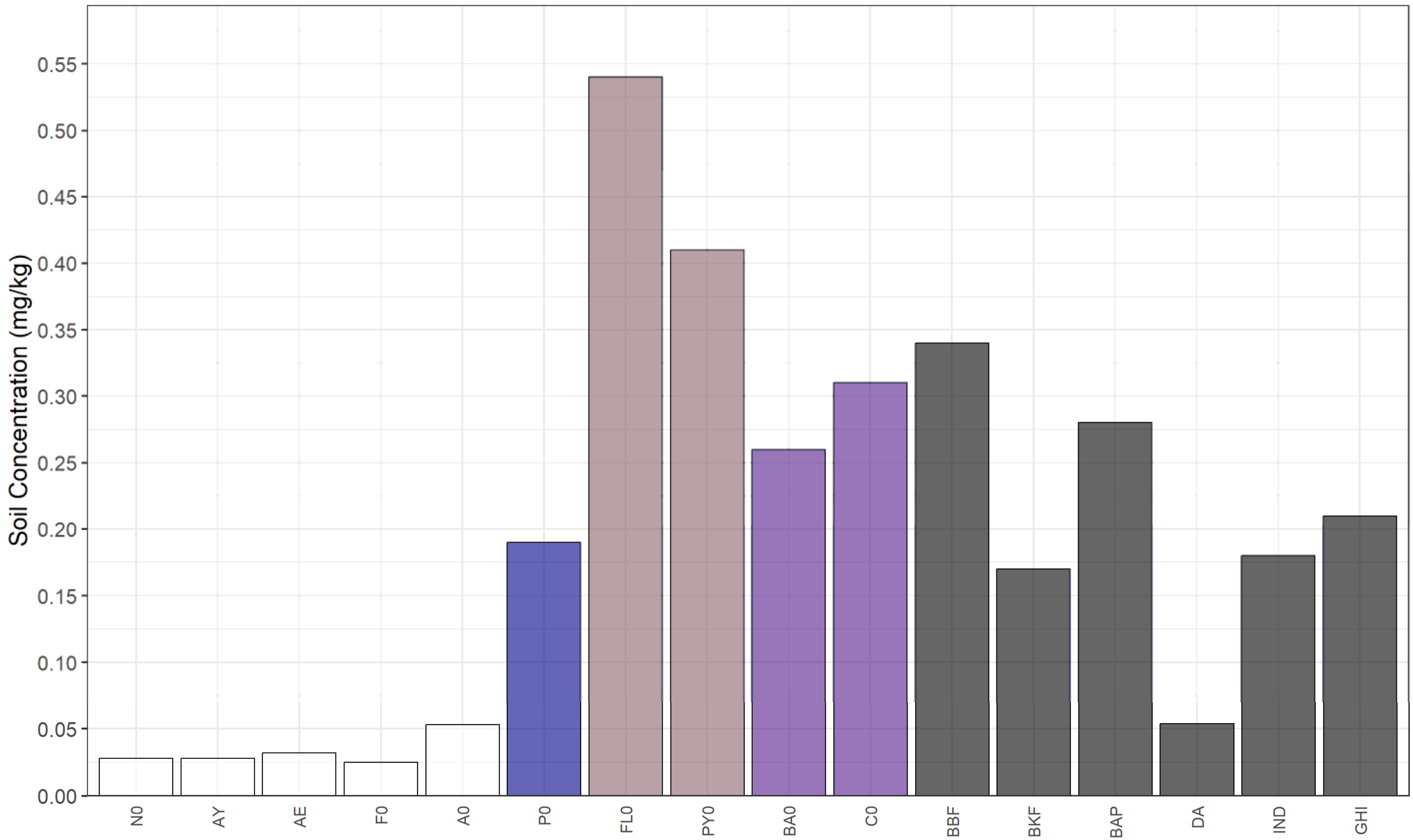
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-15-RB-MHWL
SAMPLE ID: PDI-T-15-RB-MHWL (0.5-0.8')

ARCADIS

FIGURE
X



Legend

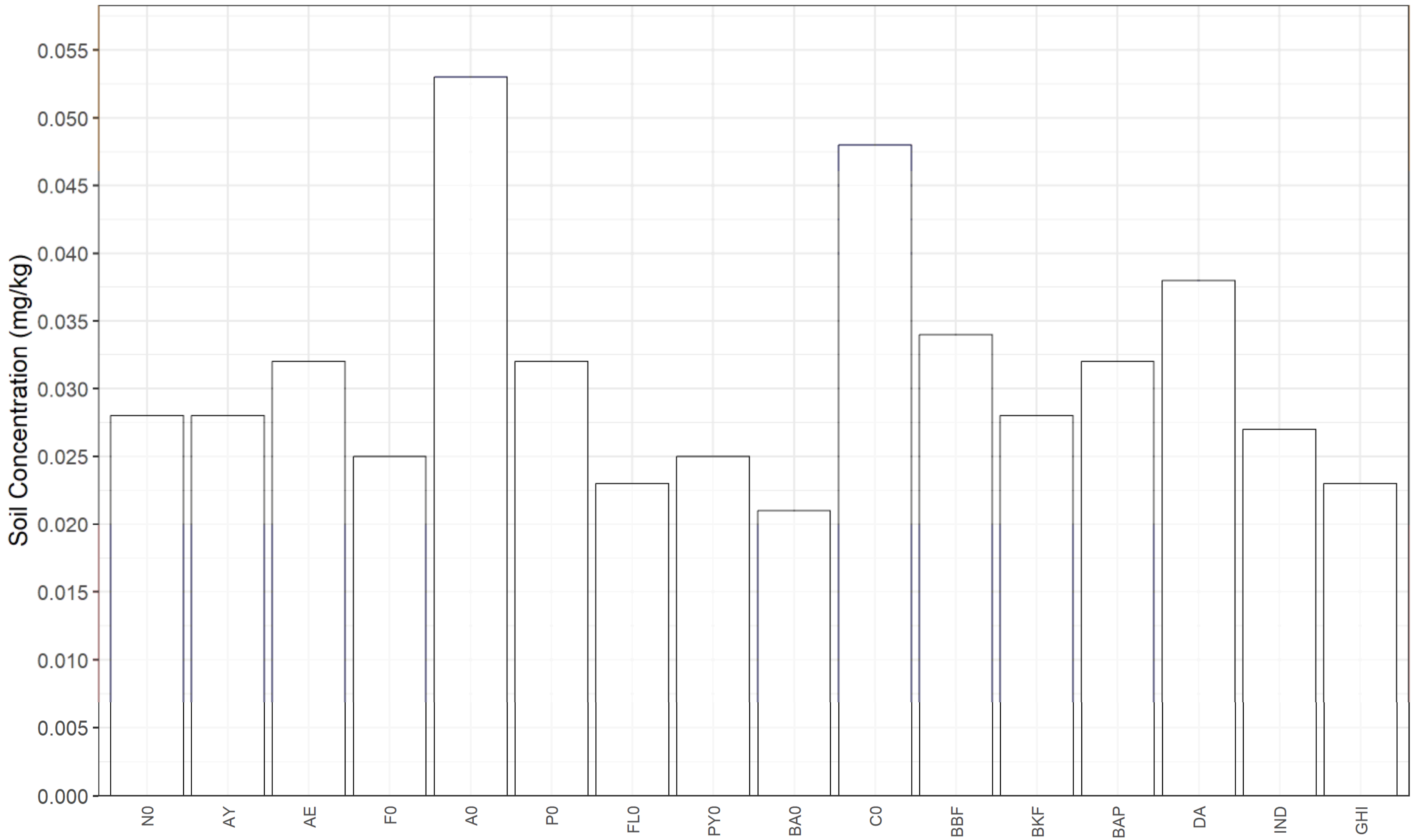
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-16-LB-MB
SAMPLE ID: PDI-T-16-LB-MB (0-0.5')

ARCADIS

FIGURE
X



Legend

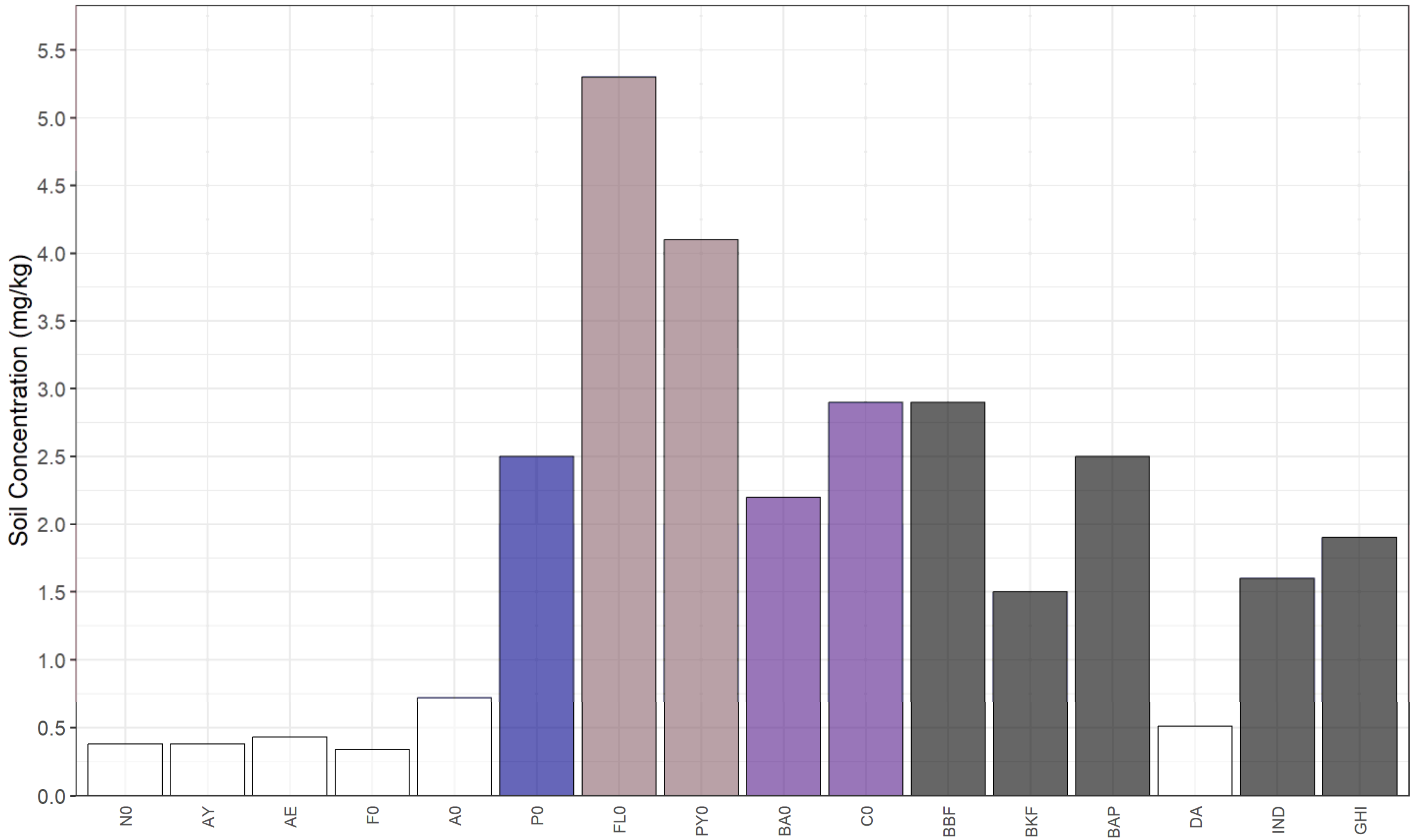
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-16-LB-MB
SAMPLE ID: PDI-T-16-LB-MB (0.5-0.8')

ARCADIS

FIGURE
X



Legend

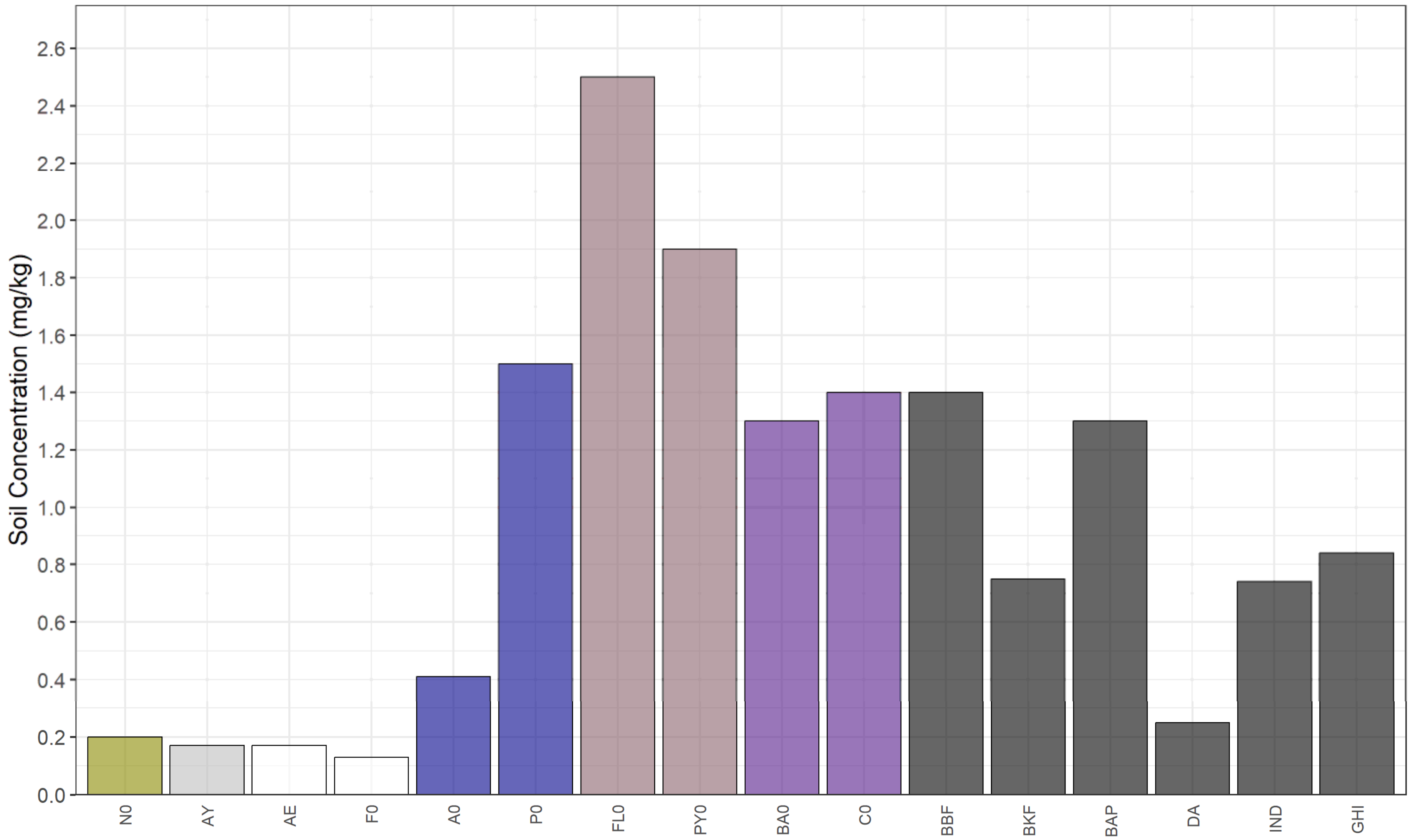
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-16-LB-MHWL
SAMPLE ID: PDI-T-16-LB-MHWL (0-0.3')

ARCADIS

FIGURE
X



Legend

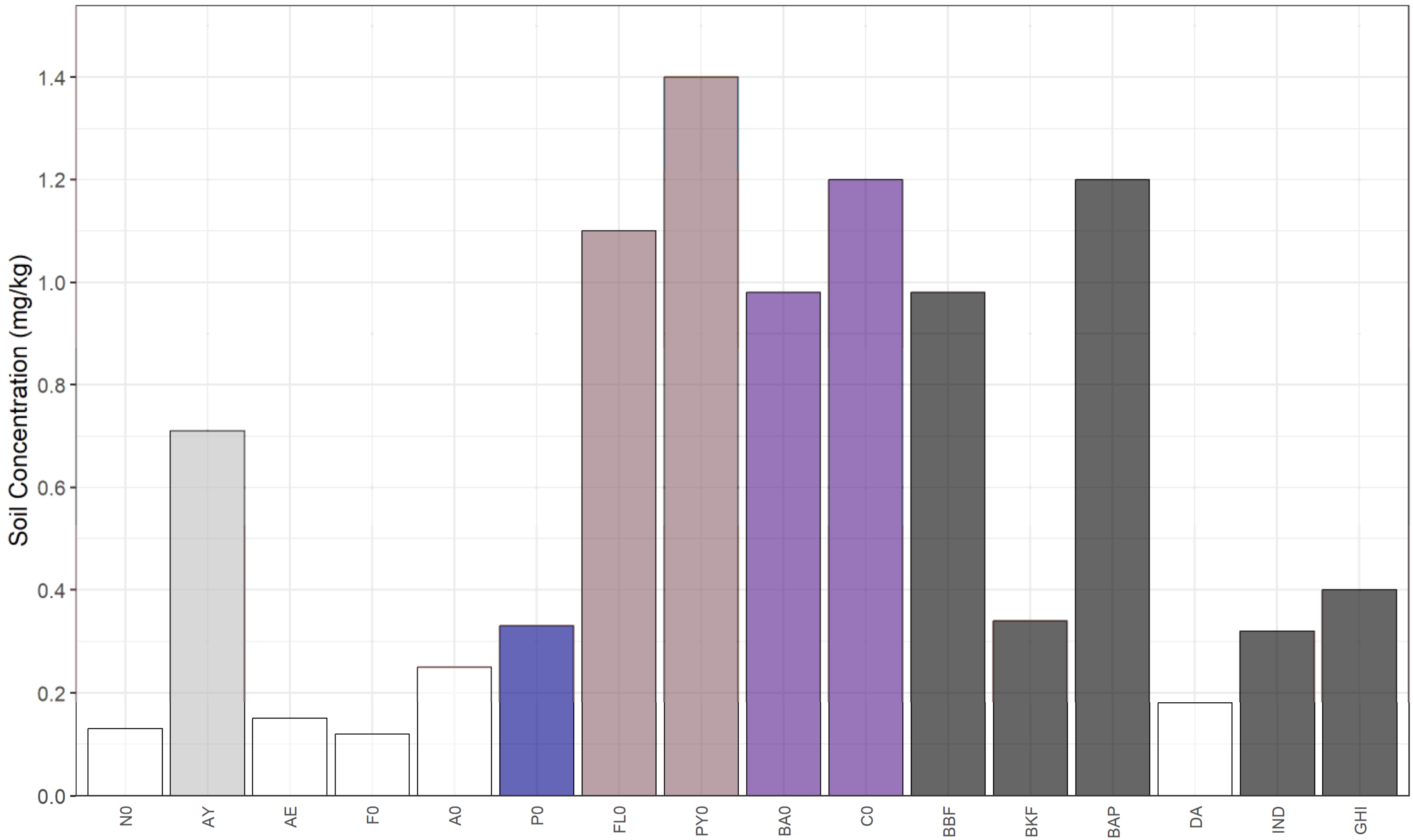
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-16-RB-MB
SAMPLE ID: PDI-T-16-RB-MB (0-0.5')

ARCADIS

FIGURE
X



Legend

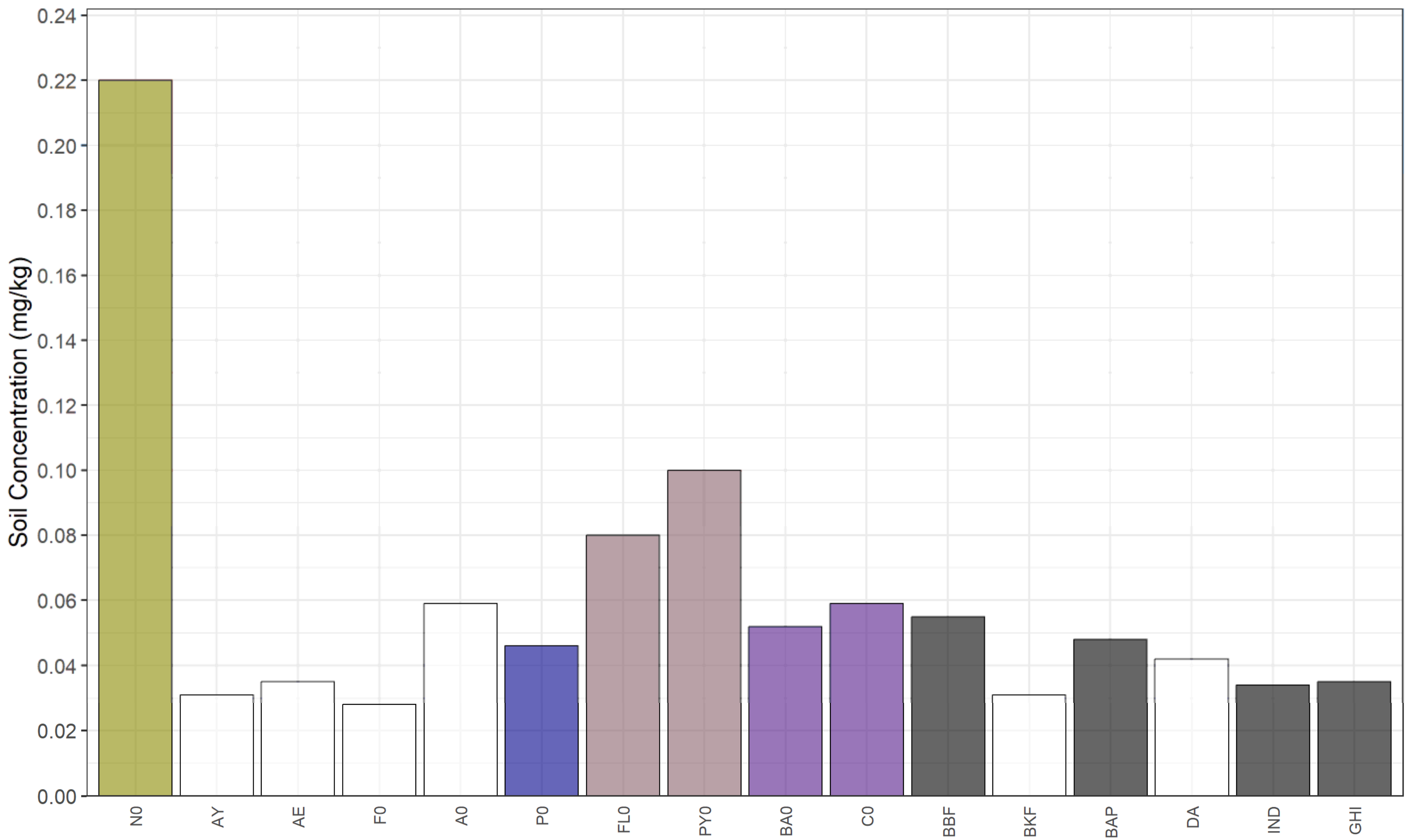
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-16-RB-MHWL
SAMPLE ID: PDI-T-16-RB-MHWL (0-0.5')

ARCADIS

FIGURE
X



Legend

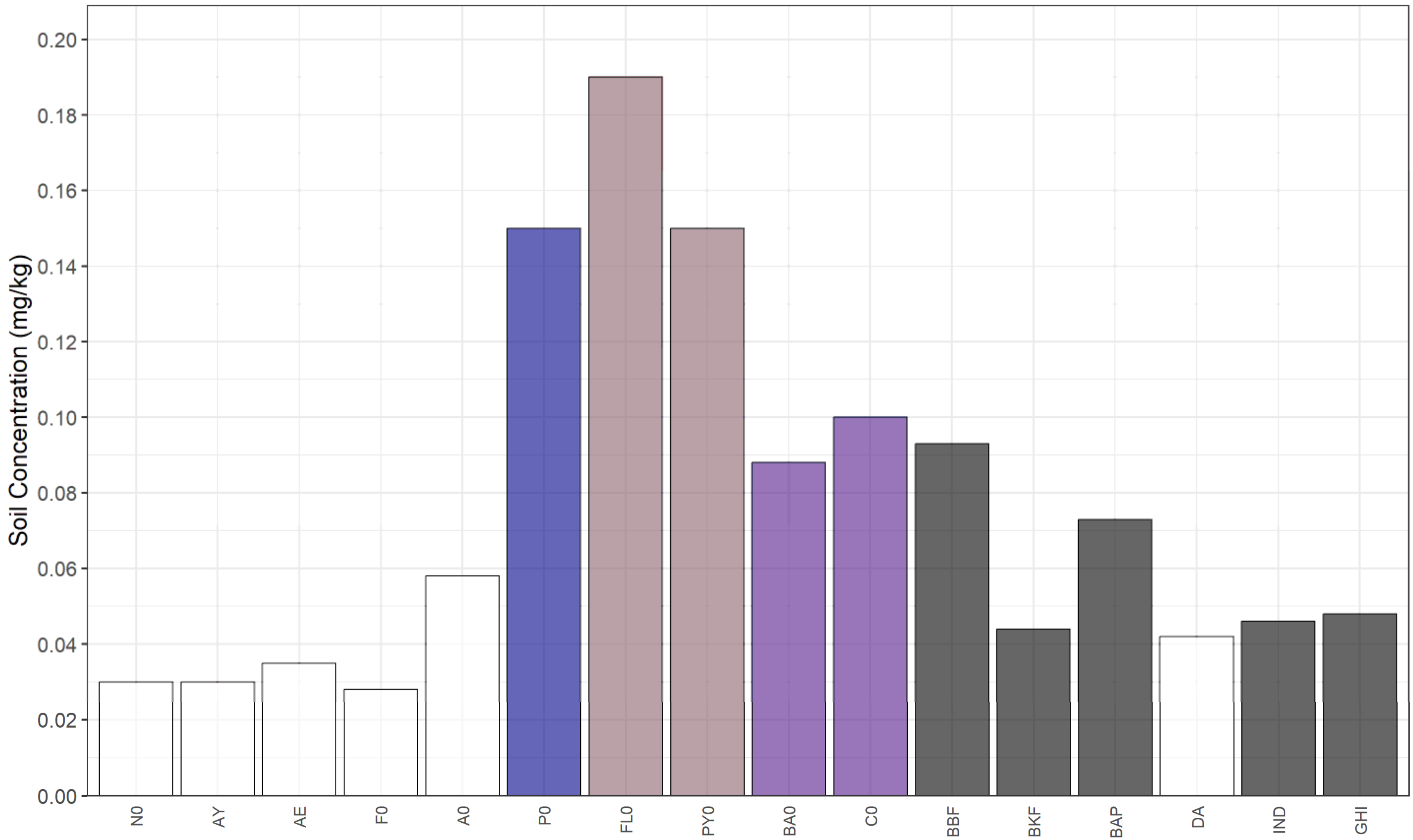
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-16-RB-MHWL
SAMPLE ID: PDI-T-16-RB-MHWL (0.5-1.0')

ARCADIS

FIGURE
X



Legend

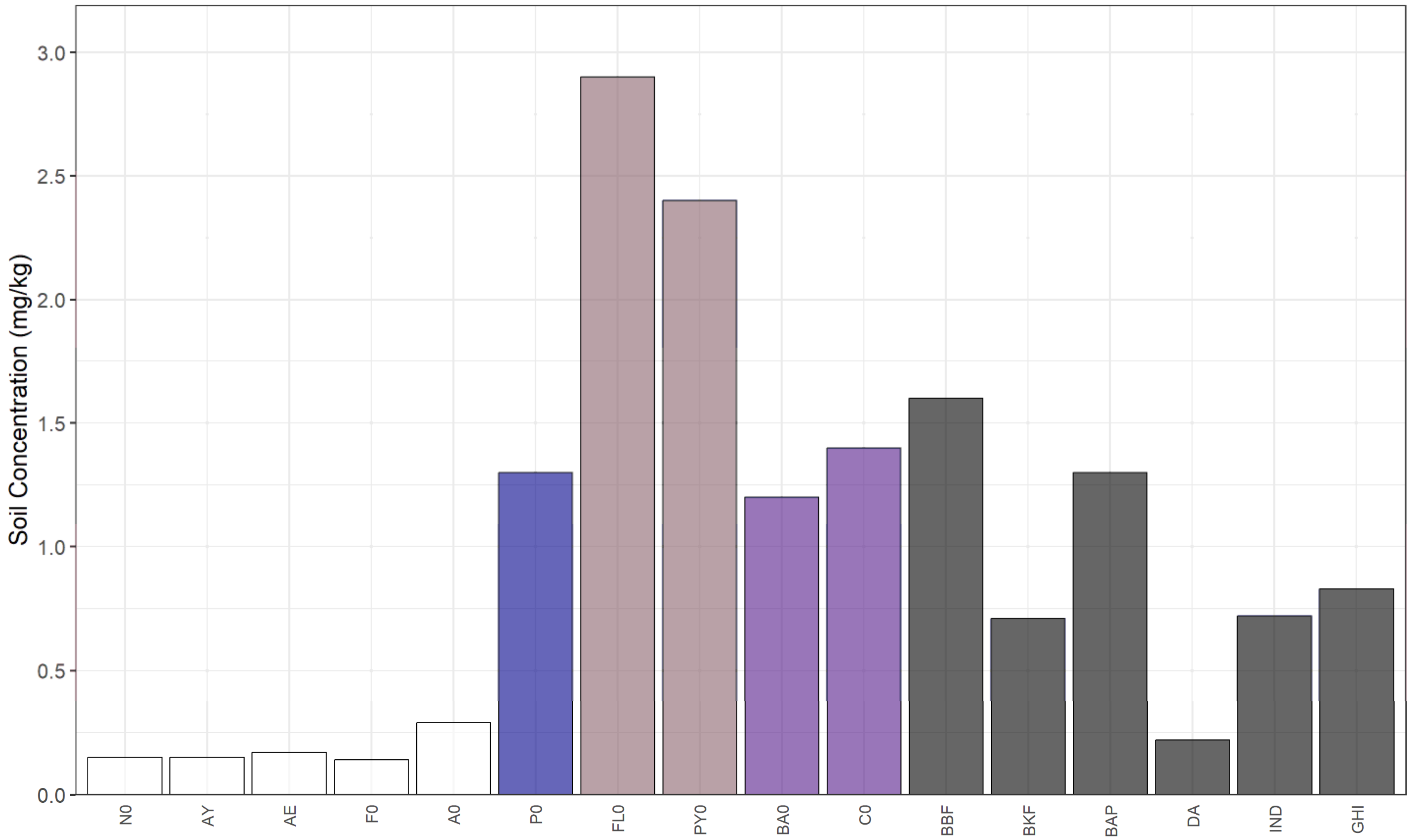
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-16-RB-MHWL
SAMPLE ID: PDI-T-16-RB-MHWL (1.0-1.8)

ARCADIS

FIGURE
X



Legend

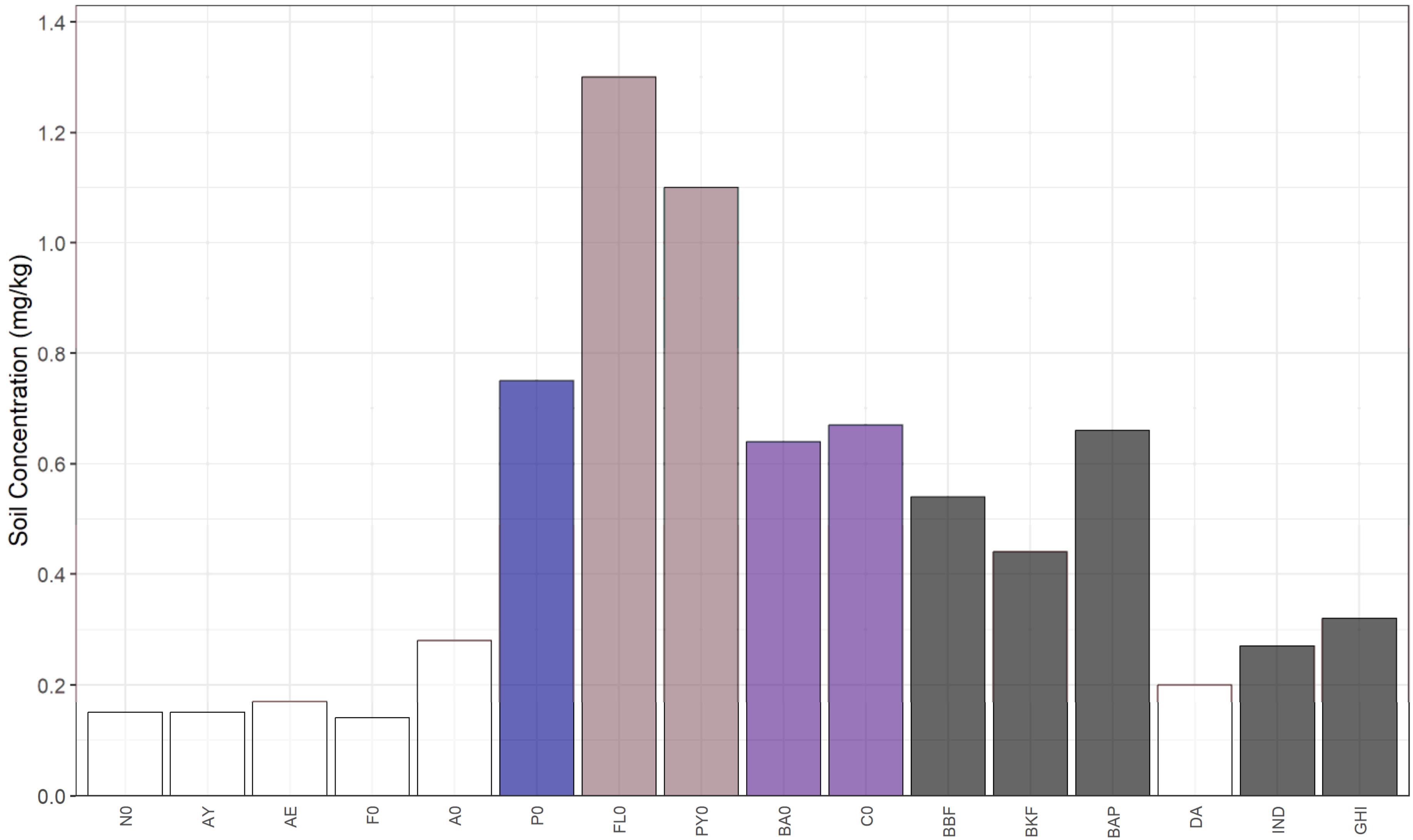
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-17-LB-MB
SAMPLE ID: PDI-T-17-LB-MB (0-0.5')

ARCADIS

FIGURE
X



Legend

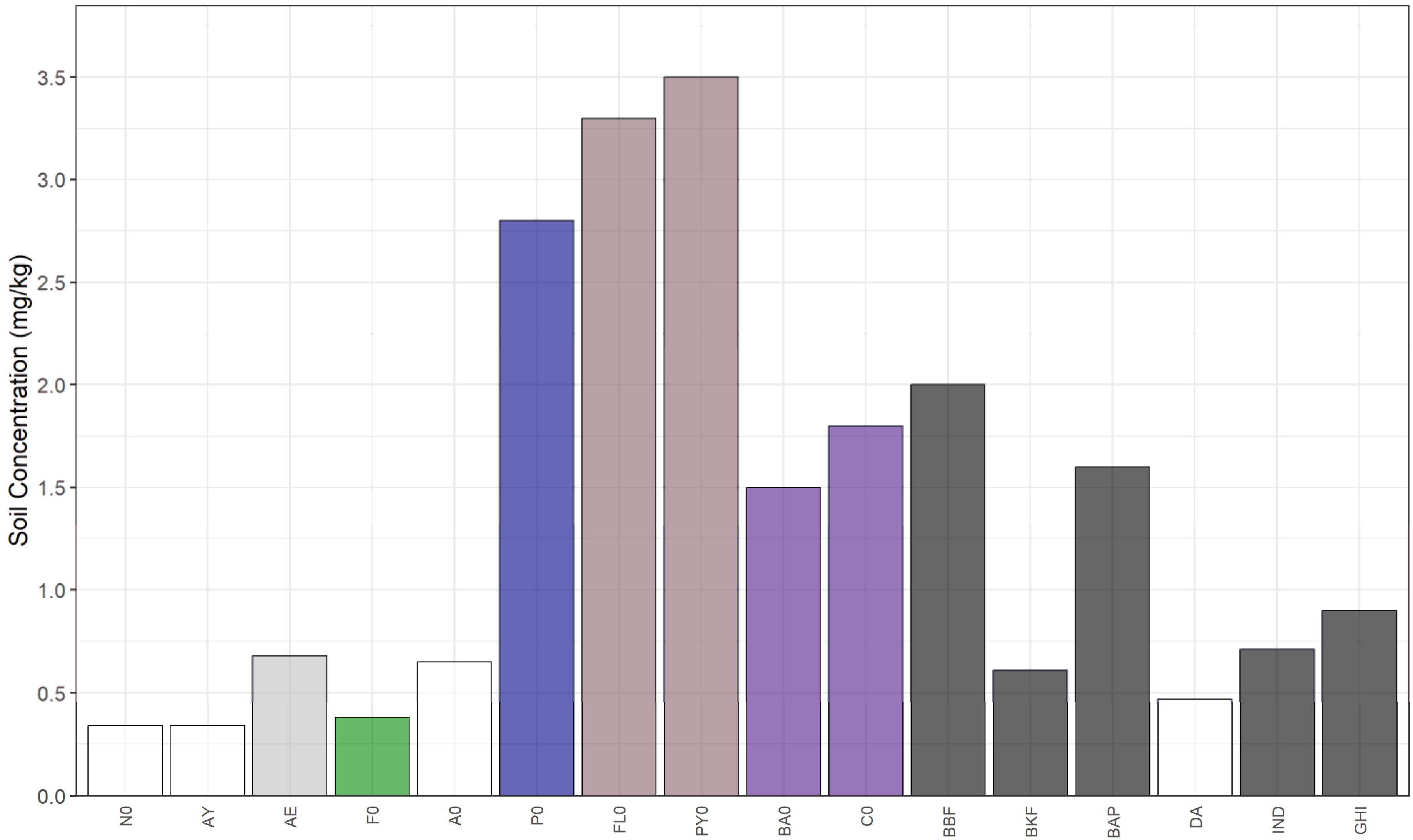
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-17-LB-MB
SAMPLE ID: PDI-T-17-LB-MB (0.5-0.8')

ARCADIS

FIGURE
X



Legend

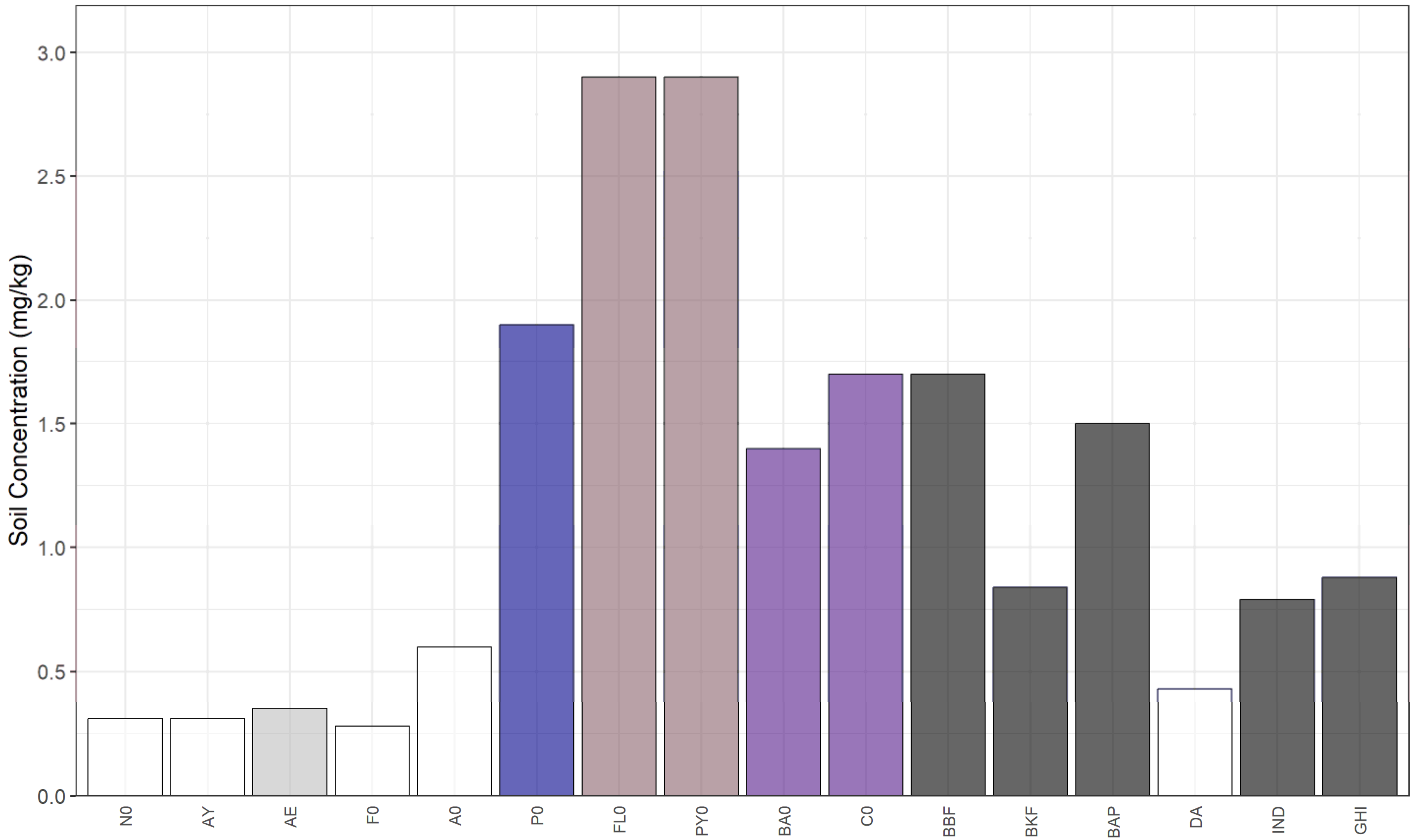
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-17-LB-MHWL
SAMPLE ID: PDI-T-17-LB-MHWL (0-0.5')

ARCADIS

FIGURE
X



Legend

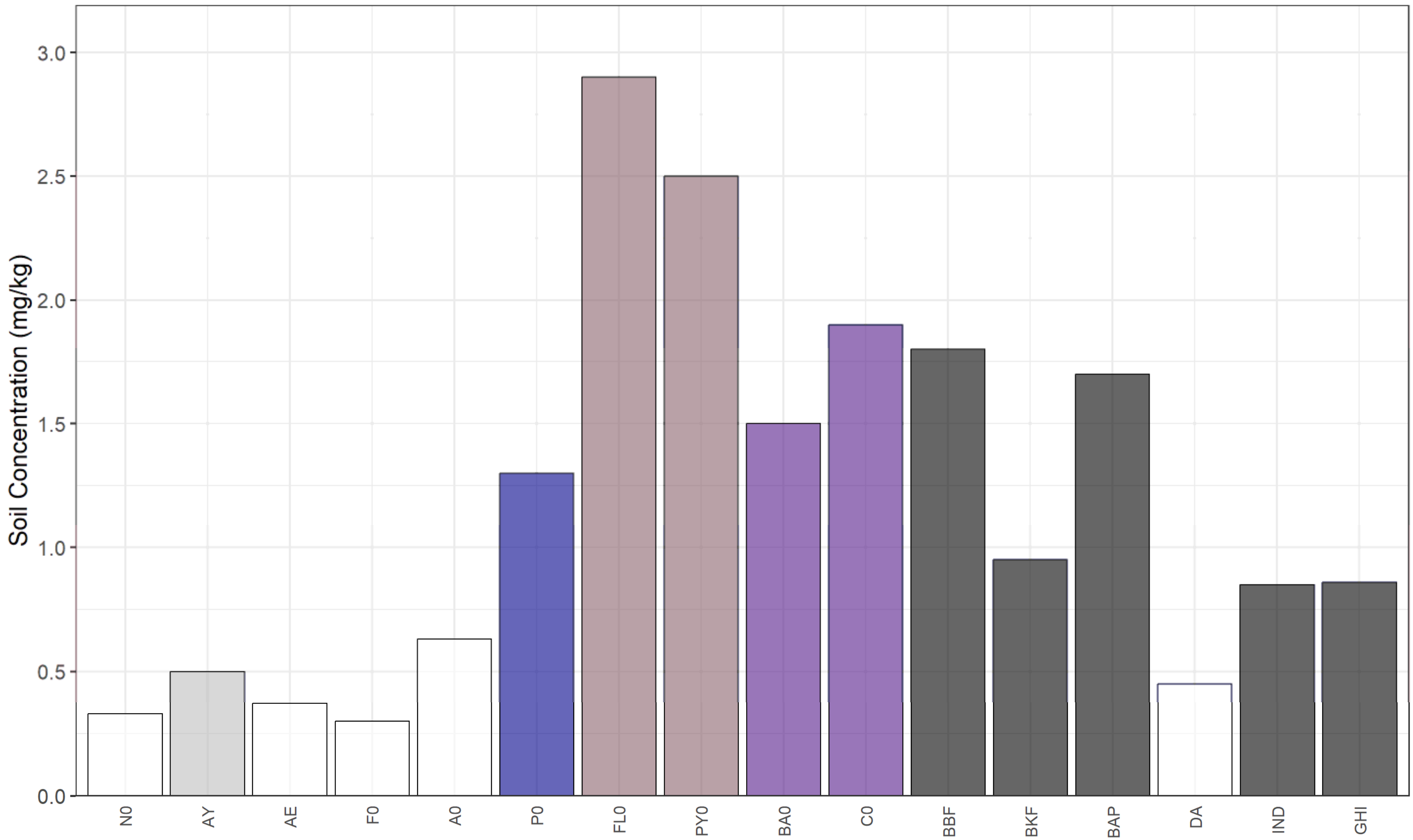
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-17-LB-MHWL
SAMPLE ID: PDI-T-17-LB-MHWL (0.5-0.9')

ARCADIS

FIGURE
X



Legend

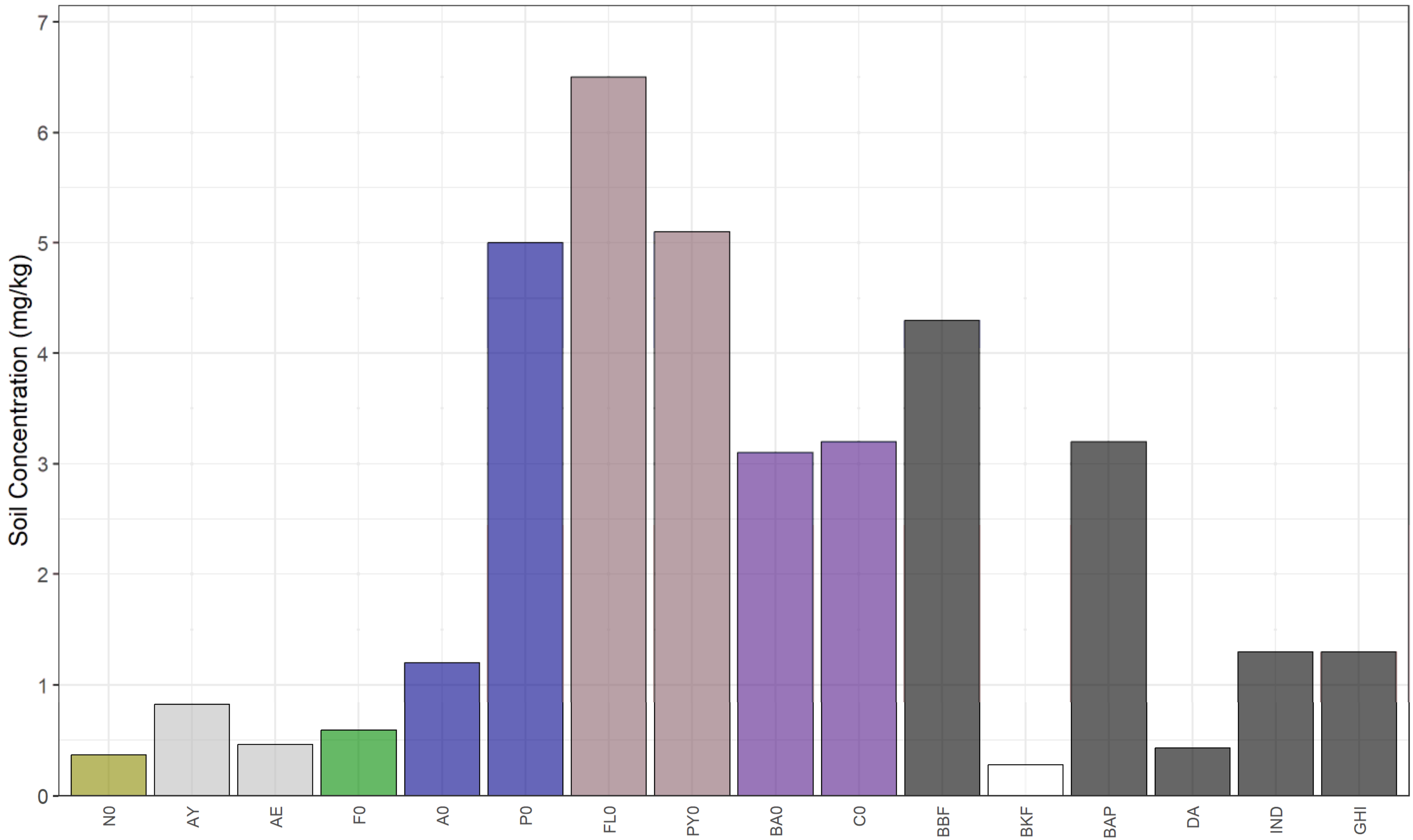
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-17-RB-MB
SAMPLE ID: PDI-T-17-RB-MB (0.0-0.5')

ARCADIS

FIGURE
X



Legend

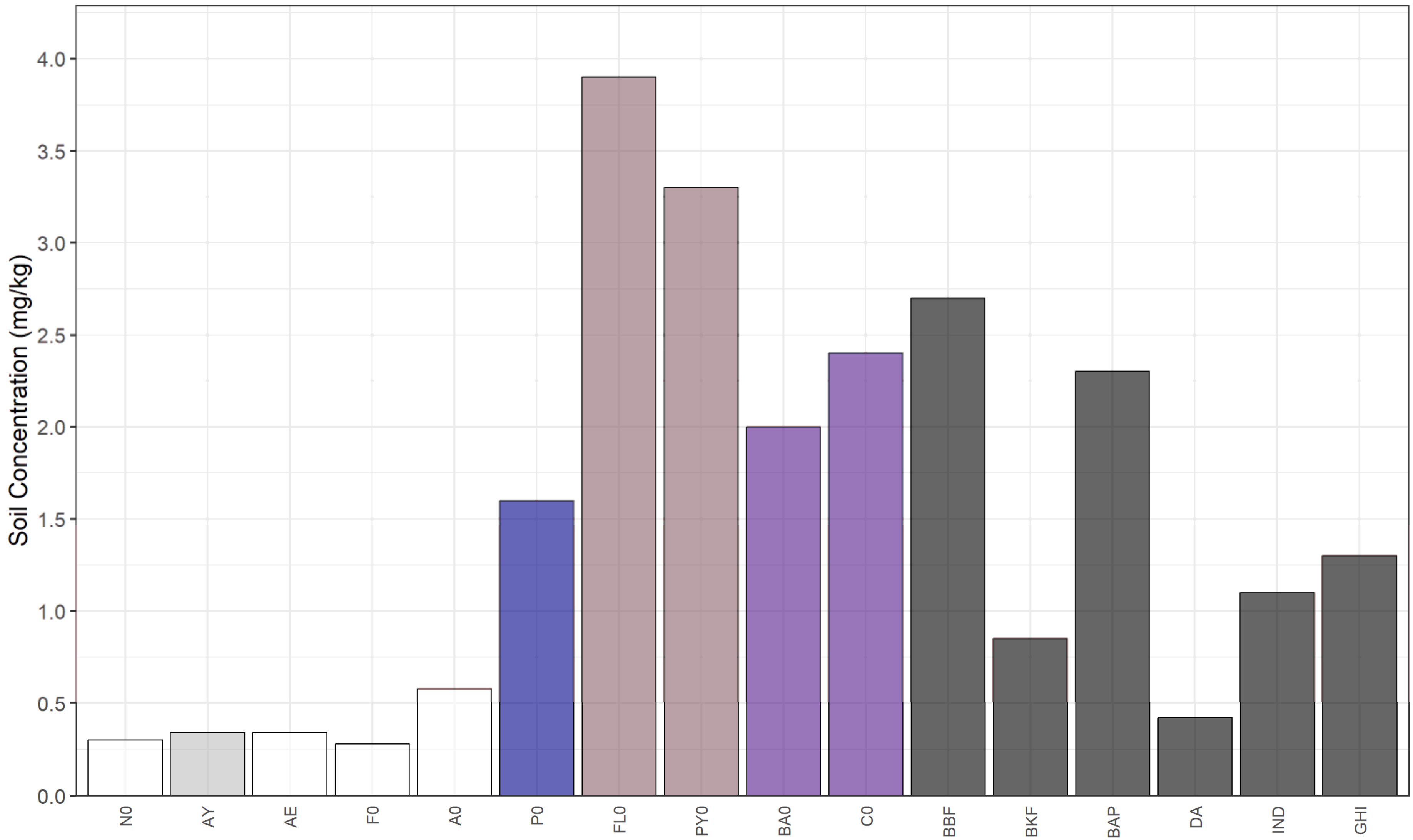
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-17-RB-MB
SAMPLE ID: PDI-T-17-RB-MB (0.5-0.7')

ARCADIS

FIGURE
X



Legend

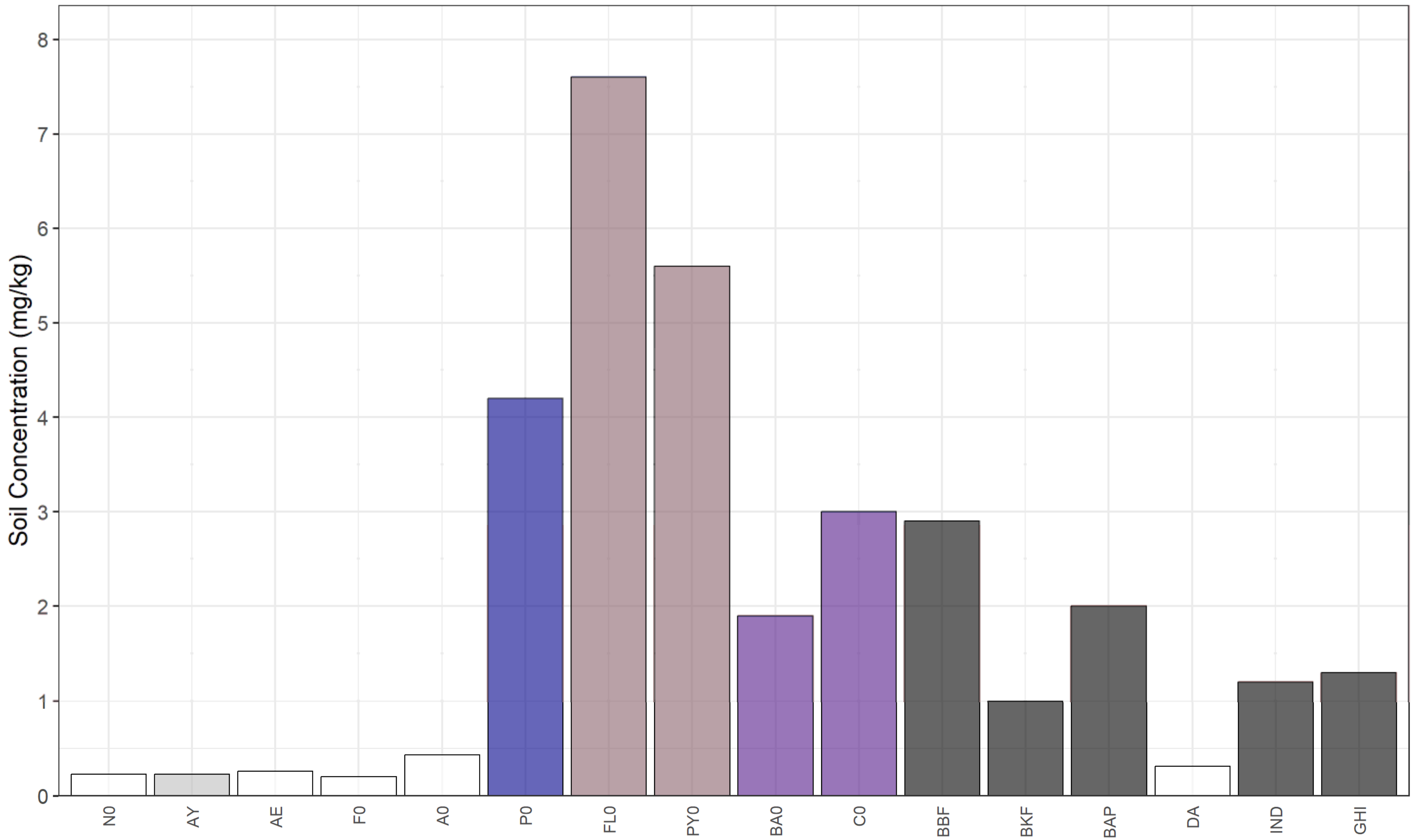
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-17-RB-MHWL
SAMPLE ID: PDI-T-17-RB-MHWL (0-0.4')

ARCADIS

FIGURE
X



Legend

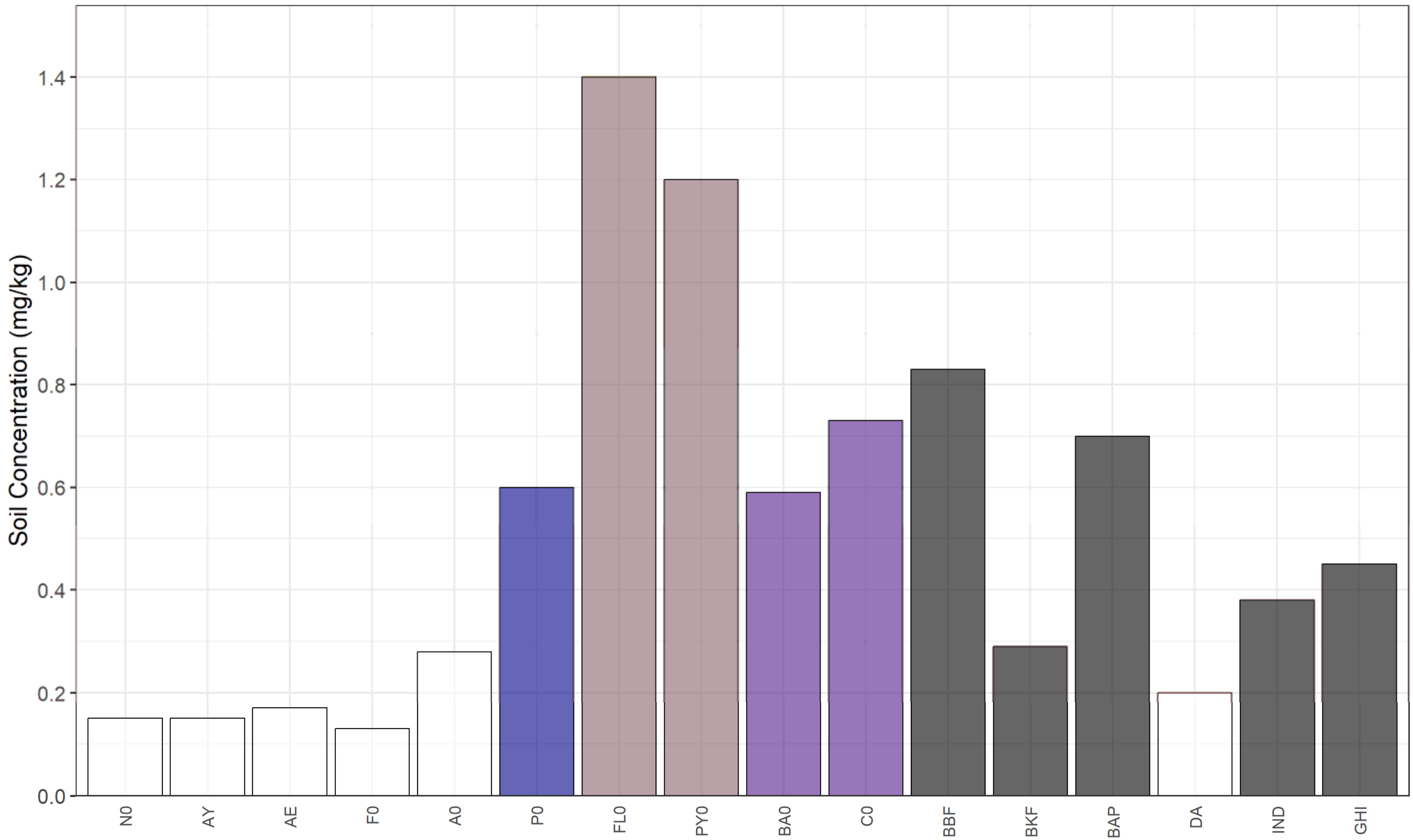
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-18-LB-MB
SAMPLE ID: PDI-T-18-LB-MB (0.0-0.5')

ARCADIS

FIGURE
X



Legend

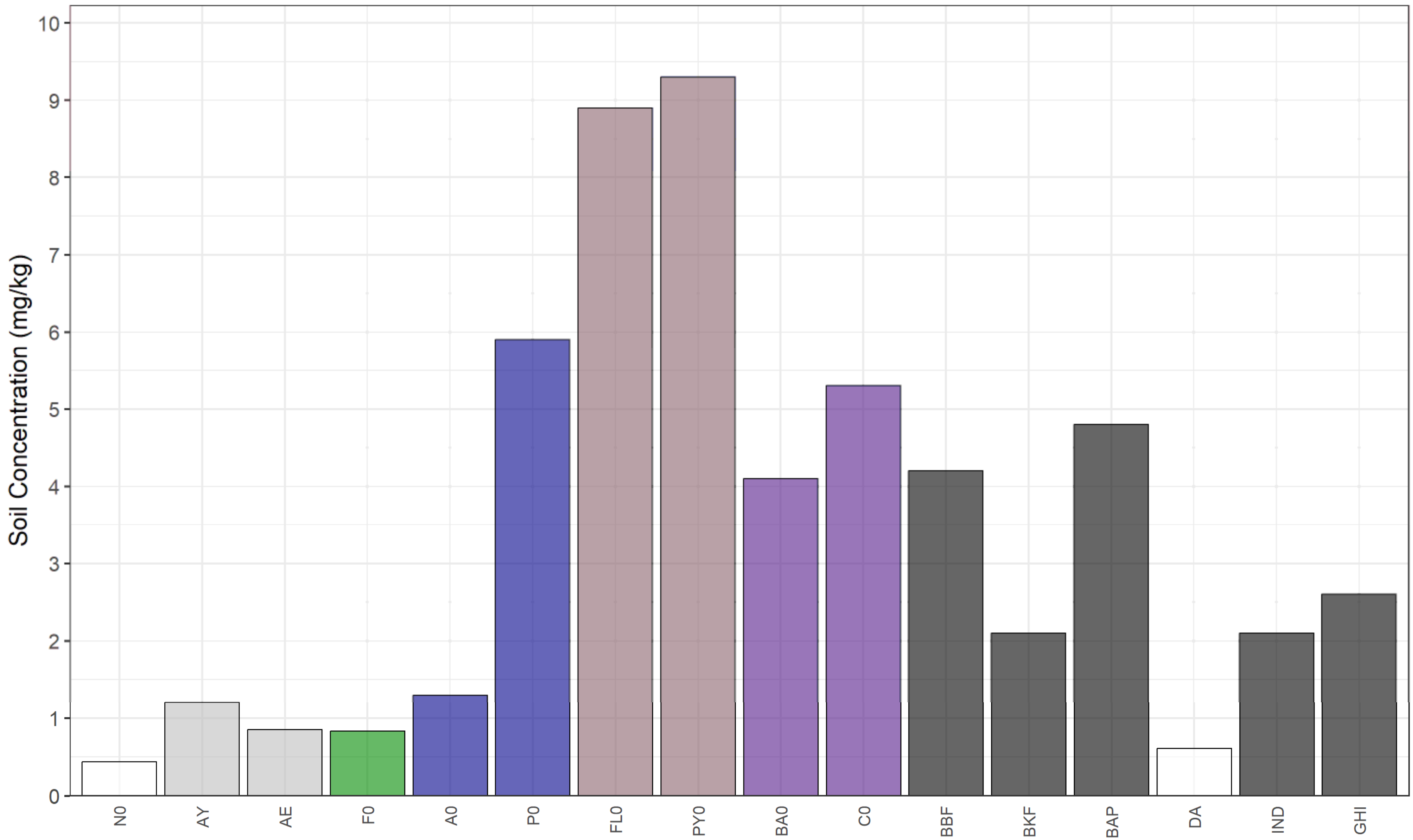
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-18-LB-MB
SAMPLE ID: PDI-T-18-LB-MB (0.5-0.9')

ARCADIS

FIGURE
X



Legend

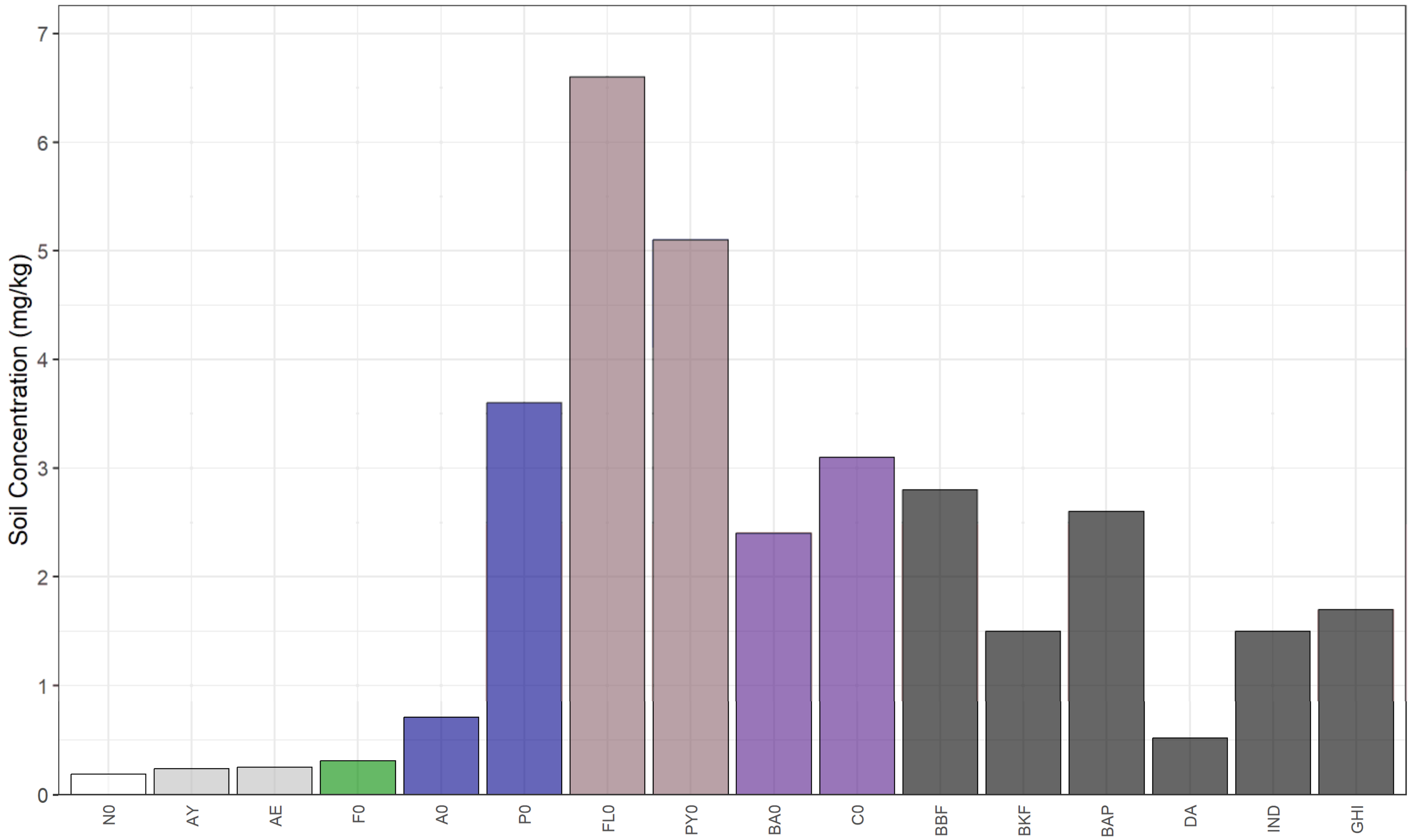
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-18-LB-MHWL
SAMPLE ID: PDI-T-18-LB-MHWL (0-0.5')

ARCADIS

FIGURE
X



Legend

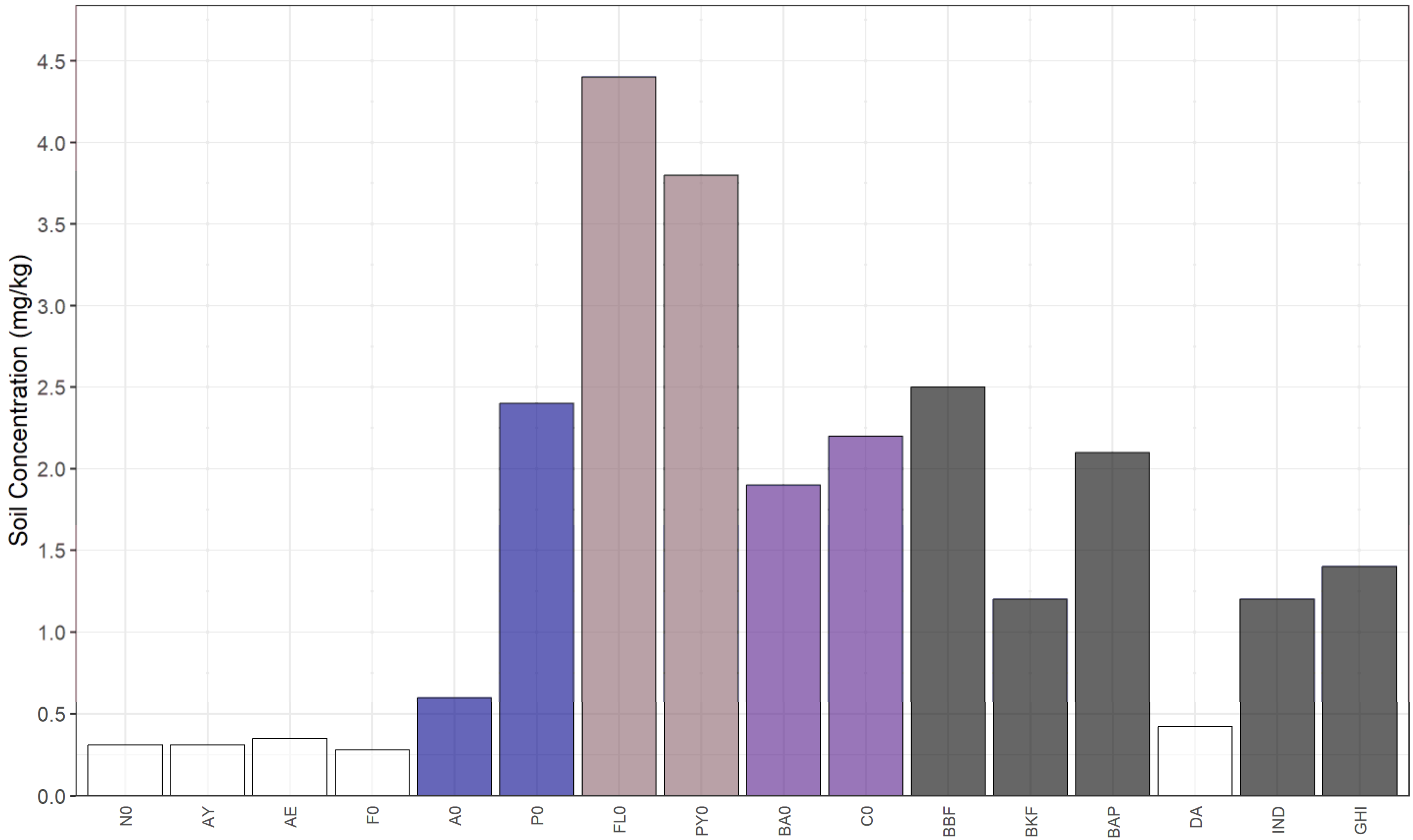
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-18-RB-MB
SAMPLE ID: PDI-T-18-RB-MB (0-0.5')

ARCADIS

FIGURE
X



Legend

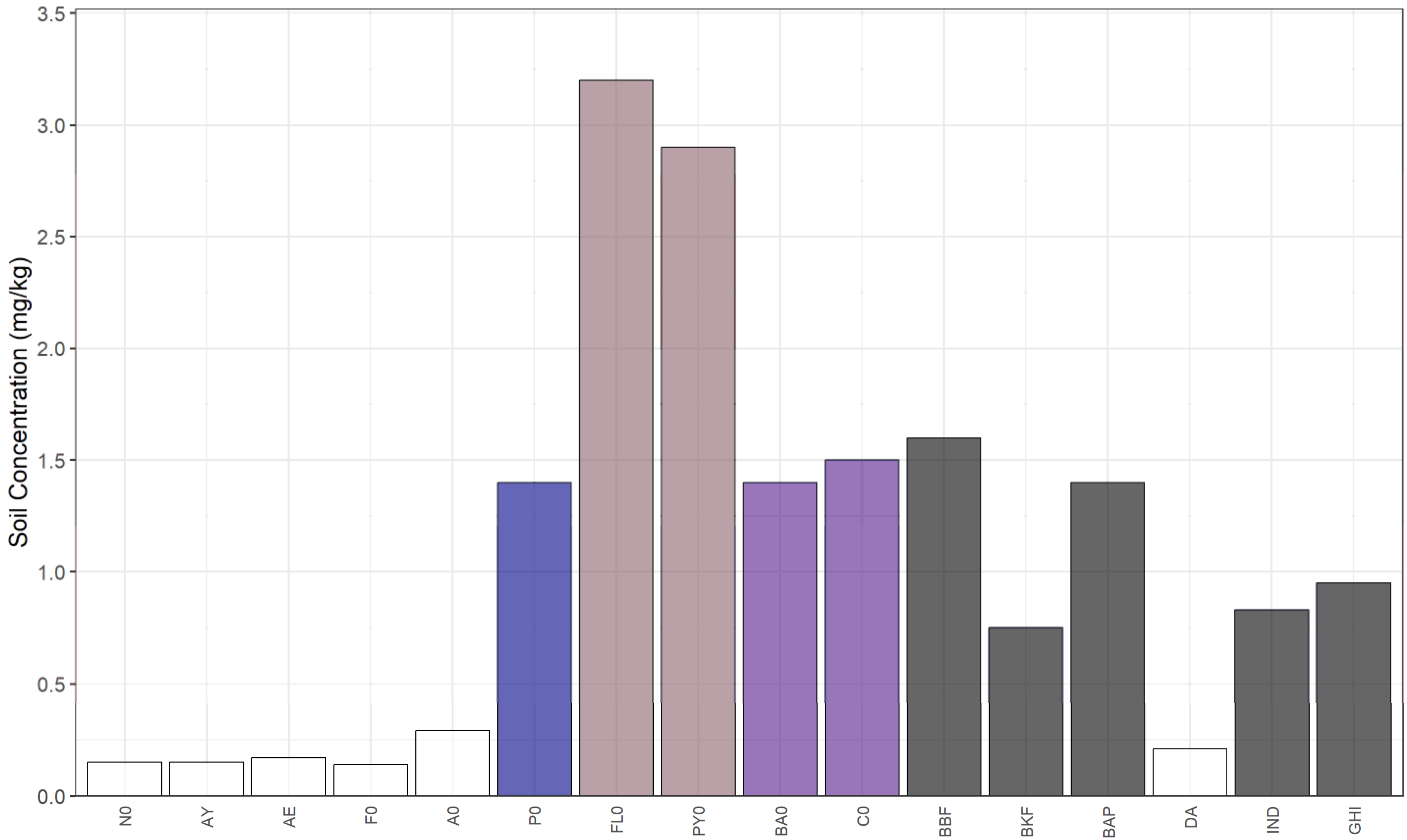
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-18-RB-MB
SAMPLE ID: PDI-T-18-RB-MB (0.5-0.6')

ARCADIS

FIGURE
X



Legend

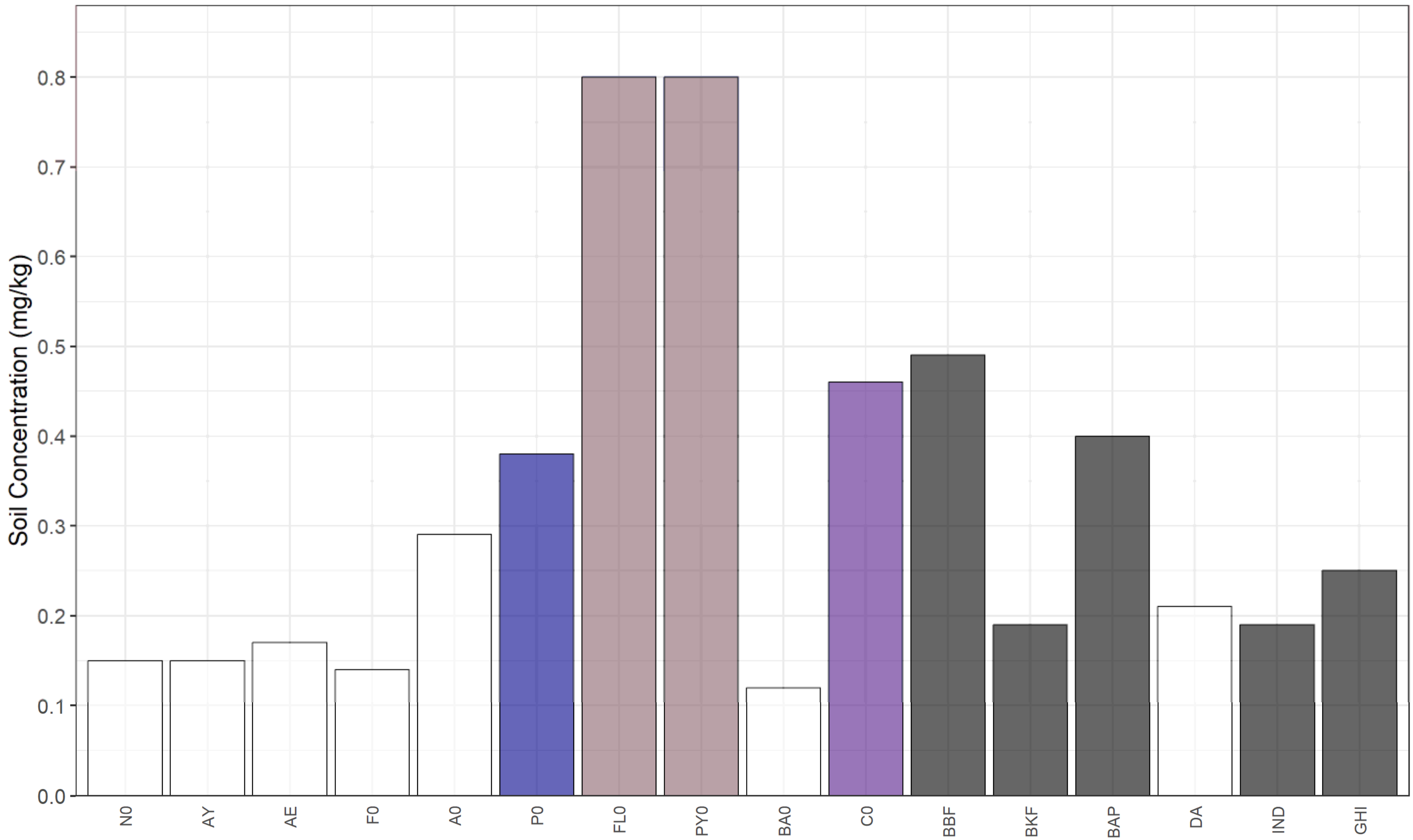
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-18-RB-MHWL
SAMPLE ID: PDI-T-18-RB-MHWL (0-0.5')

ARCADIS

FIGURE
X



Legend

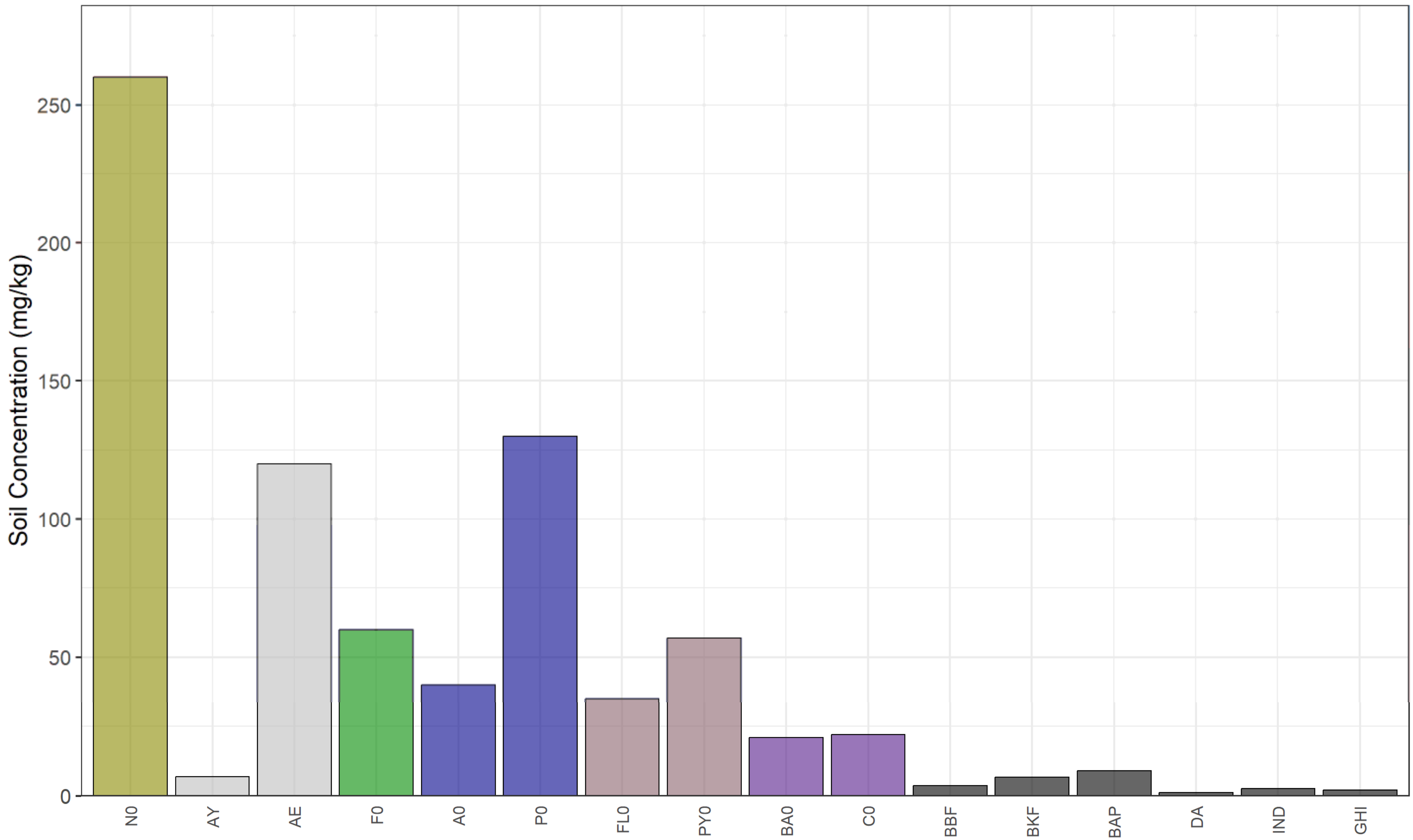
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SITE LOCATION: PDI-T-18-RB-MHWL
SAMPLE ID: PDI-T-18-RB-MHWL (0.5-1.0')

ARCADIS

FIGURE
X



Legend

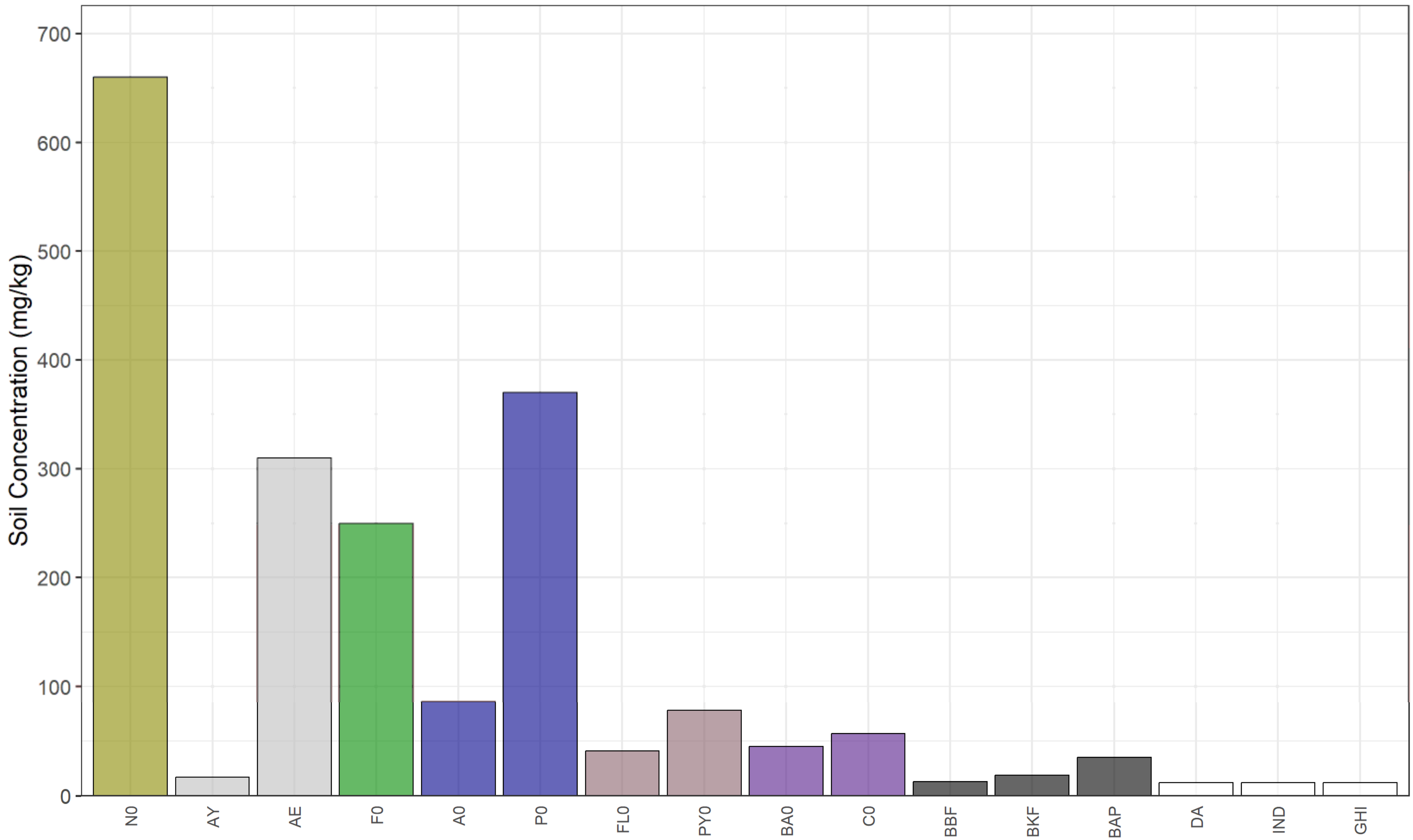
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SOURCE LOCATION: GB-53
SAMPLE ID: GB53D

ARCADIS

FIGURE
X



Legend

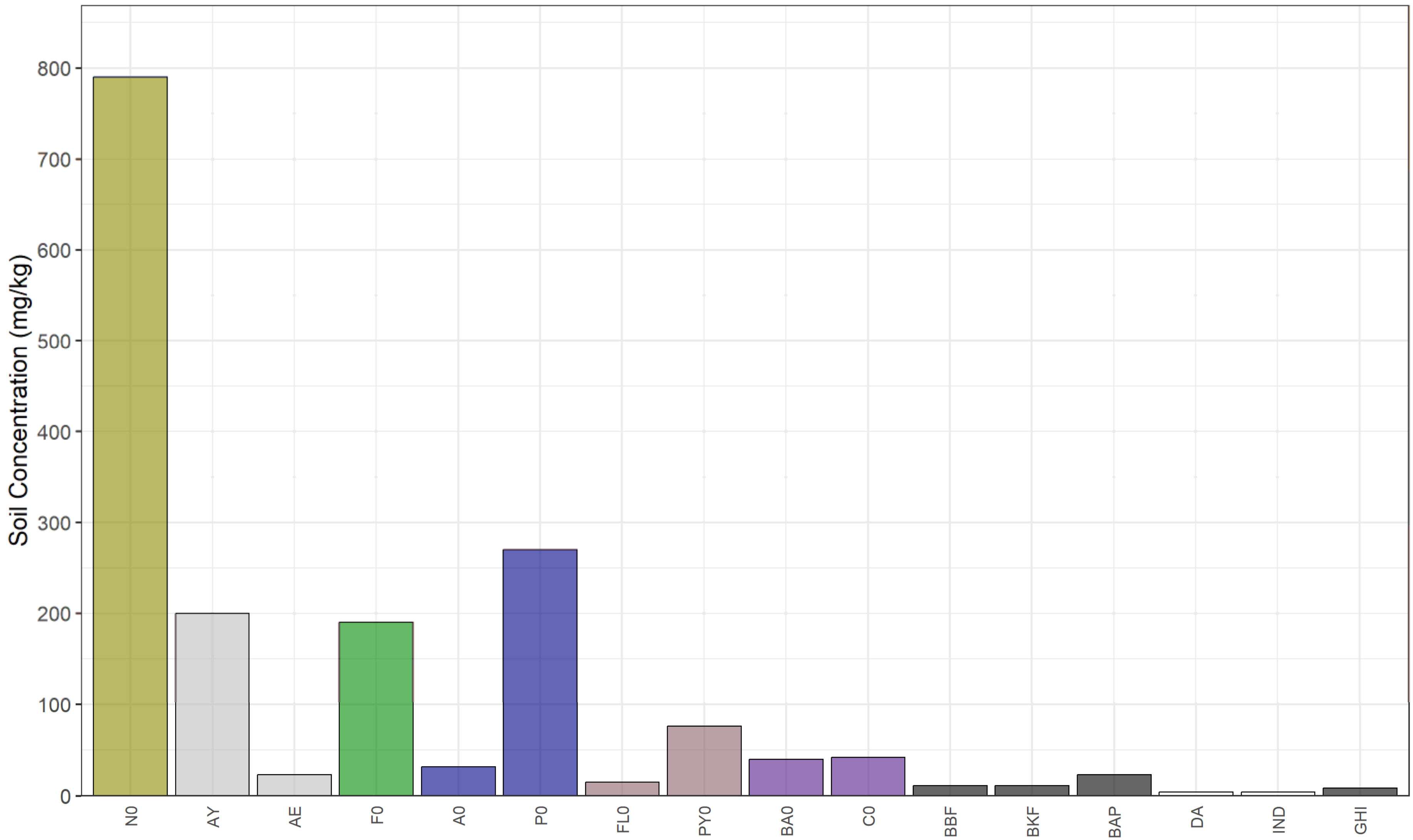
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SOURCE LOCATION: GB-58
SAMPLE ID: GB58B

ARCADIS

FIGURE
X



Legend

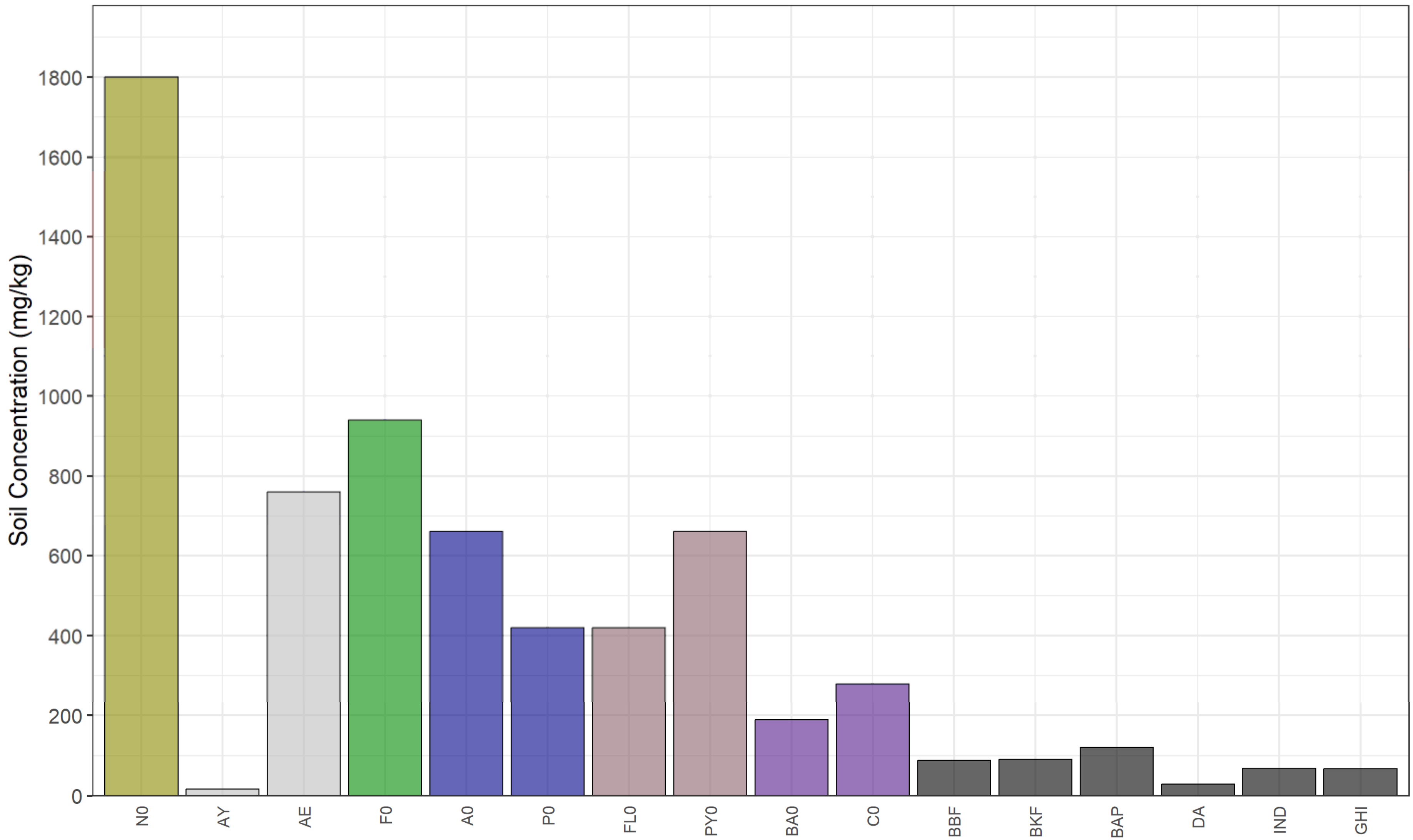
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SOURCE LOCATION: GB-64
SAMPLE ID: GB64F

ARCADIS

FIGURE
X



Legend

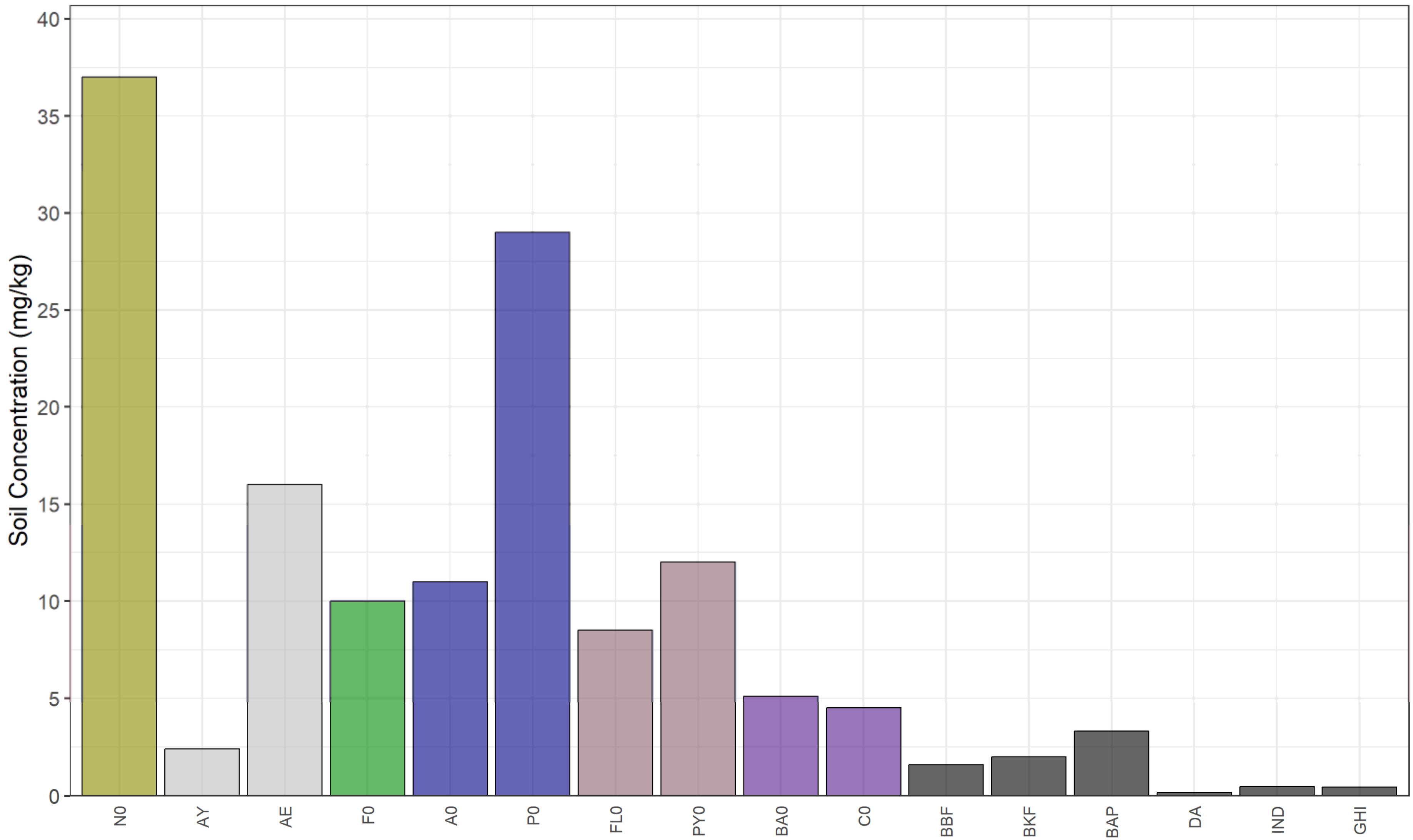
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SOURCE LOCATION: GB-74
SAMPLE ID: GB74F

ARCADIS

FIGURE
X



Legend

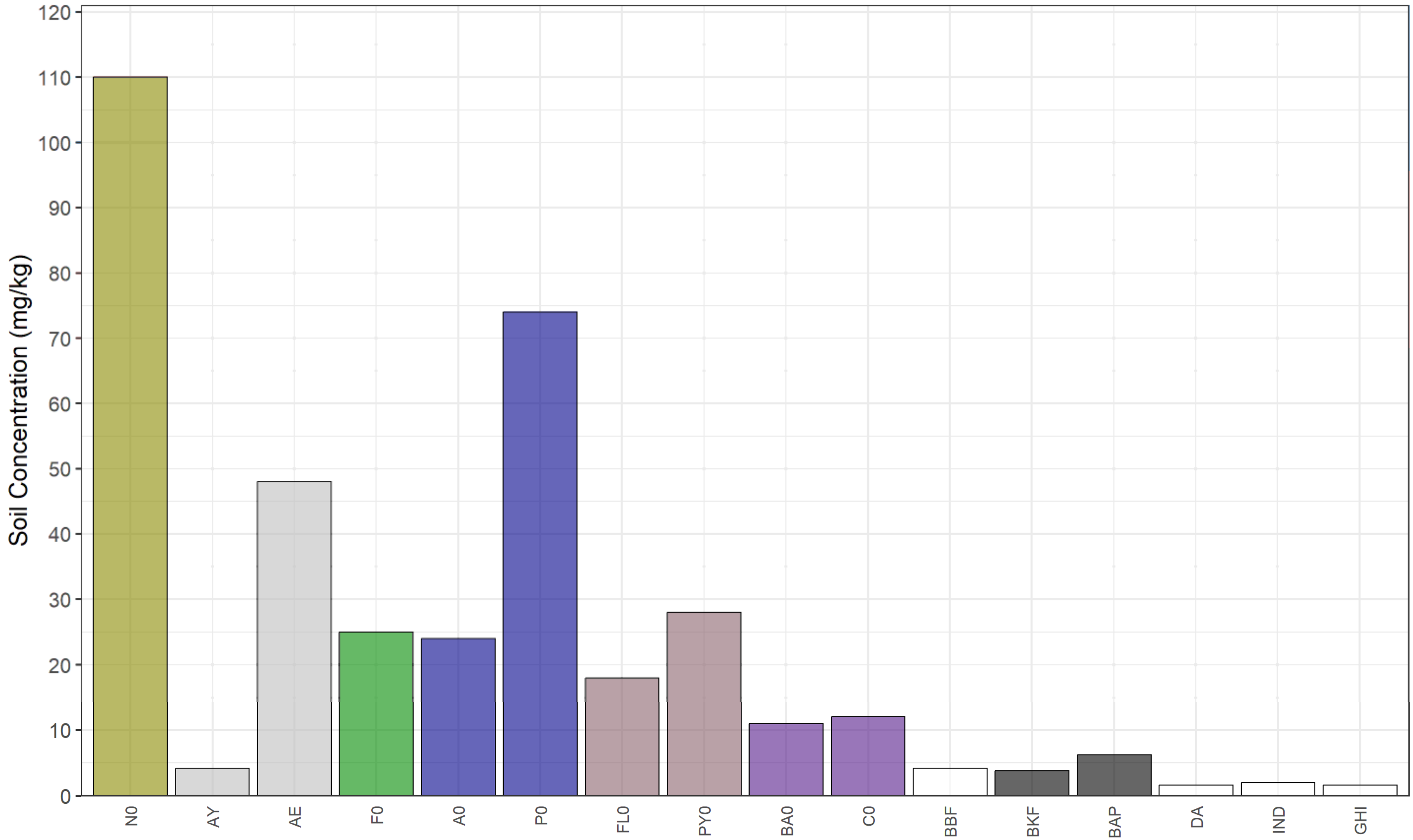
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SOURCE LOCATION: PDI-DPB-4
SAMPLE ID: PDI-DPB-4 (3.0-12.0)

ARCADIS

FIGURE
X



Legend

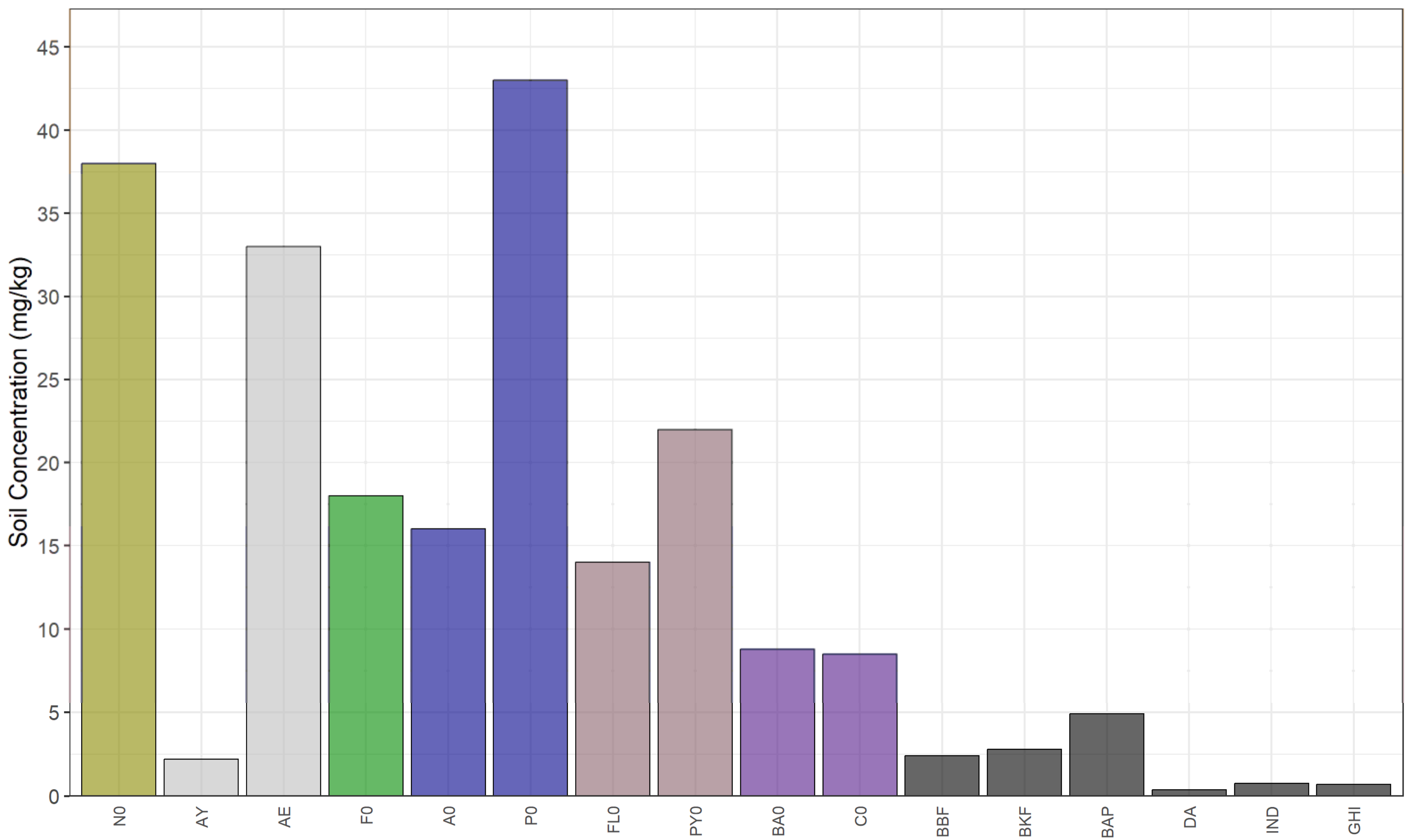
□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SOURCE LOCATION: PDI-DPB-7
SAMPLE ID: PDI-DPB-7 (4-8.5)

ARCADIS

FIGURE
X



Legend

□ Indicates non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
APPENDIX H SEDIMENT BACKGROUND AND FORENSIC EVALUATION

PAH PROFILE
SOURCE LOCATION: PDI-DPB-8
SAMPLE ID: PDI-DPB-8 (0.8-8.5)

ARCADIS

FIGURE
X

Gloversville Former MGP Site – PDI Findings

Hill Street Site No. 5-18-021

NYSDEC Meeting
September 15, 2023

nationalgrid

Agenda

1. Safety Moment
2. Background
3. Initial PDI Scope
4. Initial PDI Findings
5. Supplemental PDI Scope
6. Supplemental PDI Findings
7. Supplemental PDI Conclusion
8. NYSDEC 8/16/23 Email
9. Next Steps
10. Open Discussion

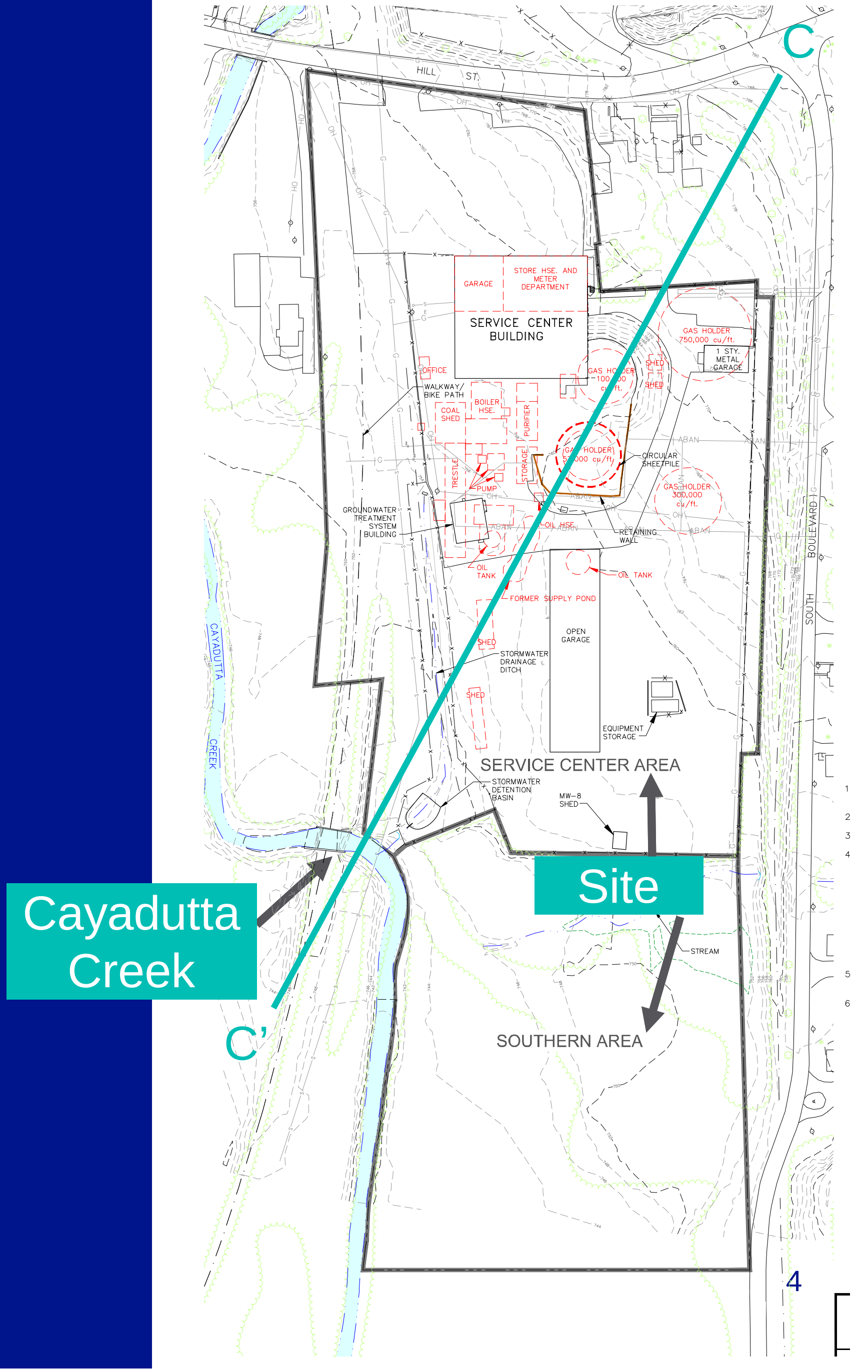
Slips, Trips & Falls (at home)

Falls are the #1 cause of death for older adults.
Fall proof your home if residents are older than 65.

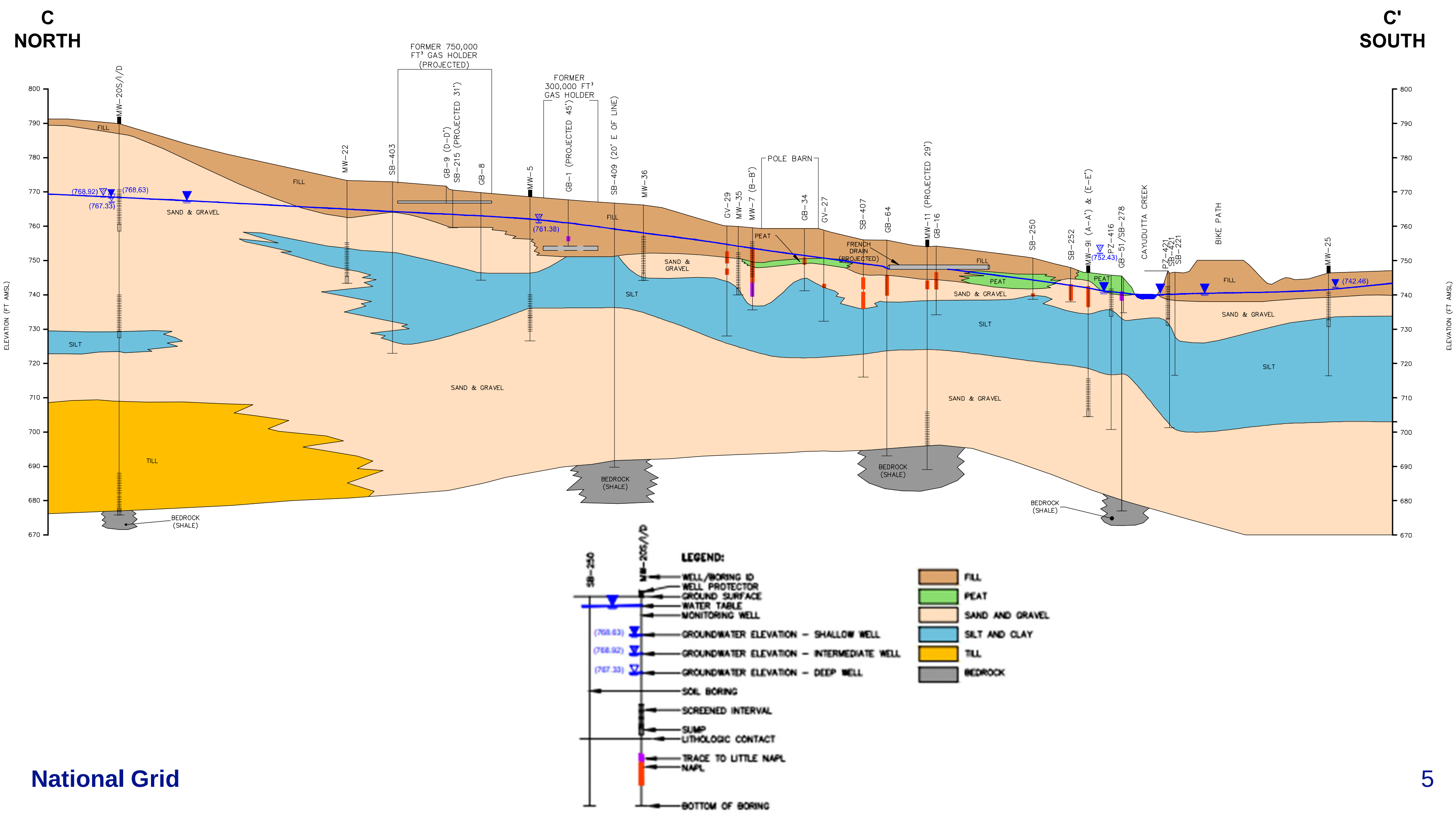
- Keep floors and surfaces clear of clutter
- Do not use mats or “throw rugs”
- Keep drawers and cabinets closed
- Keep electrical and phone cords out of traffic areas
- Arrange furniture to create open pathways
- Install handrails on stairways
- Maintain good lighting indoors and out
- Focus on your actions/movements

Background

- Site is approximately 13 acres and owned by National Grid
- Active Service Center, gas operations
- MGP operated 1898 – 1952 as CWG
- MGP by-products in soil, groundwater, and sediment, investigated since the mid-1980s
- Several IRMs completed to remove holder, purifier waste, NAPL, and separate NAPL from storm water.
- Treatment system collects water and NAPL from underdrains beneath and near service center building.

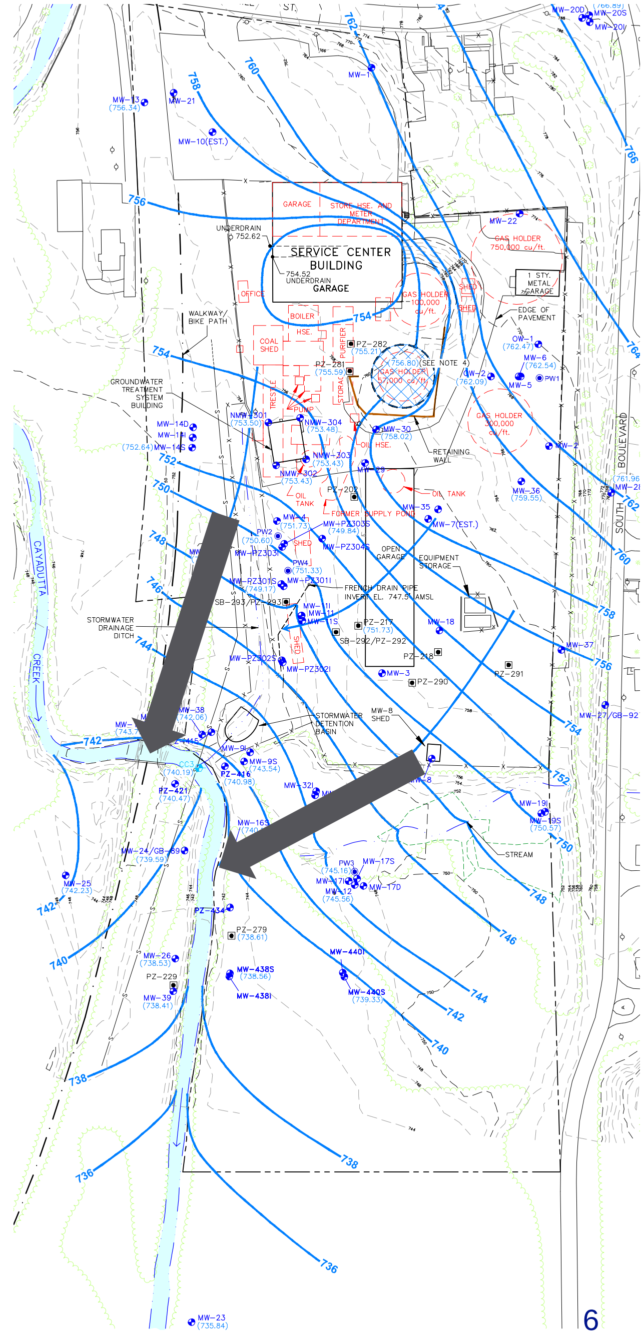


Background - Geology



Background - Hydrogeology

- Steep horizontal gradient toward creek, 30 ft groundwater elevation drop from NE to SW
- Strong upward gradient through silt/clay unit, artesian wells in deep sand and gravel near creek
- Water table ~ 10 ft bgs in northern area and ~ 1 – 5 ft bgs in southern area
- Permeability of upper and lower sand and gravel higher, silt/clay lower, flow velocities at least 60 ft/day in upper sand and gravel



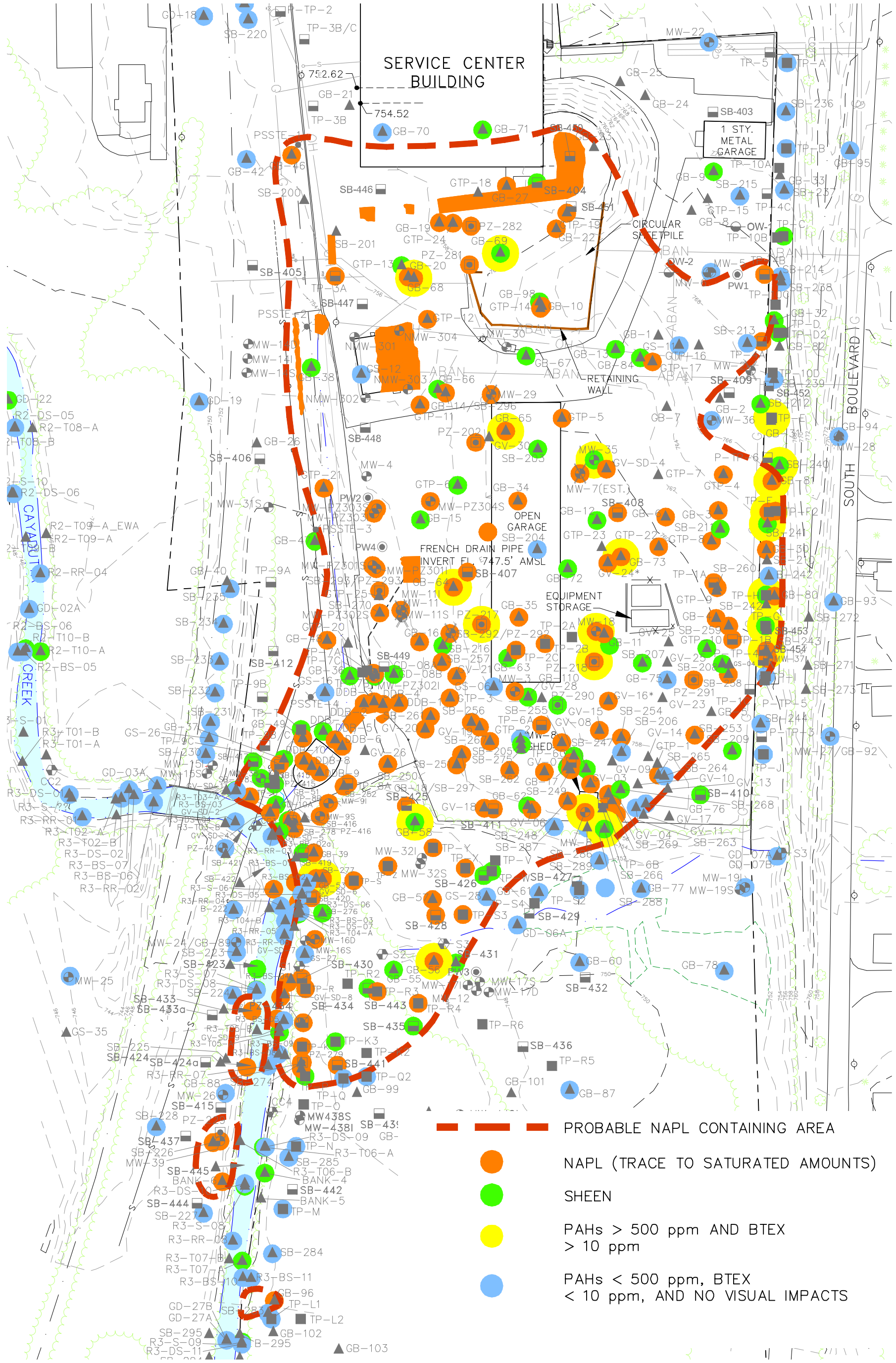
Background – Cayadutta Creek

- Thin deposits (0.5 to 1 foot) of soft sediment over 5 to 10 percent of channel.
- Creek bed primarily composed of riffle/run areas with medium to coarse sand and gravel with small amounts of silt/clay.
- Adjacent and downstream from site, creek bed is straight and composed of gravel and cobble armoring.
- Creek flow approximately 20 cubic feet per second (cfs).

Background - Impacts

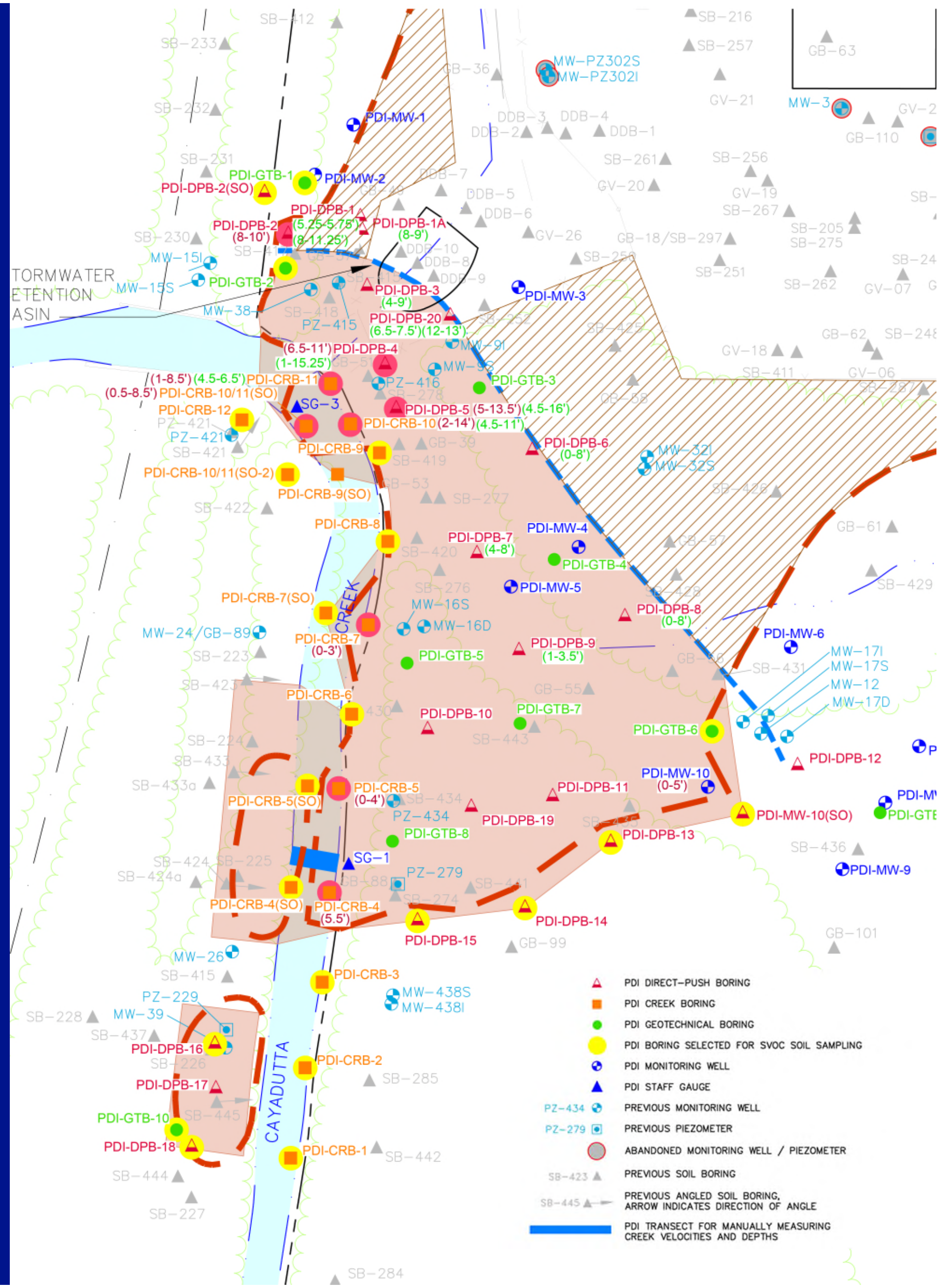
- Soil/Groundwater
  - Soil and groundwater concentrations exceed criteria within orange line, above silt/clay

- Sediments
  - Sheen occasionally observed in creek sediments, depositional areas and along water edge



Background – Selected Remedy

- NAPL Barrier Wall (NBW)
- Removal downgradient from NBW, including beneath the creek
- Shallow soil removal upgradient from NBW
- NAPL removal from recovery wells in NBW and site
- Creek bank soil and sediment removal: sed > background and bank soil > unrestricted SCOs
- Continued operation of treatment system
- Annual groundwater monitoring/NAPL recovery
- Establishing ICs
- SMP



Initial PDI Scope 2020 - 2021

Purifier Waste Area Investigation

- Locate utilities in Purifier Waste Area

Southern Excavation Area and NAPL Barrier Wall Investigation****

- Geotechnical sampling to support design
- Drilling to collect soil samples to confirm extent of impacts and define topographic surface and thickness of silt/clay
- Monitoring well installation for fluid-level monitoring (manual and transducers) and hydraulic testing to support NBW construction/alignment
- Storm water and detention basin sediment sampling for potential future discharge permit
- Groundwater treatability sampling

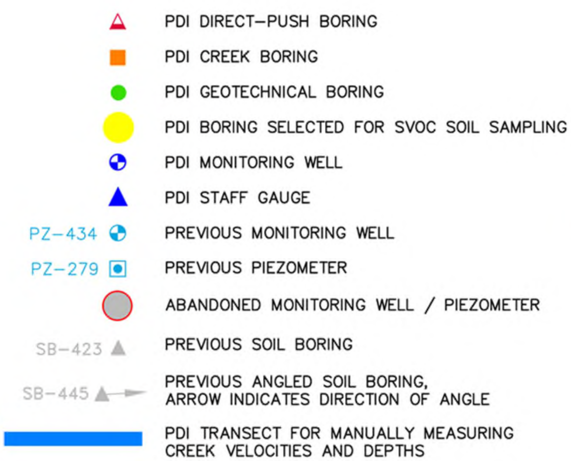
Cayadutta Creek Investigation****

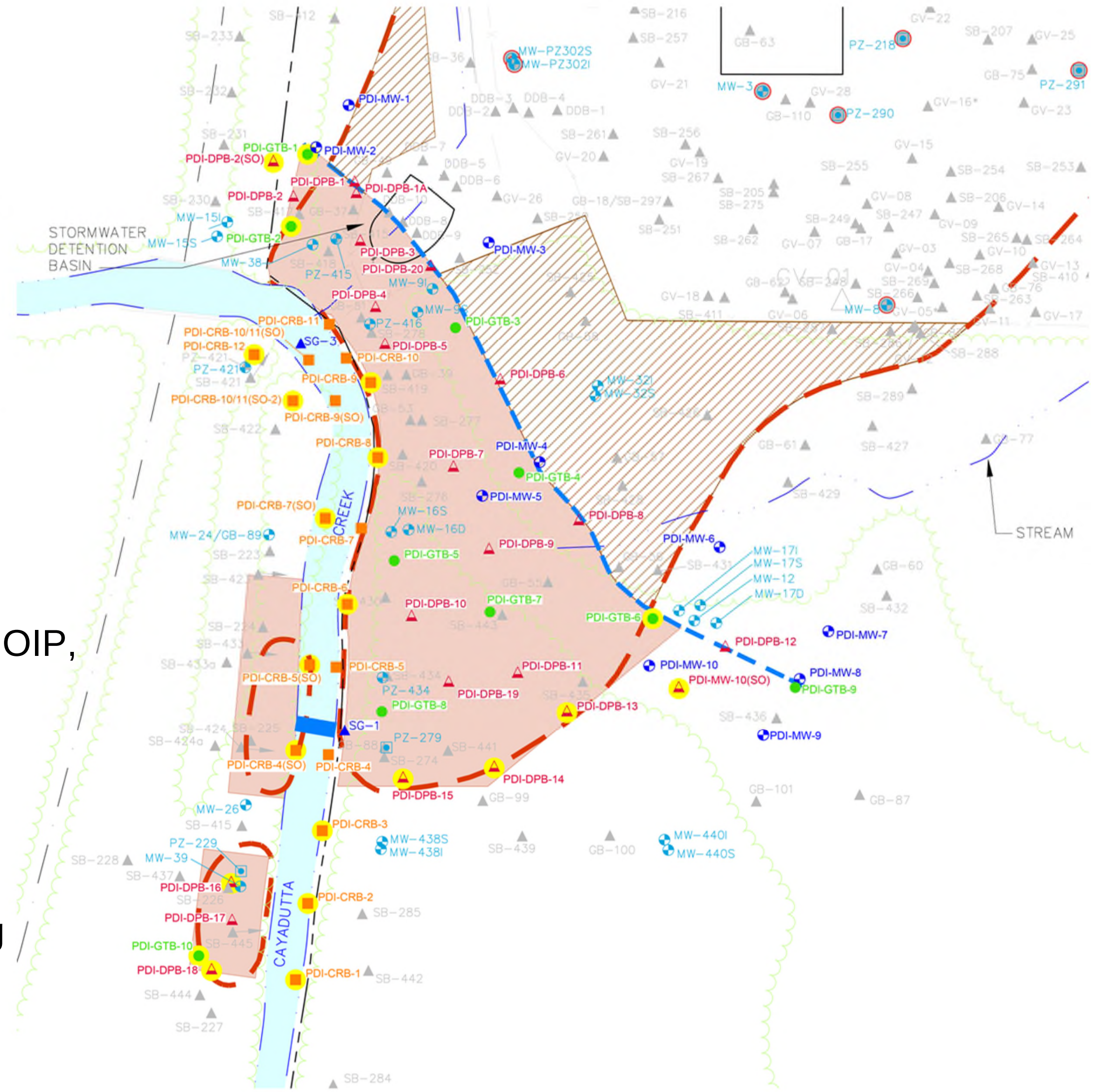
- Creek flow study to evaluate flow for potential bypass
- Creek reconnaissance (probing transects) to evaluate areas for sampling sediment and bank soil sampling to define extent of impacts
- Sediment and bank soil sampling
- Forensic and statistical evaluation

Ecological Characterization

- Identify potential wetlands, drainage features, vegetation communities, and potential threatened and endangered species

Initial PDI Scope – Southern Area and NBW

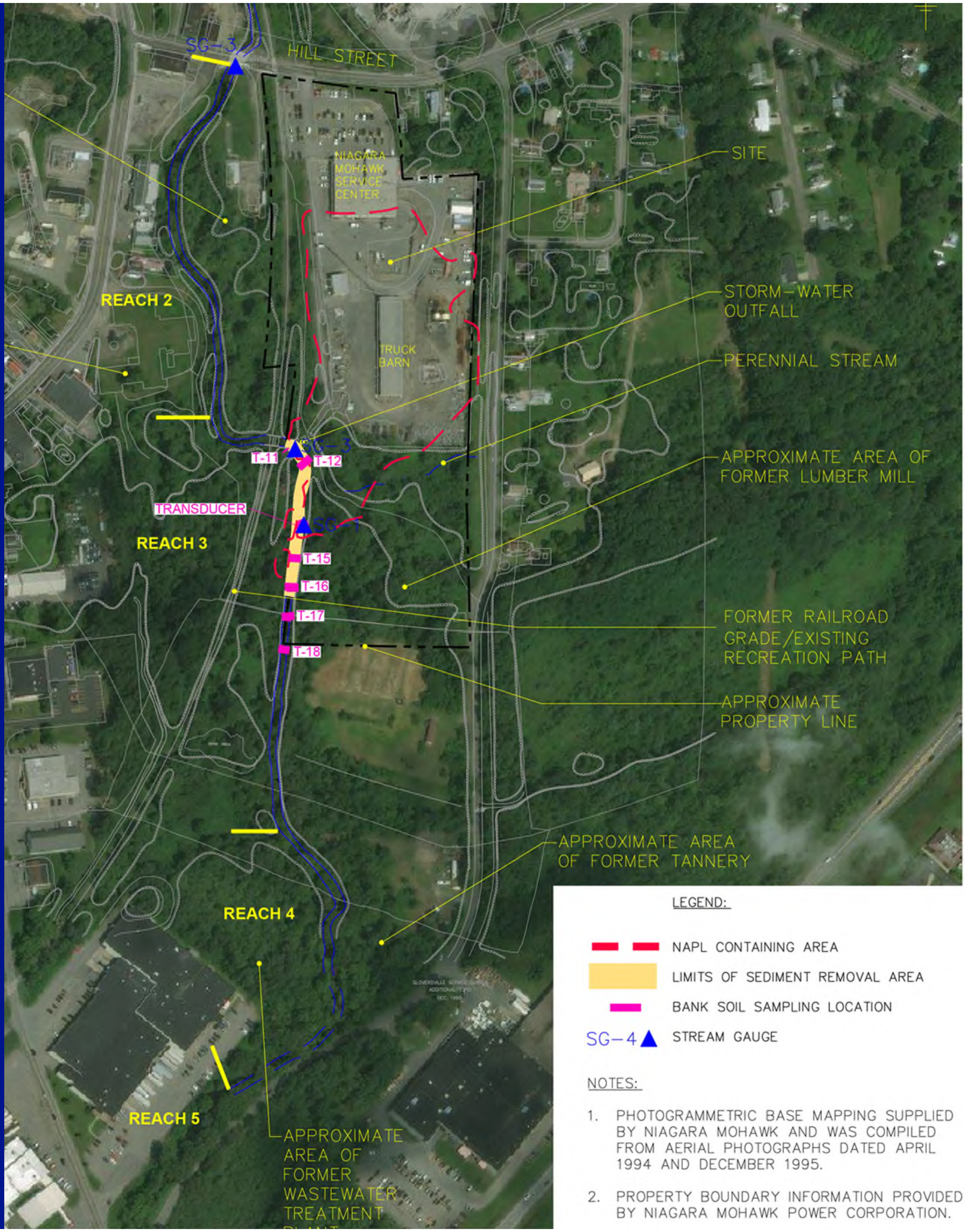




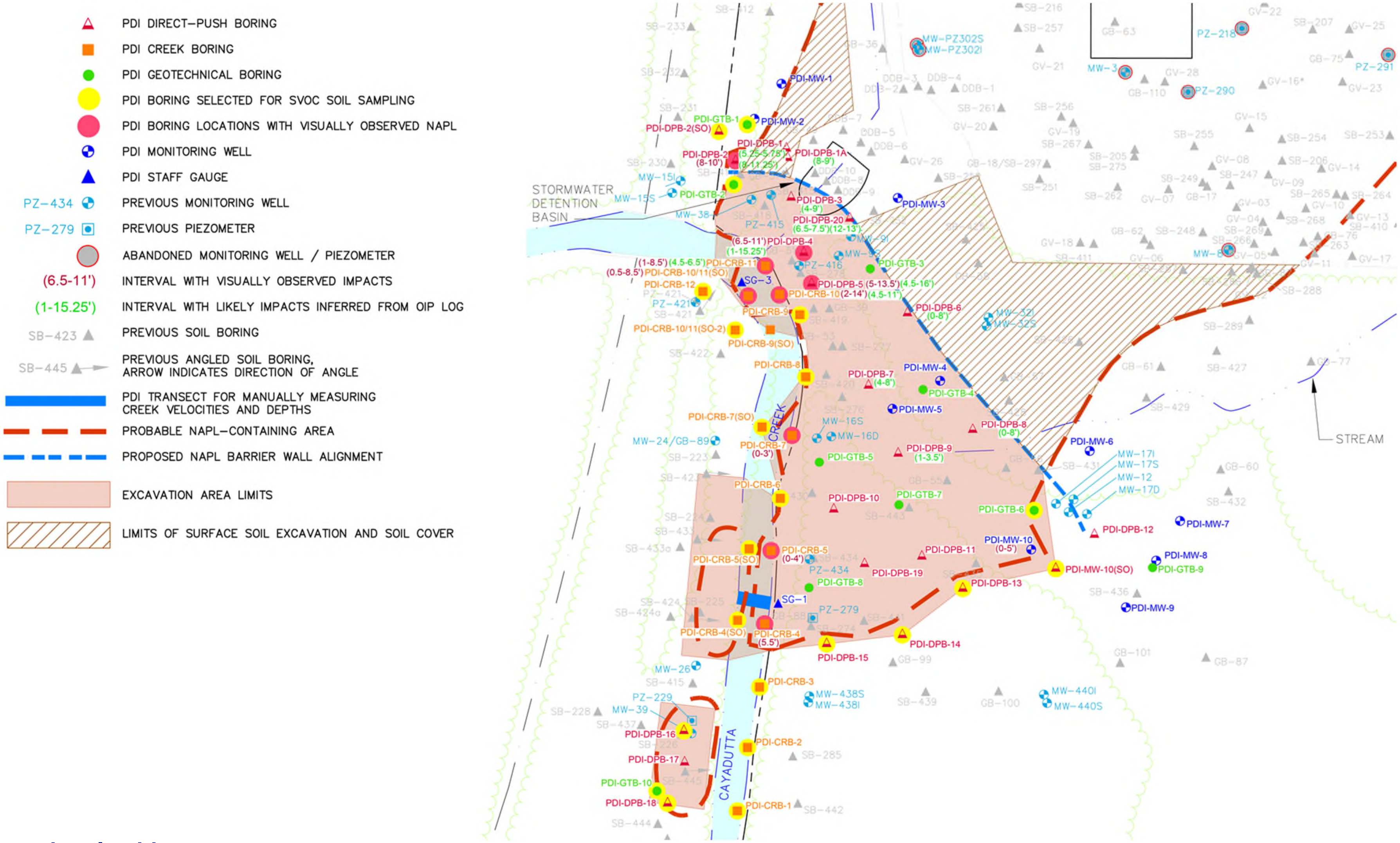
- 68 soil borings (32 using HPT, OIP, and EC tools)
- 10 geotechnical samples
- 21 SVOC soil samples
- 10 monitoring wells
- 5-month water-level monitoring

Initial PDI Scope – Creek and Bank Sampling

- Reaches 1 through 5
- 30 sediment probing transects with spot probing between
- 60 sediment cores
- 69 sediment samples
- 18 bank soil cores
- 31 bank soil samples



Initial PDI Findings – Southern Area and NBW

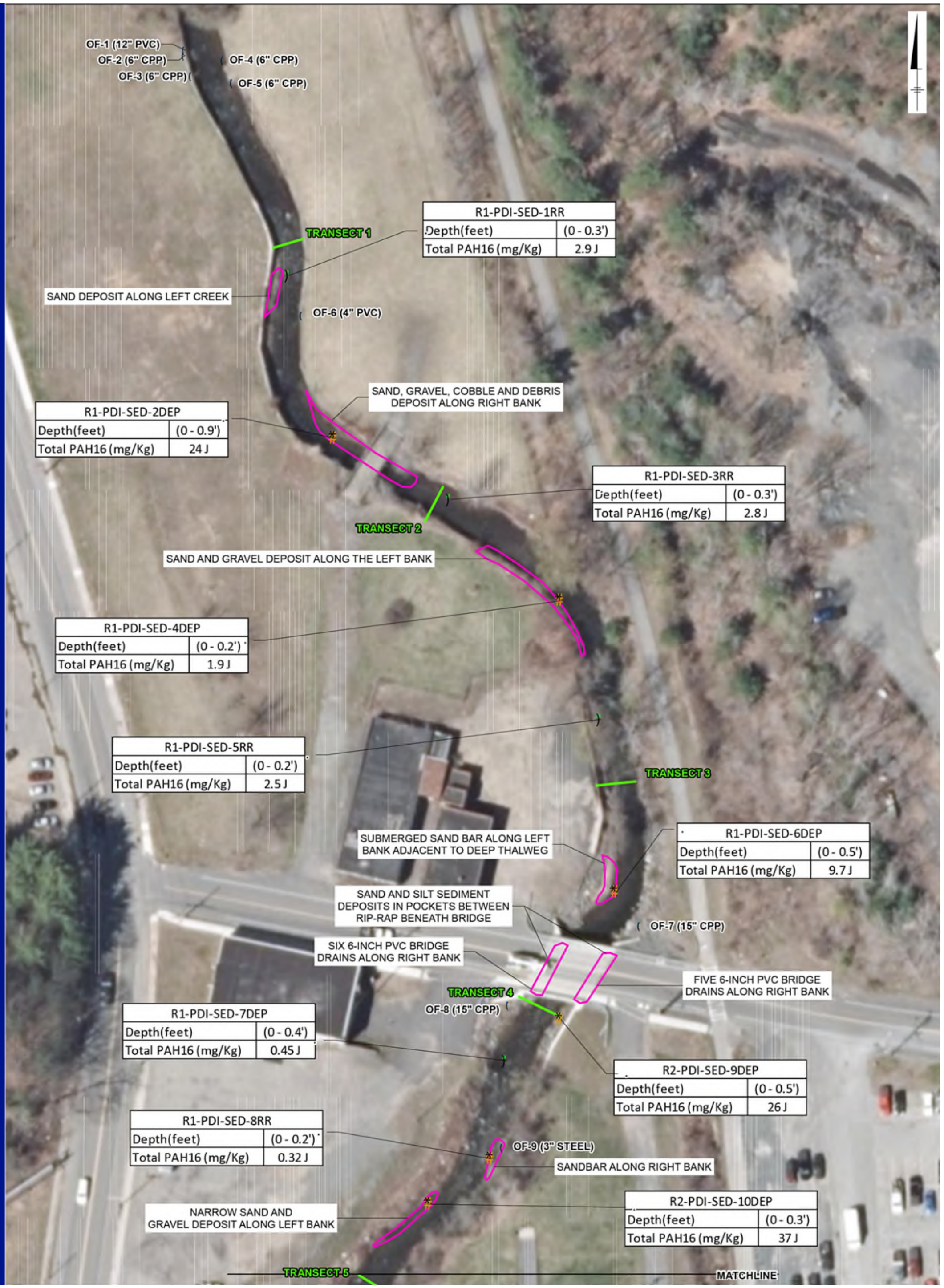


Initial PDI Findings – Reach 1 Creek Sampling

- Upstream background locations
- No sheen or NAPL observed
- PAH16 ranged up to 37 mg/kg and PAH34 up to 45 mg/kg

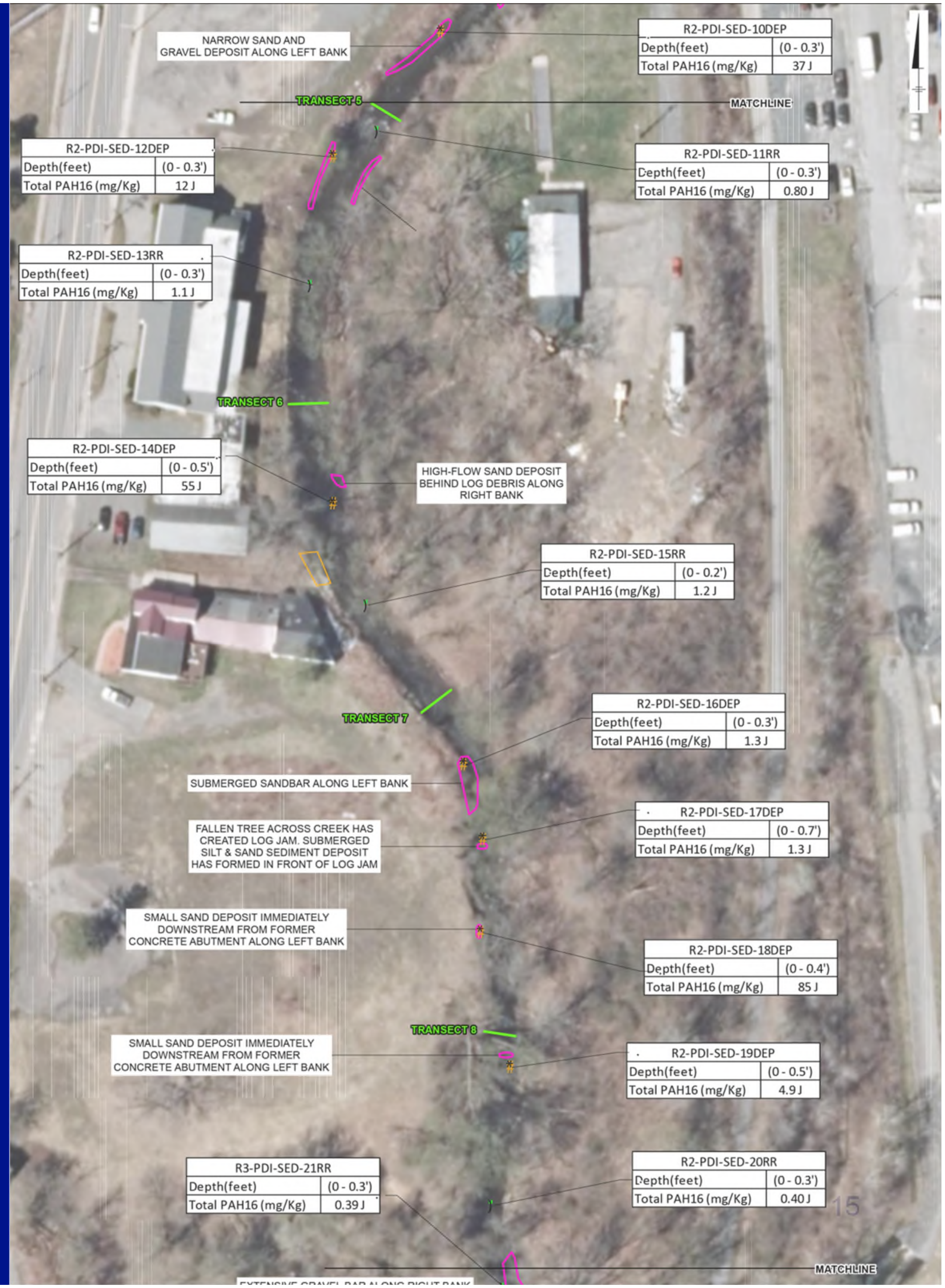
LEGEND:

- DEPOSITIONAL SEDIMENT SAMPLING LOCATION
- RIFFLE/RUN SEDIMENT SAMPLING LOCATION
- OUTFALL LOCATION
- CREEK RECONNAISANCE TRANSECT
- DEPOSITIONAL AREA



Initial PDI Findings – Reach 2 Creek Sampling

- Upstream background locations
- No sheen or NAPL observed
- PAH16 ranged up to 85 mg/kg and PAH34 up to 100.6 mg/kg

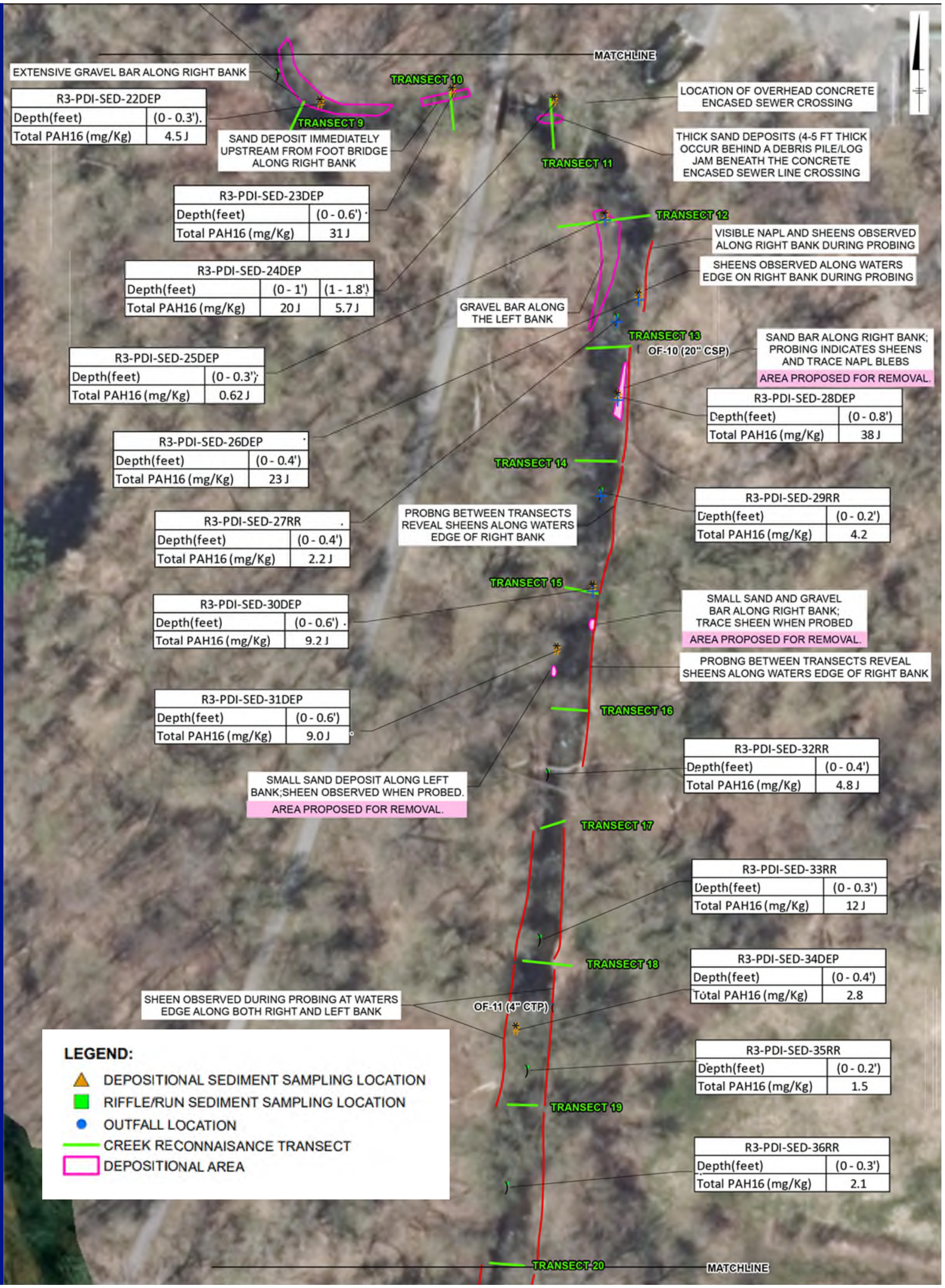


LEGEND:

- DEPOSITIONAL SEDIMENT SAMPLING LOCATION
- RIFFLE/RUN SEDIMENT SAMPLING LOCATION
- OUTFALL LOCATION
- CREEK RECONNAISANCE TRANSECT
- DEPOSITIONAL AREA

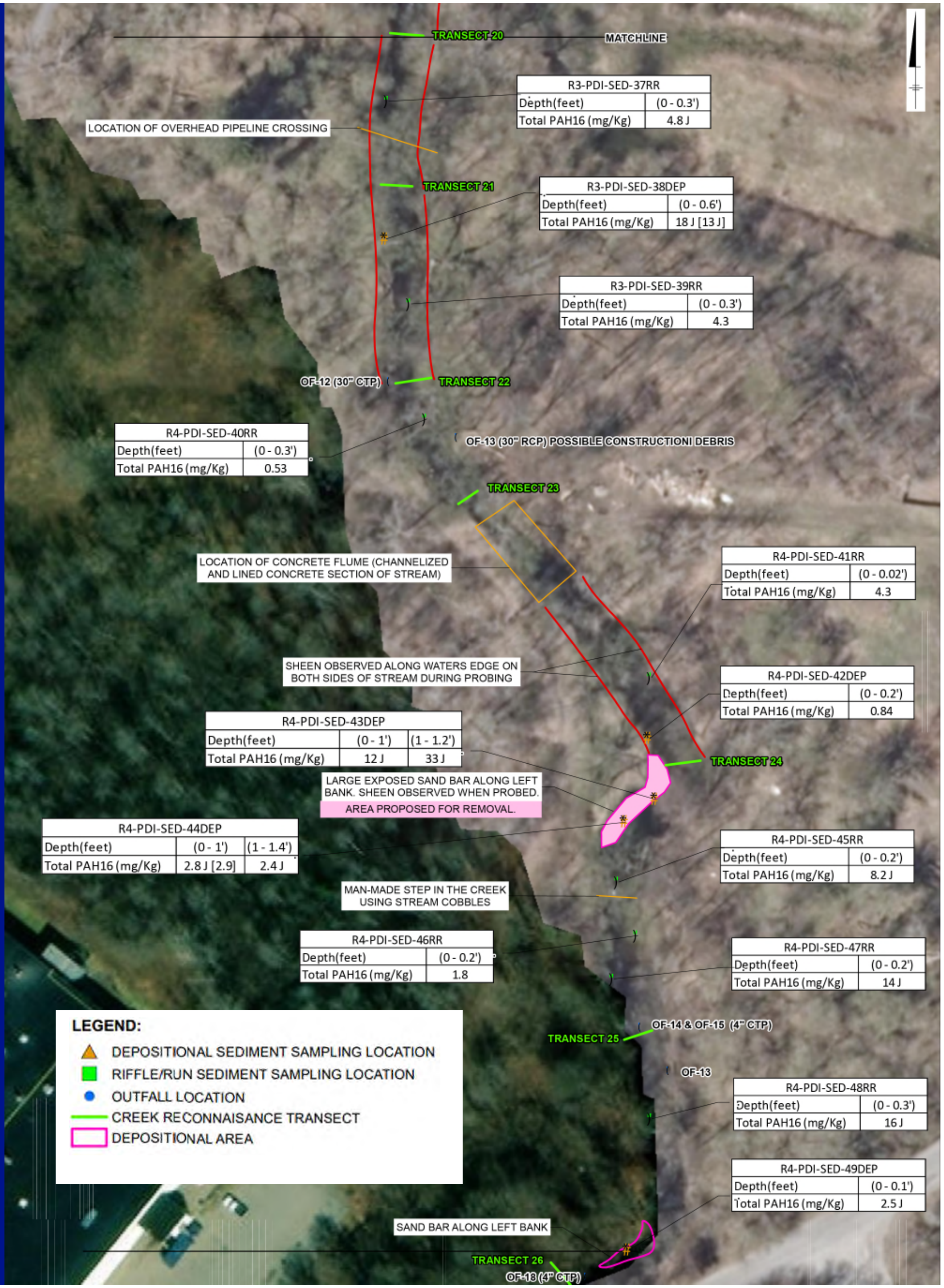
Initial PDI Findings – Reach 3 Creek Sampling

- Reach 3 partially adjacent site
- Sheens and trace blebs observed in 3 sediment deposits downstream of site to T-16
- Sheens observed during probing along banks
- PAH16 ranged up to 38 mg/kg and PAH 34 ranged up to 97.1 mg/kg



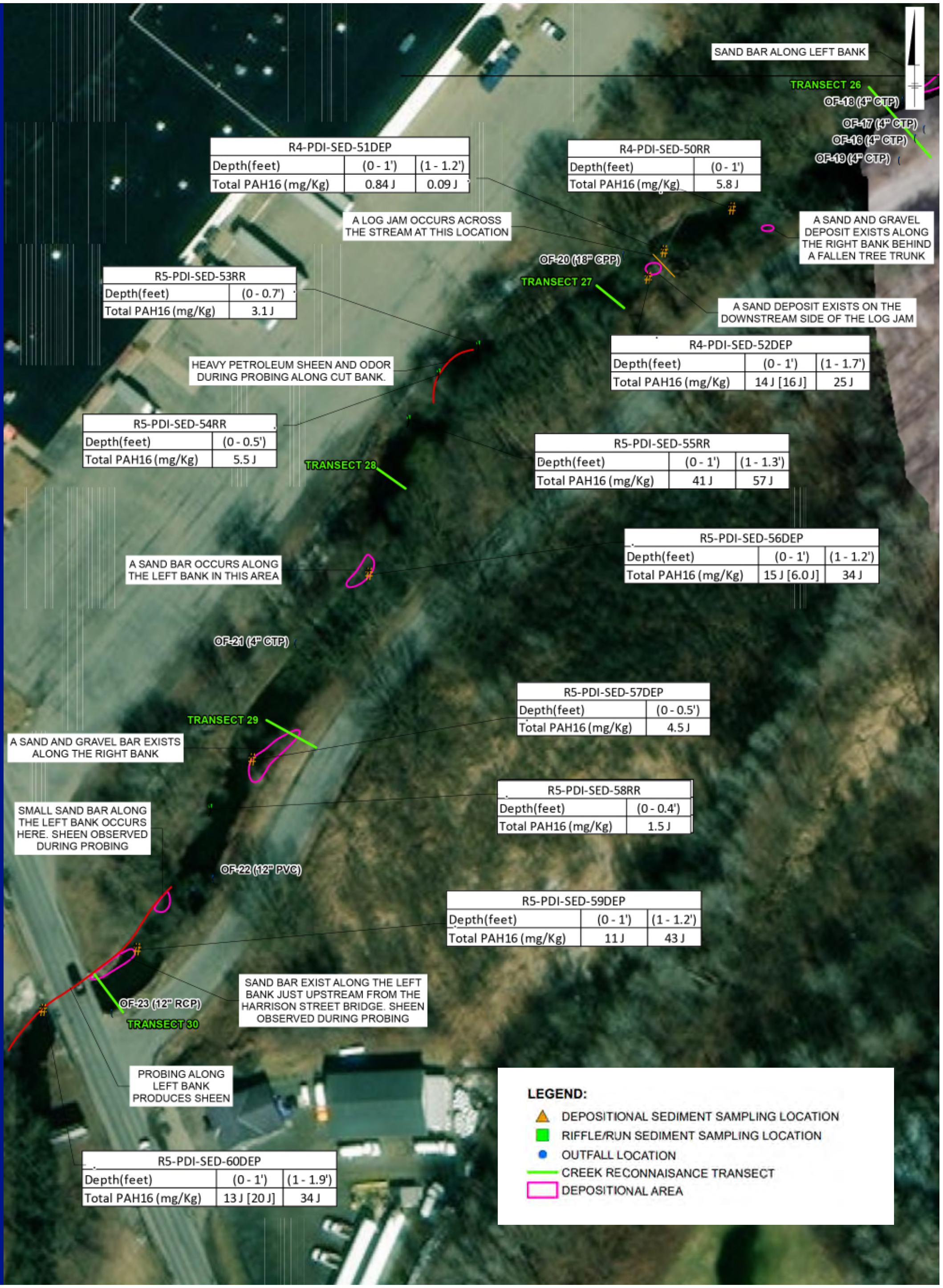
Initial PDI Findings – Reach 4 Creek Sampling

- Downstream reach
- Sheens observed in one sandbar near T-24
- Sheens observed during probing along banks
- PAH16 ranged up to 33 mg/kg and PAH34 ranged up to 45.3 mg/kg



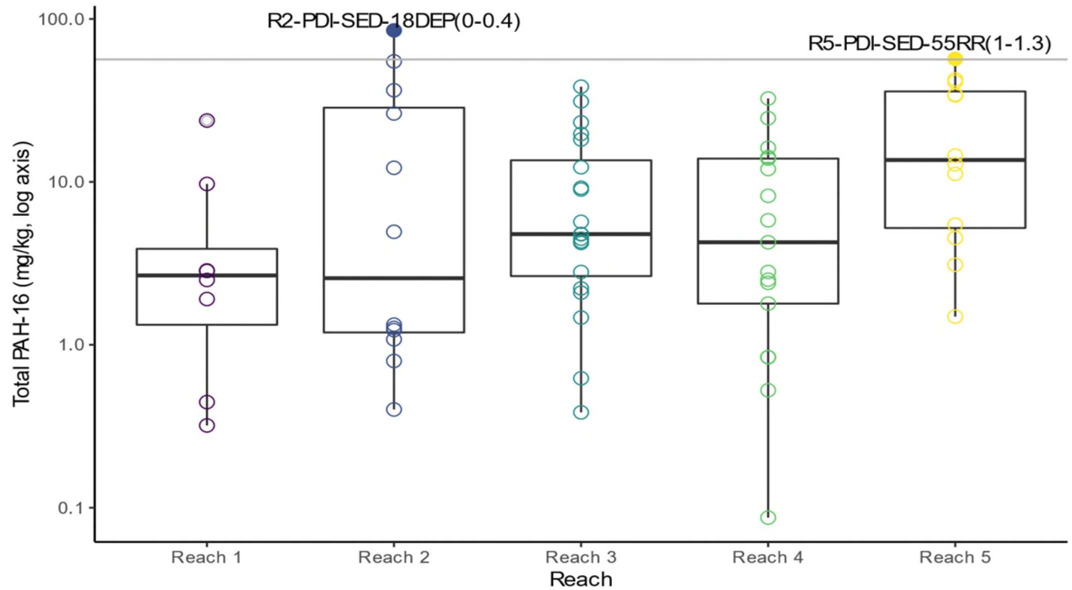
Initial PDI Findings – Reach 5 Creek Sampling

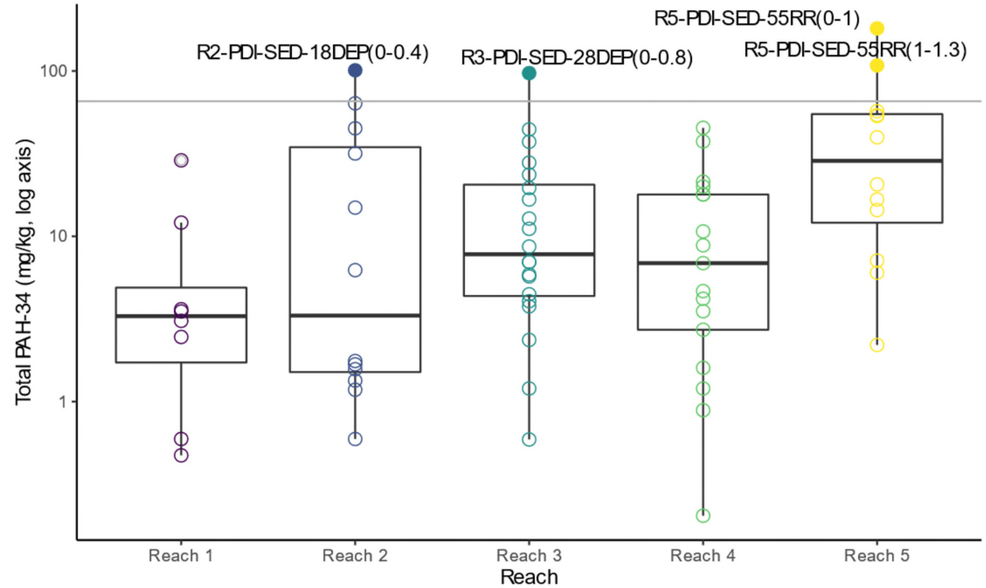
- Downstream reach
- Heavy petroleum sheens observed in bank near industrial facility; highest PAH16 concentrations (57 mg/kg) and PAH34 concentrations (181.3 mg/kg)
- Sheens observed in sediment deposits and along bank near bridge
- PAH16 ranged from 0.09 to 43 mg/kg except near petroleum sheens



Initial PDI Findings – Sediment PAH Concentrations

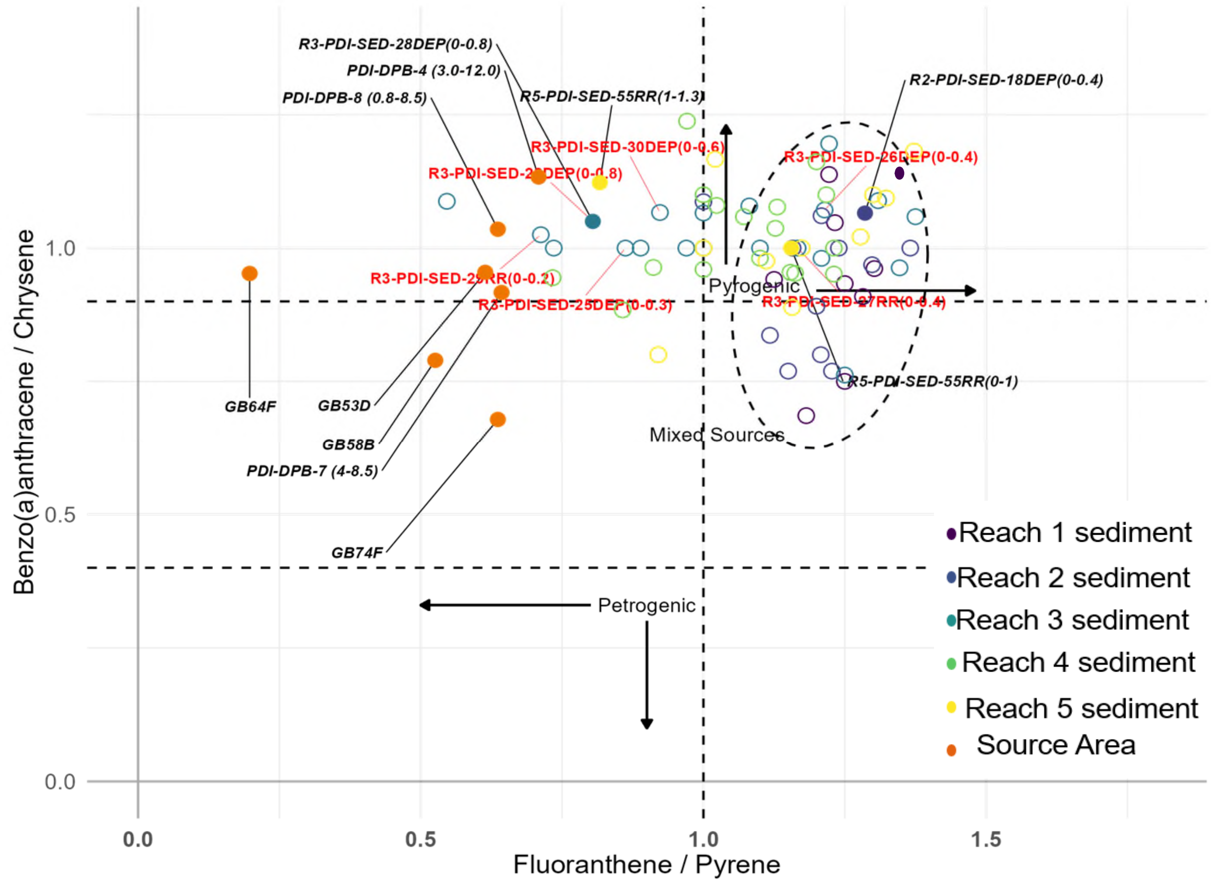
- PAH16 detected in low concentrations in all reaches (0.09 to 85 mg/kg)
- PAH34 detected in low concentrations in all reaches (0.20 to 181.3 mg/kg)
- Lowest PAH concentrations in Reaches 1 and 2; highest concentrations in Reach 5
- Higher PAH concentrations in soft sediment deposits
- No statistically significant differences between background and Reach 3 PAH concentrations
- 95th percentile (most conservative statistic) background concentrations - 56.4 mg/kg (PAH16) and 65.6 mg/kg (PAH34)





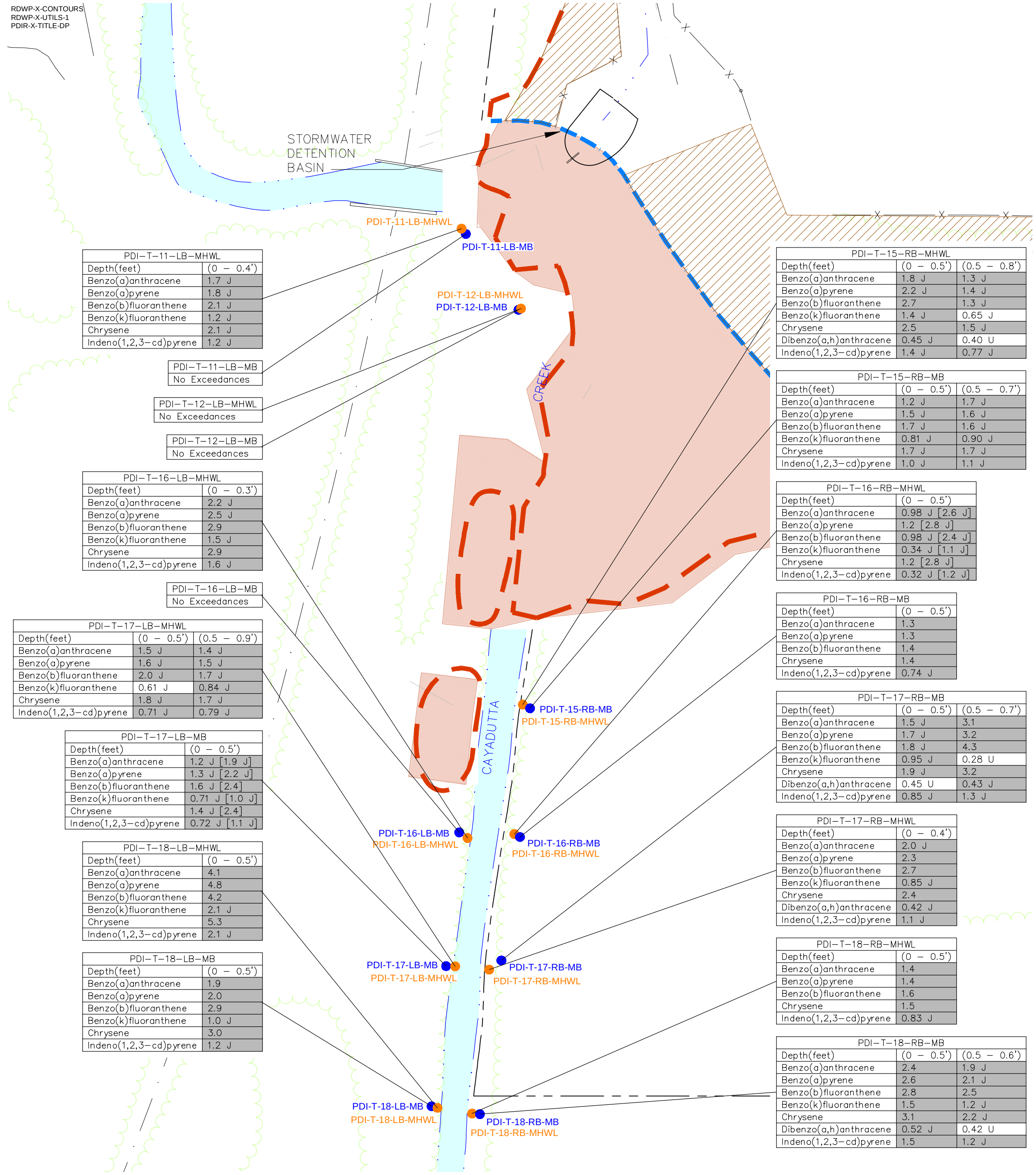
Initial PDI Findings – Sediment PAH Forensics

- PAHs in Reaches 3, 4, and 5 resemble the background PAH signature of pyrogenic PAHs in Reaches 1 and 2
- Some samples in Reaches 3, 4, and 5 have a mix of pyrogenic and petrogenic PAH signature
- Six samples from deposits in Reach 3 have compositional signature similar to upland source signature
- Reach 5 appears to contain PAHs of different source, possibly from petroleum impacts observed



Initial PDI Findings – Bank Soil

- PAH16 ranged from ND to 53.5 mg/kg
- No impacts observed
- 18 of 31 samples exceed unrestricted SCOs
- Bank soils have pyrogenic signature, but lack low molecular weight PAHs (e.g., naphthalene) present in upland source samples
- Bank soil PAHs not related to site



PDI–T–11–LB–MHWL	
Depth(feet)	(0 – 0.4')
Benzo(a)anthracene	1.7 J
Benzo(a)pyrene	1.8 J
Benzo(b)fluoranthene	2.1 J
Benzo(k)fluoranthene	1.2 J
Chrysene	2.1 J
Indeno(1,2,3–cd)pyrene	1.2 J

PDI–T–11–LB–MB
No Exceedances

PDI–T–12–LB–MHWL
No Exceedances

PDI–T–12–LB–MB
No Exceedances

PDI–T–16–LB–MHWL	
Depth(feet)	(0 – 0.3')
Benzo(a)anthracene	2.2 J
Benzo(a)pyrene	2.5 J
Benzo(b)fluoranthene	2.9
Benzo(k)fluoranthene	1.5 J
Chrysene	2.9
Indeno(1,2,3–cd)pyrene	1.6 J

PDI–T–16–LB–MB
No Exceedances

PDI–T–17–LB–MHWL		
Depth(feet)	(0 – 0.5')	(0.5 – 0.9')
Benzo(a)anthracene	1.5 J	1.4 J
Benzo(a)pyrene	1.6 J	1.5 J
Benzo(b)fluoranthene	2.0 J	1.7 J
Benzo(k)fluoranthene	0.61 J	0.84 J
Chrysene	1.8 J	1.7 J
Indeno(1,2,3–cd)pyrene	0.71 J	0.79 J

PDI–T–17–LB–MB	
Depth(feet)	(0 – 0.5')
Benzo(a)anthracene	1.2 J [1.9 J]
Benzo(a)pyrene	1.3 J [2.2 J]
Benzo(b)fluoranthene	1.6 J [2.4]
Benzo(k)fluoranthene	0.71 J [1.0 J]
Chrysene	1.4 J [2.4]
Indeno(1,2,3–cd)pyrene	0.72 J [1.1 J]

PDI–T–18–LB–MHWL	
Depth(feet)	(0 – 0.5')
Benzo(a)anthracene	4.1
Benzo(a)pyrene	4.8
Benzo(b)fluoranthene	4.2
Benzo(k)fluoranthene	2.1 J
Chrysene	5.3
Indeno(1,2,3–cd)pyrene	2.1 J

PDI–T–18–LB–MB	
Depth(feet)	(0 – 0.5')
Benzo(a)anthracene	1.9
Benzo(a)pyrene	2.0
Benzo(b)fluoranthene	2.9
Benzo(k)fluoranthene	1.0 J
Chrysene	3.0
Indeno(1,2,3–cd)pyrene	1.2 J

PDI–T–15–RB–MHWL		
Depth(feet)	(0 – 0.5')	(0.5 – 0.8')
Benzo(a)anthracene	1.8 J	1.3 J
Benzo(a)pyrene	2.2 J	1.4 J
Benzo(b)fluoranthene	2.7	1.3 J
Benzo(k)fluoranthene	1.4 J	0.65 J
Chrysene	2.5	1.5 J
Dibenzo(a,h)anthracene	0.45 J	0.40 U
Indeno(1,2,3–cd)pyrene	1.4 J	0.77 J

PDI–T–15–RB–MB		
Depth(feet)	(0 – 0.5')	(0.5 – 0.7')
Benzo(a)anthracene	1.2 J	1.7 J
Benzo(a)pyrene	1.5 J	1.6 J
Benzo(b)fluoranthene	1.7 J	1.6 J
Benzo(k)fluoranthene	0.81 J	0.90 J
Chrysene	1.7 J	1.7 J
Indeno(1,2,3–cd)pyrene	1.0 J	1.1 J

PDI–T–16–RB–MHWL	
Depth(feet)	(0 – 0.5')
Benzo(a)anthracene	0.98 J [2.6 J]
Benzo(a)pyrene	1.2 [2.8 J]
Benzo(b)fluoranthene	0.98 J [2.4 J]
Benzo(k)fluoranthene	0.34 J [1.1 J]
Chrysene	1.2 [2.8 J]
Indeno(1,2,3–cd)pyrene	0.32 J [1.2 J]

PDI–T–16–RB–MB	
Depth(feet)	(0 – 0.5')
Benzo(a)anthracene	1.3
Benzo(a)pyrene	1.3
Benzo(b)fluoranthene	1.4
Chrysene	1.4
Indeno(1,2,3–cd)pyrene	0.74 J

PDI–T–17–RB–MB		
Depth(feet)	(0 – 0.5')	(0.5 – 0.7')
Benzo(a)anthracene	1.5 J	3.1
Benzo(a)pyrene	1.7 J	3.2
Benzo(b)fluoranthene	1.8 J	4.3
Benzo(k)fluoranthene	0.95 J	0.28 U
Chrysene	1.9 J	3.2
Dibenzo(a,h)anthracene	0.45 U	0.43 J
Indeno(1,2,3–cd)pyrene	0.85 J	1.3 J

PDI–T–17–RB–MHWL	
Depth(feet)	(0 – 0.4')
Benzo(a)anthracene	2.0 J
Benzo(a)pyrene	2.3
Benzo(b)fluoranthene	2.7
Benzo(k)fluoranthene	0.85 J
Chrysene	2.4
Dibenzo(a,h)anthracene	0.42 J
Indeno(1,2,3–cd)pyrene	1.1 J

PDI–T–18–RB–MHWL	
Depth(feet)	(0 – 0.5')
Benzo(a)anthracene	1.4
Benzo(a)pyrene	1.4
Benzo(b)fluoranthene	1.6
Chrysene	1.5
Indeno(1,2,3–cd)pyrene	0.83 J

PDI–T–18–RB–MB		
Depth(feet)	(0 – 0.5')	(0.5 – 0.6')
Benzo(a)anthracene	2.4	1.9 J
Benzo(a)pyrene	2.6	2.1 J
Benzo(b)fluoranthene	2.8	2.5
Benzo(k)fluoranthene	1.5	1.2 J
Chrysene	3.1	2.2 J
Dibenzo(a,h)anthracene	0.52 J	0.42 U
Indeno(1,2,3–cd)pyrene	1.5	1.2 J

Initial PDI Findings – NYSDEC Follow-Up

MW-15S

- Reevaluate the potential presence of NAPL in MW-15S.

Bank Soil

- Establish a site-specific background PAH concentration in upstream bank soils.

Source Sampling

- Obtain a current PAH source signature in upland impacted site-soils to determine background bank soil conditions to provide a basis for removing MGP-impacted bank soils

Supplemental PDI (Nov/Dec 2022)

MW-15S

- Gauged MW-15S for NAPL and collect groundwater sample

Bank Soil

- Collected 24 background samples from banks upstream of the NAPL-impacted area (Reach 2)

Site Source Soil

- Collected three fresh soil samples containing heavy site-related impacts
- Conducted statistical and forensic evaluation to determine the extent of bank soils adjacent to the site and bordering NAPL containing upland areas (i.e., Reach 3) that may be impacted by MGP-related residuals.

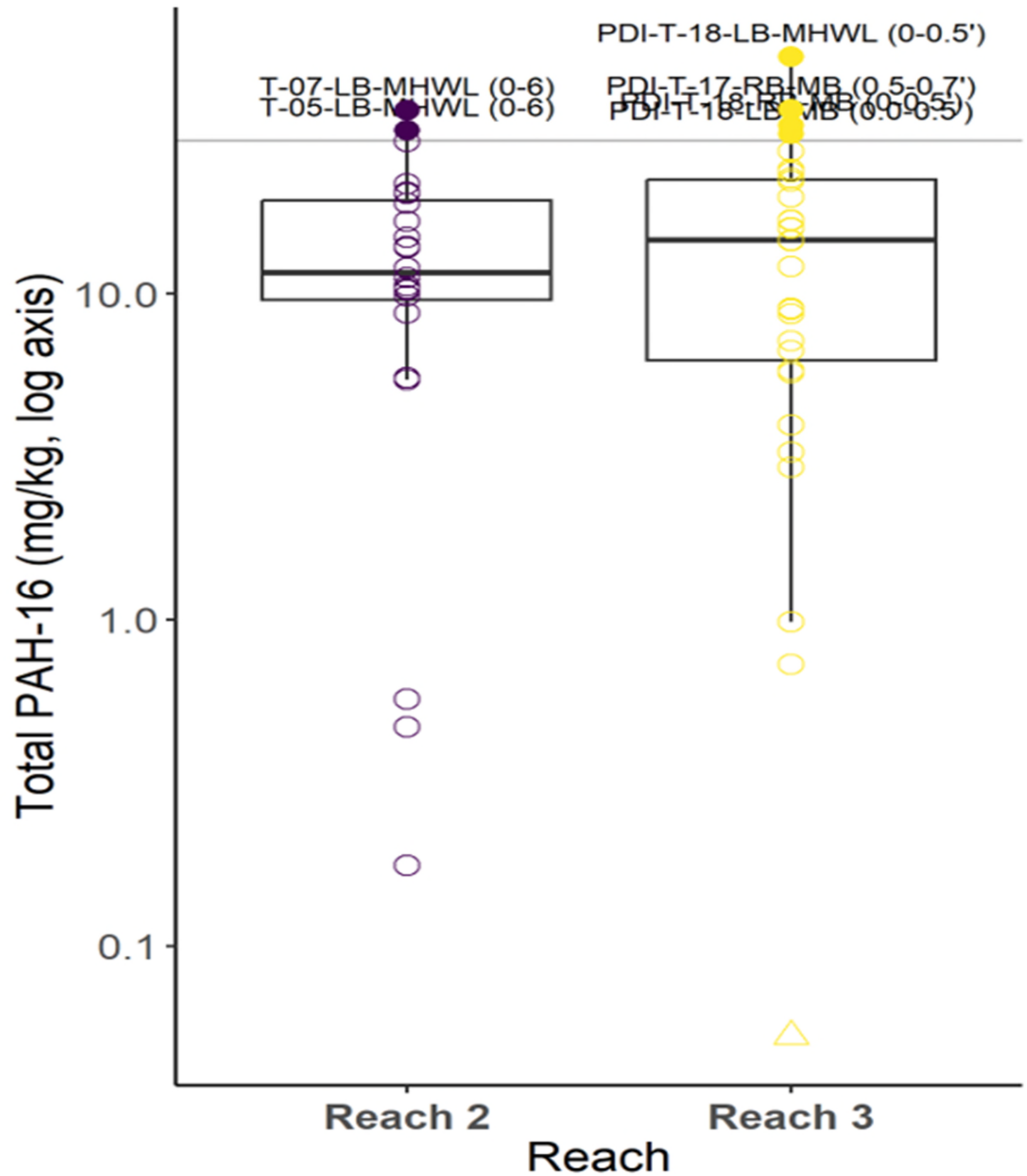
Supplemental PDI Results

MW-15S

- No NAPL present and no exceedances of site COCs

Bank Soil (Initial and Supplemental)

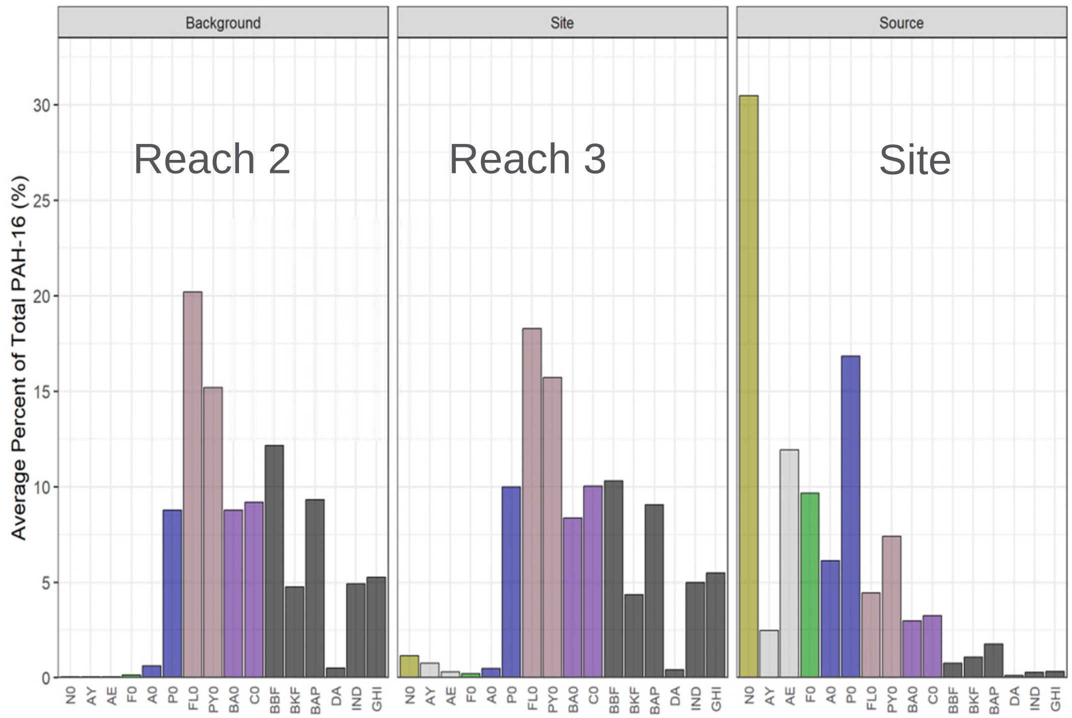
- PAH16 detected in low concentrations in Reach 2 (0.018 to 37 mg/kg) and Reach 3 (ND to 53.5 mg/kg)
- 95th percent Upper Prediction Limit (most conservative statistic) background concentration – 29.5 mg/kg (PAH16)
- PAH16 concentrations and ranges are similar between Reach 2 background and Reach 3 bank samples
- No statistically significant difference between Reach 2 background and Reach 3 bank soil PAH16 concentrations

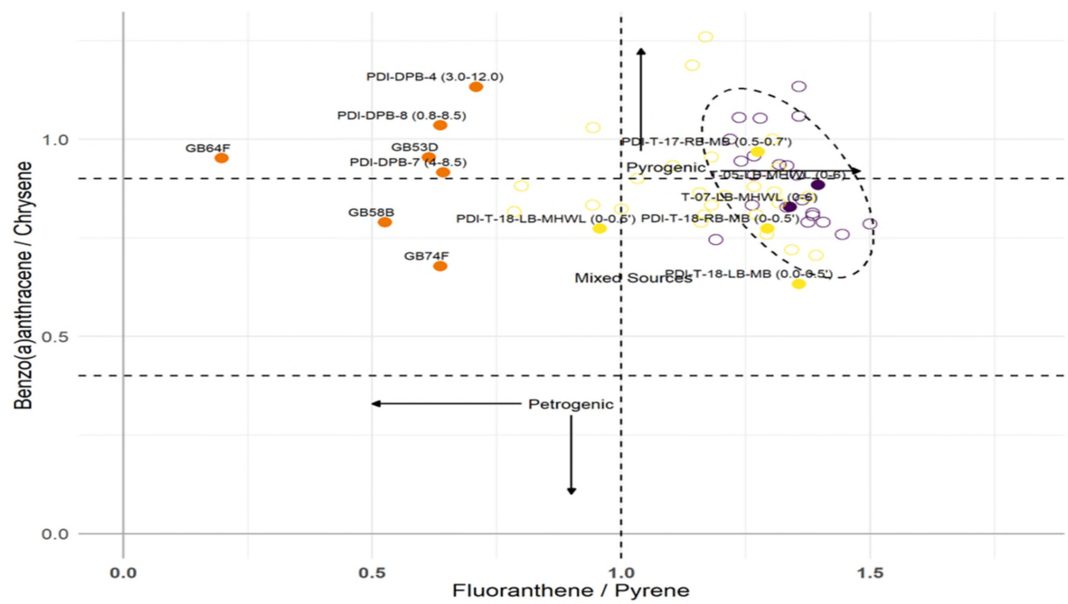


Supplemental PDI Results

Bank Soil (Initial and Supplemental)

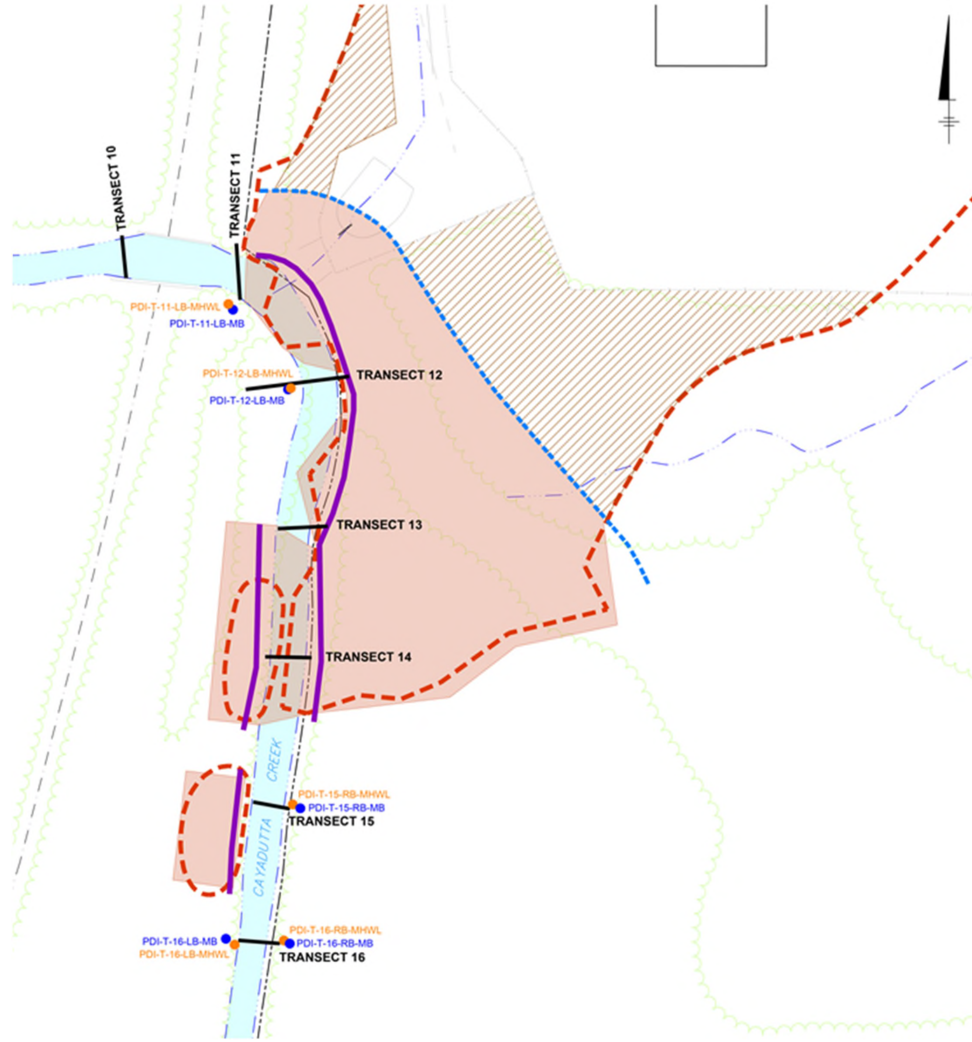
- Reach 2 background and Reach 3 bank soils have similar higher ring PAH distributions, while the site source samples were characterized by lower ring PAHs with naphthalene dominance
- Reach 2 background and Reach 3 bank soils have distinctly higher fluoranthene/pyrene ratios compared to site source soil and plot in a cluster
- Comparison of Reach 2 to Reach 3 bank soils for PAH16 concentrations, PAH distributions, and forensic PAH ratios all indicate Reach 3 is similar to background conditions





Supplemental PDI Summary and Conclusions

Requesting NYSDEC prepare ROD modification to revise the bank soil cleanup objective from “[excavating] bank soils which exceed unrestricted use SCOs” to “excavating bank soils adjacent to upland NAPL containing areas”. This ROD revision would result in removing the extent of bank soils shown below.



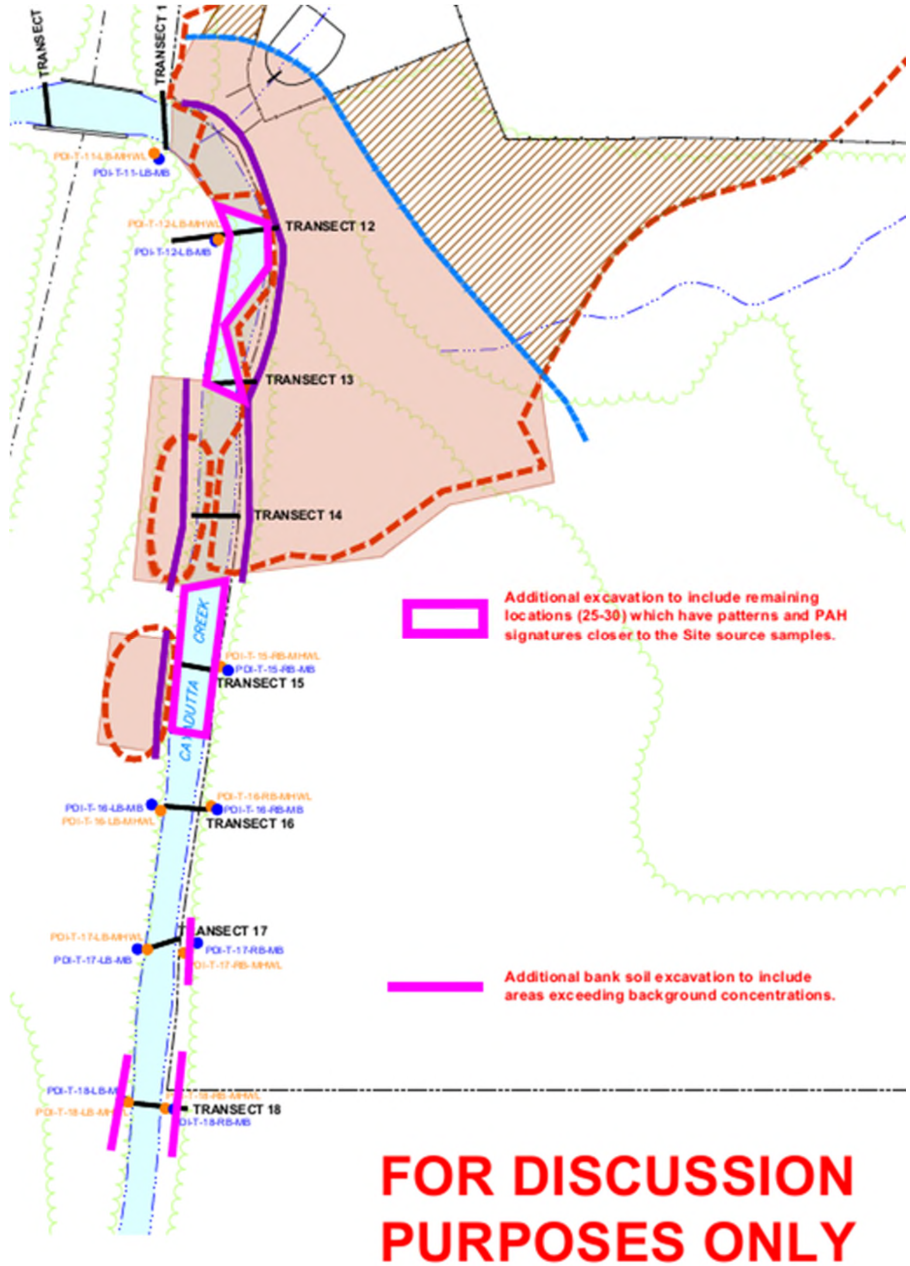
NYSDEC 8/16/23 E-Mail

"Specifically the yellow text in below paragraphs denotes the additional removal than what is being proposed in PDI report the Department will be requiring:

1. **bank soils adjacent to the site and in downstream stretches which exceed background concentration of total PAH16 in top two feet of the ground surface i.e. bank soils along the right bank of transect 17 and right and left bank soils along transect 18 (refer to attached figure, area is shown in bright purple).**

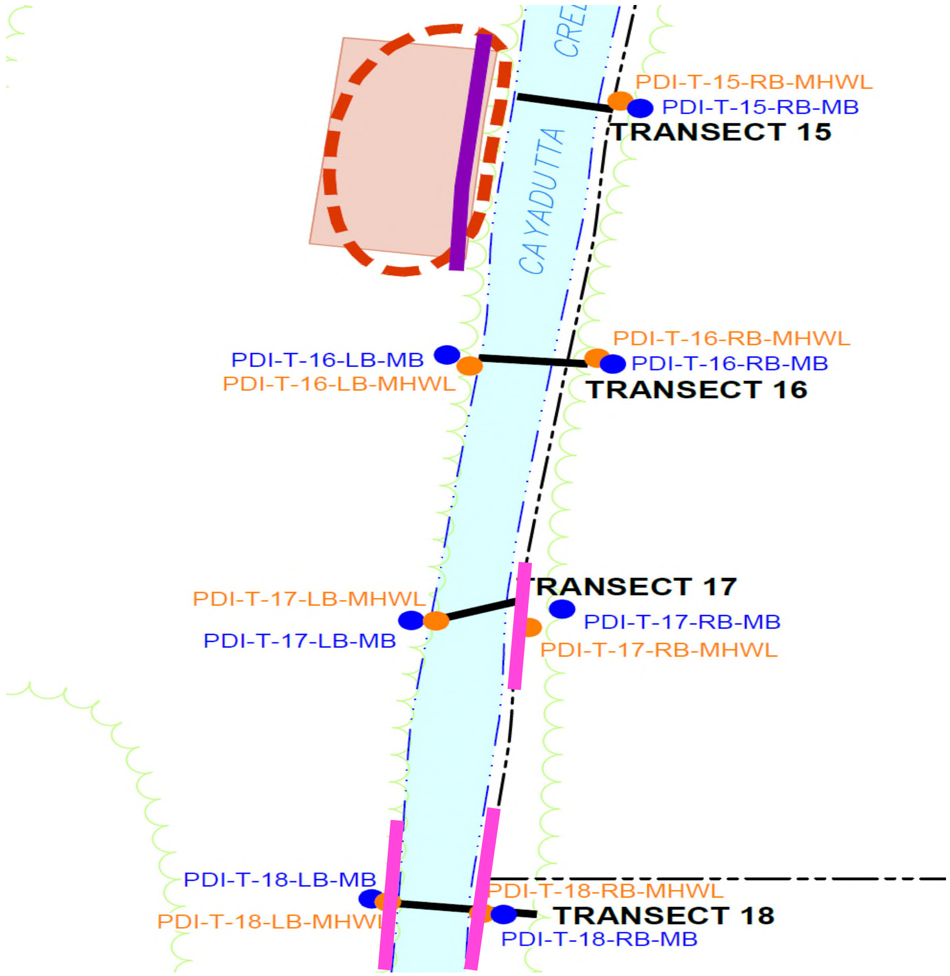
2. **sediment impacted by site-related PAHs at concentrations greater than background levels and/or has similar composition to the source PAHs i.e. sample locations R3-PDI-SED-25DEP, R3-PDI-SED-26DEP, R3-PDI-SED-27RR, R3-PDI-SED 28DEP, R3-PDI-SED-29RR, and R3-PDI-SED-30DEP) which has compositional patterns and PAH signatures closer to the site source samples (refer to attach figure, area shown in bright purple).**

3. **Remediation of the bank soil and creek sediment shall occur in two phases. First phase shall consist of removing all the bank soil and sediments specified in the PDI report and in above two paragraphs. Upon implementation of first phase, post remediation monitoring program (to be included in the remedial design) shall be implemented to determine if the sheen present along the water edge downstream of the site is transient in nature. If it is, Phase II shall not be implemented. If Phase II is required, it shall consist of excavation and off-site disposal of Cayadutta Creek sediments and/or bank soils located downstream of the site that continues to contain sheen, or which produces sheen when agitated in-situ along the water edge as evidenced by the Phase I post remediation monitoring data."**



NYSDEC 8/16/23
E-Mail Comment #1

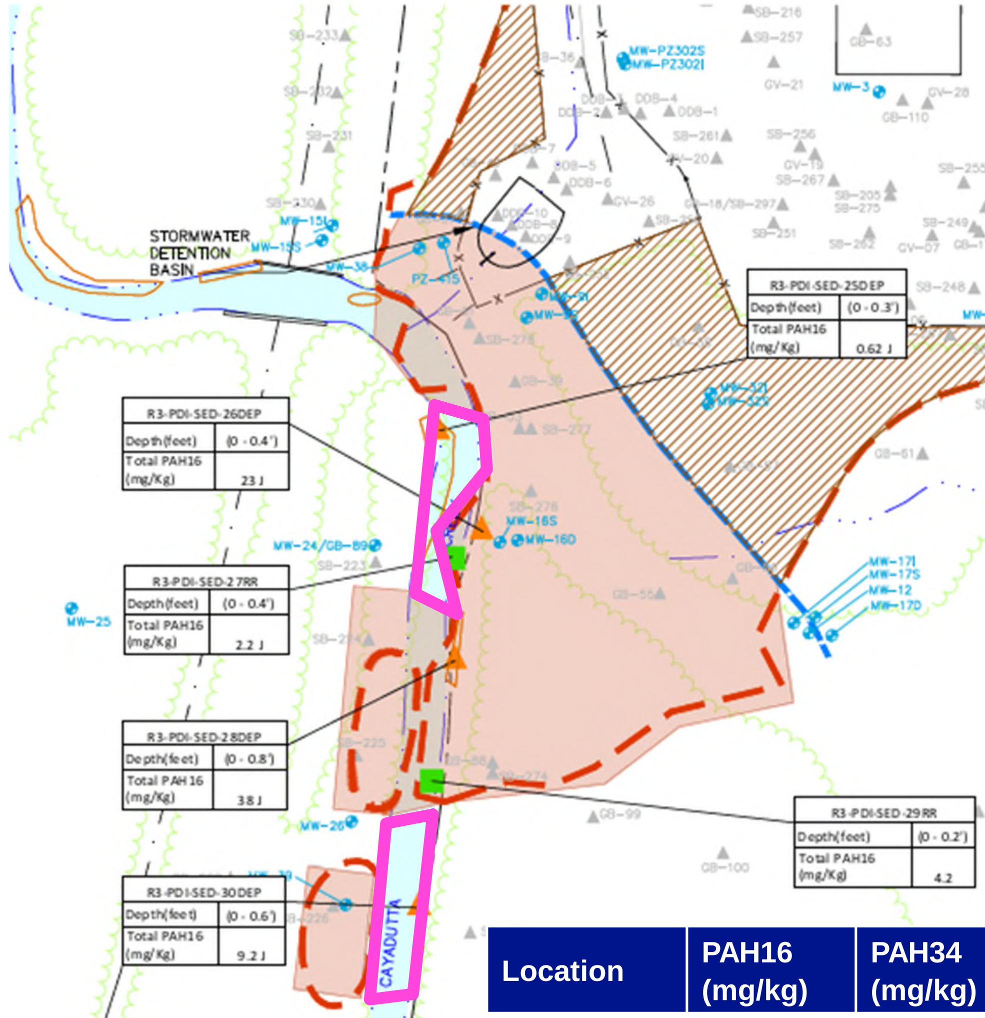
- All Reach 3 bank soil samples are similar to background PAH compositions and PAH ratios in Reach 2 background bank soils
- PAH16 concentrations in the three Reach 3 bank soil sample locations are below or near the most conservative background PAH16 bank soil statistic of 29.5 mg/kg and similar in concentration to Reach 2 (up to 37 mg/kg)



Location	PAH16 (mg/kg)	Forensic/Composition
T-17 RB	16.8J (0-0.5') MB *36.9J* (0.5-0.7') MB	Similar to background
T-18 RB	*32.9J* (0-0.5') MB 23.7J (0.5-0.6') MB 15.9J (0-0.5') MHWL 3.96J (0.5-1') MHWL	Similar to background
T-18 LB	*30.9J* (0-0.5') MB 7.17J (0.5-0.9') MB *53.5J* (0- 0.5) MHWL	Similar to background

NYSDEC 8/16/23 E-Mail Comment #2

- All PAH16 concentrations in the six Reach 3 sediment samples are below the background PAH16 sediment: 56.4 mg/kg
- PAH34 concentrations in five of the six Reach 3 sediment samples (i.e. except for R3-PDI-SED 28DEP) are below the background PAH34 sediment: 65.6 mg/kg
- R3-PDI-SED-26DEP, R3-PDI-SED-27RR, R3-PDI-SED 28DEP, and R3-PDI-SED-29RR already located in subsurface removal areas which will include removing overlying sediments
- Remaining two locations have PAH16 and PAH34 concentrations << background



Location	PAH16 (mg/kg)	PAH34 (mg/kg)
SED-25DEP	0.62J	1.2 J
SED-26DEP	23.2J	44.3J
SED-27RR	2.22J	3.77J
SED-28DEP	38.4J	*91.7J*
SED-29RR	4.22J	8.67J
SED-30DEP	9.2J	19.6J

Next Steps

National Grid response to 8/16/23 email

NYSDEC review/approval response

ROD amendment for bank soils

Initiate Remedial Design in fall 2023

Open Discussion

nationalgrid

THANK YOU!

nationalgrid

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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Transmitted Via Email

December 19, 2023

Mr. Steven Dilella
Project Manager
National Grid
300 Erie Boulevard, West A-3
Syracuse, NY 13202
steven.dilella@nationalgrid.com

Re: National Grid, Gloversville
Hill Street former MGP site
Site Id: 518021
Pre-Design Investigation (PDI) Report, January 2022
Interim Supplemental PDI Submittal, May 2023

Dear Mr. Dilella,

The New York State Department of Environmental Conservation (the Department), in consultation with New York State Department of Health (DOH), has reviewed the subject reports, submittals and other letters/correspondences exchanged in connection with the pre-design investigation, prepared by Arcadis on behalf of National Grid (NG).

Through the Interim Supplemental PDI Submittal, May 2023 National Grid requested the Department grant a request to modify Section 7.4 of the Record of Decision (ROD), dated March 2019, revising the bank soil cleanup objective from "[excavating] bank soils which exceed unrestricted use SCOs" to "excavating bank soils adjacent to upland NAPL containing areas". The Department hereby grants the request. The Department has determined this modification to the ROD, as per policy DER-2 (Making Changes to Selected Remedies), is minor and does not warrant issuing a modified ROD.

Additionally, NG has proposed to undertake additional remediation of the sediment/bank soil along the water edge in downstream stretch of the Cayadutta creek, which continues to produce a visible sheen when agitated in-situ, after the source of the contamination is remediated. The Department accepts NG's above proposal, however requires the Remedial Design contain a program to investigate the continuing presence of sheen along the water's edge in the downstream stretches of the Cayadutta creek to be implemented after the completion of the first phase of remedy construction and prior to initiating site management activities. The Remedial Design must also have a provision for submission of the appropriate workplan to accommodate additional investigation and/or remediation of the bank soil and sediments which continue to contain sheen, if deemed necessary.

Please submit the final copy of the PDI report, incorporating the Interim Supplemental PDI Submittal dated May 16, 2023, with the certification meeting the requirements of Chapter 1.5 (Certification) of DEC Program Policy DER-10: Technical Guidance for Site Investigation and Remediation within 15 days of the date of this letter. Please place the final approved report, correspondences exchanged in connection with pre-design investigation, and this letter in the document repository established for the site. Please proceed with the preparation and submission of the Preliminary Remedial Design report as per the approved Remedial Design Work Plan.

If you have any questions, please contact me at 518-402-9648 or write to me at parag.amin@dec.ny.gov.

Yours sincerely,

Parag Amin, P.E.
Project Manager

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Appendix B

Soil Boring and Monitoring Well Construction Logs

Date Start/Finish:	11/05/20	**Northing:** 1530417.257'	**Well/Boring ID:** PDI-CRB-1
Drilling Company:	Parratt-Wolff	**Easting:** 531873.076'	**Client:** National Grid
Driller's Name:	W Nielsen, M Eaves	**Casing Elevation:** NA	
Drilling Method:	Direct Push	**Surface Elevation:** 735.655'	**Location:**
Sampling Method:	4' Macrocore	**Borehole Depth:** 12'	Former MGP Site Hill Street Gloversville, NY
Rig Type:	Track Mounted Geoprobe	**Descriptions By:** E Green	

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	735	1	0-4'	1.3	0.0, 0.0, 0.0, 0.0			Light olive brown (2.5Y 5/6) coarse SAND, little sub rounded fine Gravel, trace fine Sand, loose, wet [Upper Sand and Gravel].	Borehole tremie-grouted with bentonite-cement grout to grade
5	730	2	4-8'	2.7	0.0, 0.0, 0.0, 0.0	6-8'		Dark grayish brown (2.5Y 4/2) sub angular fine GRAVEL, little fine - coarse Sand, trace Silt, loose - medium dense, wet [Upper Sand and Gravel]. SVOC soil sample collect from 6-8' bgs. Grayish brown (2.5Y 5/2) fine - coarse SAND, trace - little sub rounded fine Gravel, loose - medium dense, wet [Upper Sand and Gravel].	
10	725	3	8-11.5'	1.9	0.0, 0.0, 0.0, 0.0			End of boring at 11.5' bgs.	
15	720								

Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).Inches.

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Date Start/Finish:	11/05/20	**Northing:**	1530455.785'
Drilling Company:	Parratt-Wolff	**Easting:**	531879.252'
Driller's Name:	W Nielsen, M Eaves	**Casing Elevation:**	NA
Drilling Method:	Direct Push	**Surface Elevation:**	736.2
Sampling Method:	4' Macrocore	**Borehole Depth:**	12'
Rig Type:	Track Mounted Geoprobe	**Descriptions By:**	E Green

Well/Boring ID: PDI-CRB-2

Client: National Grid

Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0		1	0-4'	0.6	0.0 0.0 0.0 0.0			Dark grayish brown (2.5Y 4/2) fine - coarse SAND, little sub rounded fien Gravel, loose, wet [Upper Sand and Gravel].	Borehole tremie-grouted with bentonite-cement grout to grade
5	735 730	2	4-8'	2.9	0.0 0.0 0.0 0.0	X		Grayish brown (2.5Y 5/2) fine - medium SAND, trace fine Gravel, loose, wet [Upper Sand and Gravel]. SVOC soil sample and duplicate soil sample collect from 4-6' bgs. Dark grayish brown (2.5Y 4/2) sub angular fine GRAVEL, little fine - coarse Sand, medium dense, wet [Upper Sand and Gravel].	
10	725	3	8-12'	2.4	0.0 0.0 0.0 0.0			Grayish brown (2.5Y 5/2) fine - coarse SAND, loose - medium dense, wet [Upper Sand and Gravel]. Grayish brown (2.5Y 5/2) fine - medium, sub rounded - sub angular GRAVEL, little coarse Sand, loose - medium dense, wet [Upper Sand and Gravel].	
15								End of boring at 12' bgs.	

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Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish:	11/05/20	**Northing:**	1530492.487'
Drilling Company:	Parratt-Wolff	**Easting:**	531886.569'
Driller's Name:	W Nielsen, M Eaves	**Casing Elevation:**	NA
Drilling Method:	Direct Push	**Surface Elevation:**	736.152'
Sampling Method:	4' Macrocore	**Borehole Depth:**	12'
Rig Type:	Track Mounted Geoprobe	**Descriptions By:**	E Green

Well/Boring ID: PDI-CRB-3

Client: National Grid

Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	735	1	0-4'	1.0	0.0, 0.0, 0.0, 0.0			Light olive brown (2.5Y 5/4) sub angular fine GRAVEL, little fine - coarse Sand, medium dense, wet [Upper Sand and Gravel]. Dark olive brown (2.5Y 3/3) fine - coarse SAND, little sub angular fine Gravel, trace Silt, medium dense, wet [Upper Sand and Gravel].	Borehole tremie-grouted with bentonite-cement grout to grade
5	730	2	4-8'	2.3	0.0, 0.0, 0.0, 0.0			Dark gray (2.5Y 4/1) fine - coarse SAND, little - some sub rounded fine Gravel, medium dense, wet [Upper Sand and Gravel]. Gravel content increases with depth	
10	725	3	8-12'	2.9	0.0, 0.0, 0.0, 0.0	X (8-10')		SVOC soil sample and MS/MSD soil samples collect from 8-10' bgs. Dark grayish brown (2.5Y 4/2) sub rounded fine GRAVEL, little medium - coarse Sand, medium dense, wet [Upper Sand and Gravel].	
15								End of boring at 12' bgs.	

Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

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Date Start/Finish: 11/05/20	**Northing:** 1530530.81'	**Well/Boring ID:** PDI-CRB-4	
Drilling Company: Parratt-Wolff	**Easting:** 531889.688'	**Client:** National Grid	
Driller's Name: W Nielsen, M Eaves	**Casing Elevation:** NA	**Location:** Former MGP Site, Hill Street, Gloversville, NY	
Drilling Method: Direct Push	**Surface Elevation:** 737.098'		
Sampling Method: 4' Macrocore	**Borehole Depth:** 16'		
Rig Type: Track Mounted Geoprobe	**Descriptions By:** E Green		

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	740								
0		1	0-4'	0.7	0.0, 0.5, 0.5, 0.6			Very dark grayish brown (2.5Y 3/2) fine - coarse SAND, some sub rounded - sub angular fine Gravel, loose, wet, very light rainbow sheen, very faint coal tar like odor [Upper Sand and Gravel].	Borehole tremie-grouted with bentonite-cement grout to grade
	735								
5		2	4-8'	2.6	0.6, 24.0, 6.2, 5.3			Dark grayish brown (2.5Y 4/2) fine - coarse SAND, little sub rounded fine Gravel, loose - medium dense, wet, trace NAPL blebs at 5.5' bgs, light rainbow sheen at 4.5 and 7.5' bgs, moderate rainbow sheen from 5.25-5.75' bgs, light - moderate coal tar like odor [Upper Sand and Gravel].	
	730								
10		3	8-12'	2.8	1.7, 3.1, 1.1, 0.4			Dark grayish brown (2.5Y 4/2) fine - coarse SAND, trace fine Gravel, loose - medium dense, wet, light rainbow sheen at 8.25' bgs [Upper Sand and Gravel].	
	725								
15		4	12-16'	3.4	0.0, 0.0, 0.0, 0.0			End of boring at 16' bgs.	

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish: 11/05/20	**Northing:** 1530533.08'	**Well/Boring ID:** PDI-CRB-4(SO)
Drilling Company: Parratt-Wolff	**Easting:** 531873.173'	**Client:** National Grid
Driller's Name: W Nielsen, M Eaves	**Casing Elevation:** NA	**Location:**
Drilling Method: Direct Push	**Surface Elevation:** 737.109'	Former MGP Site Hill Street Gloversville, NY
Sampling Method: 4' Macrocore	**Borehole Depth:** 8'	
Rig Type: Track Mounted Geoprobe	**Descriptions By:** E Green	

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	740								
0					0.0	X		Light olive brown (2.5Y 5/4) sub rounded - sub angular fine GRAVEL, little - some fine - coarse Sand, loose, wet [Upper Sand and Gravel]. SVOC soil sample and duplicate soil sample collected from 0-2' bgs	
					0.0				
	735	1	0-4'	2.5	0.0			Dark gray (2.5Y 4/1) SILT, some medium plasticity Clay, medium stiff, moist [Upper Sand and Gravel].	
					0.0				Borehole tremie-grouted with bentonite-cement grout to grade
5					0.0			Dark gray (2.5Y 4/1) sub rounded fine GRAVEL, some fine - coarse Sand, loose, wet [Upper Sand and Gravel].	
					0.0				
		2	4-8'	2.1	0.0				
	730				0.0				
								End of boring at 8' bgs.	
10									
	725								
15									

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish:	11/05/20	**Northing:**	1530575.269'	**Well/Boring ID:**	PDI-CRB-5
Drilling Company:	Parratt-Wolff	**Easting:**	531893.622'	**Client:**	National Grid
Driller's Name:	W Nielsen, M Eaves	**Casing Elevation:**	NA	**Location:**	Former MGP Site, Hill Street, Gloversville, NY
Drilling Method:	Direct Push	**Surface Elevation:**	737.264'		
Sampling Method:	4' Macrocore	**Borehole Depth:**	12'		
Rig Type:	Track Mounted Geoprobe	**Descriptions By:**	E Green		

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	740								
0		1	0-4'	1.0	26.3, 11.4, 5.8, 4.1			Grayish brown (2.5Y 5/2) sub angular fine GRAVEL, little coarse Sand, medium dense, wet, moderate rainbow sheen, trace NAPL blebs, moderate coal tar like odor [Upper Sand and Gravel].	Borehole tremie-grouted with bentonite-cement grout to grade
	735							Grayish brown (2.5Y 5/2) SILT, little medium plasticity Clay, little fine Sand, very light rainbow sheen, moderate coal tar like odor [Silt]. Very light rainbow sheen from 4-6' bgs.	
5		2	4-8'	2.3	2.2, 0.3, 0.5, 0.0				
	730								
10		3	8-12'	3.9	0.0, 0.0, 0.0, 0.0			Grayish brown (2.5Y 5/2) SILT, little medium plasticity Clay, stiff, moist [Silt].	
	725							End of boring at 12' bgs.	
15									

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Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish:	11/05/20	**Northing:**	1530576.443'	**Well/Boring ID:**	PDI-CRB-5(SO)
Drilling Company:	Parratt-Wolff	**Easting:**	531880.186'	**Client:**	National Grid
Driller's Name:	W Nielsen, M Eaves	**Casing Elevation:**	NA	**Location:**	Former MGP Site Hill Street Gloversville, NY
Drilling Method:	Direct Push	**Surface Elevation:**	737.032'		
Sampling Method:	4' Macrocore	**Borehole Depth:**	8'		
Rig Type:	Track Mounted Geoprobe	**Descriptions By:**	E Green		

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0		1	0-4'	2.9	0.0 0.0 0.0 0.0	X		Light olive brown (2.5Y 5/4) sub rounded fine - medium GRAVEL, little coarse Sand, loose, wet [Upper Sand and Gravel]. SVOC soil sample collected from 0-1.75' bgs	Borehole tremie-grouted with bentonite-cement grout to grade
	735							Gray (2.5Y 5/1) SILT, little medium plasticity Clay, trace fine Sand, medium stiff - stiff, moist [Silt].	
5		2	4-8'	3.6	0.0 0.0 0.0 0.0				
	730							End of boring at 8' bgs.	
10									
	725								
15									

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Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish: 11/06/20 **Drilling Company:** Parratt-Wolff **Driller's Name:** W Nielsen, M Eaves **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore **Rig Type:** Track Mounted Geoprobe	**Northing:** 1530607.061' **Easting:** 531899.214' **Casing Elevation:** NA **Surface Elevation:** 737.365' **Borehole Depth:** 8' **Descriptions By:** E Green	**Well/Boring ID:** PDI-CRB-6 **Client:** National Grid **Location:** Former MGP Site Hill Street Gloversville, NY	

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	740								
0		1	0-4'	3.1	0.0 0.0			Dark grayish brown (2.5Y 5/2) fine - coarse SAND, some sub rounded fine Gravel, loose, wet [Upper Sand and Gravel].	Borehole tremie-grouted with bentonite-cement grout to grade
	735				0.0 0.0	X		Dark grayish brown (2.5Y 5/2) SILT, little - some medium plasticity Clay, trace - little fine Sand, stiff, moist [Silt]. SVOC soil sample and MS/MSD soil sample collected from 2-4' bgs	
5		2	4-8'	3.5	0.0 0.0 0.0 0.0				
	730							End of boring at 8' bgs.	
10									
	725								
15									

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish: 11/06/20	**Northing:** 1530645.297'	**Well/Boring ID:**	**PDI-CRB-7**
Drilling Company: Parratt-Wolff	**Easting:** 531906.435'	**Client:**	National Grid
Driller's Name: W Nielsen, M Eaves	**Casing Elevation:** NA		
Drilling Method: Direct Push	**Surface Elevation:** 738.128'	**Location:**	
Sampling Method: 4' Macrocore	**Borehole Depth:** 8'		Former MGP Site Hill Street Gloversville, NY
Rig Type: Track Mounted Geoprobe	**Descriptions By:** E Green		

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	740								
0		1	0-4'	1.7	11.8 33.6 8.2			Dark grayish brown (2.5Y 5/2) sub rounded fine GRAVEL, little coarse Sand, loose, wet, moderate rainbow sheen, heavy black staining, trace NAPL blebs, NAPL coating inside of macrocore sleeve, strong coal tar like odor [Upper Sand and Gravel].	Borehole tremie-grouted with bentonite-cement grout to grade
	735				5.3			Gray (2.5Y 4/1) SILT, little medium plasticity Clay, stiff, moist, moderate coal tar like odor [Silt].	
5		2	4-8'	3.8	6.2 0.3 0.1 0.1				
	730							End of boring at 8' bgs.	
10									
	725								
15									

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Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish:	11/06/20	**Northing:**	1530650.336'
Drilling Company:	Parratt-Wolff	**Easting:**	531888.114'
Driller's Name:	W Nielsen, M Eaves	**Casing Elevation:**	NA
Drilling Method:	Direct Push	**Surface Elevation:**	738.924'
Sampling Method:	4' Macrocore	**Borehole Depth:**	8'
Rig Type:	Track Mounted Geoprobe	**Descriptions By:**	E Green

Well/Boring ID: PDI-CRB-7(SO)

Client: National Grid

Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	740								
0		1	0-4'	2.5	0.0, 0.0, 0.0, 0.0	X		Light olive brown (2.5Y 5/6) fine - coarse SAND, little sub rounded fine Gravel, loose, wet [Upper Sand and Gravel SVOC soil sample collected from 0.5-2.5' bgs. Gray (2.5Y 4/1) SILT, little low - medium plasticity Clay, little fine Sand stiff, moist [Silt].	Borehole tremie-grouted with bentonite-cement grout to grade
5	735	2	4-8'	3.9	0.0, 0.0, 0.0, 0.0				
	730							End of boring at 8' bgs.	
10									
	725								
15									

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Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish:	11/06/20		**Northing:**	1530681.057'		**Well/Boring ID:**	PDI-CRB-8			
Drilling Company:	Parratt-Wolff		**Easting:**	531914.648'		**Client:**	National Grid			
Driller's Name:	W Nielsen, M Eaves		**Casing Elevation:**	NA		**Location:**	Former MGP Site Hill Street Gloversville, NY			
Drilling Method:	Direct Push		**Surface Elevation:**	738.471'						
Sampling Method:	4' Macrocore		**Borehole Depth:**	8'						
Rig Type:	Track Mounted Geoprobe		**Descriptions By:**	E Green						

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	740								
0		1	0-4'	1.3	0.8 0.4 0.0 0.0	X		Light olive brown (2.5Y 5/6) fine - coarse SAND, little sub rounded fine Gravel, loose, wet, very light rainbow sheen, very faint coal tar like odor [Upper Sand and Gravel]. SVOC soil sample collected from 0.0-1.5' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
	735							Grayish brown (2.5Y 5/2) SILT, trace - little low plasticity Clay, stiff - very stiff, moist [Silt].	
5		2	4-8'	3.9	0.0 0.0 0.0 0.0				
	730							End of boring at 8' bgs.	
10									
	725								
15									

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Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish: 11/09/20	**Northing:** 1530709.724'	**Well/Boring ID:** PDI-CRB-9	
Drilling Company: Parratt-Wolff	**Easting:** 531893.086'	**Client:** National Grid	
Driller's Name: M Eaves, R Nolvka	**Casing Elevation:** NA	**Location:**	
Drilling Method: Direct Push	**Surface Elevation:** 739.249'	Former MGP Site Hill Street Gloversville, NY	
Sampling Method: 4' Macrocore	**Borehole Depth:** 8'		
Rig Type: Track Mounted Geoprobe	**Descriptions By:** E Green		

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	740								
0		1	0-4'	3.7	0.0			Dark gray (2.5Y 4/1) fine - coarse SAND, little sub rounded fine Gravel, loose, wet.	
					0.0	X		Dark grayish brown (2.5Y 4/2) SILT, little fine Sand, medium stiff, moist [Silt]. SVOC soil sample and duplicate soil sample collected from 1-3' bgs.	
					0.0	X			
					0.0				Borehole tremie-grouted with bentonite-cement grout to grade
	735	2	4-8'	3.9	0.0				
5					0.0				
					0.0				
					0.0				
								End of boring at 8' bgs.	
	730								
10									
	725								
15									

Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

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Date Start/Finish: 11/10/20	**Northing:** 1530718.863'	**Well/Boring ID:** PDI-CRB-9(SO)	
Drilling Company: Parratt-Wolff	**Easting:** 531911.078'	**Client:** National Grid	
Driller's Name: M Eaves, R Nolvka	**Casing Elevation:** NA	**Location:**	
Drilling Method: Direct Push	**Surface Elevation:** 739.231'	Former MGP Site	
Sampling Method: 4' Macrocore	**Borehole Depth:** 8'	Hill Street	
Rig Type: Track Mounted Geoprobe	**Descriptions By:** E Green	Gloversville, NY	

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	740								
0		1	0-4'	2.2	0.8			Dark gray (2.5Y 4/1) sub rounded fine GRAVEL, some fine - coarse Sand, loose, wet.	Borehole tremie-grouted with bentonite-cement grout to grade
					0.0				
					0.0			Gray (2.5Y 5/1) SILT, trace - little low plasticity Clay, stiff, moist [Silt].	
					0.0				
5	735	2	4-8'	3.7	0.0				
					0.0				
					0.0				
					0.0				
								End of boring at 8' bgs.	
10	730								
15	725								

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Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish: 11/09/20	**Northing:** 1530731.198'	**Well/Boring ID:** PDI-CRB-10
Drilling Company: Parratt-Wolff	**Easting:** 531898.722'	**Client:** National Grid
Driller's Name: M Eaves, R Nolvka	**Casing Elevation:** NA	
Drilling Method: Direct Push	**Surface Elevation:** 739.333'	**Location:**
Sampling Method: 4' Macrocore	**Borehole Depth:** 20'	Former MGP Site Hill Street Gloversville, NY
Rig Type: Track Mounted Geoprobe	**Descriptions By:** E Green	

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	740								
0		1	0-4'	1.7	1.9 1.3 14.8 60.2			Black (2.5Y 2.5/1) sub rounded - sub angular fine GRAVEL, little fine - coarse Sand, loose, wet. Moderate - heavy rainbow sheen, heavy black staining, strong coal tar like odor, NAPL blebs and globules (approximately 10-15% grain coating) from 2-4' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
5	735	2	4-8'	1.7	80.9 219.2 84.5 49.1			Black (2.5Y 2.5/1) fine - medium SAND, little sub rounded fine Gravel, loose, wet, moderate - heavy black staining, very strong coal tar like odor. NAPL (approximately 15-20% grain coating) from 4-4.5' bgs. NAPL (approximately 30-35% grain coating) from 5.5-6' bgs. Dark gray (2.5Y 4/1) SILT, little fine Sand, medium stiff, moist, very strong coal tar like odor [Silt]. NAPL (approximately 15-20% grain coating) from 6-7.5'	
10	730	3	8-12'	3.5	6.9 20.8 17.4 6.6			Dark grayish brown (2.5Y 4/2) SILT, little medium plasticity Clay, little fine Sand, stiff, moist, very strong coal tar like odor [Silt]. Trace NAPL blebs at 8.5' bgs. Trace NAPL blebs at 10' bgs.	
15	725	4	12-16'	3.7	4.8 7.2 1.6 0.3			Trace NAPL blebs at 14' bgs.	

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Client: National Grid	**Well/Boring ID:** PDI-CRB-10
Site Location: Former MGP Site, Hill Street, Gloversville, NY	**Borehole Depth:** 20'

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
		5	16-20'	3.8	0.9 0.3 0.0 0.0				Borehole tremie-grouted with bentonite-cement grout to grade
20	720							End of boring at 20' bgs.	
25	715								
30	710								
35	705								

Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

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Date Start/Finish:	11/09/20	**Northing:**	1530730.289'	**Well/Boring ID:**	PDI-CRB-10/11(SO)
Drilling Company:	Parratt-Wolff	**Easting:**	531879.641'	**Client:**	National Grid
Driller's Name:	M Eaves, R Nolvka	**Casing Elevation:**	NA		
Drilling Method:	Direct Push	**Surface Elevation:**	737.07'	**Location:**	
Sampling Method:	4' Macrocore	**Borehole Depth:**	12'		Former MGP Site Hill Street Gloversville, NY
Rig Type:	Track Mounted Geoprobe	**Descriptions By:**	E Green		

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	740								
0		1	0-4'	0.9	0.0			Olive brown (2.5Y 4/4) sub angular fine GRAVEL, some fine - coarse Sand, loose, wet.	
	735				0.0				
					0.0				
					0,0				
		2	4-8'	2.8	100.7			Light rainbow sheen, strong coal tar like odor, heavy NAPL (approximately 75% grain coating) from 4-5' bgs.	
5					9.9			Gray (2.5Y 4/1) SILT, some medium plasticity Clay, medium stiff, moist [Silt].	
	730				32.5				
					15.2				Borehole tremie-grouted with bentonite-cement grout to grade
		3	8-12'	3.6	0.0				
10					0.0				
					0.0				
					0.0				
	725							End of boring at 12' bgs.	
15									

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish:	11/10/20
Drilling Company:	Parratt-Wolff
Driller's Name:	M Eaves, R Nolvka
Drilling Method:	Direct Push
Sampling Method:	4' Macrocore
Rig Type:	Track Mounted Geoprobe

Northing:	531871.694'
Easting:	531911.078'
Casing Elevation:	NA
Surface Elevation:	746.66'
Borehole Depth:	16'
Descriptions By:	E Green

Well/Boring ID: PDI-CRB-10/11(SO-2)

Client: National Grid

Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0		1	0-4'	2.6	0.0, 0.0, 0.0, 0.0			Olive yellow (2.5Y 6/6) fine SAND, little Woody Organics, trace coarse Sand, loose, moist [Fill].	Borehole tremie-grouted with bentonite-cement grout to grade
5	745 / 740	2	4-8'	2.0	0.0, 0.0, 0.0, 0.7			Grayish brown (2.5Y 5/2) fine - coarse SAND, some sub rounded fine - medium Gravel, loose, wet [Upper Sand and Gravel].	
10	735	3	8-12'	1.9	0.0, 0.0, 0.0, 0.0	X (10-12')		Olive brown (2.5Y 4/4) fine - medium SAND, little coarse Sand, little sub rounded fine Gravel, loose, wet [Upper Sand and Gravel]. Dark gray (2.5Y 4/1) SILT, little fine - coarse Sand, little sub rounded fine Gravel, medium stiff, moist [Silt]. SVOC and MS/MSD soil sample collected from 10-12' bgs.	
15		4	12-16'	3.8	0.0, 0.0, 0.0, 0.0			Gray (2.5Y 5/1) SILT, some medium - high plasticity Clay, stiff, moist [Silt]. End of boring at 16' bgs.	

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish:	11/09/20	**Northing:**	1530748.546'	**Well/Boring ID:**	PDI-CRB-11
Drilling Company:	Parratt-Wolff	**Easting:**	531890.103'	**Client:**	National Grid
Driller's Name:	M Eaves, R Nolvka	**Casing Elevation:**	NA		
Drilling Method:	Direct Push	**Surface Elevation:**	737.464'	**Location:**	
Sampling Method:	4' Macrocore	**Borehole Depth:**	16'		Former MGP Site Hill Street Gloversville, NY
Rig Type:	Track Mounted Geoprobe	**Descriptions By:**	E Green		

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	740								
0		1	0-4'	1.9	3.5			Dark grayish brown (2.5Y 4/2) fine - coarse SAND, little sub rounded fine Gravel, loose - medium dense, wet, moderate coal tar like odor. NAPL blebs (approximatel 10% grain coatin) at 0.5' bgs.	
					9.9				
	735				59.2			NAPL blebs (approximatel 10% grain coatin) at 3' bgs.	
					22.8			Gray (2.5Y 5/1) SILT, some fine - medium Sand, little sub rounded fine Gravel, medium stiff, moist - wet, moderate coal tar like odor.	
		2	4-8'	2.2	10.8			Gray (2.5Y 5/1) SILT, little sub rounded fine Gravel, little fine - coarse Sand, stiff, moist, moderate to strong coal tar like odor [Silt].	
5					100.8			NAPL blebs (approximatel 5-10% grain coatin) at 5' bgs.	
					35.1				
	730				14.3			NAPL blebs (approximatel 5-10% grain coatin) at 7' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
		3	8-12'	2.6	75.9			Dark gray (2.5Y 4/1) fine - coarse SAND, some sub rounded fine Gravel, little - some Silt, medium dense, wet, strong coal tar like odor, light rainbow sheen. NAPL blebs (approximatel 5-10% grain coatin) at 8.5' bgs.	
					13.2				
10					6.1			Gray (2.5Y5/1) SIlt, little medium plasticity Clay, medium stiff, moist, faint coal tar like odor [Silt].	
					4.8			Light rainbow sheen at 11.5' bgs.	
	725	4	12-16'	3.8	0.3				
					0.2				
					0.0				
15					0.0			End of boring at 16' bgs.	

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish:	11/10/20	**Northing:**	1530732.992'
Drilling Company:	Parratt-Wolff	**Easting:**	531852.127'
Driller's Name:	M Eaves, R Nolvka	**Casing Elevation:**	NA
Drilling Method:	Direct Push	**Surface Elevation:**	745.679'
Sampling Method:	4' Macrocore	**Borehole Depth:**	20'
Rig Type:	Track Mounted Geoprobe	**Descriptions By:**	E Green

Well/Boring ID: PDI-CRB-12

Client: National Grid

Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	745	1	0-4'	1.0	0.0, 0.0, 0.0, 0.0			Dark olive brown (2.5Y 4/4) fine - coarse SAND, trace - little sub rounded fine Gravel, trace Woody Organics, loose, moist [Fill]. Wet at 4' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
5	740	2	4-8'	2.4	0.0, 0.0, 0.0, 0.0			Dark olive brown (2.5Y 3/3) SILT, some fine Sand, little Woody Organics, soft, wet [Peat].	
								Gray (2.5Y 5/1) Sub angular fine Gravel, little fine - coarse Sand, loose, moist [Upper sand and Gravel].	
10	735	3	8-12'	2.1	0.0, 0.0, 0.0, 0.0	10-12'		Dark gray (2.5Y 4/1) SILT, some sub rounded fine - medium Gravel, little fine - coarse Sand, medium stiff, moist - wet [Silt]. SVOC soil sample collected from 10-12' bgs.	
15	730	4	12-16'	2.0	0.0, 0.0, 0.0, 0.0			Dark gray (2.5Y 4/1) SILT, little fine - coarse Sand, trace sub rounded fine Gravel, stiff, moist [Silt].	

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Client: National Grid	**Well/Boring ID:** PDI-CRB-12
Site Location: Former MGP Site, Hill Street, Gloversville, NY	**Borehole Depth:** 20'

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
16-20		5	16-20'	3.3	0.0, 0.0, 0.0, 0.0			Grayish brown (2.5Y 5/2) SILT, little fine Sand, little low plasticty Clay, soft - medium stiff, moist - wet [Silt].	Borehole tremie-grouted with bentonite-cement grout to grade
20								End of boring at 20' bgs.	

Depth scale: 20, 25, 30, 35. Elevation scale: 725, 720, 715, 710.

Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

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Date Start/Finish: 11/04/20	**Northing:** 1530812.449'	**Well/Boring ID:**	**PDI-DPB-2**
Drilling Company: Parratt-Wolff	**Easting:** 531871.97'	**Client:** National Grid	
Driller's Name: W Nielsen, M Eaves	**Casing Elevation:** NA		
Drilling Method: Direct Push	**Surface Elevation:** 748.439'	**Location:**	
Sampling Method: 4' Macrocore	**Borehole Depth:** 28'	Former MGP Site Hill Street Gloversville, NY	
Rig Type: Track Mounted Geoprobe	**Descriptions By:** E Green		

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	750								
0		1	0-4'	2.7	0.0 0.0 0.0 0.0			Light olive brown (2.5Y 5/3) fine SAND, trace coarse Sand, trace Woody Organics, trace fine Gravel, loose, moist [Upper Sand and Gravel]. Boring hand cleared to 5' bgs. Wet at 5.5' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
5	745	2	4-8'	3.0	0.0 0.0 0.0 0.0			Dark olive brown (2.5Y 3/3) fine SAND, little - some Silt, trace coarse Sand, loose - medium stiff, wet [Upper Sand and Gravel].	
10	740	3	8-12'	2.0	1.9 14.4 1.1 0.4			Black (2.5Y 2.5/1) sub angular fine GRAVEL, little fine - coarse Sand, trace Silt, loose, wet, moderate - heavy rainbow sheen, moderate coal tar like odor, NAPL globules acros interval [Upper Sand and Gravel]. Gray (2.5Y 5/1) SILT, little fine Sand, trace Clay, trace fine Gravel, stiff, moist [Silt].	
15	735	4	12-16'	3.9	0.0 0.0 0.0 0.0			Dark gray (2.5Y 4/1) SILT, little medium plasticity Clay, trace fine Sand, very stiff, moist [Silt].	

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).Inches.

Client: National Grid		**Well/Boring ID:**	PDI-DPB-2
Site Location: Former MGP Site, Hill Street, Gloversville, NY		**Borehole Depth:**	28'

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	730	5	16-20'	2.6	0.0, 0.0, 0.0, 0.0				Borehole tremie-grouted with bentonite-cement grout to grade
20	725	6	20-24'	3.6	0.0, 0.0, 0.0, 0.0				
25		7	24-28'	3.3	0.0, 0.0, 0.0, 0.0			SAND, trace fine Gravel, medium dense, wet [Lower Sand and Gravel]	
30	720							End of boring at 28' bgs.	
35	715								

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).Inches.

Date Start/Finish:	11/04/20	**Northing:**	1530830.252'
Drilling Company:	Parratt-Wolff	**Easting:**	531861.819'
Driller's Name:	W Nielsen, M Eaves	**Casing Elevation:**	NA
Drilling Method:	Direct Push	**Surface Elevation:**	747.298
Sampling Method:	4' Macrocore	**Borehole Depth:**	12'
Rig Type:	Track Mounted Geoprobe	**Descriptions By:**	E Green

Well/Boring ID: PDI-DPB-2(SO)

Client: National Grid

Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	750								
0		1	0-4'	3.4	0.0, 0.0, 0.0, 0.0			Dark olive brown (2.5Y 3/3) fine SAND, little Woody Organics, trace coarse Sand, loose, moist [Fill]. Boring hand cleared to 5' bgs.	
	745							Olive brown (2.5Y 4/4) fine SAND, little Silt, medium dense, wet [Upper Sand and Gravel]. Wet at 3' bgs.	
5		2	4-8'	2.9	0.0, 0.0, 0.0, 0.0			Dark grayish brown (2.5Y 4/2) fine - coarse SAND, little sub rounded fine Gravel, loose - medium dense, wet [Upper Sand and Gravel].	Borehole tremie-grouted with bentonite-cement grout to grade
	740					7-9'			
10		3	8-12'	3.8	0.0, 0.0, 0.0, 0.0			Dark gray (2.5Y 4/1) SILT, little low plasticity Clay, little fine Sand, stiff, moist [Silt].	
	735							End of boring at 12' bgs.	
15									

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Date Start/Finish:	11/03/20	**Northing:**	1530756.597'	**Well/Boring ID:**	PDI-DPB-4
Drilling Company:	Parratt-Wolff	**Easting:**	531913.411'	**Client:**	National Grid
Driller's Name:	W Nielsen, M Eaves	**Casing Elevation:**	NA		
Drilling Method:	Direct Push	**Surface Elevation:**	745.981'	**Location:**	
Sampling Method:	4' Macrocore	**Borehole Depth:**	20'		Former MGP Site Hill Street Gloversville, NY
Rig Type:	Track Mounted Geoprobe	**Descriptions By:**	E Green		

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0		1	0-4'	3.8	0.0, 0.0, 0.0, 0.0			Dark grayish brown (2.5Y 4/2) fine SAND, little coarse Sand, little Woody Organics, loose, moist [Fill].	
	745							Olive yellow (2.5Y 6/6) fine - medium SAND, trace Woody Organics, loose, moist [Fill]. Boring hand cleared to 5' bgs.	
5	740	2	4-8'	2.4	0.0, 0.0, 1.3, 1.9			Wet at 6' bgs	
								Dark grayish brown (2.5Y 4/2) SILT, little sub rounded fine Gravel, trace fine Sand, stiff, moist, faint - moderate coal tar like odor [Silt]. NAPL Blebs at 6.5' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
10	735	3	8-12'	2.3	36.5, 7.5, 31.4, 97.7			NAPL Blebs at 8.5' bgs. NAPL Blebs at 11' bgs.	
15	730	4	12-16'	3.8	6.0, 2.2, 2.8, 0.9			Grayish brown (2.5Y 5/2) SILT, little medium plasticity Clay, trace fine Sand, stiff, moist, moderate coal tar like odor [Silt].	

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Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).Inches.

Client: National Grid

Well/Boring ID: PDI-DPB-4

Borehole Depth: 20'

Site Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
					1.1				
					0.0			No odor after 17' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
		5	16-20'	3.7	0.0				
					0.0				
20								End of boring at 20' bgs.	
	725								
25									
	720								
30									
	715								
35									
	710								

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Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).Inches.

Date Start/Finish: 11/02/20	**Northing:** 1530737.775'	**Well/Boring ID:**	**PDI-DPB-5**
Drilling Company: Parratt-Wolff	**Easting:** 531918.189'	**Client:**	National Grid
Driller's Name: W Nielsen, M Eaves	**Casing Elevation:** NA	**Location:**	Former MGP Site Hill Street Gloversville, NY
Drilling Method: Direct Push	**Surface Elevation:** 745.437'		
Sampling Method: 4' Macrocore	**Borehole Depth:** 20'		
Rig Type: Track Mounted Geoprobe	**Descriptions By:** E Green		

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	745	1	0-4'	2.5	0.0 0.0 0.0 0.0			Grayish brown (2.5Y 5/2) fine - medium SAND, trace Woody Organics, trace fine Gravel, medium dense, moist [Fill]. Boring hand cleared to 5' bgs.	
5	740	2	4-8'	2.6	0.0 2.0 25.5 92.4			Black (2.5Y 2.5/1) fine - coarse SAND, little sub rounded fine Gravel, medium dense, wet, moderate rainbow sheen, heavy black staining, strong coal tar like odor, heavy NAPL coating (approximately 60% grain coating) [Upper Sand and Gravel]. Wet at 5' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
10	735	3	8-12'	3.8	6.5 35.3 5.2 5.6			Grayish brown (2.5Y 5/2) SILT, little medium plasticity Clay, trace fine Sand, siff, moist, NAPL blebs across entire interval but, more frequent over 8-10' bgs [Silt]. Higher fine Sand content (12-13.5' bgs)	
15	730	4	12-16'	3.2	4.3 0.4 0.0 0.0			No impacts after 13.5' bgs.	

Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).Inches.

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Client:	National Grid	**Well/Boring ID:**	**PDI-DPB-5**
Site Location:	Former MGP Site Hill Street Gloversville, NY	**Borehole Depth:**	20'

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
		5	16-20'	3.8	0.4 0.0 0.0 0.0				Borehole tremie-grouted with bentonite-cement grout to grade
20	725							End of boring at 20' bgs.	
25	720								
30	715								
35	710								

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Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).Inches.

Date Start/Finish: 11/03/20	**Northing:** 1530465.881'	**Well/Boring ID:** PDI-DPB-16
Drilling Company: Parratt-Wolff	**Easting:** 531840.543'	**Client:** National Grid
Driller's Name: W Nielsen, M Eaves	**Casing Elevation:** NA	**Location:**
Drilling Method: Direct Push	**Surface Elevation:** 744.237'	Former MGP Site
Sampling Method: 4' Macrocore	**Borehole Depth:** 12'	Hill Street
Rig Type: Track Mounted Geoprobe	**Descriptions By:** E Green	Gloversville, NY

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	745								
0		1	0-4'	2.7	0.0, 0.0, 0.0, 0.0			Olive brown (2.5Y 4/4) fine SAND, trace Silt, trace Woody Organics, loose, moist [Fill]. Boring hand cleared to 5' bgs.	
	740							Light brownish gray (2.5Y 6/2) SILT, some medium plasticity Clay, trace fine Sand, medium stiff - stiff, moist [Silt]. Wet at 6' bgs.	
5		2	4-8'	2.9	0.0, 0.0, 0.0, 0.0			Very dark grayish brown (2.5Y 3/2) fine - coarse SAND, little sub angular fine Gravel, loose - medium stiff, wet [Lower Sand and Gravel].	Borehole tremie-grouted with bentonite-cement grout to grade
	735	3	8-12'	3.0	0.0, 0.9, 0.0, 0.0			Very dark grayish brown (2.5Y 3/2) sub rounded - sub angular fine GRAVEL, little fine - coarse Sand, trace Silt, loose, wet, light - moderate rainbow sheen and faint - moderate coal tar like odor from 9 - 10' bgs. [Lower Sand and Gravel].	
10									
								End of boring at 12' bgs.	
	730								
15									

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Date Start/Finish: 11/03/20	**Northing:** 1530421.91'	**Well/Boring ID:** PDI-DPB-18
Drilling Company: Parratt-Wolff	**Easting:** 531830.625'	**Client:** National Grid
Driller's Name: W Nielsen, M Eaves	**Casing Elevation:** NA	
Drilling Method: Direct Push	**Surface Elevation:** 744.436'	**Location:**
Sampling Method: 4' Macrocore	**Borehole Depth:** 16'	Former MGP Site Hill Street Gloversville, NY
Rig Type: Track Mounted Geoprobe	**Descriptions By:** E Green	

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	745								
0		1	0-4'	3.5	0.0 0.0 0.0 0.0			Olive brown (2.5Y 4/4) fine SAND, trace Woody Organics, trace fine Gravel, trace Coal Cinder, loose, moist [Fill]. Boring hand cleared to 5' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
5	740	2	4-8'	3.8	0.0 0.0 0.0 0.0			Grayish brown (2.5Y 5/2) SILT, little medium plasticity Clay, stiff, moist [Silt]. Wet at 9' bgs.	
10	735	3	8-12'	2.4	0.0 0.0 0.0 0.0			Very dark grayish brown (2.5Y 3/2) fine - coarse SAND, little sub rounded fine Gravel, loose - medium dense, wet [Lower Sand and Gravel].	
15	730	4	12-16'	1.8	0.0 0.0 0.0 0.0			End of boring at 16' bgs.	

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Date Start/Finish: 10/06/20
Drilling Company: Parratt-Wolff
Driller's Name: J Price and D Sherman
Drilling Method: 4 1/4" HSA
Sampling Method: 2" x 2' Split Spoon
Rig Type: Track Mounted CME-55

Northing: 1530834.431'
Easting: 531879.051
Casing Elevation: NA
Surface Elevation: 748.161'
Borehole Depth: 28' bgs
Descriptions By: E Green

Well/Boring ID: PDI-GTB-1
Client: National Grid
Location:
Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	750										
0										Boring hand cleared to 5' bgs.	
	745										
5		1	5-6'	0.6	0.0	5, 6	NA			Light olive brown (2.5Y 5/4) fine - medium SAND, trace fine Gravel, loose - medium dense, wet [Fill].	
		2	6-8'	0.6	0.0	6, 8, 8, 15	16			Olive brown (2.5Y 4/4) fine - coarse SAND, little sub rounded fine Gravel, little Silt, loose, wet [Upper Sand and Gravel]. Wet at 5' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
	740	3	8-10'	0.0	NA	8, 9, 10, 15	19			No Recovery	
10		4	10-12'	2.0	0.0	5, 12, 15, 23	27			Olive brown (2.5Y 4/4) fine - coarse SAND, little sub rounded fine Gravel, little Silt, loose, wet [Upper Sand and Gravel]. Grayish brown (2.5Y 5/2) SILT, little medium plasticity Clay, little fine Sand, stiff, moist [Silt].	
	735	5	12-14'	2.0	0.0	5, 5, 8, 4	13			Grayish brown (2.5Y 5/2) fine - coarse SAND, some Silt, little sub rounded fine Gravel, loose, wet [Silt].	
15		6	14-16'	0.0	NA	5, 5, 8, 4	16			No Recovery	

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Client: National Grid

Well/Boring ID: PDI-GTB-1

Borehole Depth: 28' bgs

Site Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
		7	16-18'	1.7	0.0	5, 6, 5, 5	11			Grayish brown (2.5Y 5/2) fine SAND, loose - medium dense, wet.	
	730									Grayish brown (2.5Y 5/2) SILT, some medium plasticity Clay, medium stiff, moist [Silt].	
		8	18-20'	1.6	0.0	3, 3, 2, 4	5				
20		9	20-22'	2.0	0.0	2, 1, 1, 3	2			Grayish brown (2.5Y 5/2) SILT, little fine Sand, trace Clay, soft - medium stiff, moist - wet [Silt].	
	725	10	22-24'	1.9	0.0	6, 7, 7, 13	14			Grayish brown (2.5Y 5/2) finee SAND, little sub rounded fine Gravel, trace Silt, loose, wet [Silt].	
25		11	24-26'	1.2	0.0	10, 10, 15, 20	25			No Silt 24-26' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
		12	26-28'	1.6	0.0	8, 18, 19, 23	27			Grayish brown (2.5Y 5/2) fine - coarse SAND, some sub rounded fine Gravel, medium dense - dense, wet [Lower Sand and Gravel].	
	720									End of boring at 28' bgs.	
30											
	715										
35											

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Date Start/Finish:	10/06/20	**Northing:**	1530797.961'	**Well/Boring ID:**	**PDI-GTB-2**
Drilling Company:	Parratt-Wolff	**Easting:**	531870.8'	**Client:**	National Grid
Driller's Name:	J Price and D Sherman	**Casing Elevation:**	NA		
Drilling Method:	4 1/4" HSA	**Surface Elevation:**	747.674'	**Location:**	
Sampling Method:	2" x 2' Split Spoon	**Borehole Depth:**	30' bgs		Former MGP Site Hill Street Gloversville, NY
Rig Type:	Track Mounted CME-55	**Descriptions By:**	E Green		

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	750										
0	745									Boring hand cleared to 5' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
5		1	5-6'	0.9	0.0	10 11	NA			Light olive brown (2.5Y 5/4) fine - medium SAND, trace Woody Organics, trace Silt, loose, moist [Fill].	
	740	2	6-8'	1.2	0.0	8 9 12 15	21			Little Silt, little sub rounded fine Gravel 6-8' bgs.	
		3	8-10'	0.6	0.0	50/3"	NA			Olive brown (2.5Y 4/4) fine SAND, little - some Silt, trace fine Gravel, loose - medium dense, moist [Fill]. Wet at 8.5' bgs.	
10		4	10-12'	0.2	0.0	50/3"	NA			No Recovery. Granitic Gneiss chips in the shoe of the split spoon sampler.	
	735	5	12-14'	1.6	0.0	10 6 8 6	14			Dark gray (2.5Y 4/1) SILT, little fine Sand, trace Clay, stiff - very stif, moist [Silt]. Higher Clay content 14-15' bgs.	
15		6	14-16'	1.7	0.0	2 8 8 4	16			Grayish brown (2.5Y 5/2) fine SAND, trace Silt, dense, wet.	

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Client: National Grid

Well/Boring ID: PDI-GTB-2

Borehole Depth: 30' bgs

Site Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	730	7	16-18'	2.0	0.0	6, 8, 6, 6	14			Grayish brown (2.5Y 5/2) medium - high plasticity SILT and CLAY, little fine Sand, medium stiff, moist [Silt].	
20		8	18-20'	1.8	0.0	4, 4, 4, 4	8				
		9	20-22'	1.9	0.0	5, 7, 9, 10	16				
	725	10	22-24'	1.6	0.0	8, 5, 7, 8	12			Grayish brown (2.5Y 5/2) SILT, little medium plasticity Clay, trace fine Sand, soft - medium stiff, moist, [Silt].	
25		11	24-26'	2.0	0.0	11, 13, 8, 10	21			Light olive brown (2.5Y 5/4) fine - medium SAND, trace fine Gravel, medium dense, wet [Lower Sand and Gravel].	Borehole tremie-grouted with bentonite-cement grout to grade
	720	12	26-28'	0.6	0.0	13, 15, 18, 12	33				
		13	28-30'	1.9	0.0	10, 10, 9, 15	19			Olive brown (2.5 4/4) medium SAND, little sub rounded fine Gravel, medium dense, wet [Lower Sand and Gravel].	
30										End of boring at 30' bgs.	
	715										
35											

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Date Start/Finish: 9/29/20	**Northing:** 1530746.769'	**Well/Boring ID:**	PDI-GTB-3
Drilling Company: Parratt-Wolff	**Easting:** 531953.803'	**Client:**	National Grid
Driller's Name: J Price and M Neyhart	**Casing Elevation:** NA		
Drilling Method: 4 1/4" HSA	**Surface Elevation:** 745.183'	**Location:**	
Sampling Method: 2" x 2' Split Spoon	**Borehole Depth:** 34.75' bgs		Former MGP Site Hill Street Gloversville, NY
Rig Type: Track Mounted CME-55	**Descriptions By:** E Green		

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	745									Boring hand cleared to 5' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
5	740	1	5-6'	0.4	0.0	6 14	NA			Olive brown (2.5Y 4/4) SILT, some fine Sand, little Woody Organics, soft, moist [Fill].	
		2	6-8'	1.2	7.3, 3.5	6 12 11 14	23			Very dark grayish brown (2.5Y 3/2) fine SAND, little sub rounded fine Gravel, loose, wet, moderate rainbow sheen, strong coal tar like odor [Upper Sand and Gravel] Very dark grayish brown (2.5Y 3/2) SILT, little fine Sand, trace Clay, stiff, wet, moderate rainbow sheen, light black staining, strong coal tar like odor [Silt].	
		3	8-10'	1.6	1.8, 2.6	10 12 12 15	24			Dark grayish brown (2.5Y 4/2) SILT, come fine Sand, stiff, moist - wet, light rainbow sheen, light black staining, moderate coal tar like odor [Silt]. Wet at 6' bgs.	
10	735	4	10-12'	1.7	2.6, 0.6	12 12 14 13	26			Trace Clay 10-12' bgs. No impacts after 10.5' bgs.	
		5	12-14'	1.6	0.2, 0.0	7 12 10 13	22			Grayish brown (2.5Y 5/2) SILT, little low plasticity Clay, trace fine Sand, stiff - very stiff, moist [Silt].	
15	730	6	14-16'	0.7	0.0	8 21 10 8	31				

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ARCADIS Design & Consultancy for natural and built assets

Client: National Grid

Well/Boring ID: PDI-GTB-3

Borehole Depth: 34.75' bgs

Site Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
		7	16-18'	0.9	0.0	17 17 21 20	38			Grayish brown (2.5Y 5/2) SILT, some fine Sand, soft, wet [SILT].	
		8	18-20'	1.7	0.0	5 10 10 13	20			Grayish brown (2.5Y 5/2) SILT, trace - little low plasticity Clay, trace fine Sand, medium stiff, moist [Silt].	
20	725	9	20-22'	NA	NA	NA	NA			Collected Shelby Tube sample	
		10	22-24'	2.0	0.0	10 11 11 15	22			Grayish brown (2.5Y 5/2) SILT, little - some low plasticity Clay, little fine Sand, soft - medium stiff, moist - wet [Silt].	
25	720	11	24-26'	2.0	0.0	2 2 3 5	5			Dark grayish brown (2.5Y 4/2) SILT, trace Clay, trace fine Sand, medium stiff, moist - wet [Silt].	Borehole tremie-grouted with bentonite-cement grout to grade
		12	26-28'	1.7	0.0	5 5 4 3	9				
		13	28-30'	1.9	0.0	8 8 5 10	13				
30	715	14	30-32'	1.1	0.0	11 11 15 18	26			Grayish brown (2.5Y 5/2) fine - medium SAND, trace fine Gravel, trace Silt, medium dense, wet [Lower Sand and Gravel].	
		15	32-34'	1.2	0.0	30 30 22 18	42				
		16	34-36'	1.0	0.0	30 50/4"	NA			Little sub angular fine Gravel 34 - 34.75' bgs.	
35	710									End of boring at 34.75' bgs.	

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Date Start/Finish: 9/28/20	**Northing:** 1530673.418'	**Well/Boring ID:** PDI-GTB-4	
Drilling Company: Parratt-Wolff	**Easting:** 531985.86'	**Client:** National Grid	
Driller's Name: J Price and M Neyhart	**Casing Elevation:** NA		
Drilling Method: 4 1/4" HSA	**Surface Elevation:** 745.233'	**Location:**	
Sampling Method: 2" x 2' Split Spoon	**Borehole Depth:** 48.75' bgs	Former MGP Site Hill Street Gloversville, NY	
Rig Type: Track Mounted CME-55	**Descriptions By:** E Green		

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	745									Boring hand cleared to 5' bgs.	
5	740	1	5-6'	0.4	0.0	2, 1	NA			Olive brown (2.5Y 4/4) fine SAND, little Silt, trace Woody Orgnaics, loose, moist [Fill].	
		2	6-8'	0.9	20.9, 11.6	8, 10, 6, 6	16			Olive brown (2.5Y 4/4) very fine - fine SAND, little Silt, trace Woody Organics, loose, wet, heavy rainbow sheen, moderate coal tar like odor [Fill]. Wet at 6' bgs. Very dark grayish brown (2.5Y 3/2) fine - coarse SAND, little sub angular fine Gravel, loose, wet, moderate rainbow sheen, moderate coal tar like odor [Upper Sand and Gravel].	Borehole tremie-grouted with bentonite-cement grout to grade
		3	8-10'	1.7	16.2, 3.6	3, 4, 7, 7	11			Grayish brown (2.5Y 5/2) SILT, trace Clay, trace fine Sand, very stiff, moist [Silt]. Light rainbow sheen, light coal tar like odor 8.5-9' bgs.	
10	735	4	10-12'	1.8	10.5, 1.9	4, 5, 5, 8	10			Light rainbow sheen, faint coal tar like odor 10-10.5' bgs.	
		5	12-14'	2.0	11.6, 21.5	6, 4, 7, 6	11			Dark grayish brown (2.5Y 4/2) fine SAND, trace - little sub rounded fine Gravel, loose - medium dense, wet, moderate rainbow sheen, moderate coal tar like odor.	
15	730	6	14-16'	1.8	0.2, 0.0	2, 3, 5, 12	8			Dark grayish brown (2.5Y 4/2) SILT, some fine Sand, trace Clay, wet, medium stiff - stiff, very faint coal tar like odor [Silt]	

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Client: National Grid		**Well/Boring ID:**	PDI-GTB-4
Site Location: Former MGP Site Hill Street Gloversville, NY		**Borehole Depth:**	48.75' bgs

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
		7	16-18'	1.3	0.0	6 10 9 12	19				
		8	18-20'	1.7	0.0	5 6 6 9	12				
20	725	9	20-22'	2.0	0.2, 0.4	2 6 5 7	11				
		10	22-24'	2.0	0.0	2 6 7 7	13			Dark grayish brown (2.5Y 4/2) SILT, little low plasticity Clay, trace fine Sand, stiff, moist, very faint coal tar like odor [Silt].	
25	720	11	24-26'	1.9	3.4, 0.9	1 1 3 4	4			Moderate coal tar like odor 24-26' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
		12	26-28'	2.0	0.0	8 10 12 12	22			No odor after 26' bgs.	
		13	28-30'	1.9	0.0	2 1 1 4	2				
30	715	14	30-32'	2.0	0.0	2 1 1 5	2				
		15	32-34'	2.0	0.0	8 8 12 10	20			Very dark grayish brown (2.5Y 3/2) SILT, little - some very fine Sand, trace Clay, soft - medium stiff, moist - wet, no odor [Silt]. Very dark grayish brown (2.5Y 3/2) sub angular fine Gravel, little fine - coarse Sand, medium dense, wet.	
35	710	16	34-36'	1.5	0.0	5 7 7 14	14			Very dark grayish brown (2.5Y 3/2) SILT some fine Sand, trace Clay, soft - medium stiff, moist - wet [Silt]	

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Client: National Grid

Well/Boring ID: PDI-GTB-4

Borehole Depth: 48.75' bgs

Site Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
		17	36-38'	1.9	0.0	30, 10, 11, 6	21			No Clay after 36' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
		18	38-40'	2.0	0.0	1, 1, 2, 4	3				
40	705	19	40-42'	1.7	0.0	1, 1, 3, 4	4				
		20	42-44'	2.0	0.0	7, 5, 4, 7	9			Grayish brown (2.5Y 5/2) fine - medium Sand, little - some Silt, loose - medium dense, wet. Grayish brown (2.5Y 5/2) SILT, some medium plasticity Clay, trace fine Sand, medium stiff, moist - wet [Silt].	
45	700	21	44-46'	0.8	0.0	11, 8, 5, 7	13			Grayish brown (2.5Y 5/2) fine - medium SAND, trace Silt, medium dense, wet [Lower Sand and Gravel]	
		22	46-48'	1.5	0.0	30, 50/3"	NA				
		23	48-50'	1.0	0.0	30, 50/3"	NA			Black Shale Fragments in the shoe of the split spoon sampler 48.75' bgs.	
										End of boring at 48.75' bgs.	
50	695										
55	690										

ARCADIS Design & Consultancy for natural and built assets

Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish: 9/25/20	**Northing:** 1530629.0230'	**Well/Boring ID:** PDI-GTB-5
Drilling Company: Parratt-Wolff	**Easting:** 531922.8520'	**Client:** National Grid
Driller's Name: J Price and M Neyhart	**Casing Elevation:** NA	
Drilling Method: 4 1/4" HSA	**Surface Elevation:** 744.099'	**Location:**
Sampling Method: 2" x 2' Split Spoon	**Borehole Depth:** 39.25' bgs	Former MGP Site Hill Street Gloversville, NY
Rig Type: Track Mounted CME-55	**Descriptions By:** E Green	

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	745										
0										Boring hand cleared to 5' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
	740										
5		1	5-6'	0.9	0.0	5 11	NA			Olive brown (2.5Y 4/4) fine SAND, trace fine Gravel, loose, moist [Fill].	
		2	6-8'	1.6	0.0	8 9 9 12	18			Grayish brown (2.5 Y 5/2) SILT, some low - medium plasticity Clay, trace fine Sand, stiff, moist [Silt].	
	735	3	8-10'	1.7	0.0	5 5 5 6	10			No fine Sand 8-12' bgs. Light black staining, faint coal tar like odor at 8.5' bgs.	
10		4	10-12'	2.0	0.0	4 4 5 4	9			Light rainbow sheen at 11' bgs.	
		5	12-14'	2.0	0.0	4 5 7 7	12				
	730										
15		6	14-16'	NA	NA	NA	NA			Shelby Tube collected 14-16' bgs.	

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Client: National Grid

Well/Boring ID: PDI-GTB-5

Borehole Depth: 39.25' bgs

Site Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
		7	16-18'	1.7	0.0	4, 5, 7, 8	12			Grayish brown (2.5Y 5/2) low - medium plasticity SILT and CLAY, little fine Sand, medium stiff, moist - wet [Silt].	
20	725	8	18-20'	2.0	0.0	5, 6, 6, 9	12				
		9	20-22'	2.0	0.0	4, 5, 6, 6	11				
		10	22-24'	1.0	0.0	3, 5, 7, 5	12				
25	720	11	24-26'	2.0	0.0	4, 4, 5, 5	9				Borehole tremie-grouted with bentonite-cement grout to grade
		12	26-28'	2.0	0.0	4, 5, 9, 8	14				
30	715	13	28-30'	2.0	0.0	3, 3, 4, 5	7			Grayish brown (2.5Y 5/2) SILT, little low plasticity Clay, little fine Sand, stiff, moist - wet [Silt].	
		14	30-32'	1.9	0.0	3, 4, 7, 8	11				
		15	32-34'	2.0	0.0	5, 5, 4, 5	9			Increased fine Sand contnet 32-32.5' bgs.	
35	710	16	34-36'	2.0	0.0	20, 9, 7, 8	16			Grayish (2.5Y 5/2) SILT, some medium plasticity Clay, trace fine Sand, stiff, moist [Silt].	

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Client: National Grid

Well/Boring ID: PDI-GTB-5

Borehole Depth: 39.25' bgs

Site Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
		17	36-38'	2.0	0.0	9 39 20 8	59			Grayish brown (2.5Y 5/2) sub angular - sub rounded fine GRAVEL, some fine - coarse Sand, trace Silt, loose, wet [Lower Sand and Gravel].	Borehole tremie-grouted with bentonite-cement grout to grade
	705	18	38-40'	1.2	0.0	10 20 50/3"	NA			Grayish brown (2.5Y 5/2) SILT, little - some fine Sand, trace Clay, trace fine Gravel, soft, wet [Lower Sand and Gravel].	
40										End of boring at 39.25' bgs.	
	700										
45											
	695										
50											
	690										
55											

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish: 9/29/20 - 9/30/20	**Northing:** 1530599.772'	**Well/Boring ID:** PDI-GTB-6
Drilling Company: Parratt-Wolff	**Easting:** 532053.435'	**Client:** National Grid
Driller's Name: J Price and M Neyhart	**Casing Elevation:** NA	
Drilling Method: 4 1/4" HSA	**Surface Elevation:** 746.17'	**Location:**
Sampling Method: 2" x 2' Split Spoon	**Borehole Depth:** 28' bgs	Former MGP Site Hill Street Gloversville, NY
Rig Type: Track Mounted CME-55	**Descriptions By:** E Green	

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	745									Boring hand cleared to 5' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
5		1	5-6'	0.8	1.9, 0.8	17 6	NA			Dark grayish brown (2.5Y 4/2) SILT, little sub rounded fine Gravel, little Woody Organics, little fine Sand, soft, moist, faint coal tar like odor [Fill].	
	740	2	6-8'	0.0	NA	12 15 18 17	33			No Recovery	
		3	8-10'	1.9	1.6, 1.1	4 6 7 9	13			Dark grayish brown (2.5Y 4/2) SILT, some medium plasticity Clay, trace fine Sand, stiff - very stiff, moist, very faint coal tar like odor [Silt]. Wet at 8' bgs.	
10	735	4	10-12'	1.8	0.2, 0.3	6 10 10 8	20				
		5	12-14'	1.9	4.5, 1.5	5 8 5 8	13			Very dark grayish brown (2.5Y 3/2) fine - coarse SAND, little Silt, trace fine Gravel, loose - medium dense, moderate rainbow sheen, light black staining, moderate coal tar like odor [Silt]. Grayish brown (2.5Y 5/2) SILT, little - some medium plasticity Clay, trace fine Sand, stiff, moist, faint coal tar like odor [Silt].	
15		6	14-16'	1.2	0.2, 0.1	8 10 10 15	20				

Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

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Client: National Grid

Well/Boring ID: PDI-GTB-6

Borehole Depth: 28' bgs

Site Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	730	7	16-18'	0.9	0.0	18, 10, 10, 13	20			Grayish brown (2.5Y 5/2) sub rounded fine GRAVEL, little - some fine - coarse Sand, little Silt, loose, wet.	
		8	18-20'	0.5	0.0	8, 9, 28, 9	37			Grayish brown (2.5Y 5/2) SILT, little fine Sand, soft - medium stiff, wet [Silt].	
20		9	20-22'	1.0	0.0	10, 11, 11, 15	22			Very dark grayish brown (2.5Y 3/2) fine - coarse SAND, little sub rounded fine Gravel, loose - medium dense, wet [Lower Sand and Gravel].	
	725	10	22-24'	1.1	0.0	5, 9, 11, 15	20				
25		11	24-26'	1.0	0.0	13, 11, 10, 12	21				Borehole tremie-grouted with bentonite-cement grout to grade
	720	12	26-28'	1.2	0.0	15, 20, 21, 20	41			Some sub rounded fine Gravel 26-28' bgs.	
										End of boring at 28' bgs.	
30	715										
35											

ARCADIS Design & Consultancy for natural and built assets

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Date Start/Finish: 9/24/20	**Northing:** 1530603.142'	**Well/Boring ID:**	**PDI-GTB-7**
Drilling Company: Parratt-Wolff	**Easting:** 531971.237'	**Client:**	National Grid
Driller's Name: J Price and M Neyhart	**Casing Elevation:** NA		
Drilling Method: 4 1/4" HSA	**Surface Elevation:** 743.675'	**Location:**	
Sampling Method: 2" x 2' Split Spoon	**Borehole Depth:** 34'		Former MGP Site Hill Street Gloversville, NY
Rig Type: Track Mounted CME-55	**Descriptions By:** E Green		

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	745										
0										Boring hand cleared to 5' bgs.	
	740										
5		1	5-6'	0	NA	7 6	NA			No Recovery Wet at 6.5' bgs.	
		2	6-8'	1.0	0.0	7 7 8 10	15			Very dark gray (2.5Y 3/1) SILT, some sub rounded Cobble, little medium Sand, loose, wet [Fill]. Very dark gray (2.5Y 3/1) very fine SAND, some Silt, medium dense, wet, moderate organic odor [Silt].	
	735	3	8-10'	1.9	0.0	5 7 13 15	20			Dark grayish brown (2.5Y 3/1) SILT, little very fine Sand, little low plasticity Clay, stiff - very stiff, moist, moderate organic odor [Silt].	Borehole tremie-grouted with bentonite-cement grout to grade
10		4	10-12'	1.5	0.0	8 6 6 12	12			Dark grayish brown (2.5Y 2.5Y 4/2) SILT, little - some low - medium plasticity Clay, trace very fine Sand, stiff - very stiff, moist [Silt].	
	730	5	12-14'	2.0	0.0	6 6 5 13	11				
15		6	14-16'	0.6	0.0	11 22 13 8	35			No Clay, little very fine Sand 14-16' bgs.	

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).Inches.

Client: National Grid

Site Location:

Former MGP Site
Hill Street
Gloversville, NY

Well/Boring ID: PDI-GTB-7

Borehole Depth: 34'

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
		7	16-18'	1.6	0.0	9, 6, 7, 7	13				
	725	8	18-20'	0	NA	5, 5, 7, 8	12			No Recovery	
20		9	20-22'	1.6	0.0	2, 5, 7, 5	12			Dark grayish brown (2.5Y 4/2) SILT, little - some medium plasticity Clay, stiff, moist [Silt].	
	720	10	22-24'	1.9	0.0	5, 5, 7, 7	12				
25		11	24-26'	1.9	0.0	7, 8, 3, 15	11				Borehole tremie-grouted with bentonite-cement grout to grade
		12	26-28'	1.0	0.0	7, 18, 15, 11	33			Dark grayish brown (2.5Y 4/2) fine - coarse SAND (increase grain size with depth), little sub rounded fine Gravel, loose - medium dense, wet [Lower Sand and Gravel].	
	715	13	28-30'	0.4	0.0	10, 10, 9, 10	19			Dark grayish brown (2.5Y 4/2) sub angular fine GRAVEL, little fine - coarse Sand, loose, wet [Lower Sand and Gravel].	
30		14	30-32'	0.8	0.0	5, 5, 7, 10	12			Dark grayish brown (2.5Y 4/2) fine - coarse SAND, little sub rounded fine Gravel, loose - medium dense, wet [Lower Sand and Gravel].	
	710	15	32-34'	0.6	0.0	5, 7, 5, 5	12				
35										End of boring at 34' bgs.	

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Date Start/Finish: 9/24/20	**Northing:** 1530552.831'	**Well/Boring ID:** PDI-GTB-8
Drilling Company: Parratt-Wolff	**Easting:** 531916.605'	**Client:** National Grid
Driller's Name: J Price and M Neyhart	**Casing Elevation:** NA	
Drilling Method: 4 1/4" HSA	**Surface Elevation:** 742.979	**Location:**
Sampling Method: 2" x 2' Split Spoon	**Borehole Depth:** 40' bgs	Former MGP Site Hill Street Gloversville, NY
Rig Type: Track Mounted CME-55	**Descriptions By:** E Green	

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	745										
0											
	740									Boring hand cleared to 5' bgs.	
5		1	5-6'	0.8	0.0	10 15	NA			Gray (2.5Y 5/1) SILT, little low plasticity Clay, little very fine Sand, soft - moderately stiff, moist - wet [Fill].	
		2	6-8'	0.9	2.2, 2.3	13 13 8 10	21			Olive brown (2.5Y 4/4) fine - medium SAND, little sub rounded fine Gravel, medium dense, moist [Upper Sand and Gravel]. Wet at 6' bgs Moderate rainbow sheen and moderate petroleum like odor 6-8' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
	735	3	8-10'	0.7	0.0	16 10 12 11	22			Olive brown (2.5Y 4/4) fine - coarse SAND, trace fine Gravel, trace Silt, loose, wet, very light rainbow sheen, no odor [Upper Sand and Gravel]. Very dark gray (2.5Y 4/2) SILT, little medium plasticity Clay, trace very fine Sand, stiff, moist [Silt].	
10		4	10-12'	1.7	0.0	8 9 9 12	18			Little very fine Sand 10-12' bgs	
	730	5	12-14'	0.8	1.8, 2.7	21 22 19 20	41			Very dark gray (2.5Y 4/2) fine - coarse SAND, some sub rounded fine Gravel, trace Silt, loose, wet, moderate rainbow sheen, moderate coal tar like odor [Lower Sand and Gravel].	
15		6	14-16'	0.9	0.4, 0.9	13 9 9 10	18			Grayish brown (2.5Y 5/2) SILT, some fine - medium Sand, little sub rounded fine Gravel, soft - moderately stiff, wet, very light rainbow sheen, no odor [Lower Sand and Gravel]. Very dark grayish brown (2.5Y 3/2) fine - coarse SAND, little sub rounded fine Gravel, medium dense, wet, very light rainbow sheen, no odor [Lower Sand and Gravel].	

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Client: National Grid

Well/Boring ID: PDI-GTB-8

Borehole Depth: 40' bgs

Site Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	725	7	16-18'	0.9	0.0	26, 18, 10, 5	28				
20		8	18-20'	0.6	1.9, 4.1	5, 5, 8, 6	13			Very dark grayish brown (2.5Y 3/2) fine - medium SAND, loose, wet, moderate rainbow sheen, moderate coal tar like odor [Lower Sand and Gravel].	
		9	20-22'	1.2	0.4, 3.6	3, 2, 2, 5	4			Grayish brown (2.5Y 5/2) fine - coarse SAND, little sub rounded fine Gravel, loose - moderately dense, wet, faint coal tar like odor [Lower Sand and Gravel]. Light rainbow sheen 21-24' bgs	
	720	10	22-24'	1.9	0.9, 1.4	8, 9, 8, 12	17				
25		11	24-26'	0.7	1.4, 1.8	8, 8, 18, 12	26			Grayish brown (2.5Y 5/2) medium SAND, trace fine Gravel, loose, medium dense, wet, light rainbow sheen, faint coal tar lik odor [Lower Sand and Gravel].	Borehole tremie-grouted with bentonite-cement grout to grade
	715	12	26-28'	2.0	1.7, 11.4	10, 11, 11, 13	22			Heavy rainbow sheen, moderately strong coal tar like odor 27-28' bgs	
30		13	28-30'	1.4	0.0	9, 11, 11, 18	22			Grayish brown (2.5Y 5/2) fine - coarse SAND, little sub rounded fine Gravel, loose - medium dense, wet, very light rainbow sheen, no odor [Lower Sand and Gravel].	
		14	30-32'	2.0	0.2	21, 15, 11, 15	26				
	710	15	32-34'	1.4	0.0	9, 5, 6, 5	11			No impacts after 32' bgs.	
35		16	34-36'	1.4	0.0	18, 16, 8, 8	24				

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Client: National Grid	**Well/Boring ID:** PDI-GTB-8
Site Location: Former MGP Site, Hill Street, Gloversville, NY	**Borehole Depth:** 40' bgs

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
		17	36-38'	1.6	0.0	8 8 8 13	16				Borehole tremie-grouted with bentonite-cement grout to grade
	705	18	38-40'	2.0	0.0	10 10 20 25	30				
40										End of boring at 40' bgs.	
	700										
45											
	695										
50											
	690										
55											

Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

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Date Start/Finish: 9/23/20	**Northing:** 1530565.037	**Well/Boring ID:** PDI-GTB-9
Drilling Company: Parratt-Wolff	**Easting:** 532125.41	**Client:** National Grid
Driller's Name: J Price and M Neyhart	**Casing Elevation:** NA	
Drilling Method: 4 1/4" HSA	**Surface Elevation:** 746.493	**Location:**
Sampling Method: 2" x 2' Split Spoon	**Borehole Depth:** 39.25'	Former MGP Site Hill Street Gloversville, NY
Rig Type: Track Mounted CME-55	**Descriptions By:** E Green	

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	745									Boring hand cleared to 5' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
5		1	5-6'	0.7	0.0	6, 4	NA			Dark brown (10YR 3/3) SILT, some Woody Debris, loose, moist, moderate organic odor [Fill]. Dark greenish gray (GLEY1 4/1) very fine - fine SAND, little Silt, loose, moist [Fill].	
	740	2	6-8'	1.2	0.0	10, 7, 7, 15	14			Very dark greenish gray (GLEY1 3/1) SILT, little low plasticity Clay, moderately stiff - stiff, wet [Silt]. Wet at 6' bgs.	
		3	8-10'	1.2	0.0	8, 10, 15, 15	25			Very dark green (GLEY1 3/1) SILT, some very fine - fine Sand, little Woody Organics, soft - medium stiff, moist [Silt]. Pale brown (10YR 6/3) Cobble, hard moist [Lower Sand and Gravel]. Very dark greenish gray (GLEY1 3/1) fine - coarse SAND, little sub rounded fine Gravel, dense, wet [Lower Sand and Gravel].	
10	735	4	10-12'	1.5	0.0	11, 6, 5, 7	11			Dark greenish gray (GLEY1 4/1) fine SAND, little Silt, little medium - coarse Sand, trace Coble, dense, moist - wet [Lower Sand and Gravel].	
		5	12-14'	1.5	0.0	10, 9, 9, 18	18			Dark greenish gray (GLEY1 4/1) medium SAND, loose - medium dense, wet [Lower Sand and Gravel]. Trace sub rounded fine Gravel 12-14' bgs.	
15		6	14-16'	1.9	0.0	3, 4, 4, 6	8			Dark grayish brown (2.5 Y 4/2) fine - coarse SAND (becomes coarser with depth), trace fine Gravel, trace Cobble, medium dense, wet [Lower Sand and Gravel].	

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Client: National Grid

Well/Boring ID: PDI-GTB-9

Borehole Depth: 39.25'

Site Location:

Former MGP Site
Hill Street
Gloversville, NY

Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Stratigraphic Description
7	16-18'	1.65	0.0	9, 9, 20, 15	29	Very dark greenish brown (2.5Y 3/2) fine - coarse sub rounded GRAVEL, little Coarse Sand, trace Cobble, dense, wet, [Lower Sand and Gravel].
8	18-20'	2.0	0.0	34, 24, 14, 18	38	Dark grayish brown (2.5 Y 4/2) fine - coarse SAND, trace fine Gravel, trace Cobble, dense, wet [Lower Sand and Gravel].
9	20-22'	1.7	0.0	15, 18, 18, 19	36	Very dark greenish gray (GLEY1 3/1) sub angular - angular fine GRAVEL, little fine Sand, loose - medium dense, wet [Lower Sand and Gravel].
10	22-24'	1.9	0.0	12, 21, 50/3"	N A	Dark grayish brown (2.5Y 4/2) fine - coarse SAND, trace fine Gravel, trace Cobble, desne - very dense, wet [Lower Sand and Gravel].
11	24-26'	1.9	0.0	15, 18, 15, 15	33	Very dark grayish brown (2.5Y 3/2 coarse SAND, little sub angular - sub rounded fine Gravel, medium dense, wet [Lower Sand and Gravel].
12	26-28'	1.9	0.0	16, 18, 26, 27	44	Dark grayish brown (2.5Y 3/2) fine - coarse SAND, trace fine Gravel, dense, wet [Lower Sand and Gravel]. Increased sub rounded fine Gravel content 27.5 - 30' bgs.
13	28-30'	1.4	0.0	5, 8, 10, 11	18	
14	30-32'	1.3	0.0	10, 15, 16, 20	31	
15	32-34'	1.8	0.0	24, 22, 26, 28	48	Dark grayish brown (2.5Y 4/2) coarse SAND, little sub rounded fine Gravel, wet, dense [Lower Sand and Gravel].
16	34-36'	1.9	0.0	11, 11, 12, 25	23	Dark grayish brown (2.5Y 4/2) fine - coarse SAND, little sub rounded fine Gravel, dense, wet [Lower Sand anf Gravel].

Depth (feet bgs): 20, 25, 30, 35

Elevation (ft AMSL): 730, 725, 720, 715

Analytical Sample

Geologic Column

Well/Boring Construction: Borehole tremie-grouted with bentonite-cement grout to grade

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Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Client: National Grid

Well/Boring ID: PDI-GTB-9

Borehole Depth: 39.25'

Site Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	710	17	36-38'	2.0	0.0	20 26 19 18	45				Borehole tremie-grouted with bentonite-cement grout to grade
		18	38-40'	2.0	0.0	20 48 50/3"	NA			End of boring at 39.25' bgs.	
40											
	705										
45											
	700										
50											
	695										
55											

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish: 10/07/20 - 10/08/20	**Northing:** 1530429.379'	**Well/Boring ID:** PDI-GTB-10
Drilling Company: Parratt-Wolff	**Easting:** 531824.152'	**Client:** National Grid
Driller's Name: J Price and M Neyhart	**Casing Elevation:** NA	
Drilling Method: 4 1/4" HSA	**Surface Elevation:** 744.715'	**Location:**
Sampling Method: 2" x 2' Split Spoon	**Borehole Depth:** 20' bgs	Former MGP Site Hill Street Gloversville, NY
Rig Type: Track Mounted CME-55	**Descriptions By:** E Green	

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	745										
0										Boring hand cleared to 5' bgs.	Borehole tremie-grouted with bentonite-cement grout to grade
5	740	1	5-6'	1.0	0.0	13 6	NA			Light yellowish brown (2.5Y 6/3) fine SAND, little Silt, trace fine Gravel, loose - medium dense, moist [Fill].	
		2	6-8'	1.6	0.0	10 10 15 21	25			Gray (2.5Y 5/1) SILT, little low - medium plasticity Clay (Increasing clay content with depth), trace fine Sand, medium stiff, moist [Silt]. Wet at 7' bgs.	
		3	8-10'	0.0	NA	8 8 13 11	21			No Recovery	
10	735	4	10-12'	0.4	0.0	13 12 50/2"	NA			Olive brown (2.5Y 4/4) fine SAND, little rounded fine Gravel, loose, moist [Lower Sand and Gravel]. Very dark grayish brown (2.5Y 3/2) fine - coarse SAND, some sub rounded - sub angular fine Gravel, little Silt, loose - medium dense, moist - wet [Lower Sand and Gravel].	
		5	12-14'	0.0	NA	NA	NA			No Recovery	
15	730	6	14-16'	0.8	0.0	8 18 19 15	37			Dark reddish brown (2.5Y 4/2) fine SAND, little Silt, little sub angular fine Gravel, medium dense, wet [Lower Sand and Gravel].	

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).Inches.

Client: National Grid

Well/Boring ID: PDI-GTB-10

Borehole Depth: 20' bgs

Site Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
		7	16-18'	1.4	0.0	23 21 15 20	36			Dark grayish brown (2.5Y 4/2) sub rounded - sub angular fine GRAVEL, some fine - coarse Sand, medium dense, wet [Lower Sand and Gravel].	Borehole tremie-grouted with bentonite-cement grout to grade
20	725	8	18-20'	0.6	NA	11 11 15 10	26				
										End of boring at 20' bgs.	
25	720										
30	715										
35	710										

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).Inches.

Date Start/Finish:	10/07/20
Drilling Company:	Parratt-Wolff
Driller's Name:	J Price and D Sherman
Drilling Method:	4 1/4" HSA
Sampling Method:	2" x 2' Split Spoon
Rig Type:	Track Mounted CME-55

Northing:	1530859.243'
Easting:	531899.85'
Casing Elevation:	750.195
Surface Elevation:	748.195
Borehole Depth:	14' bgs
Descriptions By:	E Green

Well/Boring ID: PDI-MW-1

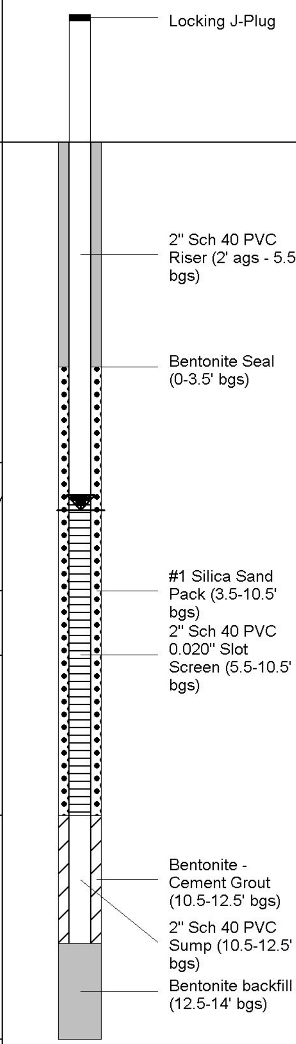
Client: National Grid

Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description
0	750									Boring hand cleared to 5' bgs.
5	745	1	5-6'	1.0	0.0	5 3	NA			Olive brown (2.5Y 4/4) fine SAND, some Silt, trace Woody Organics, trace fine Gravel, loose, moist [Fill].
		2	6-8'	1.4	0.7, 1.8	7 15 10 10	25			Light olive brown (2.5Y 5/4) fine - medium SAND, loose - medium dense, wet [Upper Sand and Gravel]. Wet at 5.5' bgs. Very dark grayish brown (2.5Y 3/2) fine - coarse SAND, some sub rounded - sub angular fine Gravel, loose - medium dense, wet, very light black staining, faint coal tar like odor [Upper Sand and Gravel].
		3	8-10'	0.5	0.0	31 20 50/3"	NA			Dark grayish brown (2.5Y 4/2) fine - medium SAND, little sub rounded fine Gravel, little Silt, loose, wet [Upper Sand and Gravel].
10	740	4	10-12'	1.4	0.0	11 12 5 6	17			Dark grayish brown (2.5Y 4/2) SILT, little medium plasticity Clay, trace fine Sand, stff - very stiff, moist [Silt].
		5	12-14'	2.0	0.0	10 10 11 15	21			
15	735									End of boring at 14' bgs.

Well/Boring Construction



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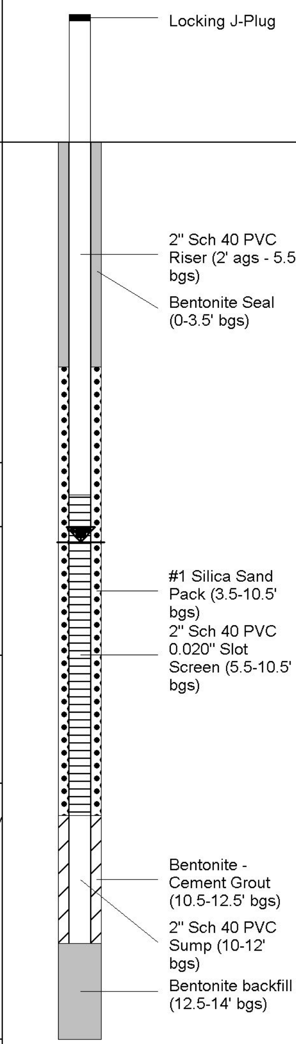
Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish: 10/07/20	**Northing:** 1530837.956'	**Well/Boring ID:**	**PDI-MW-2**
Drilling Company: Parratt-Wolff	**Easting:** 531883.42'	**Client:**	National Grid
Driller's Name: J Price and D Sherman	**Casing Elevation:** 750.899'		
Drilling Method: 4 1/4" HSA	**Surface Elevation:** 748.899	**Location:**	
Sampling Method: 2" x 2' Split Spoon	**Borehole Depth:** 14' bgs		Former MGP Site Hill Street Gloversville, NY
Rig Type: Track Mounted CME-55	**Descriptions By:** E Green		

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description
0	750									Boring hand cleared to 5' bgs.
5	745	1	5-6'	0.6	0.6	4, 2	NA			Gray (2.5Y 5/1) fine SAND, little Silt, little Woody Debris, trace fine Gravel, loose - medium dense, moist, faint coal tar like odor [Fill].
		2	6-8'	1.5	0.2, 0.4	4, 4, 5, 5	9			Light olive brown (2.5Y 5/3) fine SAND, trace fine Gravel, loose - medium dense, wet [Upper Sand and Gravel]. Wet at 6' bgs.
		3	8-10'	0.7	0.0	5, 12, 13, 21	25			Dark gray (2.5Y 4/1) medium plasticity SILT and CLAY, little sub rounded fine Gravel, little fine Sand, soft, moist - wet [Silt]
10	740	4	10-12'	1.4	0.0	5, 5, 7, 9	12			Dark grayish brown (2.5Y 4/2) SILT, some fine Sand, trace Clay, soft, moist [Silt]. Dark grayish brown (2.5Y 4/2) SILT, trace Clay, trace fine Sand, very stiff, moist [Silt].
		5	12-14'	2.0	0.0	15, 15, 19, 21	34			
15	735									End of boring at 14' bgs.

Well/Boring Construction



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Date Start/Finish: 10/08/20	**Northing:** 1530789.824'	**Well/Boring ID:** PDI-MW-3	
Drilling Company: Parratt-Wolff	**Easting:** 531970.578'	**Client:** National Grid	
Driller's Name: J Price and D Sherman	**Casing Elevation:** 750.239		
Drilling Method: 4 1/4" HSA	**Surface Elevation:** 748.239'	**Location:**	
Sampling Method: 2" x 2' Split Spoon	**Borehole Depth:** 16' bgs	Former MGP Site Hill Street Gloversville, NY	
Rig Type: Track Mounted CME-55	**Descriptions By:** E Green		

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
											Locking J-Plug
0	750									Boring hand cleared to 5' bgs.	2" Sch 40 PVC Riser (2' ags - 3' bgs); Bentonite Seal (0-3' bgs)
5	745	1	5-6'	0.9	21.5	1, 1	NA			Dark olive brown (2.5Y 3/3) fine SAND, some Silt, little Woody Organics, loose, moist, heavy black staining, strong coal tar like odor from 5.5 - 6' bgs [Fill].	
		2	6-8'	0.8	20.4, 5.8	5, 8, 8, 13	16			Dark olive brown (2.5Y 3/3) SILT, some fine Sand, trace Woody Organics, soft, wet, heavy black staining, moderate rainbow sheen, strong coal tar like odor [Fill]. Wet at 6.5' bgs.	2" Sch 40 PVC 0.020" Slot Screen (3-13' bgs)
		3	8-10'	1.3	17.7, 10.7	19, 20, 15, 11	35			Dark grayish brown (2.5Y 4/2) fine - coarse SAND, little sub rounded fine Gravel, loose - medium dense, wet, light - moderate rainbow sheen, faint coal tar like odor [Upper Sand and Gravel].	#1 Silica Sand Pack (3-10' bgs)
10	740	4	10-12'	1.1	3.4, 5.8	19, 21, 20, 20	41				
		5	12-14'	1.6	2.8, 2.0	10, 15, 20, 21	35			Grayish brown (2.5Y 5/2) SILT, little - some medium plasticity Clay, trace fine Sand, stiff, moist, faint coal tar like odor, [Silt].	Bentonite - Cement Grout (13-15' bgs)
15	735	6	14-16'	1.6	2.1, 2.4	5, 5, 4, 7	9				2" Sch 40 PVC Sump (13-15' bgs); Bentonite backfill (15-16' bgs)

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish:	10/01/20
Drilling Company:	Parratt-Wolff
Driller's Name:	J Price and D Sherman
Drilling Method:	4 1/4" HSA
Sampling Method:	2" x 2' Split Spoon
Rig Type:	Track Mounted CME-55

Northing:	1530678.72'
Easting:	531996.298'
Casing Elevation:	748.397'
Surface Elevation:	746.397'
Borehole Depth:	14' bgs
Descriptions By:	E Green

Well/Boring ID: PDI-MW-4

Client: National Grid

Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	750										Locking J-Plug
0	745									Boring hand cleared to 5' bgs.	2" Sch 40 PVC Riser (2' ags - 6' bgs); Bentonite Seal (0-4' bgs)
5		1	5-6'	1.0	0.0, 4.6	8, 2	NA			Olive brown (2.5Y 4/4) fine SAND, trace - little sub angular fine Gravel, medium dense, wet, faint coal tar like odor, light black staining from 5.75 - 6' bgs [Upper Sand and Gravel].	
		2	6-8'	1.0	1.9, 5.3	7, 5, 5, 8	10			Black (2.5Y 2.5/1) fine - coarse SAND, little sub rounded fine Gravel, loose, wet, heavy black staining, heavy rainbow sheen, strong coal tar like odor, [Upper Sand and Gravel]. Wet at 5' bgs.	#1 Silica Sand Pack (3-10' bgs)
	740	3	8-10'	2.0	9.4, 0.3	9, 8, 8, 10	16			Dark grayish brown (2.5Y 4/2) SILT, little medium plasticity Clay, stiff, moist.	2" Sch 40 PVC 0.020" Slot Screen (6-11' bgs)
10		4	10-12'	2.0	19.8, 0.6	7, 5, 6, 7	11			Black (2.5Y 2.5/1) fine - coarse SAND, trace fine Gravel, loose, wet, heavy black staining, heavy rainbow sheen, strong coal tar like odor [Upper Sand and Gravel]. Grayish brown (2.5Y 5/2) SILT, little medium plasticity Clay, stiff, moist [SILT].	2" Sch 40 PVC Sump (11-13' bgs); Bentonite - Cement Grout (11-13' bgs)
	735	5	12-14'	1.7	0.0	5, 5, 4, 5	9				Bentonite backfill (13-14' bgs.)
15										End of boring at 14' bgs.	

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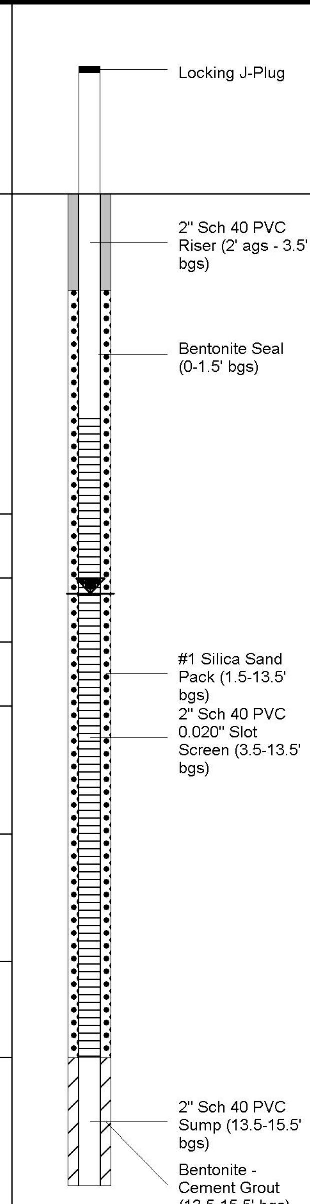
Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish:	10/01/20
Drilling Company:	Parratt-Wolff
Driller's Name:	J Price and D Sherman
Drilling Method:	4 1/4" HSA
Sampling Method:	2" x 2' Split Spoon
Rig Type:	Track Mounted CME-55
Northing:	1530661.717'
Easting:	531967.308'
Casing Elevation:	747.677'
Surface Elevation:	745.677'
Borehole Depth:	16' bgs
Descriptions By:	E Green
Well/Boring ID:	PDI-MW-5
Client:	National Grid
Location:	Former MGP Site Hill Street Gloversville, NY

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description
	750									
0	745									Boring hand cleared to 5' bgs.
5		1	5-6'	0.5	0.0	10, 12	NA			Olive brown (2.5Y 4/4) fine SAND, little Silt, little Woody Organics, loose, moist [Fill].
		2	6-8'	0.8	1.0, 7.8	15, 10, 5, 5	15			Grayish brown (2.5Y 5/2) fine - coarse SAND, little - some sub angular fine Gravel, loose, wet, moderate coal tar like odor [Upper Sand and Gravel].
	740									Black (2.5Y 2.5/1) fine - coarse SAND, little - some sub angular fine Gravel, loose, wet, NAPL blebs, heavy rainbow sheen, black staining, moderate coal tar like odor [Upper Sand and Gravel].
		3	8-10'	0.6	3.1, 2.8	7, 19, 13, 10	32			Grayish brown (2.5Y 5/2) fine SAND, little Silt, loose - medium dense, wet, very light rainbow sheen [Upper Sand and Gravel].
10		4	10-12'	0.0	NA	23, 10, 10, 13	20			No Recovery
	735	5	12-14'	2.0	0.7, 0.4	9, 10, 10, 13	20			Grayish brown (2.5Y 5/2) fine - medium SAND, trace Silt, loose - medium dense, wet [Upper Sand and Gravel].
15		6	14-16'	2.0	0.0	10, 9, 9, 8	18			Grayish brown (2.5Y 5/2) SILT, some medium plasticity Clay, trace fine Sand, medium stiff, moist [Silt]. End of boring at 16' bgs.

Well/Boring Construction



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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish:	9/30/20	**Northing:**	1530635.88'	**Well/Boring ID:**	PDI-MW-6
Drilling Company:	Parratt-Wolff	**Easting:**	532087.197'	**Client:**	National Grid
Driller's Name:	J Price and D Sherman	**Casing Elevation:**	749.741'		
Drilling Method:	4 1/4" HSA	**Surface Elevation:**	747.741	**Location:**	
Sampling Method:	2" x 2' Split Spoon	**Borehole Depth:**	15' bgs		Former MGP Site Hill Street Gloversville, NY
Rig Type:	Track Mounted CME-55	**Descriptions By:**	E Green		

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	750										Locking J-Plug
0										Boring hand cleared to 5' bgs.	2" Sch 40 PVC Riser (2' ags - 4' bgs); Bentonite Seal (0-2' bgs)
5	745	1	5-6'	0.9	0.0	6, 8	NA			Dark grayish brown (2.5Y 4/2) fine SAND, little Silt, little Woody Organics, loose, moist [Fill]. Olive brown (2.5Y 4/4) very fine - fine SAND, little Silt, medium dense, moist [Upper Sand and Gravel].	#1 Silica Sand Pack (2-9' bgs)
		2	6-8'	1.0	0.0	7, 14, 10, 6	24			Olive brown (2.5Y 4/4) fine - medium SAND, little sub rounded fine Gravel, loose - medium dense, wet [Upper Sand and Gravel]. Wet at 6' bgs	2" Sch 40 PVC 0.020" Slot Screen (4-9' bgs)
		3	8-10'	1.4	0.0	10, 11, 12, 12	23			Grayish brown (2.5Y 5/2) SILT, little medium plasticity Clay, stiff, moist - wet [Silt].	
10	740	4	10-11'	0	0.0	9, 20	NA			No Recovery	Bentonite - Cement Grout (9-11' bgs); 2" Sch 40 PVC Sump (9-11' bgs)
		5	11-13'	0	0.0	10, 11, 5, 5	16				Bentonite Backfill (11-15' bgs)
		6	13-15'	1.5	0.0	6, 8, 6, 3	14			Gray (2.5Y 5/1) SILT, little medium plasticity Clay, trace fine Sand, medium stiff, moist [Silt].	
15	735									End of boring at 15' bgs.	

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Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

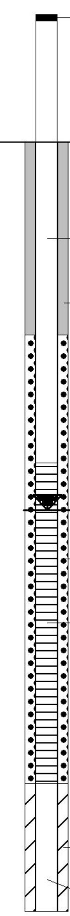
Project: 30044656.710 Created/Edited by: E Green Date: 3/26/2021

Data File: PDI-MW-6.ldat8 Template: G:\Div11\Rockware\Logplot 8 Templates

Date Start/Finish:	10/01/20	**Northing:**	1530593.377'	**Well/Boring ID:**	PDI-MW-7
Drilling Company:	Parratt-Wolff	**Easting:**	532142.114	**Client:**	National Grid
Driller's Name:	J Price and D Sherman	**Casing Elevation:**	749.883		
Drilling Method:	4 1/4" HSA	**Surface Elevation:**	747.883	**Location:**	
Sampling Method:	2" x 2' Split Spoon	**Borehole Depth:**	12' bgs		Former MGP Site Hill Street Gloversville, NY
Rig Type:	Track Mounted CME-55	**Descriptions By:**	E Green		

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description
0	750									Boring hand cleared to 5' bgs.
5	745	1	5-6'	0.7	0.0	5 3	NA			Dark olive brown (2.5Y 3/3) fine SAND, little - some Silt, little Woody Organics, loose, moist [Fill]. Grayish brown (2.5Y 5/2) fine SAND, little Silt, trace fine Gravel, soft, wet [Upper Sand and Gravel].
		2	6-8'	0.7	0.0	9 9 5 10	14			Dark grayish brown (2.5Y 4/2) SILT, some medium plasticity Clay, trace fome Sand, stiff, moist [Silt]. Wet at 5.5' bgs.
		3	8-10'	2.0	0.0	5 8 9 17	17			
10	740	4	10-12'	2.0	0.0	NA	NA			End of boring at 12' bgs.
15	735									

Well/Boring Construction



ARCADIS Design & Consultancy for natural and built assets

Remarks: ags = above ground surface; AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish:	10/02/20
Drilling Company:	Parratt-Wolff
Driller's Name:	J Price and D Sherman
Drilling Method:	4 1/4" HSA
Sampling Method:	2" x 2' Split Spoon
Rig Type:	Track Mounted CME-55

Northing:	1530569.28'
Easting:	532127.616'
Casing Elevation:	749.481'
Surface Elevation:	747.481
Borehole Depth:	10' bgs
Descriptions By:	E Green

Well/Boring ID: PDI-MW-8

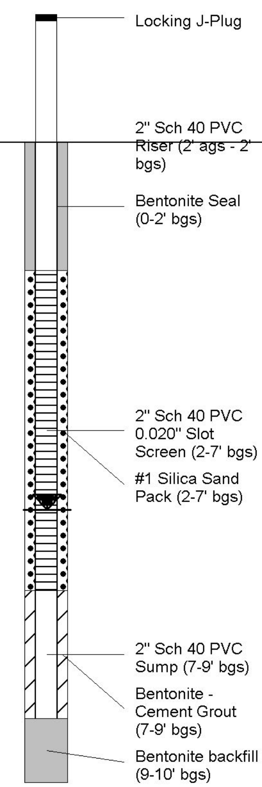
Client: National Grid

Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description
	750									
0										Boring hand cleared to 5' bgs.
	745									Wet at 5.5' bgs.
5		1	5-6'	0.8	0.0	8, 5	NA			Olive brown (2.5Y 4/4) fine SAND, little Silt, little Woody Organics, loose, moist [Fill].
										Dark gray (2.5Y 4/2) fine SAND, tace fine Gravel, loose - medium dense, moist - wet [Upper Sand and Gravel].
		2	6-8'	1.3	0.0	10, 10, 12, 14	14			Very dark gray (2.5Y 3/2) fine - coarse SAND, little sub rounded fine Gravel, loose - medium dense, wet [Upper Sand and Gravel].
										Dark grayish brown (2.5Y 4/2) SILT, little fine Sand, trave Clay, stiff, moist [Silt].
		3	8-10'	1.0	0.0	7, 13, 14, 16	17			Dark grayish brown (2.5Y 4/2) fine - coarse SAND, little sub angular fine Gravel, medium dense - dense, wet [Lower Sand and Gravel].
	740									
10										End of boring at 10' bgs.
	735									
15										

Well/Boring Construction



ARCADIS Design & Consultancy for natural and built assets

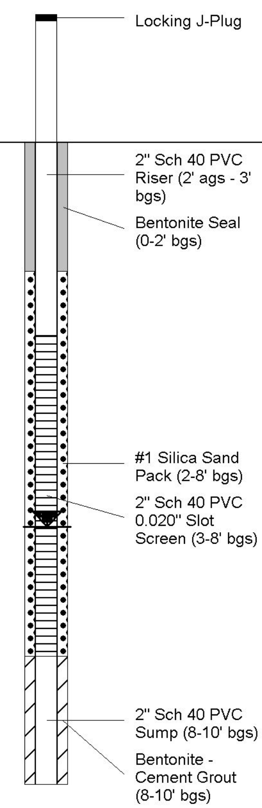
Remarks: ags = above ground surface; AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish:	10/02/20	**Northing:**	1530540.917'	**Well/Boring ID:**	PDI-MW-9
Drilling Company:	Parratt-Wolff	**Easting:**	532109.226'	**Client:**	National Grid
Driller's Name:	J Price and D Sherman	**Casing Elevation:**	749.323'		
Drilling Method:	4 1/4" HSA	**Surface Elevation:**	747.323	**Location:**	
Sampling Method:	2" x 2' Split Spoon	**Borehole Depth:**	10' bgs		Former MGP Site Hill Street Gloversville, NY
Rig Type:	Track Mounted CME-55	**Descriptions By:**	E Green		

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description
0	750									
	745									Boring hand cleared to 5' bgs.
5		1	5-6'	0.9	0.0	8 6	NA			Olive brown (2.5Y 4/4) SILT, little fine Sand, little Woody Organics, soft, moist - wet [Fill]. Grayish brown (2.5Y 5/2) fine - coarse SAND, little sub rounded fine Gravel, loose - medium dense, wet [Upper Sand and Gravel].
		2	6-8'	2.0	0.0	5 10 9 9	19			Dark grayish brown (2.5Y 4/2) SILT, little low plasticity Clay, trace fine Sand, medium stiff - stiff, moist [Silt]. Wet at 5.75' bgs.
	740	3	8-10'	2.0	0.0	3 8 7 8	15			Dark grayish brown (2.5Y 4/2) SILT, little fine Sand, stiff, moist [Silt].
10										End of boring at 10' bgs.
15	735									

Well/Boring Construction



ARCADIS Design & Consultancy for natural and built assets

Remarks: ags = above ground surface; AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish:	9/30/20
Drilling Company:	Parratt-Wolff
Driller's Name:	J Price and D Sherman
Drilling Method:	4 1/4" HSA
Sampling Method:	2" x 2' Split Spoon
Rig Type:	Track Mounted CME-55

Northing:	1530576.026
Easting:	532051.645
Casing Elevation:	748.193
Surface Elevation:	746.193
Borehole Depth:	14' bgs
Descriptions By:	E Green

Well/Boring ID: PDI-MW-10

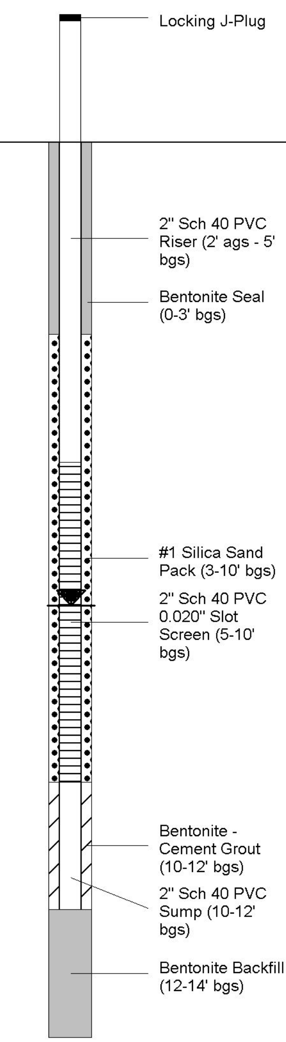
Client: National Grid

Location:

Former MGP Site
Hill Street
Gloversville, NY

Depth (feet bgs)	Elevation (ft AMSL)	Sample Run Number	Sample Interval	Recovery (feet)	PID Headspace (ppm)	Blow Count	N-Value	Analytical Sample	Geologic Column	Stratigraphic Description
	750									
0	745									Boring hand cleared to 5' bgs.
5		1	5-6'	0	NA	1 1	N A			No Recovery NAPL blebs, light rainbow sheen, black staining, and strong coal tar like odor in slough from above interval.
		2	6-8'	1.4	0.0	9 9 7 10	16			Dark grayish brown (2.5Y 4/2) SILT, trace fine Sand, trace Clay, stiff, moist [Silt] Wet at 7' bgs.
	740	3	8-10'	1.1	0.0	10 11 11 13	22			Grayish brown (2.5Y 3/2) SILT, some medium plasticity Clay, medium stiff, moist [Silt].
10		4	10-12'	2.0	0.0	9 8 5 10	13			Grayish brown (2.5Y 3/2) SILT, little low plasticity Clay, little fine Sand, stiff, moist [Silt].
	735	5	12-14'	1.2	0.0	10 10 14 10	24			Grayish brown (2.5Y 3/2) SILT, little - some fine Sand, medium stiff, wet [Silt].
15										End of boring at 14' bgs.

Well/Boring Construction



ARCADIS Design & Consultancy for natural and built assets

Remarks: ags = above ground surface; AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).

Date Start/Finish: 11/02/20	**Northing:** 1530564.4280'	**Well/Boring ID:**	**PDI-MW-10(SO)**
Drilling Company: Parratt-Wolff	**Easting:** 532066.571'	**Client:**	National Grid
Driller's Name: W Nielsen, M Eaves	**Casing Elevation:** NA	**Location:**	Former MGP Site Hill Street Gloversville, NY
Drilling Method: Direct Push	**Surface Elevation:** 746.47'		
Sampling Method: 4' Macrocore	**Borehole Depth:** 16'		
Rig Type: Track Mounted Geoprobe	**Descriptions By:** E Green		

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	745	1	0-4'	3.2	0.0, 0.0, 0.0, 0.0			Olive brown (2.5Y 4/4) fine SAND, trace - little Woody Organics, trace fein Gravel, trace Coal Cinder, loose - medium dense, moist [Fill].	Borehole tremie-grouted with bentonite-cement grout to grade
								Olive yellow (2.5Y 6/6) very fine - fine SAND, trace Silt, trace fine Gravel, loose, moist - wet [Upper Sand and Gravel]. Boring hand cleared to 5' bgs.	
5	740	2	4-8'	3.5	0.0, 0.0, 0.0, 0.0	X		Grayish brown (2.5Y 5/2) fine - medium SAND, little sub rounded fine Gravel, trace Coal Cinder, medium dense, wet [Upper Sand and Gravel]. Wet at 4' bgs. Soil sample collected for SVOCs (4.5-6.5' bgs)	
								Grayish brown (2.5Y 5/2) SILT, little low - medium plasticity Clay, trace fine Sand, stiff, moist [Silt].	
10	735	3	8-12'	3.7	0.0, 0.0, 0.0, 0.0				
15		4	12-16'	1.8	0.0, 0.0, 0.0, 0.0			Grayish brown (2.5Y 5/2) fine - coarse SAND, little sub rounded fine Gravel, loose - medium dense, wet [Lower Sand and Gravel]. End of boring at 16' bgs.	

Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).Inches.

ARCADIS Design & Consultancy for natural and built assets

Date Start/Finish: 11/02/2022	**Northing:** 1530756.597'	**Well/Boring ID:**	**PDI-DPB-4**
Drilling Company: Arcadis	**Easting:** 531913.411'	**Client:** National Grid	
Driller's Name: D Richmond, T Platt	**Casing Elevation:** NA		
Drilling Method: Direct Push	**Surface Elevation:** 745.981'	**Location:**	
Sampling Method: 4' Macrocore	**Borehole Depth:** 12'	Former MGP Site	
Rig Type: AMS Power Probe VTR 9520	**Descriptions By:** Dan Meandro	Hill Street	
		Gloversville, NY	

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	745	1	0-4'	3.9	1.5			Very dark grayish brown (10YR 3/2) fine - medium SAND, some Silt, trace - little fine sub rounded Gravel, moist, medium firm.	
								Black (10YR 2/1) SILT, little fine Sand, trace fine sub angular Gravel, moist, medium firm.	
								Brown (10 YR 4/3) fine - medium SAND, little Silt, moist - wet, odor. Sheen on soil (3.1-5.4' bgs).	
5	740	2	4-8'	3.8	2.7			Black (10YR 2/1) fine - coarse SAND, some fine - medium sub angular - angular Gravel, wet, medium firm, visible sheen, odor.	Borehole backfilled with bentonite chips.
								Dark gray (10YR 4/1) CLAY, some Silt, little fine sub angular Gravel, moist, firm, slight plasticity. SVOC soil sample collected from 3-12' bgs	
10	735	3	8-12'	2.0	10			Very dark gray (10YR 3/1) fine - medium SAND and SILT, some fine - medium sub angular - sub rounded Gravel, moist - wet, medium firm, non-plastic, sheen, odor.	
15	730							End of boring at 12' bgs.	

Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).Inches.

ARCADIS Design & Consultancy for natural and built assets

Date Start/Finish:	11/01/2022	**Northing:**	1530675.836'	**Well/Boring ID:**	**PDI-DPB-7**
Drilling Company:	Arcadis	**Easting:**	531952.764'	**Client:**	National Grid
Driller's Name:	D Richmond, T Platt	**Casing Elevation:**	NA	**Location:**	Former MGP Site Hill Street Gloversville, NY
Drilling Method:	Direct Push	**Surface Elevation:**	744.678'		
Sampling Method:	4' Macrocore	**Borehole Depth:**	12'		
Rig Type:	AMS Power Probe VTR 9520	**Descriptions By:**	Dan Meandro		

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	745								
0		1	0-4'	1.8	0			Brown (10YR 4/3) fine - medium SAND and SILT, little Organics (roots), trace - little fine sub angular - Gravel, moist, medium firm. Light brownish gray (10YR 6/2) fine - coarse SAND, moist, loose. Dark grayish brown (10YR 4/2) SILT and fine - medium SAND, little fine sub angular Gravel, moist, medium firm.	Borehole backfilled with bentonite chips.
5	740	2	4-8'	2.1	40			Very dark grayish brown (10YR 3/2) fine - coarse SAND, some fine sub rounded - sub angular Gravel, little Silt, wet, loose - medium firm, strong odor, sheen. Dark grayish brown (10YR 4/2) fine - medium SAND, light sheen, light odor. SVOC soil sample collected from 4-8.5' bgs Very dark gray (10YR 3/1) fine SAND, some Silt, little Clay, trace fine sub rounded Gravel, moist, firm, slight sheen.	
10	735	3	8-12'	3.7	1.2			Very dark gray (10YR 3/1) CLAY, trace - little fine Sand, moist.	
								End of boring at 12' bgs.	
15	730								

ARCADIS Design & Consultancy for natural and built assets

Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).Inches.

Date Start/Finish: 11/01/2022	**Northing:** 1530648.741'	**Well/Boring ID:**	**PDI-DPB-8**
Drilling Company: Arcadis	**Easting:** 532016.11'	**Client:** National Grid	
Driller's Name: D Richmond, T Platt	**Casing Elevation:** NA	**Location:**	
Drilling Method: Direct Push	**Surface Elevation:** 745.335'	Former MGP Site Hill Street Gloversville, NY	
Sampling Method: 4' Macrocore	**Borehole Depth:** 12'		
Rig Type: AMS Power Probe VTR 9520	**Descriptions By:** Dan Meandro		

Depth (feet bgs)	Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	745							Dark brown (10YR 3/3) fine - coarse SAND, little Organics (roots), trace fine sub rounded Gravel, moist, medium firm.	
		1	0-4'	2.8	10.1			Very dark gray (10YR 3/1) SILT some fine - medium Sand, some Organics (roots), little fine sub angular - sub rounded Gravel, slight sheen, slight odor.	
								Brown (10YR 4/3) fine - medium SAND, little Silt, moist, medium firm, sheen, odor.	
5	740	2	4-8'	2.2	5.0			Very dark brown (10YR 2/2) medium SAND, little Silt, trace - little fine sub rounded Gravel, wet, medium firm, sheen, slight odor. SVOC soil sample collected from 0.8-8.5' bgs	Borehole backfilled with bentonite chips.
								Dark gray (10YR 4/1) medium SAND, little Silt, little fine sub rounded Gravel, moist, medium firm, sheen, slight odor.	
10	735	3	8-12'	3.8	2.2			Very dark grayish brown (10YR 4/1) CLAY, some Silt, little fine Sand, dry - moist, firm.	
								End of boring at 12' bgs.	
15	730								

ARCADIS Design & Consultancy for natural and built assets

Remarks: AMSL = Above Mean Sea Level; bgs = below ground surface; NA = Not Applicable/Available; ppm = parts per million; ' = Feet; " = Inches.

Northing and easting provided in U.S. survey feet refrenced to New York State Plane Central Zone (NAD83). Elevations are in U.S. survey refrenced to North American Vertical Datum of 1988 (NAVD88).Inches.

Appendix C

Geotechnical Testing Results

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058~ pwlabsinc@hotmail.com

October 14, 2020

Mr. Jason Brien
Arcadis | Arcadis of New York, Inc
One Lincoln Center
110 West Fayette Street - Suite 300
Syracuse, New York 13202

Re: L-20113
Laboratory Testing
National Grid
Gloversville (Hill Street) Former Manufactured Gas Plant Site
Work Auth No. #AUS-PWLabs30044656-WA1

Dear Jason [jason.brien@arcadis.com]:

Enclosed are the results of laboratory testing performed at your request on four (4) Bag Soil samples and one (1) Shelby Tube sample delivered to PW Laboratories, Inc. on **10/2/2020** for the above referenced project. Results include:

1.)	Natural Moisture Content (ASTM D2216) Laboratory I.D. #40179 – 40182	4 Each
2.)	Sieve Analysis (ASTM D6913 – Method A) Laboratory I.D. #40179 – 40182	4 Each
3.)	Specific Gravity (ASTM D854) Laboratory I.D. #40179 – 40182	4 Each
4.)	Atterberg Limits (ASTM D4318) Laboratory I.D. #40179 – 40182	4 Each
5.)	Unified Soil Classification System (ASTM D2487) Laboratory I.D. #40179 – 40182	4 Each
6.)	Bulk [Natural] Density – Displacement Method (ASTM D7263) Laboratory I.D. #40183	1 Each
7.)	Unconsolidated Undrained (UU) Triaxial Test – 1 Point (ASTM D2850) Laboratory I.D. #40183	1 Each

All requested tests have been completed on the previously received sample(s) for the above project. All sample remains are scheduled to be disposed of on **11/14/2020.** Please notify PW Laboratories, Inc. by letter or telephone prior to **11/14/2020** if you would prefer to pick up the sample(s) or that the sample(s) be retained by PW Laboratories, Inc. for an additional period.

Thank you for this opportunity to work with you.

PW LABORATORIES, INC.

Patrick J. Edmiston
Laboratory Manager
PJE/BLL

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058~ pwlabsinc@hotmail.com

October 14, 2020

L-20113
Laboratory Testing
National Grid
Gloversville (Hill Street) Former Manufactured Gas Plant Site
Work Auth No. #AUS-PWLabs30044656-WA1

Natural Moisture Content (ASTM D2216)

Lab I.D. #	Sample I.D.	Depth (Feet)	Moisture Content as a Percent of Dry Weight
40179	PDI-GTB-3	5.0 - 6.0	40.8
40180	PDI-GTB-3	6.0 - 7.0	23.7
40181	PDI-GTB-3	12.0 - 14.0	38.1
40182	PDI-GTB-3	32.0 - 34.0	21.0

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 - Fax 315.503.3058 - pwlabsinc@hotmail.com

Sieve Analysis of Soil/Aggregate

Project Title: Laboratory Testing
National Grid
Gloversville (Hill Street) Former Manufactured Gas Plant Site
Work Auth No. #AUS-PWLabs30044656-WA1

Project #: L-20113
Test Method: ASTM D6913 - Method A

Report #: 1
Report Date: October 14, 2020

			Sieve Size - Percent Passing Sieve														
Lab I.D. #	Sample I.D.	Depth (Feet)	3/4"	1/2"	3/8"	1/4"	#4	#10	#30	#40	#60	#100	#200				
40179	PDI-GTB-3	5.0 - 6.0	100	90.9	90.9	90.0	87.6	83.2	73.1	64.7	47.6	31.0	16.7				
40180	PDI-GTB-3	6.0 - 7.0	100	94.6	92.6	87.4	85.8	80.2	71.2	61.0	34.8	14.1	5.9				
40181	PDI-GTB-3	12.0 - 14.0	-	-	-	-	100	99.8	99.5	99.2	98.3	97.5	96.3				
40182	PDI-GTB-3	32.0 - 34.0	-	-	100	99.9	99.9	99.6	98.9	89.9	48.3	19.6	5.2				

Sample mass, as received, meets minimum mass requirements of test method: **Yes** X **No**

Performed By: MS Patrick Edmiston

Remarks:

Prewashed
Entire Sample X
Mass Retained on #200 Only
Not Prewashed:

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058~ pwlabsinc@hotmail.com

October 14, 2020

L-20113
Laboratory Testing
National Grid
Gloversville (Hill Street) Former Manufactured Gas Plant Site
Work Auth No. #AUS-PWLabs30044656-WA1

Specific Gravity of Soils (ASTM D854)

Lab I.D. #	Sample I.D.	Depth (Feet)	Specific Gravity of Soils (G)
40179	PDI-GTB-3	5.0 - 6.0	1.68
40180	PDI-GTB-3	6.0 - 7.0	2.73
40181	PDI-GTB-3	12.0 - 14.0	2.76
40182	PDI-GTB-3	32.0 - 34.0	2.74

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058 ~ pwlabsinc@hotmail.com

October 14, 2020

L-20113
Laboratory Testing
National Grid
Gloversville (Hill Street) Former Manufactured Gas Plant Site
Work Auth No. #AUS-PWLabs30044656-WA1

Atterberg Limits (ASTM D4318) & Unified Soil Classification (ASTM D2487)

Lab I.D. #	Sample I.D.	Depth (Feet)	Plastic Limit	Liquid Limit	Plasticity Index	Classification
40179	PDI-GTB-3	5.0 - 6.0	Non-Plastic	-	-	SM
40180	PDI-GTB-3	6.0 - 7.0	Non-Plastic	-	-	SP-SM
40181	PDI-GTB-3	12.0 - 14.0	26	55	29	CH
40182	PDI-GTB-3	32.0 - 34.0	Non-Plastic	-	-	SP-SM

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058 ~ pwlabsinc@hotmail.com

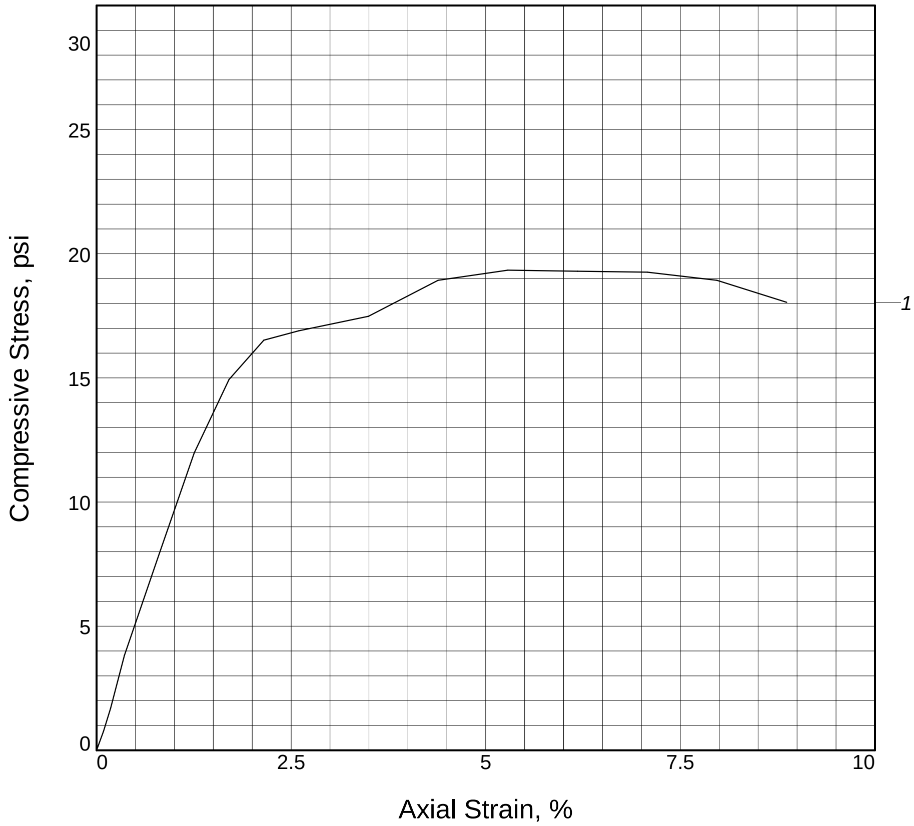
October 14, 2020

L-20113
Laboratory Testing
National Grid
Gloversville (Hill Street) Former Manufactured Gas Plant Site
Work Auth No. #AUS-PWLabs30044656-WA1

Bulk [Natural] Density Displacement Method (ASTM D7263)

Laboratory I.D. #	Sample I.D.	Depth (Feet)	Bulk [Natural] Soil Density (PCF)	
			Moist	Dry
40183	PDI-GTB-3	20.0 - 22.0	119.0	89.9

UNCONSOLIDATED UNDRAINED TEST



Sample No.	1			
Fail. Stress, psi	19.34			
Ult. Stress, psi	18.05			
Cell pressure, psi	7.50			
Strain rate, in./min.	0.06			
Water content, %	41.7			
Wet density, pcf	112.2			
Dry density, pcf	79.2			
Saturation, %	99.8			
Void ratio	1.1282			
Specimen diameter, in.	2.88			
Specimen height, in.	6.70			
Height/diameter ratio	2.33			

Description: Gray moist stiff SILT and CLAY

LL = --	**PL =**	**PI =** --	**Assumed GS=** 2.70	**Type:** INTACT

Project No.: L-20113
Date Received: 10/2/2020
Remarks:

Client: ARCADIS
Project: National GridGloversville (Hill Street) Former Manufactured Gas Plant Site
Work Auth No. #AUS-PWLabs30044656-WA1
Lab I.D.:#40183
Location: GLOVERSVILLE,NY
Sample I.D.: PDI-GTB-3

UNCONSOLIDATED UNDRAINED TEST
PW Laboratories, Inc. East Syracuse, NY

Figure TWO

Tested By: PE **Checked By:** DPB

TRIAXIAL COMPRESSION TEST
Unconsolidated Undrained

1/1/2008
1:10 AM

Date: RECEIVED: 10/2/2020
Client: ARCADIS
Project: FORMER MPG SITE
Project No.: L-20113
Location: GLOVERSVILLE, NY
Depth: 20 TO 22 FEET **Sample I.D.:** PDI-GTB-3
Description: Gray moist stiff SILT and CLAY **Lab I.D. #:** 40183
Remarks:
Type of Sample: INTACT
Assumed Specific Gravity=2.70 **LL=**-- **PL=** **PI=**--
Test Method: ASTM D 2850

Parameters for Specimen No. 1

Specimen Parameter	Initial	Final
Moisture content: Moist soil+tare, gms.		1295.300
Moisture content: Dry soil+tare, gms.		995.900
Moisture content: Tare, gms.		88.500
Moisture, %	41.7	33.0
Moist specimen weight, gms.	1285.7	
Diameter, in.	2.88	
Area, in.²	6.51	
Height, in.	6.70	
Wet density, pcf	112.2	
Dry density, pcf	79.2	
Void ratio	1.1282	
Saturation, %	99.8	

Test Readings for Specimen No. 1

Cell pressure = 7.50 psi
Back pressure = 0.00 psi
Strain rate, in./min. = 0.06
Fail. Stress = 19.34 psi **at reading no.** 12
Ult. Stress = 18.05 psi **at reading no.** 16

Test Readings for Specimen No. 1

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress psi	Minor Princ. Stress psi	Major Princ. Stress psi	1:3 Ratio	P psi	Q psi
0	0.0060	19.000	0.0	0.0	0.00	7.50	7.50	1.00	7.50	0.00
1	0.0120	24.000	5.0	0.1	0.77	7.50	8.27	1.10	7.88	0.38
2	0.0180	30.000	11.0	0.2	1.69	7.50	9.19	1.22	8.34	0.84
3	0.0240	37.000	18.0	0.3	2.76	7.50	10.26	1.37	8.88	1.38
4	0.0300	44.000	25.0	0.4	3.82	7.50	11.32	1.51	9.41	1.91
5	0.0600	71.000	52.0	0.8	7.92	7.50	15.42	2.06	11.46	3.96
6	0.0900	98.000	79.0	1.3	11.97	7.50	19.47	2.60	13.49	5.99
7	0.1200	118.000	99.0	1.7	14.94	7.50	22.44	2.99	14.97	7.47
8	0.1500	129.000	110.0	2.1	16.52	7.50	24.02	3.20	15.76	8.26
9	0.1800	132.000	113.0	2.6	16.90	7.50	24.40	3.25	15.95	8.45
10	0.2400	137.000	118.0	3.5	17.48	7.50	24.98	3.33	16.24	8.74
11	0.3000	148.000	129.0	4.4	18.93	7.50	26.43	3.52	16.97	9.47
12	0.3600	152.000	133.0	5.3	19.34	7.50	26.84	3.58	17.17	9.67
13	0.4200	153.000	134.0	6.2	19.30	7.50	26.80	3.57	17.15	9.65
14	0.4800	154.000	135.0	7.1	19.26	7.50	26.76	3.57	17.13	9.63
15	0.5400	153.000	134.0	8.0	18.93	7.50	26.43	3.52	16.97	9.47
16	0.6000	148.000	129.0	8.9	18.05	7.50	25.55	3.41	16.52	9.02

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058~ pwlabsinc@hotmail.com

October 13, 2020

Mr. Jason Brien
Arcadis | Arcadis of New York, Inc
One Lincoln Center
110 West Fayette Street - Suite 300
Syracuse, New York 13202

Re: L-20113
Laboratory Testing
National Grid
Gloversville (Hill Street) Former Manufactured Gas Plant Site
Work Auth No. #AUS-PWLabs30044656-WA1

DearJason [jason.brien@arcadis.com]:

Enclosed are the results of laboratory testing performed at your request on one (1) Shelby Tube sample delivered to PW Laboratories, Inc. on **9/28/2020** for the above referenced project. Results include:

1.) Bulk [Natural] Density – Displacement Method (ASTM D7263)
Laboratory I.D. #40178 1 Each

2.) Unconsolidated Undrained (UU) Triaxial Test – 1 Point (ASTM D2850)
Laboratory I.D. #40178 1 Each

All requested tests have been completed on the previously received sample(s) for the above project. All sample remains are scheduled to be disposed of on **11/13/2020**. Please notify PW Laboratories, Inc. by letter or telephone prior to **11/13/2020** if you would prefer to pick up the sample(s) or that the sample(s) be retained by PW Laboratories, Inc. for an additional period.

Thank you for this opportunity to work with you.

PW LABORATORIES, INC.

Patrick J. Edmiston
Laboratory Manager
PJE/BLL

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058 ~ pwlabsinc@hotmail.com

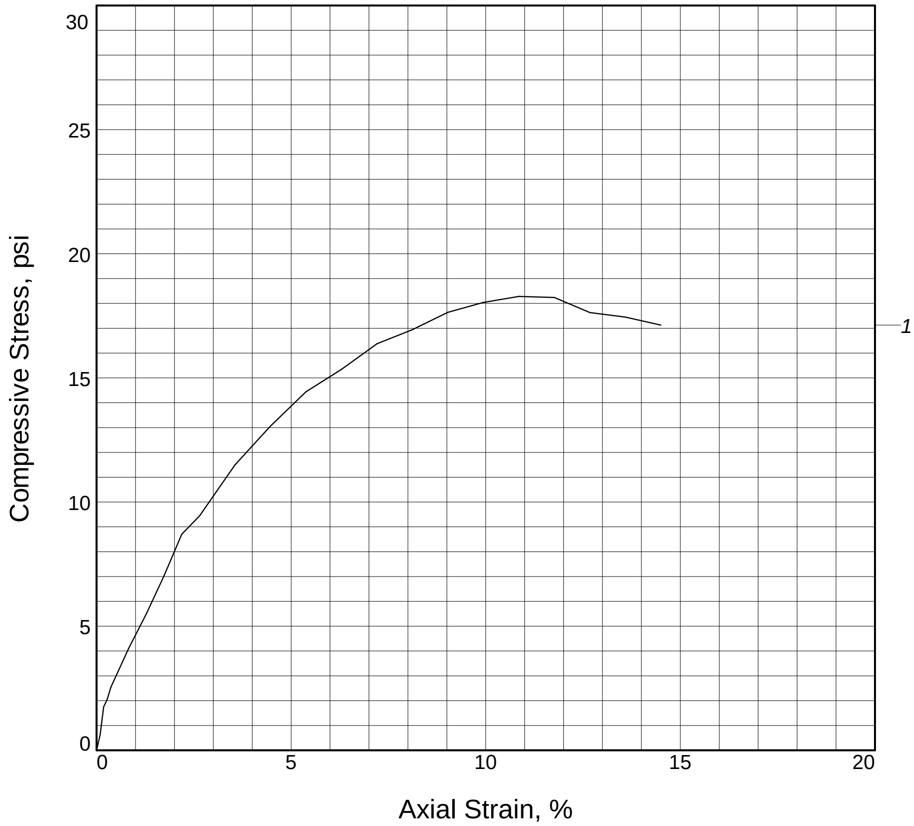
October 13, 2020

L-20113
Laboratory Testing
National Grid
Gloversville (Hill Street) Former Manufactured Gas Plant Site
Work Auth No. #AUS-PWLabs30044656-WA1

Bulk [Natural] Density Displacement Method (ASTM D7263)

Laboratory I.D. #	Sample I.D.	Depth (Feet)	Bulk [Natural] Soil Density (PCF)	
			Moist	Dry
40178	PDI-GTB-5	14 - 16	118.7	89.3

UNCONSOLIDATED UNDRAINED TEST



Sample No.	1			
Fail. Stress, psi	18.28			
Ult. Stress, psi	17.13			
Cell pressure, psi	5.00			
Strain rate, in./min.	0.06			
Water content, %	29.5			
Wet density, pcf	120.2			
Dry density, pcf	92.8			
Saturation, %	97.5			
Void ratio	0.8160			
Specimen diameter, in.	2.83			
Specimen height, in.	6.58			
Height/diameter ratio	2.33			

Description: Gray moist stiff SILT and CLAY

LL = --	PL =	PI = --	Assumed GS= 2.70	Type: INTACT

Project #: L-20113

Date Received: 9/28/2020

Remarks:

Figure ONE

Client: ARCADIS
Project: National Grid
Gloversville (Hill Street) Former Manufactured Gas Plant Site
Work Auth No. #AUS-PWLabs30044656-WA1
Lab I.D.: #40178
Location: GLOVERSVILLE, NY
Sample I.D.: PDI-GTB-5

UNCONSOLIDATED UNDRAINED TEST

PW Laboratories, Inc. - East Syracuse, NY

Tested By: PE **Checked By:** DPB

TRIAXIAL COMPRESSION TEST 1/1/2008
Unconsolidated Undrained 1:09 AM

Date:	RECEIVED:9/28/2020		
Client:	ARCADIS		
Project:	FORMER MPG SITE		
Project No.:	L-20113		
Location:	GLOVERSVILLE, NY		
Depth:	14 TO 16 FEET	**Sample I.D.::**	PDI-GTB-5
Description:	Gray moist stiff SILT and CLAY	**Lab I.D. #:**	40178
Remarks:			
Type of Sample:	INTACT		
Test Method:	ASTM D 2850		

Assumed Specific Gravity=2.70 **LL=**-- **PL=** **PI=**--

Parameters for Specimen No. 1

Specimen Parameter	Initial	Final
Moisture content: Moist soil+tare, gms.		1405.400
Moisture content: Dry soil+tare, gms.		1108.400
Moisture content: Tare, gms.		100.000
Moisture, %	29.5	29.5
Moist specimen weight, gms.	1305.6	
Diameter, in.	2.83	
Area, in.^{2}	6.29	
Height, in.	6.58	
Wet density, pcf	120.2	
Dry density, pcf	92.8	
Void ratio	0.8160	
Saturation, %	97.5	

Test Readings for Specimen No. 1

Cell pressure = 5.00 psi
Back pressure = 0.00 psi
Strain rate, in./min. = 0.06
Fail. Stress = 18.28 psi **at reading no.** 18
Ult. Stress = 17.13 psi **at reading no.** 22

Test Readings for Specimen No. 1

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress psi	Minor Princ. Stress psi	Major Princ. Stress psi	1:3 Ratio	P psi	Q psi
0	0.0060	17.000	0.0	0.0	0.00	5.00	5.00	1.00	5.00	0.00
1	0.0120	21.000	4.0	0.1	0.64	5.00	5.64	1.13	5.32	0.32
2	0.0180	28.000	11.0	0.2	1.75	5.00	6.75	1.35	5.87	0.87
3	0.0240	30.000	13.0	0.3	2.06	5.00	7.06	1.41	6.03	1.03
4	0.0300	33.000	16.0	0.4	2.53	5.00	7.53	1.51	6.27	1.27
5	0.0600	43.000	26.0	0.8	4.10	5.00	9.10	1.82	7.05	2.05
6	0.0900	52.000	35.0	1.3	5.49	5.00	10.49	2.10	7.75	2.75
7	0.1200	62.000	45.0	1.7	7.03	5.00	12.03	2.41	8.52	3.52
8	0.1500	73.000	56.0	2.2	8.71	5.00	13.71	2.74	9.35	4.35
9	0.1800	78.000	61.0	2.6	9.44	5.00	14.44	2.89	9.72	4.72
10	0.2400	92.000	75.0	3.6	11.50	5.00	16.50	3.30	10.75	5.75
11	0.3000	103.000	86.0	4.5	13.06	5.00	18.06	3.61	11.53	6.53
12	0.3600	113.000	96.0	5.4	14.44	5.00	19.44	3.89	12.22	7.22
13	0.4200	120.000	103.0	6.3	15.34	5.00	20.34	4.07	12.67	7.67
14	0.4800	128.000	111.0	7.2	16.38	5.00	21.38	4.28	13.19	8.19
15	0.5400	133.000	116.0	8.1	16.94	5.00	21.94	4.39	13.47	8.47
16	0.6000	139.000	122.0	9.0	17.64	5.00	22.64	4.53	13.82	8.82
17	0.6600	143.000	126.0	9.9	18.04	5.00	23.04	4.61	14.02	9.02
18	0.7200	146.000	129.0	10.9	18.28	5.00	23.28	4.66	14.14	9.14
19	0.7800	147.000	130.0	11.8	18.24	5.00	23.24	4.65	14.12	9.12
20	0.8400	144.000	127.0	12.7	17.63	5.00	22.63	4.53	13.82	8.82
21	0.9000	144.000	127.0	13.6	17.45	5.00	22.45	4.49	13.72	8.72
22	0.9600	143.000	126.0	14.5	17.13	5.00	22.13	4.43	13.56	8.56

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058~ pwlabsinc@hotmail.com

February 1, 2021

Mr. David A. Cornell, PG, CWD
Arcadis | Arcadis of New York, Inc
One Lincoln Center
110 West Fayette Street - Suite 300
Syracuse, New York 13202

Re: L-21003
Laboratory Testing
National Grid – Gloversville, New York

Dear Mr. Cornell [david.cornell@arcadis.com]:

Enclosed are the results of laboratory testing performed at your request on nine (9) Bulk Soil samples delivered to our laboratory on 1/22/2021 for the above referenced project. Results include:

1.) Sieve Analysis (ASTM D422 & D1140)
Laboratory I.D. #40573 – 40581 — 9 Each

2.) Hydrometer Analysis (ASTM D422)
Laboratory I.D. #40573, 40574, 40579 — 3 Each

All requested tests have been completed on the previously received sample(s) for the above project. All sample remains are scheduled to be disposed of on **3/1/2021.** Please notify PW Laboratories, Inc. by letter or telephone prior to **3/1/2021** if you would prefer to pick up the sample(s) or that the sample(s) be retained by PW Laboratories, Inc. for an additional period.

Thank you for this opportunity to work with you.

PW LABORATORIES, INC.

Patrick J. Edmiston
Laboratory Manager
PJE/BLL
Cc: Daniel.Meandro@arcadis.com

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 - Fax 315.503.3058 - pwlabsinc@hotmail.com

Sieve Analysis of Soil/Aggregate

Project Title: Laboratory Testing
National Grid - Gloversville, New York

Project #: L-21003
Test Method: ASTM D422 & D1140

Report #: 1
Report Date: February 1, 2021

		Sieve Size - Percent Passing Sieve															
Lab I.D. #	**Sample I.D.**	**3"**	**2"**	**1 1/2"**	**1"**	**3/4"**	**1/2"**	**3/8"**	**1/4"**	**#4**	**#10**	**#30**	**#40**	**#60**	**#100**	**#200**	
40573	R5-PDI-SED-60DEP	-	100	92.7	91.5	90.8	89.7	89.1	87.7	87.0	84.5	77.0	69.5	46.9	20.9	7.8	
40574	R5-PDI-SED-55RR	-	-	-	-	-	100	99.4	99.0	98.9	83.1	57.7	46.4	34.7	27.2	20.0	
40575	R4-PDI-SED-46RR	100	78.7	66.8	58.2	51.1	46.6	44.4	39.9	36.1	23.9	9.0	6.1	3.2	1.7	1.1	
40576	R4-PDI-SED-43DEP	-	-	100	99.3	97.9	97.4	96.9	96.0	95.1	91.6	64.0	42.0	15.5	4.9	1.6	
40577	R3-PDI-SED-36RR	-	100	97.4	96.6	96.1	93.2	91.3	83.4	75.5	52.1	26.4	16.4	5.8	1.8	0.6	
40578	R3-PDI-SED-29RR	-	100	88.9	68.7	62.2	55.8	53.4	42.9	42.5	24.8	11.4	7.6	2.9	0.9	0.2	
40579	R3-PDI-SED-28DEP	-	-	-	-	100	99.1	98.5	95.1	92.6	84.4	69.6	58.4	34.3	14.3	5.8	
40580	R3-PDI-SED-25DEP	100	95.5	85.8	69.1	57.5	46.0	41.6	34.3	29.9	18.7	6.4	3.8	1.9	1.2	0.8	
40581	R3-PDI-SED-24DEP	-	-	-	100	99.6	98.9	98.5	97.5	96.5	91.4	50.9	26.1	8.2	3.8	2.7	

Sample mass, as received, meets minimum mass requirements of test method: **Yes** ____ **No** X

Prewashed
Entire Sample X
Mass Retained on #200 Only ____
Not Prewashed: ____

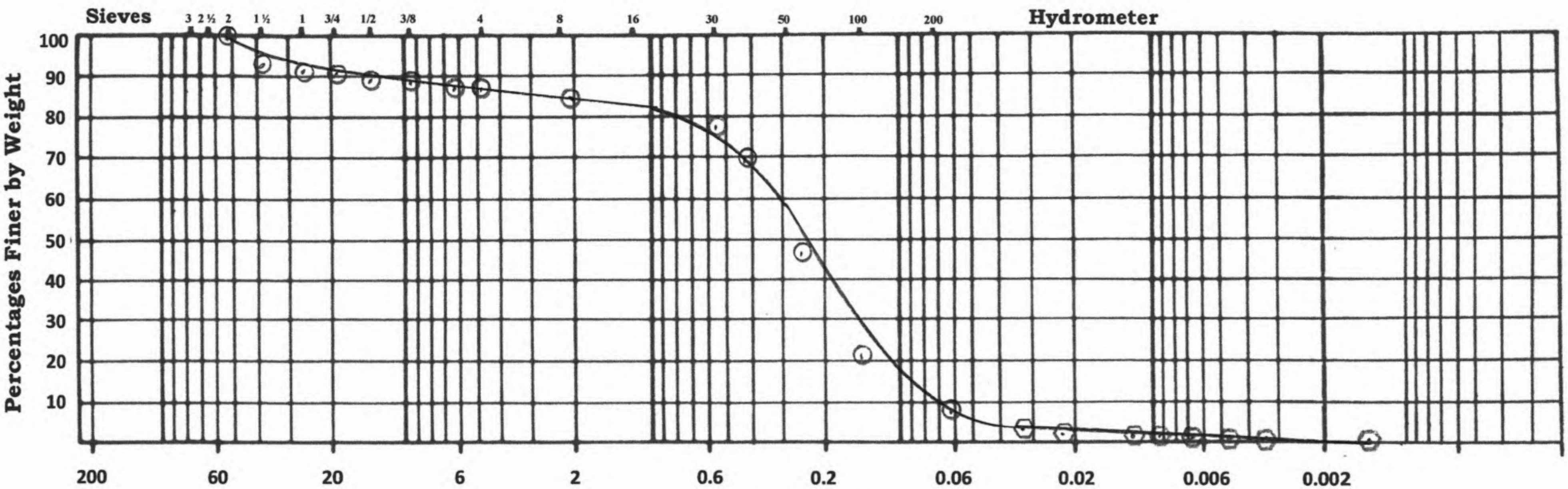
Performed By: EA **Checked By:** Patrick Edmiston

Remarks:

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058 ~ pwlabsinc@hotmail.com

Project #: L-21003
Report #: 1
Date: February 1, 2021

Hydrometer Analysis



Boulders Cobbles	Coarse Gravel	Medium Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Silt	Clay

228 76.2 25.4 9.52 2.0 0.59 0.25 0.074 0.002 mm

9 in. 3 in. 1 in. 3/8 in. No. 10 No. 30 No. 60 No. 200

Lab I.D. : 40573	Project #: L-21003
Sample I.D.: R5-PDI-SED-60DEP	Project Title: Laboratory Testing
	National Grid - Gloversville
Sieve Analysis ASTM D422 & D1140	
Hydrometer Analysis ASTM D422	

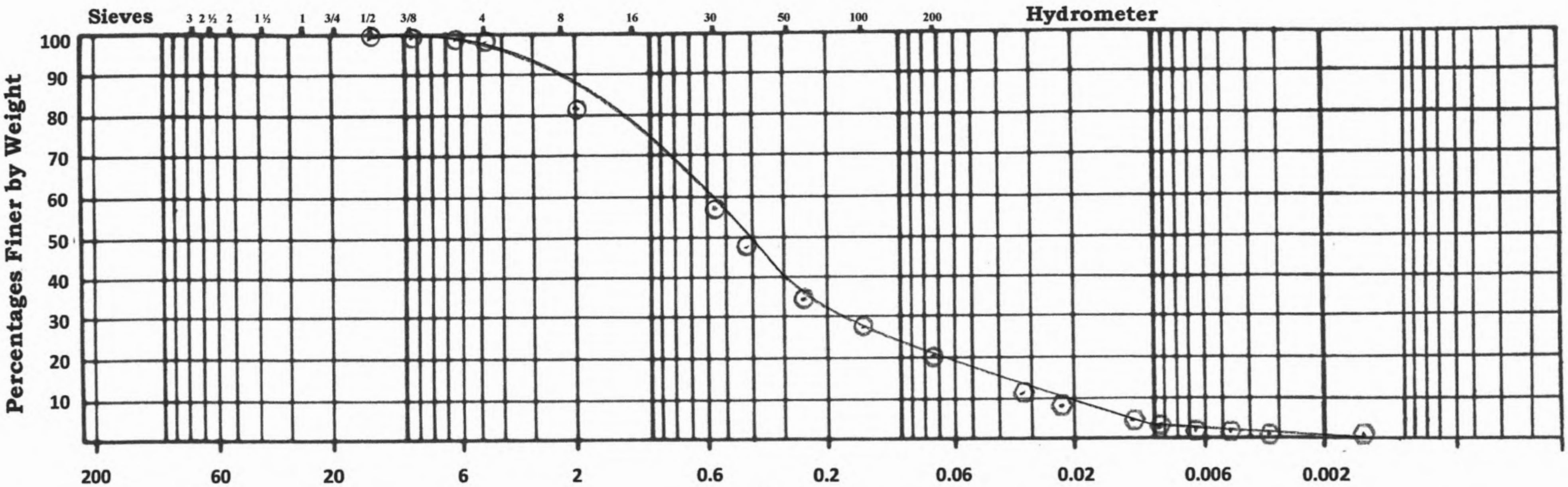
p-w labs
PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058~ pwlabsinc@hotmail.com

Project #: L-21003

Report #: 2

Date: February 1, 2021

Hydrometer Analysis



Boulders Cobbles	Coarse Gravel	Medium Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Silt	Clay

228 9 in. | 76.2 3 in. | 25.4 1 in. | 9.52 3/8 in. | 2.0 No. 10 | 0.59 No. 30 | 0.25 No. 60 | 0.074 No. 200 | 0.002 mm

Lab I.D.: 40574	Project #: L-21003
Sample I.D.: R5-PDI-SED-55RR	Project Title: Laboratory Testing
	National Grid - Gloversville

Sieve Analysis ASTM D422 & D1140

Hydrometer Analysis ASTM D422

p-w labs

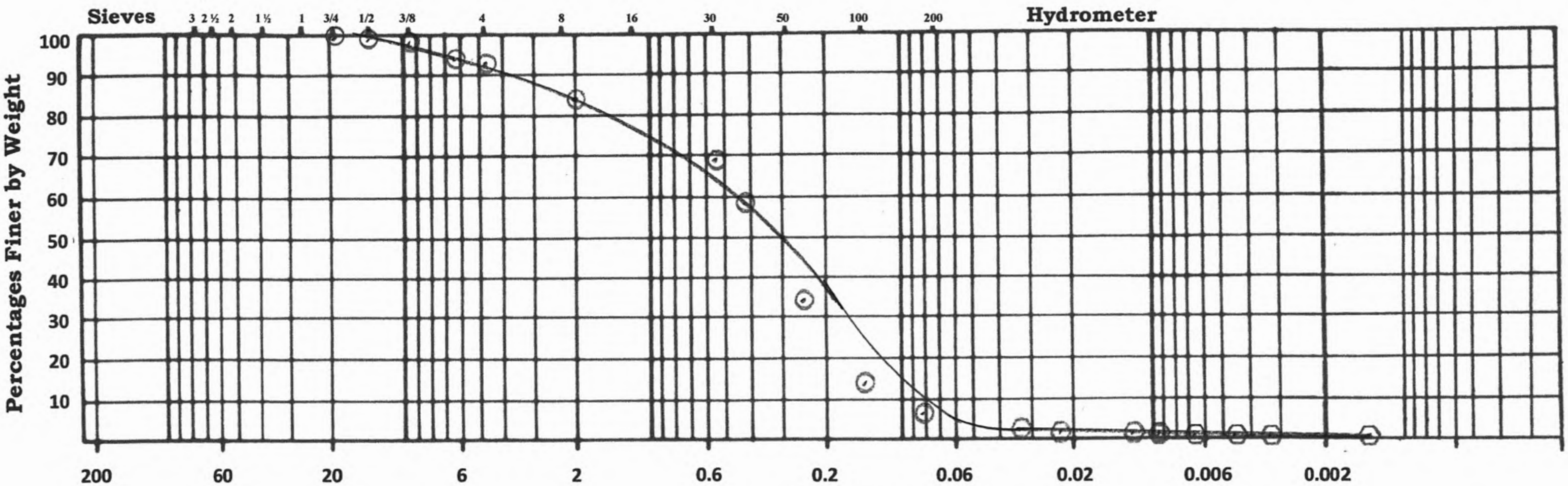
PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058~ pwlabsinc@hotmail.com

Project #: L-21003

Report #: 3

Date: February 1, 2021

Hydrometer Analysis



Boulders Cobbles	Coarse Gravel	Medium Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Silt	Clay

228	76.2	25.4	9.52	2.0	0.59	0.25	0.074	0.002 mm
9 in.	3 in.	1 in.	3/8 in.	No. 10	No. 30	No. 60	No. 200	

Lab I.D.: 40579	**Project #:** L-21003
Sample I.D.: R3-PDI-SED-28DEP	**Project Title:** Laboratory Testing
	National Grid - Gloversville
Sieve Analysis ASTM D422 & D1140	
Hydrometer Analysis ASTM D422	

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058~ pwlabsinc@hotmail.com

February 11, 2021

Mr. Joshua Sinay EIT
Arcadis | Arcadis of New York, Inc
One Lincoln Center
110 West Fayette Street - Suite 300
Syracuse, New York 13202

Re: L-21003
Laboratory Testing
National Grid – Gloversville, New York
Arcadis Project #48020236
P.O. #B0036652.0009

Dear Mr. Sinay [Josh.Sinay@arcadis.com]:

Enclosed are the results of laboratory testing performed at your request on ten (10) Bulk Soil samples delivered to our laboratory on 2/5/2021 for the above referenced project. Results include:

1.) Sieve Analysis (ASTM D422 & D1140)
Laboratory I.D. #40599 – 40608 — 10 Each

2.) Hydrometer Analysis (ASTM D422)
Laboratory I.D. #40599, 40600, 40603, 40604, 40605, 40606 — 6 Each

All requested tests have been completed on the previously received sample(s) for the above project. All sample remains are scheduled to be disposed of on **3/11/2021.** Please notify PW Laboratories, Inc. by letter or telephone prior to **3/11/2021** if you would prefer to pick up the sample(s) or that the sample(s) be retained by PW Laboratories, Inc. for an additional period.

Thank you for this opportunity to work with you.

PW LABORATORIES, INC.

Patrick J. Edmiston
Laboratory Manager
PJE/BLL

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 - Fax 315.503.3058 - pwlabsinc@hotmail.com

Sieve Analysis of Soil/Aggregate

Project Title: Laboratory Testing
National Grid - Gloversville, New York
Arcadis Project #48020236
P.O. #B0036652.0009

Project #: L-21003
Test Method: ASTM D422 & D1140

Report #: 2
Report Date: February 11, 2021

			Sieve Size - Percent Passing Sieve														
Lab I.D. #	Sample I.D.	Depth (Feet)	3"	2"	1 1/2"	1"	3/4"	1/2"	3/8"	1/4"	#4	#10	#30	#40	#60	#100	#200
40599	PDI-T-15-LB-MHWL	0.0 - 0.5	-	-	-	100	98.0	92.0	90.4	87.5	86.3	83.7	79.7	74.6	55.0	33.3	14.8
40600	PDI-T-15-LB-MHWL	0.5 - 1.0	-	-	-	100	95.8	95.1	93.3	91.3	90.0	87.7	83.3	77.6	59.3	37.2	17.7
40601	PDI-T-14-LB-MB	0.0 - 0.5	-	-	-	-	-	-	-	-	-	100	98.9	92.5	61.2	27.4	11.1
40602	PDI-T-14-LB-MB	0.5 - 1.0	-	-	-	-	-	-	-	-	-	100	97.5	85.2	51.4	22.5	7.7
40603	PDI-T-14-RB-MHWL	0.0 - 0.5	-	-	-	-	-	100	99.1	98.7	98.4	97.4	95.6	93.4	83.7	58.5	25.7
40604	PDI-T-14-RB-MHWL	0.5 - 0.8	-	-	100	94.8	92.2	88.6	87.3	85.7	84.8	82.3	78.8	76.1	66.4	45.1	19.8
40605	PDI-T-13-RB-MB	0.0 - 0.5	-	-	-	100	97.2	96.2	95.3	93.9	92.9	89.4	80.2	73.7	62.5	43.1	19.1
40606	PDI-T-13-RB-MB	0.5 - 1.0	-	-	-	100	97.9	95.6	94.7	91.7	90.8	88.9	83.8	78.7	70.0	46.2	19.6
40607	PDI-T-13-LB-MHWL	0.0 - 0.3	100	64.9	64.9	60.2	59.7	59.3	57.4	55.0	53.5	49.6	41.8	38.3	31.2	20.3	9.3
40608	PDI-T-12-RB-MHWL	0.0 - 0.4	100	72.5	51.1	35.7	28.6	20.5	18.3	15.3	14.4	11.9	8.1	6.7	4.7	3.3	2.0

Sample mass, as received, meets minimum mass requirements of test method: Yes ____ No X

Performed By: EA **Checked By:** Patrick Edmiston

Remarks:

Prewashed
Entire Sample X
Mass Retained on #200 Only ____
Not Prewashed: ____

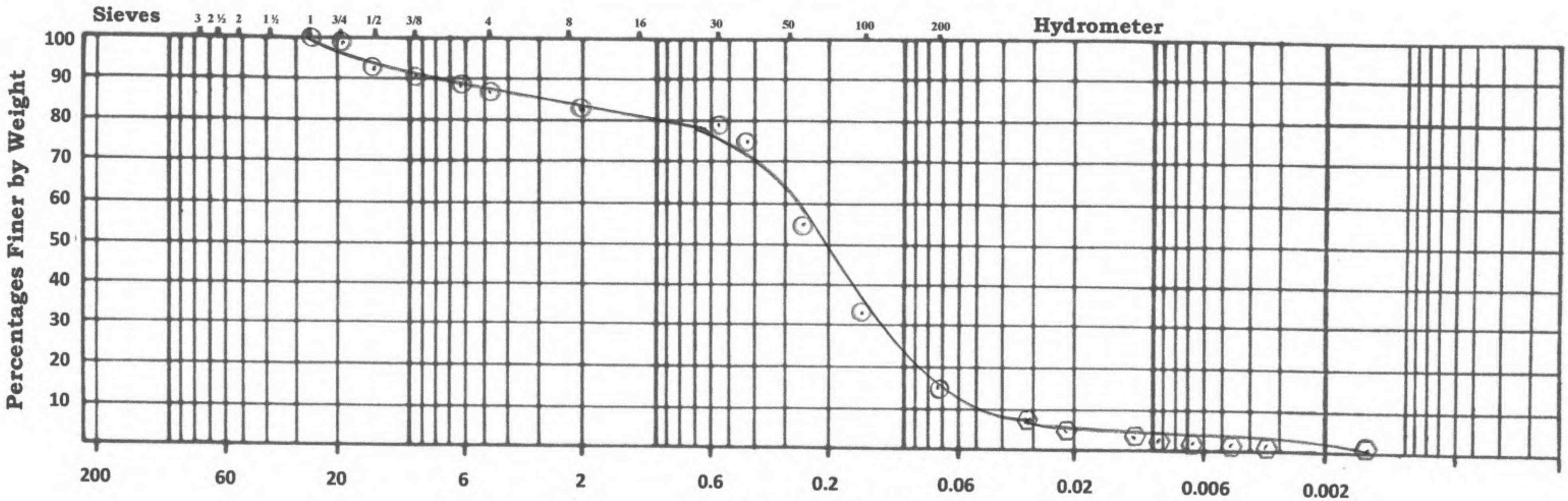
PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058~ pwlabsinc@hotmail.com

Project #: L-21003

Report #: 4

Date: February 11, 2021

Hydrometer Analysis



Boulders Cobbles	Coarse Gravel	Medium Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Silt	Clay

228 | 76.2 | 25.4 | 9.52 | 2.0 | 0.59 | 0.25 | 0.074 | 0.002 mm

9 in. | 3 in. | 1 in. | 3/8 in. | No. 10 | No. 30 | No. 60 | No. 200

Lab I.D.: 40599	Project #: L-21003
Sample I.D.: PDI-T-15-LB-MHWL	Project Title: Laboratory Testing
Depth (Feet): 0.0 - 0.5	National Grid - Gloversville
	Arcadis Project #48020236
	P.O. #B0036652.0009
Sieve Analysis ASTM D422 & D1140	
Hydrometer Analysis ASTM D422	

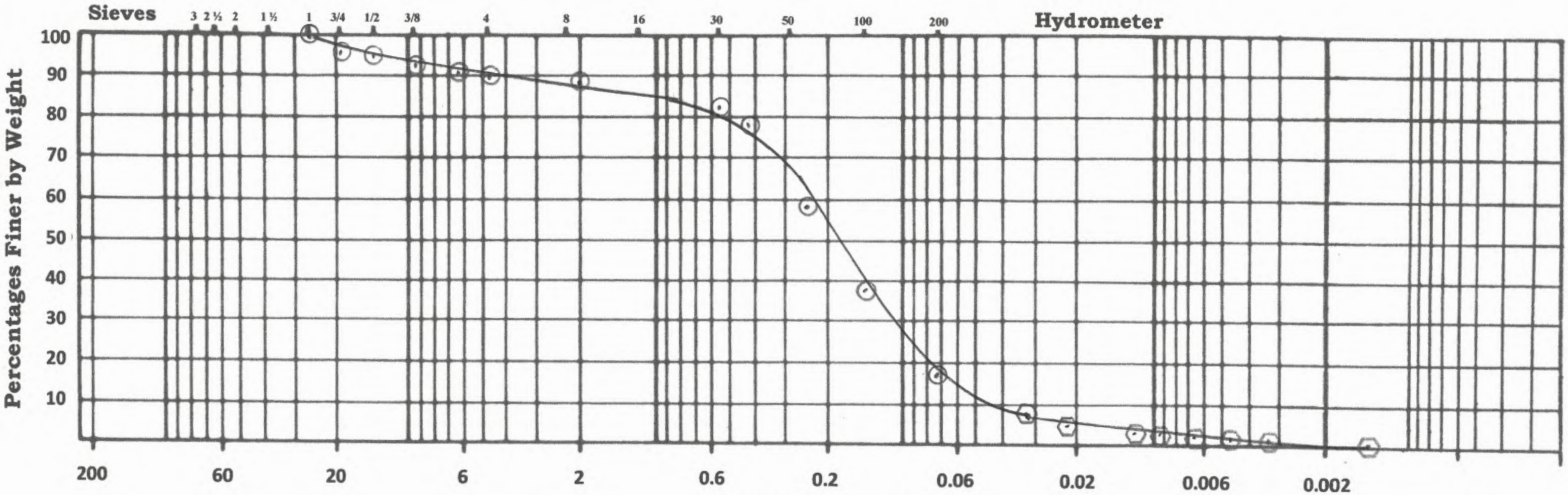
p-w labs
PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058~ pwlabsinc@hotmail.com

Project #: L-21003

Report #: 5

Date: February 11, 2021

Hydrometer Analysis



Boulders Cobbles	Coarse Gravel	Medium Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Silt	Clay

228	76.2	25.4	9.52	2.0	0.59	0.25	0.074	0.002 mm
9 in.	3 in.	1 in.	3/8 in.	No. 10	No. 30	No. 60	No. 200	

Lab I.D.: 40600	Project #: L-21003
Sample I.D.: PDI-T-15-LB-MHWL	Project Title: Laboratory Testing
Depth (Feet): 0.5 - 1.0	National Grid - Gloversville
	Arcadis Project #48020236
	P.O. #B0036652.0009
Sieve Analysis ASTM D422 & D1140	
Hydrometer Analysis ASTM D422	

PW Laboratories, Inc.
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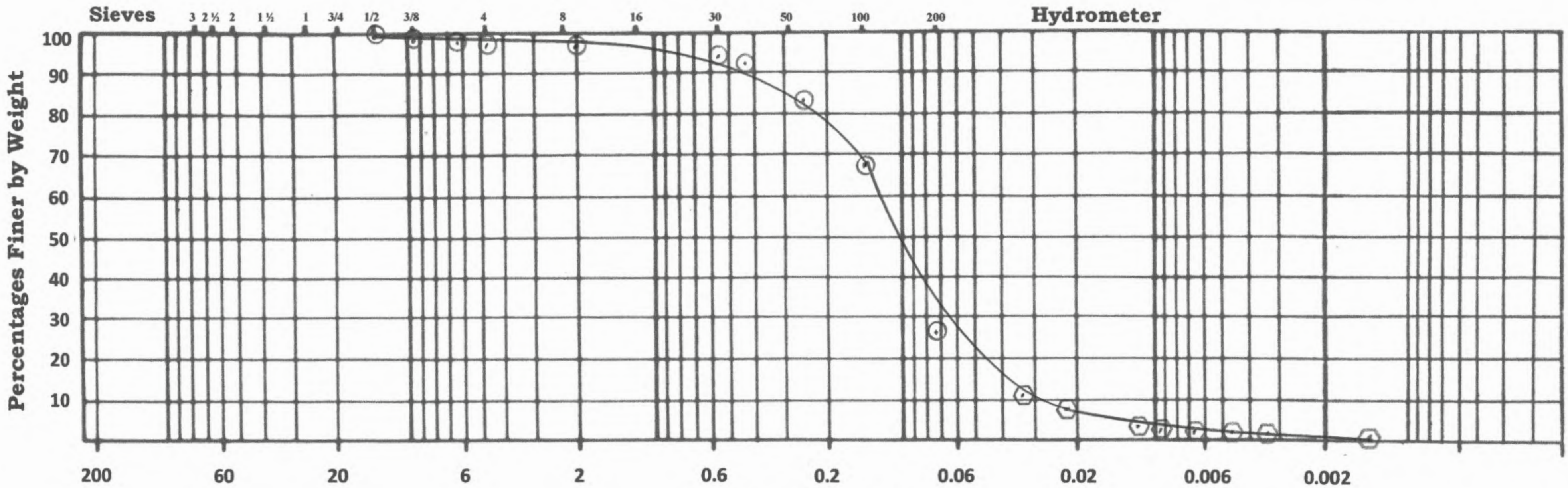
Office 315.437.1420 ~ Fax 315.503-3058~ pwlabsinc@hotmail.com

Project #:	L-21003
Report #:	6
Date:	February 11, 2021

Hydrometer Analysis



Boulders Cobbles	Coarse Gravel	Medium Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Silt	Clay

228 76.2 25.4 9.52 2.0 0.59 0.25 0.074 0.002 mm

9 in. 3 in. 1 in. 3/8 in. No. 10 No. 30 No. 60 No. 200

Lab I.D. :	40603	Project #:	L-21003
Sample I.D.:	PDI-T-14-RB-MHWL	Project Title:	Laboratory Testing
Depth (Feet):	0.0 - 0.5		National Grid - Gloversville
			Arcadis Project #48020236
			P.O. #B0036652.0009
Sieve Analysis ASTM D422 & D1140			
Hydrometer Analysis ASTM D422			

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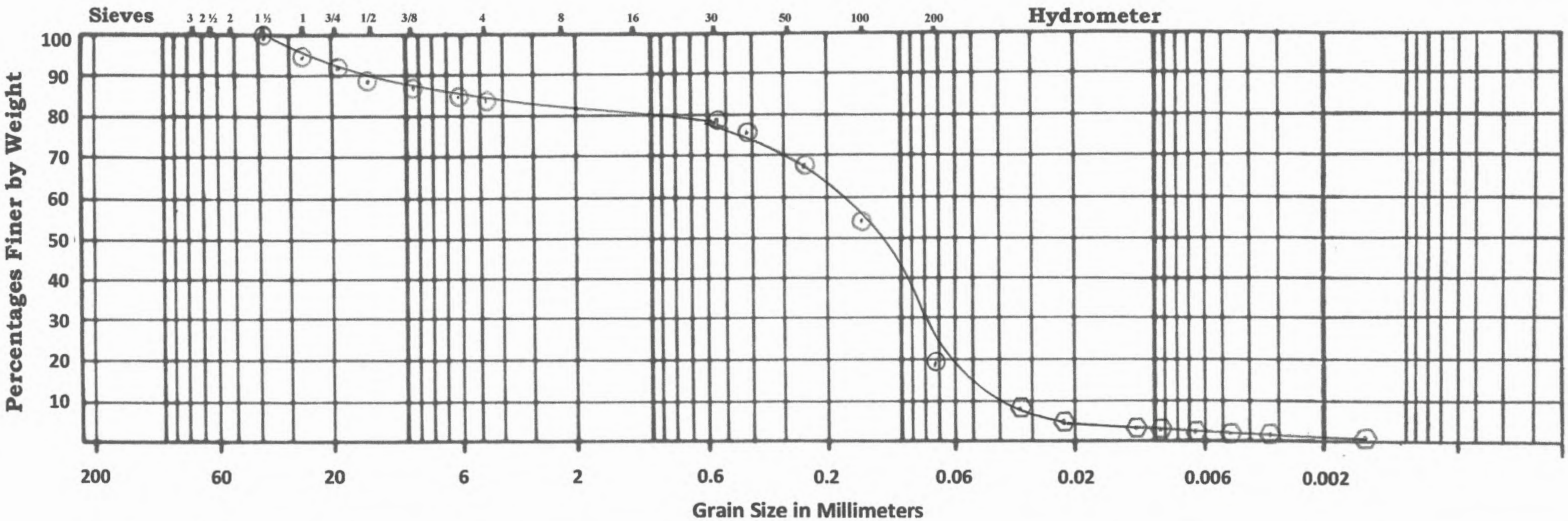
Office 315.437.1420 ~ Fax 315.503-3058 ~ pwlabsinc@hotmail.com

Project #: L-21003

Report #: 7

Date: February 11, 2021

Hydrometer Analysis



Boulders Cobbles	Coarse Gravel	Medium Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Silt	Clay

228	76.2	25.4	9.52	2.0	0.59	0.25	0.074	0.002 mm
9 in.	3 in.	1 in.	3/8 in.	No. 10	No. 30	No. 60	No. 200	

Lab I.D.: 40604	Project #: L-21003
Sample I.D.: PDI-T-14-RB-MHWL	Project Title: Laboratory Testing
Depth (Feet): 0.5 - 0.8	National Grid - Gloversville
	Arcadis Project #48020236
	P.O. #B0036652.0009
Sieve Analysis ASTM D422 & D1140	
Hydrometer Analysis ASTM D422	

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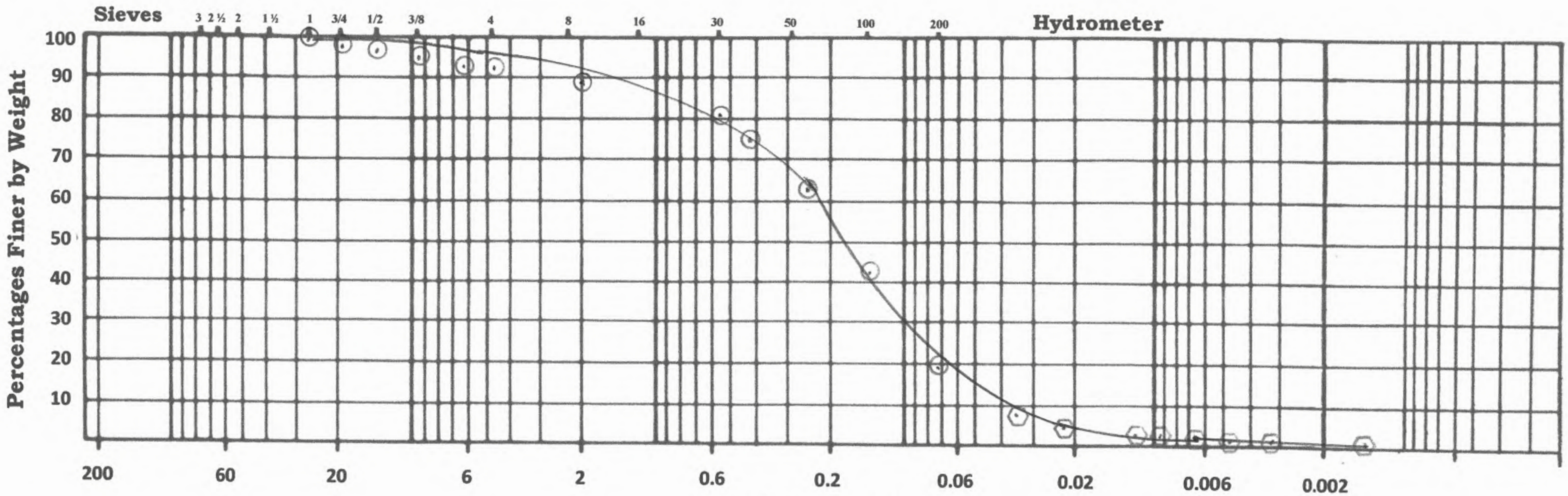
Project #: L-21003

Report #: 8

Date: February 11, 2021

Hydrometer Analysis



Boulders Cobbles	Coarse Gravel	Medium Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Silt	Clay

228 9 in. | 76.2 3 in. | 25.4 1 in. | 9.52 3/8 in. | 2.0 No. 10 | 0.59 No. 30 | 0.25 No. 60 | 0.074 No. 200 | 0.002 mm

Lab I.D.: 40605	Project #: L-21003
Sample I.D.: PDI-T-13-RB-MB	Project Title: Laboratory Testing
Depth (Feet): 0.0 - 0.5	National Grid - Gloversville
	Arcadis Project #48020236
	P.O. #B0036652.0009
Sieve Analysis ASTM D422 & D1140	
Hydrometer Analysis ASTM D422	

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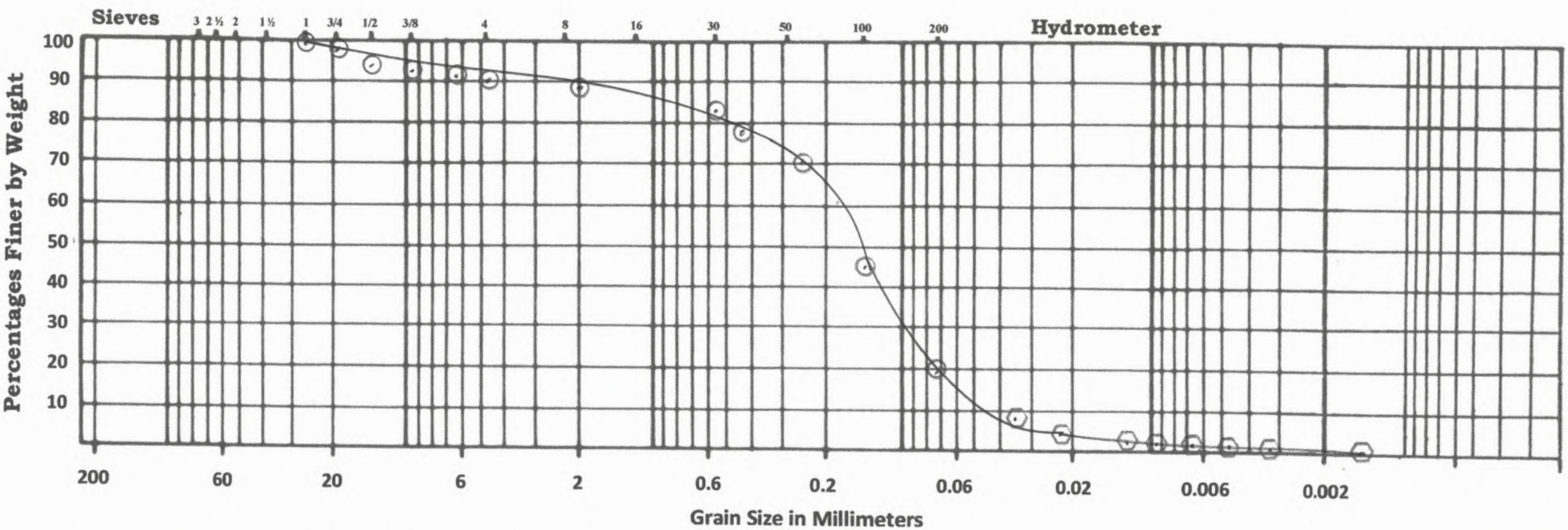
Project #: L-21003

Report #: 9

Date: February 11, 2021

Hydrometer Analysis



Boulders Cobbles	Coarse Gravel	Medium Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Silt	Clay

228 76.2 25.4 9.52 2.0 0.59 0.25 0.074 0.002 mm

9 in. 3 in. 1 in. 3/8 in. No. 10 No. 30 No. 60 No. 200

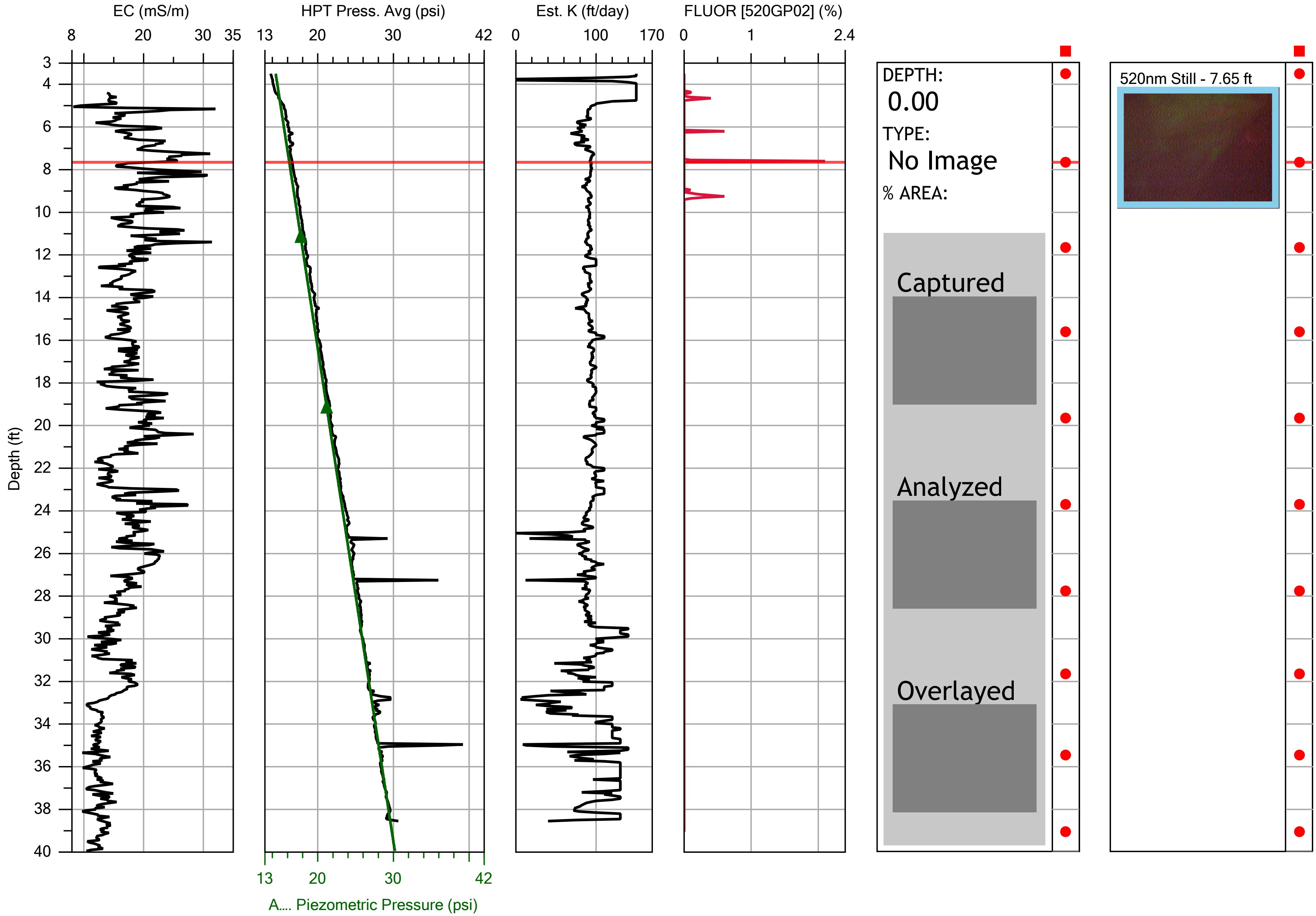
Lab I.D.: 40606
Sample I.D.: PDI-T-13-RB-MB
Depth (Feet): 0.5 - 1.0

Project #: L-21003
Project Title: Laboratory Testing
National Grid - Gloversville
Arcadis Project #48020236
P.O. #B0036652.0009

Sieve Analysis ASTM D422 & D1140
Hydrometer Analysis ASTM D422

Appendix D

Direct Image Logs



		File: PDI-CRB-1.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/27/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-CRB-1.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	59.4	8.0	PASS
High	360.0	370.6	2.9	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   1.0
Black Box   520nm   0.0
Diesel 520nm   97.4
Motor Oil   520nm   95.1

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Tue Oct 27 2020 08:00:10

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.628	0.0	93.960
TOP with FLOW>0	13.897	228.2	95.820
BOTTOM with FLOW=0	13.417	0.0	92.510
BOTTOM with FLOW>0	13.688	222.8	94.370

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
Probe advancement with HPT flow valve and/or pump switch turned off at 3.55 ft (1.082 m).
Probe advancement with HPT flow valve and/or pump switch turned off at 3.60 ft (1.097 m).
LOG START TIME: Tue Oct 27 2020 08:47:28

Probe advancement with HPT flow valve and/or pump switch turned off at 4.30 ft (1.311 m).
LOG END DEPTH: 39.05 ft (11.902 m)
LOG END TIME: Tue Oct 27 2020 09:37:35

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	1.0	63.2	62.3
Black Box	520nm	0.0	0.0	0.0
Diesel	520nm	97.4	94.5	2.9
Motor Oil	520nm	95.1	98.6	3.5

Frame grabber settings:
Brightness: 111
Contrast: 140

Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Tue Oct 27 2020 10:37:03

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.591	0.0	93.710
TOP with FLOW>0	13.862	246.9	95.570
BOTTOM with FLOW=0	13.381	0.0	92.260
BOTTOM with FLOW>0	13.665	248.3	94.220

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.5 kPa)

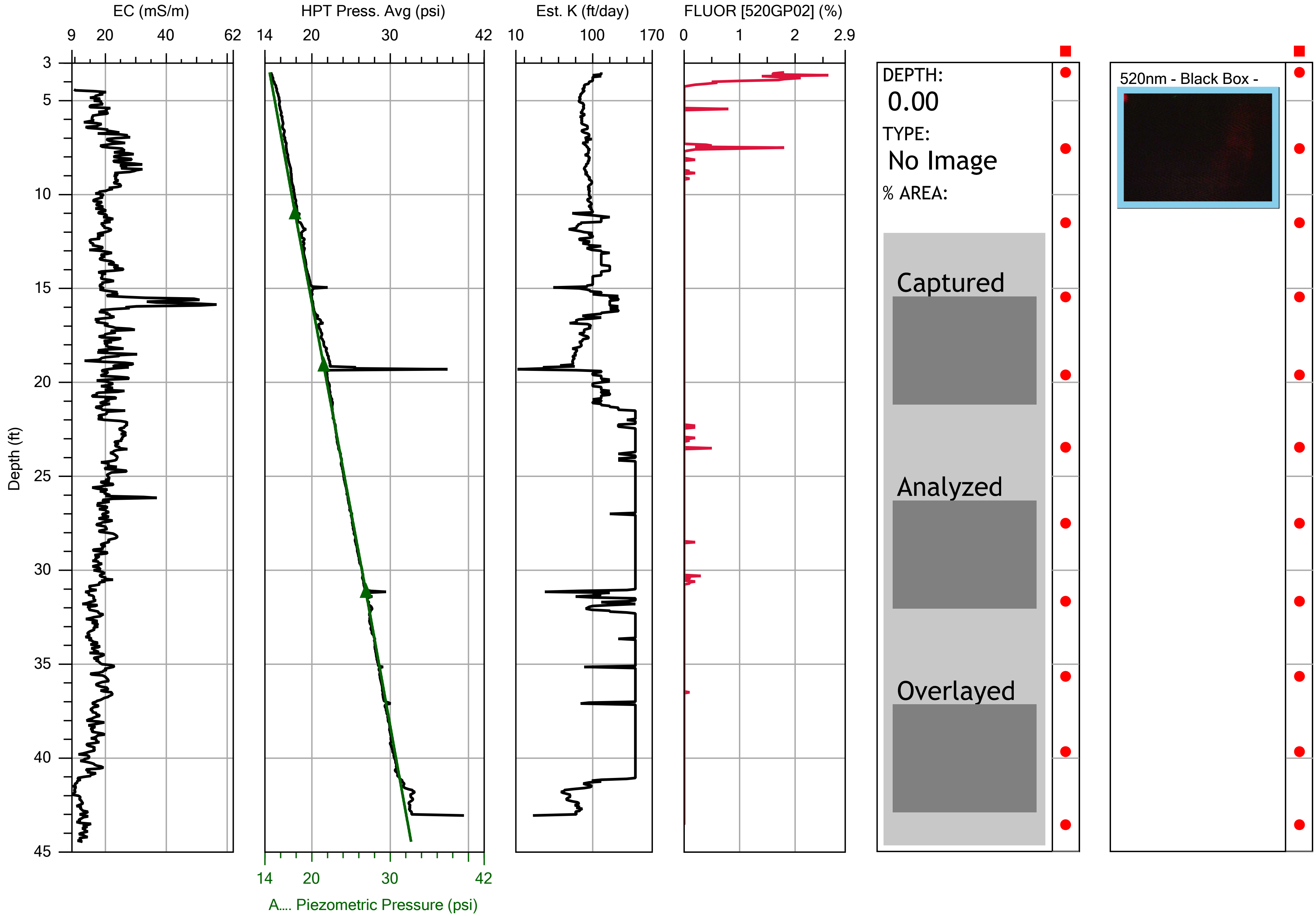
TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	56.8	3.2	PASS
High	360.0	368.9	2.5	PASS

********** USER NOTES **********

Refusal at 39 feet



		File: PDF-CRB-2.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/26/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-CRB-2.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	58.9	7.0	PASS
High	360.0	354.7	1.5	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   24.1
Black Box   520nm   0.0
Diesel 520nm   92.8
Motor Oil   520nm   95.7

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Mon Oct 26 2020 14:00:33

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.592	0.0	93.710
TOP with FLOW>0	13.900	241.0	95.840
BOTTOM with FLOW=0	13.380	0.0	92.250
BOTTOM with FLOW>0	13.702	251.3	94.470

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
LOG START TIME: Mon Oct 26 2020 14:11:45

LOG END DEPTH: 43.55 ft (13.274 m)
LOG END TIME: Mon Oct 26 2020 15:03:25

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	24.1	0.4	23.7
Black Box	520nm	0.0	0.4	0.4
Diesel	520nm	92.8	96.9	4.1
Motor Oil	520nm	95.7	97.7	2.0

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Mon Oct 26 2020 15:45:50

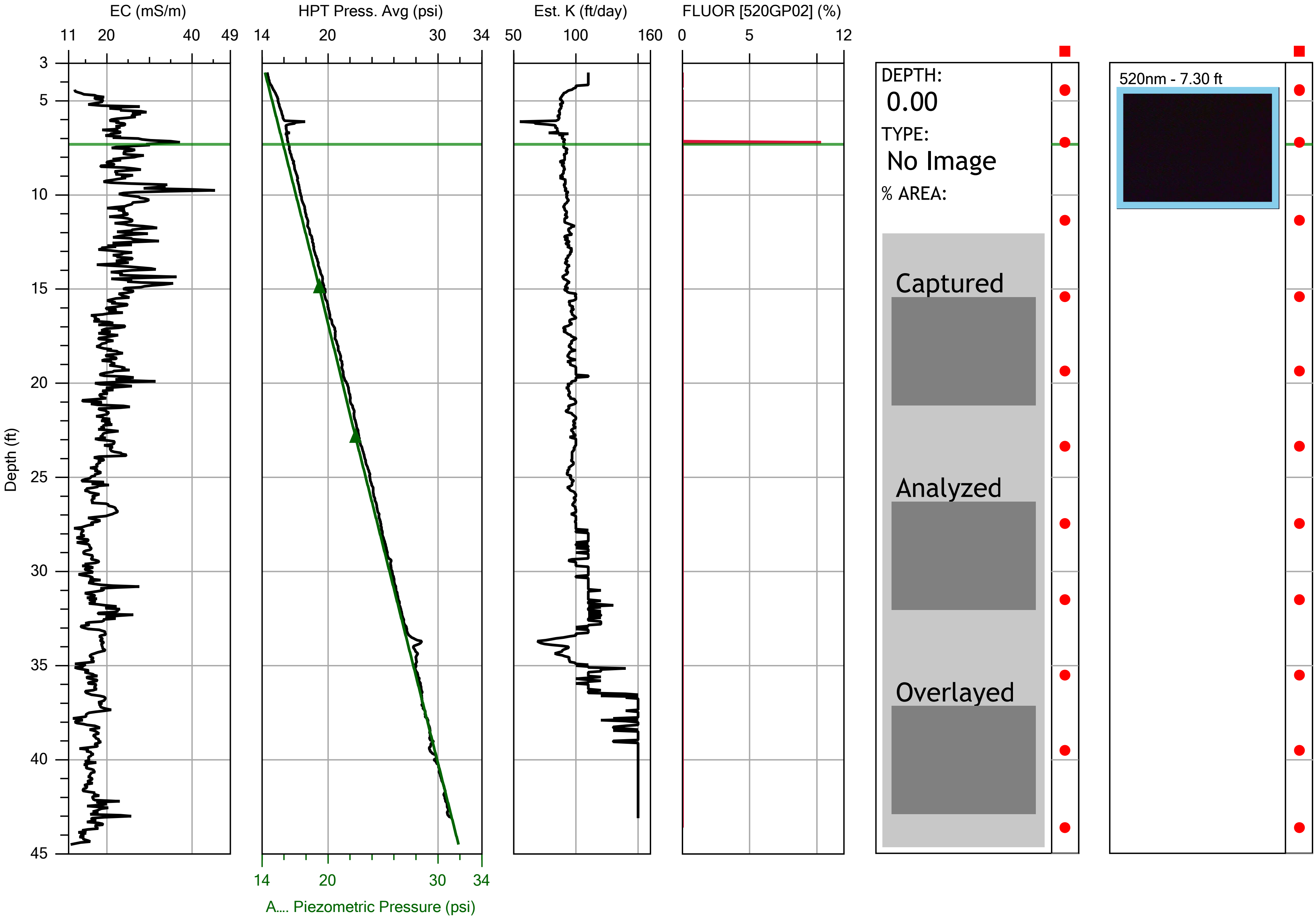
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.549	0.0	93.420
TOP with FLOW>0	13.797	248.9	95.130
BOTTOM with FLOW=0	13.333	0.0	91.930
BOTTOM with FLOW>0	13.585	277.3	93.660

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	58.4	6.1	PASS
High	360.0	372.5	3.5	PASS



Direct Image® By Geoprobe Systems®

		File: PDI-CRB-3.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/27/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-CRB-3.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	59.6	8.4	PASS
High	360.0	365.9	1.6	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST

Visual Target	IR	83.6
Black Box	520nm	0.0
Diesel 520nm	89.2	
Motor Oil	520nm	95.9

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Tue Oct 27 2020 14:34:46

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.550	0.0	93.420
TOP with FLOW>0	13.858	243.0	95.550
BOTTOM with FLOW=0	13.337	0.0	91.950
BOTTOM with FLOW>0	13.629	234.8	93.970

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
LOG START TIME: Tue Oct 27 2020 14:47:09

LOG END DEPTH: 43.60 ft (13.289 m)
LOG END TIME: Tue Oct 27 2020 15:35:24

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	83.6	46.5	37.1
Black Box	520nm	0.0	0.0	0.0
Diesel	520nm	89.2	99.3	10.1
Motor Oil	520nm	95.9	94.1	1.8

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Tue Oct 27 2020 16:00:45

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.562	0.0	93.510
TOP with FLOW>0	13.838	250.8	95.410
BOTTOM with FLOW=0	13.338	0.0	91.970
BOTTOM with FLOW>0	13.635	252.0	94.010

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

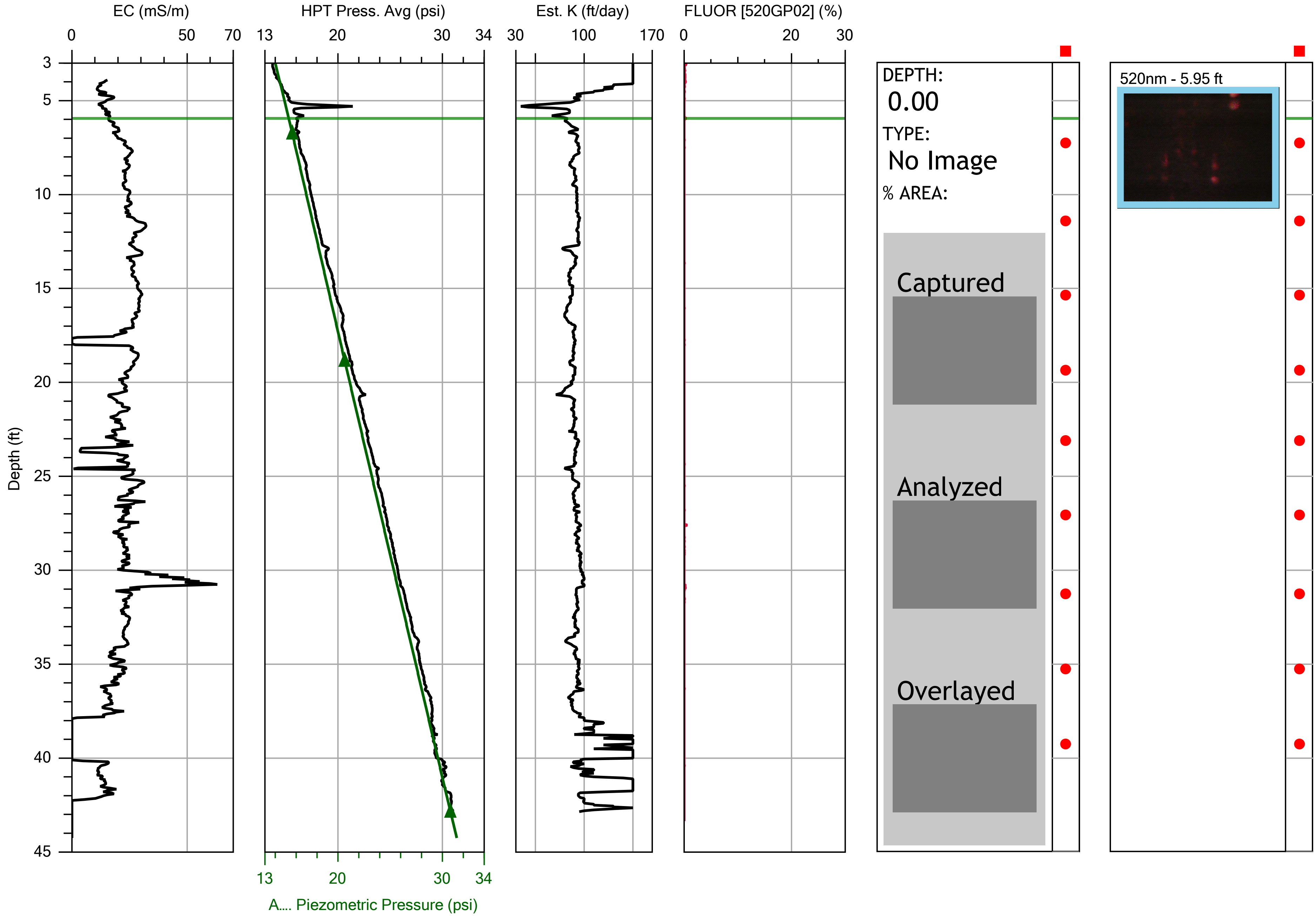
TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.6	4.7	PASS
High	360.0	371.5	3.2	PASS

********** USER NOTES **********

The 10 percent spike is a false reading. Paused the log to take the probe out of the ground to check the window and the sun light gave us a reading.



File: PDI-CRB-4.OIHP		
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/28/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-CRB-4.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	59.3	7.9	PASS
High	360.0	349.0	3.0	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST

Visual Target	IR	0.0
Black Box	520nm	0.0
Diesel 520nm	90.5	
Motor Oil	520nm	95.4

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Wed Oct 28 2020 08:11:00

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.506	0.0	93.120
TOP with FLOW>0	13.844	262.9	95.450
BOTTOM with FLOW=0	13.300	0.0	91.700
BOTTOM with FLOW>0	13.648	258.1	94.100

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.4 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
LOG START TIME: Wed Oct 28 2020 08:24:06

LOG END DEPTH: 43.35 ft (13.213 m)
LOG END TIME: Wed Oct 28 2020 09:16:04

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	0.0	68.0	68.0
Black Box	520nm	0.0	0.0	0.0
Diesel	520nm	90.5	94.5	4.1
Motor Oil	520nm	95.4	98.1	2.8

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Wed Oct 28 2020 09:46:17

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.518	0.0	93.200
TOP with FLOW>0	13.821	262.0	95.290
BOTTOM with FLOW=0	13.304	0.0	91.730
BOTTOM with FLOW>0	13.615	264.3	93.880

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.5 kPa)

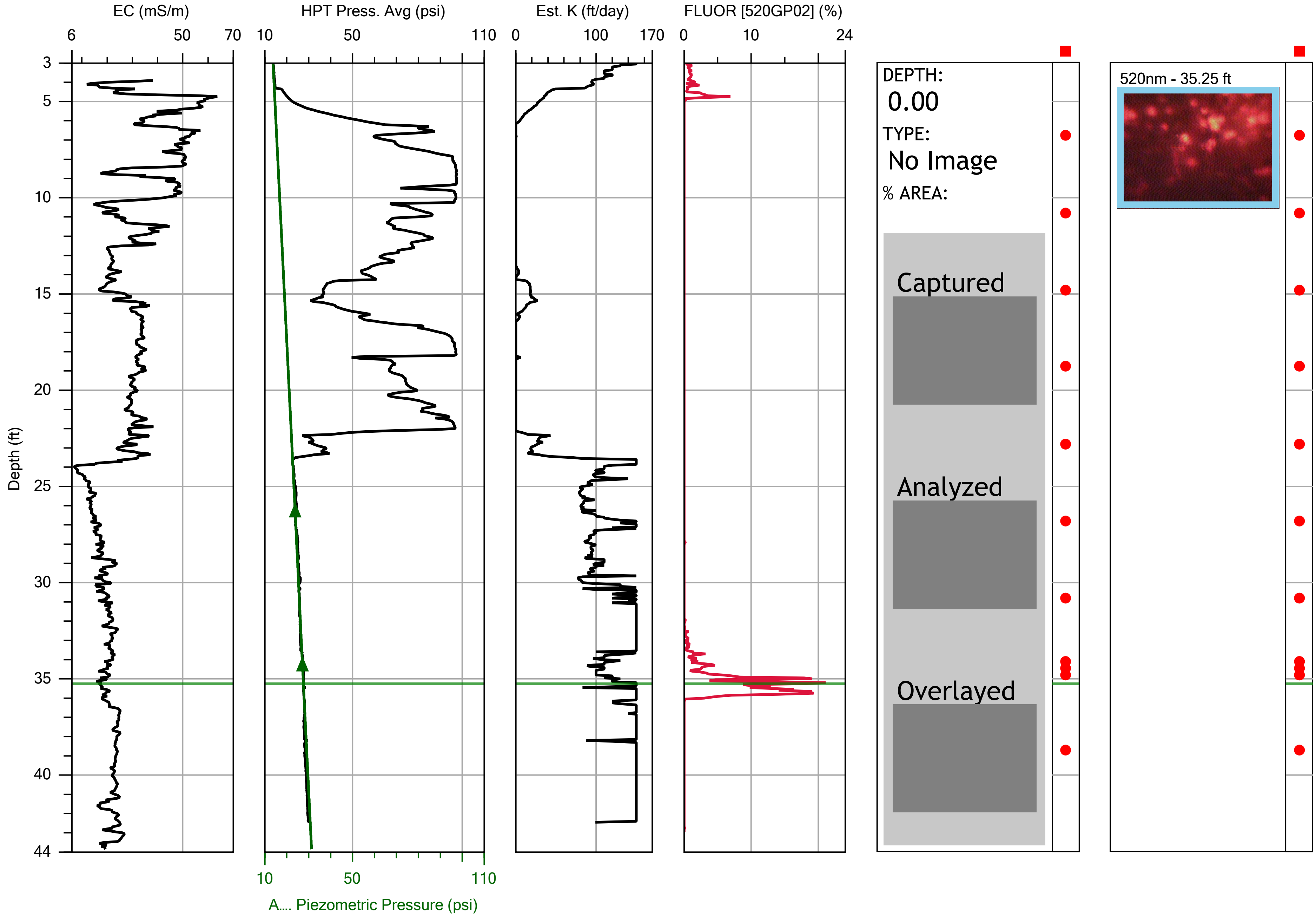
TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	60.2	9.4	PASS
High	360.0	367.5	2.1	PASS

Post-Log EC Troubleshooting Tests

Test	Value	P/F
Instrument Calibration Tests		
10 Ohms:	10.2 Ohms	PASS
100 Ohms:	100.2 Ohms	PASS
1000 Ohms:	1023.1 Ohms	PASS



Direct Image By Geoprobe Systems

		File: PDI-CRB-5.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/28/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-CRB-5.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	60.0	9.2	PASS
High	360.0	368.2	2.3	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   0.8
Black Box   520nm   0.0
Diesel 520nm   90.0
Motor Oil   520nm   98.4

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Wed Oct 28 2020 10:07:46

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.517	0.0	93.190
TOP with FLOW>0	13.838	265.3	95.410
BOTTOM with FLOW=0	13.301	0.0	91.710
BOTTOM with FLOW>0	13.629	262.3	93.970

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
LOG START TIME: Wed Oct 28 2020 10:44:20

LOG END DEPTH: 42.95 ft (13.091 m)
LOG END TIME: Wed Oct 28 2020 11:18:07

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	0.8	0.7	0.1
Black Box	520nm	0.0	0.0	0.0
Diesel	520nm	90.0	93.3	3.3
Motor Oil	520nm	98.4	100.0	1.5

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Wed Oct 28 2020 11:44:00

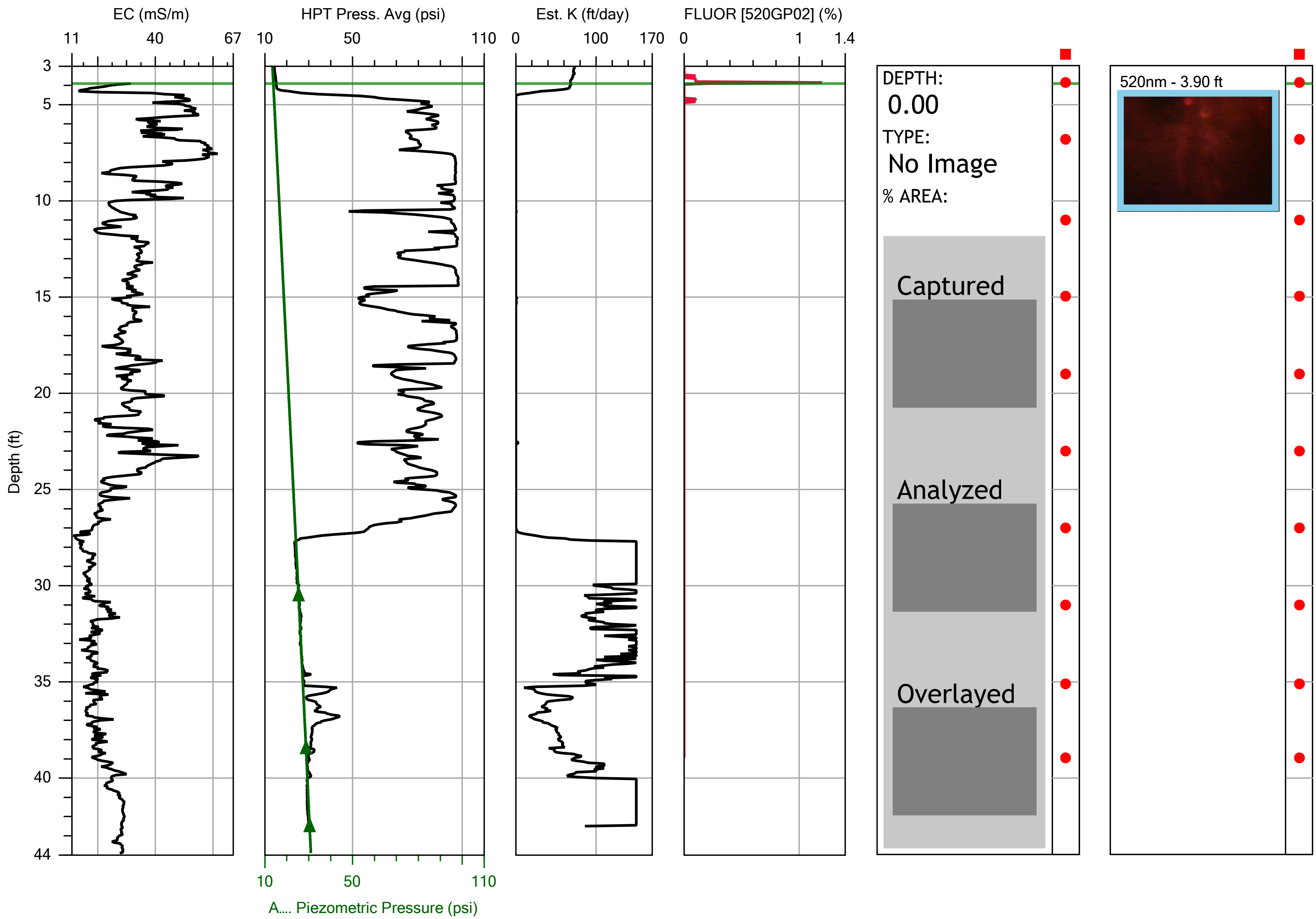
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.522	0.0	93.230
TOP with FLOW>0	13.852	258.9	95.510
BOTTOM with FLOW=0	13.300	0.0	91.700
BOTTOM with FLOW>0	13.642	258.0	94.060

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	60.2	9.5	PASS
High	360.0	369.2	2.6	PASS



		File: PDI-CRB-6.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/28/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-CRB-6.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	59.6	8.4	PASS
High	360.0	331.4	8.0	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   28.8
Black Box   520nm   0.0
Diesel 520nm   95.0
Motor Oil   520nm   97.4

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Wed Oct 28 2020 13:48:25

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.516	0.0	93.190
TOP with FLOW>0	13.864	255.3	95.590
BOTTOM with FLOW=0	13.298	0.0	91.690
BOTTOM with FLOW>0	13.659	256.6	94.170

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
Probe advancement with HPT flow valve and/or pump switch turned off at 3.05 ft (0.930 m).
Probe advancement with HPT flow valve and/or pump switch turned off at 3.20 ft (0.975 m).
LOG START TIME: Wed Oct 28 2020 13:57:23

LOG END DEPTH: 43.00 ft (13.106 m)
LOG END TIME: Wed Oct 28 2020 14:42:08

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	28.8	30.5	1.7
Black Box	520nm	0.0	0.0	0.0
Diesel	520nm	95.0	84.0	11.0
Motor Oil	520nm	97.4	87.6	9.9

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0

Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Wed Oct 28 2020 15:21:48

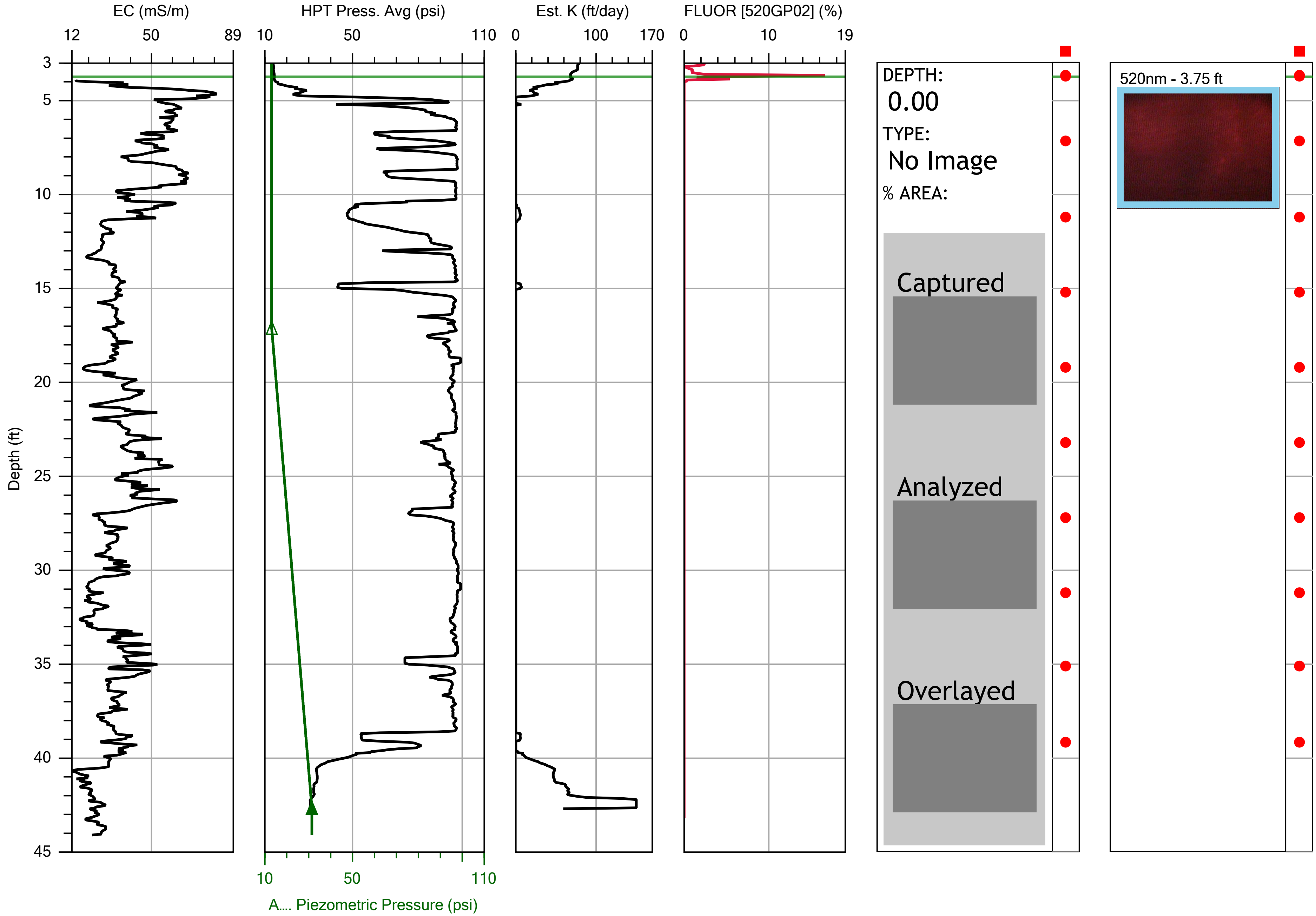
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.488	0.0	93.000
TOP with FLOW>0	13.788	261.0	95.070
BOTTOM with FLOW=0	13.272	0.0	91.510
BOTTOM with FLOW>0	13.582	261.3	93.650

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	59.9	8.9	PASS
High	360.0	371.9	3.3	PASS



		File: PDI-CRB-7.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/29/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-CRB-7.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	60.3	9.6	PASS
High	360.0	342.3	4.9	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   0.5
Black Box   520nm   0.0
Diesel 520nm   88.2
Motor Oil   520nm   93.5

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Thu Oct 29 2020 07:51:41

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.460	0.0	92.800
TOP with FLOW>0	13.782	251.2	95.020
BOTTOM with FLOW=0	13.260	0.0	91.420
BOTTOM with FLOW>0	13.575	236.9	93.600

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.20 psi (1.4 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
LOG START TIME: Thu Oct 29 2020 08:27:43

LOG END DEPTH: 43.20 ft (13.167 m)
LOG END TIME: Thu Oct 29 2020 09:05:49

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	0.5	64.3	63.7
Black Box	520nm	0.0	0.0	0.0
Diesel	520nm	88.2	85.2	2.9
Motor Oil	520nm	93.5	89.9	3.7

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Thu Oct 29 2020 09:47:42

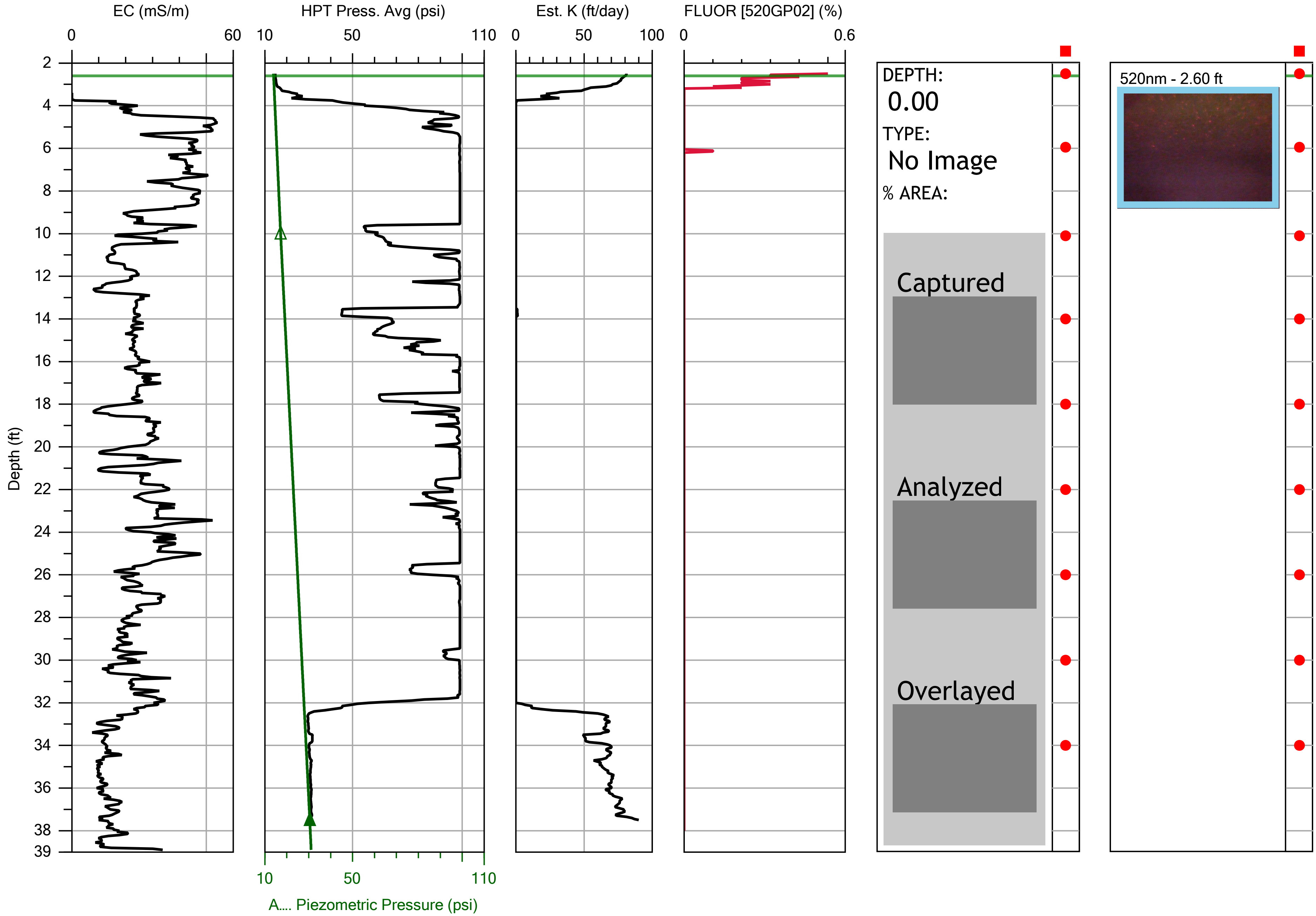
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.467	0.0	92.850
TOP with FLOW>0	13.794	237.3	95.110
BOTTOM with FLOW=0	13.258	0.0	91.410
BOTTOM with FLOW>0	13.576	235.5	93.610

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.4 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	55.6	1.0	PASS
High	360.0	376.6	4.6	PASS



		File: PDI-CRB-8.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/29/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-CRB-8.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	54.0	1.8	PASS
High	360.0	386.3	7.3	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   78.6
Black Box   520nm   0.0
Diesel 520nm   82.7
Motor Oil   520nm   98.0

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Thu Oct 29 2020 11:17:57

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.524	0.0	93.240
TOP with FLOW>0	13.935	245.7	96.080
BOTTOM with FLOW=0	13.312	0.0	91.790
BOTTOM with FLOW>0	13.731	244.4	94.670

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
LOG START TIME: Thu Oct 29 2020 11:26:45

LOG END DEPTH: 38.00 ft (11.582 m)
LOG END TIME: Thu Oct 29 2020 11:55:59

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	78.6	97.7	19.1
Black Box	520nm	0.0	0.0	0.0
Diesel	520nm	82.7	98.3	15.6
Motor Oil	520nm	98.0	96.5	1.5

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Thu Oct 29 2020 12:26:36

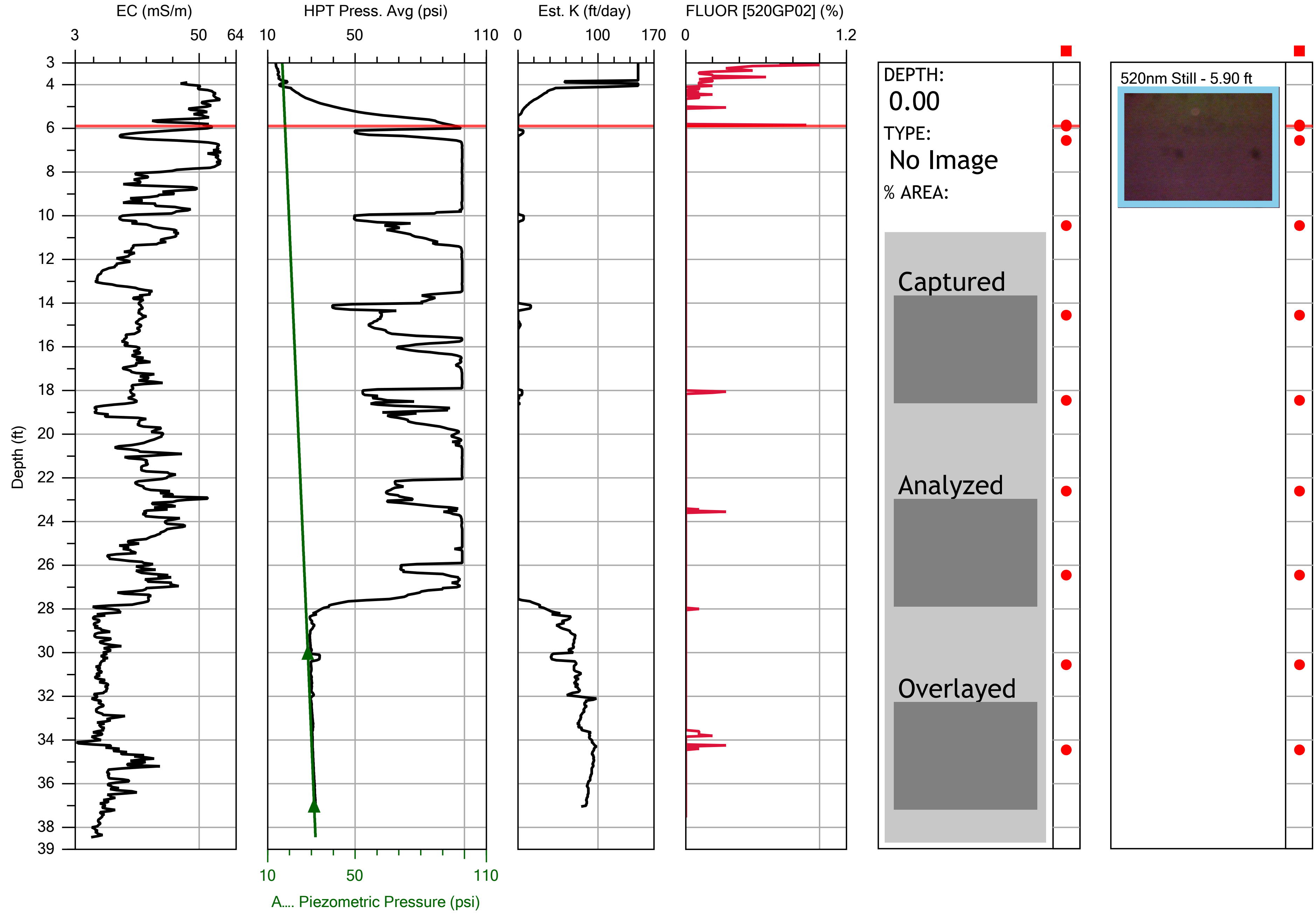
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.500	0.0	93.080
TOP with FLOW>0	13.873	248.4	95.650
BOTTOM with FLOW=0	13.297	0.0	91.680
BOTTOM with FLOW>0	13.667	246.6	94.230

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.20 psi (1.4 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.3	4.1	PASS
High	360.0	338.8	5.9	PASS



		File: PDI-CRB-9.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/29/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-CRB-9.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	52.8	3.9	PASS
High	360.0	340.1	5.5	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   52.0
Black Box   520nm   0.0
Diesel 520nm   85.8
Motor Oil   520nm   99.7

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Thu Oct 29 2020 14:14:44

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.468	0.0	92.860
TOP with FLOW>0	13.866	253.2	95.600
BOTTOM with FLOW=0	13.248	0.0	91.340
BOTTOM with FLOW>0	13.652	252.6	94.120

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
Probe advancement with HPT flow valve and/or pump switch turned off at 3.00 ft (0.914 m).
Probe advancement with HPT flow valve and/or pump switch turned off at 3.05 ft (0.930 m).
LOG START TIME: Thu Oct 29 2020 14:26:43

LOG END DEPTH: 37.55 ft (11.445 m)
LOG END TIME: Thu Oct 29 2020 15:07:44

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	52.0	1.2	50.8
Black Box	520nm	0.0	0.0	0.0
Diesel	520nm	85.8	79.8	6.0
Motor Oil	520nm	99.7	98.4	1.3

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0

Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Thu Oct 29 2020 15:40:45

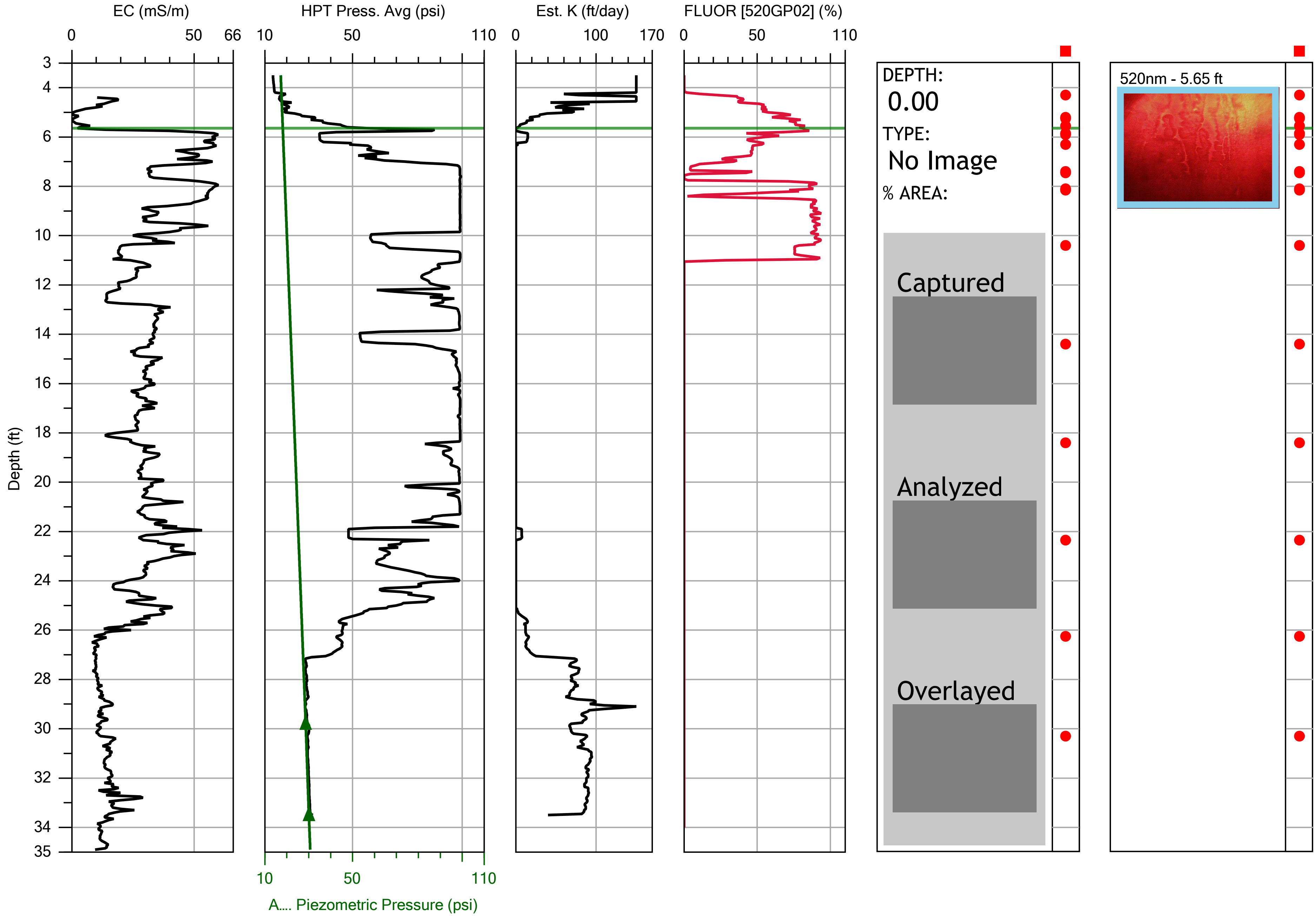
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.507	0.0	93.130
TOP with FLOW>0	13.882	250.2	95.720
BOTTOM with FLOW=0	13.298	0.0	91.680
BOTTOM with FLOW>0	13.667	249.5	94.230

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.4 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.9	5.2	PASS
High	360.0	346.8	3.7	PASS



		File: PDI-CRB-10.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/30/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-CRB-10.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	54.3	1.4	PASS
High	360.0	352.9	2.0	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   2.6
Black Box   520nm   0.0
Diesel 520nm   79.0
Motor Oil   520nm   97.7

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Fri Oct 30 2020 08:25:19

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.539	0.0	93.350
TOP with FLOW>0	13.970	254.3	96.320
BOTTOM with FLOW=0	13.325	0.0	91.870
BOTTOM with FLOW>0	13.767	255.2	94.920

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
LOG START TIME: Fri Oct 30 2020 08:54:36

LOG END DEPTH: 34.00 ft (10.363 m)
LOG END TIME: Fri Oct 30 2020 09:31:10

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	2.6	23.0	20.5
Black Box	520nm	0.0	0.0	0.0
Diesel	520nm	79.0	85.2	6.1
Motor Oil	520nm	97.7	98.7	1.0

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Fri Oct 30 2020 09:59:54

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.529	0.0	93.280
TOP with FLOW>0	13.942	254.7	96.130
BOTTOM with FLOW=0	13.322	0.0	91.850
BOTTOM with FLOW>0	13.742	255.5	94.750

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.4 kPa)

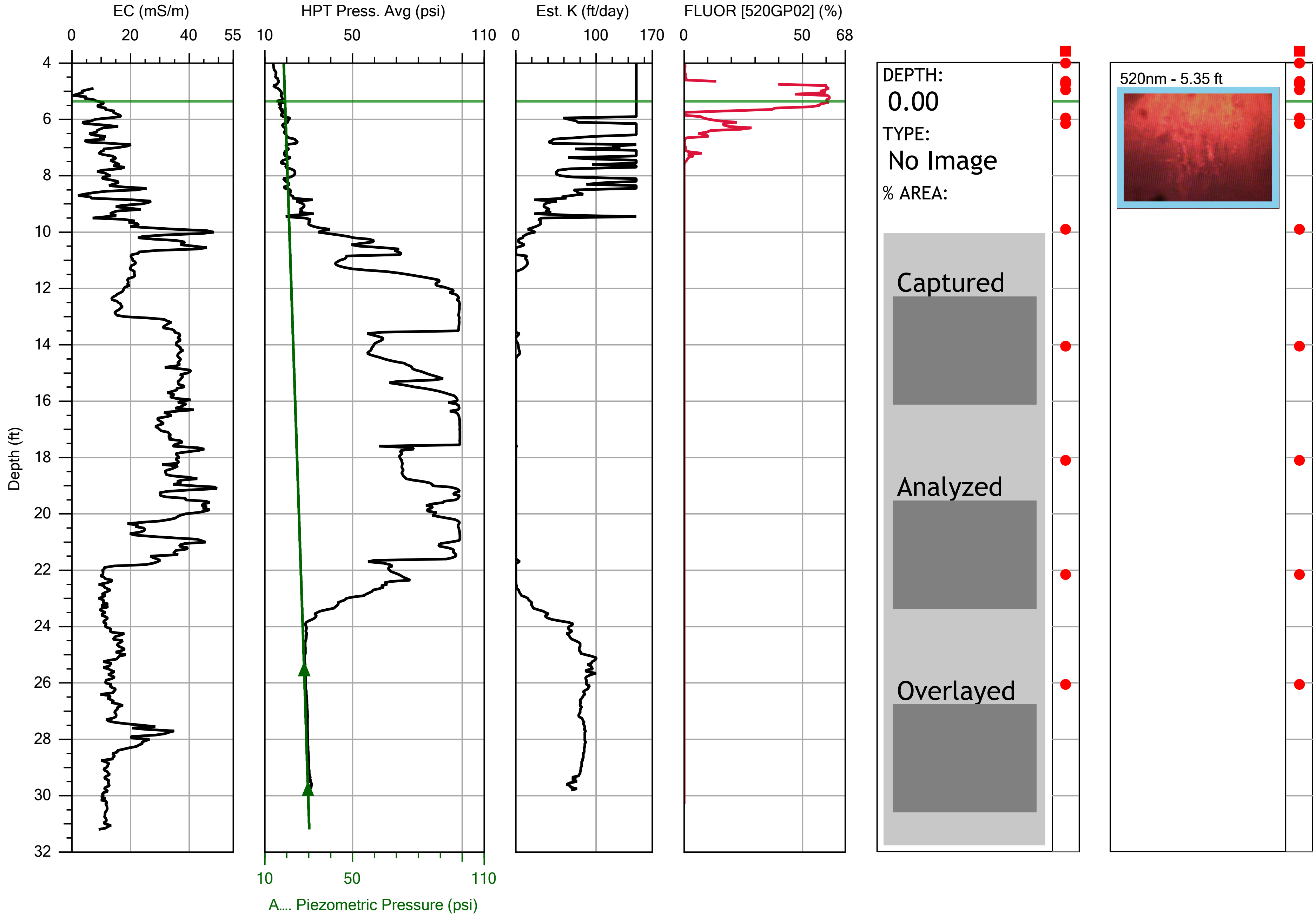
TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.0	3.6	PASS
High	360.0	342.4	4.9	PASS

********** USER NOTES **********

Refusal 34 feet



		File: PDI-CRB-11.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/30/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-CRB-11.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.3	4.1	PASS
High	360.0	342.4	4.9	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   7.2
Black Box   520nm   0.0
Diesel 520nm   83.4
Motor Oil   520nm   95.5

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Fri Oct 30 2020 10:10:04

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.540	0.0	93.360
TOP with FLOW>0	13.969	259.4	96.320
BOTTOM with FLOW=0	13.327	0.0	91.890
BOTTOM with FLOW>0	13.766	265.9	94.910

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
Probe advancement with HPT flow valve and/or pump switch turned off at 4.00 ft (1.219 m).
LOG START TIME: Fri Oct 30 2020 10:13:04

LOG END DEPTH: 30.30 ft (9.235 m)
LOG END TIME: Fri Oct 30 2020 11:50:27

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	7.2	41.3	34.2
Black Box	520nm	0.0	0.0	0.0
Diesel	520nm	83.4	85.4	2.0
Motor Oil	520nm	95.5	96.6	1.1

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Fri Oct 30 2020 12:13:30

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.562	0.0	93.510
TOP with FLOW>0	13.947	262.3	96.160
BOTTOM with FLOW=0	13.342	0.0	91.990
BOTTOM with FLOW>0	13.743	262.5	94.750

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

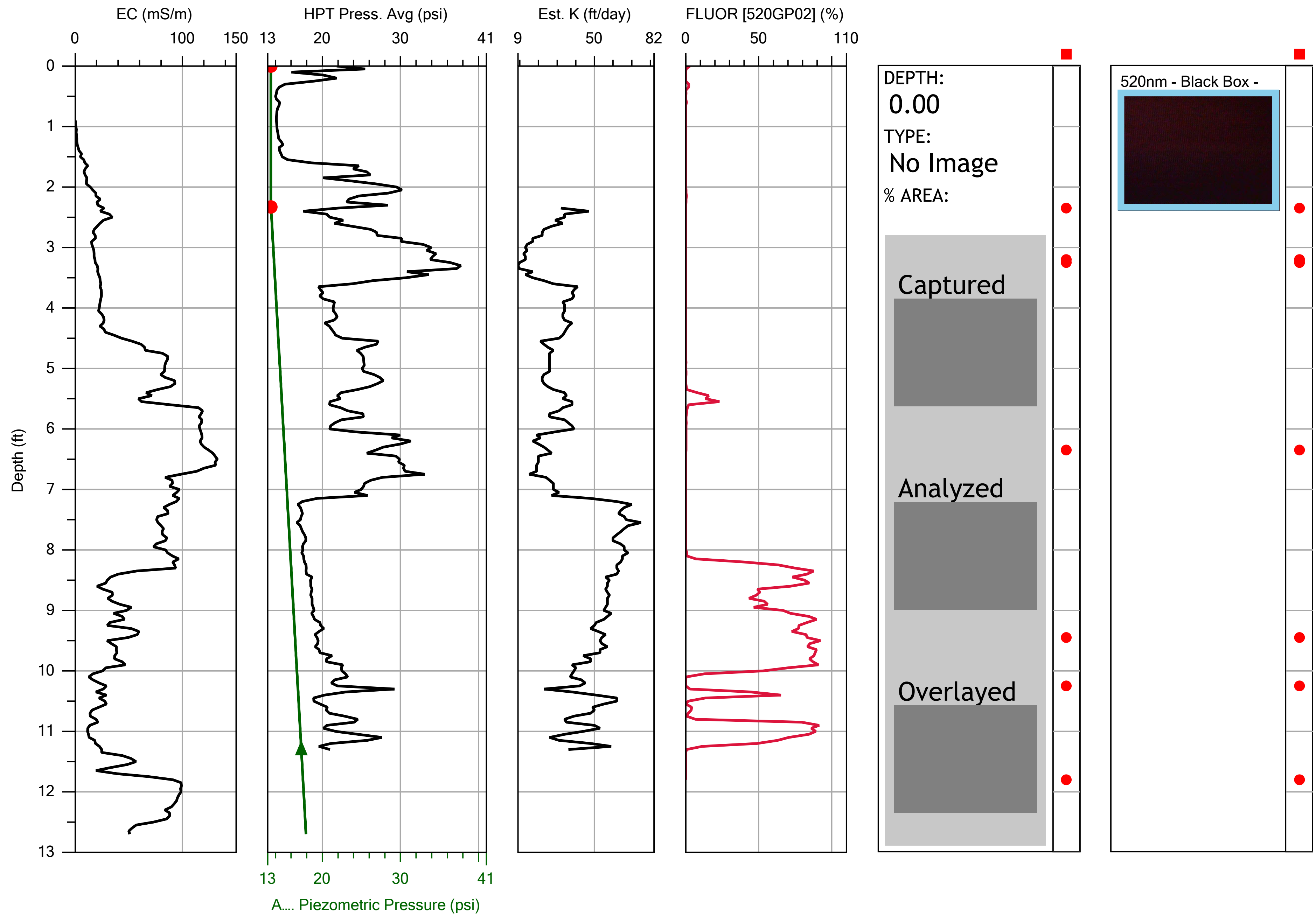
TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	58.5	6.4	PASS
High	360.0	342.8	4.8	PASS

********** USER NOTES **********

Refusal 30.3



Direct Image By Geoprobe Systems

		File: PDI-DPB-1.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 11/4/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-1.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	50.5	8.2	PASS
High	360.0	336.2	6.6	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   91.1
Black Box   520nm   0.0
Diesel 520nm   83.5
Motor Oil   520nm   99.1

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Wed Nov 4 2020 08:06:25

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.773	0.0	94.960
TOP with FLOW>0	14.145	257.4	97.530
BOTTOM with FLOW=0	13.554	0.0	93.450
BOTTOM with FLOW>0	13.944	257.6	96.140

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
Probe advancement with HPT flow valve and/or pump switch turned off at 0.05 ft (0.015 m).
LOG START TIME: Wed Nov 4 2020 08:13:00

LOG END DEPTH: 11.80 ft (3.597 m)
LOG END TIME: Wed Nov 4 2020 08:32:10

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	91.1	n/a	n/a
Black Box	520nm	0.0	0.0	0.0
Diesel	520nm	83.5	83.2	0.2
Motor Oil	520nm	99.1	99.7	0.6

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Wed Nov 4 2020 08:44:07

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.733	0.0	94.680
TOP with FLOW>0	14.081	272.0	97.090
BOTTOM with FLOW=0	13.518	0.0	93.200
BOTTOM with FLOW>0	13.873	278.1	95.650

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

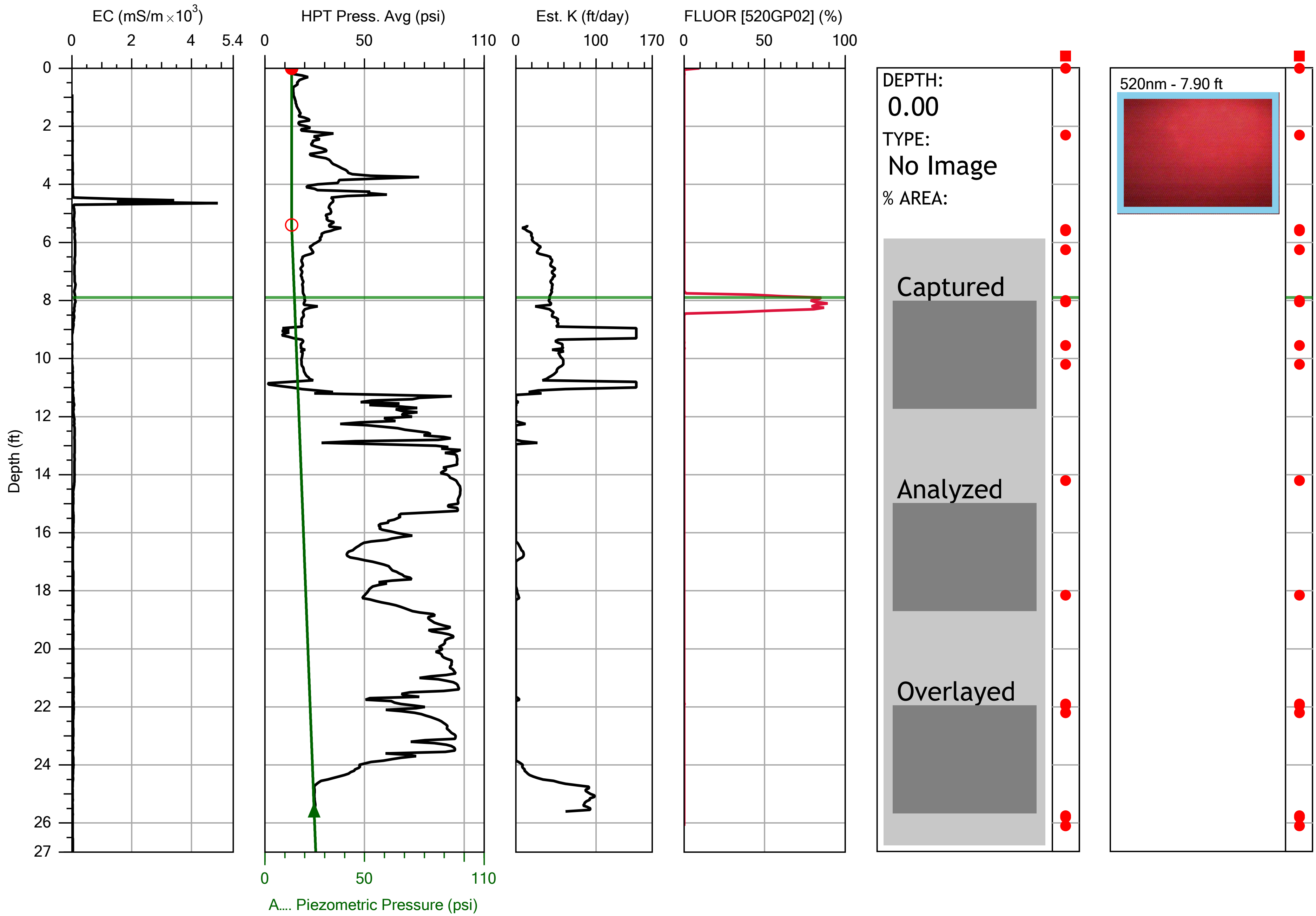
TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	58.2	5.9	PASS
High	360.0	380.0	5.6	PASS

********** USER NOTES **********

Refusal 12 feet



		File: PDI-DPB-1A.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 11/4/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-1a.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	60.0	9.1	PASS
High	360.0	337.3	6.3	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   47.5
Black Box   520nm   0.0
Diesel 520nm   87.0
Motor Oil   520nm   91.6

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Wed Nov 4 2020 09:01:48

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.743	0.0	94.750
TOP with FLOW>0	14.089	274.0	97.140
BOTTOM with FLOW=0	13.523	0.0	93.240
BOTTOM with FLOW>0	13.887	275.7	95.750

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
Probe advancement with HPT flow valve and/or pump switch turned off at 0.05 ft (0.015 m).
LOG START TIME: Wed Nov 4 2020 09:06:10

LOG END DEPTH: 26.10 ft (7.955 m)
LOG END TIME: Wed Nov 4 2020 09:35:39

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	47.5	n/a	n/a
Black Box	520nm	0.0	n/a	n/a
Diesel	520nm	87.0	n/a	n/a
Motor Oil	520nm	91.6	n/a	n/a

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Wed Nov 4 2020 09:50:41

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.751	0.0	94.810
TOP with FLOW>0	14.071	257.9	97.020
BOTTOM with FLOW=0	13.534	0.0	93.310
BOTTOM with FLOW>0	13.859	265.0	95.560

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

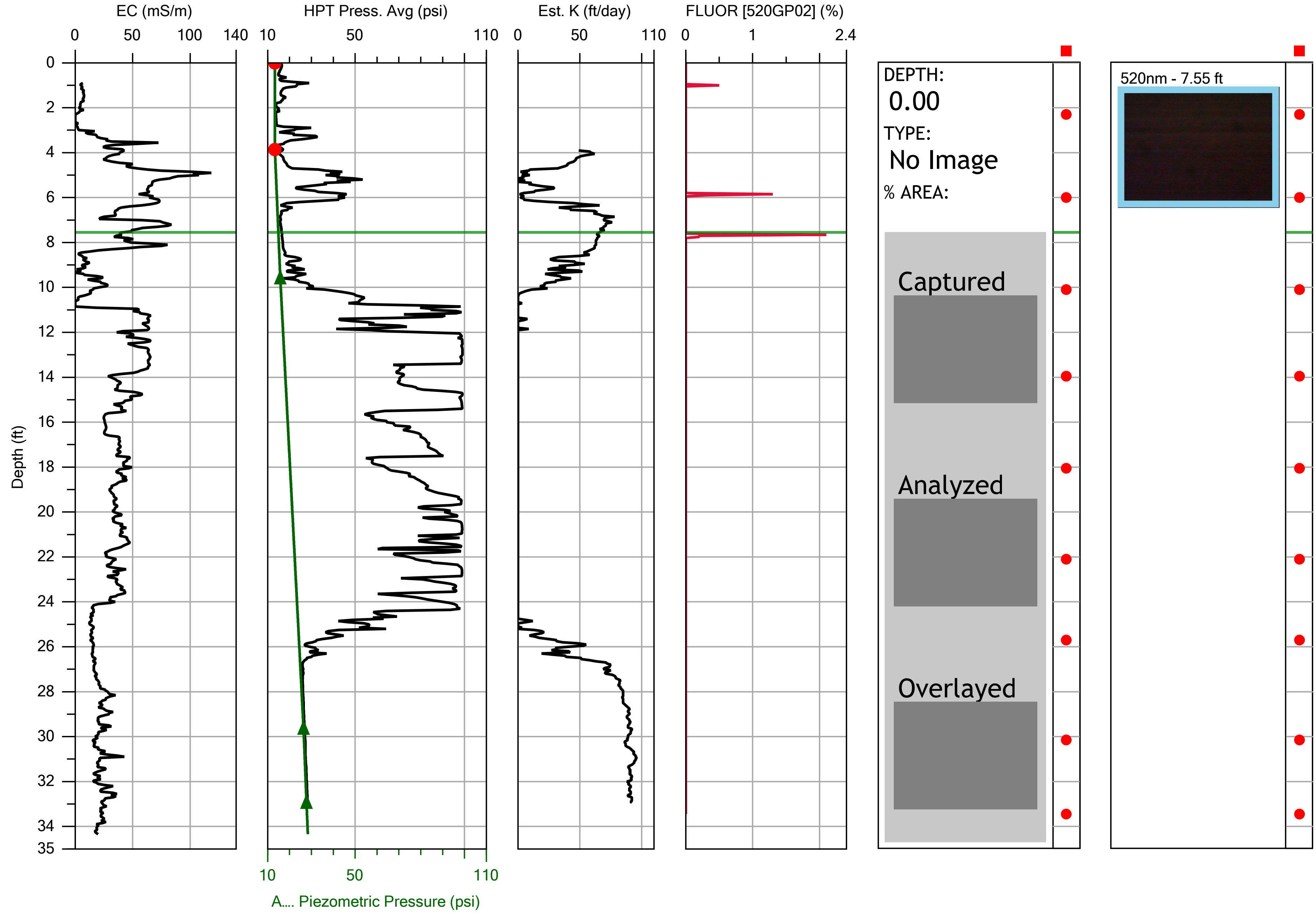
TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	52.7	4.2	PASS
High	360.0	365.7	1.6	PASS

********** USER NOTES **********

Window broke at 25 feet



		File: PDI-DPB-2.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 11/3/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-2.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	59.7	8.5	PASS
High	360.0	353.8	1.7	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   6.2
Black Box   520nm   0.0
Diesel 520nm   86.9
Motor Oil   520nm   94.4

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Tue Nov 3 2020 15:13:50

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.621	0.0	93.920
TOP with FLOW>0	14.055	257.1	96.910
BOTTOM with FLOW=0	13.404	0.0	92.420
BOTTOM with FLOW>0	13.845	258.1	95.460

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
Probe advancement with HPT flow valve and/or pump switch turned off at 0.00 ft (0.000 m).
LOG START TIME: Tue Nov 3 2020 15:17:54

LOG END DEPTH: 33.45 ft (10.196 m)
LOG END TIME: Tue Nov 3 2020 15:57:05

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	6.2	n/a	n/a
Black Box	520nm	0.0	0.0	0.0
Diesel	520nm	86.9	9.0	77.9
Motor Oil	520nm	94.4	10.0	84.4

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Tue Nov 3 2020 16:27:43

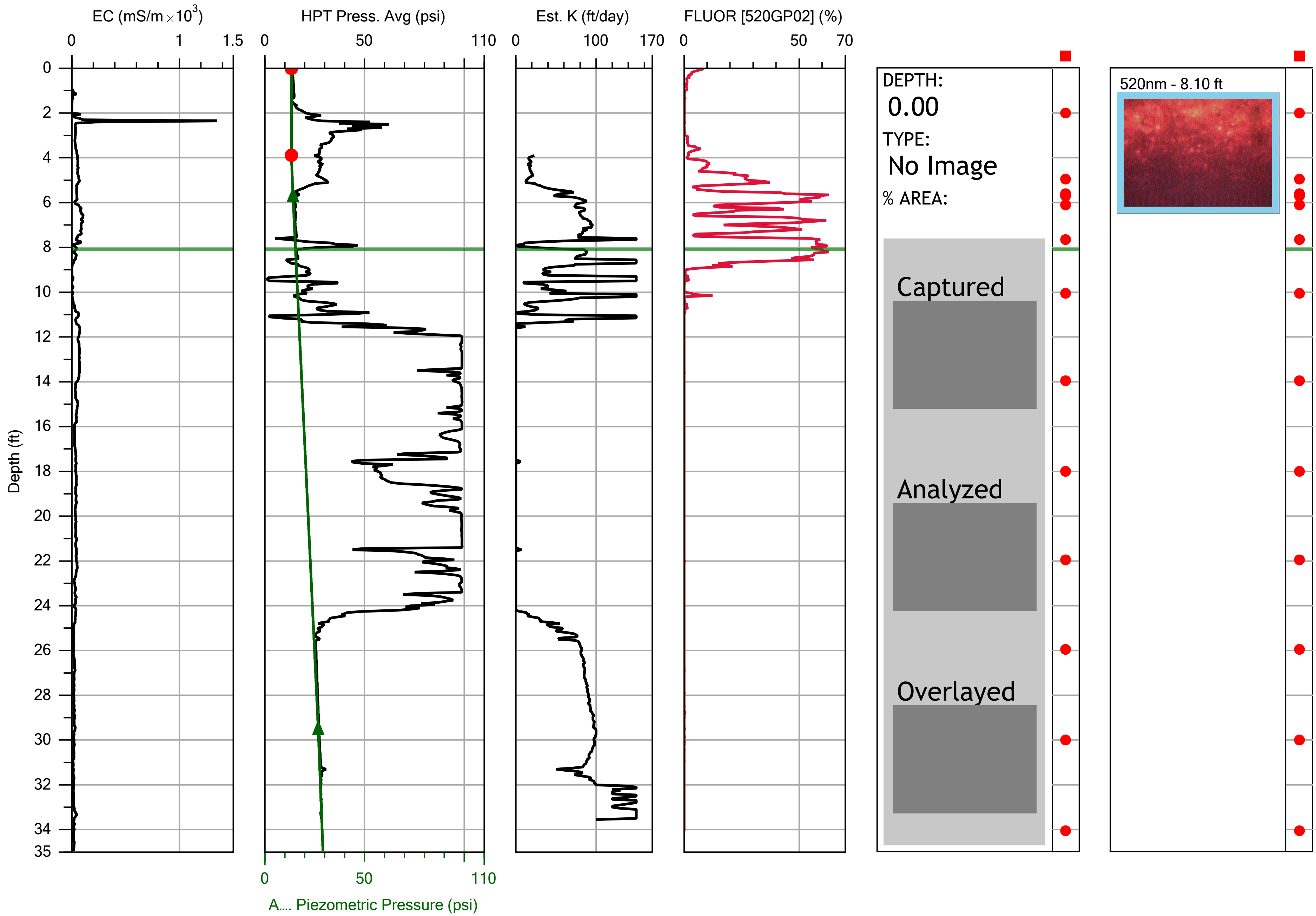
POST-LOG HPT REFERENCE TESTS BYPASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	59.8	8.8	PASS
High	360.0	360.4	0.1	PASS

********** USER NOTES **********

Window broke in probe



Direct Image
By Geoprobe Systems

		File: PDI-DPB-3.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/22/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-3.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.9	5.4	PASS
High	360.0	369.5	2.6	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   54.2
Black Box   520nm   0.4
Diesel 520nm   98.4
Motor Oil   520nm   99.1

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Thu Oct 22 2020 14:49:49

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.641	0.0	94.050
TOP with FLOW>0	13.912	255.7	95.920
BOTTOM with FLOW=0	13.428	0.0	92.580
BOTTOM with FLOW>0	13.710	254.8	94.530

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
LOG START TIME: Thu Oct 22 2020 14:55:27

LOG END DEPTH: 34.05 ft (10.378 m)
LOG END TIME: Thu Oct 22 2020 15:45:19

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	54.2	0.3	54.0
Black Box	520nm	0.4	0.0	0.4
Diesel	520nm	98.4	97.6	0.9
Motor Oil	520nm	99.1	98.9	0.2

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Thu Oct 22 2020 16:03:26

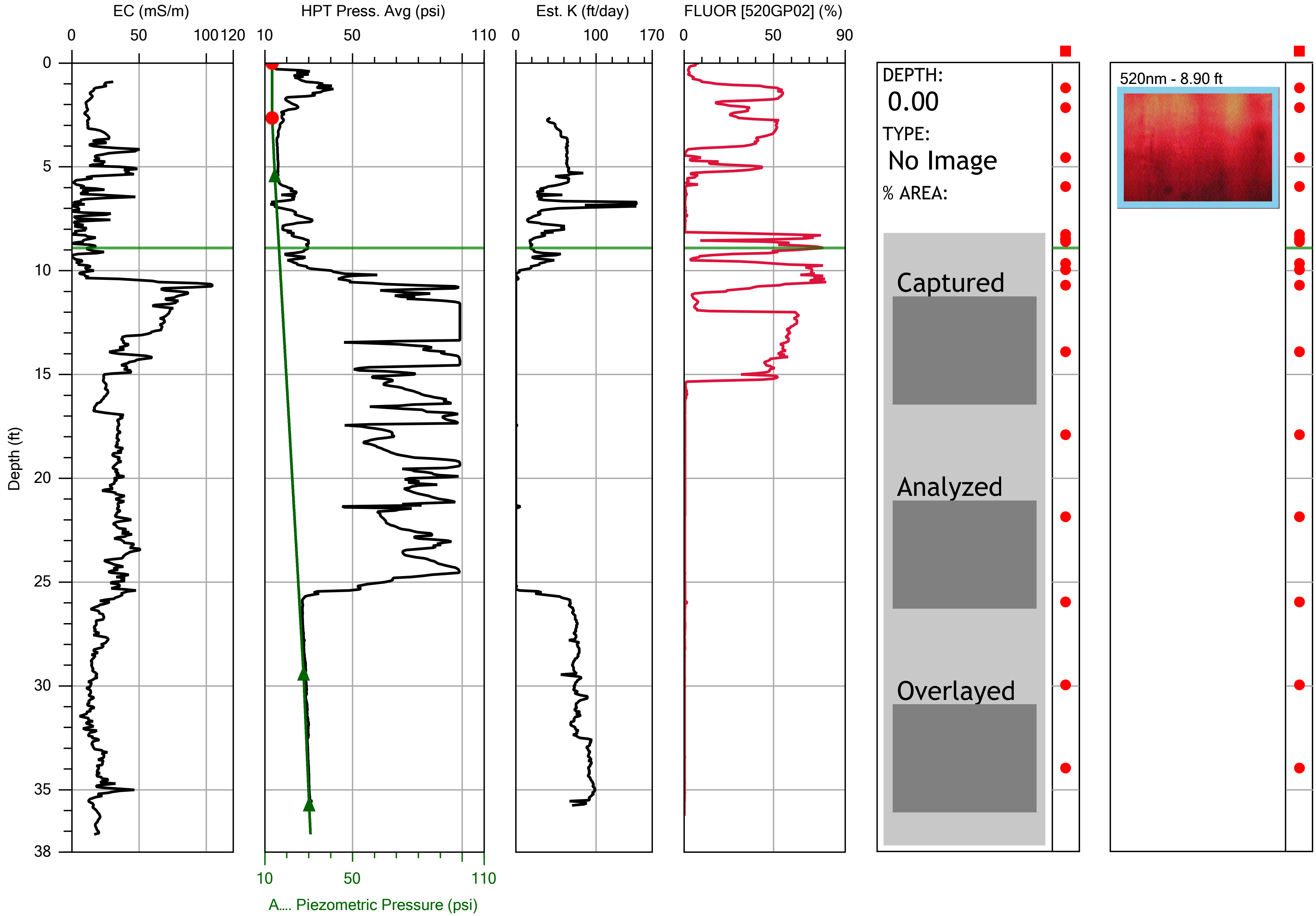
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.623	0.0	93.930
TOP with FLOW>0	13.893	253.5	95.790
BOTTOM with FLOW=0	13.407	0.0	92.440
BOTTOM with FLOW>0	13.685	253.6	94.350

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.2	4.1	PASS
High	360.0	366.2	1.7	PASS



Direct Image By Geoprobe Systems

		File: PDI-DPB-4.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/22/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-4.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	59.3	7.8	PASS
High	360.0	361.9	0.5	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   56.4
Black Box   520nm   0.2
Diesel 520nm   97.0
Motor Oil   520nm   98.8

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Thu Oct 22 2020 13:23:34

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.649	0.0	94.110
TOP with FLOW>0	13.937	258.1	96.090
BOTTOM with FLOW=0	13.428	0.0	92.590
BOTTOM with FLOW>0	13.725	234.1	94.630

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
Probe advancement with HPT flow valve and/or pump switch turned off at 0.00 ft (0.000 m).
LOG START TIME: Thu Oct 22 2020 13:25:52

Probe advancement with HPT flow valve and/or pump switch turned off at 6.00 ft (1.829 m).
Probe advancement with HPT flow valve and/or pump switch turned off at 6.00 ft (1.829 m).
LOG END DEPTH: 36.25 ft (11.049 m)
LOG END TIME: Thu Oct 22 2020 14:20:56

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	56.4	20.7	35.7
Black Box	520nm	0.2	0.4	0.2
Diesel	520nm	97.0	99.6	2.6
Motor Oil	520nm	98.8	99.0	0.2

Frame grabber settings:
Brightness: 111
Contrast: 140

Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Thu Oct 22 2020 14:39:50

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.657	0.0	94.160
TOP with FLOW>0	13.919	250.3	95.970
BOTTOM with FLOW=0	13.432	0.0	92.610
BOTTOM with FLOW>0	13.698	253.1	94.450

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

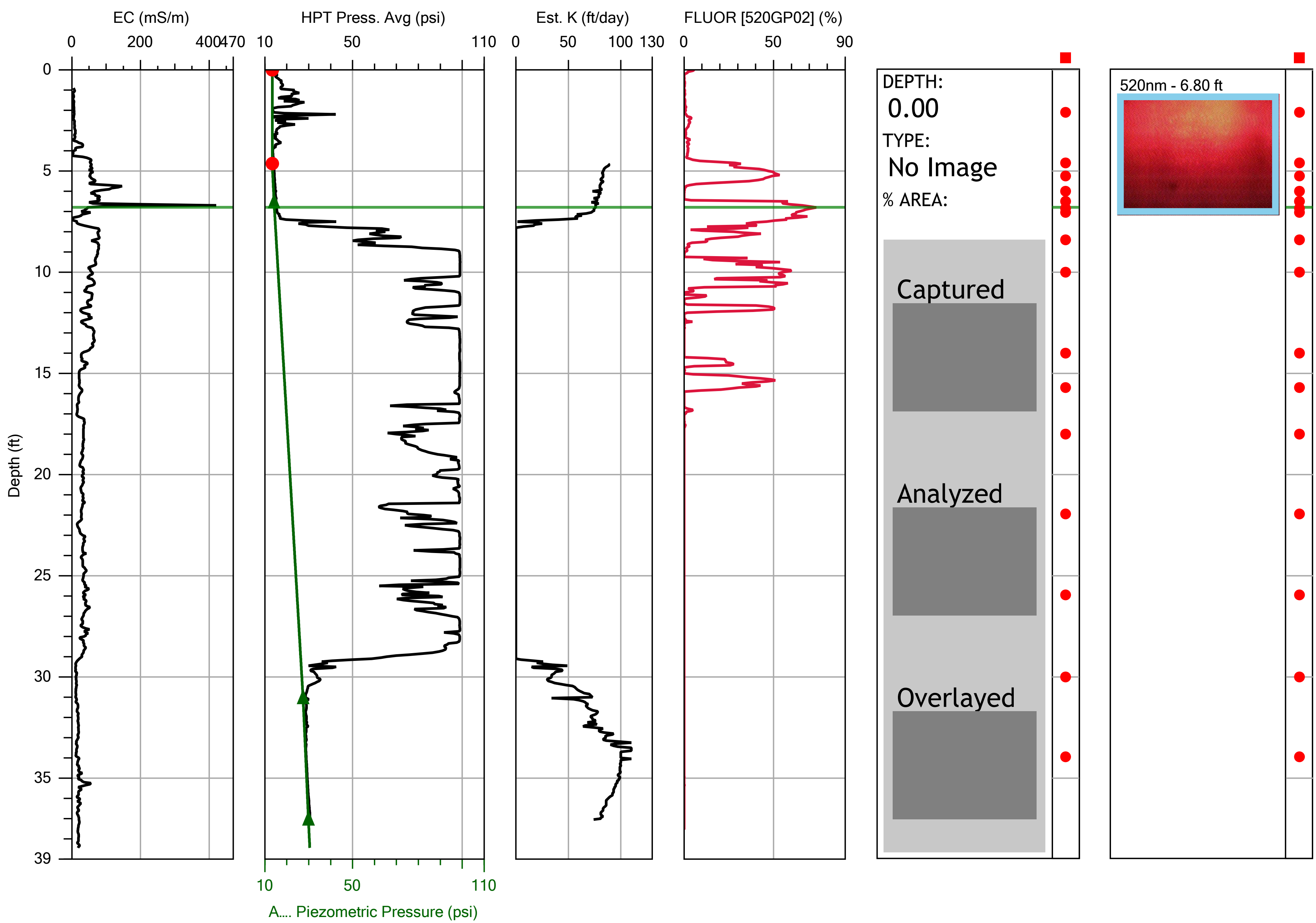
TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.7	4.9	PASS
High	360.0	369.5	2.6	PASS

********** USER NOTES **********

Refusal at 36.25



		File: PDI-DPB-5.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/22/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-5.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	60.3	9.5	PASS
High	360.0	369.7	2.7	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   95.9
Black Box   520nm   0.0
Diesel 520nm   99.3
Motor Oil   520nm   99.7

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Thu Oct 22 2020 11:02:15

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.684	0.0	94.350
TOP with FLOW>0	13.956	253.6	96.220
BOTTOM with FLOW=0	13.461	0.0	92.810
BOTTOM with FLOW>0	13.751	253.3	94.810

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
Probe advancement with HPT flow valve and/or pump switch turned off at 0.05 ft (0.015 m).
LOG START TIME: Thu Oct 22 2020 11:11:21

LOG END DEPTH: 37.55 ft (11.445 m)
LOG END TIME: Thu Oct 22 2020 12:08:07

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	95.9	9.3	86.5
Black Box	520nm	0.0	0.1	0.0
Diesel	520nm	99.3	99.8	0.5
Motor Oil	520nm	99.7	98.6	1.1

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Thu Oct 22 2020 12:24:13

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.683	0.0	94.340
TOP with FLOW>0	13.933	253.4	96.070
BOTTOM with FLOW=0	13.464	0.0	92.830
BOTTOM with FLOW>0	13.729	252.6	94.660

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

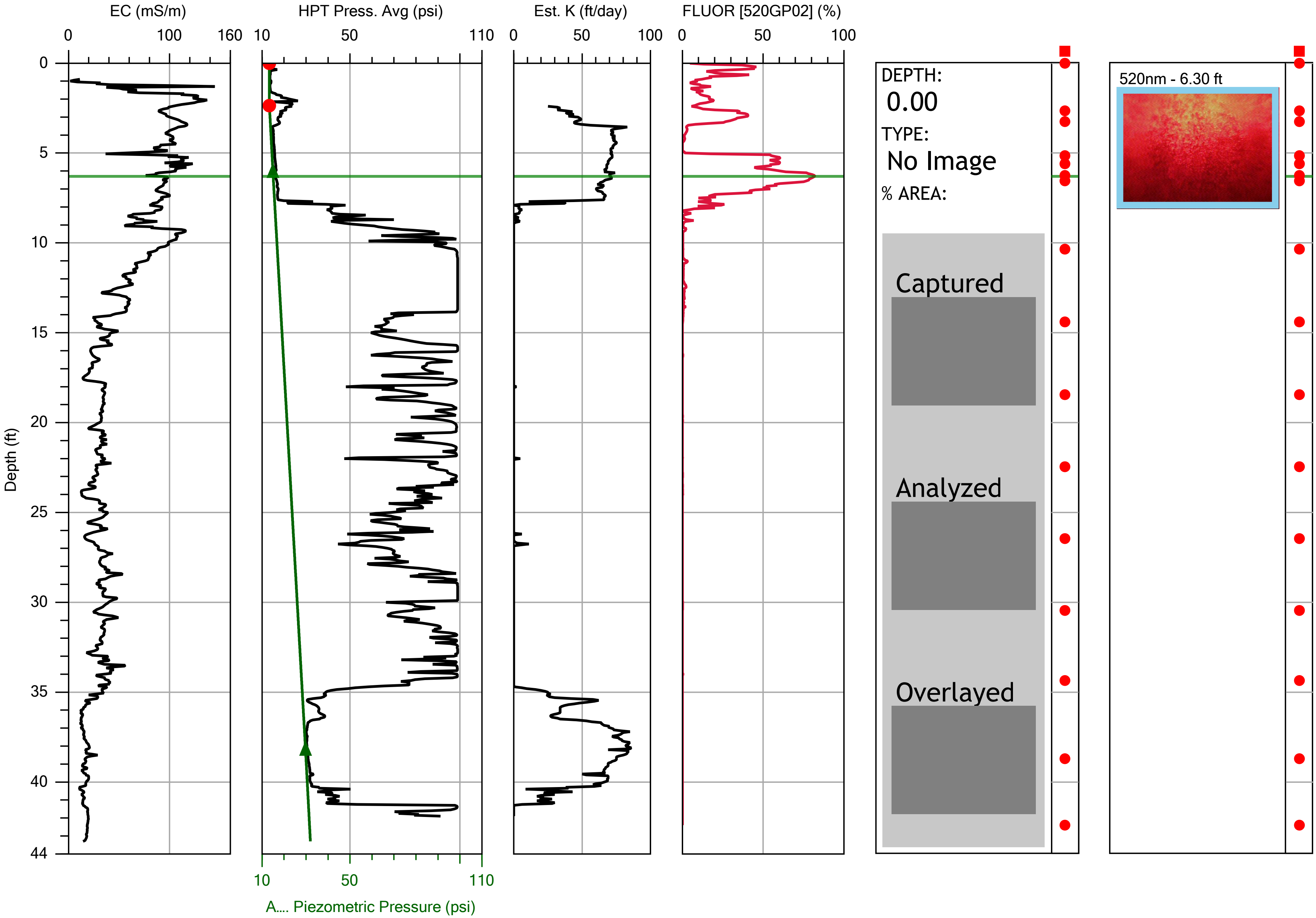
TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.8	5.0	PASS
High	360.0	369.5	2.7	PASS

********** USER NOTES **********

Refusal at 37.5



		File: PDI-DPB-6.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/22/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-6.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	59.8	8.7	PASS
High	360.0	368.0	2.2	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   70.7
Black Box   520nm   0.4
Diesel 520nm   99.8
Motor Oil   520nm   98.7

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Thu Oct 22 2020 09:44:03

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.657	0.0	94.160
TOP with FLOW>0	13.959	256.6	96.240
BOTTOM with FLOW=0	13.440	0.0	92.670
BOTTOM with FLOW>0	13.737	254.2	94.720

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
Probe advancement with HPT flow valve and/or pump switch turned off at 0.05 ft (0.015 m).
LOG START TIME: Thu Oct 22 2020 09:46:22

LOG END DEPTH: 42.40 ft (12.924 m)
LOG END TIME: Thu Oct 22 2020 10:35:35

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	70.7	69.5	1.2
Black Box	520nm	0.4	0.1	0.3
Diesel	520nm	99.8	100.0	0.2
Motor Oil	520nm	98.7	99.4	0.7

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Thu Oct 22 2020 10:54:23

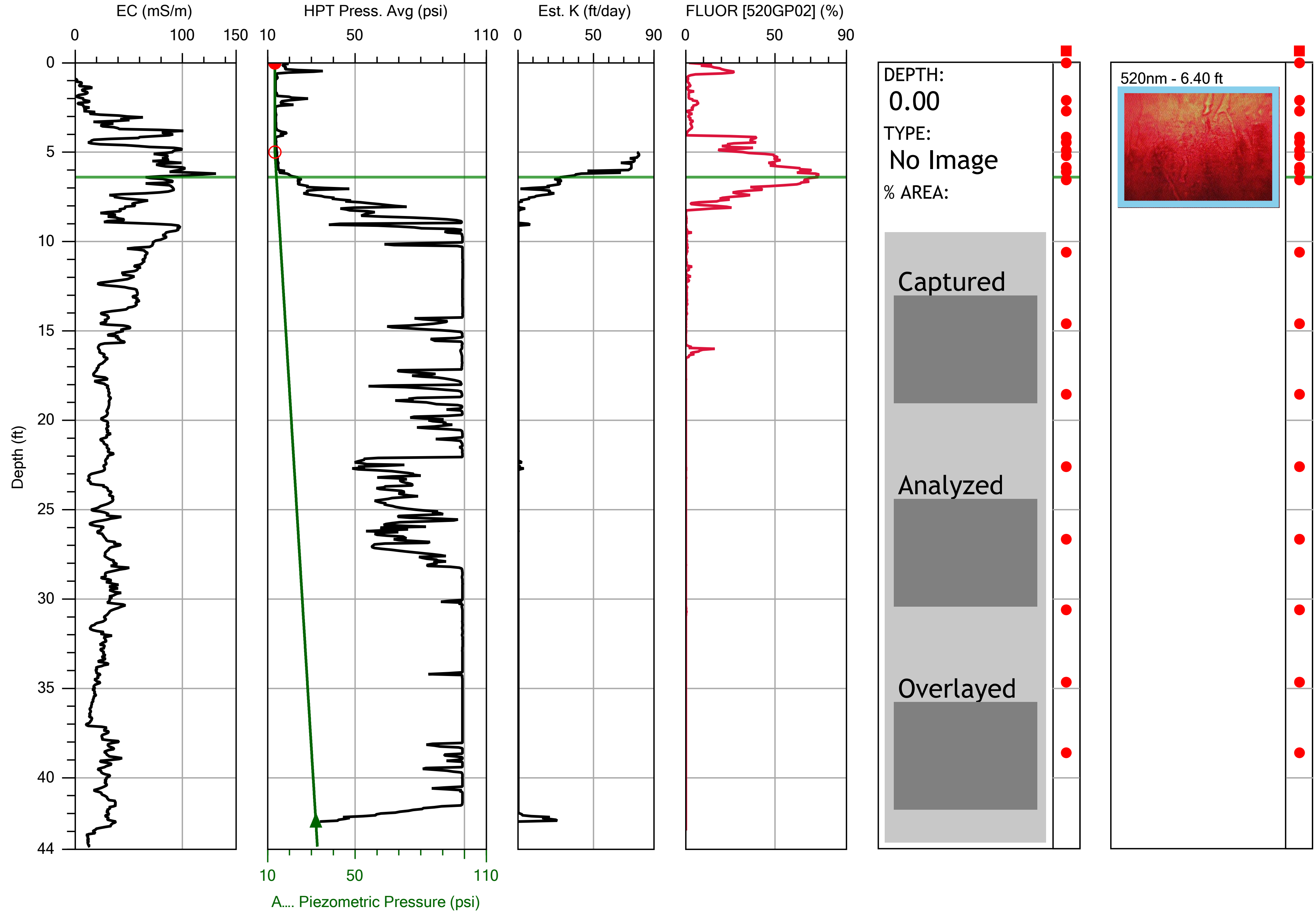
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.682	0.0	94.330
TOP with FLOW>0	13.945	252.9	96.150
BOTTOM with FLOW=0	13.459	0.0	92.790
BOTTOM with FLOW>0	13.741	255.2	94.740

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	60.0	9.0	PASS
High	360.0	370.0	2.8	PASS



Direct Image® By Geoprobe Systems®

		File: PDI-DPB-7.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/22/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-7.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	58.0	5.5	PASS
High	360.0	363.1	0.9	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   34.5
Black Box   520nm   0.1
Diesel 520nm   97.9
Motor Oil   520nm   97.9

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Thu Oct 22 2020 07:42:24

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.632	0.0	93.990
TOP with FLOW>0	13.973	262.2	96.340
BOTTOM with FLOW=0	13.428	0.0	92.580
BOTTOM with FLOW>0	13.773	260.0	94.960

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.20 psi (1.4 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
LOG START TIME: Thu Oct 22 2020 07:49:27

LOG END DEPTH: 42.95 ft (13.091 m)
LOG END TIME: Thu Oct 22 2020 09:03:43

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	34.5	76.1	41.6
Black Box	520nm	0.1	0.1	0.0
Diesel	520nm	97.9	88.9	9.0
Motor Oil	520nm	97.9	96.8	1.0

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Thu Oct 22 2020 09:28:08

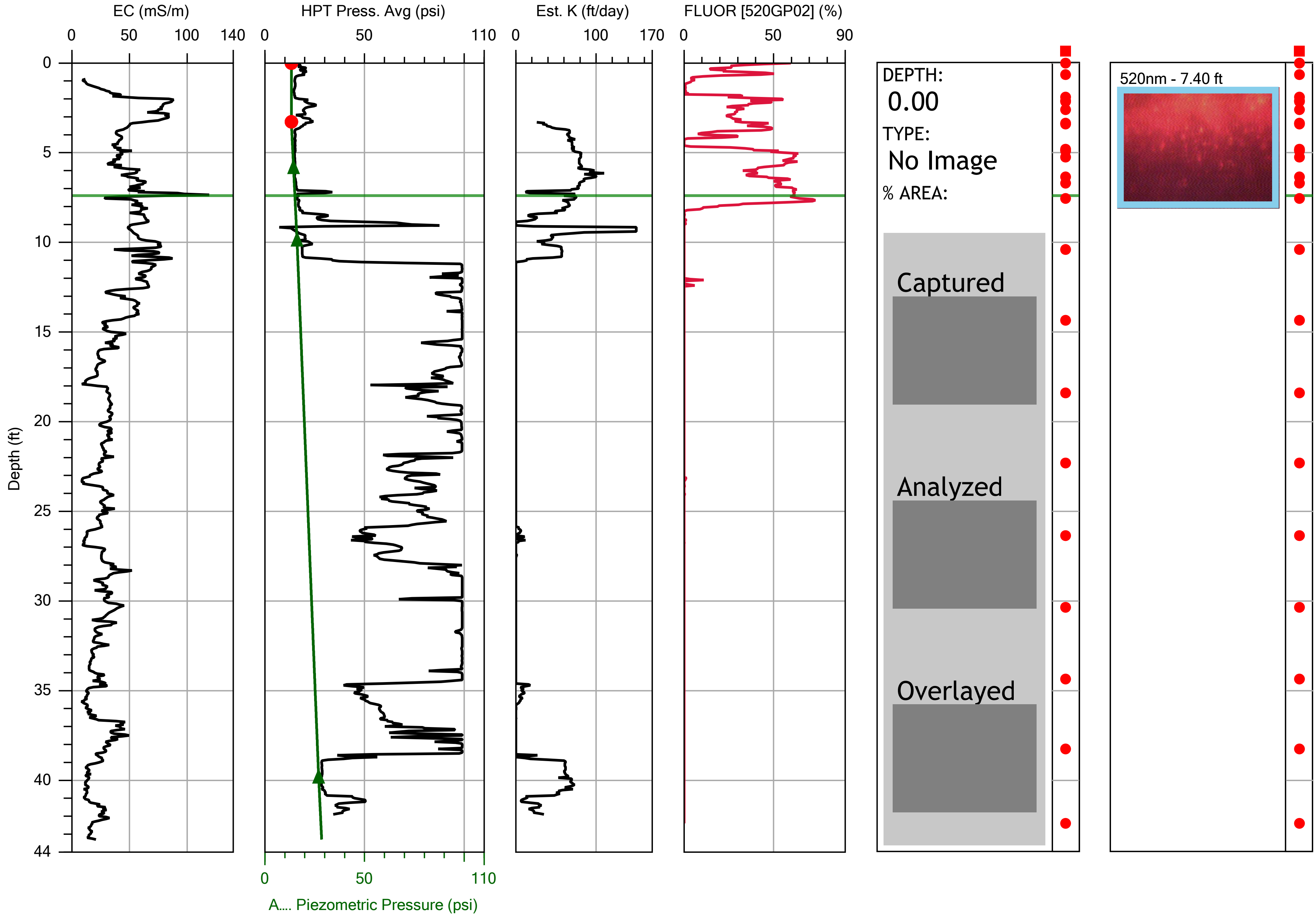
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.651	0.0	94.120
TOP with FLOW>0	13.972	255.4	96.330
BOTTOM with FLOW=0	13.442	0.0	92.680
BOTTOM with FLOW>0	13.742	251.7	94.750

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.4 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	58.8	7.0	PASS
High	360.0	369.4	2.6	PASS



		File: PDI-DPB-8.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/21/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-8.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.3	4.1	PASS
High	360.0	365.3	1.5	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   27.3
Black Box   520nm   0.2
Diesel 520nm   98.4
Motor Oil   520nm   98.4

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Wed Oct 21 2020 15:05:18

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.607	0.0	93.810
TOP with FLOW>0	13.865	246.6	95.600
BOTTOM with FLOW=0	13.374	0.0	92.210
BOTTOM with FLOW>0	13.656	245.2	94.160

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.23 psi (1.6 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
LOG START TIME: Wed Oct 21 2020 15:09:38

Probe advancement with HPT flow valve and/or pump switch turned off at 10.45 ft (3.185 m).
LOG END DEPTH: 42.40 ft (12.924 m)
LOG END TIME: Wed Oct 21 2020 15:58:25

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	27.3	26.6	0.7
Black Box	520nm	0.2	0.0	0.2
Diesel	520nm	98.4	95.6	2.7
Motor Oil	520nm	98.4	92.1	6.2

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Wed Oct 21 2020 16:16:34

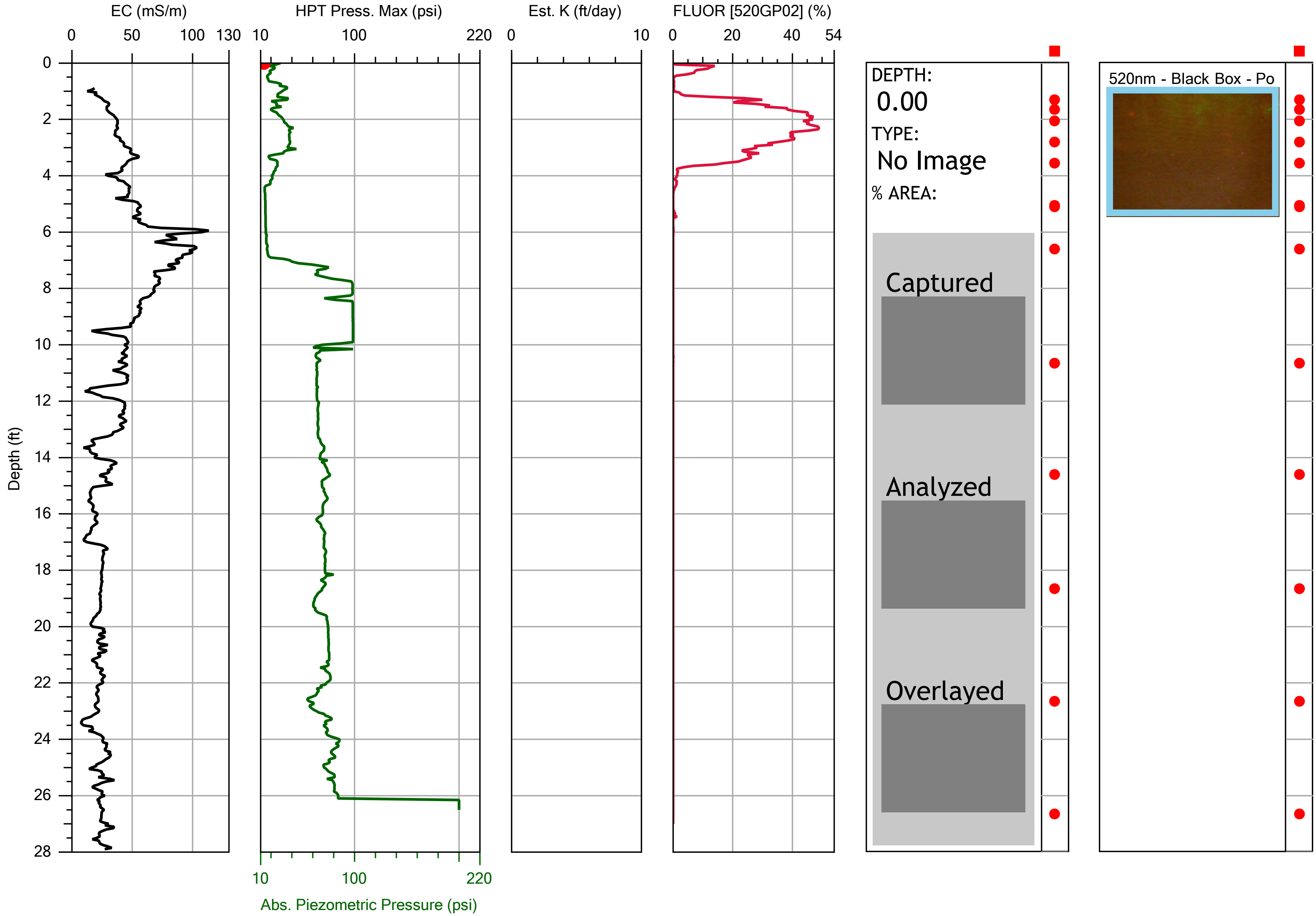
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.598	0.0	93.750
TOP with FLOW>0	13.871	255.7	95.640
BOTTOM with FLOW=0	13.383	0.0	92.270
BOTTOM with FLOW>0	13.668	254.8	94.240

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	59.2	7.6	PASS
High	360.0	370.0	2.8	PASS



Direct Image By Geoprobe Systems

		File: PDI-DPB-9.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/21/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-9.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	56.4	2.5	PASS
High	360.0	366.6	1.8	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   78.0
Black Box   520nm   0.2
Diesel 520nm   99.0
Motor Oil   520nm   95.8

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Wed Oct 21 2020 10:37:19

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.560	0.0	93.490
TOP with FLOW>0	13.886	268.4	95.740
BOTTOM with FLOW=0	13.356	0.0	92.090
BOTTOM with FLOW>0	13.673	269.8	94.270

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.20 psi (1.4 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
LOG START TIME: Wed Oct 21 2020 10:39:29

Probe advancement with HPT flow valve and/or pump switch turned off at 8.85 ft (2.697 m).
LOG END DEPTH: 27.00 ft (8.230 m)
LOG END TIME: Wed Oct 21 2020 11:29:17

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	78.0	91.5	13.5
Black Box	520nm	0.2	0.2	0.0
Diesel	520nm	99.0	99.4	0.4
Motor Oil	520nm	95.8	98.9	3.1

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Wed Oct 21 2020 11:47:02

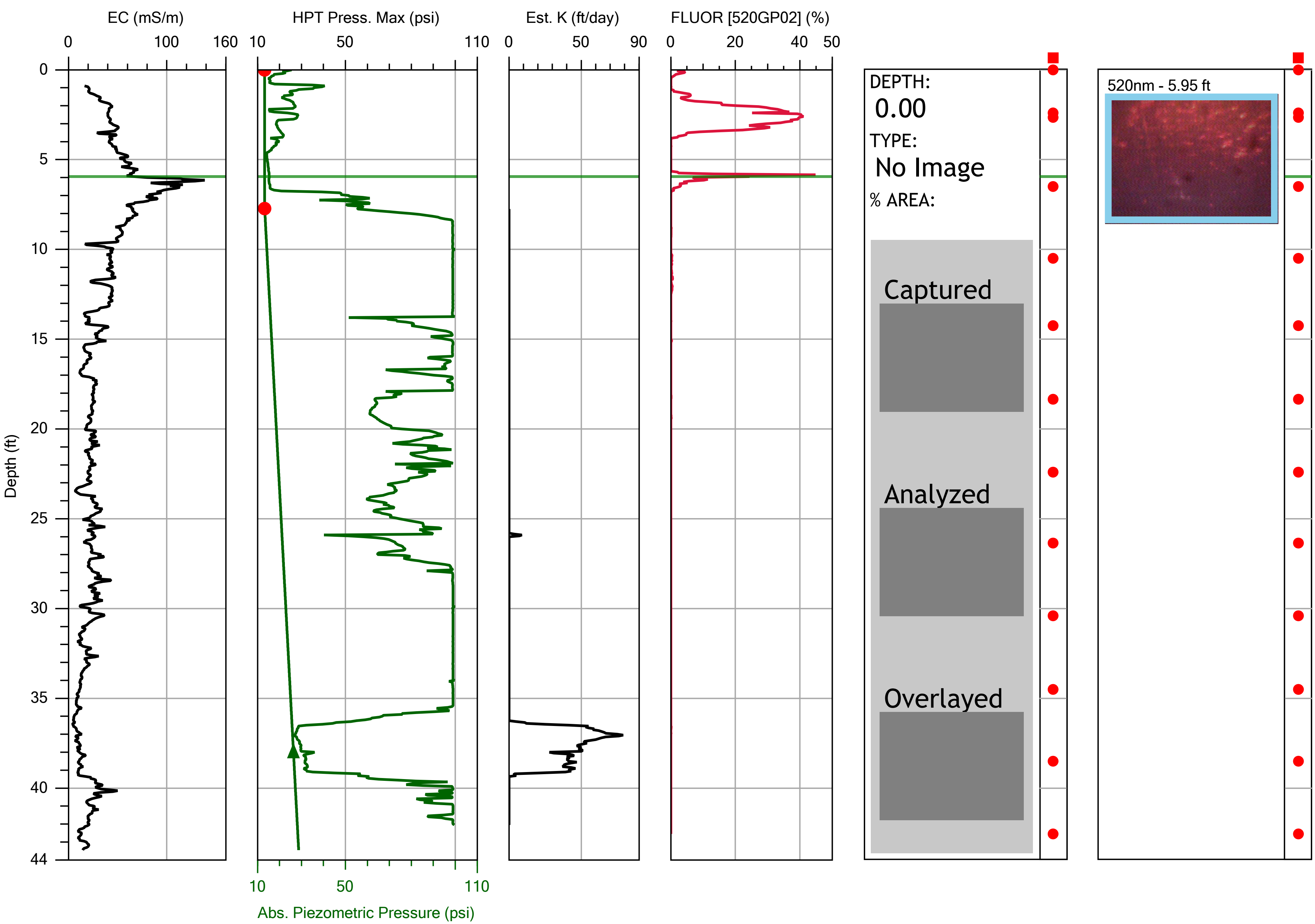
POST-LOG HPT REFERENCE TESTS BYPASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	56.7	3.1	PASS
High	360.0	365.9	1.6	PASS

********** USER NOTES **********

Probems with HPT at 26 feet pulled probe to repair.



		File: PDI-DPB-9A.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/21/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-9a.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.8	5.2	PASS
High	360.0	365.3	1.5	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   41.5
Black Box   520nm   0.1
Diesel 520nm   94.8
Motor Oil   520nm   90.4

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Wed Oct 21 2020 13:44:57

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.569	0.0	93.560
TOP with FLOW>0	13.925	247.1	96.010
BOTTOM with FLOW=0	13.355	0.0	92.080
BOTTOM with FLOW>0	13.701	251.2	94.460

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
Probe advancement with HPT flow valve and/or pump switch turned off at 0.05 ft (0.015 m).
LOG START TIME: Wed Oct 21 2020 13:47:24

LOG END DEPTH: 42.55 ft (12.969 m)
LOG END TIME: Wed Oct 21 2020 14:25:50

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	41.5	19.6	21.9
Black Box	520nm	0.1	0.1	0.0
Diesel	520nm	94.8	99.6	4.9
Motor Oil	520nm	90.4	93.6	3.2

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Wed Oct 21 2020 14:46:31

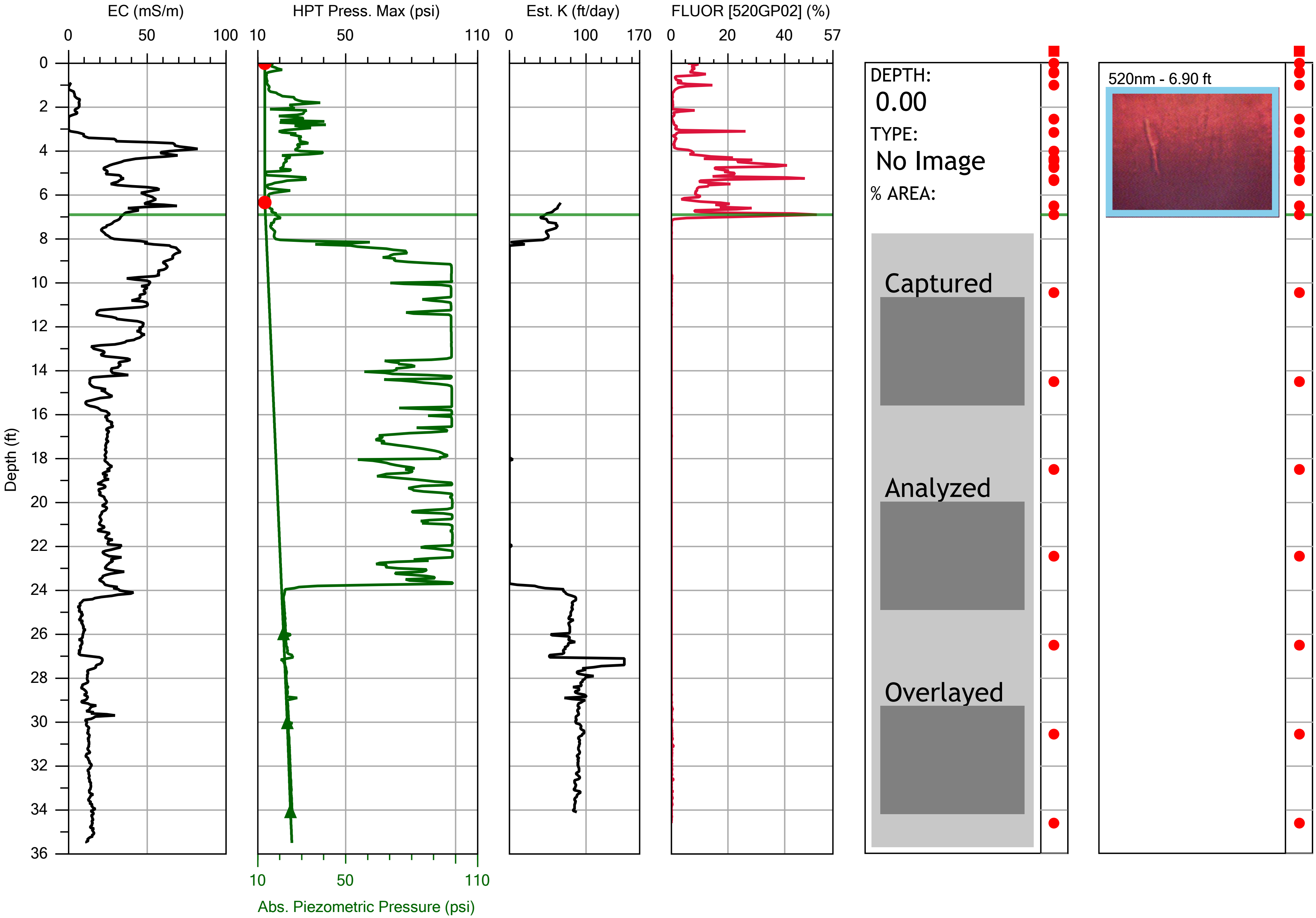
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.594	0.0	93.720
TOP with FLOW>0	13.894	256.5	95.790
BOTTOM with FLOW=0	13.365	0.0	92.150
BOTTOM with FLOW>0	13.684	258.4	94.350

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.23 psi (1.6 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.7	5.0	PASS
High	360.0	364.6	1.3	PASS



		File: PDI-DPB-10.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/21/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-10.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.2	4.1	PASS
High	360.0	365.7	1.6	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   19.4
Black Box   520nm   0.1
Diesel 520nm   98.9
Motor Oil   520nm   98.7

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Wed Oct 21 2020 09:07:45

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.590	0.0	93.700
TOP with FLOW>0	13.922	271.0	95.990
BOTTOM with FLOW=0	13.381	0.0	92.260
BOTTOM with FLOW>0	13.719	271.5	94.590

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.4 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
Probe advancement with HPT flow valve and/or pump switch turned off at 0.00 ft (0.000 m).
LOG START TIME: Wed Oct 21 2020 09:10:41

LOG END DEPTH: 34.60 ft (10.546 m)
LOG END TIME: Wed Oct 21 2020 10:01:55

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	19.4	60.6	41.2
Black Box	520nm	0.1	0.1	0.0
Diesel	520nm	98.9	99.4	0.5
Motor Oil	520nm	98.7	99.5	0.9

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Wed Oct 21 2020 10:17:09

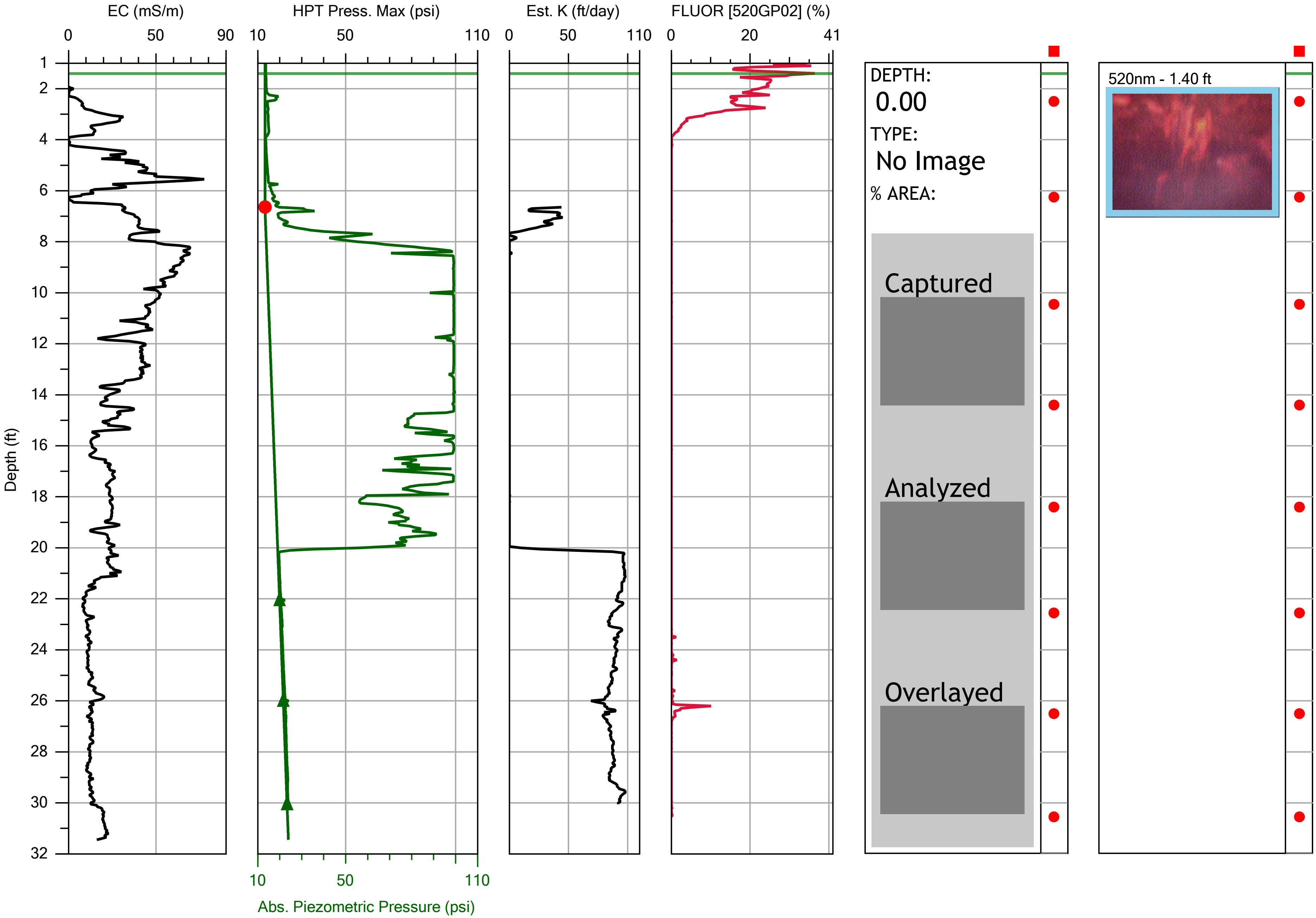
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.547	0.0	93.400
TOP with FLOW>0	13.867	264.7	95.610
BOTTOM with FLOW=0	13.333	0.0	91.930
BOTTOM with FLOW>0	13.634	265.4	94.010

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.5 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	58.2	5.8	PASS
High	360.0	366.6	1.8	PASS



		File: PDI-DPB-11.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/21/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-11.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.2	3.9	PASS
High	360.0	364.9	1.4	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   0.0
Black Box   520nm   0.2
Diesel 520nm   95.0
Motor Oil   520nm   96.4

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Wed Oct 21 2020 07:51:20

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.633	0.0	94.000
TOP with FLOW>0	13.934	267.5	96.070
BOTTOM with FLOW=0	13.401	0.0	92.400
BOTTOM with FLOW>0	13.731	268.2	94.670

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.23 psi (1.6 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
LOG START TIME: Wed Oct 21 2020 07:58:23

LOG END DEPTH: 30.55 ft (9.312 m)
LOG END TIME: Wed Oct 21 2020 08:40:44

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	0.0	49.6	49.6
Black Box	520nm	0.2	0.3	0.1
Diesel	520nm	95.0	99.2	4.2
Motor Oil	520nm	96.4	99.0	2.6

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Wed Oct 21 2020 08:57:28

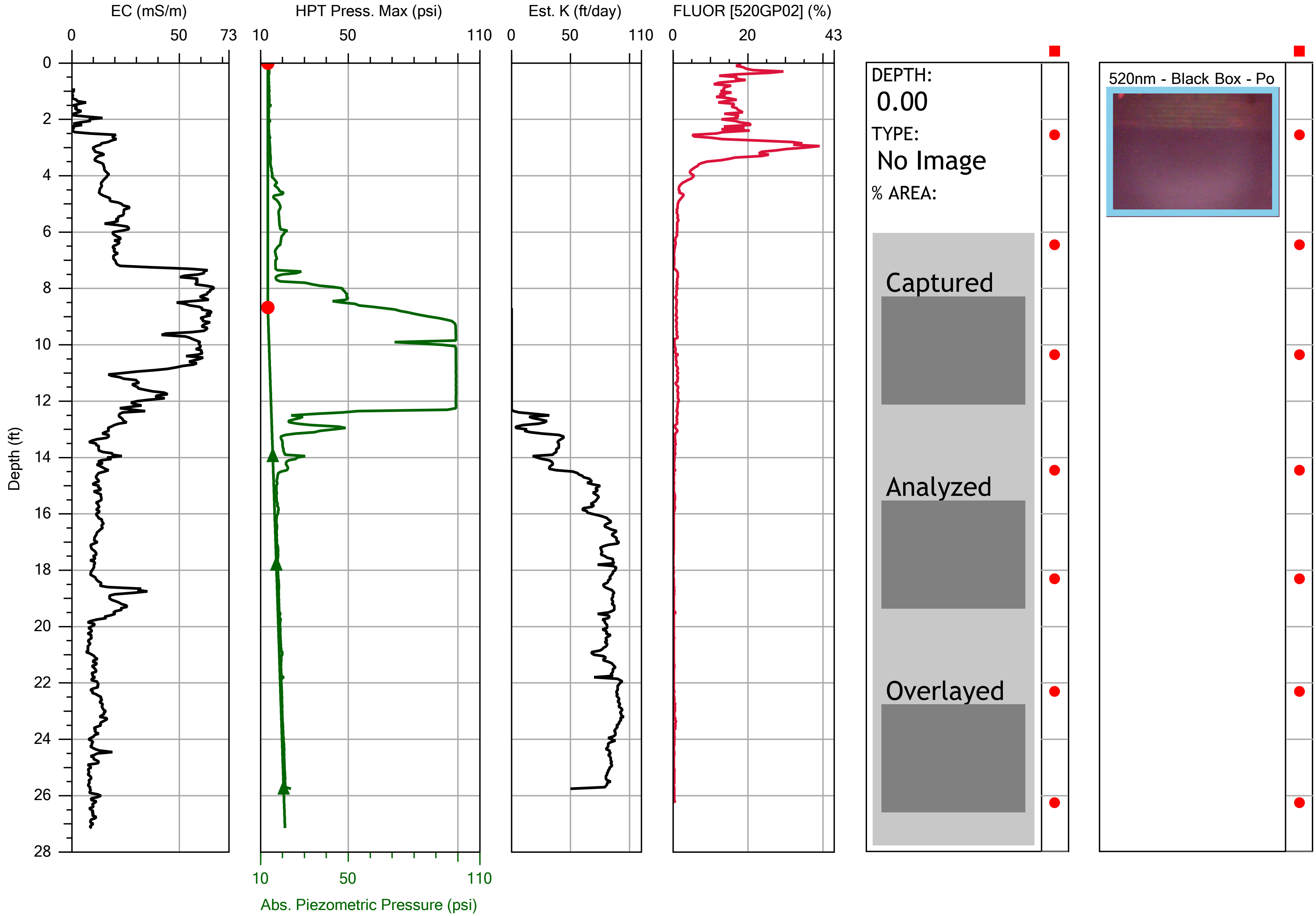
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.577	0.0	93.610
TOP with FLOW>0	13.929	269.6	96.030
BOTTOM with FLOW=0	13.364	0.0	92.140
BOTTOM with FLOW>0	13.721	266.1	94.600

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.5 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.8	5.1	PASS
High	360.0	365.9	1.6	PASS



Direct Image® By Geoprobe Systems®

		File: PDI-DPB-12.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/20/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-12.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.1	3.9	PASS
High	360.0	364.5	1.2	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   24.4
Black Box   520nm   1.0
Diesel 520nm   98.7
Motor Oil   520nm   98.7

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Tue Oct 20 2020 06:26:17

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.656	0.0	94.150
TOP with FLOW>0	14.016	239.4	96.640
BOTTOM with FLOW=0	13.423	0.0	92.550
BOTTOM with FLOW>0	13.809	232.0	95.210

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.23 psi (1.6 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
Probe advancement with HPT flow valve and/or pump switch turned off at 0.00 ft (0.000 m).
LOG START TIME: Tue Oct 20 2020 06:39:16

LOG END DEPTH: 26.25 ft (8.001 m)
LOG END TIME: Tue Oct 20 2020 07:19:01

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	24.4	6.5	17.9
Black Box	520nm	1.0	0.6	0.4
Diesel	520nm	98.7	98.8	0.1
Motor Oil	520nm	98.7	97.9	0.9

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Tue Oct 20 2020 07:37:30

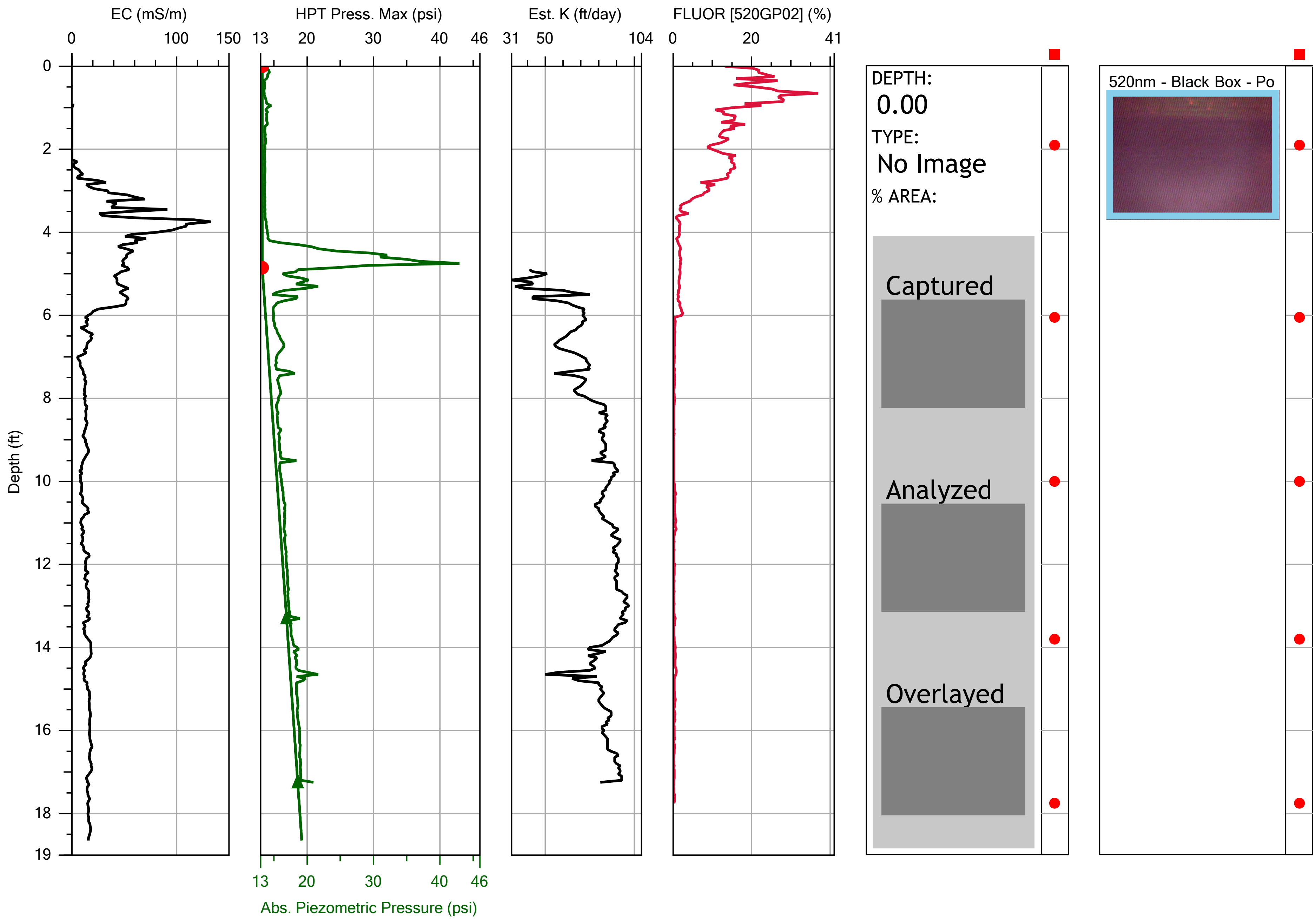
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.596	0.0	93.740
TOP with FLOW>0	13.847	346.6	95.470
BOTTOM with FLOW=0	13.359	0.0	92.110
BOTTOM with FLOW>0	13.616	305.2	93.880

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.24 psi (1.6 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	58.4	6.2	PASS
High	360.0	367.0	2.0	PASS



Direct Image
By Geoprobe Systems

		File: PDI-DPB-13.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/20/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-13.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.7	5.0	PASS
High	360.0	366.8	1.9	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST

Visual Target	IR	41.8
Black Box	520nm	0.7
Diesel 520nm	95.0	
Motor Oil	520nm	97.1

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Tue Oct 20 2020 07:55:53

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.591	0.0	93.710
TOP with FLOW>0	13.878	214.7	95.680
BOTTOM with FLOW=0	13.355	0.0	92.080
BOTTOM with FLOW>0	13.651	220.0	94.120

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.24 psi (1.6 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
LOG START TIME: Tue Oct 20 2020 08:01:43

LOG END DEPTH: 17.75 ft (5.410 m)
LOG END TIME: Tue Oct 20 2020 08:46:08

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	41.8	8.7	33.0
Black Box	520nm	0.7	0.2	0.4
Diesel	520nm	95.0	96.0	1.0
Motor Oil	520nm	97.1	97.9	0.8

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Tue Oct 20 2020 08:59:24

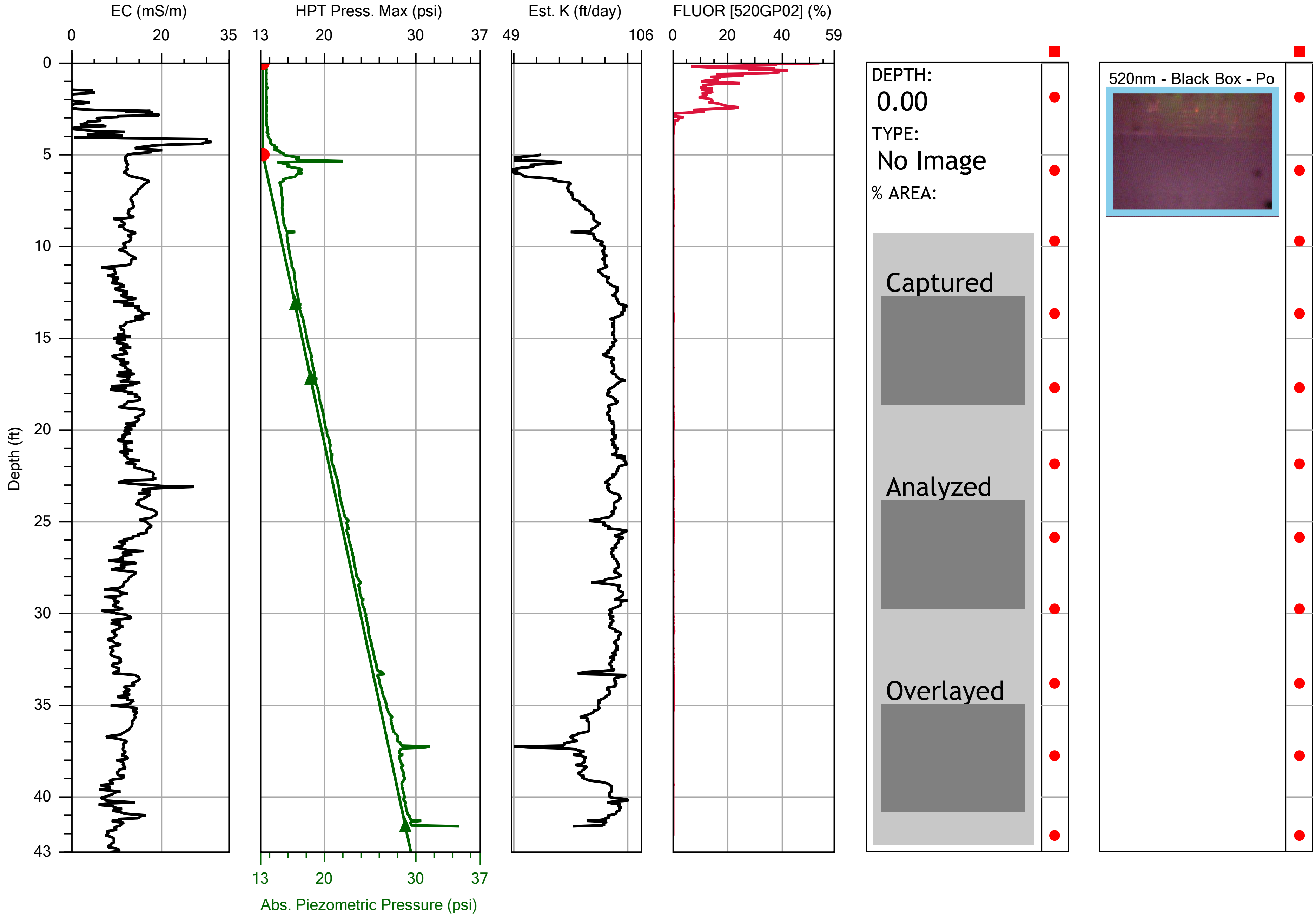
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.577	0.0	93.610
TOP with FLOW>0	13.922	271.9	95.990
BOTTOM with FLOW=0	13.359	0.0	92.110
BOTTOM with FLOW>0	13.729	275.8	94.660

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	58.3	5.9	PASS
High	360.0	367.2	2.0	PASS



		File: PDI-DPB-14.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/20/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-14.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.6	4.7	PASS
High	360.0	365.4	1.5	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST

Visual Target	IR	2.6
Black Box	520nm	0.1
Diesel 520nm	94.1	
Motor Oil	520nm	98.0

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Tue Oct 20 2020 12:58:10

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.587	0.0	93.680
TOP with FLOW>0	13.928	276.5	96.030
BOTTOM with FLOW=0	13.362	0.0	92.130
BOTTOM with FLOW>0	13.721	273.3	94.600

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
Probe advancement with HPT flow valve and/or pump switch turned off at 0.00 ft (0.000 m).
LOG START TIME: Tue Oct 20 2020 13:06:58

LOG END DEPTH: 42.10 ft (12.832 m)
LOG END TIME: Tue Oct 20 2020 13:58:32

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	2.6	47.9	45.2
Black Box	520nm	0.1	0.3	0.2
Diesel	520nm	94.1	99.1	5.1
Motor Oil	520nm	98.0	98.0	0.0

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Tue Oct 20 2020 14:19:05

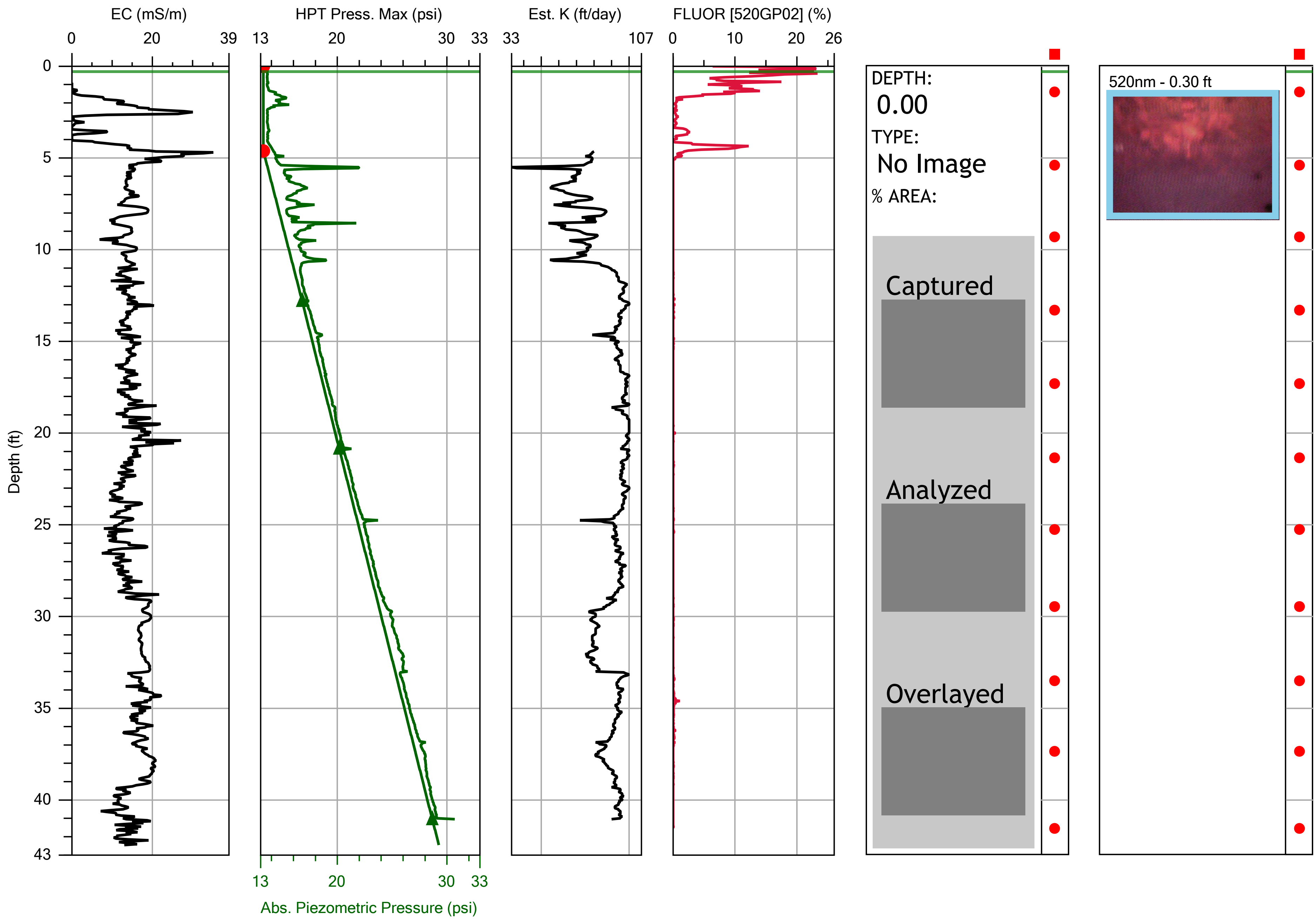
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.584	0.0	93.660
TOP with FLOW>0	13.902	273.8	95.850
BOTTOM with FLOW=0	13.360	0.0	92.110
BOTTOM with FLOW>0	13.703	273.6	94.480

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.9	5.2	PASS
High	360.0	365.9	1.6	PASS



		File: PDI-DPB-15.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 10/20/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-15.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.8	5.0	PASS
High	360.0	365.9	1.6	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   66.2
Black Box   520nm   0.2
Diesel 520nm   98.2
Motor Oil   520nm   98.5

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Tue Oct 20 2020 14:35:52

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.582	0.0	93.650
TOP with FLOW>0	13.923	272.2	95.990
BOTTOM with FLOW=0	13.363	0.0	92.130
BOTTOM with FLOW>0	13.720	274.1	94.590

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
LOG START TIME: Tue Oct 20 2020 14:46:09

LOG END DEPTH: 41.55 ft (12.664 m)
LOG END TIME: Tue Oct 20 2020 15:31:14

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	66.2	27.6	38.6
Black Box	520nm	0.2	0.0	0.2
Diesel	520nm	98.2	98.9	0.7
Motor Oil	520nm	98.5	94.1	4.4

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Tue Oct 20 2020 15:55:21

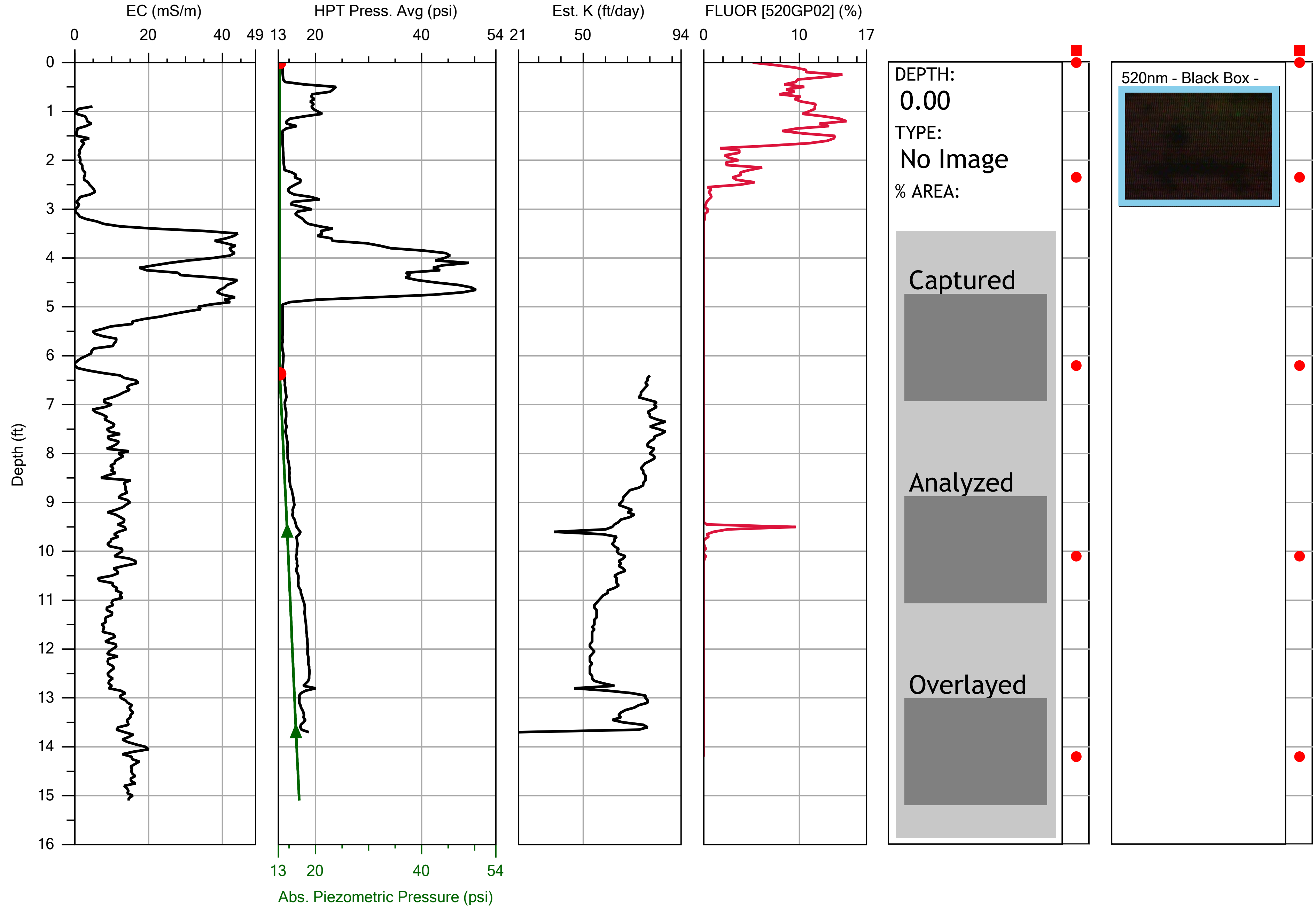
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.598	0.0	93.750
TOP with FLOW>0	13.890	269.4	95.770
BOTTOM with FLOW=0	13.384	0.0	92.280
BOTTOM with FLOW>0	13.690	268.8	94.390

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.5 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	58.0	5.4	PASS
High	360.0	366.7	1.9	PASS



Direct Image® By Geoprobe Systems®

Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	File: PDI-DPB-16.OIHP
		Date: 11/3/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-16.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	59.8	8.6	PASS
High	360.0	351.5	2.4	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   43.1
Black Box   520nm   0.0
Diesel 520nm   82.5
Motor Oil   520nm   93.2

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Tue Nov 3 2020 13:06:19

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.599	0.0	93.760
TOP with FLOW>0	14.053	272.2	96.900
BOTTOM with FLOW=0	13.388	0.0	92.310
BOTTOM with FLOW>0	13.849	276.8	95.490

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
LOG START TIME: Tue Nov 3 2020 13:08:50

LOG END DEPTH: 14.20 ft (4.328 m)
LOG END TIME: Tue Nov 3 2020 13:36:29

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	43.1	50.8	7.7
Black Box	520nm	0.0	0.0	0.0
Diesel	520nm	82.5	73.0	9.5
Motor Oil	520nm	93.2	94.4	1.1

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Tue Nov 3 2020 13:47:03

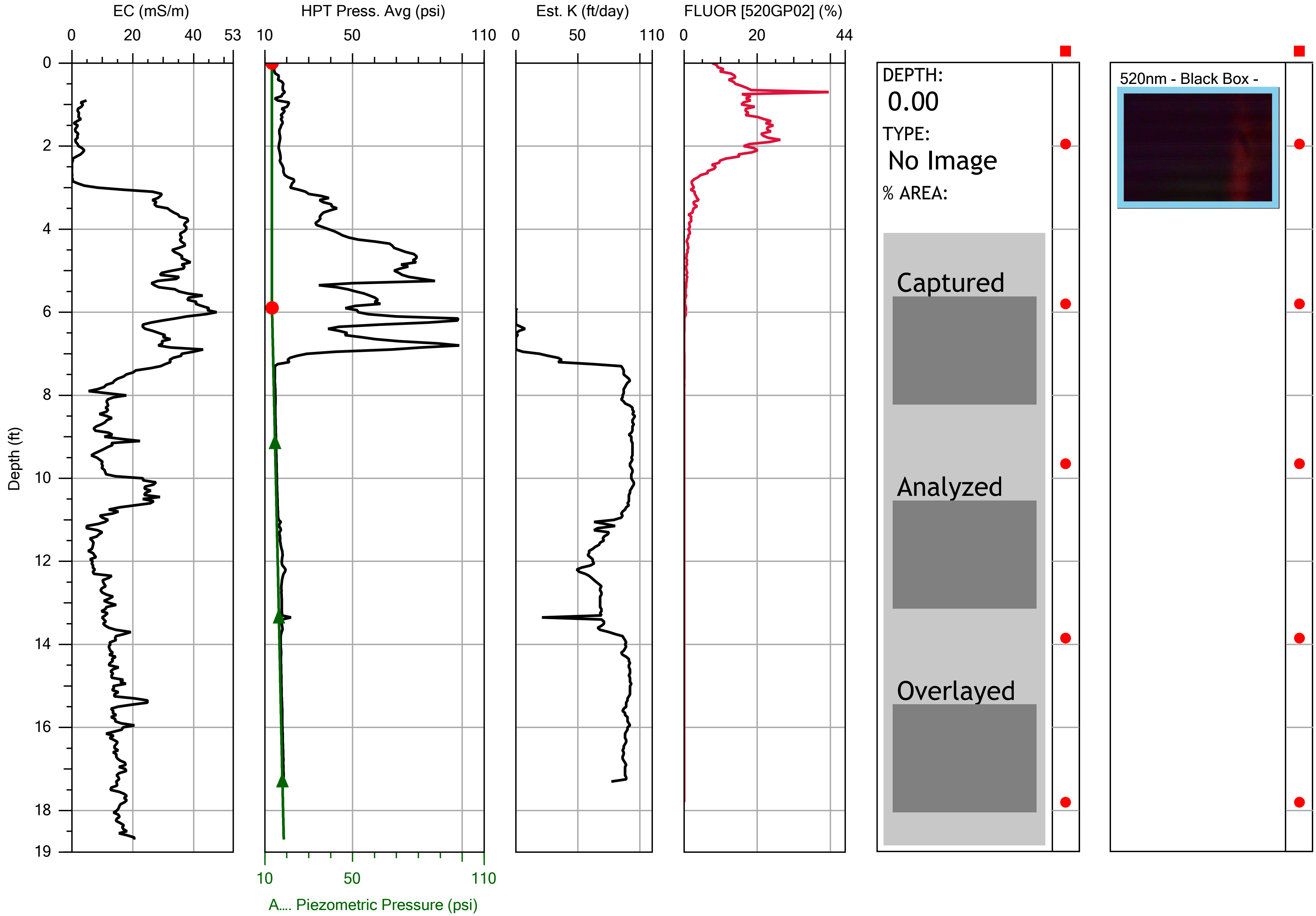
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.609	0.0	93.830
TOP with FLOW>0	14.032	263.8	96.740
BOTTOM with FLOW=0	13.399	0.0	92.380
BOTTOM with FLOW>0	13.827	267.8	95.340

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.4 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	54.1	1.6	PASS
High	360.0	357.0	0.8	PASS



Direct Image® By Geoprobe Systems®

		File: PDI-DPB-17.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 11/3/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-17.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	58.7	6.7	PASS
High	360.0	353.3	1.9	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   39.6
Black Box   520nm   2.0
Diesel 520nm   71.8
Motor Oil   520nm   89.5

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Tue Nov 3 2020 11:12:51

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.570	0.0	93.560
TOP with FLOW>0	14.003	266.7	96.550
BOTTOM with FLOW=0	13.366	0.0	92.160
BOTTOM with FLOW>0	13.798	271.0	95.130

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.20 psi (1.4 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
Probe advancement with HPT flow valve and/or pump switch turned off at 0.05 ft (0.015 m).
LOG START TIME: Tue Nov 3 2020 11:16:08

LOG END DEPTH: 17.80 ft (5.425 m)
LOG END TIME: Tue Nov 3 2020 11:38:00

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	39.6	13.1	26.5
Black Box	520nm	2.0	0.0	2.0
Diesel	520nm	71.8	74.9	3.1
Motor Oil	520nm	89.5	88.1	1.4

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Tue Nov 3 2020 12:00:51

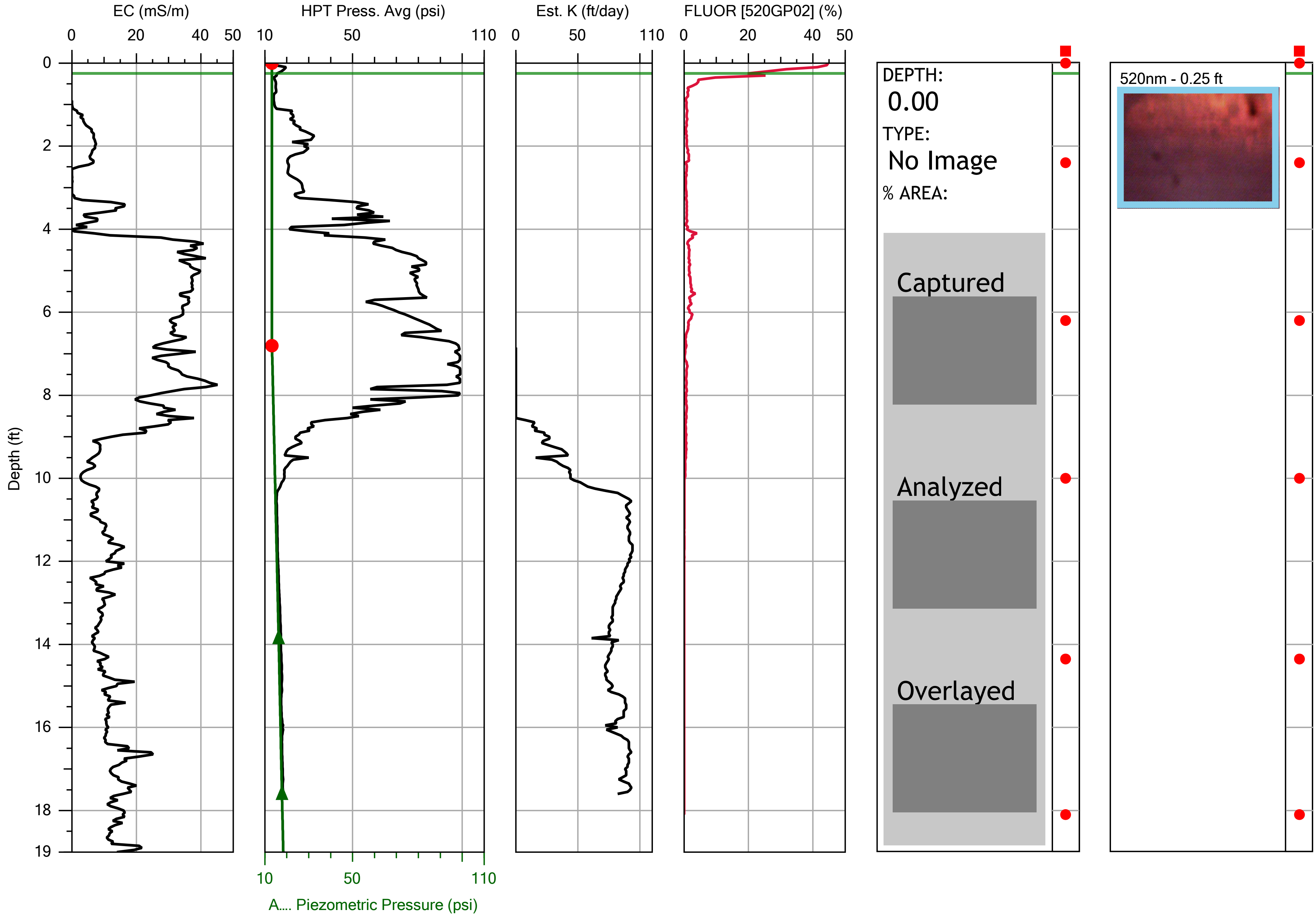
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.587	0.0	93.680
TOP with FLOW>0	14.035	264.0	96.770
BOTTOM with FLOW=0	13.377	0.0	92.230
BOTTOM with FLOW>0	13.832	268.8	95.370

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.4 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	59.7	8.6	PASS
High	360.0	356.5	1.0	PASS



		File: PDI-DPB-18.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 11/3/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-18.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.9	5.3	PASS
High	360.0	343.8	4.5	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   7.2
Black Box   520nm   1.9
Diesel 520nm   92.0
Motor Oil   520nm   90.2

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Tue Nov 3 2020 10:17:29

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.567	0.0	93.540
TOP with FLOW>0	14.009	262.1	96.590
BOTTOM with FLOW=0	13.345	0.0	92.010
BOTTOM with FLOW>0	13.806	264.5	95.190

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
Probe advancement with HPT flow valve and/or pump switch turned off at 0.00 ft (0.000 m).
LOG START TIME: Tue Nov 3 2020 10:20:48

LOG END DEPTH: 18.10 ft (5.517 m)
LOG END TIME: Tue Nov 3 2020 10:45:02

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	7.2	16.5	9.3
Black Box	520nm	1.9	0.1	1.8
Diesel	520nm	92.0	76.7	15.3
Motor Oil	520nm	90.2	95.1	4.8

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Tue Nov 3 2020 10:56:41

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.572	0.0	93.580
TOP with FLOW>0	13.980	263.3	96.390
BOTTOM with FLOW=0	13.359	0.0	92.110
BOTTOM with FLOW>0	13.762	269.6	94.880

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.5 kPa)

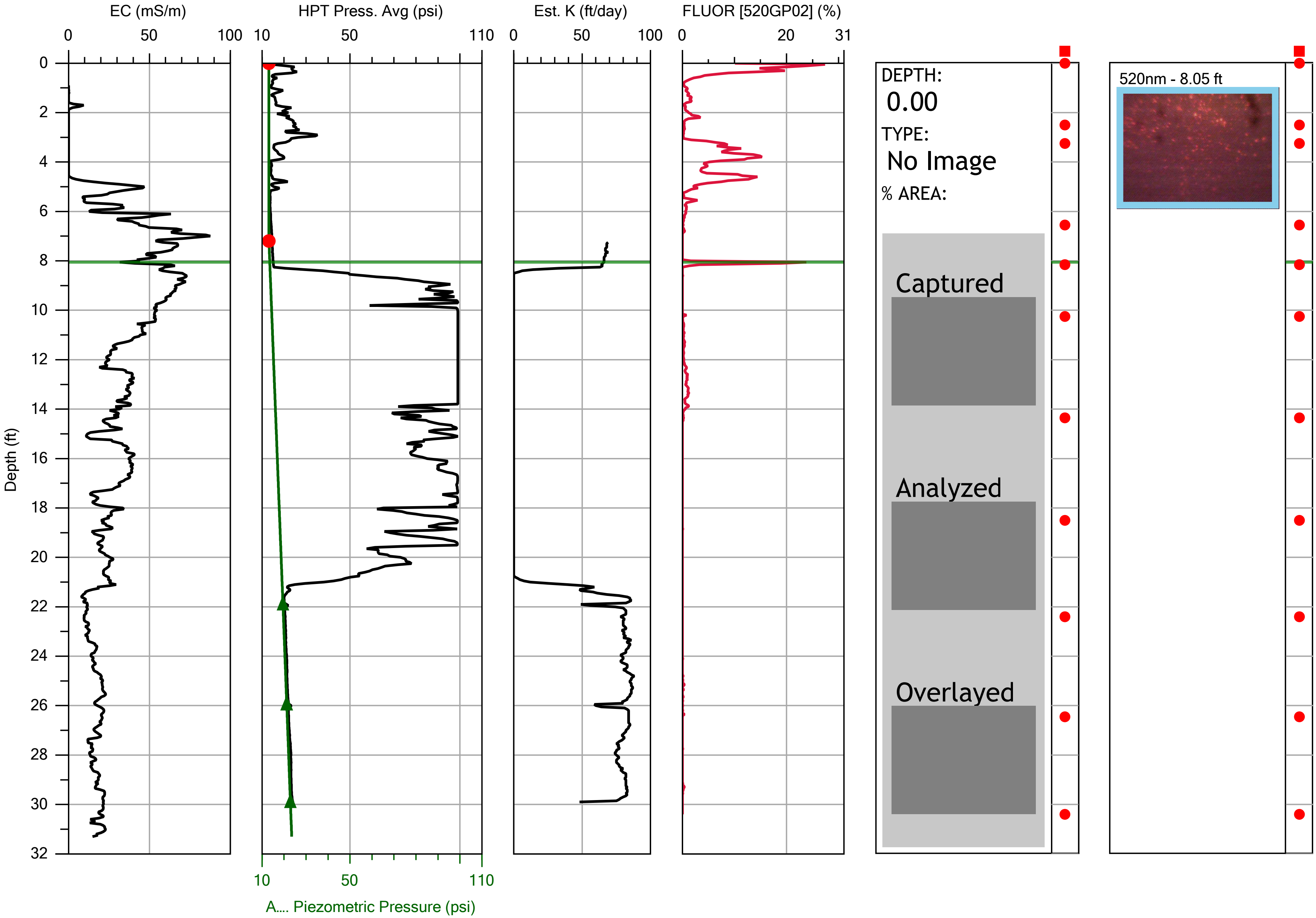
TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	59.1	7.5	PASS
High	360.0	356.0	1.1	PASS

********** USER NOTES **********

False readind in the first few inches due to dirty rod wiper.



Direct Image By Geoprobe Systems

		File: PDI-DPB-19.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 11/2/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-19.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	52.0	5.5	PASS
High	360.0	330.1	8.3	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   13.9
Black Box   520nm   0.1
Diesel 520nm   80.0
Motor Oil   520nm   96.5

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Mon Nov 2 2020 09:43:05

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.462	0.0	92.820
TOP with FLOW>0	13.896	249.6	95.810
BOTTOM with FLOW=0	13.250	0.0	91.350
BOTTOM with FLOW>0	13.697	246.3	94.440

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
Probe advancement with HPT flow valve and/or pump switch turned off at 0.05 ft (0.015 m).
LOG START TIME: Mon Nov 2 2020 09:52:04

LOG END DEPTH: 30.40 ft (9.266 m)
LOG END TIME: Mon Nov 2 2020 10:30:56

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	13.9	85.6	71.7
Black Box	520nm	0.1	0.2	0.1
Diesel	520nm	80.0	78.2	1.8
Motor Oil	520nm	96.5	89.9	6.6

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Mon Nov 2 2020 10:54:57

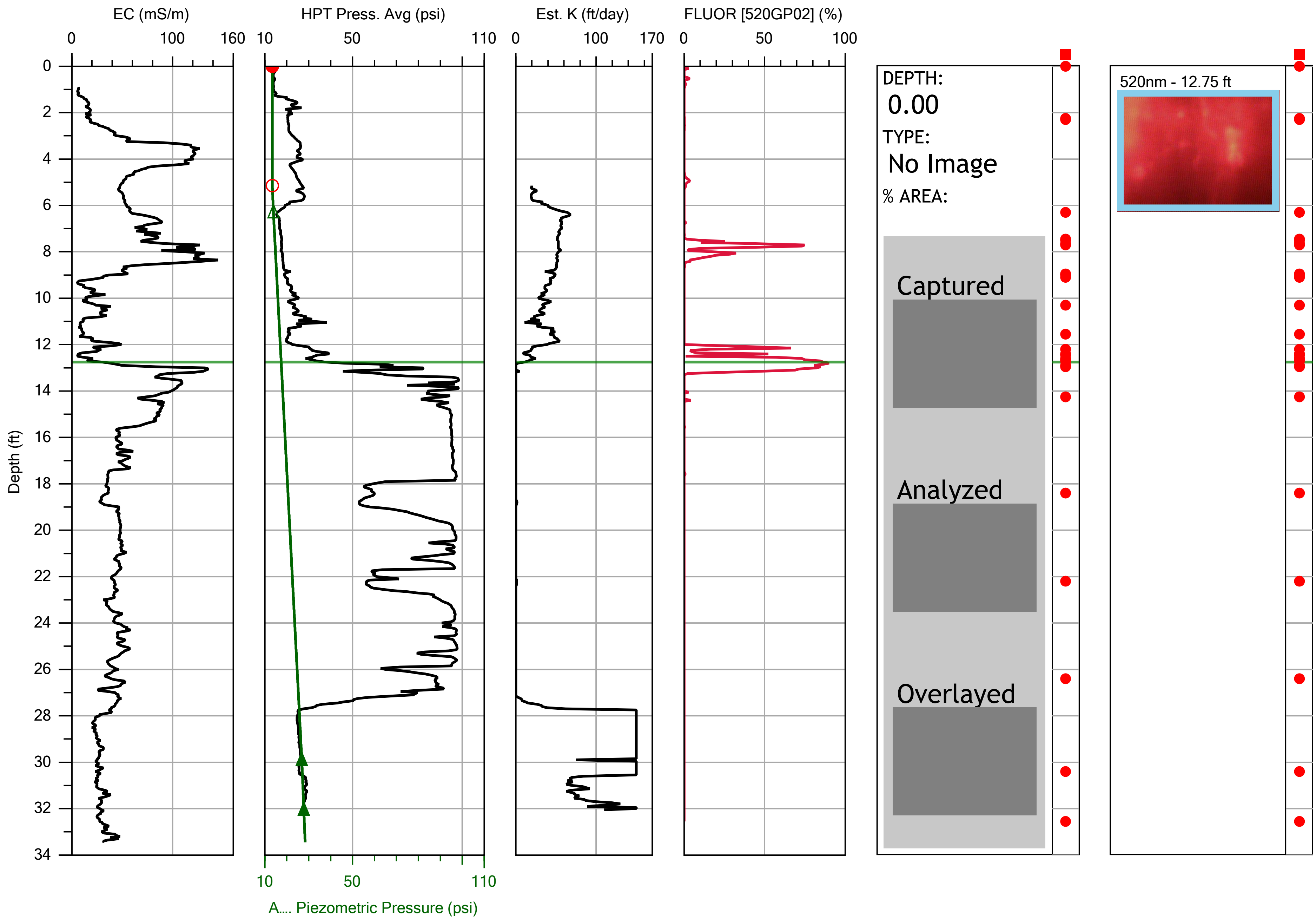
TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.459	0.0	92.790
TOP with FLOW>0	13.905	253.0	95.870
BOTTOM with FLOW=0	13.245	0.0	91.320
BOTTOM with FLOW>0	13.701	255.6	94.460

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.5 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	56.7	3.1	PASS
High	360.0	340.0	5.5	PASS



Direct Image® By Geoprobe Systems®

		File: PDI-DPB-20.OIHP
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 11/4/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-DPB-20.zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.8	5.1	PASS
High	360.0	334.4	7.1	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST
Visual Target   IR   22.3
Black Box   520nm   0.0
Diesel 520nm   95.0
Motor Oil   520nm   99.8

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Wed Nov 4 2020 15:36:08

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.707	0.0	94.510
TOP with FLOW>0	14.072	264.3	97.020
BOTTOM with FLOW=0	13.480	0.0	92.940
BOTTOM with FLOW>0	13.856	265.1	95.530

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.23 psi (1.6 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
LOG START TIME: Wed Nov 4 2020 15:40:29

LOG END DEPTH: 32.55 ft (9.921 m)
LOG END TIME: Wed Nov 4 2020 16:13:53

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	22.3	81.9	59.6
Black Box	520nm	0.0	0.0	0.0
Diesel	520nm	95.0	89.0	6.0
Motor Oil	520nm	99.8	97.7	2.1

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Wed Nov 4 2020 16:31:37

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.727	0.0	94.640
TOP with FLOW>0	14.058	264.5	96.920
BOTTOM with FLOW=0	13.509	0.0	93.140
BOTTOM with FLOW>0	13.853	263.5	95.510

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

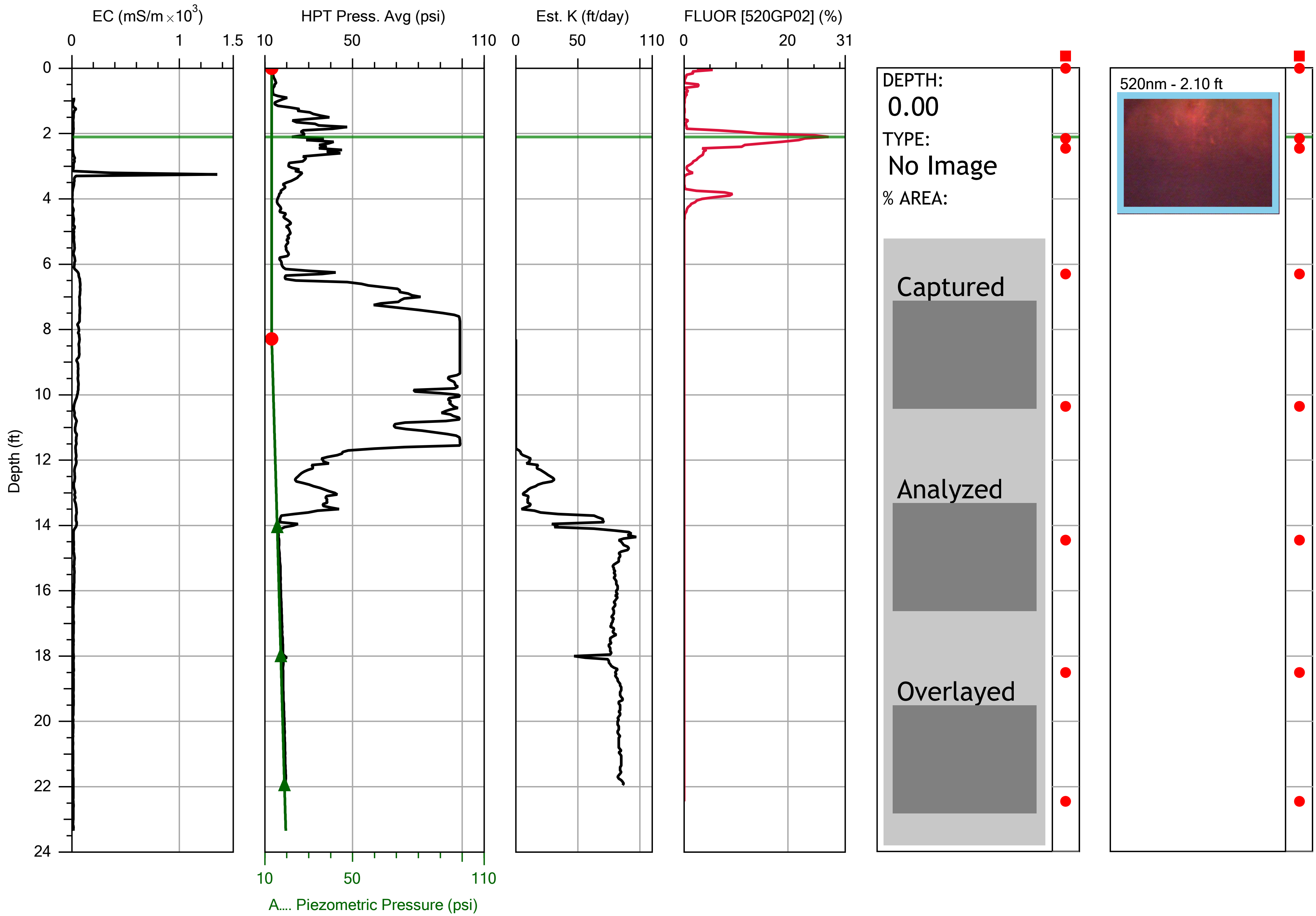
TRANSDUCER TEST PASSED

Post-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	49.5	9.9	PASS
High	360.0	356.5	1.0	PASS

********** USER NOTES **********

Refusal 32 feet



File: PDI-MW-10(SO).OIHP		
Company: Parratt-Wolff, Inc.	Operator: Wayne Nielson	Date: 11/2/2020
Project ID: 20089	Client: Arcadis	Location: Gloversville

PDI-MW-10(SO).zip

SITE INFORMATION -- DIRECT IMAGE OIP+HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 3.3   Build: 19087

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	57.5	4.5	PASS
High	360.0	344.9	4.2	PASS

COMPANY: Parratt-Wolff, Inc.
OPERATOR: Wayne Nielson
PROJECT ID: 20089
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: OH6720 OIHPT GL520 IR with Top Dipole
LOCATION: Gloversville
100 INCH STRING POT USED
ROD LENGTH: 4 feet

FILTER SETTINGS
Filter:
FILTER NAME: 520GPFilterGB002
FILTER GUID: 7cecbdf7-568b-41ab-a593-1fb75c212e47
T1: H[0-45, 225-255] S[140-255] V[125-255]
T2: H[0-45, 225-255] S[0-139] V[165-255]

LOGGING MODE: 520

OIP PRE-LOG TEST

Visual Target	IR	78.1
Black Box	520nm	0.0
Diesel 520nm	83.1	
Motor Oil	520nm	97.5

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Mon Nov 2 2020 11:08:02

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.468	0.0	92.860
TOP with FLOW>0	13.904	251.9	95.860
BOTTOM with FLOW=0	13.266	0.0	91.470
BOTTOM with FLOW>0	13.700	269.8	94.450

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.20 psi (1.4 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: G-F345OH,0.0000,0.0000,0.0000,0.0000,2.5000,-2.6070e1
Probe advancement with HPT flow valve and/or pump switch turned off at 0.05 ft (0.015 m).
LOG START TIME: Mon Nov 2 2020 11:13:21

LOG END DEPTH: 22.45 ft (6.843 m)
LOG END TIME: Mon Nov 2 2020 11:38:53

LATITUDE: 0.000000000
LONGITUDE: 0.000000000
ELEVATION: 0.000 METERS 0.00 FEET
GPS Quality: None

OIP PRE/POST-LOG TEST RESULTS

Name	Light	Pre	Post	Dif
Visual Target	IR	78.1	87.1	9.0
Black Box	520nm	0.0	0.0	0.0
Diesel	520nm	83.1	84.3	1.2
Motor Oil	520nm	97.5	99.2	1.7

Frame grabber settings:
Brightness: 111
Contrast: 140
Hue: 0
Saturation: 200

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Mon Nov 2 2020 11:53:57

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	13.459	0.0	92.790
TOP with FLOW>0	13.946	273.0	96.150
BOTTOM with FLOW=0	13.259	0.0	91.420
BOTTOM with FLOW>0	13.734	275.5	94.690

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.20 psi (1.4 kPa)

TRANSDUCER TEST PASSED

Post-Log EC Load Tests

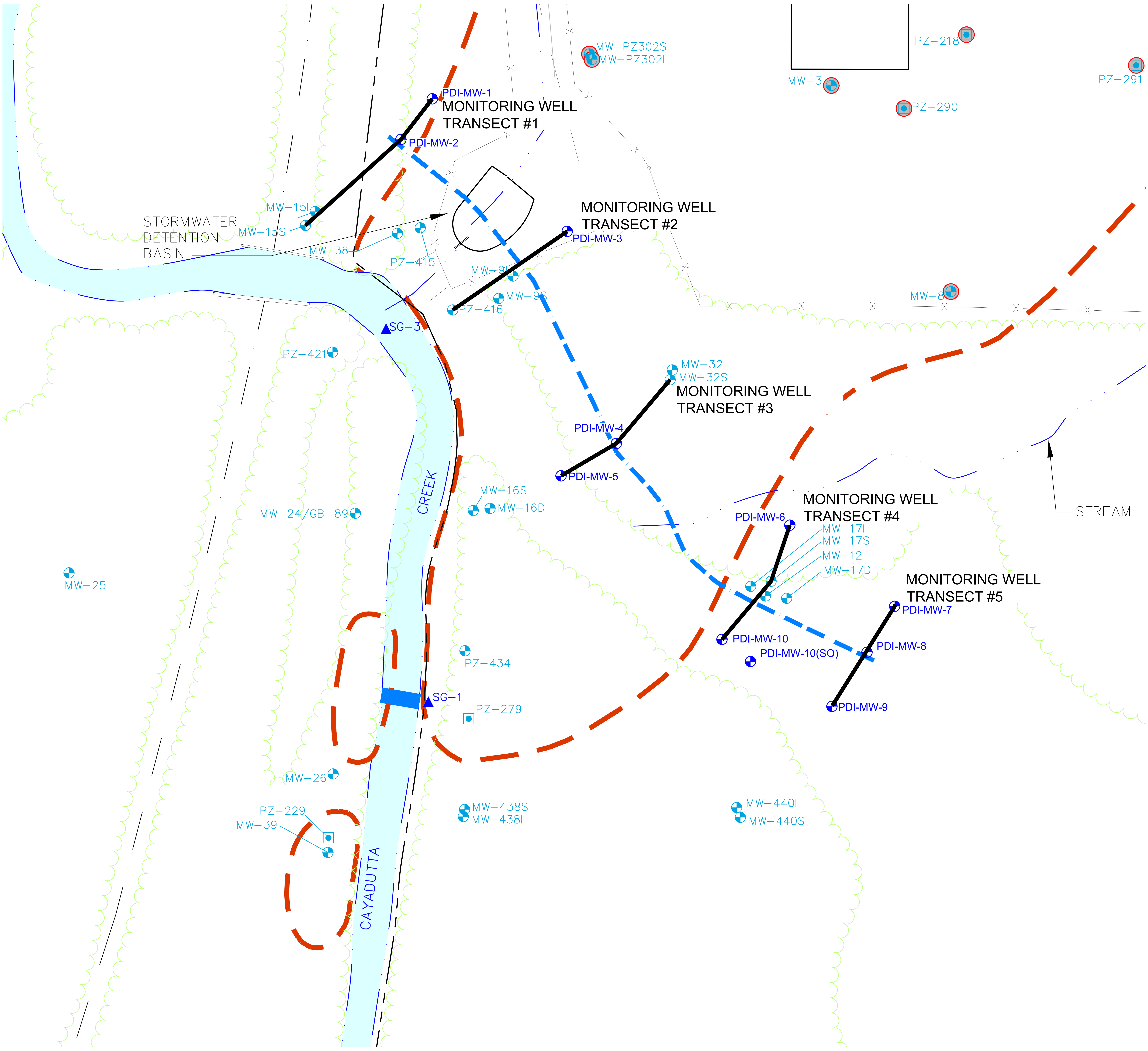
Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Low	55.0	58.3	6.1	PASS
High	360.0	345.7	4.0	PASS

Appendix E

NBW Alignment Hydrographs

C:\Users\mwasilewski\BIM 360\Arcadis\ANA - National Grid\Project Files\Gloversville (Hill St) Former MGP Site\2021\01-DWG\PDIR-FIG01 MW TRANSECT LOCATIONS.DWG LAYOUT: 1 SAVED: 5/27/2021 8:09 AM ACADVER: 23.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 5/27/2021 8:09 AM BY: WASILEWSKI, MATT

XREFS: IMAGES:
RDWP-X-BASEMAP
RDWP-X-CONTOURS
RDWP-X-UTILS-1
PDIR-X-TITLE-DP



LEGEND:

- PDI MONITORING WELL
- PDI STAFF GAUGE
- PZ-434 PREVIOUS MONITORING WELL
- PZ-279 PREVIOUS PIEZOMETER
- ABANDONED MONITORING WELL / PIEZOMETER
- MONITORING WELL TRANSECT
- PDI TRANSECT FOR MANUALLY MEASURING CREEK VELOCITIES AND DEPTHS
- PROBABLE NAPL-CONTAINING AREA
- PROPOSED NAPL BARRIER WALL ALIGNMENT
- APPROXIMATE PROPERTY LINE LIMITS
- PAVED BIKE PATH
- WATER
- TREE LINE
- FENCE
- UTILITY POLE

NOTES:

1. ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.
2. THE NATIONAL GRID PROPERTY LINE SHOWN IS APPROXIMATE.
3. ALL LOCATIONS ARE APPROXIMATE.
4. BASEMAP PREPARED FROM ELECTRONIC SURVEY FILE PROVIDED BY NIAGARA MOHAWK ON 7/23/01. PRIMARY SURVEY CONTROL FOR PHOTOGRAMMETIC MAPPING WAS ESTABLISHED FROM AN ON THE GROUND SURVEY, PERFORMED ON JULY 28, 1994 USING THE GLOBAL POSITIONING SYSTEM (GPS) AND CONFORMS TO ORDER 2 CLASS 2 FGCS ACCURACY SPECIFICATIONS. THE HORIZONTAL REFERENCE DATUM NORTH AMERICAN DATUM OF 1983 (NAD 83) ON REFERENCE ELLIPSOID ASSOCIATED WITH THE GEODETIC REFERENCE SYSTEM OF 1980 (GRS 80). THE COORDINATES ARE BASED ON THE NEW YORK STATE PLANE GEODETIC SYSTEM OF 1983 (EASTERN ZONE 3101).

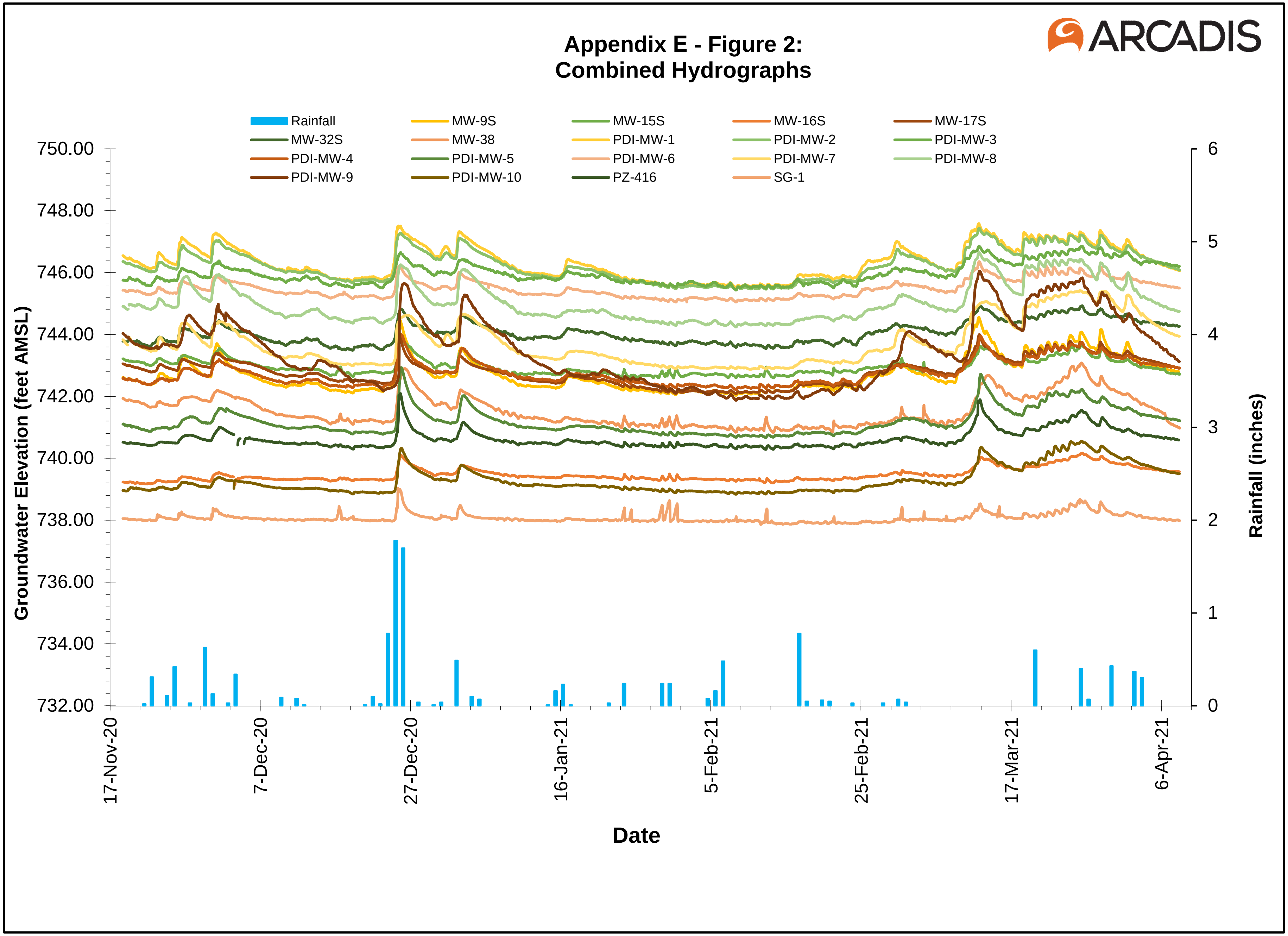
0 30' 60'
GRAPHIC SCALE

NATIONAL GRID
GLOVERSVILLE (HILL STREET) FORMER MGP SITE
GLOVERSVILLE, NEW YORK
PRE-DESIGN INVESTIGATION REPORT

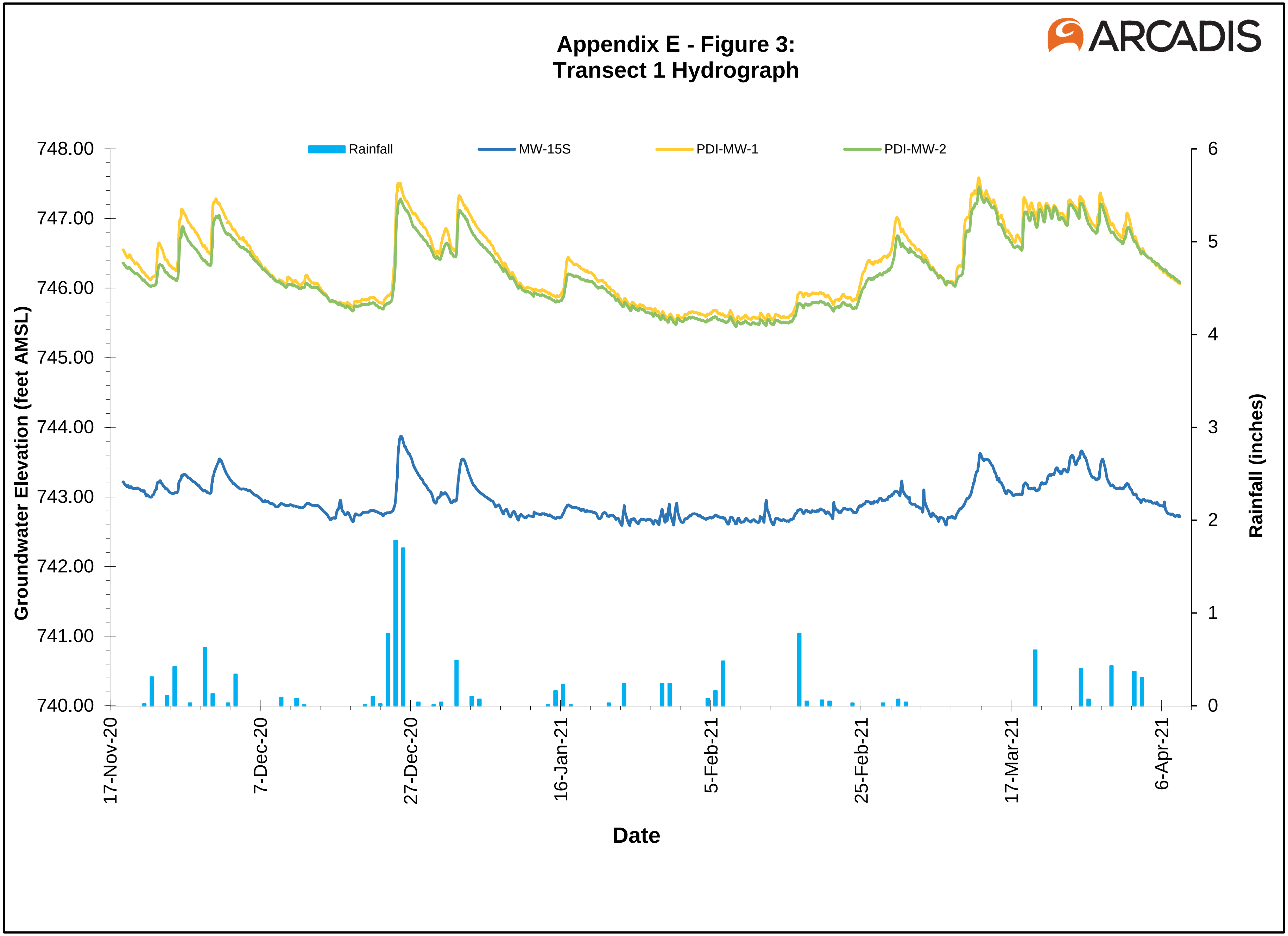
MONITORING WELL TRANSECT LOCATIONS

ARCADIS

FIGURE
1

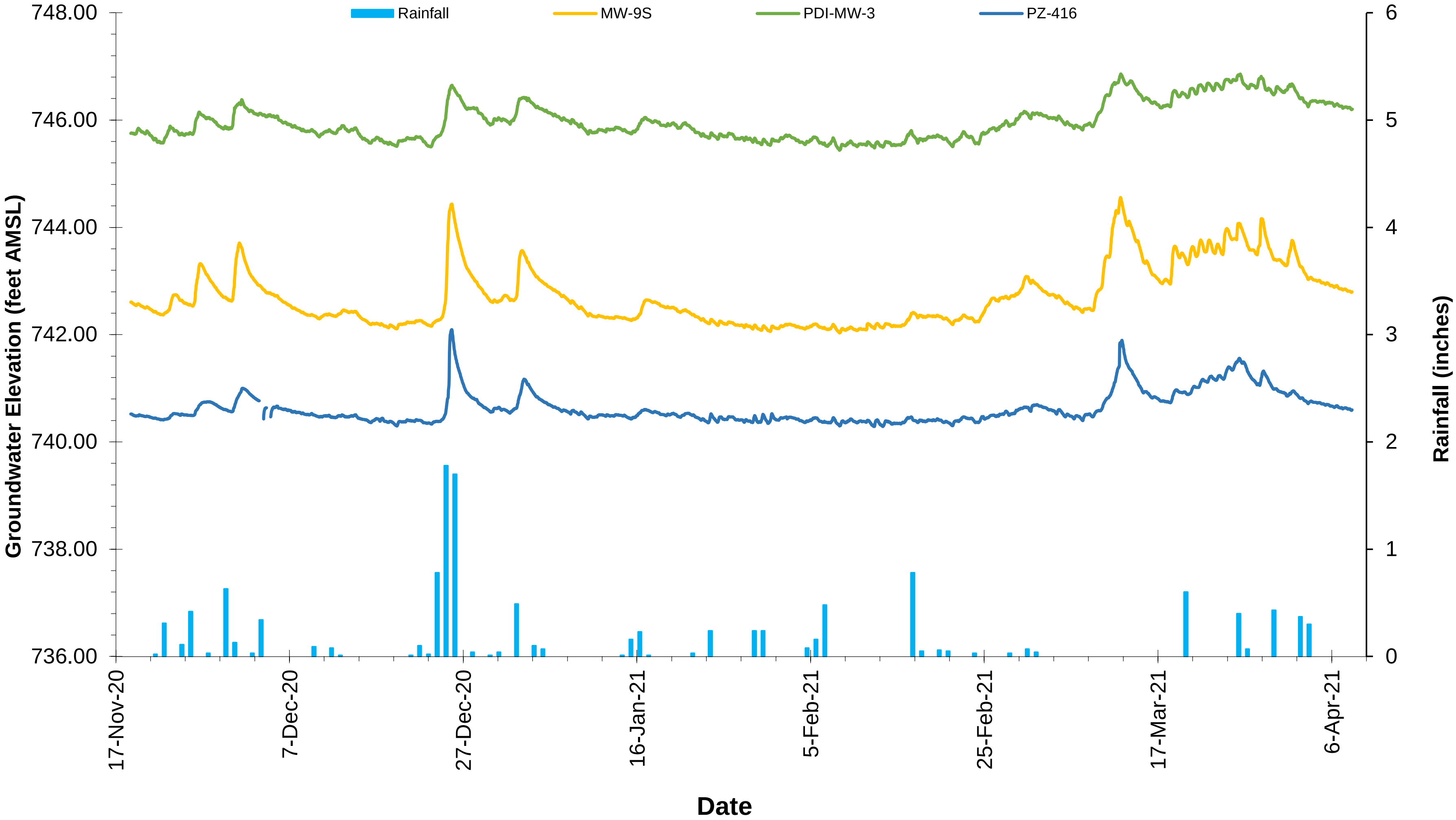


Appendix E - Figure 2:
Combined Hydrographs
ARCADIS
Rainfall
MW-9S
MW-15S
MW-16S
MW-17S
MW-32S
MW-38
PDI-MW-1
PDI-MW-2
PDI-MW-3
PDI-MW-4
PDI-MW-5
PDI-MW-6
PDI-MW-7
PDI-MW-8
PDI-MW-9
PDI-MW-10
PZ-416
SG-1
Groundwater Elevation (feet AMSL)
750.00
748.00
746.00
744.00
742.00
740.00
738.00
736.00
734.00
732.00
Rainfall (inches)
6
5
4
3
2
1
0
17-Nov-20
7-Dec-20
27-Dec-20
16-Jan-21
5-Feb-21
25-Feb-21
17-Mar-21
6-Apr-21
Date

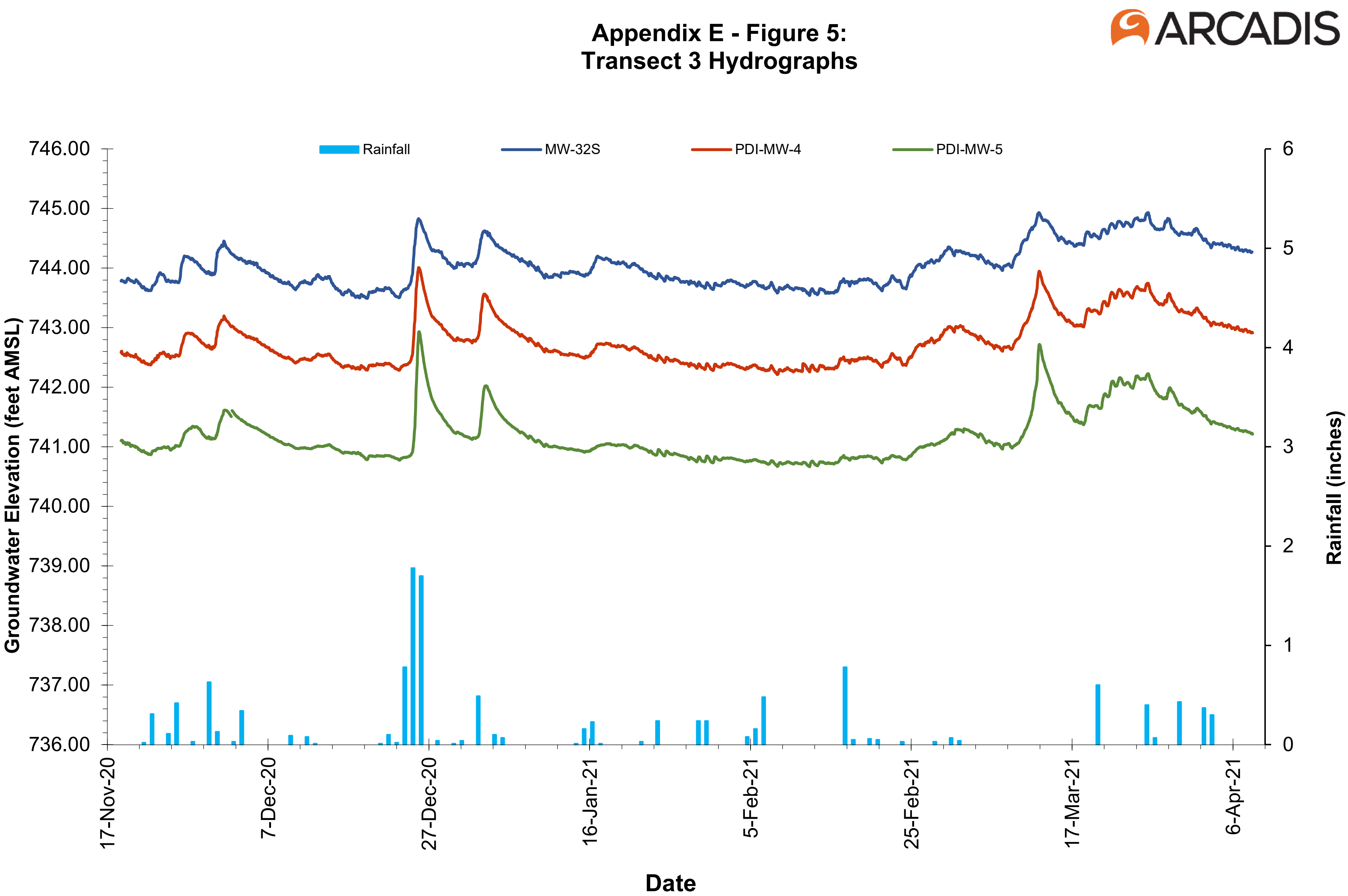


Appendix E - Figure 3:
Transect 1 Hydrograph
ARCADIS
Rainfall
MW-15S
PDI-MW-1
PDI-MW-2
748.00
747.00
746.00
745.00
744.00
743.00
742.00
741.00
740.00
Groundwater Elevation (feet AMSL)
6
5
4
3
2
1
0
Rainfall (inches)
17-Nov-20
7-Dec-20
27-Dec-20
16-Jan-21
5-Feb-21
25-Feb-21
17-Mar-21
6-Apr-21
Date

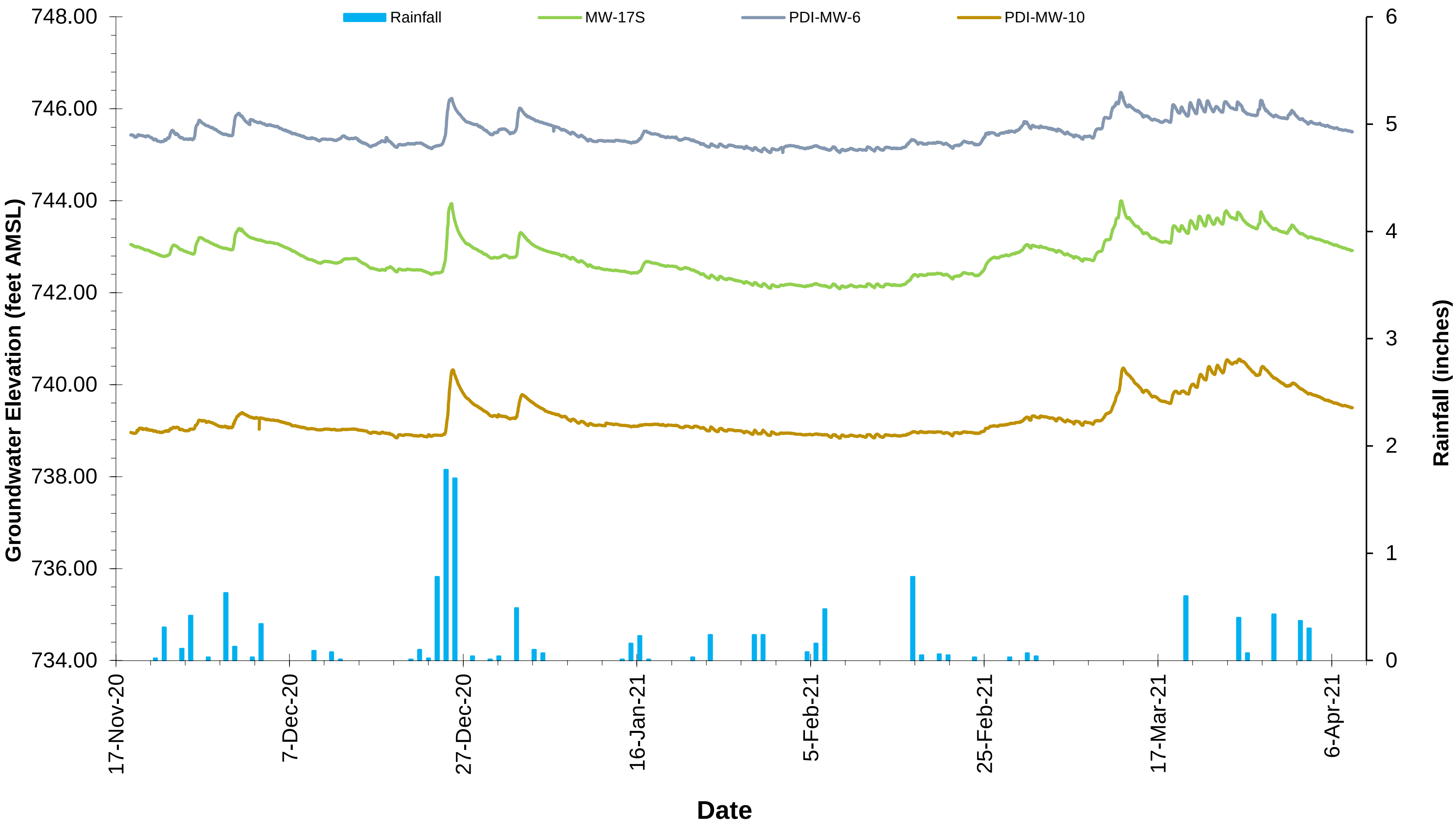
Appendix E - Figure 4:
Transect 2 Hydrographs

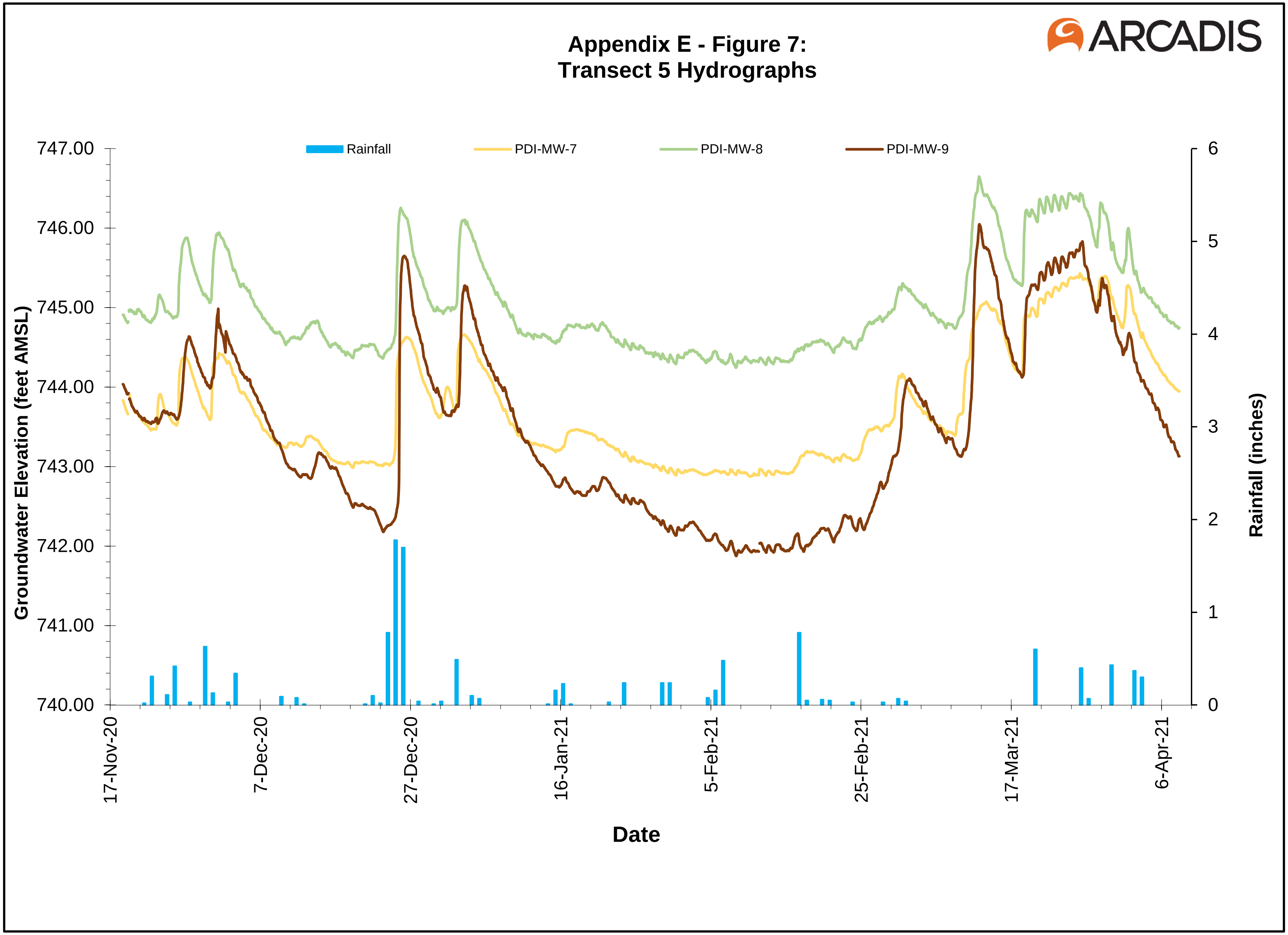


Appendix E - Figure 5:
Transect 3 Hydrographs



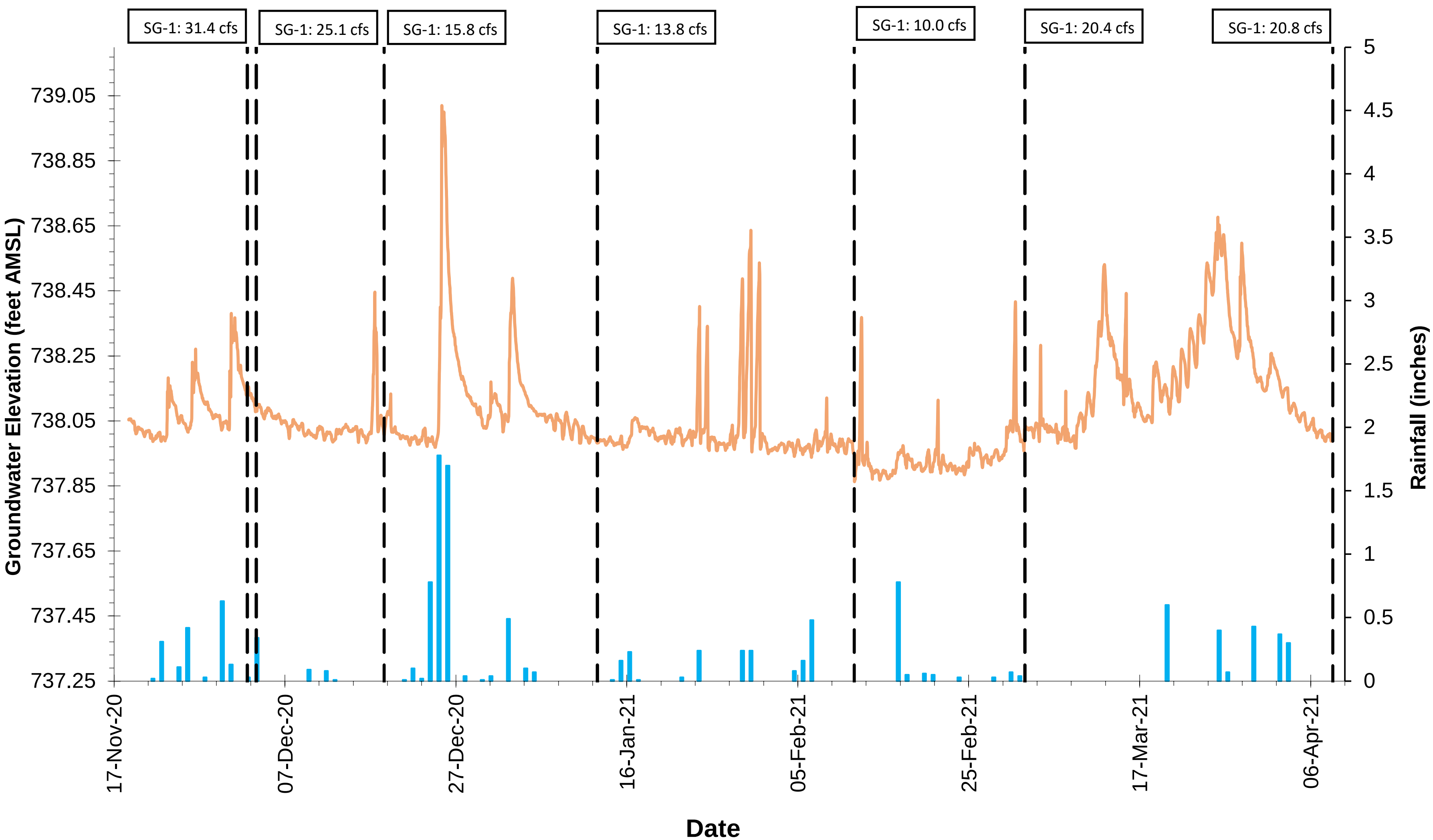
Appendix E - Figure 6:
Transect 4 Hydrographs





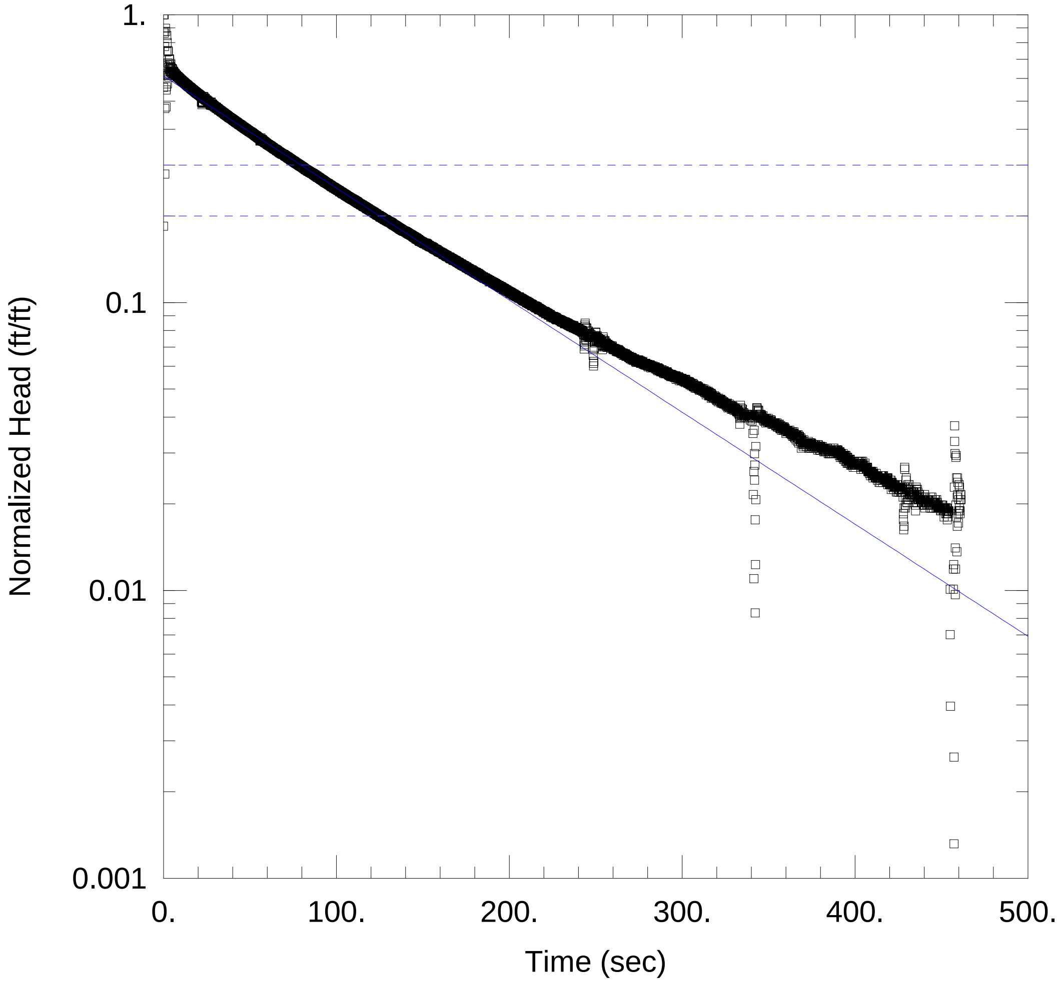
Appendix E - Figure 7:
Transect 5 Hydrographs
ARCADIS
Rainfall
PDI-MW-7
PDI-MW-8
PDI-MW-9
Groundwater Elevation (feet AMSL)
747.00
746.00
745.00
744.00
743.00
742.00
741.00
740.00
Rainfall (inches)
6
5
4
3
2
1
0
17-Nov-20
7-Dec-20
27-Dec-20
16-Jan-21
5-Feb-21
25-Feb-21
17-Mar-21
6-Apr-21
Date

Appendix E - Figure 8: SG-1 Hydrograph With Stream Discharge Measurements



Appendix F

AQTESOLV Slug Test Solution Plots



PDI-MW-1 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-1 Rising Head Bouwer Rice.aqt
Date: 04/06/21 Time: 09:26:51

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-1
Test Date: 12/02/2020

AQUIFER DATA

Saturated Thickness: 9.26 ft
Anisotropy Ratio (Kz/Kr): 1.

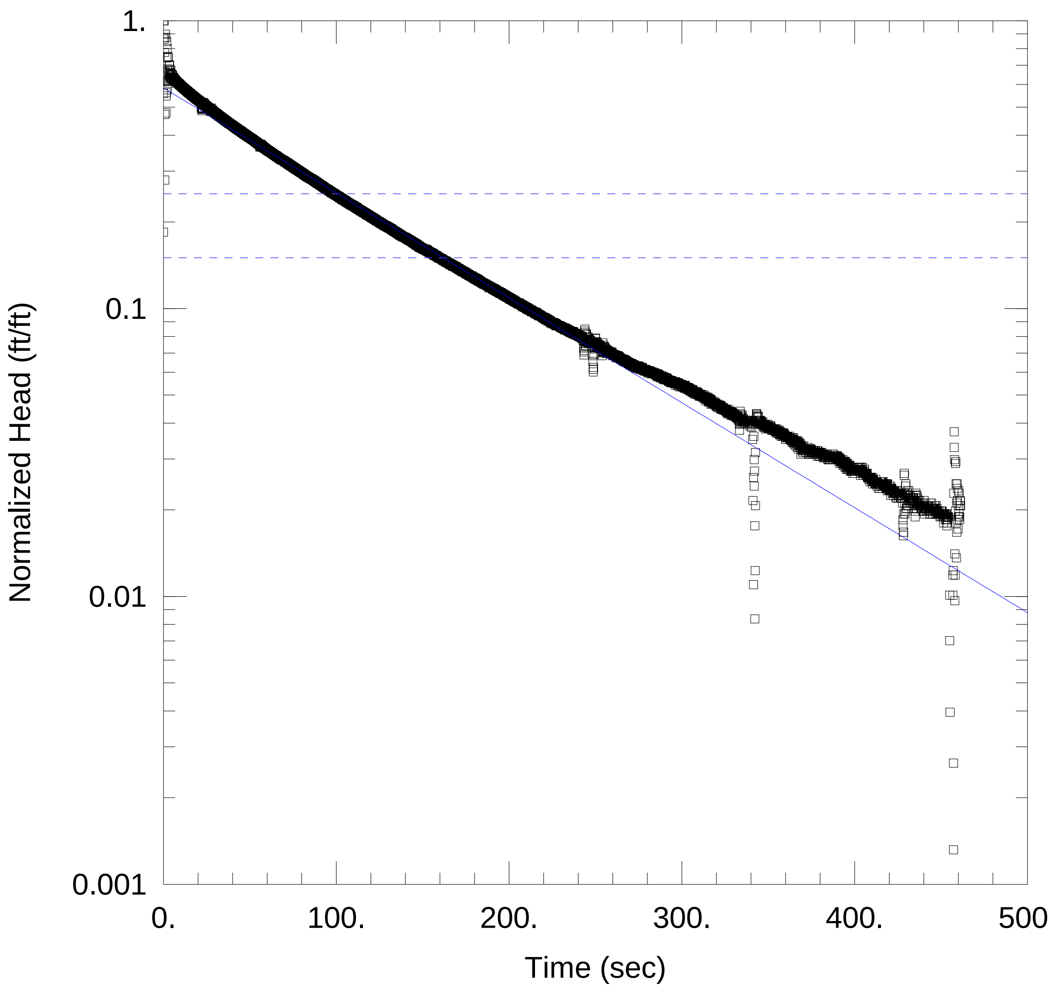
WELL DATA (PDI-MW-1)

Initial Displacement: 2.278 ft
Static Water Column Height: 9.26 ft
Total Well Penetration Depth: 9.26 ft
Screen Length: 9.26 ft
Casing Radius: 0.083 ft
Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.8691 ft/day
y0 = 1.394 ft



PDI-MW-1 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-1 Rising Head Hvorslev.aqt
Date: 04/06/21 Time: 09:27:36

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-1
Test Date: 12/02/2020

AQUIFER DATA

Saturated Thickness: 9.26 ft Anisotropy Ratio (Kz/Kr): 1.

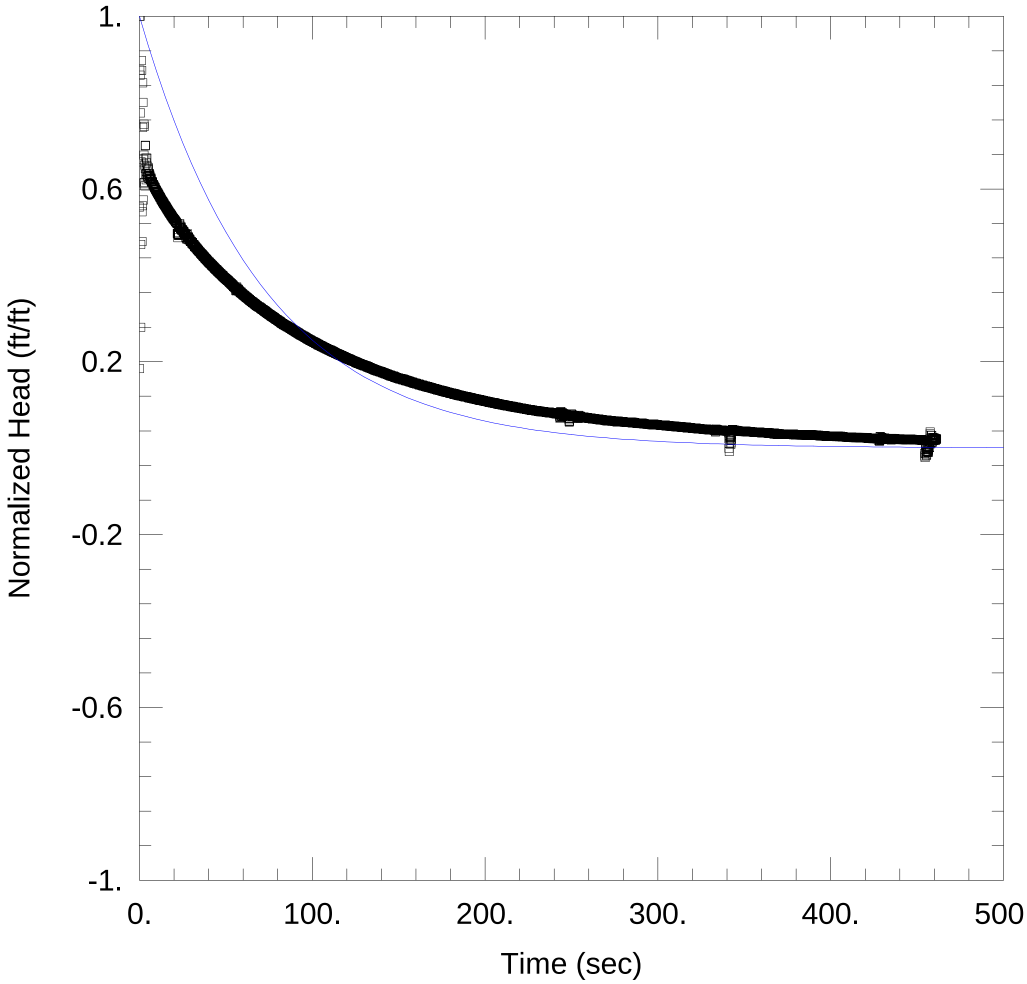
WELL DATA (PDI-MW-1)

Initial Displacement: 2.278 ft Static Water Column Height: 9.26 ft
Total Well Penetration Depth: 9.26 ft Screen Length: 9.26 ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev

K = 1.43 ft/day y0 = 1.33 ft



PDI-MW-1 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-1 Rising Head Springer Gelhar.aqt
Date: 04/06/21 Time: 09:29:04

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-1
Test Date: 12/02/2020

AQUIFER DATA

Saturated Thickness: 9.26 ft Anisotropy Ratio (Kz/Kr): 1.

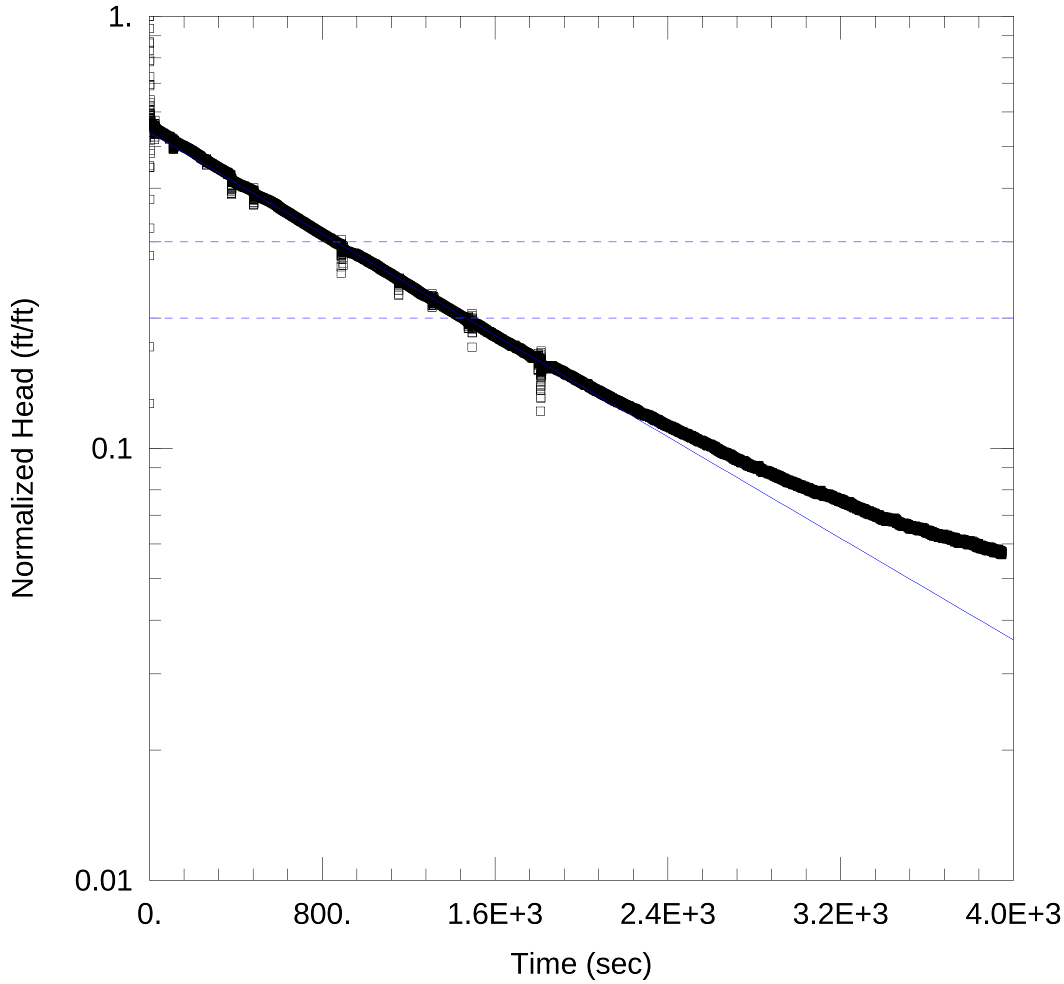
WELL DATA (PDI-MW-1)

Initial Displacement: 2.278 ft Static Water Column Height: 9.26 ft
Total Well Penetration Depth: 9.26 ft Screen Length: 9.26 ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 1.343 ft/day Le = 0.1 ft



PDI-MW-2 RISING HEAD SLUG TESTS

Data Set: C:\...\PDI-MW-2 Rising Head Bouwer Rice.aqt
Date: 04/06/21 Time: 09:30:14

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-2
Test Date: 12/02/2020

AQUIFER DATA

Saturated Thickness: 8.02 ft Anisotropy Ratio (Kz/Kr): 1.

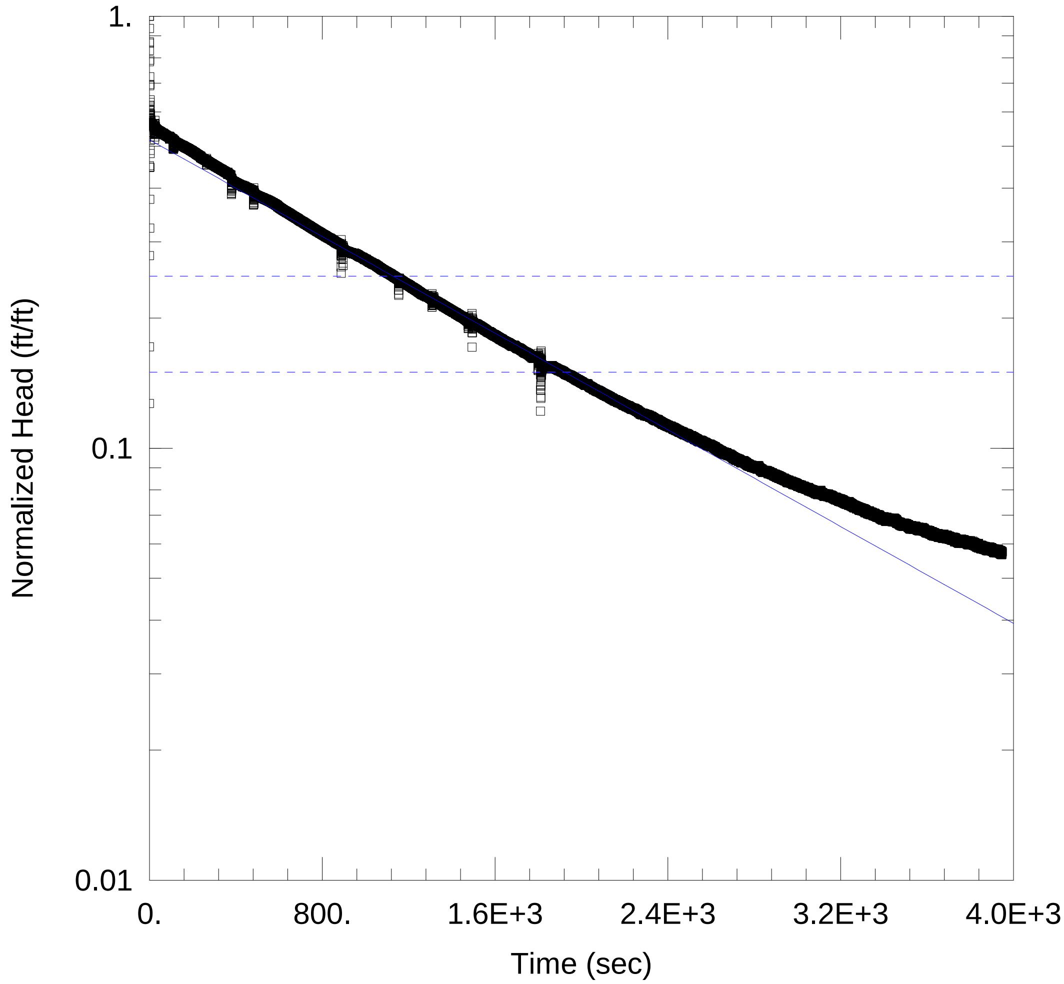
WELL DATA (PDI-MW-2)

Initial Displacement: 2.692 ft Static Water Column Height: 8.02 ft
Total Well Penetration Depth: 8.02 ft Screen Length: 8.02 ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.07282 ft/day y0 = 1.45 ft



PDI-MW-2 RISING HEAD SLUG TESTS

Data Set: C:\...\PDI-MW-2 Rising Head Hvorslev.aqt
Date: 04/06/21 Time: 09:31:12

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-2
Test Date: 12/02/2020

AQUIFER DATA

Saturated Thickness: 8.02 ft Anisotropy Ratio (Kz/Kr): 1.

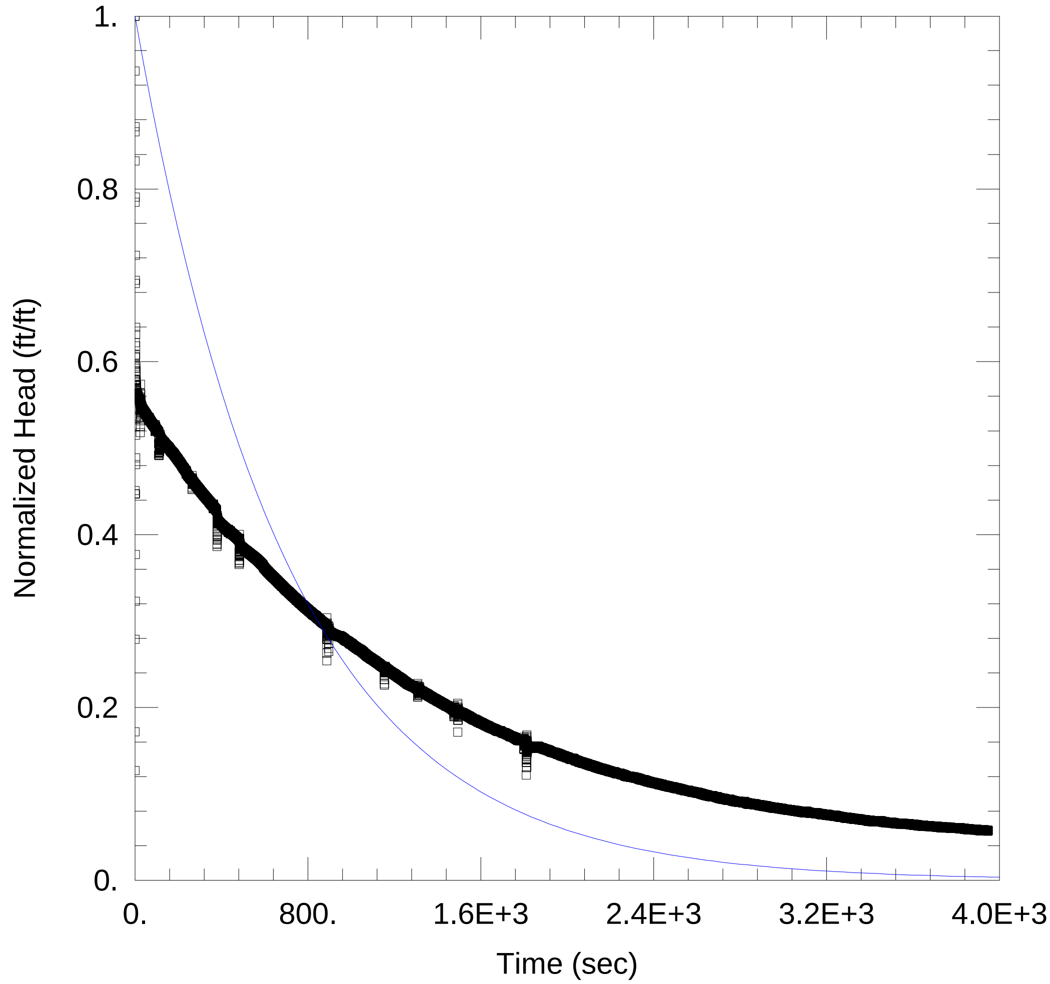
WELL DATA (PDI-MW-2)

Initial Displacement: 2.692 ft Static Water Column Height: 8.02 ft
Total Well Penetration Depth: 8.02 ft Screen Length: 8.02 ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev

K = 0.1267 ft/day y0 = 1.394 ft



PDI-MW-2 RISING HEAD SLUG TESTS

Data Set: C:\...\PDI-MW-2 Rising Head Springer Gelhar.aqt
Date: 04/06/21 Time: 09:32:14

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-2
Test Date: 12/02/2020

AQUIFER DATA

Saturated Thickness: 8.02 ft Anisotropy Ratio (Kz/Kr): 1.

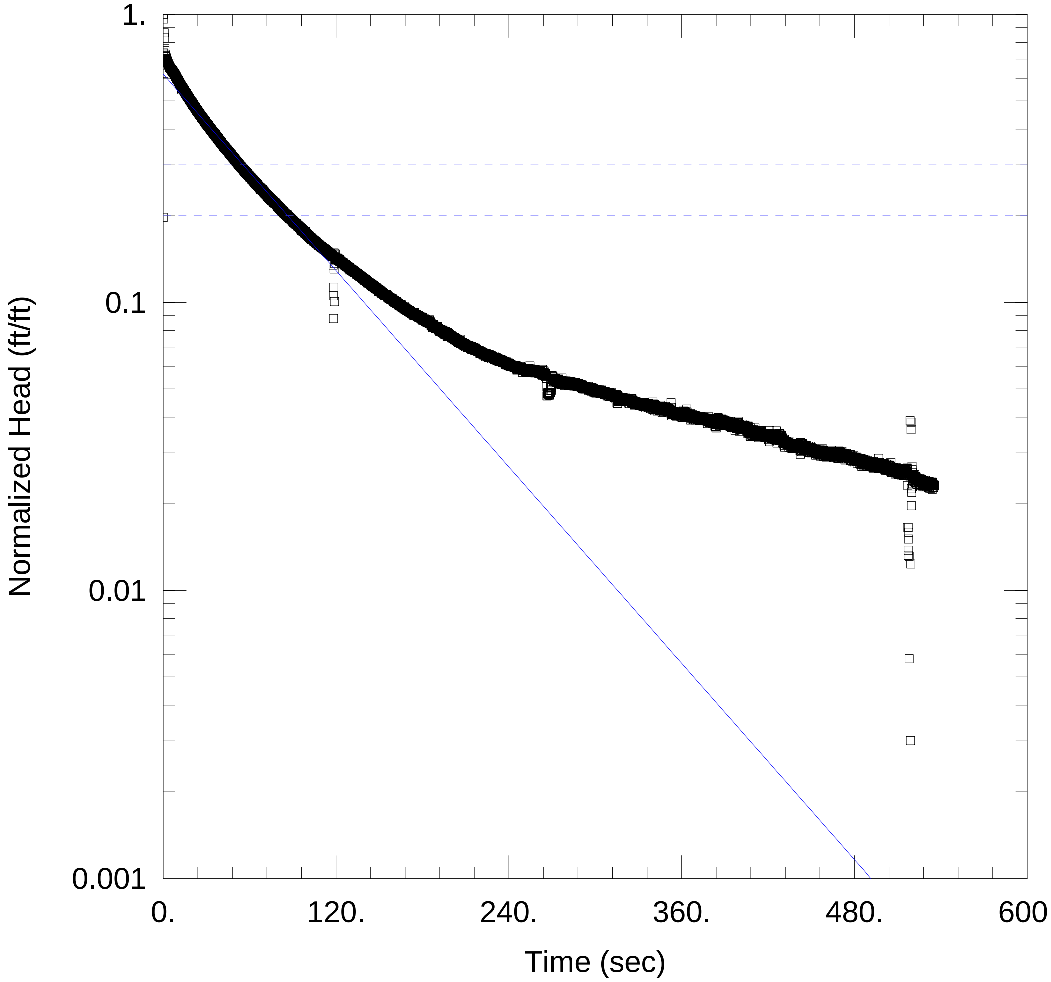
WELL DATA (PDI-MW-2)

Initial Displacement: 2.692 ft Static Water Column Height: 8.02 ft
Total Well Penetration Depth: 8.02 ft Screen Length: 8.02 ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.1535 ft/day Le = 0.1 ft



PDI-MW-3 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-3 Rising Head Bouwer Rice.aqt
Date: 04/06/21 Time: 09:33:51

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-3
Test Date: 12/02/2020

AQUIFER DATA

Saturated Thickness: 10.91 ft
Anisotropy Ratio (Kz/Kr): 1.

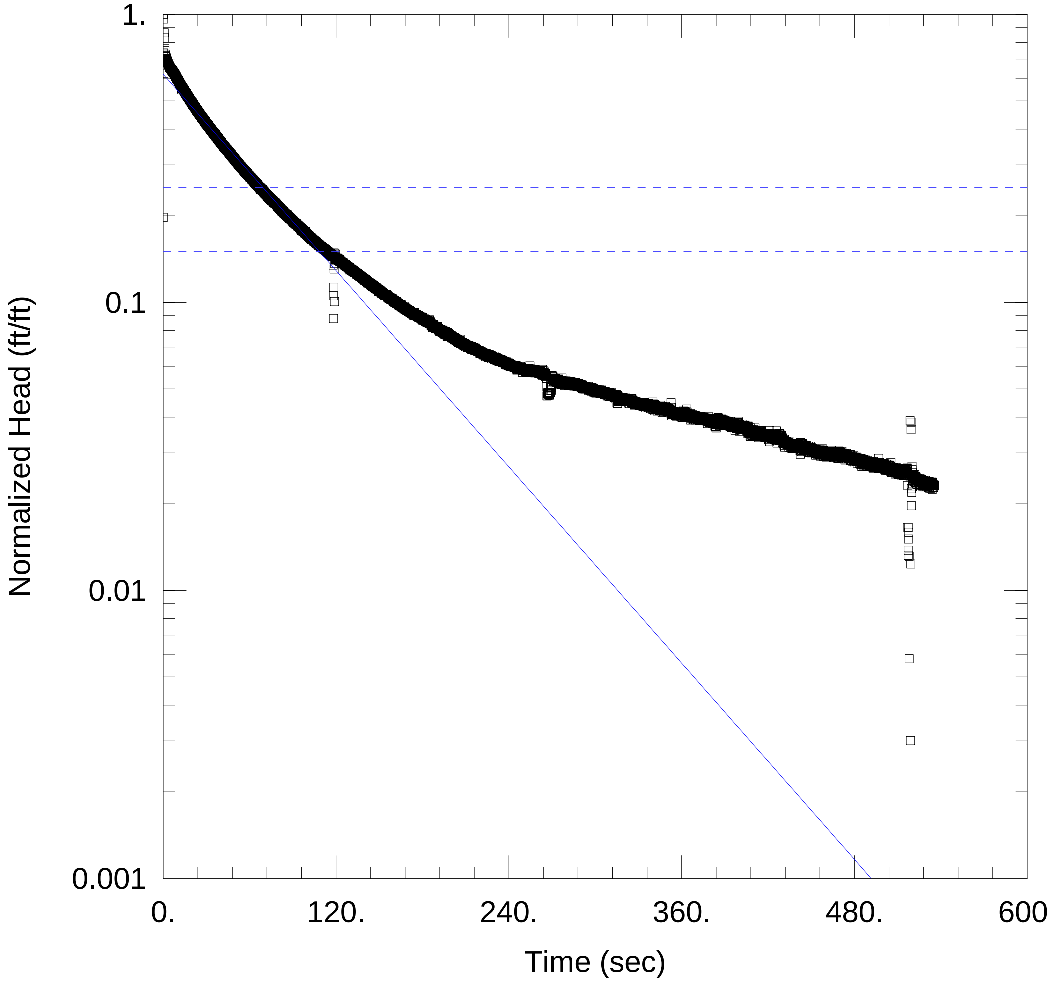
WELL DATA (PDI-MW-3)

Initial Displacement: 2.092 ft
Static Water Column Height: 10.91 ft
Total Well Penetration Depth: 10.91 ft
Screen Length: 10. ft
Casing Radius: 0.083 ft
Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 1.22 ft/day
y0 = 1.296 ft



PDI-MW-3 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-3 Rising Head Hvorslev.aqt
Date: 04/06/21 Time: 09:34:30

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-3
Test Date: 12/02/2020

AQUIFER DATA

Saturated Thickness: 10.91 ft Anisotropy Ratio (Kz/Kr): 1.

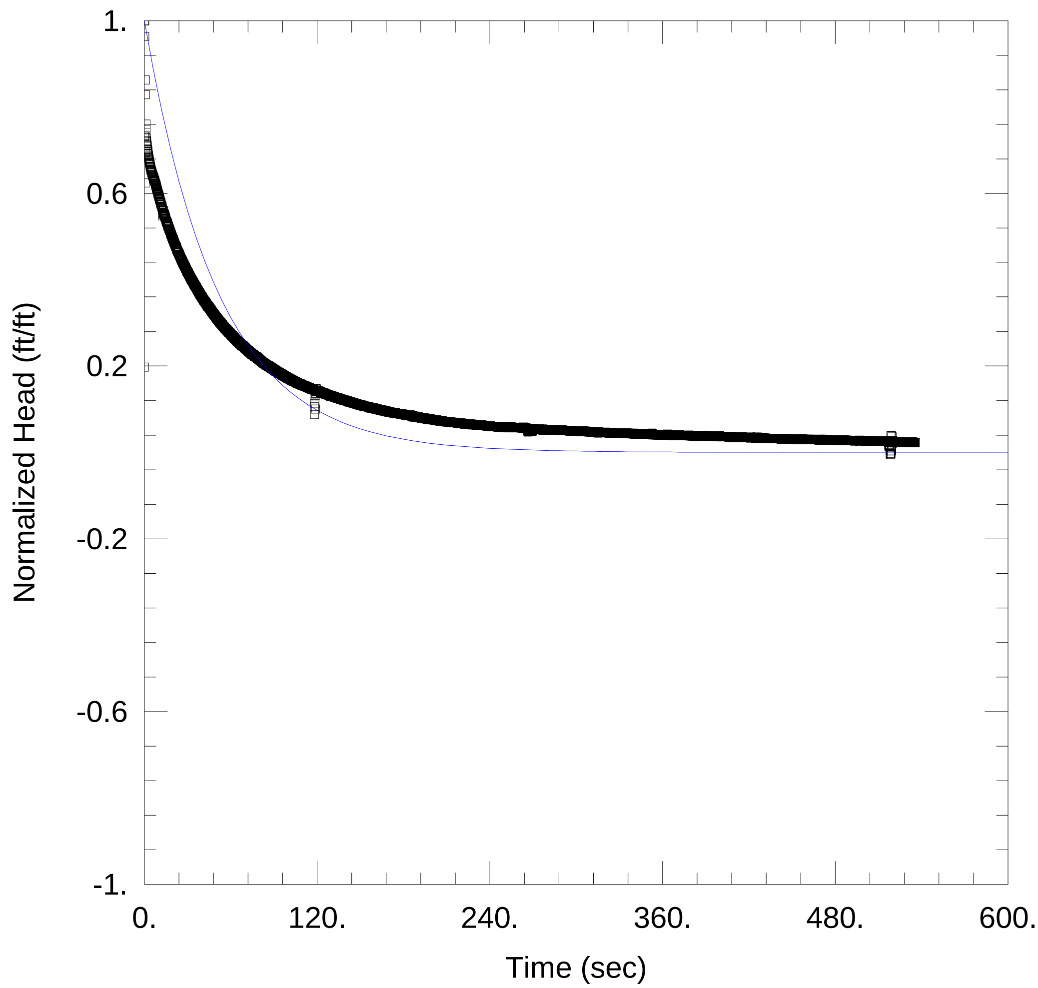
WELL DATA (PDI-MW-3)

Initial Displacement: 2.092 ft Static Water Column Height: 10.92 ft
Total Well Penetration Depth: 10.91 ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev

K = 1.833 ft/day y0 = 1.296 ft



PDI-MW-3 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-3 Rising Head Springer Gelhar.aqt
Date: 04/06/21 Time: 09:35:14

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-3
Test Date: 12/02/2020

AQUIFER DATA

Saturated Thickness: 10.91 ft Anisotropy Ratio (Kz/Kr): 1.

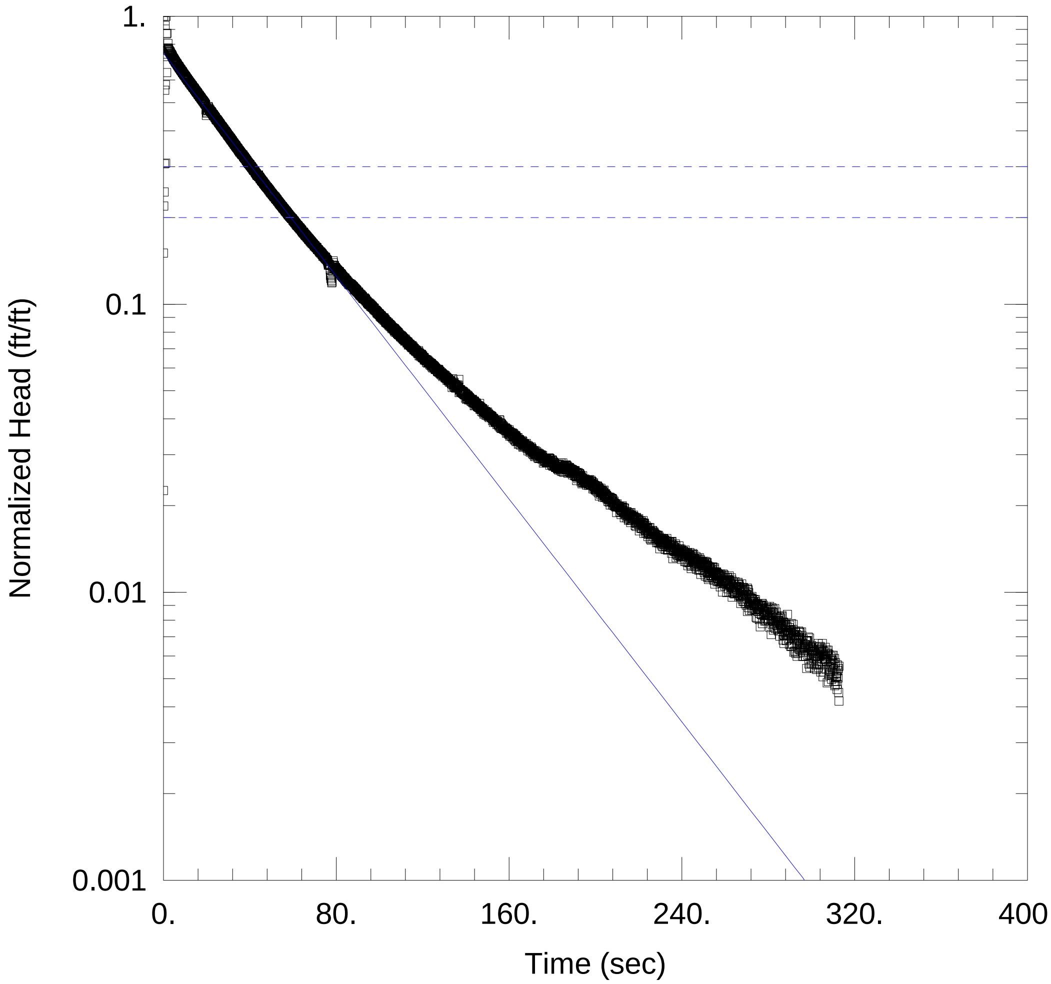
WELL DATA (PDI-MW-3)

Initial Displacement: 2.092 ft Static Water Column Height: 10.92 ft
Total Well Penetration Depth: 10.91 ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 1.81 ft/day Le = 0.1 ft



PDI-MW-4 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-4 Rising Head Bouwer Rice.aqt
Date: 04/06/21 Time: 09:36:00

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-4
Test Date: 12/02/2020

AQUIFER DATA

Saturated Thickness: 7.68 ft Anisotropy Ratio (Kz/Kr): 1.

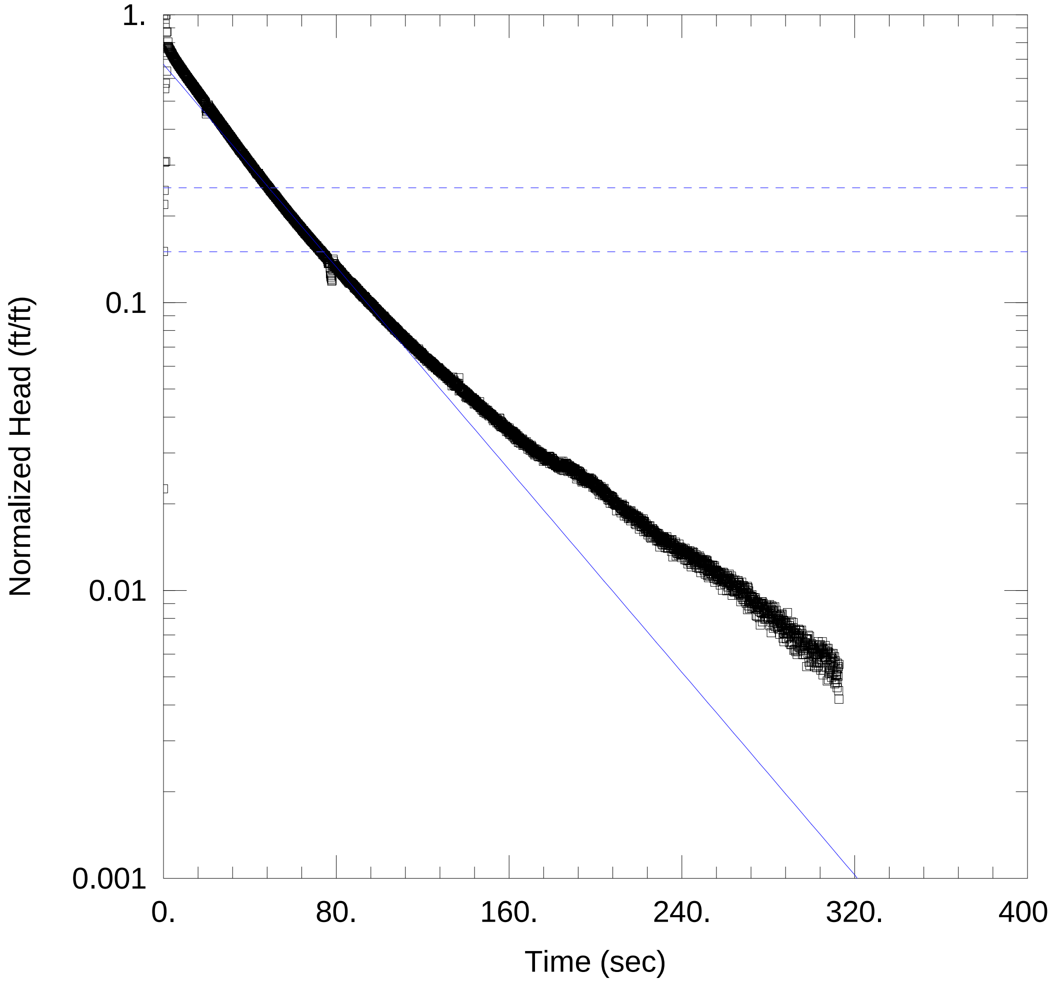
WELL DATA (PDI-MW-4)

Initial Displacement: 2.006 ft Static Water Column Height: 7.68 ft
Total Well Penetration Depth: 7.68 ft Screen Length: 5. ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 3.668 ft/day y0 = 1.49 ft



PDI-MW-4 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-4 Rising Head Hvorslev.aqt
Date: 04/06/21 Time: 09:36:29

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-4
Test Date: 12/02/2020

AQUIFER DATA

Saturated Thickness: 7.68 ft Anisotropy Ratio (Kz/Kr): 1.

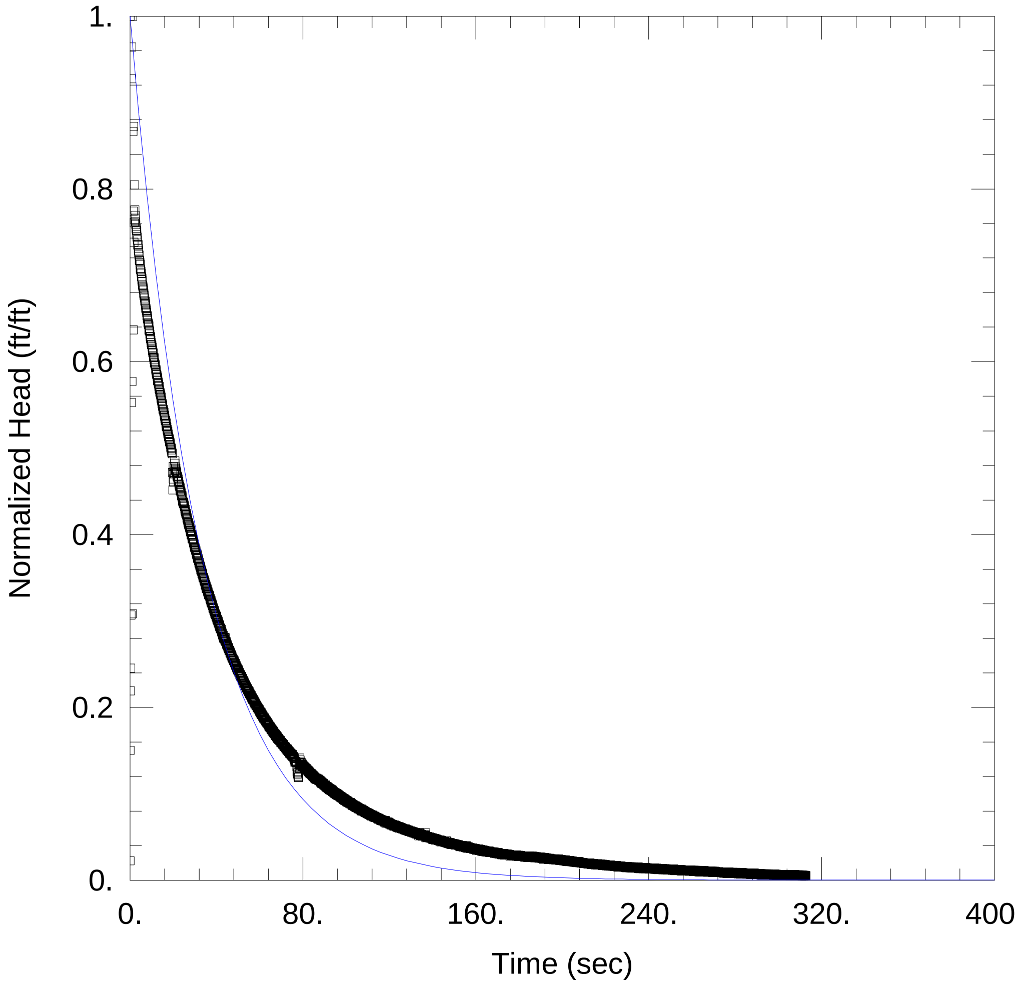
WELL DATA (PDI-MW-4)

Initial Displacement: 2.006 ft Static Water Column Height: 7.68 ft
Total Well Penetration Depth: 7.68 ft Screen Length: 5. ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev

K = 4.845 ft/day y0 = 1.348 ft



PDI-MW-4 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-4 Rising Head Springer Gelhar.aqt
Date: 04/06/21 Time: 09:37:02

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-4
Test Date: 12/02/2020

AQUIFER DATA

Saturated Thickness: 7.68 ft Anisotropy Ratio (Kz/Kr): 1.

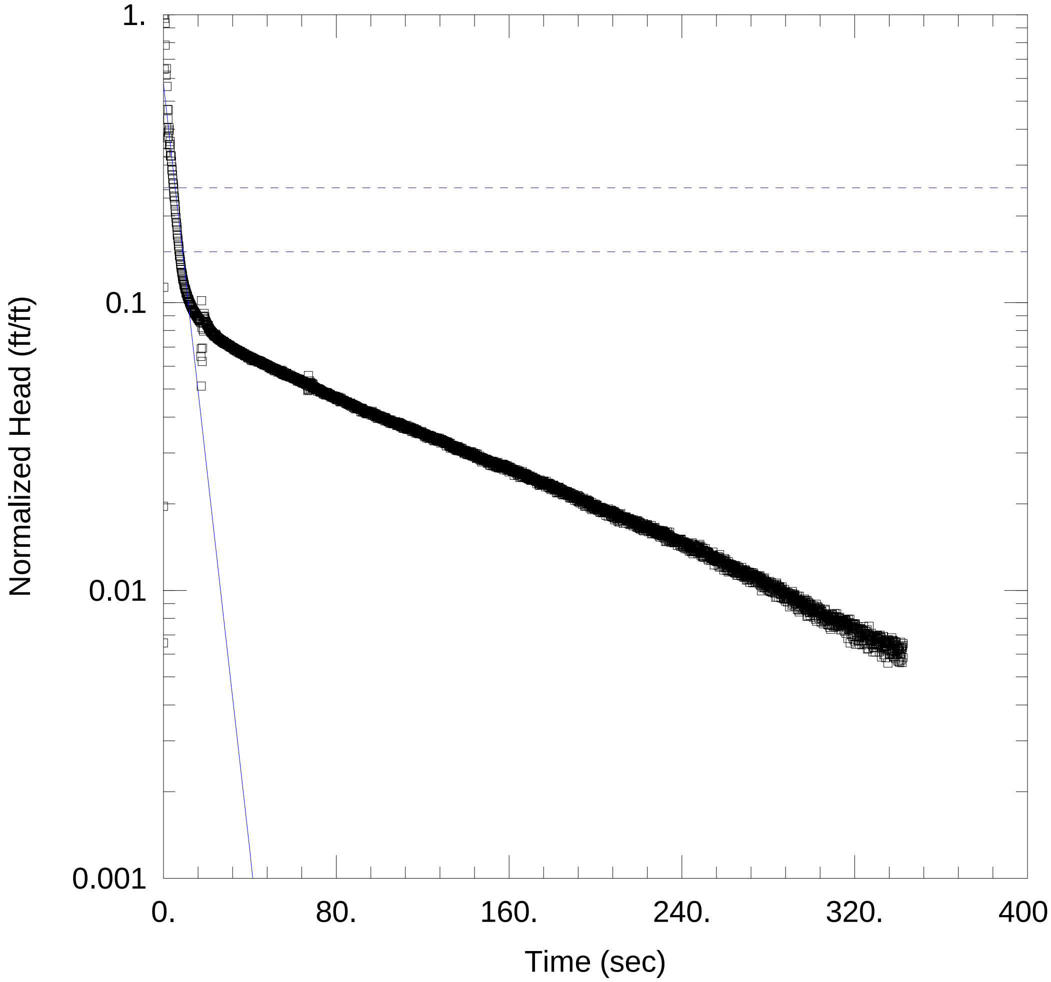
WELL DATA (PDI-MW-4)

Initial Displacement: 2.006 ft
Total Well Penetration Depth: 7.68 ft
Casing Radius: 0.083 ft
Static Water Column Height: 7.68 ft
Screen Length: 5. ft
Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 4.878 ft/day Le = 0.1 ft



PDI-MW-5 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-5 Rising Head Hvorslev.aqt
Date: 04/06/21 Time: 09:38:46

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-5
Test Date: 12/02/2020

AQUIFER DATA

Saturated Thickness: 9.39 ft Anisotropy Ratio (Kz/Kr): 1.

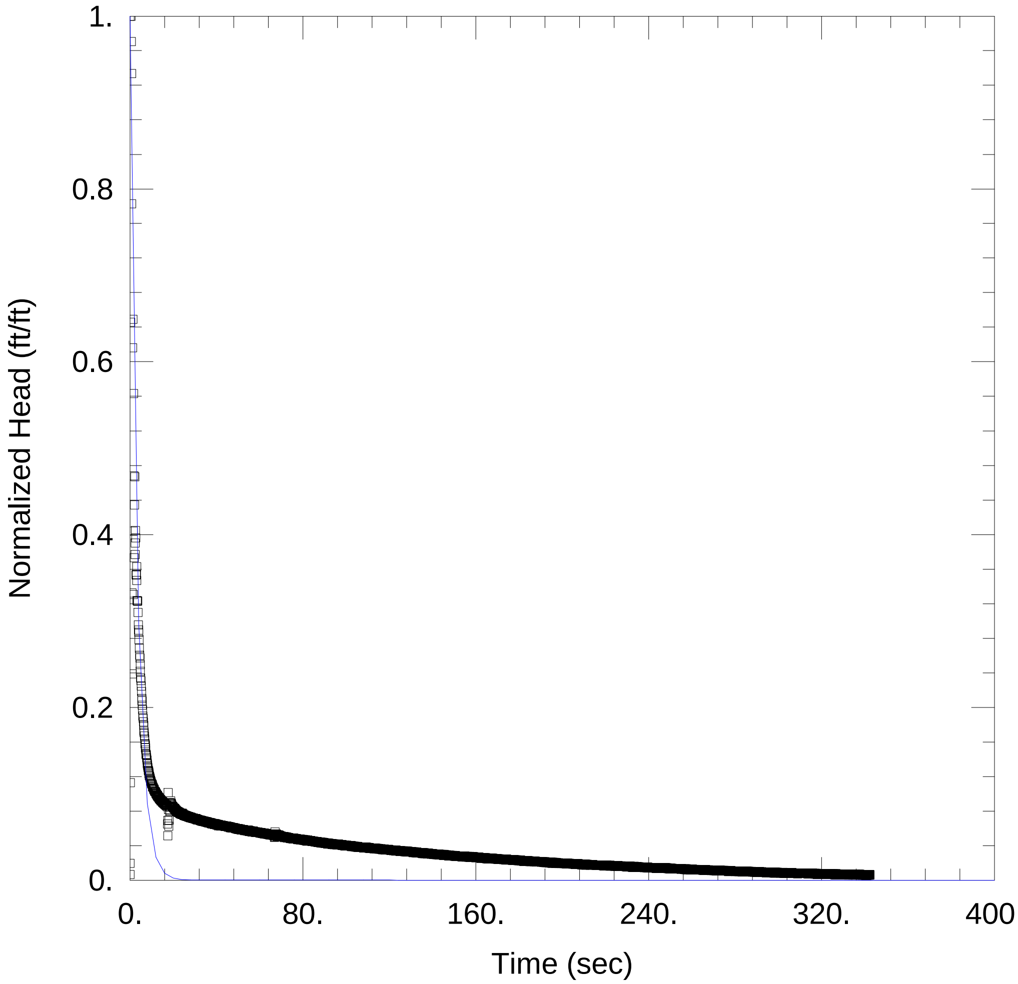
WELL DATA (PDI-MW-5)

Initial Displacement: 2.864 ft Static Water Column Height: 9.39 ft
Total Well Penetration Depth: 9.39 ft Screen Length: 9.39 ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev

K = 25.76 ft/day y0 = 1.647 ft



PDI-MW-5 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-5 Rising Head Springer Gelhar.aqt
Date: 04/06/21 Time: 09:39:34

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-5
Test Date: 12/02/2020

AQUIFER DATA

Saturated Thickness: 9.39 ft Anisotropy Ratio (Kz/Kr): 1.

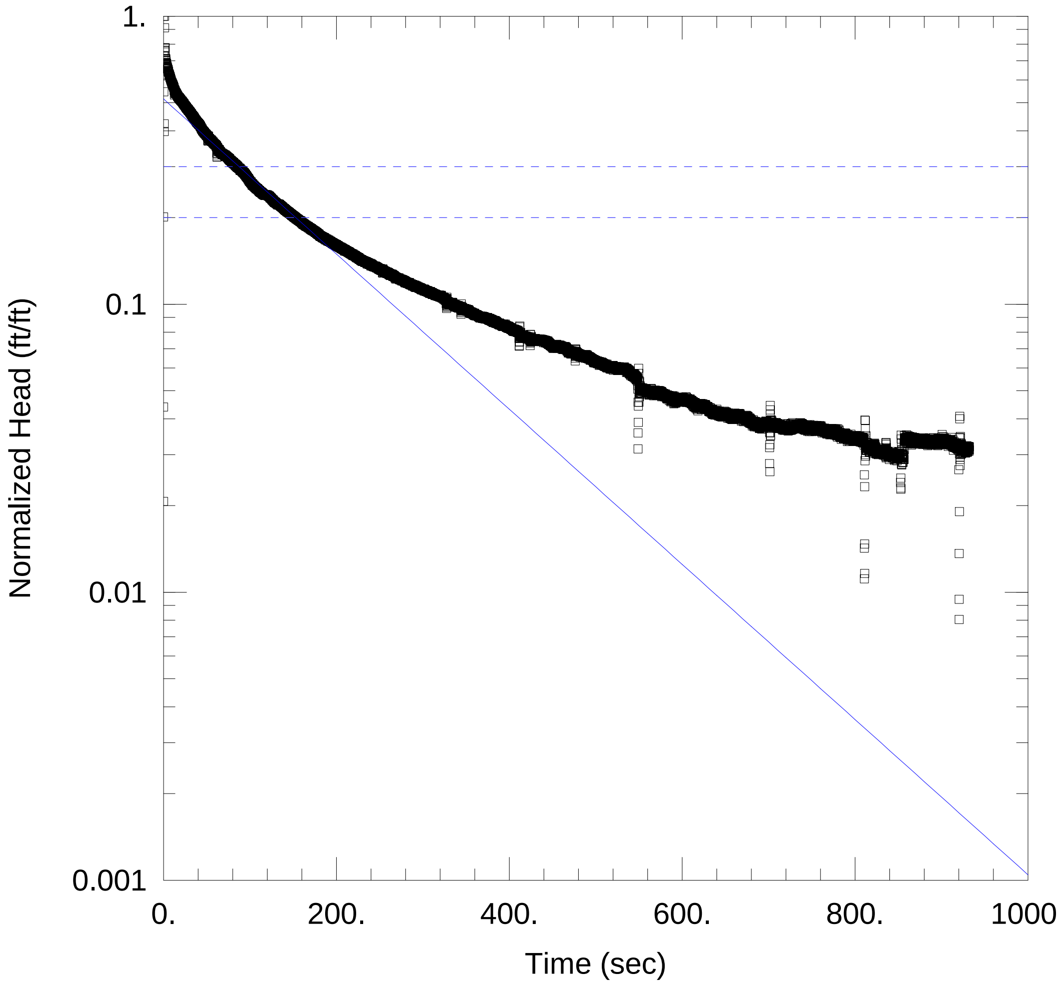
WELL DATA (PDI-MW-5)

Initial Displacement: 2.864 ft Static Water Column Height: 9.39 ft
Total Well Penetration Depth: 9.39 ft Screen Length: 9.39 ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 29.09 ft/day Le = 0.1 ft



PDI-MW-6 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-6 Rising Head.aqt
Date: 04/06/21 Time: 09:57:16

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-6
Test Date: 12/02/2020

AQUIFER DATA

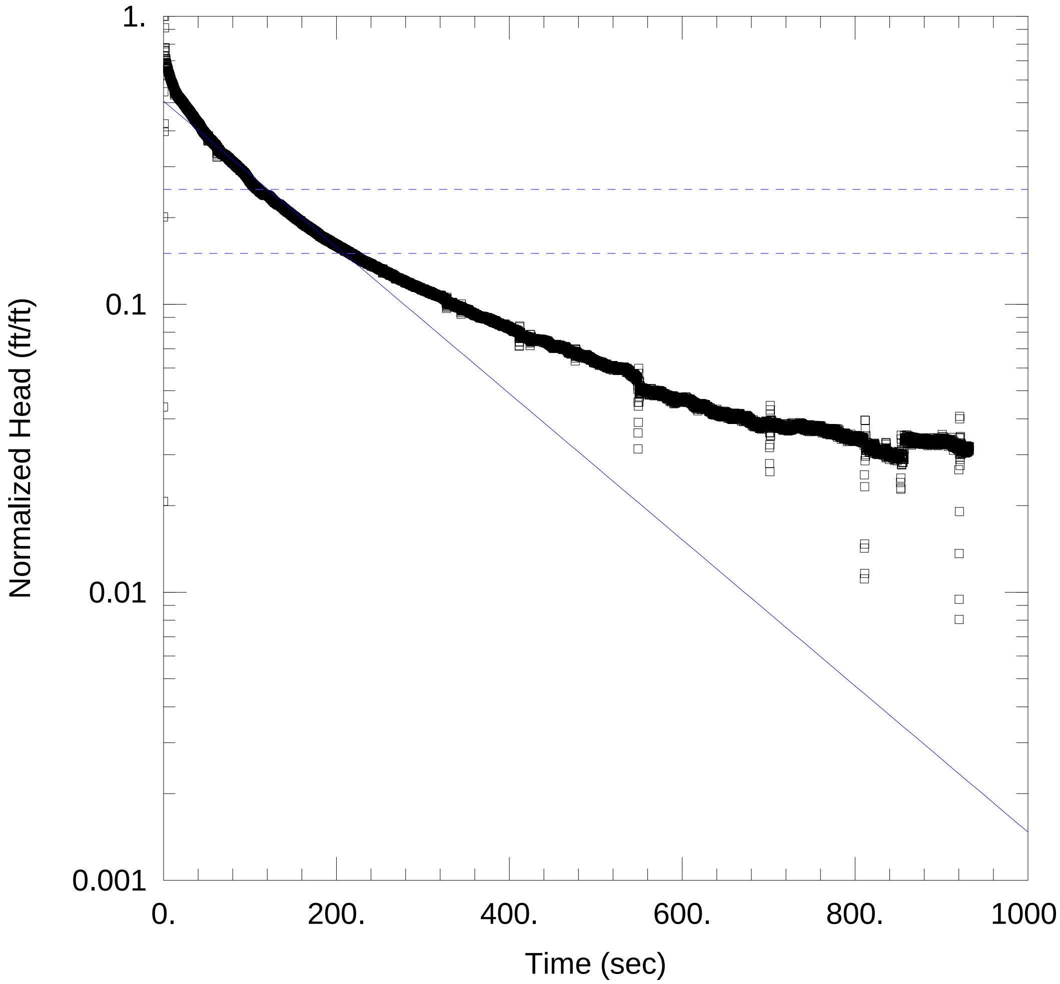
Saturated Thickness: 7.04 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PDI-MW-6)

Initial Displacement: 1.844 ft Static Water Column Height: 7.04 ft
Total Well Penetration Depth: 7.04 ft Screen Length: 5. ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.002 ft/day y0 = 0.9511 ft



PDI-MW-6 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-6 Rising Head Hvorslev.aqt
Date: 04/06/21 Time: 09:59:27

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-6
Test Date: 12/02/2020

AQUIFER DATA

Saturated Thickness: 7.04 ft Anisotropy Ratio (Kz/Kr): 1.

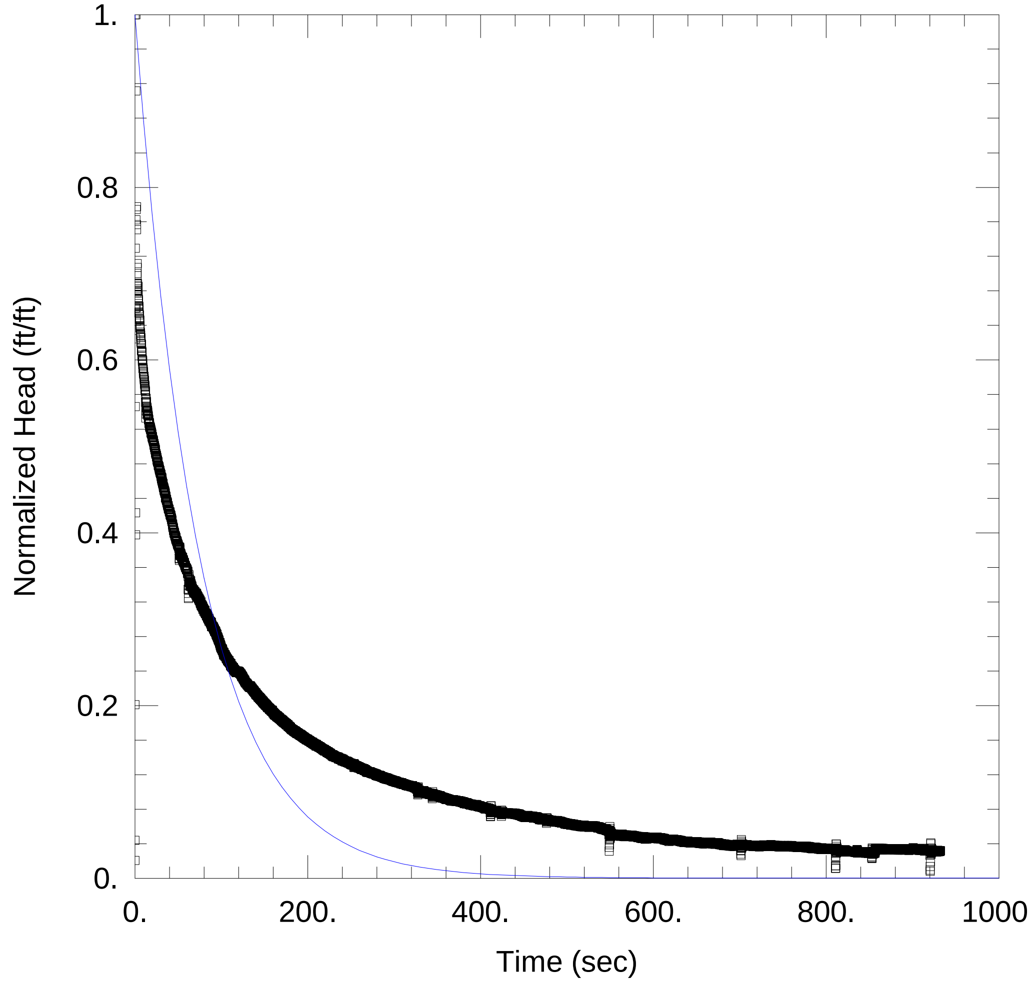
WELL DATA (PDI-MW-6)

Initial Displacement: 1.844 ft Static Water Column Height: 7.04 ft
Total Well Penetration Depth: 7.04 ft Screen Length: 5. ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev

K = 1.398 ft/day y0 = 0.9354 ft



PDI-MW-6 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-6 Rising Head Springer Gelhar.aqt
Date: 04/06/21 Time: 10:00:31

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-6
Test Date: 12/02/2020

AQUIFER DATA

Saturated Thickness: 7.04 ft Anisotropy Ratio (Kz/Kr): 1.

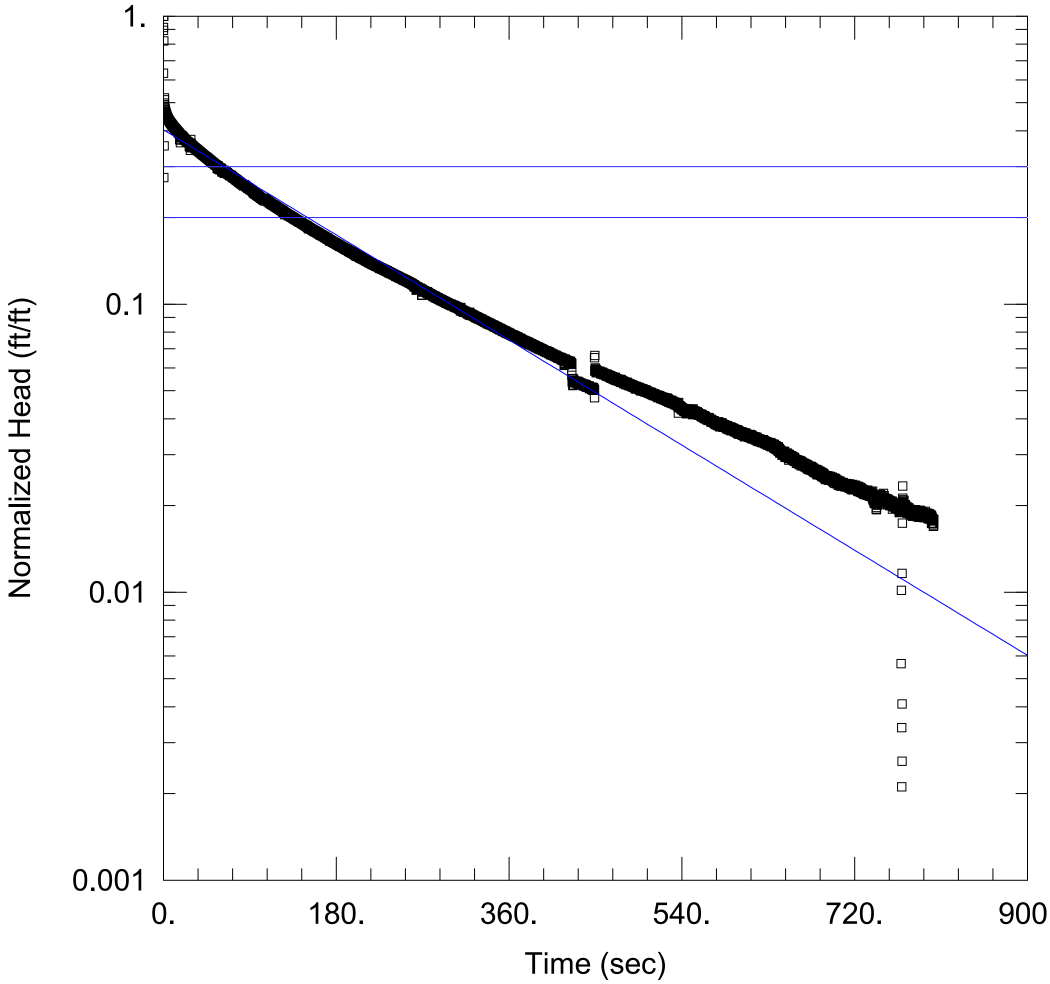
WELL DATA (PDI-MW-6)

Initial Displacement: 1.844 ft Static Water Column Height: 7.04 ft
Total Well Penetration Depth: 7.04 ft Screen Length: 5. ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 2.136 ft/day Le = 0.1 ft



PDI-MW-7 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-7 Rising Head Bouwer Rice.aqt
Date: 04/29/21 Time: 10:27:03

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-7
Test Date: 11/19/2020

AQUIFER DATA

Saturated Thickness: 5.88 ft Anisotropy Ratio (Kz/Kr): 1.

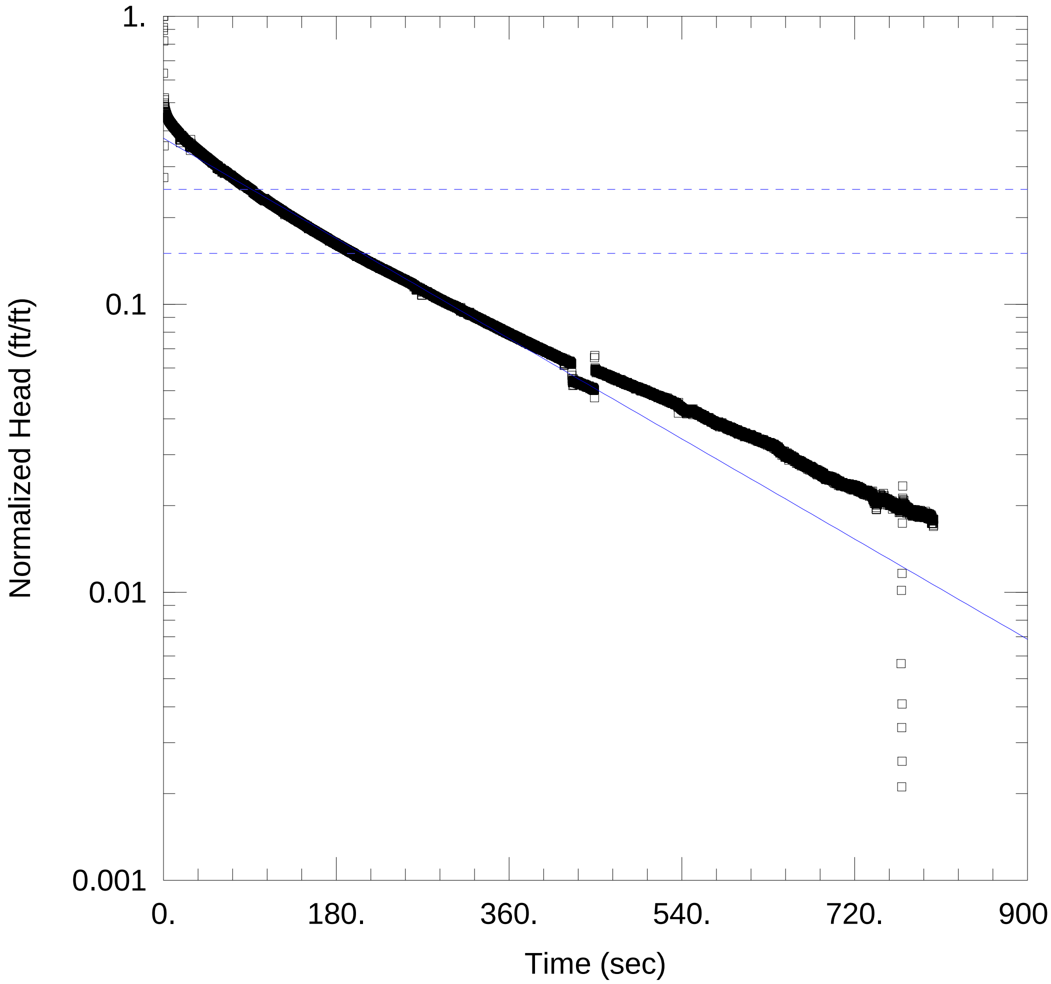
WELL DATA (PDI-MW-7)

Initial Displacement: 3.133 ft Static Water Column Height: 5.88 ft
Total Well Penetration Depth: 5.88 ft Screen Length: 5. ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.7237 ft/day y0 = 1.262 ft



PDI-MW-7 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-7 Rising Head Hvorslev.aqt
Date: 04/06/21 Time: 10:05:48

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-7
Test Date: 11/19/2020

AQUIFER DATA

Saturated Thickness: 5.88 ft Anisotropy Ratio (Kz/Kr): 1.

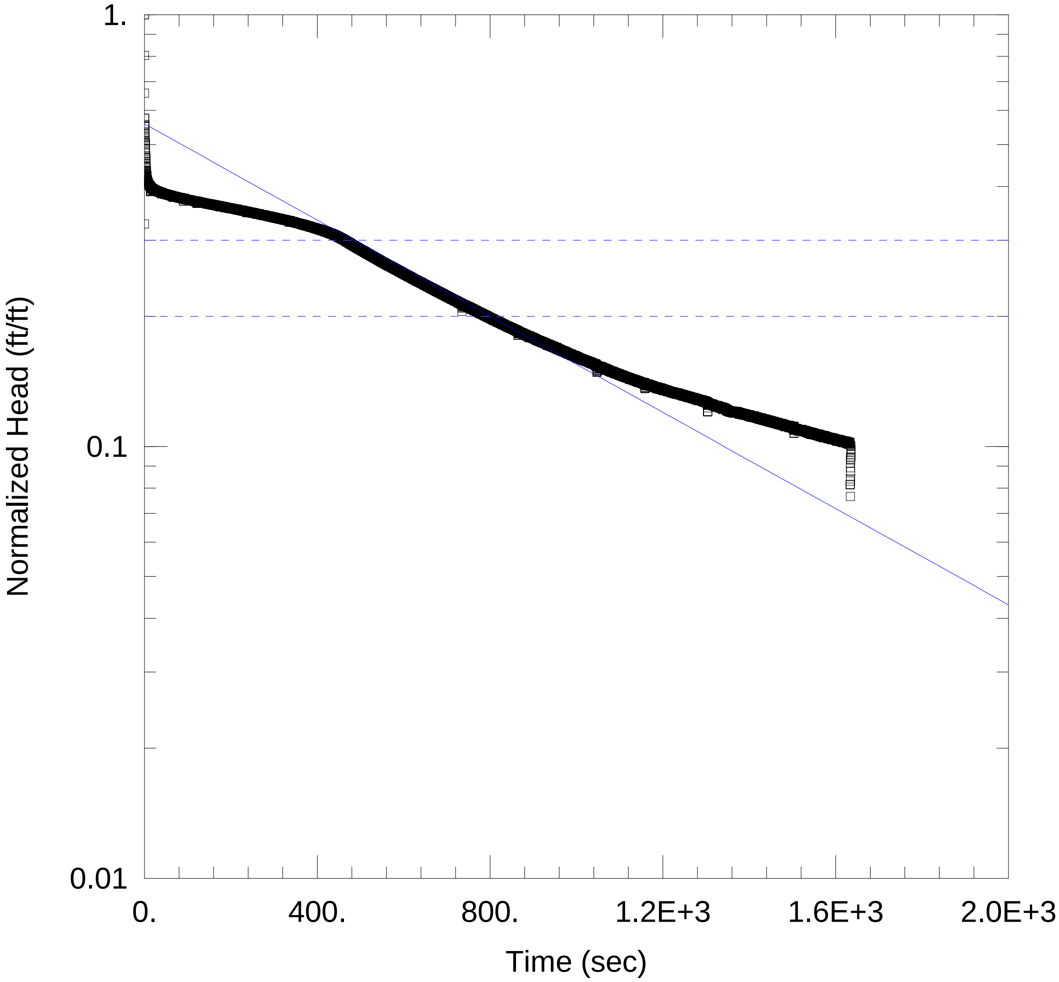
WELL DATA (PDI-MW-7)

Initial Displacement: 3.133 ft Static Water Column Height: 5.88 ft
Total Well Penetration Depth: 5.88 ft Screen Length: 5. ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev

K = 1.064 ft/day y0 = 1.18 ft



PDI-MW-8 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-8 Rising Head Bouwer Rice.aqt
Date: 04/06/21 Time: 10:12:32

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-8
Test Date: 11/19/2020

AQUIFER DATA

Saturated Thickness: 4.37 ft Anisotropy Ratio (Kz/Kr): 1.

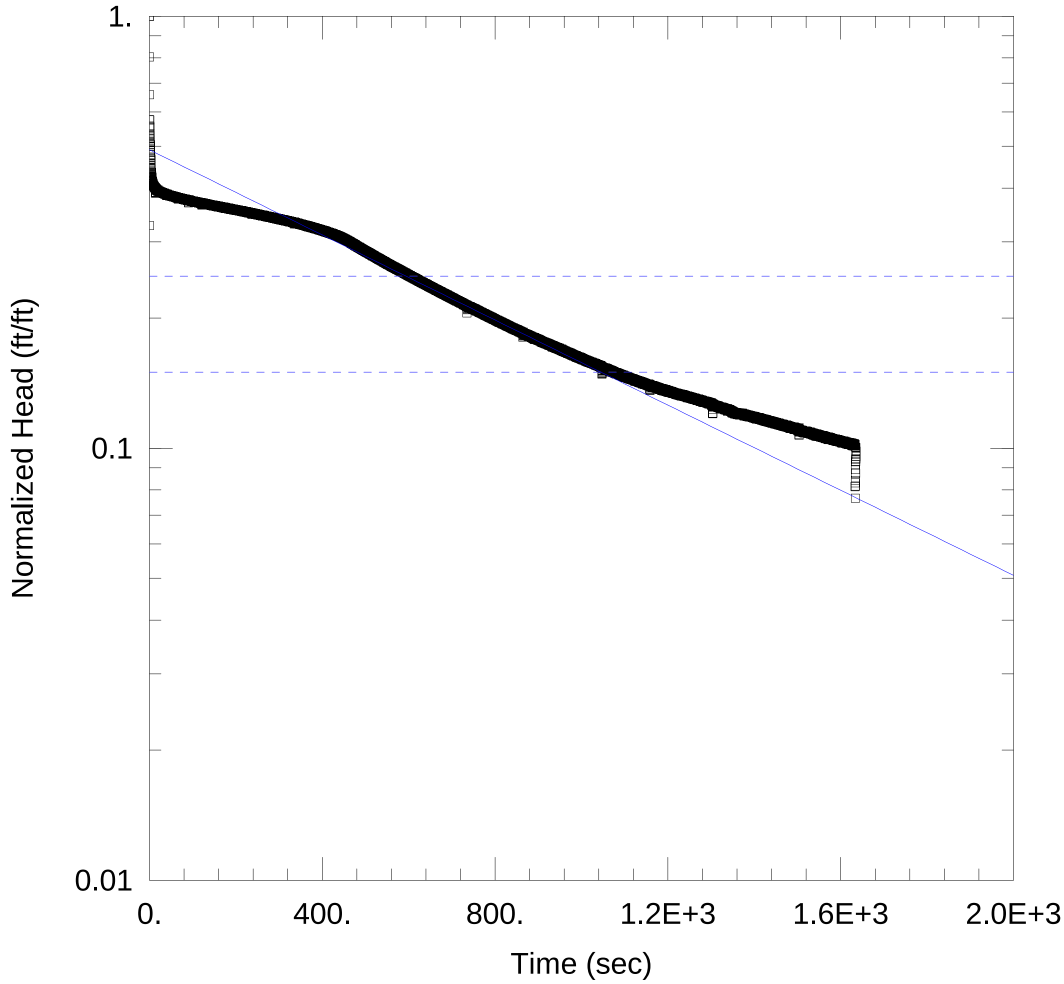
WELL DATA (PDI-MW-8)

Initial Displacement: 2.75 ft
Total Well Penetration Depth: 4.37 ft
Casing Radius: 0.083 ft
Static Water Column Height: 4.37 ft
Screen Length: 4.37 ft
Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.2086 ft/day y0 = 1.535 ft



PDI-MW-8 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-8 Rising Head Hvorslev.aqt
Date: 04/06/21 Time: 10:14:15

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-8
Test Date: 11/19/2020

AQUIFER DATA

Saturated Thickness: 4.37 ft Anisotropy Ratio (Kz/Kr): 1.

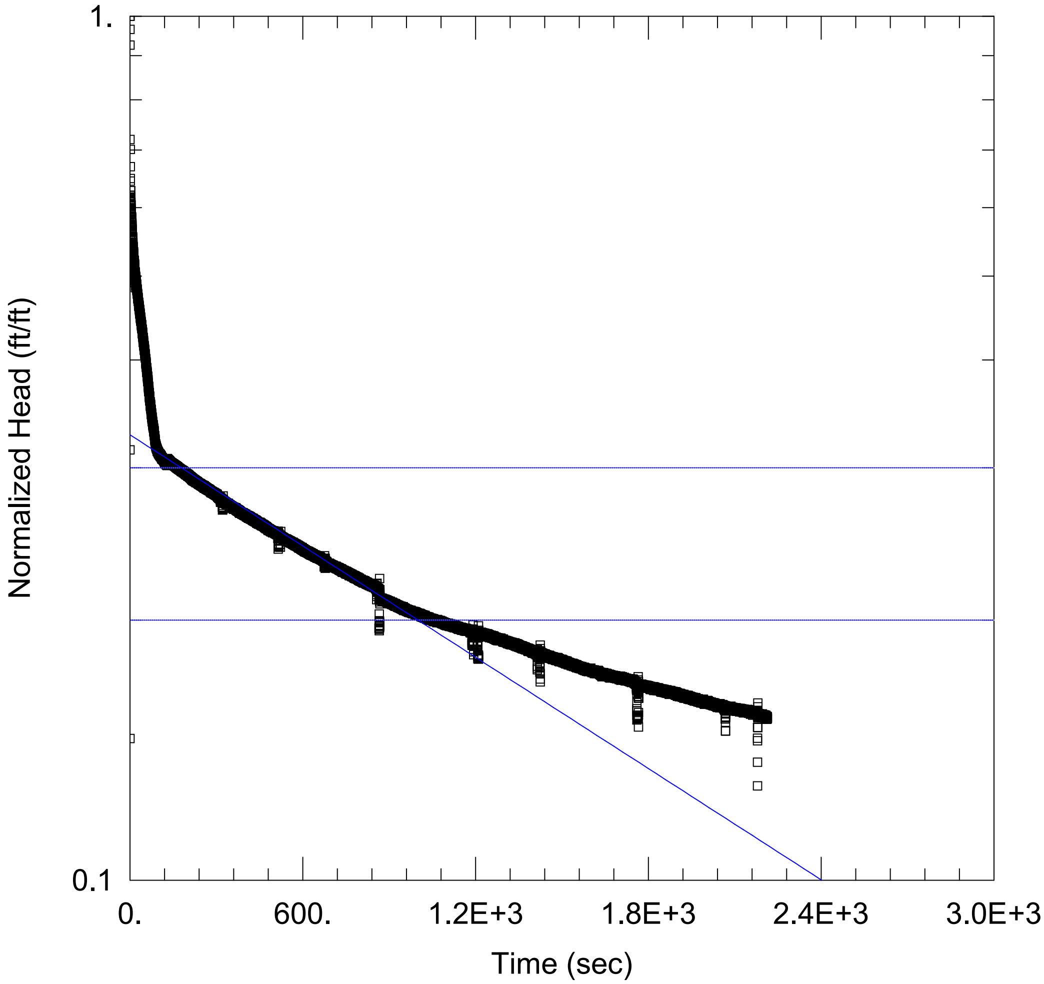
WELL DATA (PDI-MW-8)

Initial Displacement: 2.75 ft Static Water Column Height: 4.37 ft
Total Well Penetration Depth: 4.37 ft Screen Length: 4.37 ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev

K = 0.4092 ft/day y0 = 1.348 ft



PDI-MW-9 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-9 Rising Head Bouwer Rice.aqt
Date: 04/29/21 Time: 10:30:25

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-9
Test Date: 11/19/2020

AQUIFER DATA

Saturated Thickness: 4.57 ft Anisotropy Ratio (Kz/Kr): 1.

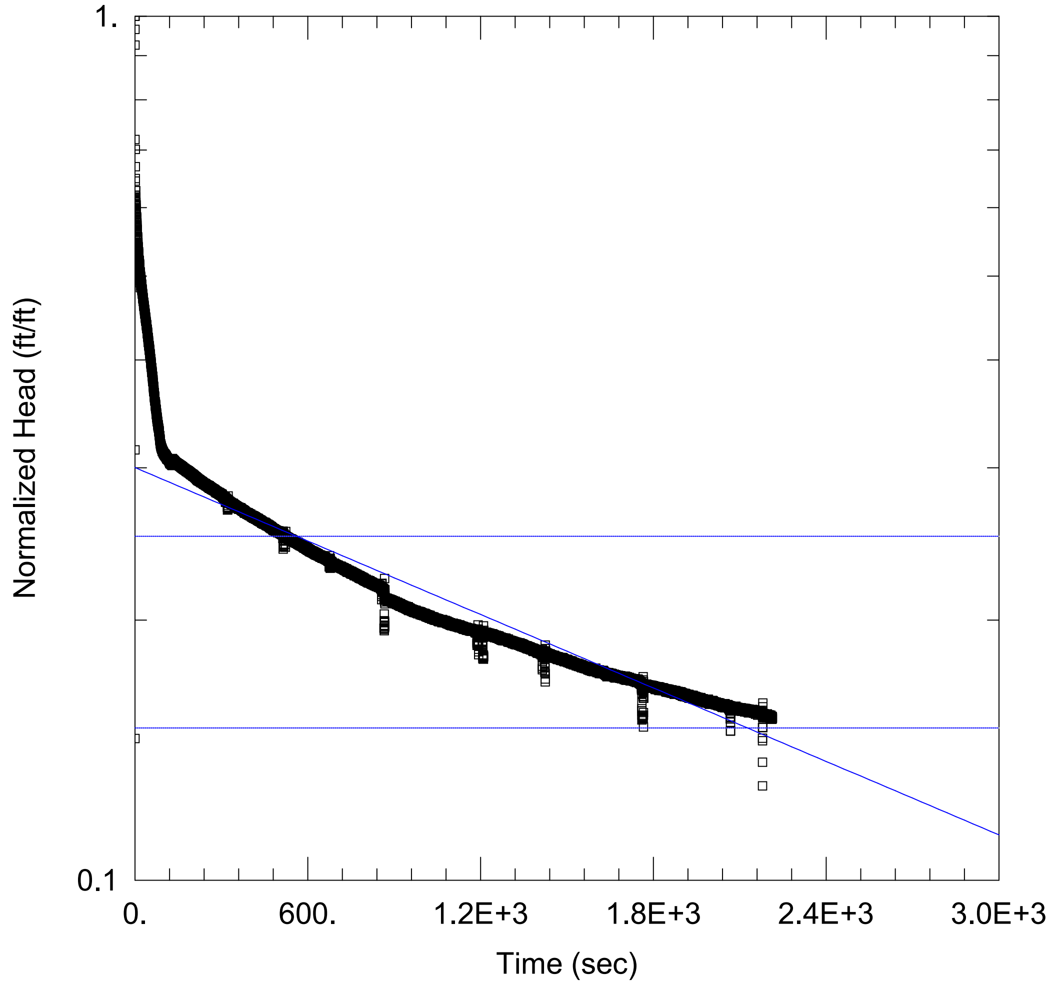
WELL DATA (PDI-MW-9)

Initial Displacement: 2.294 ft Static Water Column Height: 4.57 ft
Total Well Penetration Depth: 4.57 ft Screen Length: 4.57 ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.07812 ft/day y0 = 0.7518 ft



PDI-MW-9 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-9 Rising Head Hvorslev.aqt
Date: 04/29/21 Time: 10:31:46

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-9
Test Date: 11/19/2020

AQUIFER DATA

Saturated Thickness: 4.57 ft Anisotropy Ratio (Kz/Kr): 1.

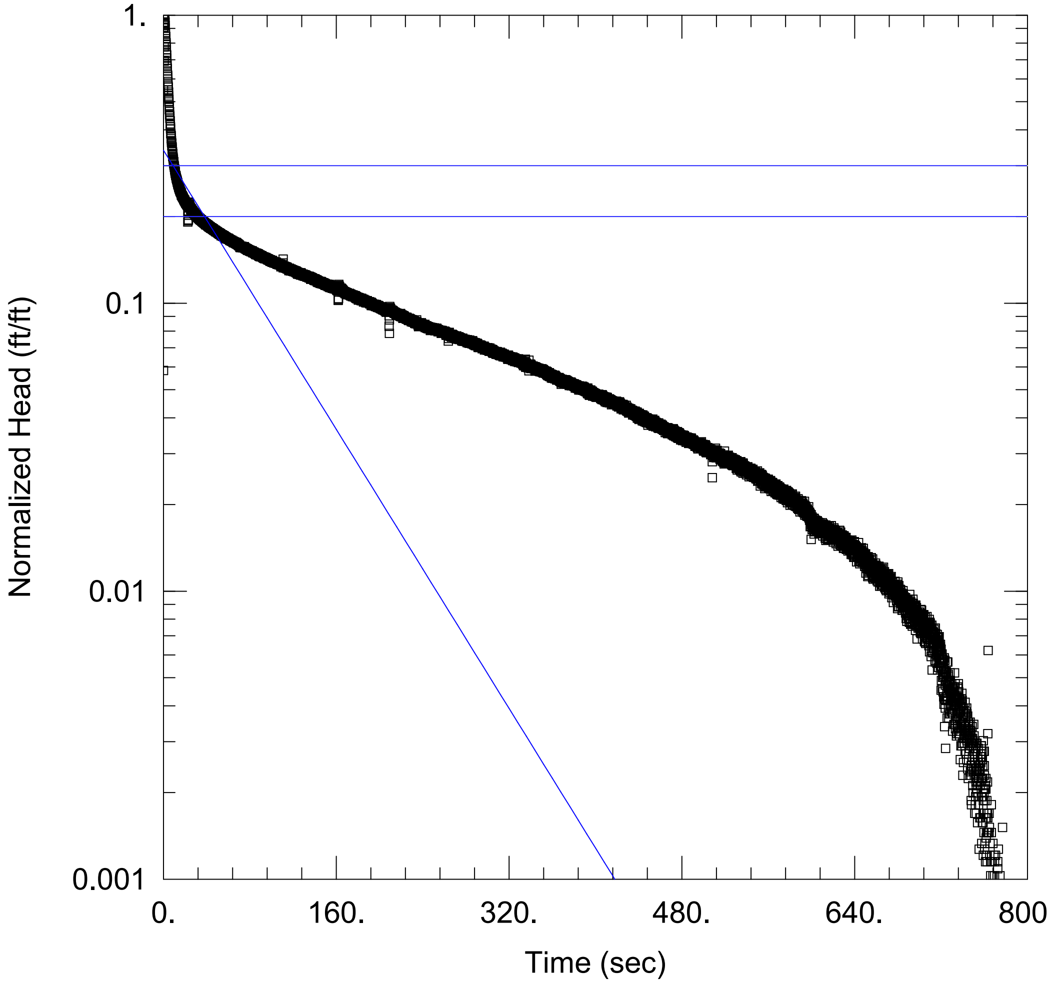
WELL DATA (PDI-MW-9)

Initial Displacement: 2.294 ft
Total Well Penetration Depth: 4.57 ft
Casing Radius: 0.083 ft
Static Water Column Height: 4.57 ft
Screen Length: 4.57 ft
Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev

K = 0.1126 ft/day y0 = 0.6888 ft



PDI-MW-10 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-10 Rising Head Bouwer Rice.aqt
Date: 04/29/21 Time: 10:34:38

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-10
Test Date: 11/19/2020

AQUIFER DATA

Saturated Thickness: 2.86 ft
Anisotropy Ratio (Kz/Kr): 1.

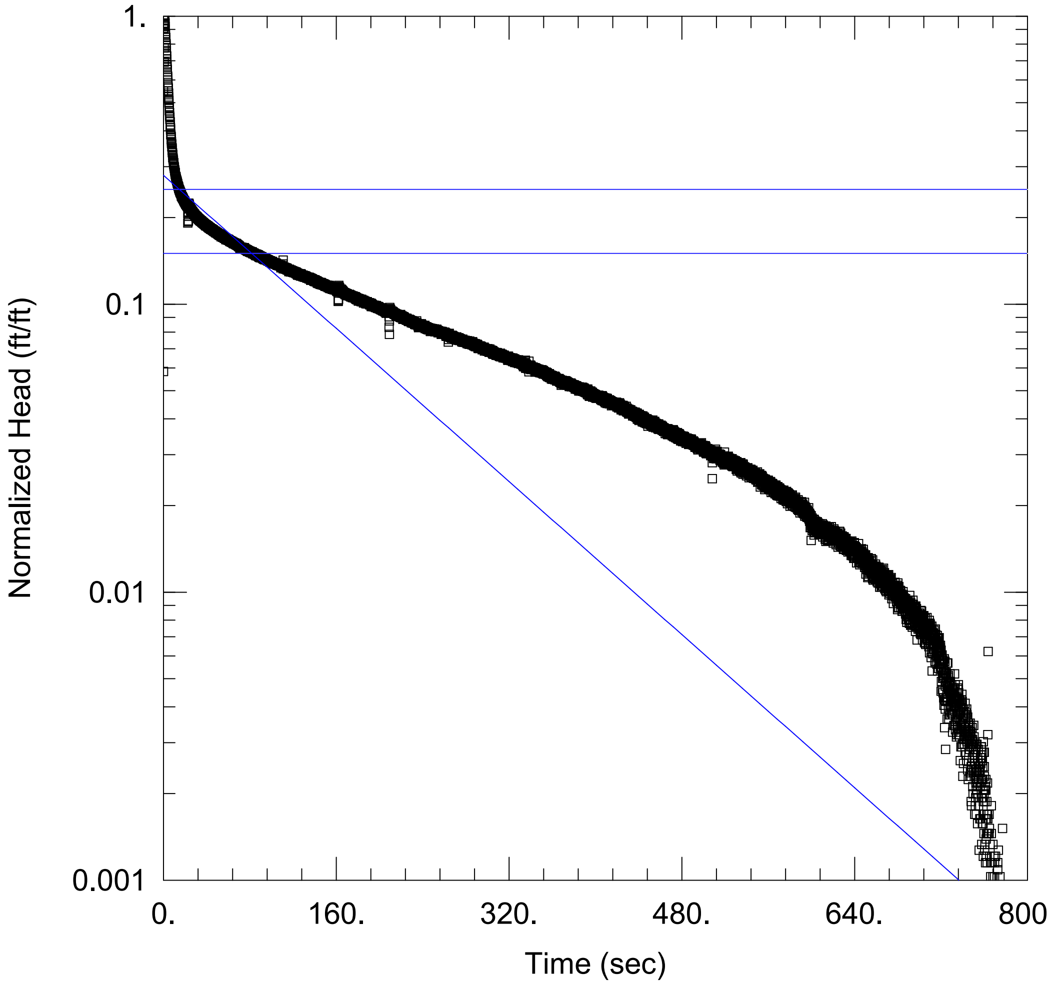
WELL DATA (PDI-MW-10)

Initial Displacement: 1.655 ft
Static Water Column Height: 37.77 ft
Total Well Penetration Depth: 2.86 ft
Screen Length: 2.86 ft
Casing Radius: 0.083 ft
Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 2.938 ft/day
y0 = 0.5617 ft



PDI-MW-10 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-10 Rising Head Hvorslev.aqt
Date: 04/29/21 Time: 10:40:30

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-10
Test Date: 11/19/2020

AQUIFER DATA

Saturated Thickness: 2.86 ft Anisotropy Ratio (Kz/Kr): 1.

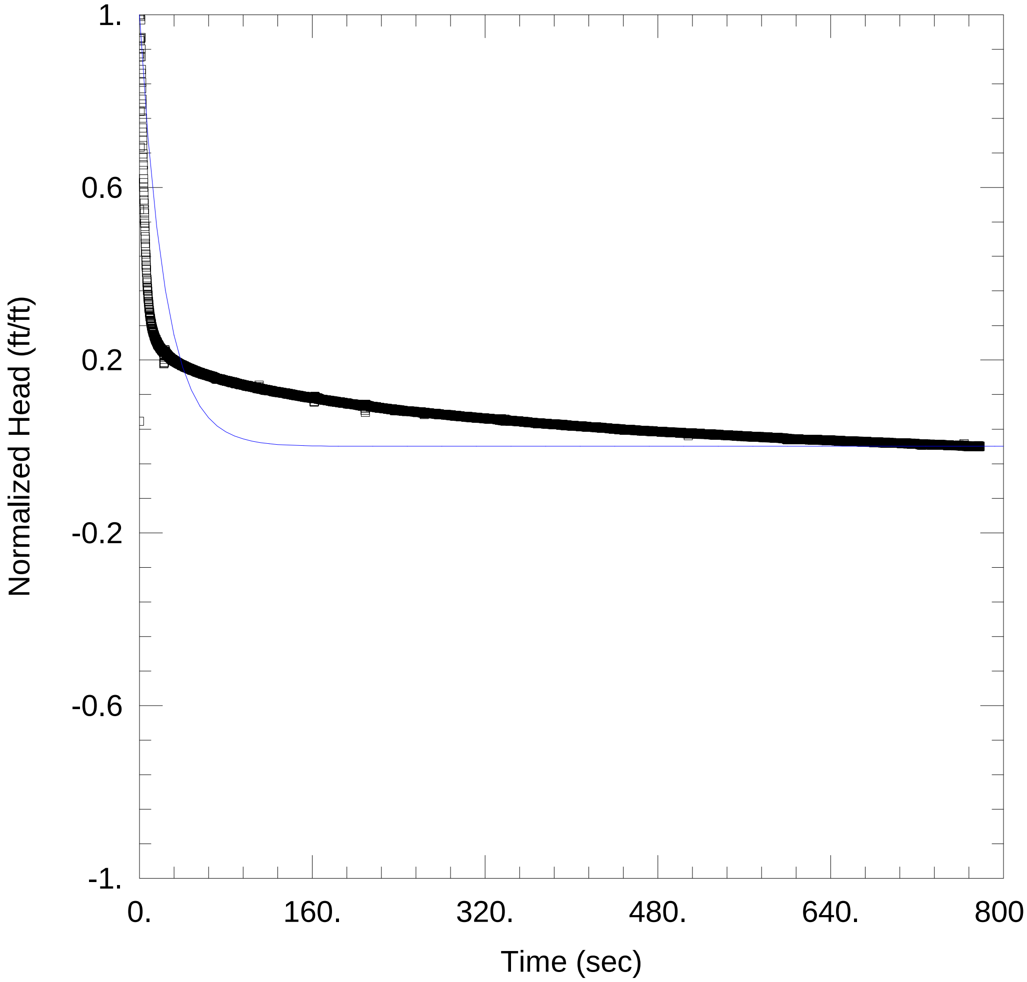
WELL DATA (PDI-MW-10)

Initial Displacement: 1.655 ft Static Water Column Height: 37.77 ft
Total Well Penetration Depth: 2.86 ft Screen Length: 2.86 ft
Casing Radius: 0.083 ft Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev

K = 4.218 ft/day y0 = 0.4635 ft



PDI-MW-10 RISING HEAD SLUG TEST

Data Set: C:\...\PDI-MW-10 Rising Head Springer Gelhar.aqt
Date: 04/06/21 Time: 10:30:32

PROJECT INFORMATION

Company: Arcadis
Client: National Grid
Location: Gloversville, NY
Test Well: PDI-MW-10
Test Date: 11/19/2020

AQUIFER DATA

Saturated Thickness: 2.86 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PDI-MW-10)

Initial Displacement: 1.655 ft
Static Water Column Height: 37.77 ft
Total Well Penetration Depth: 2.86 ft
Screen Length: 2.86 ft
Casing Radius: 0.083 ft
Well Radius: 0.18 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Springer-Gelhar

K = 8.933 ft/day
Le = 0.1 ft

Appendix G

Sediment Sampling Correspondence

From: Brien, Jason
Sent: Friday, October 2, 2020 7:28 AM
To: Amin, Parag B (DEC)
Cc: Steven DiLella; Powlin, Scott; Cornell, David
Subject: National Grid Gloversville - Proposed Cayadutta Creek Sediment Sampling Locations
Attachments: CC-ISR_01-05_REACHES rev 9.17.20.pdf

Parag,

Arcadis, on behalf of National Grid, completed the Cayadutta Creek reconnaissance (recon) from August 17 through 20, 2020 in accordance with Section 2.4.2 of the June 2020 Remedial Design Work Plan (RDWP) for National Grid's Gloversville Former MGP site Pre-Design Investigation (PDI). Arcadis conducted the recon as a component of the Pre-Design Investigation (PDI) to map various physical creek characteristics and select sediment sampling locations.

Arcadis personnel measured and recorded full channel dimensions, water depths, sediment thicknesses and bank descriptions at 30 probing transects established in five defined "reaches" (Reaches 1 through 5) extending from approximately 1,700 feet upstream from the site to the Harrison Street bridge approximately 2,600 feet downstream from the site as follows:

- Reaches 1 and 2 upstream from the site
- Reaches 3 adjacent to the site
- Reaches 4 and 5 downstream from the site

Spot probing was completed between transects to characterize the creek, identify depositional areas and check for obvious impacts to sediments as described in section 2.4.2 of the RDWP.

Field personnel identified and surveyed (using GPS) a total of 20 outfalls, 11 bridge drains (Hill Street bridge), 3 drainage swales, and 30 depositional areas. Potential sediment impacts (i.e., sheen) were observed along the water's edge during probing adjacent to the former site and at various points downstream from the site on both sides of the creek as depicted on the attached figures with a red line.

In accordance with RDWP Section 2.4.3, Arcadis identified 60 proposed sediment sampling locations as follows:

- 20 background locations (Reaches 1 and 2)
  - 12 depositional
  - 8 riffle/run
- 20 adjacent to the site (Reach 3)
  - 10 deposition
  - 10 riffle/run
- 20 downstream locations (Reaches 4 and 5)
  - Reach 4
    - 6 depositional
    - 6 riffle/run
  - Reach 5
    - 4 depositional
    - 4 riffle/run

Transect locations, observed impacts, pertinent site features and proposed sediment sampling locations are depicted on the attached figures. Arcadis will schedule the sediment sampling activities following DEC's proposed sediment sampling location review and approval. Please let me or Steve DiLella know if you require additional information or if you would like to set up a call to discuss the recon activities or proposed locations. Thank you.

Jason

Jason Brien PE | Principal Engineer | jason.brien@arcadis.com
Arcadis of New York, Inc.
110 West Fayette, Suite 300
Syracuse, NY | 13202 | USA
T. +1 315 671 9114 | M. + 1 315 263 5898

Professional Registration / PE-NY, #084067

From:	Amin, Parag B (DEC) <parag.amin@dec.ny.gov>
Sent:	Tuesday, October 13, 2020 11:53 AM
To:	Brien, Jason
Cc:	Steven DiLella; Powlin, Scott; Cornell, David; Carpenter, Kevin J (DEC); Pochini, Katherine M (DEC)
Subject:	RE: National Grid Gloversville - Proposed Cayadutta Creek Sediment Sampling Locations

Hi Jason,

We have following comments on the proposed sediment sampling location plan:

1. Sample point R2-PDI-SED-9DEP is located very close to and directly downstream of an outfall. Please relocate this sample point. It appears that this depositional area may be too small to relocate this point upstream of the outfall. If moving the point upstream is not possible, this depositional sample may be replaced with an additional riffle run sample.

2. The segment/portion of the creek which is not going to be proposed to be excavated but where visual impacts (e.g. sheen etc.) and/or PAHs is detected during PDI, is NM plan to demonstrate that it is not related to the site, if so how e.g. via PAH fingerprint analysis?

3. The symbols for depositional v/s riffle sediment sampling locations are difficult to read in the legend without zooming way in and are too similar when they are readable. We suggest that making the symbols more distinguishable.

Please revise the figure and resubmit. If you have any questions, please contact me.

Parag Amin P.E.
Project Manager, Division of Environmental Remediation

New York State Department of Environmental Conservation
625 Broadway, Albany, NY 12233-7014
P: (518) 402-9648 | F: (518) 402-9679 | parag.amin@dec.ny.gov
www.dec.ny.gov | | |

From: Brien, Jason <Jason.Brien@arcadis.com>
Sent: Friday, October 02, 2020 7:28 AM
To: Amin, Parag B (DEC) <parag.amin@dec.ny.gov>
Cc: Steven DiLella <Steven.Dilella@nationalgrid.com>; scott.powlin@arcadis.com; Cornell, David <David.Cornell@arcadis.com>
Subject: National Grid Gloversville - Proposed Cayadutta Creek Sediment Sampling Locations

Parag,

Arcadis, on behalf of National Grid, completed the Cayadutta Creek reconnaissance (recon) from August 17 through 20, 2020 in accordance with Section 2.4.2 of the June 2020 Remedial Design Work Plan (RDWP) for National Grid's Gloversville Former MGP site Pre-Design Investigation (PDI). Arcadis conducted the recon as a component of the Pre-Design Investigation (PDI) to map various physical creek characteristics and select sediment sampling locations.

Arcadis personnel measured and recorded full channel dimensions, water depths, sediment thicknesses and bank descriptions at 30 probing transects established in five defined "reaches" (Reaches 1 through 5) extending from approximately 1,700 feet upstream from the site to the Harrison Street bridge approximately 2,600 feet downstream from the site as follows:

- Reaches 1 and 2 upstream from the site
- Reaches 3 adjacent to the site
- Reaches 4 and 5 downstream from the site

Spot probing was completed between transects to characterize the creek, identify depositional areas and check for obvious impacts to sediments as described in section 2.4.2 of the RDWP.

Field personnel identified and surveyed (using GPS) a total of 20 outfalls, 11 bridge drains (Hill Street bridge), 3 drainage swales, and 30 depositional areas. Potential sediment impacts (i.e., sheen) were observed along the water's edge during probing adjacent to the former site and at various points downstream from the site on both sides of the creek as depicted on the attached figures with a red line.

In accordance with RDWP Section 2.4.3, Arcadis identified 60 proposed sediment sampling locations as follows:

- 20 background locations (Reaches 1 and 2)
    - 12 depositional
    - 8 riffle/run
- 20 adjacent to the site (Reach 3)
    - 10 deposition
    - 10 riffle/run
- 20 downstream locations (Reaches 4 and 5)
    - Reach 4
        - 6 depositional
        - 6 riffle/run
    - Reach 5
        - 4 depositional
        - 4 riffle/run

Transect locations, observed impacts, pertinent site features and proposed sediment sampling locations are depicted on the attached figures. Arcadis will schedule the sediment sampling activities following DEC's proposed sediment sampling location review and approval. Please let me or Steve DiLella know if you require additional information or if you would like to set up a call to discuss the recon activities or proposed locations. Thank you.

Jason

Jason Brien PE | Principal Engineer | jason.brien@arcadis.com
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Professional Registration / PE-NY, #084067

Be green, leave it on the screen.

From: Amin, Parag B (DEC) <parag.amin@dec.ny.gov>
Sent: Friday, October 16, 2020 10:29 AM
To: Brien, Jason
Cc: Steven DiLella; Powlin, Scott; Cornell, David; Carpenter, Kevin J (DEC)
Subject: RE: National Grid Gloversville - Proposed Cayadutta Creek Sediment Sampling Locations

Hi Jason,
We don't have any further comments on sediment sampling location plan. However, we feel still the symbols used to show depositional and riffle sampling locations are not readily distinguishable. Please ensure that it is not the case in the PDI report.

Please provide advance notice prior to sampling sediments and bank soils.

Parag Amin P.E.
Project Manager, Division of Environmental Remediation

New York State Department of Environmental Conservation
625 Broadway, Albany, NY 12233-7014
P: (518) 402-9648 | F: (518) 402-9679 | parag.amin@dec.ny.gov
www.dec.ny.gov | | |

From: Brien, Jason <Jason.Brien@arcadis.com>
Sent: Thursday, October 15, 2020 6:36 AM
To: Amin, Parag B (DEC) <parag.amin@dec.ny.gov>
Cc: Steven DiLella <Steven.Dilella@nationalgrid.com>; scott.powlin@arcadis.com; Cornell, David <David.Cornell@arcadis.com>; Carpenter, Kevin J (DEC) <kevin.carpenter@dec.ny.gov>; Pochini, Katherine M (DEC) <Katherine.Pochini@dec.ny.gov>
Subject: RE: National Grid Gloversville - Proposed Cayadutta Creek Sediment Sampling Locations

Parag,

Please see my responses to your comments below. Please let me know if you have any other comments or questions. Thanks.

Jason

Jason Brien PE | Principal Engineer | jason.brien@arcadis.com
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Professional Registration / PE-NY, #084067

From: Amin, Parag B (DEC) <parag.amin@dec.ny.gov>
Sent: Tuesday, October 13, 2020 11:53 AM
To: Brien, Jason <Jason.Brien@arcadis.com>
Cc: Steven DiLella <Steven.Dilella@nationalgrid.com>; Powlin, Scott <Scott.Powlin@arcadis.com>; Cornell, David <David.Cornell@arcadis.com>; Carpenter, Kevin J (DEC) <kevin.carpenter@dec.ny.gov>; Pochini, Katherine M (DEC) <Katherine.Pochini@dec.ny.gov>
Subject: RE: National Grid Gloversville - Proposed Cayadutta Creek Sediment Sampling Locations

Hi Jason,

We have following comments on the proposed sediment sampling location plan:

1. Sample point R2-PDI-SED-9DEP is located very close to and directly downstream of an outfall. Please relocate this sample point. It appears that this depositional area may be too small to relocate this point upstream of the outfall. If moving the point upstream is not possible, this depositional sample may be replaced with an additional riffle run sample. As indicated on the attached revised sediment sampling figures, proposed sampling point R2-PDI-SED-9DEP has been relocated within the same depositional area upstream of the outfall.

2. The segment/portion of the creek which is not going to be proposed to be excavated but where visual impacts (e.g. sheen etc.) and/or PAHs is detected during PDI, is NM plan to demonstrate that it is not related to the site, if so how e.g. via PAH fingerprint analysis? Yes, per the RDWP, a PAH source fingerprinting screening evaluation will be performed. National Grid will develop a statistically derived site-specific PAH_{34} background concentration using Reaches 1 and 2 sediment sample analytical results to which Reaches 3, 4, and 5 sediment sample detected PAH_{34} concentrations will be compared. A PAH source fingerprinting screening (i.e., forensic) evaluation will be performed as described in RDWP Section 2.4.3.2 to evaluate which samples represent "*sediment impacted by site-related PAHs at concentrations greater than background levels*" as defined by the ROD. The forensic evaluation will look at multiple lines of evidence. As indicated in the RDWP, the specific PAHs, ratios of PAH concentrations, distribution of PAH concentrations, and spatial relationship of PAH concentrations will all be evaluated and presented in a summary report to the NYSDEC. The summary report will be accompanied by a figure(s) indicating proposed revised sediment removal limits based on the PDI results.

3. The symbols for depositional v/s riffle sediment sampling locations are difficult to read in the legend without zooming way in and are too similar when they are readable. We suggest that making the symbols more distinguishable. Please see the revised figures.

Please revise the figure and resubmit. If you have any questions, please contact me.

Parag Amin P.E.
Project Manager, Division of Environmental Remediation

New York State Department of Environmental Conservation
625 Broadway, Albany, NY 12233-7014
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www.dec.ny.gov | | |

From: Brien, Jason <Jason.Brien@arcadis.com>
Sent: Friday, October 02, 2020 7:28 AM
To: Amin, Parag B (DEC) <parag.amin@dec.ny.gov>
Cc: Steven DiLella <Steven.Dilella@nationalgrid.com>; scott.powlin@arcadis.com; Cornell, David <David.Cornell@arcadis.com>
Subject: National Grid Gloversville - Proposed Cayadutta Creek Sediment Sampling Locations

Parag,

Arcadis, on behalf of National Grid, completed the Cayadutta Creek reconnaissance (recon) from August 17 through 20, 2020 in accordance with Section 2.4.2 of the June 2020 Remedial Design Work Plan (RDWP) for National Grid's Gloversville Former MGP site Pre-Design Investigation (PDI). Arcadis conducted the recon as a component of the Pre-Design Investigation (PDI) to map various physical creek characteristics and select sediment sampling locations.

Arcadis personnel measured and recorded full channel dimensions, water depths, sediment thicknesses and bank descriptions at 30 probing transects established in five defined "reaches" (Reaches 1 through 5) extending from approximately 1,700 feet upstream from the site to the Harrison Street bridge approximately 2,600 feet downstream from the site as follows:

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- Reaches 3 adjacent to the site
- Reaches 4 and 5 downstream from the site

Spot probing was completed between transects to characterize the creek, identify depositional areas and check for obvious impacts to sediments as described in section 2.4.2 of the RDWP.

Field personnel identified and surveyed (using GPS) a total of 20 outfalls, 11 bridge drains (Hill Street bridge), 3 drainage swales, and 30 depositional areas. Potential sediment impacts (i.e., sheen) were observed along the water's edge during probing adjacent to the former site and at various points downstream from the site on both sides of the creek as depicted on the attached figures with a red line.

In accordance with RDWP Section 2.4.3, Arcadis identified 60 proposed sediment sampling locations as follows:

- 20 background locations (Reaches 1 and 2)
    - 12 depositional
    - 8 riffle/run
- 20 adjacent to the site (Reach 3)
    - 10 deposition
    - 10 riffle/run
- 20 downstream locations (Reaches 4 and 5)
    - Reach 4
        - 6 depositional
        - 6 riffle/run
    - Reach 5
        - 4 depositional
        - 4 riffle/run

Transect locations, observed impacts, pertinent site features and proposed sediment sampling locations are depicted on the attached figures. Arcadis will schedule the sediment sampling activities following DEC's proposed sediment sampling location review and approval. Please let me or Steve DiLella know if you require additional information or if you would like to set up a call to discuss the recon activities or proposed locations. Thank you.

Jason

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Appendix H

Ecological Characterization Evaluation

National Grid

Ecological Characterization Report

Gloversville (Hill Street) Former Manufactured Gas Plant
Gloversville, New York
Site No. 5-18-021

November 2021

Gloversville Former MGP Site Ecological Characterization Report

Gloversville (Hill Street) Former Manufactured Gas Plant
Gloversville, New York
Site No. 5-18-021

November 2021

Prepared By:
Arcadis of New York, Inc.
One Lincoln Center, 110 West Fayette Street, Suite 300
Syracuse
New York 13202
Phone: 315 446 9120
Fax: 315 449 0017

Prepared For:
National Grid

Our Ref:
30044656

Contents

Tables

Figures

Attachments

1 Introduction

This report presents Arcadis of New York, Inc. (Arcadis') ecological characterization study (study) results for the National Grid Former MGP (Hill St.) Site in Gloversville, NY. The study area covered approximately 5.5 acres expected to be within and near the planned construction area. The approximate center of the survey is located at 43° 2'2.91"N, 74°21'2.10"W (Figure 1).

Arcadis conducted the study on August 17, 27, 28, and 31, 2020) to determine the extent and location of waters of the United States and characterize the project area's vegetative community. The location and quantification of natural resources surrounding the project area will be used to minimize the project's environmental impact and create a suitable ecological restoration plan following remedial activities.

Wetland boundary delineation and characterization methods and results are presented in Section 2 including a desktop survey of mapped National Wetland Inventory (NWI) Wetlands (Figure 2), New York State Department of Environmental Conservation (NYSDEC) Wetlands (Figure 3), and United States Department of Agricultural Natural Resources Conservation Service (USDA NRCS) Soils (Figure 4), and field delineated conditions (Figure 5).

Upland and Riparian Vegetation Community Characterization methods and results are presented in Section 3 including radial-area vegetation plot sampling (Figure 6) and a site tree inventory (Figure 7). Vegetation data is summarized in Tables 1 through 3.

2 Wetland Boundary Delineation and Characterization

Methods

The study area is located within the Northeast and North Central subregion corresponding to Land Resource Region (LRR) R (USACE, 2011). As such, the delineation was conducted in accordance with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0) (Regional Supplement). The Regional Supplement is intended to be utilized in conjunction with the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987) (Manual).

The United States Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA) jointly define wetlands as, "…those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (Environmental Laboratory, 1987). From this regulatory definition, USACE developed a three-parameter approach to identify and delineate wetlands. This approach dictates that wetlands contain hydrophytic vegetation, hydric soils, and evidence of wetland hydrology except for atypical situations or in previously disturbed areas.

The National Wetlands Plant List (NWPL) (USACE, 2018) was utilized to determine the wetland indicator status for vegetation encountered within the study area. Dominant vegetation with an indicator status of facultative (FAC), facultative wetland (FACW), or obligate (OBL) were considered hydrophytic. Plant species that individually or together comprising 50 percent of the total vegetation coverage of a community plus an individual species that by itself accounts for 20 percent of the total coverage were considered dominant (i.e., 50/20 rule). Areas with greater than 50 percent of their dominant vegetation possessing an indicator status of FAC, FACW or OBL were noted as having wetland vegetation.

Study area soils were analyzed to a depth of 20 to 30 inches, where possible, to determine color, texture and if hydric indicators were present. A Munsell® Color Chart was used to assign standard color notations to soil samples. Soil color was examined on moist or saturated soils. If soils were dry at the time of analysis, then samples were moistened with a spray bottle prior to analysis to facilitate accurate color readings. Areas possessing one or more field indicators, as outlined in USDA, NRCS (2018), were noted as having hydric soils present. Field-verified soils were also compared to NRCS published soil map units to determine if any mapped soils within the study area were listed as hydric.

Study area hydrology assessments consisted of direct observation of inundation, soil saturation or groundwater within 12-inches of the surface of hand-excavated test pits. Where direct observation hydrology was absent, other field indicators of wetland hydrology utilized. These hydrology indicators included, but were not limited to, drainage patterns, sediment deposition, watermarks, water-stained leaves, or the presence of sparsely vegetated concave surfaces.

Aquatic resources such as streams were identified and delineated based on their hydrologic regime (perennial or intermittent flow), presence of well-defined beds and banks, flow indicators such as sediment sorting and scouring, and indications of ordinary high-water marks. In all instances where a wetland abutted a stream, the outer wetland boundaries were established, as well as the boundary between the stream and the wetland.

Delineated wetland and stream habitats were classified in accordance with methods outlined in, Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al., 1979). Upland areas were classified in accordance with, Ecological Communities of New York State, Second Edition (Edinger et al. 2002). A wetland delineation map is included as Figure 5, representative photographs are included as Attachment 1, and completed wetland determination forms are included in Attachment 2.

Study Area Soils

The NRCS has the following three soils mapped within the study area (Figure 4):

- 7B – Endoaquents, 0 to 8 percent slopes, smoothed
- 72C – Broadalbin fine sandy loam, 8 to 15 percent slopes
- 115B – Udipsamments, 0 to 8 percent slopes, smoothed

Endoaquents are comprised of a parent material of loamy human transported material. They are somewhat poorly drained and have a very high runoff class. The depth to water table is about 6 to 18 inches and the depth to a restrictive layer is greater than 80 inches. Endoaquents are in Hydrologic Soil Group B/D and not classified as hydric.

Broadalbin fine sandy loam soils are comprised of a parent material of friable loamy eolian deposits over firm till. They are well drained and have a very high runoff class. The depth to water table is more than 80 inches and the depth to a restrictive layer is about 18 to 36 inches. Broadalbin fine sandy loam soils are in Hydrologic Soil Group C and not classified as hydric.

Udipsamments are comprised of a parent material of human transported material over sandy outwash. They are excessively drained and have a negligible runoff class. They have a depth to water table of greater than 80 inches and depth to restrictive layer of greater than 80 inches. Udipsamments soils are in Hydrologic Soil Group C and not classified as hydric.

Soil Map Unit Symbol	Soil Map Unit Name	Hydric Classification
Fulton County, NY		
7B	Endoaquents, 0 to 8 percent slopes, smoothed	No
72C	Broadalbin fine sandy loam, 8 to 15 percent slopes	No
115B	115B - Udipsamments, 0 to 8 percent slopes, smoothed	No

Study Area Drainage

The study area is in Fulton County, New York within the Mohawk River Watershed (HUC: 02020004). A portion of the Cayadutta Creek, a direct tributary of the Mohawk River, flows south and west through the study area (Regulation: 876-192, Standard: C(T), Classification: C) (Figure 2). Additionally, there are two channelized drainage features that flow to the Cayadutta Creek. The first drainage feature flows west and southwest through a culvert located on South Street and along the south side of the facility. This drainage feature discharges to Cayadutta Creek through a subgrade culvert. Further discussion of this perennial tributary is provided in Section 4. The second drainage feature is located to the west of the facility and flows south into the Cayadutta Creek. This drainage feature was characterized as a drainage swale within the wetland that is seasonally inundated with precipitation and surface water runoff that is open to the banks of Cayadutta Creek. Characterization of this feature is included within the Wetland B description. Both drainage features have a hydrologic source of runoff from the facility and other adjacent parcels.

The classification AA or A is assigned to waters used as a source of drinking water; classification B indicates a best usage for swimming and other contact recreation, but not for drinking water; classification C is for waters supporting fisheries and suitable for non-contact activities; the lowest classification and standard is D. Waters with classifications A, B, and C may also have a standard of (T), indicating that it may support a trout population, or (TS), indicating that it may support trout spawning. Special requirements apply to sustain these waters that support these valuable and sensitive fisheries resources.

Study Area Wetland/Upland Boundaries and Descriptions

Wetland A (US Fish and Wildlife Services Type PSS - Freshwater- Forested and Shrub wetland) was identified on the south side of the facility surrounding the drainage feature with hydrologic inputs from the culvert at South Boulevard (Figure 5). The wetland was delineated by flags “A1” through “A71 Open to Culvert” and comprised approximately 0.82 acres within the study area. The centerline of the drainage feature was approximately 400 feet long from upstream to downstream culverts and had standing water ranging from one to four inches deep. The study area hydrology was significantly disturbed from previous human action, however, field personnel observed saturated soils, scattered pockets of inundation and drainage patterns in various location throughout Wetland A. Dominant hydric vegetation included black willow (*Salix nigra*), cottonwood (*Populus deltoides*), glossy buckthorn (*Ferangula alnus*), giant goldenrod (*Solidago gigantea*), joe pye weed (*Eutrochium purpureum*), riverbank grape (*Vitis riparia*), and flat pea (*Lathyrus sylvestris*). Soils were a silty loam texture with a color of 5Y 2.5/1 until shovel refusal at ten inches. The hydric soil indicator for this wetland was Dark Surface (S7).

Uplands adjacent to Wetland A had no indicators of wetland hydrology. Dominant vegetation included box elder (*Acer negundo*), black walnut, (*Juglans nigra*), silky dogwood (*Cornus amomum*), glossy buckthorn, joe pye weed, common burdock (Arctium minus), and flat pea. Soils were a silty and loamy sand texture with a color of 10YR 3/3 until shovel refusal at 14 inches.

<u>Wetland B (PSS)</u> was identified to the west of the facility (Figure 5). The wetland was delineated by flags "B1 Open to Stream" to "B26 Open to Stream" and totaled 0.33 acres within the study area. The wetland was a drainage feature with relatively steep (~7-10%) slopes compared to the surrounding landscape. At the time of the survey, there was no standing water within the drainage channel, however hydrologic wetland indicators were present and included Saturation (A3) (10"), Water Marks (B3), Water Stained Leaves (B9), Drainage Patterns (B10), and Geomorphic Position (D2). Dominant hydrophytic vegetation included cottonwood, American elm (*Ulmus americana*), glossy buckthorn, sensitive fern (*Onoclea sensibilis*), creeping jenny (*Lysimachia nummularia*) and riverbank grape. Soils were a silty loam texture with a color of 5Y 2.5/1. At 14 inches 38% of soils were a color of 2.5Y 6/1 and redox concentration with a color of 7.5YR 5/8 within the matrix were found at prevalence of 2%. The hydric soil indicator for this wetland was Dark Surface (S7).

Uplands adjacent to Wetland B had no indicators of wetland hydrology. Dominant vegetation included cottonwood, staghorn sumac (*Rhus typhina*), glossy buckthorn, Kentucky bluegrass (*Poa pratensis*), and red clover (*Trifolium pratense*). Soils were a loamy sand texture with a color of 5YR 3/2 from 0-2 inches and 5YR 4/3 from 2-20+ inches.

3 Upland and Riparian Vegetation Community Characterization

Methods

The study area was broken into separate habitat types based on initial qualitative observations. Random sampling plots were placed within these areas with a minimum of at least 20% total area coverage to the tree and shrub community. The circular sampling plot areas were 1/10 acre each (37.3 feet radius). Every sapling or shrub individual within the sampling plot radius was identified by its species and counted. Every tree within the sampling plot radius was identified by its species, counted, and diameter at breast-height (DBH) recorded in inches.

Herbaceous vegetation cover of individual species was measured by using a one square meter quadrat placed at the center of each sampling plot. Species dominance of a plot was assigned in a similar way as wetland delineation with the 50/20 rule.

Vegetation Sampling Plots

The Study Area was broken into three separate habitat types: Upland, Wetland (composed of previously mentioned Wetland A and its center stream), and Ravine (composed of previously mentioned Wetland B and the surrounding steep slopes) (Figure 6).

<u>Upland</u>

The Upland Habitat was approximately 4.0 acres, or 73% of the study area. The Habitat is best described as a Successional Southern Hardwood Forest.

> *"…a hardwood or mixed forest that occurs on sites that have been cleared or otherwise disturbed. Characteristic trees and shrubs include any of the following: American elms (Ulmus americana), slippery elm (Ulmus rubra), white ash (Fraxinus americana), red maples (Acer rubrum), box*

> *elders (Acer negundo), silver maple (Acer saccharinum), sassafrass (Sassafras albidum), gray birch (Betula populifolia), hawthorns (Crataegus spp.), eastern red cedar (Juniperus virginiana), and choke-cherry (Prunus virginiana). Certain introduced species are commonly found in successional forests, including black locust (Robinia pseudo-acacia), tree-of-heaven (Ailanthus altissima), and buckthorn (Rhamnus cathartica)"*
>
> -Edinger (2014) pp.125

A total of eight radial plots (plots U1 through U8) were used to characterize the Upland Habitat (Table 1 and Table 2). There were 148 shrubs counted (185 shrubs/acre) and 103 trees counted (129 trees/acre). The results of the vegetation sampling are listed below:

- U1 – 43° 2'4.23"N, 74°21'0.88"W had a total of 17 shrubs; the most common shrub was glossy buckthorn (10) and the least common was silky dogwood (1). A total of twelve trees were counted; the most common trees was box elder (8) and the least common was glossy buckthorn (1). Tree DBH's ranged from a low of 1.1" (black walnut) to a high of 20.7" (box elder). The dominant herbaceous species of the sampled plot was Canada goldenrod.
- U2 – 43° 2'3.17"N, 74°20'59.06"W had a total of 13 shrubs; the most common shrub was Tartarian honeysuckle (6) and the least common was green ash sapling (1). A total of 13 trees were counted; the most common tree was cottonwood (8) and the least common were black walnut and eastern hawthorn (*Crataegus phaenopyrum*) (1). Tree DBH's ranged from a low of 0.4" (cottonwood) to a high of 10" (black walnut and box elder). The dominant herbaceous species of the sampled plot was Canada goldenrod.
- U3 – 43° 2'4.20"N, 74°21'1.79"W had a total of 6 shrubs; there were 3 shrubs of box elder and glossy buckthorn each. A total of 4 trees were counted; the most common tree was box elder (3) and the least common was black walnut (1). Tree DBH's ranged from a low of 0.8" (black walnut) to a high of 4.8" (box elder). The dominant herbaceous species of the sampled plot was field thistle.
- U4 – 43° 2'4.14"N, 74°21'3.20"W had a total of 24 shrubs; the most common shrub was glossy buckthorn (8) and the least common were green ash and multiflora rose (1). A total of 14 trees were counted; the most common trees were box elder and cottonwood (4) and the least common were black walnut and glossy buckthorn (3). Tree DBH's ranged from a low of 0.8" (black walnut and box elder) to a high of 9" (cottonwood). The dominant herbaceous species of the sampled plot was Canada goldenrod.
- U5 – 43° 2'3.73"N, 74°21'4.09"W, had a total of 32 shrubs; the most common shrub was glossy buckthorn (11) and the least common was black walnut sapling (1). A total of 7 trees were counted, all of which were box elder. DBH's of the trees ranged from a low of 1" to a high of 5.5". The dominant herbaceous species of the sampled plot was goutweed (*Aegopodium podagraria*).
- U6 – 43° 2'5.41"N, 74°21'3.77"W had a total of 31 shrubs; the most common shrub was Russian olive (11) and the least common was cottonwood (1). A total of 24 trees were counted; the most common tree was box elder (17) and the least common were American elm, black walnut, and Norway maple (*Acer platanoides*) (1). Tree DBH's ranged from a low of 0.9" (box elder) to a high of 3.3" (green ash). The dominant herbaceous species of the sampled plot were Canada goldenrod and goutweed.
- U7 – 43° 2'2.67"N, 74°21'5.78"W had a total of 15 shrubs; the most common shrub was box elder (7) and the least common were Norway maple and silky dogwood (1). A total of 18 trees were counted; the most common tree was box elder (13) and the least common was silver maple (*Acer saccharinum*) (1). Tree DBH's ranged from a low of 1.0" (black walnut) to a high of 12.9" (silver maple). The dominant herbaceous species of the sampled plot was herbaceous Allegheny blackberry.

- U8 – 43° 2'11.36"N, 74°20'57.77"W had a total of 10 shrubs; the most common shrub was box elder sapling (5) and the least common was glossy buckthorn (2). A total of 11 trees were counted; the most common tree was staghorn sumac (*Rhus typhina*) (4) and the least common were white pine (*Pinus strobus*) and red oak (*Quercus rubra*) (1). Tree DBH's ranged from a low of 1" (staghorn sumac) to a high of 11.4" (white pine). The dominant herbaceous species of the sampled plot were Canada goldenrod and bird's foot trefoil (*Lotus corniculatus*).

<u>Wetland</u>

The Wetland Habitat was approximately 0.8 acres, or 15% of the study area. There were 104 shrubs counted (347 shrubs/acre) and 18 trees counted (60 trees/acre). The Habitat is best described as a Shrub-Swamp.

> *"In northern New York many shrub swamps are dominated by alder (Alnus incana ssp. rugosa); these swamps are widely recognized as alder thickets. A swamp dominated by red osier dogwood (Cornus sericea), silky dogwood (C. amomum), and willows (Salix spp.) may be called a shrub carr. Along the shores of some lakes and ponds there is a distinct zone dominated by water-willow (Decodon verticillatus) and/or buttonbush (Cephalanthus occidentalis) which can sometimes fill a shallow basin. Characteristic shrubs that are common in these and other types of shrub swamps include meadowsweet (Spiraea alba var. alba and S. alba var. latifolia), hardhack (Spiraea tomentosa), gray dogwood (Cornus racemosa), swamp azalea (Rhododendron viscosum), highbush blueberry (Vaccinium corymbosum), male-berry (Lyonia ligustrina), smooth alder (Alnus serrulata), spicebush (Lindera benzoin), willows (Salix bebbiana, S. discolor, S. lucida, S. petiolaris), wild raisin (Viburnum nudum var. cassinoides), and arrowwood (Viburnum dentatum var. lucidum). Scattered young trees may be present, such as red maple (Acer rubrum), American elm (Ulmus americana), and green ash (Fraxinus pennsylvanica)."*
>
> -Edinger (2014) pp.45

A total of three radial plots were used to characterize the Wetland Habitat (Table 1 and Table 2).

- W1 – 43° 2'4.54"N, 74°21'0.82"W had a total of 29 shrubs; the most common shrub was speckled alder (17) and the least common was silky dogwood and cottonwood (1). A total of 4 trees were counted; the most common tree was black willow (2) and the least common were American elm and cottonwood (1). Tree DBH's ranged from a low of 4.3" (American elm) to a high of 16" (cottonwood). The dominant herbaceous species of the sampled plot were joe pye weed and giant goldenrod.
- W2 – 43° 2'5.54"N, 74°21'1.01"W had a total of 38 shrubs; the most common shrub was glossy buckthorn (20) and the least common was black willow (4). A total of 4 trees were counted, all of which were cottonwood. Tree DBH's ranged from a low of 4" to a high of 13.2". The dominant herbaceous species of the sampled plot was giant goldenrod.
- W3 – 43° 2'5.93"N, 74°21'2.23"W had a total of 37 shrubs; the most common shrub was glossy buckthorn (15) and the least common was silky dogwood (1). A total of 10 trees were counted; the most common trees was box elder (4) and the least common were glossy buckthorn and speckled alder (1). Tree DBH's ranged from a low of 3.1" (speckled alder) to a high of 9.9" (box elder). The dominant herbaceous species of the sampled plot was jewelweed.

Ravine

The Ravine Habitat was approximately 0.7 acres, or 13% of the study area. There 48 shrubs counted (480 shrubs/acre) and 7 trees counted (70 trees per acre). The Habitat was located in between the site facility and an adjacent pedestrian path and is best described as a Ditch/Artificial Intermittent Stream with steep upland slopes.

> *"The aquatic community of an artificial waterway constructed for drainage or irrigation of adjacent lands. Water levels either fluctuate in response to variations in precipitation and groundwater levels, or water levels are artificially controlled. The sides of ditches are often vegetated, with grasses and sedges usually dominant. Non-native or weedy species are common. Purple loosestrife (Lythrum salicaria), European common reed (Phragmites australis), and reed canary grass (Phalaris arundinacea) often become established and may form dense, monospecific stands. Reed canary grass is often planted along ditches for erosion control. Other plants that are characteristic include sedges (Carex spp.) and cattails (Typha spp.). Algae indicative of eutrophic conditions may be abundant."*
>
> -Edinger (2014) pp. 30

One radial plot was used to characterize the Ravine Habitat (Table 1 and Table 2).

- R1 – 43° 2'7.08"N, 74°21'4.78"W had a total of 48 shrubs; the most common shrub was cottonwood sapling (15) and the least common was black willow (5). A total of 7 trees were counted; the most common trees was cottonwood (5) and the least common was black willow (7). Tree DBH's ranged from a low of 1.2" (cottonwood) to a high of 2.4" (black willow). The dominant herbaceous species of the sampled plot were sensitive fern and creeping jenny.

Tree Inventory

Table 3 provides a full list of trees inventoried with numerical identifiers that can be seen on the map in Figure 7 – Tree Inventory Map. Table 4 provides a breakdown of the number of individuals and trunks of each species inventoried along with measures of DBH. Figure 8 presents a bar graph showing the total number of each tree species identified and average DBH of the population observed.

During the Tree Inventory, a total of 272 individual trees were located and identified by species. Trees with two or more trunks were tagged as the same individual, but counted and measured DBH separately. In total, there were 334 trunks located within the study area. The average DBH of all tree trunks identified was 9.7 inches and the median DBH was 7.2 inches. Based on the total study area of 6.24 acres, the stem density of trees was 53.5 trunks per acre.

The species with the greatest number of trees was box elder with 119 individuals (156 trunks) followed by cottonwood with 89 individuals (103 trunks). The species with the fewest number of trees (only one identified on site each) were apple (*Malus sp.*), black ash (*Fraxinus nigra*), quaking aspen (*Populus tremuloides*), an unidentifiable ash (*Ulmus sp.*), and serviceberry. The species with the largest average DBH was black walnut at 16.9 inches and the species with the lowest average DBH were American sycamore (*Platanus occidentalis*) and black willow. While black willow had the lowest average, its median was highest at 42.8 inches due to the few individuals counted and high range of observed DBH.

4 Tributary Characterization

The drainage feature (Unnamed Tributary) observed in the southern portion of the site was characterized for physical and ecological habitat attributes on August 28, 2020. Methods to evaluate the Unnamed Tributary followed general procedures outlined in Rapid Bioassessment Protocols [RBP] (Barbour et al 1999) and Stream Visual Assessment Protocols [SVAP] (USDA 2009). Evaluation included drainage features characterization of wetted width, water depth, habitats, substrate, bank conditions, vegetation, and observations of aquatic biota.

The Unnamed Tributary is an altered drainage way that has been influenced by past human disturbances; based on the presence of fill, some straightening and road access, and underground culvert. Despite the human disturbance, this drainage way has characteristics of a perennial first order stream. This first order stream drains a small catchment basin to the northeast of the project site that is generally bounded to the north by Hill Street and Worth Street, to the east and southeast by hill topography and to the south by the small site access road that is found within the southern portion of the project area. Using topography contours the approximate catchment basin area is 18 acres. From the site boundary (South Boulevard culvert) to the east to the confluence with Cayadutta Creek the Unnamed Tributary travels linearly east to west approximately 500 feet. A 24-inch drainage culvert runs approximately 75 feet underground from the confluence with Cayadutta Creek upgradient into the Unnamed Tributary drainage just west of the wetland boundary. The culvert is perched above the baseflow water elevation of Cayadutta Creek. Based on this position of the culvert, it appears to be hydrologically isolated and would not allow aquatic resources to move from Cayadutta Creek to the Unnamed Tributary during most flow regimes.

The wetted width of the Unnamed Tributary ranged from 29 to 48 inches; with an average of 35 inches. The water depth ranged from 1.5 (riffle habitat) to 5.5 (pool habitat) inches; with an average of 3.6 inches. The Unnamed Tributary habitat was comprised of typical sequences of short riffle breaks between runs and shallow pools along a low gradient, with some highly entrenched sections closer to the upstream culvert and becoming less entrenched as the channel moved downstream along the wetland. Along the wetland boundary, the channel was incised approximately 4 to 6 inches and controlled by the rooted wetland vegetation present to limit migration. The Tributary channel has moderate to low sinuosity and is generally stable over substrates of predominately mixed cobbles, gravels, and sands. Mixed fill materials were also observed within the active channel. Banks were primarily stable, indicated by moderate to high vegetation coverage and/or root zone protection based on the existing canopy and herbaceous communities present. The predominant canopy species included American elm and cottonwood. The predominant understory shrubs included glossy buckthorn, silky dogwood, speckled alder, and vine of riverbank grape. The predominant herbaceous vegetation included goldenrod species (Solidago spp.), creeping jenny, sensitive fern, spotted jewelweed (Impatiens capensis), purple loosestrife, and cattail species (Typha spp.).

Some minor erosional and undercut bank areas were observed with some aggradation of materials to slightly embed channel substrates. Bank materials were primarily alluvial soils made of silts and sands. Bank slopes were variable depending upon the wetland or root zone influence or confining entrenchment developed closer to the eastern boundary. Based on the presence of highly vegetated control and some physical disturbance through fill placement and the access road the sinuosity is less than typically observed for this type of wet meadow and floodplain channel. The Tributary channel is generally classified as C3/C4 within Rosgen stream classification. This type of stream channel is characterized by low gradient, slightly entrenched with well-defined meandering channel with riffle-pool bed morphology.

In terms of aquatic ecological habitat, substrates (including presence of rooted emergent vegetation and cover from minor boulders), undercuts, and large woody debris provide suitable benthic community habitat. In addition, the Unnamed Tributary and surrounding wetland and floodplain habitat would also provide suitable habitat for amphibians. Based on the perched culvert at the confluence with Cayadutta Creek, the presence of fish within the Unnamed Tributary is likely low and none were observed during field characterization. Using the elements of the SVAP to assess the Unnamed Tributary stream condition, the general estimate would be "Good". A photolog of the Unnamed Tributary existing conditions is provided in Attachment 3.

5 Conclusions

Two palustrine scrub-shrub wetlands were identified and located near the planned construction at the National Grid – Gloversville (Former MGP) site, totaling 1.15 acres within the Study Area. Both wetlands receive hydrologic input from surrounding runoff and have channelized drainage features that discharge into the Cayadutta Creek. The wetlands' soils were a silty loam and their vegetation dominated successional herbaceous, shrub, and tree species.

The study area was split into three separate habitat types: an upland successional forest, a shrub swamp, and altered drainage way (Unnamed Tributary). The Unnamed Tributary is hydrologically isolated from Cayadutta Creek based on the presence of a perched culvert pipe such that aquatic resources would not be able to travel up this drainage during most flow conditions. Suitable habitat is present within the Unnamed Tributary to support aquatic life such as amphibians and benthic community. The most common species identified in these areas were box elder, glossy buckthorn, cottonwood, speckled alder, Canada goldenrod, and giant goldenrod. A total of 272 trees were located and measured in the study area. The average and median DBH of the tree community was 9.7 and 7.2 inches, respectively.

6 References

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Tables

Table 1
Vegetation Characterization Plots: Herbaceous

Ecological Characterization Report
National Grid
Gloversville (Hill Street) Former MGP Site, Gloversville, New York

Upland Vegetation Plot 1		
Common Name	**Scientific Name**	**% Cover**
Bindweed	*Convolvulus arvensis*	10
Canada Goldenrod	*Solidago canadensis*	60
Joe Pye Weed	*Eutrochium maculatum*	15
Common Burdock	*Arcticum minus*	10

Upland Vegetation Plot 2		
Common Name	**Scientific Name**	**% Cover**
Canada Goldenrod	*Solidago canadensis*	90
Virgin's Bower	*Clematis virginiana*	10
Box Elder	*Acer negundo*	5
Quack Grass	*Elymus repens*	15
Kentucky Blue Grass	*Poa pratensis*	15
Bedstraw	*Galium aparine*	2
Virginia Creeper	*Parthenocissus quinquefolia*	5

Upland Vegetation Plot 3		
Common Name	**Scientific Name**	**% Cover**
Field Thistle	*Cirsium discolor*	60
Jewelweed	*Impatiens capensis*	20
Canada Goldenrod	*Solidago canadensis*	20
Creeping Charlie	*Glechoma hederacea*	20
Purple Loosestrife	*Lythrum salicaria*	10

Upland Vegetation Plot 4		
Common Name	**Scientific Name**	**% Cover**
Canada Goldenrod	*Solidago canadensis*	70
Asiatic Bittersweet	*Celastrus orbiculatus*	20
Allegany Blackberry	*Rubus allegheniensis*	10
Virginia Creeper	*Parthenocissus quinquefolia*	10
Creeping Charlie	*Glechoma hederacea*	2

Upland Vegetation Plot 5		
Common Name	**Scientific Name**	**% Cover**
Goutweed	*Aegopodium podagraria*	65
Allegheny blackberry	*Rubus allegheniensis*	10
Canada Goldenrod	*Solidago canadensis*	20
White Snakeroot	*Ageratina altissima*	5
Garlic Mustard	*Alliaria petiolata*	2

Upland Vegetation Plot 6		
Common Name	**Scientific Name**	**% Cover**
Canada Goldenrod	*Solidago canadensis*	50
Goutweed	*Aegopodium podagraria*	40
Bedstraw	*Galium aparine*	5
Creeping Charlie	*Glechoma hederacea*	2

Upland Vegetation Plot 7		
Common Name	**Scientific Name**	**% Cover**
Allegheny blackberry	*Rubus allegheniensis*	65
Jewelweed	*Impatiens capensis*	10
Creeping Charlie	*Glechoma hederacea*	10
Canada Goldenrod	*Solidago canadensis*	2

Upland Vegetation Plot 8		
Common Name	**Scientific Name**	**% Cover**
Red Clover	*Trifolium pratense*	15
Quackgrass	*Elymus repens*	10
Canada Goldenrod	*Solidago canadensis*	50
Long Leaf Plantain	*Plantago lanceolata*	5
Strawberry	*Fragaria vesca*	2
Field Bindweed	*Convolvulus arvensis*	2
Bird's Foot Trefoil	*Lotus corniculatus*	40

Table 1
Vegetation Characterization Plots: Herbaceous

Ecological Characterization Report
National Grid
Gloversville (Hill Street) Former MGP Site, Gloversville, New York

Wetland Vegetation Plot 1		
Common Name	**Scientific Name**	**% Cover**
Flat Pea	*Lathyrus sylvestris*	10
Joe Pye Weed	*Eutrochium maculatum*	40
Giant Goldenrod	*Solidago gigantea*	60
Teasel	*Dipsacus fullonum*	5
Purple Loosestrife	*Lythrum salicaria*	5
Common Burdock	*Arcticum minus*	5

Wetland Vegetation Plot 2		
Common Name	**Scientific Name**	**% Cover**
Flat Pea	*Lathyrus sylvestris*	15
Broad-Leaf Cattail	*Typha latifolia*	10
Sensitive Fern	*Onoclea sensibilis*	10
Devil's Beggarstick	*Bidens frondosa*	2
Giant Goldenrod	*Solidago gigantea*	20
Purple Loosestrife	*Lythrum salicaria*	10
Lurid Sedge	*Carex lurida*	15

Wetland Vegetation Plot 3		
Common Name	**Scientific Name**	**% Cover**
Jewelweed	*Impatiens capensis*	40
Purple Loosestrife	*Lythrum salicaria*	25
Sensitive Fern	*Onoclea sensibilis*	15
Glossy Buckthorn	*Frangula alnus*	5
Black Willow	*Salix nigra*	5
Devil's Beggarstick	*Bidens frondosa*	2

Drainage Vegetation Plot 1		
Common Name	**Scientific Name**	**% Cover**
Sensitive Fern	*Onoclea sensibilis*	10
Creeping Jenny	*Lysimachia nummularia*	5

Table 2
Vegetation Characterization Plots: Tree and Shrub

Ecological Characterization Report
National Grid
Gloversville (Hill Street) Former MGP Site, Gloversville, New York

Upland Vegetation Plot 1											
	Common Name	**Scientific Name**	**Count**	**DBH's (In)**							
Shrubs	Box Elder	*Acer negundo*	4								
	Glossy Buckthorn	*Frangula alnus*	10								
	Multiflora Rose	*Rosa multiflora*	2								
	Silky Dogwood	*Cornus amomum*	1								
Trees	Black Walnut	*Juglans nigra*	3	3.8	15.3	1.1					
	Box Elder	*Acer negundo*	8	20.7	11.5	7.6	14.3	5.1	4.5	4.2	10.2
	Glossy Buckthorn	*Frangula alnus*	1	3.3							

Upland Vegetation Plot 2											
	Common Name	**Scientific Name**	**Count**	**DBH's (In)**							
Shrubs	Box Elder	*Acer negundo*	2								
	Glossy Buckthorn	*Frangula alnus*	4								
	Green Ash	*Fraxinus pennsylvanica*	1								
	Tartarian Honeysuckle	*Lonicera tartarica*	6								
Trees	Black Walnut	*Juglans nigra*	1	10							
	Box Elder	*Acer negundo*	3	10	10	10					
	Cottonwood	*Populus deltoides*	8	0.9	1.7	1.6	3	1.2	3.2	0.4	2.8
	Hawthorn	*Crataegus phaenopyrum*	1	10							

Upland Vegetation Plot 3						
	Common Name	**Scientific Name**	**Count**	**DBH's (In)**		
Shrubs	Box Elder	*Acer negundo*	3			
	Glossy Buckthorn	*Frangula alnus*	3			
Trees	Black Walnut	*Juglans nigra*	1	0.8		
	Box Elder	*Acer negundo*	3	4.8	4.3	4.2

Upland Vegetation Plot 4							
	Common Name	**Scientific Name**	**Count**	**DBH's (In)**			
Shrubs	Black Walnut	*Juglans nigra*	3				
	Box Elder	*Acer negundo*	3				
	Glossy Buckthorn	*Frangula alnus*	8				
	Green Ash	*Fraxinus pennsylvanica*	1				
	Multiflora Rose	*Rosa multiflora*	1				
	Silky Dogwood	*Cornus amomum*	4				
	Tartarian Honeysuckle	*Lonicera tartarica*	4				
Trees	Black Walnut	*Juglans nigra*	3	0.8	0.8	2.4	
	Box Elder	*Acer negundo*	4	0.9	1.3	2.5	0.8
	Cottonwood	*Populus deltoides*	4	4.3	6.4	9	4
	Glossy Buckthorn	*Frangula alnus*	3	0.9	1	1.3	

Table 2
Vegetation Characterization Plots: Tree and Shrub

Ecological Characterization Report
National Grid
Gloversville (Hill Street) Former MGP Site, Gloversville, New York

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Upland Vegetation Plot 5

	Common Name	Scientific Name	Count	DBH's (In)															
Shrubs	Box Elder	*Acer negundo*	5																
	Black Walnut	*Juglans nigra*	1																
	Tartarian Honeysuckle	*Lonicera tartarica*	9																
	Glossy Buckthorn	*Frangula alnus*	11																
	Silky Dogwood	*Cornus amomum*	6																
Trees	Box Elder	*Acer negundo*	7	5.5	5.4	1.3	4.4	1.3	1	6.2									

Upland Vegetation Plot 6

	Common Name	Scientific Name	Count	DBH's (In)															
Shrubs	Box Elder	*Acer negundo*	5																
	Cottonwood	*Populus deltoides*	1																
	Glossy Buckthorn	*Frangula alnus*	8																
	Russian Olive	*Elaeagnus angustifolia*	11																
	Tartarian Honeysuckle	*Lonicera tartarica*	6																
Trees	American Elm	*Ulmus americana*	1	1															
	Black Walnut	*Juglans nigra*	1	1															
	Box Elder	*Acer negundo*	17	1.2	1	1.1	1.3	1.8	0.9	1.2	1.2	1.4	1	0.9	1.4	3.4	2.7	1.9	2
	Glossy Buckthorn	*Frangula alnus*	2	0.9	1														
	Green Ash	*Fraxinus pennsylvanica*	2	2.7	3.3														
	Norway Maple	*Acer platanoides*	1	1.4															

Upland Vegetation Plot 7

	Common Name	Scientific Name	Count	DBH's (In)															
Shrubs	Black Walnut	*Juglans nigra*	3																
	Box Elder	*Acer negundo*	7																
	Glossy Buckthorn	*Frangula alnus*	3																
	Norway Maple	*Acer platanoides*	1																
	Silky Dogwood	*Cornus amomum*	1																
Trees	Black Walnut	*Juglans nigra*	2	1	1.1														
	Box Elder	*Acer negundo*	13	7.4	1.5	4.7	1.9	2	2	3.3	2.6	7.5	3.2	2.2	3.3	1.4			
	Glossy Buckthorn	*Frangula alnus*	2	1.3	1.3														
	Silver Maple	*Acer saccharinum*	1	12.9															

Upland Vegetation Plot 8

	Common Name	Scientific Name	Count	DBH's (In)			
Shrubs	Multiflora rose	*Rosa multiflora*	3				
	Box Elder	*Acer negundo*	5				
	Glossy Buckthorn	*Frangula alnus*	2				
Trees	Red Oak	*Quercus rubra*	1	9.1			
	White Pine	*Pinus strobus*	1	11.4			
	Quaking Aspen	*Populus tremuloides*	2	4.2	3.1		
	Staghorn Sumac	*Rhus typhina*	4	2.1	1	2.4	2.2
	Box Elder	*Acer negundo*	3	3.1	1.2	1.7	

Table 2
Vegetation Characterization Plots: Tree and Shrub

Ecological Characterization Report
National Grid
Gloversville (Hill Street) Former MGP Site, Gloversville, New York

Wetland Vegetation Plot 1								
	Common Name	***Scientific Name***	**Count**	**DBH's (In)**				
Shrubs	Black Willow	*Salix nigra*	3					
	Cottonwood	*Populus deltoides*	1					
	Box Elder	*Acer negundo*	7					
	Silky Dogwood	*Cornus amomum*	1					
	Speckled Alder	*Alnus incana*	17					
Trees	American Elm	*Ulmus mericana*	1	4.3				
	Black Willow	*Salix nigra*	2	7	7.2			
	Cottonwood	*Populus deltoides*	1	16				

Wetland Vegetation Plot 2								
	Common Name	**Scientific Name**	**Count**	**DBH's (In)**				
Shrubs	Black Willow	*Salix nigra*	4					
	Box Elder	*Acer negundo*	5					
	Cottonwood	*Populus deltoides*	9					
	Glossy Buckthorn	*Frangula alnus*	20					
Trees	Cottonwood	*Populus deltoides*	4	7.1	6	4	13.2	

Wetland Vegetation Plot 3								
	Common Name	**Scientific Name**	**Count**	**DBH's (In)**				
Shrubs	Box Elder	*Acer negundo*	4					
	Cottonwood	*Populus deltoides*	6					
	Glossy Buckthorn	*Frangula alnus*	15					
	Silky Dogwood	*Cornus amomum*	1					
	Speckled Alder	*Alnus incana*	11					
Trees	Black Willow	*Salix nigra*	2	7.3	7.8			,
	Box Elder	*Acer negundo*	4	5.1	6.4	7.6	9.9	
	Cottonwood	*Populus deltoides*	2	4.1	4.5			
	Glossy Buckthorn	*Frangula alnus*	1	4.1				
	Speckled Alder	*Alnus incana*	1	3.1				

Ravine Vegetation Plot 1								
	Common Name	**Scientific Name**	**Count**	**DBH's (In)**				
Shrubs	Black Willow	*Salix nigra*	5					
	Cottonwood	*Populus deltoides*	15					
	Glossy Buckthorn	*Frangula alnus*	13					
	Green Ash	*Fraxinus pennsylvanica*	7					
	Silky Dogwood	*Cornus amomum*	8					
Trees	Black Willow	*Salix nigra*	2	1.4	2.4			
	Cottonwood	*Populus deltoides*	5	2	1.4	1.6	1.2	1.5

Table 3
Tree Inventory

Ecological Characterization Report
National Grid
Gloversville (Hill Street) Former MGP Site, Gloversville, New York

Tree Inventory			
ID	Common Name	Scientific Name	DBH (Inches)
0	Silver Maple	*Acer saccharinum*	12.9
1	Box Elder	*Acer negundo*	7.4
2	Box Elder	*Acer negundo*	1.5
3	Box Elder	*Acer negundo*	4.7
4	Box Elder	*Acer negundo*	1.9
5	Box Elder	*Acer negundo*	2
6	Box Elder	*Acer negundo*	2
7	Black Walnut	*Juglans nigra*	1
8	Black Walnut	*Juglans nigra*	1.1
9	Box Elder	*Acer negundo*	3.2
10	Cottonwood	*Populus deltoides*	20
11	Box Elder	*Acer negundo*	8.5
12	Cottonwood	*Populus deltoides*	15.7
13	Box Elder	*Acer negundo*	7.5
14	Box Elder	*Acer negundo*	16.8
15	Box Elder	*Acer negundo*	6
16	Box Elder	*Acer negundo*	22
17	Box Elder	*Acer negundo*	17
17	Box Elder	*Acer negundo*	17
17	Box Elder	*Acer negundo*	18.4
18	Box Elder	*Acer negundo*	13.5
18	Box Elder	*Acer negundo*	17.8
18	Box Elder	*Acer negundo*	18
19	Box Elder	*Acer negundo*	4.8
19	Box Elder	*Acer negundo*	8.5
20	Cottonwood	*Populus deltoides*	5.1
21	Box Elder	*Acer negundo*	6.5
22	Cottonwood	*Populus deltoides*	4.3
22	Cottonwood	*Populus deltoides*	5.5
22	Cottonwood	*Populus deltoides*	11.3
23	Cottonwood	*Populus deltoides*	15.9
24	Cottonwood	*Populus deltoides*	15.5
25	Cottonwood	*Populus deltoides*	8.4
25	Cottonwood	*Populus deltoides*	12.2
26	Cottonwood	*Populus deltoides*	10.3
27	Box Elder	*Acer negundo*	7.2
27	Box Elder	*Acer negundo*	8.4
28	Cottonwood	*Populus deltoides*	13.1
28	Cottonwood	*Populus deltoides*	29
29	Cottonwood	*Populus deltoides*	14.2
30	Cottonwood	*Populus deltoides*	16.8
31	Box Elder	*Acer negundo*	6.8
31	Box Elder	*Acer negundo*	13.7
32	Box Elder	*Acer negundo*	11.3
33	Box Elder	*Acer negundo*	3.5
34	Cottonwood	*Populus deltoides*	9.5
34	Cottonwood	*Populus deltoides*	14.1
34	Cottonwood	*Populus deltoides*	17.9
35	Cottonwood	*Populus deltoides*	34
36	Cottonwood	*Populus deltoides*	15.2
37	Box Elder	*Acer negundo*	9.5
38	Cottonwood	*Populus deltoides*	16.1
39	Cottonwood	*Populus deltoides*	25
40	Box Elder	*Acer negundo*	5
40	Box Elder	*Acer negundo*	12
41	Box Elder	*Acer negundo*	3.8
42	Box Elder	*Acer negundo*	4.2
43	Cottonwood	*Populus deltoides*	32.5
44	Box Elder	*Acer negundo*	24.2
45	Box Elder	*Acer negundo*	5.6
46	Box Elder	*Acer negundo*	3.3
46	Box Elder	*Acer negundo*	9.4
47	Box Elder	*Acer negundo*	23.3
48	Box Elder	*Acer negundo*	20.7
49	Box Elder	*Acer negundo*	11.9
49	Box Elder	*Acer negundo*	13.5
49	Box Elder	*Acer negundo*	16.3
50	Box Elder	*Acer negundo*	16.8

Tree Inventory			
ID	Common Name	Scientific Name	DBH (Inches)
51	Box Elder	*Acer negundo*	12.8
52	Box Elder	*Acer negundo*	14
53	Box Elder	*Acer negundo*	11.4
54	Box Elder	*Acer negundo*	16.8
55	Black Cherry	*Prunus serotina*	28.1
56	Box Elder	*Acer negundo*	10
57	Box Elder	*Acer negundo*	11.1
58	Box Elder	*Acer negundo*	7.9
59	Box Elder	*Acer negundo*	32.5
60	Box Elder	*Acer negundo*	13.6
61	Box Elder	*Acer negundo*	17.9
62	Box Elder	*Acer negundo*	14.3
63	Box Elder	*Acer negundo*	13
64	Box Elder	*Acer negundo*	16.4
65	Box Elder	*Acer negundo*	7
66	Box Elder	*Acer negundo*	5.2
66	Box Elder	*Acer negundo*	6.2
67	Box Elder	*Acer negundo*	7
68	Box Elder	*Acer negundo*	5.8
69	Box Elder	*Acer negundo*	11.5
70	Box Elder	*Acer negundo*	4.6
71	Box Elder	*Acer negundo*	17.3
72	Box Elder	*Acer negundo*	4
73	Box Elder	*Acer negundo*	6.6
74	Box Elder	*Acer negundo*	7.9
75	Box Elder	*Acer negundo*	10.6
76	Box Elder	*Acer negundo*	4.9
77	Box Elder	*Acer negundo*	3.2
78	Box Elder	*Acer negundo*	14.3
79	Black Walnut	*Juglans nigra*	3.8
80	Box Elder	*Acer negundo*	20.7
81	Box Elder	*Acer negundo*	6.5
82	Box Elder	*Acer negundo*	26.2
83	Box Elder	*Acer negundo*	13.5
84	Box Elder	*Acer negundo*	3
84	Box Elder	*Acer negundo*	4
85	Box Elder	*Acer negundo*	5.3
86	Box Elder	*Acer negundo*	5
86	Box Elder	*Acer negundo*	5.6
86	Box Elder	*Acer negundo*	5.6
86	Box Elder	*Acer negundo*	6.5
86	Box Elder	*Acer negundo*	7
87	Black Walnut	*Juglans nigra*	5.1
88	Black Walnut	*Juglans nigra*	6.9
89	Black Willow	*Salix nigra*	49.5
90	Box Elder	*Acer negundo*	17.5
91	Box Elder	*Acer negundo*	5.5
91	Box Elder	*Acer negundo*	17.4
92	Box Elder	*Acer negundo*	9.2
93	American Elm	*Ulmus americana*	5.4
93	American Elm	*Ulmus americana*	6.3
94	American Elm	*Ulmus americana*	3.5
94	American Elm	*Ulmus americana*	8.8
95	American Elm	*Ulmus americana*	5.8
96	American Elm	*Ulmus americana*	5.8
97	Cottonwood	*Populus deltoides*	27.3
98	Cottonwood	*Populus deltoides*	23.8
99	Cottonwood	*Populus deltoides*	25.8
100	Box Elder	*Acer negundo*	5.2
101	Box Elder	*Acer negundo*	8.6
102	Box Elder	*Acer negundo*	8
103	Norway Maple	*Acer platanoides*	5
104	Green Ash	*Fraxinus pennsylvanica*	11
104	Green Ash	*Fraxinus pennsylvanica*	13.2
105	Apple	*Malus sp.*	6.2
105	Apple	*Malus sp.*	6.6
106	Box Elder	*Acer negundo*	15.2
107	Black Walnut	*Juglans nigra*	4.9
108	Box Elder	*Acer negundo*	10.4

Ecological Characterization Report
National Grid
Gloversville (Hill Street) Former MGP Site, Gloversville, New York

Tree Inventory			
ID	Common Name	Scientific Name	DBH (Inches)
109	Box Elder	*Acer negundo*	13.6
110	Box Elder	*Acer negundo*	5
110	Box Elder	*Acer negundo*	5
110	Box Elder	*Acer negundo*	6.1
111	Cottonwood	*Populus deltoides*	9
112	Service Berry	*Quercus rubra*	3.4
113	Cottonwood	*Populus deltoides*	9.8
114	Black Cherry	*Prunus serotina*	5.8
115	Cottonwood	*Populus deltoides*	10.1
116	Black Cherry	*Prunus serotina*	9.8
117	Cottonwood	*Populus deltoides*	10.1
118	Cottonwood	*Populus deltoides*	9.8
119	American Elm	*Ulmus americana*	5
120	Cottonwood	*Populus deltoides*	7.8
120	Cottonwood	*Populus deltoides*	9.5
121	Cottonwood	*Populus deltoides*	8
122	Cottonwood	*Populus deltoides*	10.4
123	Cottonwood	*Populus deltoides*	10.8
124	Cottonwood	*Populus deltoides*	3.4
125	Tree of Heaven	*Ailanthus altissima*	3.8
126	Box Elder	*Acer negundo*	7.1
127	Box Elder	*Acer negundo*	3.8
127	Box Elder	*Acer negundo*	4.2
127	Box Elder	*Acer negundo*	4.6
127	Box Elder	*Acer negundo*	5.1
128	Box Elder	*Acer negundo*	3
128	Box Elder	*Acer negundo*	5.5
129	Box Elder	*Acer negundo*	4.1
129	Box Elder	*Acer negundo*	4.5
129	Box Elder	*Acer negundo*	5.3
129	Box Elder	*Acer negundo*	5.7
130	Box Elder	*Acer negundo*	4.1
131	Cottonwood	*Populus deltoides*	4.8
132	Cottonwood	*Populus deltoides*	3.2
133	Box Elder	*Acer negundo*	9.7
134	Box Elder	*Acer negundo*	3.3
134	Box Elder	*Acer negundo*	5.3
135	American Elm	*Ulmus americana*	3.3
136	Cottonwood	*Populus deltoides*	4
137	American Elm	*Ulmus americana*	4.3
138	Cottonwood	*Populus deltoides*	3.2
139	American Sycamore	*Platanus occidentalis*	3.7
140	Ulmus Sp	*Elm*	3.3
141	Salix Sp	*Willow*	4.2
142	Box Elder	*Acer negundo*	5
142	Box Elder	*Acer negundo*	11
142	Box Elder	*Acer negundo*	13
143	Box Elder	*Acer negundo*	9.8
144	Tree of Heaven	*Ailanthus altissima*	5.4
145	Box Elder	*Acer negundo*	4.2
145	Box Elder	*Acer negundo*	6.6
146	Norway Maple	*Acer platanoides*	4.1
147	Norway Maple	*Acer platanoides*	8
148	Box Elder	*Acer negundo*	10.4
149	Cottonwood	*Populus deltoides*	17.4
150	Box Elder	*Acer negundo*	6.6
151	Box Elder	*Acer negundo*	6
152	Black Willow	*Salix nigra*	80
153	Box Elder	*Acer negundo*	10
154	Cottonwood	*Populus deltoides*	5.1
155	Cottonwood	*Populus deltoides*	17.3
155	Cottonwood	*Populus deltoides*	20
156	Norway Maple	*Acer platanoides*	3
157	Cottonwood	*Populus deltoides*	14.7
158	Cottonwood	*Populus deltoides*	4
159	Cottonwood	*Populus deltoides*	11.8
160	Box Elder	*Acer negundo*	3.2
161	Box Elder	*Acer negundo*	5.2
161	Box Elder	*Acer negundo*	5.3

Table 3
Tree Inventory

Ecological Characterization Report
National Grid
Gloversville (Hill Street) Former MGP Site, Gloversville, New York

Tree Inventory			
ID	Common Name	Scientific Name	DBH (Inches)
162	American Elm	*Ulmus americana*	5.9
163	American Elm	*Ulmus americana*	5.9
164	Black Ash	*Fraxinus nigra*	5.5
165	Box Elder	*Acer negundo*	4.1
166	Box Elder	*Acer negundo*	4.3
167	Cottonwood	*Populus deltoides*	6.8
168	Cottonwood	*Populus deltoides*	4
169	Cottonwood	*Populus deltoides*	6.2
170	Box Elder	*Acer negundo*	5.5
171	Cottonwood	*Populus deltoides*	17.8
172	Box Elder	*Acer negundo*	8.2
173	Cottonwood	*Populus deltoides*	14.3
174	Cottonwood	*Populus deltoides*	17
175	Box Elder	*Acer negundo*	7.4
176	Box Elder	*Acer negundo*	5.8
177	Box Elder	*Acer negundo*	11.4
178	Box Elder	*Acer negundo*	9
179	Box Elder	*Acer negundo*	6.5
180	Box Elder	*Acer negundo*	6.5
181	Box Elder	*Acer negundo*	6.5
181	Box Elder	*Acer negundo*	13.4
182	Yellow Birch	*Betula alleghaniensis*	3
183	Cottonwood	*Populus deltoides*	3.3
183	Cottonwood	*Populus deltoides*	4.8
184	Cottonwood	*Populus deltoides*	3.1
184	Cottonwood	*Populus deltoides*	3.2
185	Yellow Birch	*Betula alleghaniensis*	3
186	Yellow Birch	*Betula alleghaniensis*	3.2
187	Staghorn Sumac	*Rhus typhina*	3.2
188	Box Elder	*Acer negundo*	5.1
188	Box Elder	*Acer negundo*	6.8
188	Box Elder	*Acer negundo*	8.1
189	Box Elder	*Acer negundo*	4.4
190	Black Willow	*Salix nigra*	36
191	Black Willow	*Salix nigra*	13.5
192	Cottonwood	*Populus deltoides*	3
192	Cottonwood	*Populus deltoides*	3.1
192	Cottonwood	*Populus deltoides*	4.1
193	Yellow Birch	*Betula alleghaniensis*	3.1
194	Salix Sp	*Willow*	3.7
195	Cottonwood	*Populus deltoides*	4.8
196	Yellow Birch	*Betula alleghaniensis*	3.8
197	Box Elder	*Acer negundo*	8.6
198	Cottonwood	*Populus deltoides*	10.1
199	Box Elder	*Acer negundo*	8
200	Cottonwood	*Populus deltoides*	10.5
201	Cottonwood	*Populus deltoides*	5.7
202	Cottonwood	*Populus deltoides*	9.1
203	Cottonwood	*Populus deltoides*	7
204	Cottonwood	*Populus deltoides*	7.7
205	Cottonwood	*Populus deltoides*	4
206	Cottonwood	*Populus deltoides*	11
206	Cottonwood	*Populus deltoides*	11.5
207	Cottonwood	*Populus deltoides*	10.4
208	Cottonwood	*Populus deltoides*	8.3
209	Salix Sp	*Willow*	4.2
210	Cottonwood	*Populus deltoides*	8.3
211	Cottonwood	*Populus deltoides*	7.3
212	Cottonwood	*Populus deltoides*	14.8
213	Cottonwood	*Populus deltoides*	6.5
214	Cottonwood	*Populus deltoides*	4.1
215	Cottonwood	*Populus deltoides*	5.8
216	Cottonwood	*Populus deltoides*	5
217	Cottonwood	*Populus deltoides*	7.5
218	Cottonwood	*Populus deltoides*	7.1
219	Cottonwood	*Populus deltoides*	3.5
220	American Elm	*Ulmus americana*	7.4
221	Green Ash	*Fraxinus pennsylvanica*	7.1
222	Green Ash	*Fraxinus pennsylvanica*	4

Table 3
Tree Inventory

Ecological Characterization Report
National Grid
Gloversville (Hill Street) Former MGP Site, Gloversville, New York

Tree Inventory			
ID	Common Name	Scientific Name	DBH (Inches)
223	Green Ash	*Fraxinus pennsylvanica*	3.5
224	Green Ash	*Fraxinus pennsylvanica*	3.6
225	Box Elder	*Acer negundo*	4.5
226	Cottonwood	*Populus deltoides*	16.8
227	Cottonwood	*Populus deltoides*	25.3
228	Cottonwood	*Populus deltoides*	19.2
229	Cottonwood	*Populus deltoides*	24.1
230	Box Elder	*Acer negundo*	9.8
231	Cottonwood	*Populus deltoides*	3.1
232	Staghorn Sumac	*Rhus typhina*	4.1
233	Staghorn Sumac	*Rhus typhina*	4.1
234	Cottonwood	*Populus deltoides*	5
235	Cottonwood	*Populus deltoides*	5
236	Cottonwood	*Populus deltoides*	7
237	Cottonwood	*Populus deltoides*	5.9
237	Cottonwood	*Populus deltoides*	6.4
238	Cottonwood	*Populus deltoides*	7
239	Cottonwood	*Populus deltoides*	11.2
240	Cottonwood	*Populus deltoides*	11.4
241	Cottonwood	*Populus deltoides*	9
242	Cottonwood	*Populus deltoides*	4.6
243	Cottonwood	*Populus deltoides*	8.5
244	Cottonwood	*Populus deltoides*	6.3
245	Cottonwood	*Populus deltoides*	10.5
246	Cottonwood	*Populus deltoides*	9.5
247	Cottonwood	*Populus deltoides*	11.2
248	Silver Maple	*Acer saccharinum*	10.2
248	Silver Maple	*Acer saccharinum*	12.1
248	Silver Maple	*Acer saccharinum*	30.7
249	Norway Maple	*Acer platanoides*	11.8
250	Box Elder	*Acer negundo*	23.1
251	Box Elder	*Acer negundo*	7
251	Box Elder	*Acer negundo*	11.7
252	Box Elder	*Acer negundo*	6.8
253	Box Elder	*Acer negundo*	8.5
254	Box Elder	*Acer negundo*	6.7
254	Box Elder	*Acer negundo*	11.2
255	Box Elder	*Acer negundo*	3.6
256	Norway Maple	*Acer platanoides*	3.5
257	American Elm	*Ulmus americana*	9.1
258	Box Elder	*Acer negundo*	25.2
259	American Elm	*Ulmus americana*	4.5
260	Box Elder	*Acer negundo*	12.4
261	Box Elder	*Acer negundo*	32.7
262	Box Elder	*Acer negundo*	23
263	Silver Maple	*Acer saccharinum*	10.2
263	Silver Maple	*Acer saccharinum*	16.8
264	Box Elder	*Acer negundo*	4.5
265	Red Oak	*Quercus rubra*	13.2
266	Red Oak	*Quercus rubra*	11.3
266	Red Oak	*Quercus rubra*	11.8
267	Red Oak	*Quercus rubra*	6.8
268	Red Oak	*Quercus rubra*	11
269	Red Oak	*Quercus rubra*	13.2
270	Quaking Aspen	*Populus tremuloides*	3.3
271	Black Walnut	*Juglans nigra*	5.1
271	Black Walnut	*Juglans nigra*	5.7
272	Tree of Heaven	*Ailanthus altissima*	7.8

Table 4
Tree Vegetation Summary

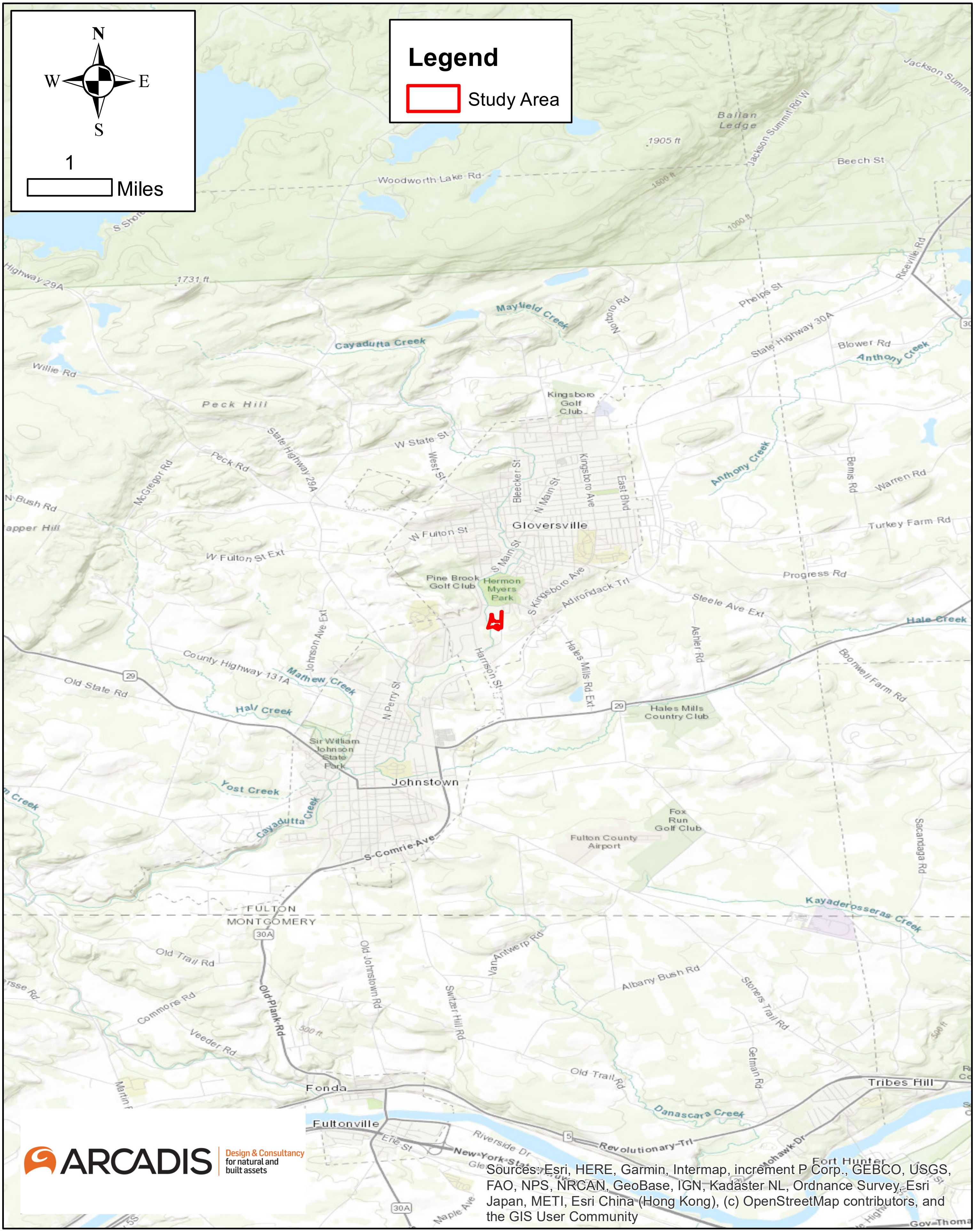
Ecological Characterization Report
National Grid
Gloversville (Hill Street) Former MGP Site, Gloversville, New York

Common Name	No. of Trees (Individual)	No. of Trees (Trunks)	Average DBH (Trunks)	Standard Deviation DBH (Trunks)	Median DBH (Trunks)
American Elm	12	14	10.2	1.7	5.8
American Sycamore	1	1	4.2	0.0	3.7
Apple	1	2	10.1	0.2	6.4
Black Ash	1	1	4.3	0.0	5.5
Black Cherry	3	3	10.2	9.7	9.8
Black Walnut	7	8	16.9	2.0	5
Black Willow	3	4	4.2	24.1	42.75
Box Elder	119	156	10.2	6.0	7.15
Cottonwood	89	103	9.2	6.9	9.5
Green Ash	5	6	6.9	3.8	5.55
Norway Maple	6	6	12.9	3.1	4.55
Quaking Aspen	1	1	5.7	0.0	3.3
Red Oak	5	6	8.5	2.2	11.55
Salix Sp	3	3	7.4	0.2	4.2
Service Berry	1	1	5.8	0.0	3.4
Silver Maple	3	6	14.1	7.2	12.5
Staghorn Sumac	3	3	5.6	0.4	4.1
Tree of Heaven	3	3	5.2	1.6	5.4
Ulmus Sp	1	1	5.0	0.0	3.3
Yellow Birch	5	5	5.6	0.3	3.1

Figures

NG Gloversville Hill St Former MGP Site
Project Location

FIGURE 1



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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NG Gloversville Hill St Former MGP Site
NWI Wetlands

FIGURE 2

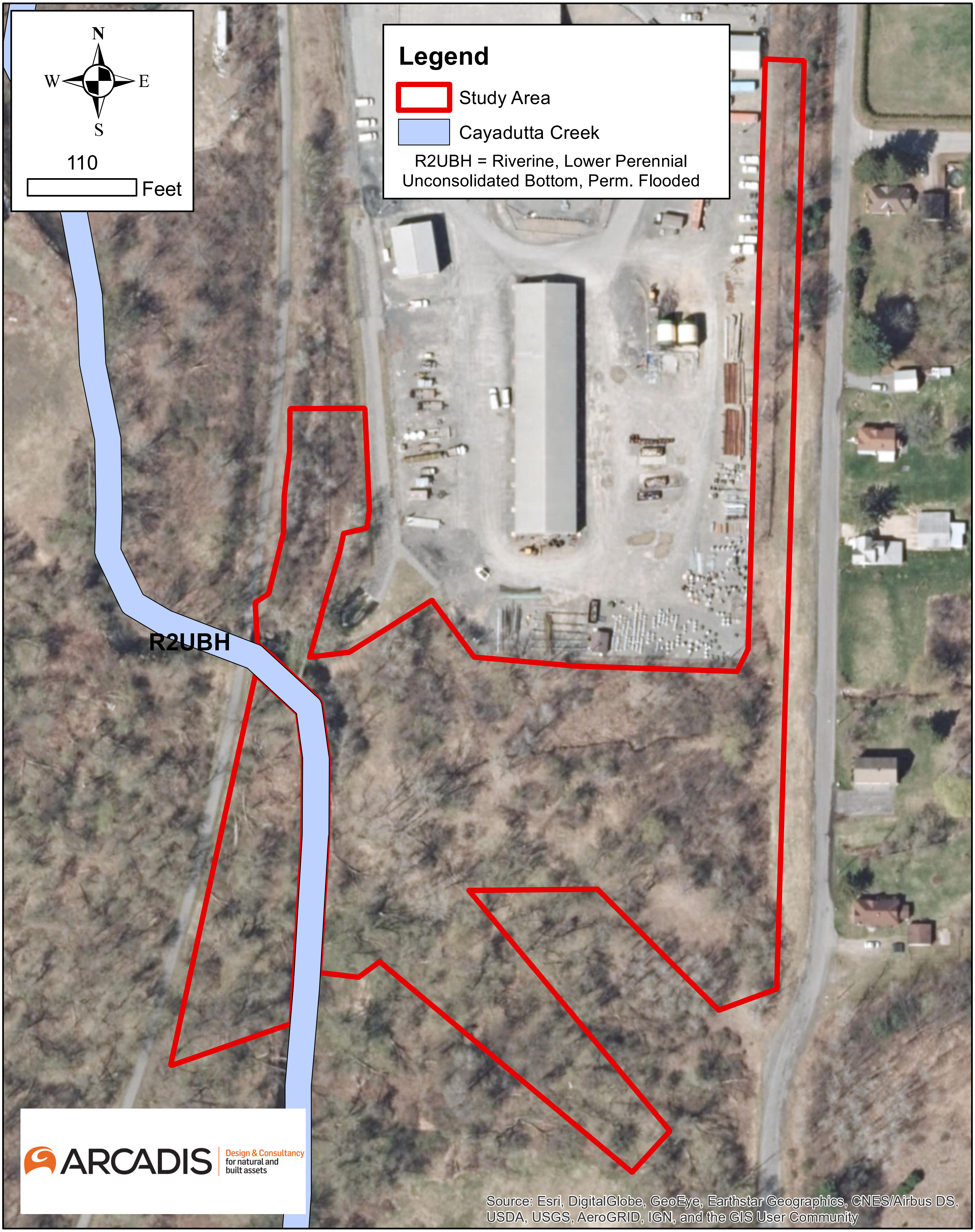


FIGURE 3

NG Gloversville Hill St Former MGP Site
NYSDEC Wetlands

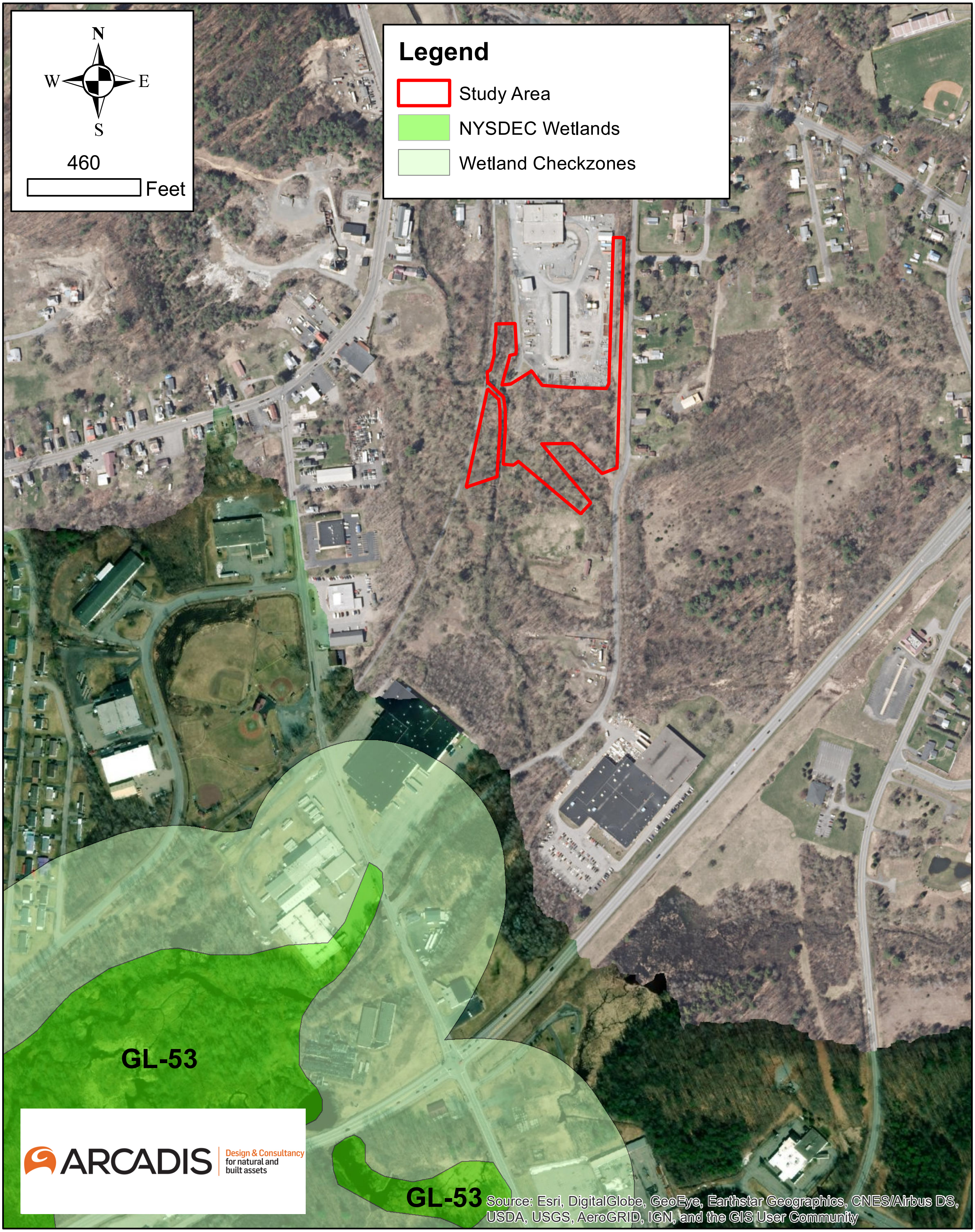
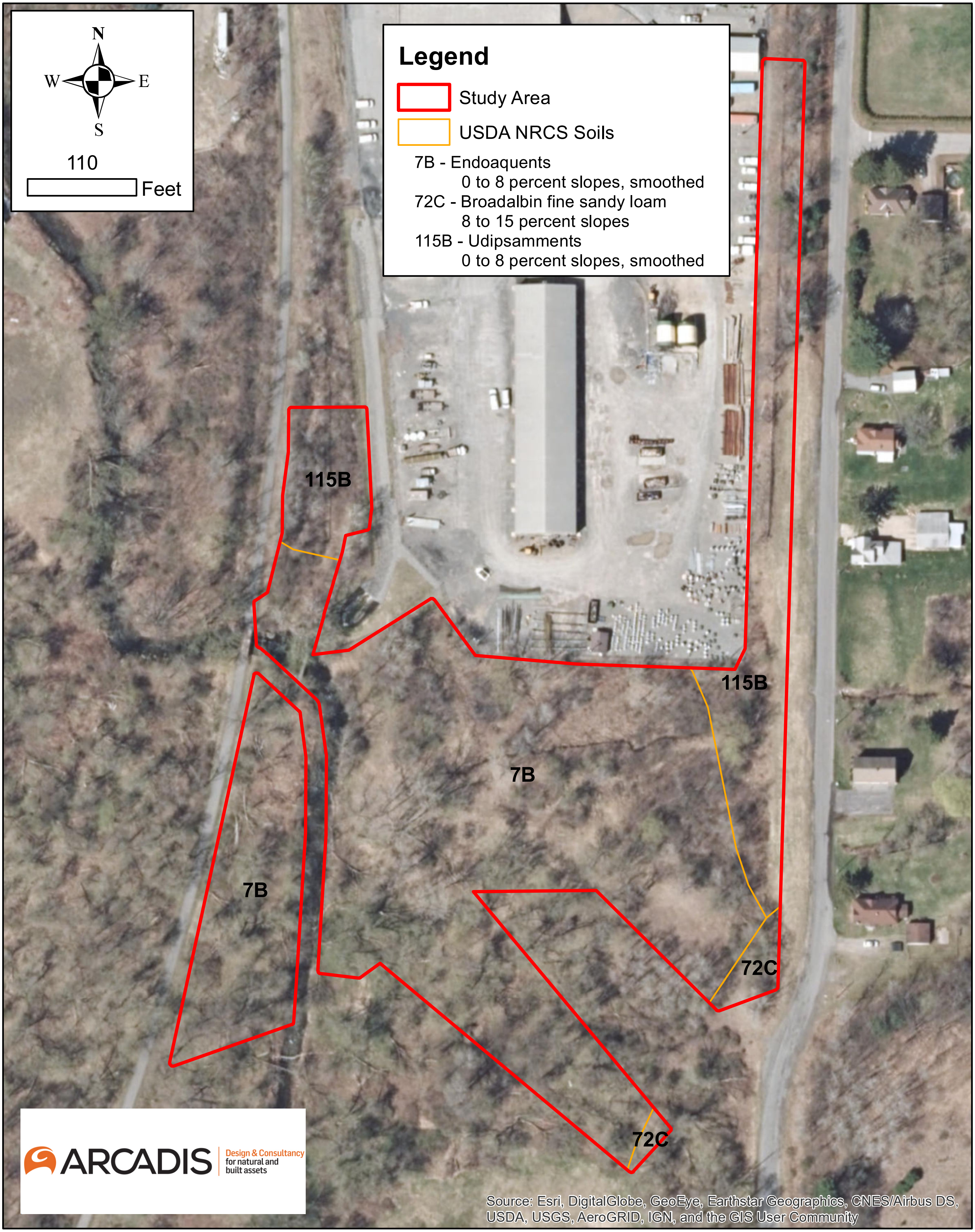


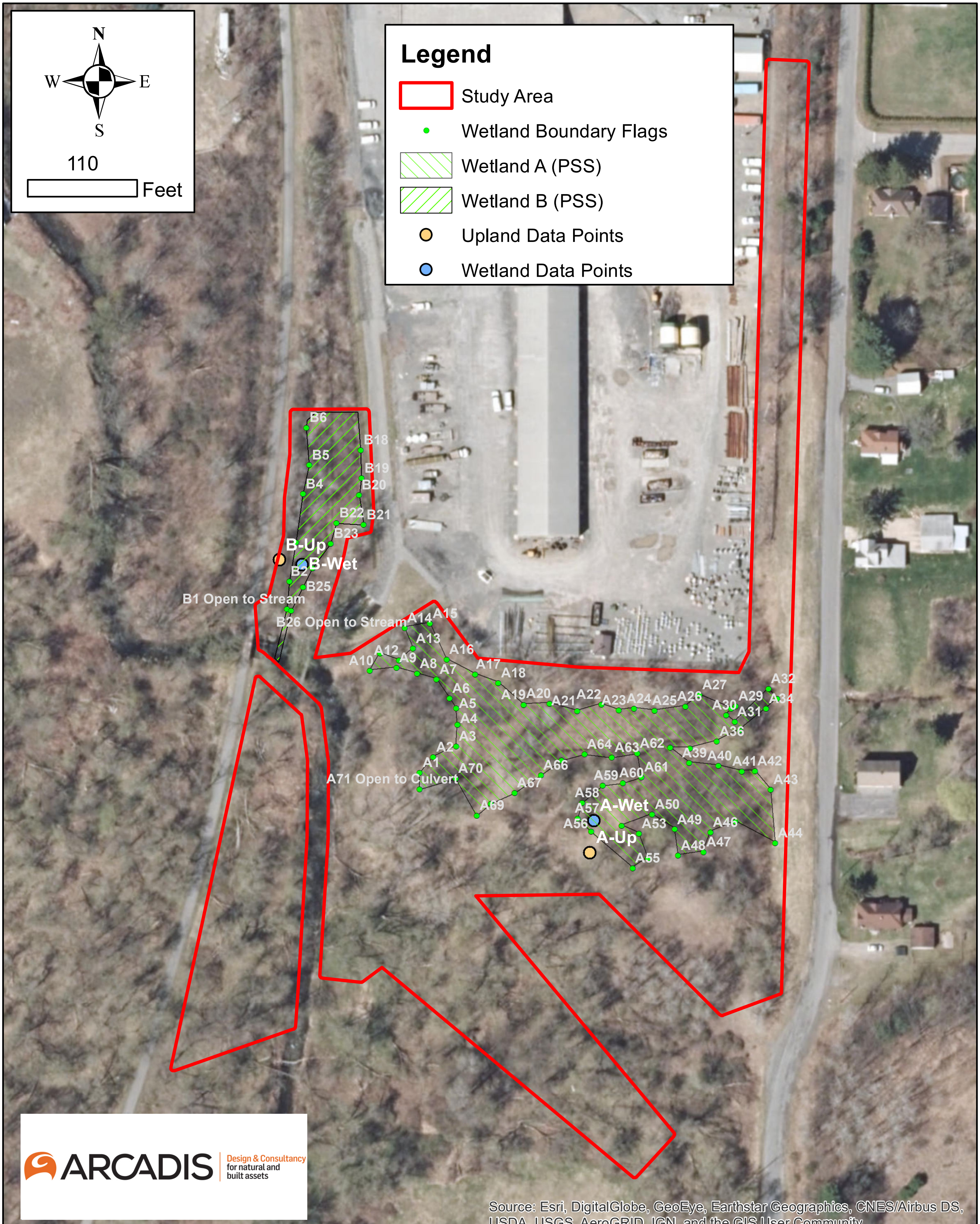
FIGURE 4

NG Gloversville Hill St Former MGP Site
USDA NRCS Soils



NG Gloversville Hill St Former MGP Site
Wetland Delineation Map

FIGURE 5



NG Gloversville Hill St Former MGP Site

FIGURE 6 Habitat and Vegetation Characterization Map

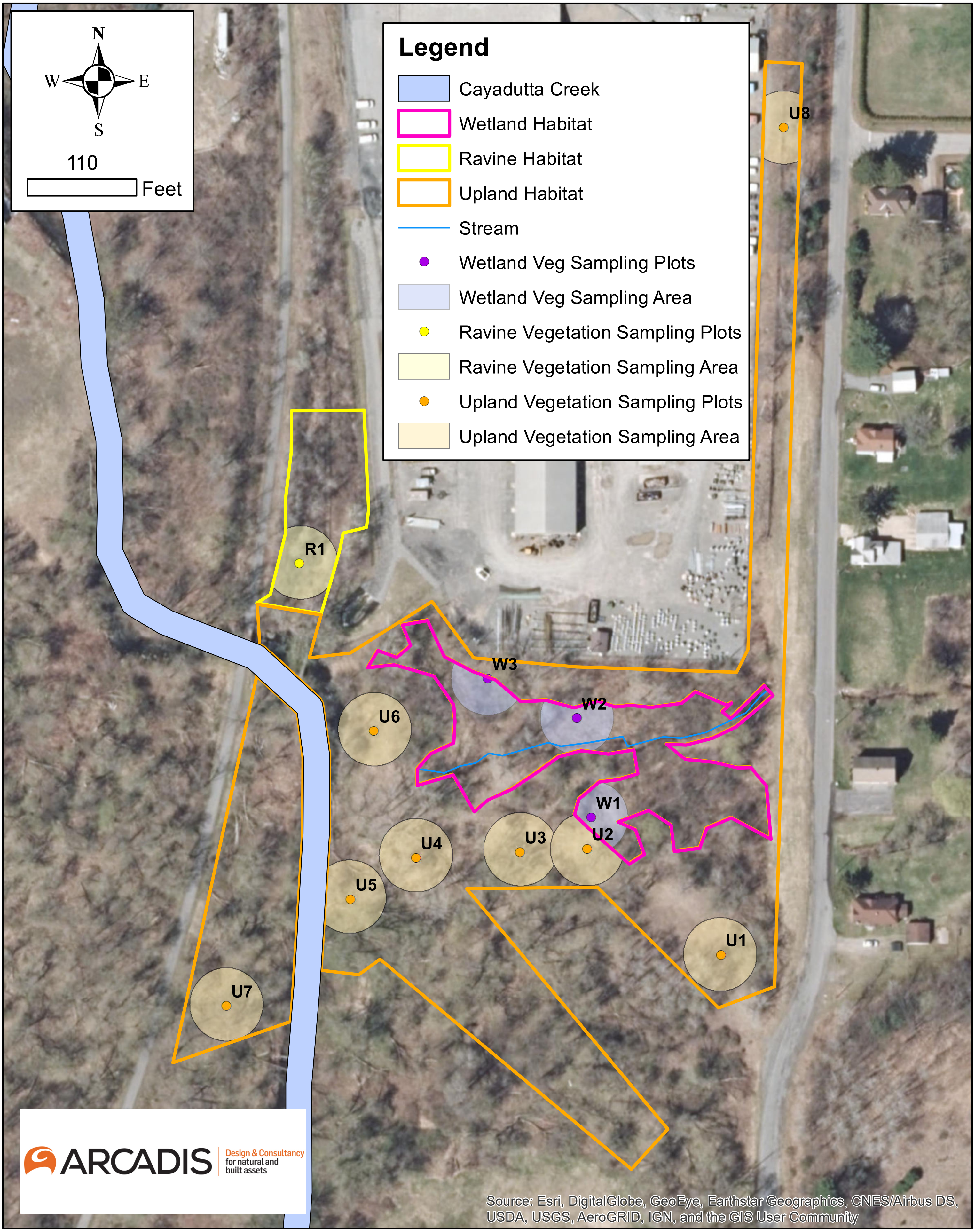
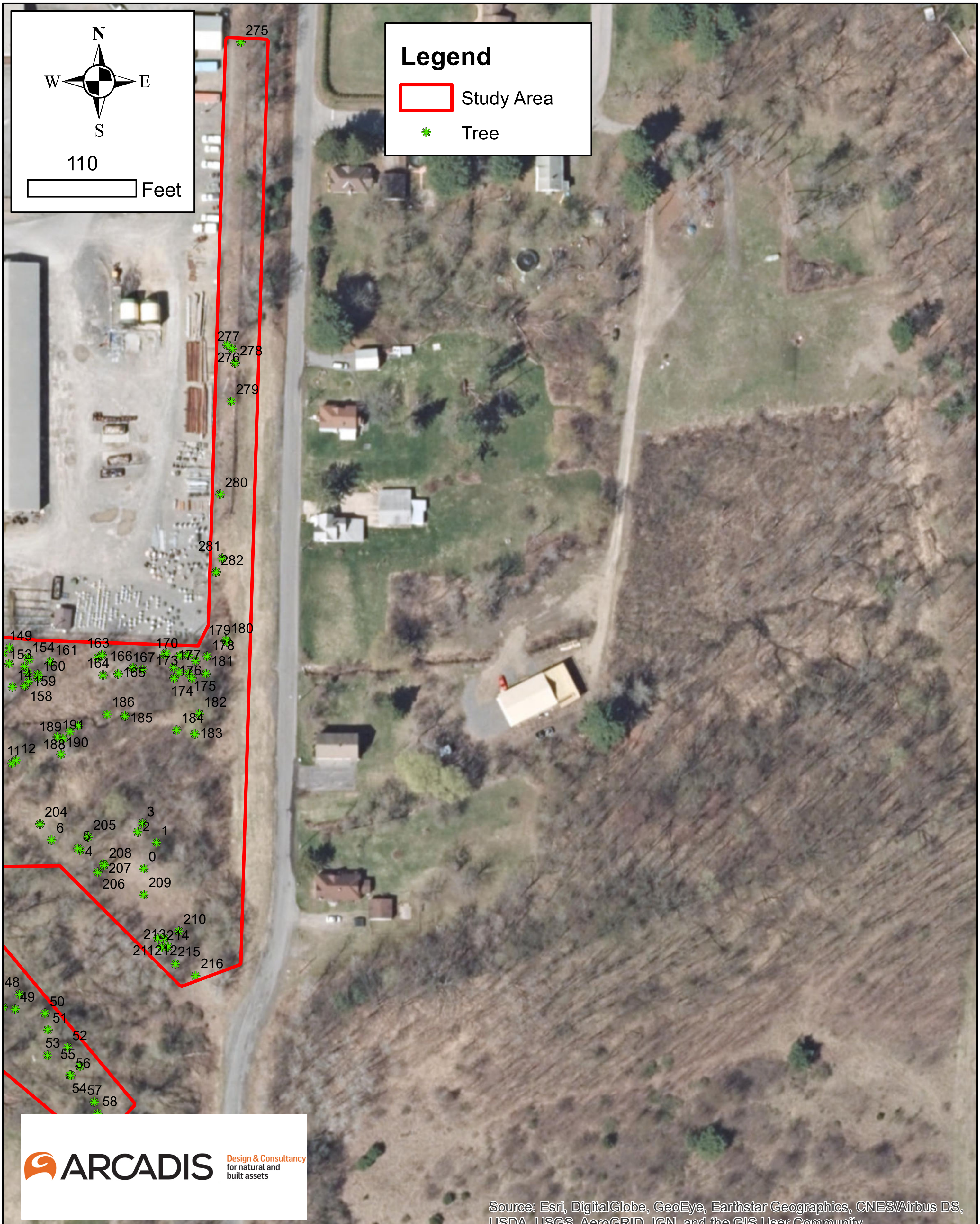


FIGURE 7A

NG Gloversville Hill St Former MGP Site
Tree Inventory Map



NG Gloversville Hill St Former MGP Site
Tree Inventory Map

FIGURE 7B

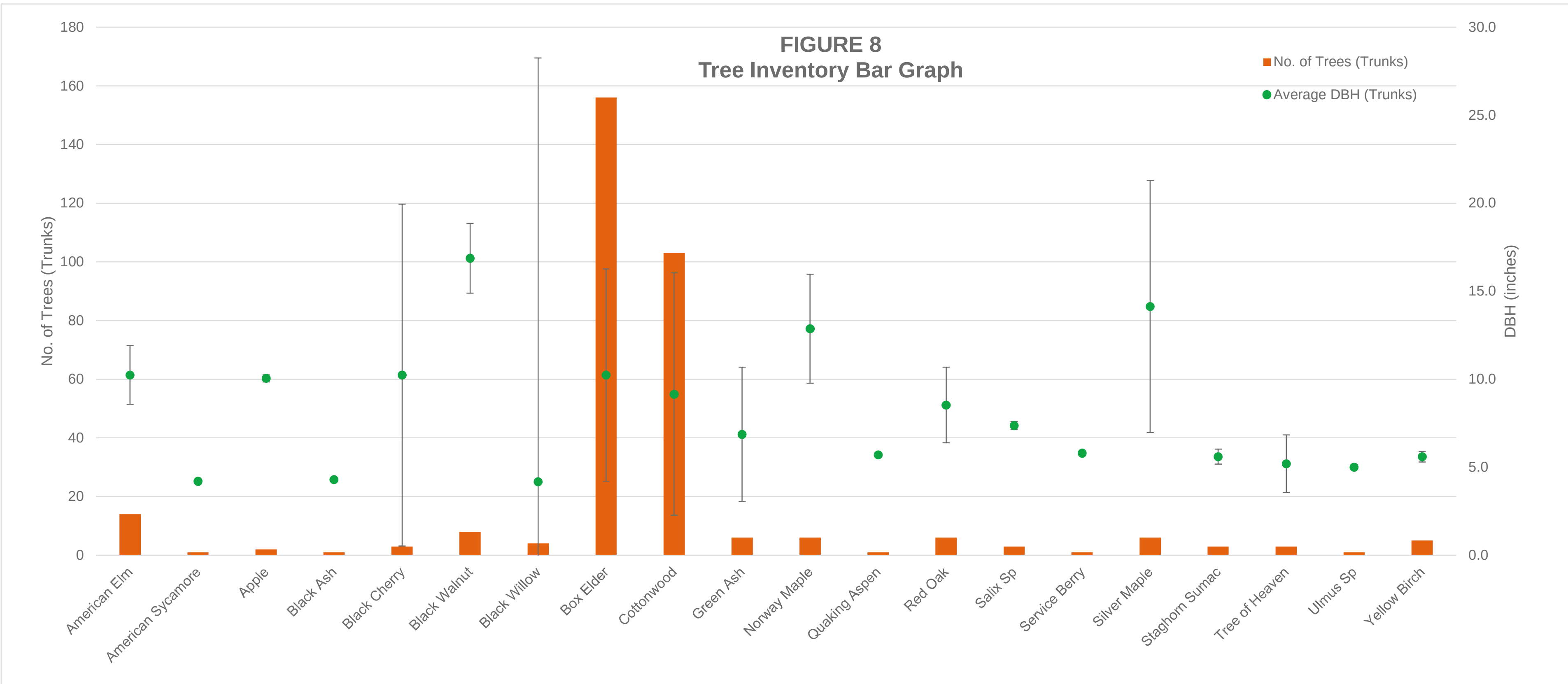


FIGURE 8
Tree Inventory Bar Graph
No. of Trees (Trunks)
Average DBH (Trunks)
No. of Trees (Trunks)
DBH (inches)
180
160
140
120
100
80
60
40
20
0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
American Elm
American Sycamore
Apple
Black Ash
Black Cherry
Black Walnut
Black Willow
Box Elder
Cottonwood
Green Ash
Norway Maple
Quaking Aspen
Red Oak
Salix Sp
Service Berry
Silver Maple
Staghorn Sumac
Tree of Heaven
Ulmus Sp
Yellow Birch

Attachment 1

Photograph Log

Photo No.	Date
1	8/31/2020

Direction Photo Taken:

Northwest

Description:

Wetland Vegetation Plot 1 / Data Point A

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Photo No. 2	Date 8/31/2020

Direction Photo Taken:

Northeast

Description:

Wetland Vegetation Plot 1 / Data Point A

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
3	8/31/2020

Direction Photo Taken:

Southeast

Description:

Wetland Vegetation Plot 1 / Data Point A

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
4	8/31/2020

Direction Photo Taken:

Southwest

Description:

Wetland Vegetation Plot 1 / Data Point A

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
5	8/17/2020

Direction Photo Taken:

West

Description:

Wetland Vegetation Plot 2

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
6	8/17/2020

Direction Photo Taken:

North

Description:

Wetland Vegetation Plot 2

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
7	8/17/2020

Direction Photo Taken:

East

Description:

Wetland Vegetation Plot 2

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
8	8/17/2020

Direction Photo Taken:

South

Description:

Wetland Vegetation Plot 2

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
9	8/17/2020

Direction Photo Taken:

Northwest

Description:

Wetland Vegetation Plot 3

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
10	8/17/2020

Direction Photo Taken:

Northeast

Description:

Wetland Vegetation Plot 3

Photo No.	Date
11	8/17/2020

Direction Photo Taken:

Southeast

Description:

Wetland Vegetation Plot 3

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
12	8/17/2020

Direction Photo Taken:

Southwest

Description:

Wetland Vegetation Plot 3

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
13	8/31/2020

Direction Photo Taken:

Northwest

Description:

Upland Vegetation Plot 1

Photo No.	Date
14	8/31/2020

Direction Photo Taken:

Northeast

Description:

Upland Vegetation Plot 1

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
15	8/31/2020

Direction Photo Taken:

Southeast

Description:

Upland Vegetation Plot 1

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
16	8/31/2020

Direction Photo Taken:

Southwest

Description:

Upland Vegetation Plot 1

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
17	8/31/2020

Direction Photo Taken:

Northwest

Description:

Upland Vegetation Plot 2

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
18	8/31/2020

Direction Photo Taken:

Northeast

Description:

Upland Vegetation Plot 2

Photo No.	Date
19	8/31/2020

Direction Photo Taken:

Southeast

Description:

Upland Vegetation Plot 2

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
20	8/31/2020

Direction Photo Taken:

Southwest

Description:

Upland Vegetation Plot 2

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
21	8/31/2020

Direction Photo Taken:

Northwest

Description:

Upland Vegetation Plot 3

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
22	8/31/2020

Direction Photo Taken:

Northeast

Description:

Upland Vegetation Plot 3

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
23	8/31/2020

Direction Photo Taken:

Southeast

Description:

Upland Vegetation Plot 3

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
24	8/31/2020

Direction Photo Taken:

Southwest

Description:

Upland Vegetation Plot 3

Photo No.	Date
25	8/31/2020

Direction Photo Taken:

Northwest

Description:

Upland Vegetation Plot 4

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
26	8/31/2020

Direction Photo Taken:

Northeast

Description:

Upland Vegetation Plot 4

ARCADIS Design & Consultancy for natural and built assets

Photo No. 27	Date 8/31/2020

Direction Photo Taken:

Southeast

Description:

Upland Vegetation Plot 4

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
28	8/31/2020

Direction Photo Taken:

Southwest

Description:

Upland Vegetation Plot 4

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
29	8/31/2020

Direction Photo Taken:

Northwest

Description:

Upland Vegetation Plot 5

ARCADIS Design & Consultancy for natural and built assets

Photo No. 30	Date 8/31/2020

Direction Photo Taken:

Northeast

Description:

Upland Vegetation Plot 5

Photo No. 31	Date 8/31/2020

Direction Photo Taken:

Southwest

Description:

Upland Vegetation Plot 5

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
32	8/31/2020

Direction Photo Taken:

Southeast

Description:

Upland Vegetation Plot 5

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
33	8/31/2020

Direction Photo Taken:

Northwest

Description:

Upland Vegetation Plot 6

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
34	8/31/2020

Direction Photo Taken:

Northeast

Description:

Upland Vegetation Plot 6

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
35	8/31/2020

Direction Photo Taken:

Southeast

Description:

Upland Vegetation Plot 6

Photo No.	Date
36	8/31/2020

Direction Photo Taken:

Southwest

Description:

Upland Vegetation Plot 6

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
37	8/31/2020

Direction Photo Taken:

Northwest

Description:

Upland Vegetation Plot 7

ARCADIS Design & Consultancy for natural and built assets

Photo No. 38	Date 8/31/2020

Direction Photo Taken:

Northeast

Description:

Upland Vegetation Plot 7

Photo No.	Date
39	8/31/2020

Direction Photo Taken:

Southwest

Description:

Upland Vegetation Plot 7

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
40	8/31/2020

Direction Photo Taken:

Southest

Description:

Upland Vegetation Plot 7

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
41	8/31/2020

Direction Photo Taken:

Northwest

Description:

Drainage Vegetation Plot 1 / Data Point B

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
42	8/31/2020

Direction Photo Taken:

Northeast

Description:

Drainage Vegetation Plot 1 / Data Point B

ARCADIS Design & Consultancy for natural and built assets

Photo No. 43	Date 8/31/2020

Direction Photo Taken:

Southwest

Description:

Drainage Vegetation Plot 1 / Data Point B

ARCADIS Design & Consultancy for natural and built assets

Photo No.	Date
44	8/31/2020

Direction Photo Taken:

Southeast

Description:

Drainage Vegetation Plot 1 / Data Point B

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Attachment 2

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: National Grid - Gloversville City/County: Gloversville/Fulton Sampling Date: 8/31/20

Applicant/Owner: National Grid State: NY Sampling Point: A-UP

Investigator(s): AT, JK Section, Township, Range: N/A

Landform (hillside, terrace, etc.): ____ Local relief (concave, convex, none): ____ Slope %: ____

Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 43° 2'4.31"N Long: 74°21'1.46"W Datum: WGS 1984

Soil Map Unit Name: 7B - Endoaquents, 0 to 8 percent slopes, smoothed NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	**Is the Sampled Area within a Wetland?**	**Yes** ____ **No** X
Hydric Soil Present?	Yes ____ No X	If yes, optional Wetland Site ID:	____
Wetland Hydrology Present?	Yes ____ No X		

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)
___ High Water Table (A2)	___ Aquatic Fauna (B13)
___ Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): 0
Water Table Present?	Yes ____	No X	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): 0

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: A-UP

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	30	Yes	FAC
2. *Juglans nigra*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	40	=Total Cover	
Sapling/Shrub Stratum (Plot size: 5 m)			
1. *Juglans nigra*	10	Yes	FACU
2. *Cornus amomum*	5	Yes	FACW
3. *Frangula alnus*	5	Yes	FAC
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 1 m)			
1. *Solidago canadensis*	60	Yes	FACU
2. *Eutrochium purpureum*	15	No	FAC
3. *Arctium minus*	10	No	FACU
4. *Convolvulus arvensis*	10	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	=Total Cover	
Woody Vine Stratum (Plot size: 5 m)			
1. *Lathyrus sylvestris*	70	Yes	UPL
2.			
3.			
4.			
	70	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 42.9% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	50	x 3 =	150
FACU species	90	x 4 =	360
UPL species	80	x 5 =	400
Column Totals:	225 (A)		920 (B)

Prevalence Index = B/A = 4.09

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point A-UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/3	100					Sandy	Silt and Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Stone

Depth (inches): 14

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: National Grid - Gloversville City/County: Gloversville/Fulton Sampling Date: 8/31/20

Applicant/Owner: National Grid State: NY Sampling Point: A-WET

Investigator(s): AT, JK Section, Township, Range: N/A

Landform (hillside, terrace, etc.): ____ Local relief (concave, convex, none): ____ Slope %: 0-2

Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 43° 2'4.55"N Long: 74°21'0.82"W Datum: WGS 1984

Soil Map Unit Name: 7B - Endoaquents, 0 to 8 percent slopes, smoothed NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	**Is the Sampled Area within a Wetland?**	**Yes** X **No** ____
Hydric Soil Present?	Yes X No ____	If yes, optional Wetland Site ID:	____
Wetland Hydrology Present?	Yes X No ____		

Remarks: (Explain alternative procedures here or in a separate report.)
Hydrology Significantly Disturbed

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

____ Surface Water (A1)	____ Water-Stained Leaves (B9)
____ High Water Table (A2)	____ Aquatic Fauna (B13)
____ Saturation (A3)	____ Marl Deposits (B15)
____ Water Marks (B1)	____ Hydrogen Sulfide Odor (C1)
____ Sediment Deposits (B2)	____ Oxidized Rhizospheres on Living Roots (C3)
____ Drift Deposits (B3)	____ Presence of Reduced Iron (C4)
____ Algal Mat or Crust (B4)	____ Recent Iron Reduction in Tilled Soils (C6)
____ Iron Deposits (B5)	____ Thin Muck Surface (C7)
____ Inundation Visible on Aerial Imagery (B7)	____ Other (Explain in Remarks)
____ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ? Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): 0
Water Table Present?	Yes ____	No X	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): 0

Wetland Hydrology Present? Yes ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Hydrology Significantly Disturbed

VEGETATION – Use scientific names of plants.

Sampling Point: A-WET

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	20	Yes	OBL
2. *Populus deltoides*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	40	=Total Cover	
Sapling/Shrub Stratum (Plot size: 5 m)			
1. *Salix nigra*	10	Yes	OBL
2. *Frangula alnus*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 1 m)			
1. *Lathyrus sylvestris*	10	No	UPL
2. *Solidago gigantea*	60	Yes	FAC
3. *Eutrochium purpureum*	40	Yes	FAC
4. *Arctium minus*	5	No	FACU
5. *Dipsacus fullonum*	5	No	FACU
6. *Lythrum salicaria*	5	No	OBL
7.			
8.			
9.			
10.			
11.			
12.			
	125	=Total Cover	
Woody Vine Stratum (Plot size: 5 m)			
1. *Vitis riparia*	20	Yes	FAC
2. *Lathyrus sylvestris*	50	Yes	UPL
3.			
4.			
	70	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point A-WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	5YR 2.5/1	100					Loamy/Clayey	Silty

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- X Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Stone

Depth (inches): 10

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: National Grid - Gloversville City/County: Gloversville/Fulton Sampling Date: 8/31/20

Applicant/Owner: National Grid State: NY Sampling Point: B-UP

Investigator(s): AT, JK Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Drainage, Hillslope Local relief (concave, convex, none): Concave Slope %: ____

Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 43° 2'4.31"N Long: 74°21'1.46"W Datum: WGS 1984

Soil Map Unit Name: 115B - Udipsamments, 0 to 8 percent slopes, smoothed NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): 0
Water Table Present?	Yes ____	No X	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): 0

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: B-UP

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	10	Yes	FAC
2. *Rhus typhina*	10	Yes	UPL
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 5 m)			
1. *Rhus typhina*	10	Yes	UPL
2. *Frangula alnus*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 1 m)			
1. *Poa pratensis*	40	Yes	FACU
2. *Trifolium pratense*	40	Yes	FAC
3. *Cichorium intybus*	10	No	FACU
4. *Solidago canadensis*	10	No	FACU
5. *Toxicodendron radicans*	2	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	102	=Total Cover	
Woody Vine Stratum (Plot size: 5 m)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	62	x 3 =	186
FACU species	60	x 4 =	240
UPL species	20	x 5 =	100
Column Totals:	142 (A)		526 (B)

Prevalence Index = B/A = 3.70

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point B-UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	5YR 3/2	100					Sandy	Loamy
2-20	5YR 4/3	100					Sandy	Loamy

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ______
Depth (inches): ______

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: National Grid - Gloversville City/County: Gloversville/Fulton Sampling Date: 8/31/20

Applicant/Owner: National Grid State: NY Sampling Point: B-WET

Investigator(s): AT, JK Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope %: 0-2

Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 43° 2'4.31" N Long: 74°21'1.46"W Datum: WGS 1984

Soil Map Unit Name: 115B - Udipsamments, 0 to 8 percent slopes, smoothed NWI classification: PSS/PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___
Hydric Soil Present? Yes X No ___
Wetland Hydrology Present? Yes X No ___

Is the Sampled Area within a Wetland? **Yes** X **No** ___
If yes, optional Wetland Site ID: ___

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	X Water-Stained Leaves (B9)
___ High Water Table (A2)	___ Aquatic Fauna (B13)
X Saturation (A3)	___ Marl Deposits (B15)
X Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): 0
Water Table Present?	Yes ___	No X	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: B-WET

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	20	Yes	FAC
2. *Ulmus americana*	10	Yes	FACW
3. *Frangula alnus*	5	No	FAC
4.			
5.			
6.			
7.			
	35	=Total Cover	

Sapling/Shrub Stratum (Plot size: 5 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Frangula alnus*	10	Yes	FAC
2. *Fraxinus pennsylvanica*	5	Yes	FACW
3. *Salix nigra*	5	Yes	OBL
4. *Cornus amomum*	2	No	FACW
5. *Populus deltoides*	5	Yes	FAC
6.			
7.			
	27	=Total Cover	

Herb Stratum (Plot size: 1 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Onoclea sensibilis*	10	Yes	FACW
2. *Lysimachia nummularia*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	=Total Cover	

Woody Vine Stratum (Plot size: 5 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Vitis riparia*	5	Yes	FAC
2.			
3.			
4.			
	5	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	27	x 2 =	54
FAC species	50	x 3 =	150
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	82 (A)		209 (B)

Prevalence Index = B/A = 2.55

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point B-WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20	5YR 2.5/1	100					Silt	Loamy
20+	5YR 2.5/1	60					Silt	Loamy
20+	2.5YR 6/1	38	7.5YR 5/8	2	C	M	Silt	Loamy

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- X Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ___

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Attachment 3

Unnamed Tributary Photograph Log

PHOTOGRAPH LOG

National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Photograph: 1

Description:
Looking at downstream end of culvert at intersection of Cayadutta Creek

Location:
Unnamed Tributary

Photograph taken by:
Arcadis

Date: 8/28/2020

Photograph: 2

Description:
Looking downstream at upstream end of culvert leading to Cayadutta Creek

Location:
Unnamed Tributary

Photograph taken by:
Arcadis

Date: 8/28/2020

National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Photograph: 3

Description:
Looking upstream at undercut bank section on outer bend of drainage

Location:
Unnamed Tributary

Photograph taken by:
Arcadis

Date: 8/28/2020

Photograph: 4

Description:
Looking upstream at Pool #1

Location:
Unnamed Tributary

Photograph taken by:
Arcadis

Date: 8/28/2020

Photograph: 5

Description:
Looking upstream at Pool #2

Location:
Unnamed Tributary

Photograph taken by:
Arcadis

Date: 8/28/2020

Photograph: 6

Description:
Looking upstream at existing canopy cover over drainage along wetland boundary

Location:
Unnamed Tributary

Photograph taken by:
Arcadis

Date: 8/28/2020

Photograph: 7

Description:
Looking upstream at Riffle #1

Location:
Unnamed Tributary

Photograph taken by:
Arcadis

Date: 8/28/2020

Photograph: 8

Description:
Looking downstream at rooted submerged aquatic vegetation

Location:
Unnamed Tributary

Photograph taken by:
Arcadis

Date: 8/28/2020

PHOTOGRAPH LOG

National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Photograph: 9

Description:
Looking upstream at typical run habitat within drainage

Location:
Unnamed Tributary

Photograph taken by:
Arcadis

Date: 8/28/2020

PHOTOGRAPH LOG

National Grid
Gloversville (Hill Street) Former MGP Site
Gloversville, New York

Photograph: 10

Description:
Looking upstream at culvert and pool habitat at the intersection with Southern Boulevard

Location:
Unnamed Tributary

Photograph taken by:
Arcadis

Date: 8/28/2020

Appendix I

Sediment Background and Forensic Evaluation

Memo

SUBJECT
Cayadutta Creek Bank Soil and Sediment Sample Forensic Analysis
Pre-Design Investigation
Gloversville (Hill Street) Former Manufactured Gas Plant Site

TO
Project File

DATE
November 1, 2021

PROJECT NUMBER
30044656

DEPARTMENT
Environment

NAME
Julie Sueker, PhD, PH, PE
Sonal Patil
Joe Statwick, PhD

COPIES TO
Nancy Gensky
Scott Powlin

This memorandum summarizes the Gloversville (Hill Street) Former Manufactured Gas Plant (MGP) Site (Site) pre-design investigation (PDI) bank soil and sediment forensic analysis methodology and results. Arcadis conducted this forensic analysis using Cayadutta Creek bank soil and sediment sample polycyclic aromatic hydrocarbon (PAH) analytical results.

1 Introduction

Arcadis collected sediment samples from January 19 to January 21, 2021 and bank soil samples on February 3 and 4, 2021. Sediment samples were collected from Reaches 1 through 5 (PDI Report Figures 4 through 8) and bank soil samples were collected from Reach 3 (PDI Report Figure 9) in accordance with the Remedial Design Work Plan (RDWP; Arcadis 2020). Each sediment sample was analyzed for 34 PAHs and each bank soil sample was analyzed for 16 PAHs. The 34 PAHs (PAH-34) represent 18 specific non-alkylated PAHs (or parent PAHs) and 16 generic alkylated PAHs identified in Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures (USEPA 2003) and referenced in Screening and Assessment of Contaminated Sediment (NYSDEC 2014). The 16 PAHs represent the target compound list (TCL) of 16 parent (non-alkylated) PAHs (PAH-16). Analytical results for the sediment and soil samples are summarized in PDI Report Tables 8 and 9. Samples collected from Reaches 1 and 2 represent background conditions, Reach 3 is adjacent to the Site and borders NAPL containing upland areas, and Reaches 4 and 5 represent downstream conditions (Arcadis 2020). Four previously collected upland soil samples (samples, GB-53 (6-8), GB-58(2-4), GB-64(10-12), and GB-74(10-12)) with visual impacts and PAH concentrations indicative of Site source material were also included in this analysis for comparison.

A summary of sample quantities is included in the following Table 1.

Table 1 Summary of Sampling Activities

Sample Media	Sample Locations	Number of Samples	Analyses
Sediment	61	69	34 Forensic PAHs[1]
Bank Soil	18	31	16 Parent PAHs[2]
Impacted Upland Soil	4	4	16 Parent PAHs[2]
Total:	**81**	**108**	

Notes:
[1] Sediment samples were analyzed for 34 PAHs (18 parent PAHs and 16 C1 to C4 alkylated PAHs from prominent groups).
[2] Soil samples were analyzed for 17 TCL PAHs, all of which are parent PAHs except for 2-methylnaphthalene. Only the 16 parent PAHs are used in this forensic analysis.
[3] Duplicate samples are not included in this evaluation.

2 Data Evaluation Methodology

Environmental forensics is the systematic and scientific evaluation of physical, chemical, and historical information for the purposes of developing multiple lines of evidence for defensible scientific and legal conclusions regarding the source of release of constituents of concern to the environment. This soil and sediment PAH forensic analysis includes multiple analytical and data evaluation techniques to identify materials with similar properties.

2.1 Polycyclic Aromatic Hydrocarbons

PAHs are defined as a class of organic compounds consisting of two or more fused aromatic rings (Boehm 2006) which are divided into parent and alkylated PAHs. Parent (i.e., unsubstituted) PAHs contain no carbon side chains; whereas, alkylated (i.e., substituted) PAHs have alkyl groups (straight chain) hydrocarbons attached to the rings at one or more points. An alkyl PAH homolog series includes all the alkylated isomers with the same number of carbon atoms associated with the same parent PAH (e.g., an alkylated PAH homolog series for naphthalene includes C1-naphthalene, C2-naphthalene, C3-naphthalene, and C4-naphthalene; Olson et. al. 2004).

PAH sources in the environment are segregated into three principal categories as described below:

- Biogenic PAHs are developed from natural plant-based precursors that have not undergone the transformation processes resulting in coal or petroleum hydrocarbons. Biogenic hydrocarbons are generated when organic matter derived primarily from plants and microbes is deposited in nature (i.e., soil and sediment). As organic matter accumulates and decays, some PAHs may be formed. Perylene (a 5-ring unsubstituted PAH) is the most notable PAH produced during biogenic processes and is commonly found in river, lake, and ocean sediments of (Boehm 2006). While perylene can be associated with other PAH sources, a high abundance of perylene relative to other PAHs suggests presence of biogenic PAHs and native sediments.
- Petrogenic PAHs are generated through geological processes that transform organic matter into crude oil (including its refined petroleum products) and coal. The distinguishing characteristic of petrogenic PAHs is that the relative abundance of alkylated PAHs exceeds the abundance of parent PAH within the homolog series (Boehm 2006). In general, the compositional fingerprints for petrogenic PAH sources demonstrate a characteristic “bell-shaped” curve distribution of PAHs within some of the homolog series. This distribution has lower concentrations of parent PAHs and the highest concentrations of C2- or C3-substituted PAHs relative to the parent PAH. Petrogenic PAHs include higher concentrations of lighter PAHs (2-, 3-, or 4-ring).
- Pyrogenic PAHs are produced during the combustion or pyrolysis of organic matter (e.g., wood, coal, or petroleum hydrocarbons) when the organic compounds escape complete combustion at a high temperature. Since high temperature processes tend to destroy the more reactive alkylated PAHs, a major feature of pyrogenic PAHs is the presence of parent PAHs at higher concentrations than the alkylated PAHs (Boehm 2006). Also, pyrogenic PAHs are characterized by higher abundance of the heavier PAHs (4-, 5-, 6-ring; Boehm 2006). PAH compositional fingerprint for a known pyrogenic source (e.g., generic creosote sample) demonstrates a characteristic “ski slope” distribution with higher concentrations of parent PAHs and decreasing abundance of alkyl substituted PAHs within the homolog series.

Common sources of PAHs in the environment are summarized in the following table.

Table 2 Common Sources of PAHs in the Environment

Petroleum Products	Pyrogenic By-Products	Coal Derived	Biogenic Sources
Crude Oil	Coal Tar	Coal Tar	Peat
Kerosene	Creosote	Creosote	Pine
Jet Fuel	Petroleum-Derived Soot	Coal	Lignins
Diesel Fuel	Forest Fire Ash	Coal Ash	
Heating Oil	Used Engine Oil	Coal-Derived Soot	
Engine Oil	Used Hydraulic Oil		
Used Engine Oil	Asphalt		
Used Hydraulic Oil			
Asphalt			

2.2 Evaluation Techniques

Arcadis conducted the Cayadutta Creek sediment PAH source forensic analysis using the following independent evaluation techniques:

- Sediment total PAH background concentrations were determined to assess upstream PAH contributions to the Site and establish a statistically derived PAH background concentration to which sediment samples adjacent to and downstream from the Site were compared. Several commonly used metrics were considered, including 95th percentiles, 95th percent upper prediction limits (95 UPLs), and 95/95 Upper Threshold Limits (95/95 UTLs). The 95th percentiles were selected, as they are the most conservative.
- Statistical evaluation of average total PAH concentration in sediment across reaches to determine spatial patterns of PAH concentrations within the investigation area. This evaluation consisted of an analysis of variance (ANOVA) without interaction effects, with reach, sediment type, and sample depth as independent variables. Tukey honest significant difference (HSD) tests were used to determine significant differences between reaches.
- Compilation of PAH compositional fingerprints to assess the presence of distribution patterns indicative of petrogenic and pyrogenic PAH sources.
- Compilation of PAH double-ratio plots of benzo(a)anthracene/chrysene versus fluoranthene/pyrene and benzo(a)anthracene/(benzo(a)anthracene + chrysene) versus anthracene / (anthracene + phenanthrene), which are the most common ratios used in PAH source evaluations (Costa et al. 2004; Costa and Sauer 2005; Yunker et al. 2002).
- Multivariate statistical analysis including cluster analyses (K-means clustering and Ward's hierarchical clustering) to group sample sites based on their overall similarity and Principal Component Analysis (PCA) to group PAHs together based on the degree to which they covary. Analytical data were unit normalized (divided each sample by the total PAH concentration such that all PAH concentrations sum to one) and then scaled and centered to a mean of zero and a variance of one before analysis. These normalization procedures remove bias due to different PAH concentrations between samples (EPRI 2008).

In support of these evaluations, concentrations for constituents that were not detected in a sample were set to zero. Statistical analyses were performed in the 'R' statistical language (R Core Team 2018) and with ProUCL version 5.1 (USEPA 2015).

3 Summary of Findings

3.1 Background Evaluation

Background concentrations of PAH-16 and PAH-34 were calculated using the Reach 1 and Reach 2 PAH sediment results. A statistical evaluation of upper limits of background concentrations was conducted (Table 3). No significant outliers were identified by Dixon's test or examination of QQ plots. The data were lognormally distributed by Shapiro Wilk and Lilliefors tests, so the background upper limit statistics were computed using lognormal or non-parametric methods.

Table 3 Summary of Upper Limits of Background PAH Concentrations

PAH Mixture	95th Percentile[1] (mg/kg)	95 UPL[2] (mg/kg)	95/95 UTL[3] (mg/kg)
PAH-16	56.4	61.8	85.1
PAH-34	65.6	72.0	101.0

Notes:
1 95th percentiles were calculated using the Type 7 method (USEPA 2015).
2 95 UPLs were calculated using the lognormal 95% Percentile (z) method (USEPA 2015).
3 95/95 UTLs were calculated using the 95% BCA Bootstrap UTL with 95% Coverage method (USEPA 2015).

The 95th percentile PAH-34 and PAH-16 concentrations (65.6 and 56.4 mg/kg, respectively) were selected as the representative statistically derived sediment background (i.e., Reaches 1 and 2) concentrations , as they are the most conservative of the upper tail estimates. The statistically derived background concentrations (i.e., 65.6 and 56.4 mg/kg) were used as a basis against which detected sediment concentrations in samples collected from Reaches 3 through 5 were compared.

Total PAHs (PAH-34) were detected in four of 69 sediment samples collected from Reaches 1 through 5 at concentrations exceeding the 65.6 mg/kg background concentration: one background sample in Reach 2 (R2-PDI-SED-18DEP(0-0.4)), one sample in Reach 3 (R3-PDI-SED-28DEP(0-0.8)), and two samples in Reach 5 (R5-PDI-SED-55RR(0-1) and R5-PDI-SED-55RR(1-1.3)). Total PAHs (PAH-16) were detected in two of 69 sediment samples at concentrations exceeding the 56.4 mg/kg background concentration: one background sample in Reach 2 (R2-PDI-SED-18DEP(0-0.4)) and one sample in Reach 5 (R5-PDI-SED-55RR(1-1.3)). The presence of background exceedances in Reach 5 but not Reach 4 may be indicative of PAH sources in Reach 5.

3.2 Spatial Evaluation

Average total concentrations of PAH-16 and PAH-34 in sediment were qualitatively higher in the downstream direction of the creek, with lower concentrations in Reach 1 samples and generally higher concentrations in Reach 5 (Figures 1 and 2). However, by lognormal ANOVA, only the difference between Reach 1 and Reach 5 for Total PAH-34 was statistically significant ($p < 0.05$). This indicates potential PAH sources in Reach 5. Additionally, depositional sediments had statistically significant higher average total PAH concentrations than riffle/run sediments ($p < 0.05$ for both Total PAH-34 and Total PAH-16), although riffle/run sediments had higher minimum and maximum total concentrations. A summary of Total PAH-34 concentrations is included in Table 4.

Table 4 Concentrations of Total PAH-34 in Sediment

Sample Location	Median Total PAH-34 (mg/kg)	Geometric Mean Total PAH-34 (mg/kg)	Total PAH-34 Range (mg/kg)
Sediment – By Reach			
Reach 1	3.3	3.1	0.47 – 28.8
Reach 2	4.0	6.2	0.59 – 100.6
Reach 3	7.8	8.8	0.59 – 97.1
Reach 4	6.9	5.8	0.20 – 45.3
Reach 5	30.2	25.0	2.2 – 181.3
Sediment – By Area			
Depositional	15.8	11.1	0.20 – 100.6
Riffle/Run	4.1	5.1	0.47 – 181.3

Within Reach 3, bank soils had higher total PAH-16 concentrations than sediments; statistically significant by lognormal ANOVA ($p < 0.05$). There were no statistically significant differences in bank soil Total PAH-16 concentrations across sample depth (surface vs subsurface), location (mid bank vs mean high water level), or bank (left bank versus right bank). Bank soil sample PAH concentrations were significantly lower compared to the impacted upland soil samples collected during previous investigations. A summary of Total PAH-16 concentrations in Reach 3 sediment and bank soil samples and impacted upland soil samples is included in Table 5.

Table 5 Concentrations of Total PAH-16 in Sediment and Bank Soil in Reach 3

Sample Media	Median Total PAH-16 (mg/kg)	Geometric Mean Total PAH-16 (mg/kg)	Total PAH-16 Range (mg/kg)
Reach 3			
Sediment	4.8	5.4	0.39 – 38.4
Bank Soil	15.3	11.2	0.73 – 53.5
Impacted Upland Soil	1,856	2,036	777 – 6,446

3.3 PAH Compositional Fingerprints

PAH distributions (compositional fingerprints) were evaluated for similarities across sampling locations. A visual comparison of the PAH compositional fingerprints (Attachment 1) indicates that the furthest upstream samples, in Reach 1 and Reach 2, have similar PAH distributions. This distribution is characterized primarily by parent PAH compounds with medium to heavy molecular weights (3-5 rings), such as phenanthrene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, and the benzofluoranthenes and benzopyrenes. These PAH compositional fingerprints exhibit characteristic pyrogenic distributions, with limited quantities of alkyl-substituted compounds. The PAH compounds with low molecular weights, such as naphthalenes, acenaphthylene, acenaphthene, and fluorenes, are generally not detected in these samples or are present at low concentrations near their respective detection limits.

Five samples from the four furthest upstream locations in Reach 3 have similar PAH distributions to those in Reach 1 and Reach 2 (R3-PDI-SED-21RR, R3-PDI-SED-22DEP, R3-PDI-SED-23DEP, and R3-PDI-SED-24DEP). Of the 16 sediment samples collected further downstream in Reach 3, six samples (R3-PDI-SED-25DEP, R3-PDI-SED-26DEP, R3-PDI-SED-27RR, R3-PDI-SED-28DEP, R3-PDI-SED-29RR, and R3-PDI-SED-30DEP) had relatively higher concentrations of naphthalene homolog groups that were similar in relative concentration to other PAH homolog groups. Of these six samples, one sediment sample (R3-PDI-SED-29RR) indicated petrogenic distributions for naphthalenes and fluorenes, and pyrogenic distributions for the higher ring PAH groups: phenanthrene/anthracenes, fluoranthene/pyrenes, and benzo(a)anthracene/chrysenes. The remaining five samples (R3-PDI-SED-25DEP, R3-PDI-SED-26DEP, R3-PDI-SED-27RR, R3-PDI-SED-28DEP, and R3-PDI-SED-30DEP) indicated a mixture of distributions, with generally petrogenic distributions in the naphthalene homolog group and pyrogenic distributions in fluorenes, phenanthrene/anthracenes, fluoranthene/pyrenes, and/or benzo(a)anthracene/chrysenes.

The remaining 10 samples further downstream in Reach 3 as well as samples collected from Reaches 4 and 5 had relatively lower concentrations of the naphthalene homolog groups compared to other PAH homolog groups except at R5-PDI-SED-54RR and R5-PDI-SED-55RR. At these two locations, the naphthalene homologs were the dominant PAH group, particularly C3- and C4-naphthalenes. Most samples exhibited petrogenic distributions in naphthalene homolog group and some samples had petrogenic distributions for the fluorene and phenanthrene/anthracene homolog groups, most notably at R5-PDI-SED-54RR.

Distinct compositions are observed for the six Reach 3 samples closest to the Site and the two samples in Reach 5. Alkylated isomer distributions within the individual homolog groups indicated that these six Reach 3 samples have different distributions than the two Reach 5 samples. The remaining samples are dominated by pyrogenic high ring PAHs with varying by lower concentration low ring PAHs that generally have a petrogenic distribution of the naphthalene homologs. The impacted soil samples from the Site indicated relatively higher lighter PAH (1- to 3-ring) concentrations relative to the heavier PAHs.

3.4 Double Ratio Plots

For this forensic evaluation, select PAH diagnostic ratio values were calculated and plotted for each sediment sample (Figures 4 and 5). In general, the benzo(a)anthracene/chrysene ratios in sediment samples ranged from 0.6 to 1.3 (Figure 4). The fluoranthene/pyrene ratios ranged from 0.5 to 1.4 (Figure 4). The second set of PAH diagnostic ratio values calculated for the sediment samples included benzo(a)anthracene/(benzo(a)anthracene + chrysene) and anthracene / (anthracene + phenanthrene), which ranged from 0.4 to 0.6 and 0.08 to 0.4, respectively (Figure 5).

The diagnostic ratio plot of benzo(a)anthracene/chrysene versus fluoranthene/pyrene (Figure 4) indicated that approximately 51% of the sediment samples (25 of 49 samples) from Reaches 3 to 5 plot within the background distribution (95 percent t-distribution confidence ellipse). The background distribution encompasses both pyrogenic and mixed source zones. Sediment samples plotting to left of the background distribution had lower fluoranthene/pyrene ratios and mostly fell within the pyrogenic source zones. These samples included four of the six samples (R3-PDI-SED-25DEP, R3-PDI-SED-28DEP, R3-PDI-SED-29RR, and R3-PDI-SED-30DEP) with higher naphthalene homolog groups in Reach 3 closest to the Site and R5-PDI-SED-54RR and R5-PDI-SED-55RR with dominant naphthalene homologs in Reach 5. The impacted soil samples from the Site had even lower fluoranthene/pyrene ratios that plotted within pyrogenic and mixed source zones.

The diagnostic ratio plot of benzo(a)anthracene/(benzo(a)anthracene + chrysene) versus anthracene / (anthracene + phenanthrene) (Figure 5) indicated that approximately 86% of the sediment samples (42 of 49 samples) from Reaches 3 to 5 plot within the background distribution (95 percent t-distribution confidence ellipse). All samples plotted within the pyrogenic source zone. Sediment samples plotting to the right of the background distribution had higher anthracene / (anthracene + phenanthrene) ratios and included one of the six samples (R3-PDI-SED-25DEP) with higher naphthalene homolog groups in Reach 3 closest to the Site and R5-PDI-SED-55RR with dominant naphthalene homologs in Reach 5. The impacted soil samples from the Site plotted within the background distribution except for one sample (GB-74) which had a higher anthracene / (anthracene + phenanthrene) ratio.

The double ratio plots indicated the dominance of background-like PAH ratio distributions in all reaches and different fluoranthene/pyrene ratios in Site sources samples compared to sediment samples collected from Reaches 3 through 5 and background samples from Reaches 1 and 2.

3.5 Multivariate Analyses

Multivariate cluster analyses (both K-means clustering and Ward's hierarchical clustering) split the sediment data into two clusters; the groupings from the two methods were qualitatively similar (data not shown). The K-means cluster analysis grouped all of the samples from Reaches 1 and 2 in cluster 1 and split the samples from Reaches 3, 4, and 5 into both clusters 1 and 2 at approximately 45 and 55 percent, respectively (Figure 6). Similarly, Ward's clustering assigned all of the samples from Reaches 1 and 2 in cluster 1 and split the samples from Reaches 3, 4, and 5 into both clusters 1 and 2 at approximately 24 and 76 percent, respectively (data not shown).

The cluster analyses were further evaluated by PCA. Analysis of the data via PCA revealed that the majority of the variance in the data (48%) can be explained by the first principal component dimension, which is strongly characterized by parent PAHs versus alkylated PAHs. By comparison, the second principal component dimension explained relatively less of the variance in the data (18%) and appears to be characterized by low versus heavy molecular weight PAHs. As shown in the PCA biplot (Figure 6), most sediment samples in Reaches 1 and 2 are characterized by a relatively high proportion of heavy molecular weight PAHs, and to some extent, by medium-weight parent compounds like fluorene, anthracene, and phenanthrene. These samples generally aligned with cluster 1 in the cluster analyses. The samples in Reaches 3, 4, and 5, however, are more variable. Although some of these samples are similar to the samples in Reaches 1 and 2 in heavy molecular weight and parent PAH presence, approximately 60 percent of the samples in the downstream reaches were characterized by relatively more alkyl PAHs. These samples generally aligned with cluster 2 in the cluster analyses. However, these samples do not plot closely together, meaning the relative alkyl PAH concentrations vary substantially between samples. Similarly, the relative abundances of low and high molecular weight compounds vary substantially between samples as well. These observations suggest multiple origins of the alkylated PAHs. The six samples in Reach 3 with relatively higher concentrations of naphthalene homolog groups (R3-PDI-SED-25DEP, R3-PDI-SED-26DEP, R3-PDI-SED-27RR, R3-PDI-SED-28DEP, R3-PDI-SED-29RR, and R3-PDI-SED-30DEP) plot together as a loose group, separate from the other samples, in the lower right quadrant. The two Reach 5 locations where naphthalene homologs were the dominant PAH (R5-PDI-SED-54RR and R5-PDI-SED-55RR), also plot together loosely, but in a different area than the six samples from Reach 3 in the upper right quadrant.

When specifically examining samples that exceed the 95th percentile concentration of background total PAH-34 concentrations, there is no apparent common PAH source for these four samples (Figure 7). The sample in Reach 2 (R2-PDI-SED-18DEP(0-0.4)) is compositionally similar to other background samples and is not an outlier by statistical testing. The two samples in Reach 5 (R5-PDI-SED-55RR, both depths (0-1 and 1-1.3 feet)), are compositionally different than the sample in Reach 3 (R3-PDI-SED-28DEP indicating a different origin of alkyl PAHs in Reach 5.

Within Reach 3, the sediments, bank soils, and Site source samples were compared based on PAH-16 data (Figure 8). While the PAH-16 analytes do not include any alkyl compounds, the sediment samples contained relatively more low molecular weight compounds, particularly in samples R3-PDI-SED-25DEP, to R3-PDI-SED-30DEP closer to the Site. The bank soil samples, meanwhile, were relatively enriched in 6-ring PAHs (mainly indeno[1,2,3-c,d]pyrene and benzo[g,h,i]perylene), and showed relatively less low molecular weight parent PAHs. In contrast, the Site source samples contained significantly more low molecular weight PAHs. This indicates that the bank soil samples are different than the Site source samples and the bank soils are not impacted by the Site. The sediment samples are also different than the Site source samples, although sediment samples R3-PDI-SED-25DEP to R3-PDI-SED-30DEP plot closer to the Site source samples and may have Site-related PAH contributions.

4 Conclusions

While average total PAH concentrations are higher in Reach 5 than Reach 1, there is substantial overlap in the range of concentrations for each reach, such that PAHs were only detected in four sediment samples (including one background sample) at concentrations exceeding the statistically derived 65.6 mg/kg PAH-34 background concentration, and only Reach 5 PAH concentrations were statistically significantly different from Reach 1. The presence of higher PAH concentrations and background exceedances in Reach 5 may be indicative of PAH sources in Reach 5. Note the field team observed sheens and petroleum odors during probing in Reach 5.

Based on the multiple lines of evidence presented, sediment samples in Reaches 3 through 5 appear to have dominant contributions from the background pyrogenic PAHs detected in Reaches 1 and 2. Some samples collected in Reaches 3 through 5 appear to have a mixture of pyrogenic and petrogenic sources meaning the relative alkyl PAH concentrations vary between samples, as do the most prevalent molecular weights. Due to a lack of consistency in the lines of evidence patterns of these mixed sources, it is possible that multiple PAH sources are present, particularly in Reach 5. Two investigation areas within the overall PDI area showed distinctly different patterns – the six Reach 3 samples closest to the Site which have patterns and PAH signatures closer to the Site source samples and the two samples in Reach 5 where the field team observed sheens and petroleum odors during probing.

Within Reach 3, bank soils had statistically significant higher total PAH-16 concentrations than sediments. The bank soils were significantly lower in total PAH-16 concentration compared to the impacted upland soil samples from previous investigations. Further, the bank soil samples are enriched in 6-ring compounds and are largely pyrogenic in nature, but are lacking the naphthalene signatures present in the impacted upland samples.

5 References

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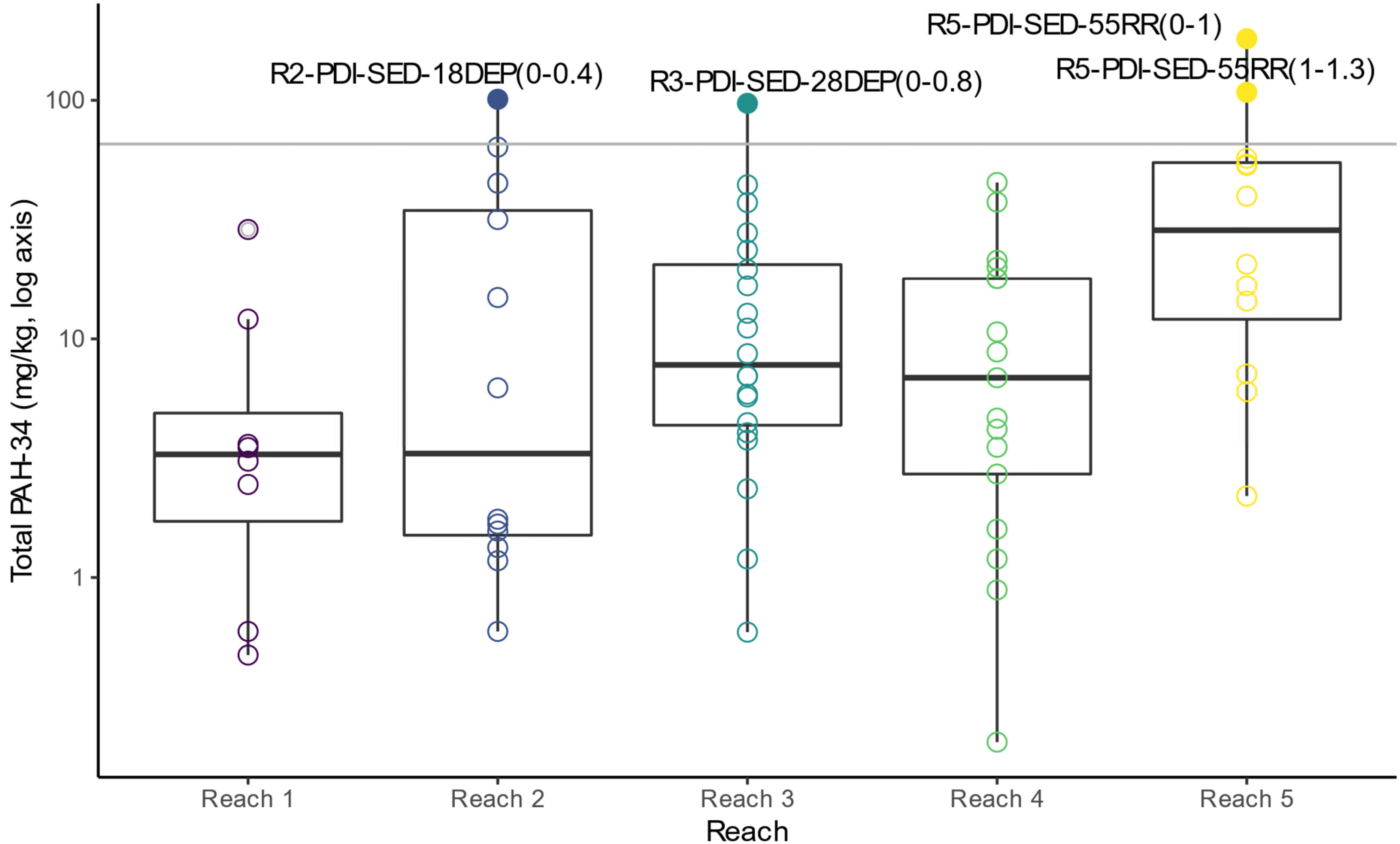
Enc.: Figure 1 – Boxplot of Total PAH34 in Sediment Samples by Reach
Figure 2 – Boxplot of Total PAH16 in Sediment Samples by Reach
Figure 3 – Boxplot of Total PAH16 in Bank Soil and Sediment Samples in Reach 3
Figure 4 – Double Ratio Plot 1
Figure 5 – Double Ratio Plot 2
Figure 6 – Principal Component Plot of PAH-34 in Sediment Samples by Reach and K-Means Cluster
Figure 7 – Principal Component Plot of PAH-34 in Sediment Samples by Reach with Exceedances of Background
Figure 8 – Principal Component Plot of PAH-16 in Sediment and Bank Soil Samples in Reach 3
Attachment 1 – Bar Charts

Figures



Notes:

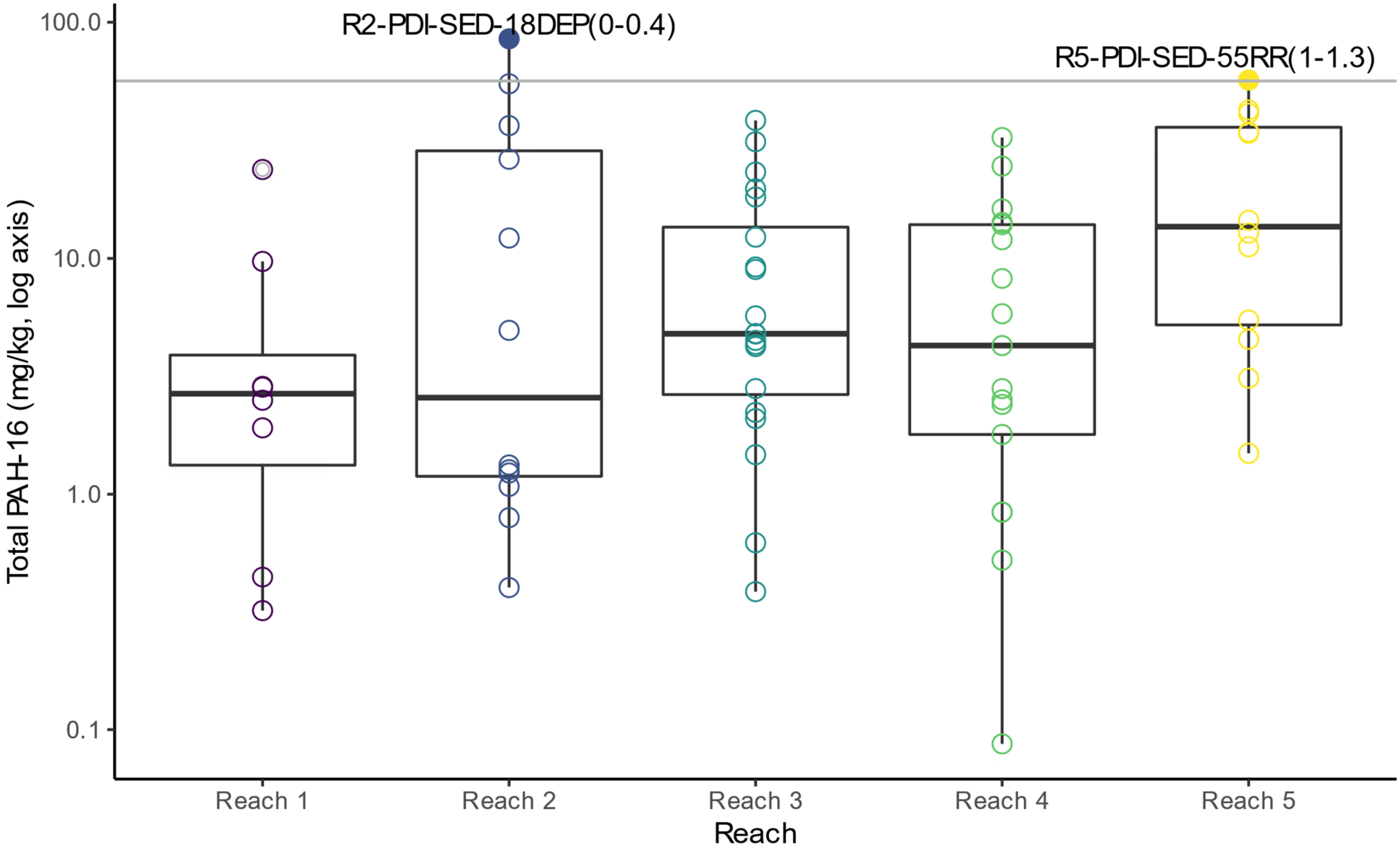
- The grey horizontal line depicts the 95th percentile of background PAH-34 concentrations, 65.6 mg/kg
- Open circles are samples below the 95th percentile background value; filled circles are those samples (labeled) that exceeded the 95th percentile background value

NATIONAL GRID - GLOVERSVILLE

BOXPLOT OF TOTAL PAH34 IN SEDIMENT SAMPLES BY REACH

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1



Notes:

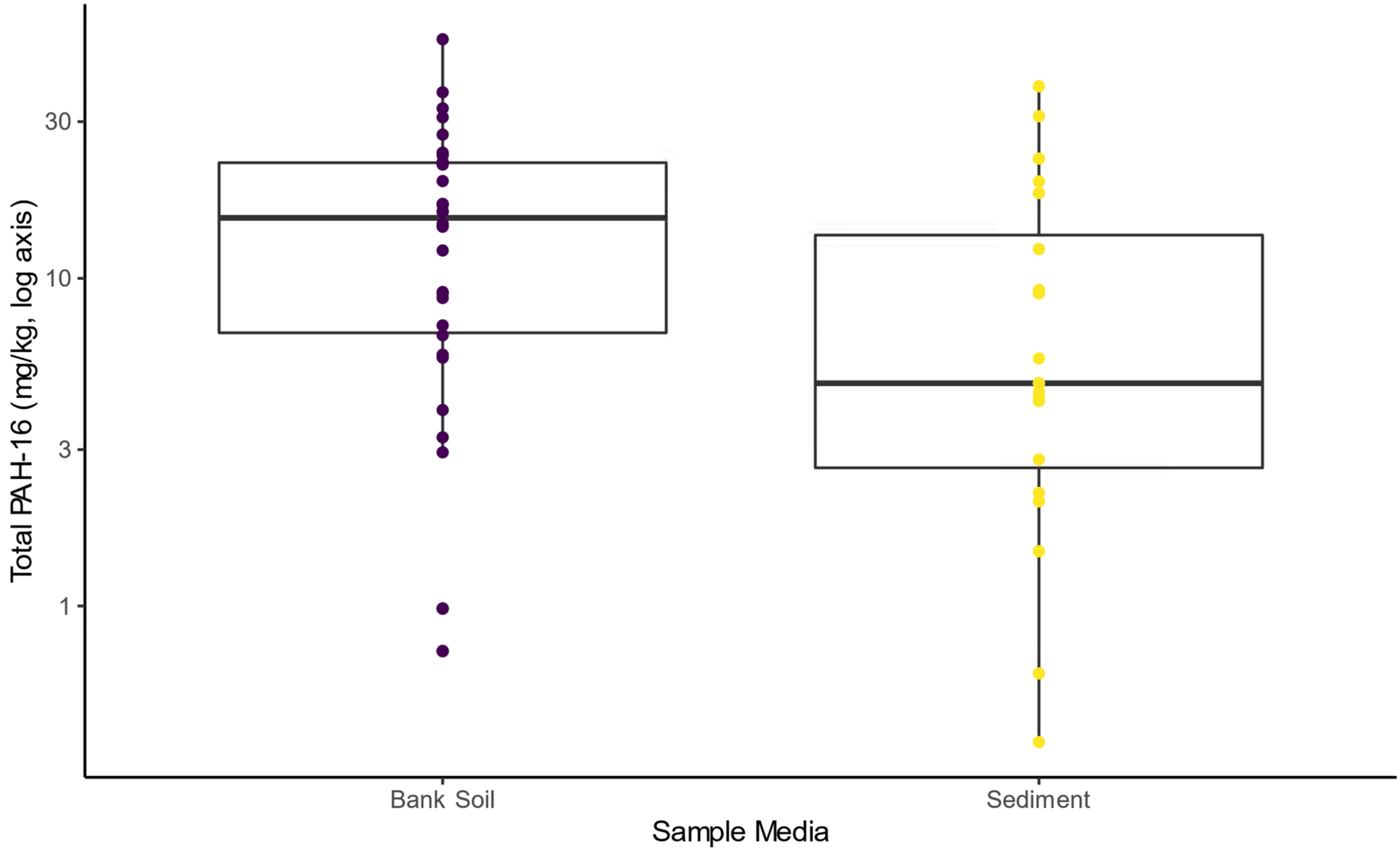
- The grey horizontal line depicts the 95th percentile of background PAH-16 concentrations, 56.4 mg/kg
- Open circles are samples below the 95th percentile background value; filled circles are those samples (labeled) that exceeded the 95th percentile background value

NATIONAL GRID - GLOVERSVILLE

BOXPLOT OF TOTAL PAH16 IN SEDIMENT SAMPLES BY REACH

ARCADIS Design & Consultancy for natural and built assets

FIGURE 2

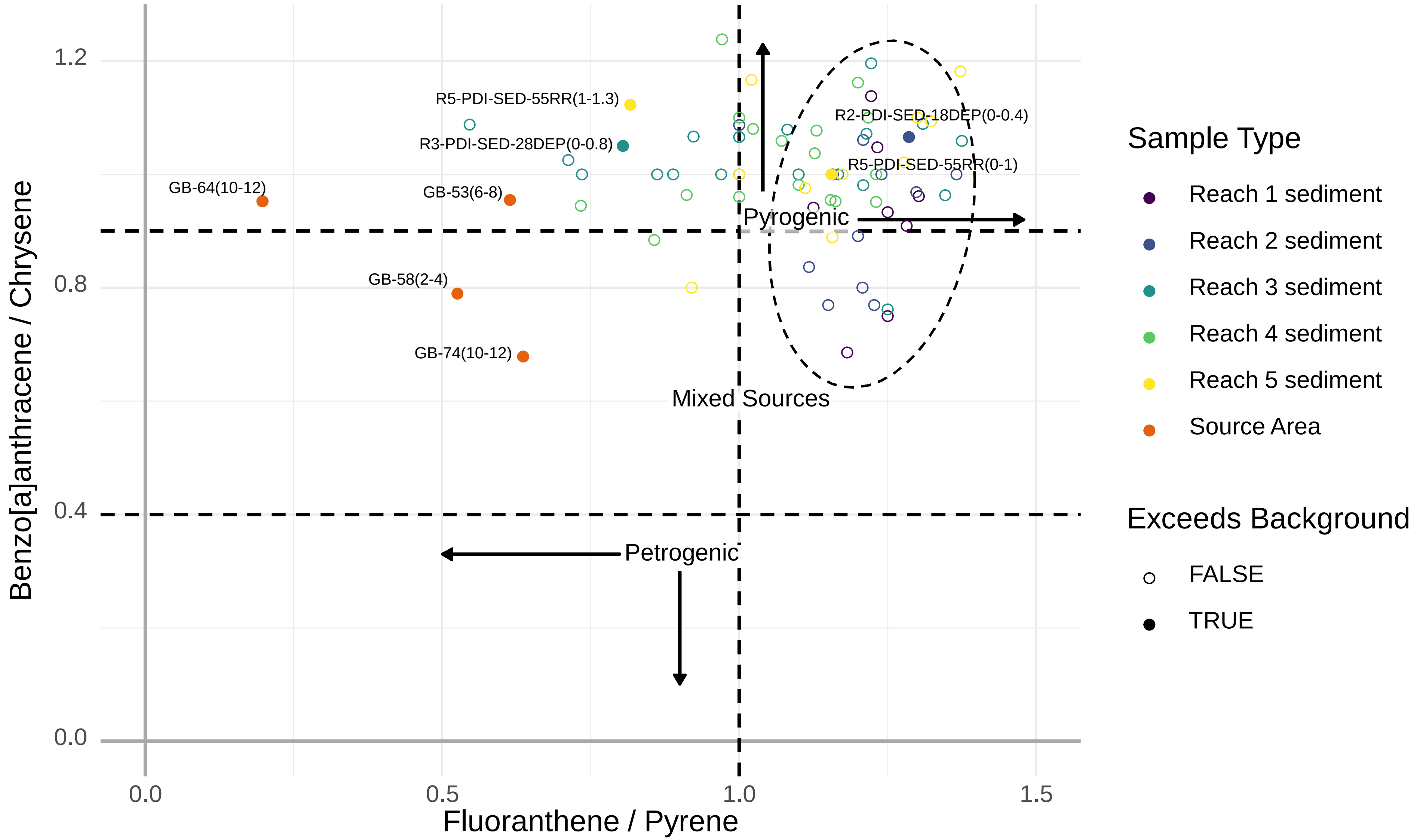


NATIONAL GRID - GLOVERSVILLE

BOXPLOT OF TOTAL PAH16 IN BANK SOIL AND SEDIMENT SAMPLES IN REACH 3

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3



Notes:

- The dotted ellipse represents the 95 percent t-distribution confidence ellipse around the background samples
- Open circles are samples below the 95th percentile background value of total PAH-34 concentrations, 65.6 mg/kg; filled circles are those samples (labeled) that exceeded the 95th percentile background value

NATIONAL GRID - GLOVERSVILLE

DOUBLE RATIO PLOT 1

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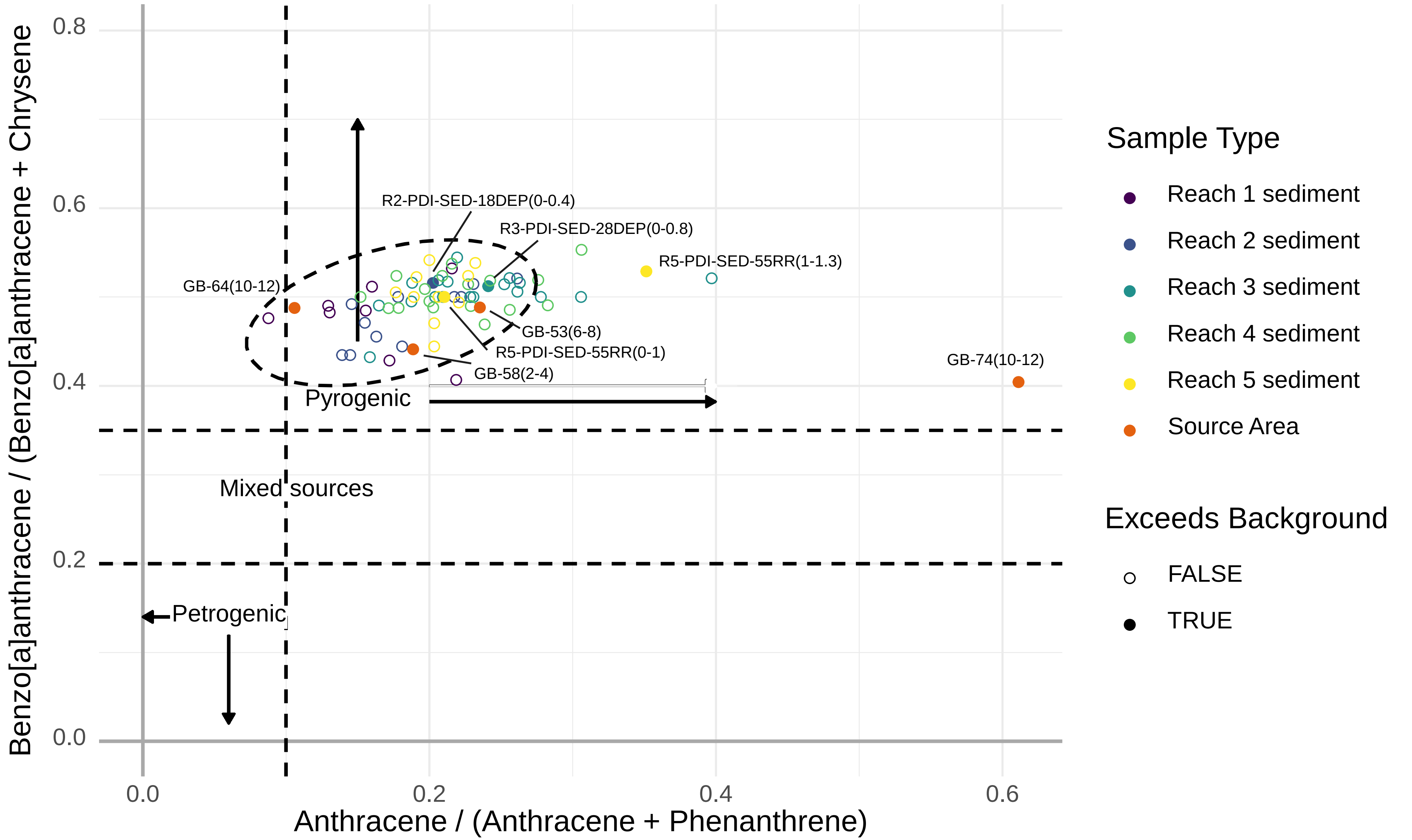
FIGURE 4



Notes:

- The dotted ellipse represents the 95 percent t-distribution confidence ellipse around the background samples
- Open circles are samples below the 95th percentile background value of total PAH-34 concentrations, 65.6 mg/kg; filled circles are those samples (labeled) that exceeded the 95th percentile background value

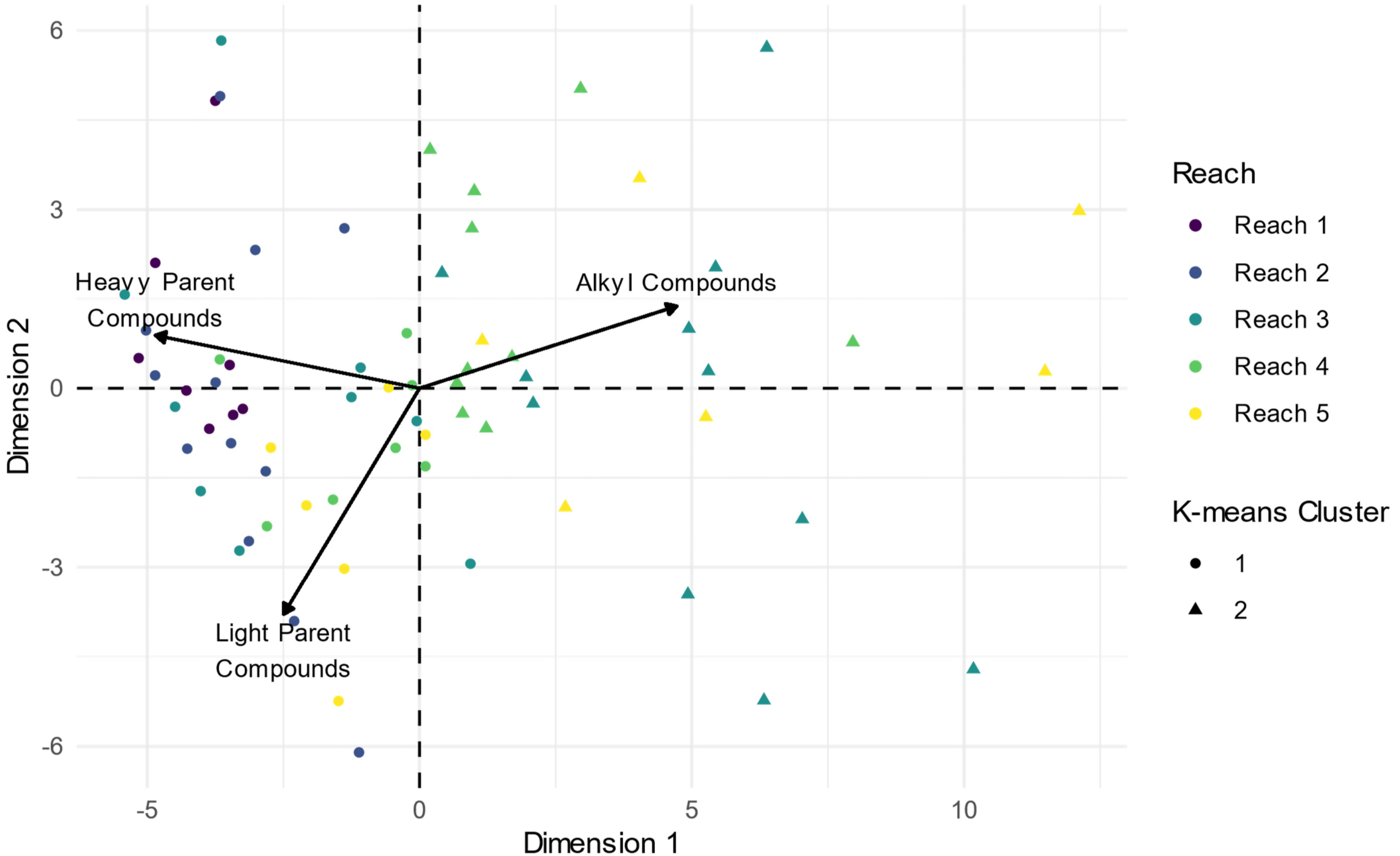
NATIONAL GRID - GLOVERSVILLE

DOUBLE RATIO PLOT 2

ARCADIS Design & Consultancy for natural and built assets

FIGURE

5

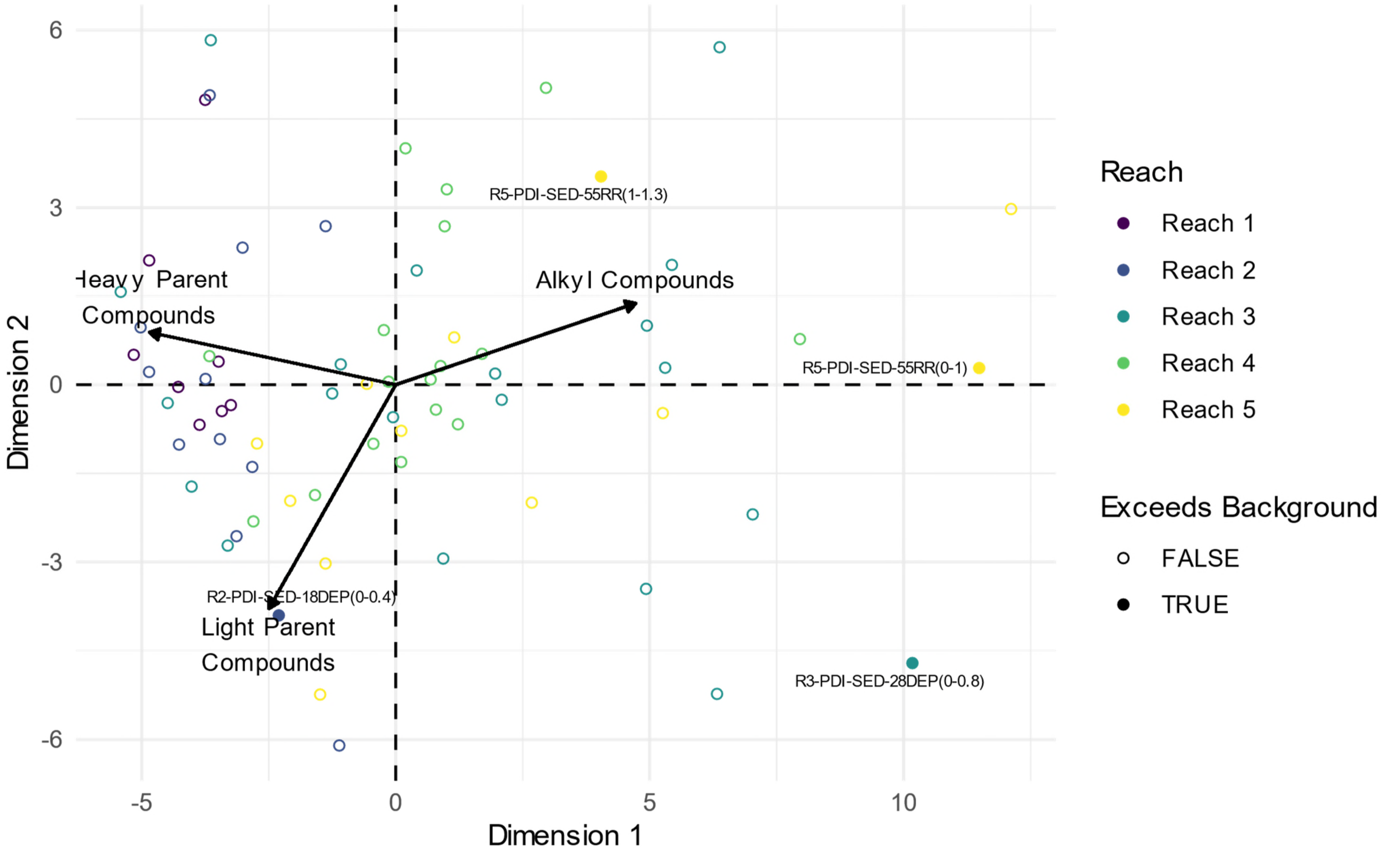


NATIONAL GRID - GLOVERSVILLE

PRINCIPAL COMPONENT PLOT OF PAH-34 IN SEDIMENT SAMPLES BY REACH AND K-MEANS CLUSTER

ARCADIS Design & Consultancy for natural and built assets

FIGURE 6



Notes:

- Open circles are samples below the 95th percentile background PAH-34 concentrations, 65.6 mg/kg; filled circles are those samples (labeled) that exceeded the 95th percentile background value

NATIONAL GRID - GLOVERSVILLE

PRINCIPAL COMPONENT PLOT OF PAH-34 IN SEDIMENT SAMPLES BY REACH WITH EXCEEDANCES OF BACKGROUND

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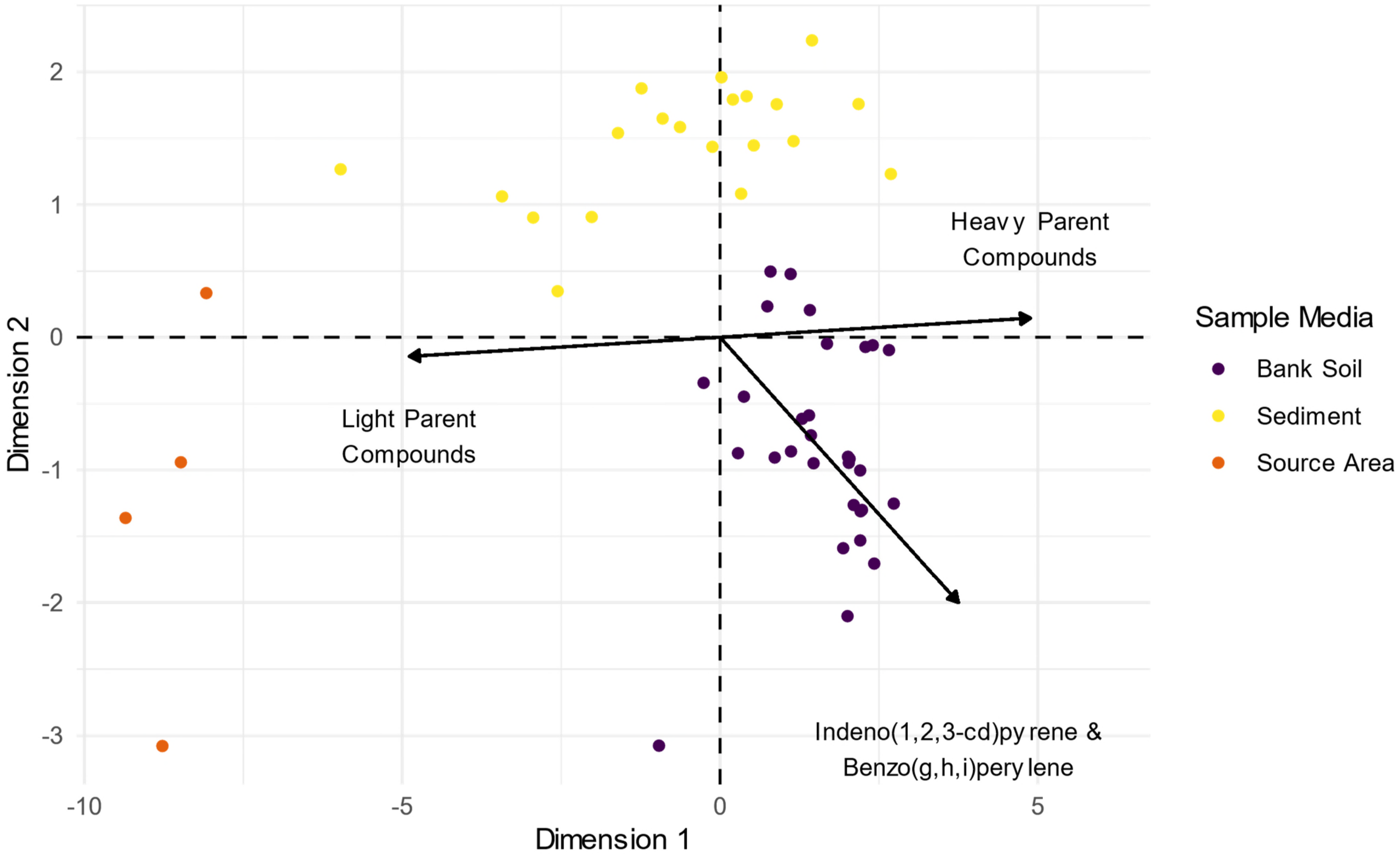
FIGURE 7



NATIONAL GRID - GLOVERSVILLE

PRINCIPAL COMPONENT PLOT OF PAH-16 IN SEDIMENT AND BANK SOIL SAMPLES IN REACH 3

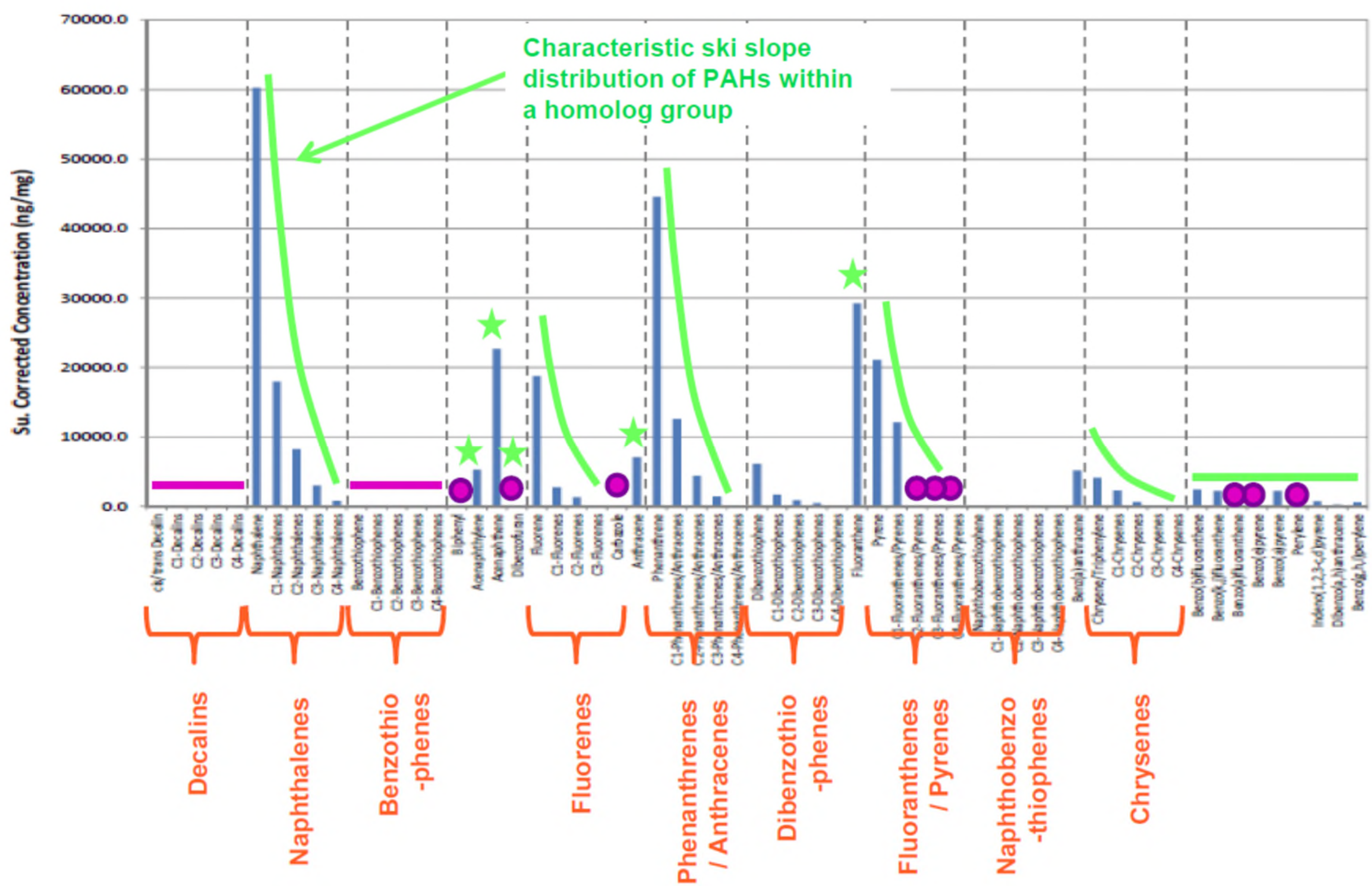
ARCADIS Design & Consultancy for natural and built assets

FIGURE 8

Attachment 1

Bar Charts

Creosote Sample (Pyrogenic Source)



Legend:

Indicate compounds commonly associated with pyrogenic PAHs

Compound not analyzed for this example sample

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

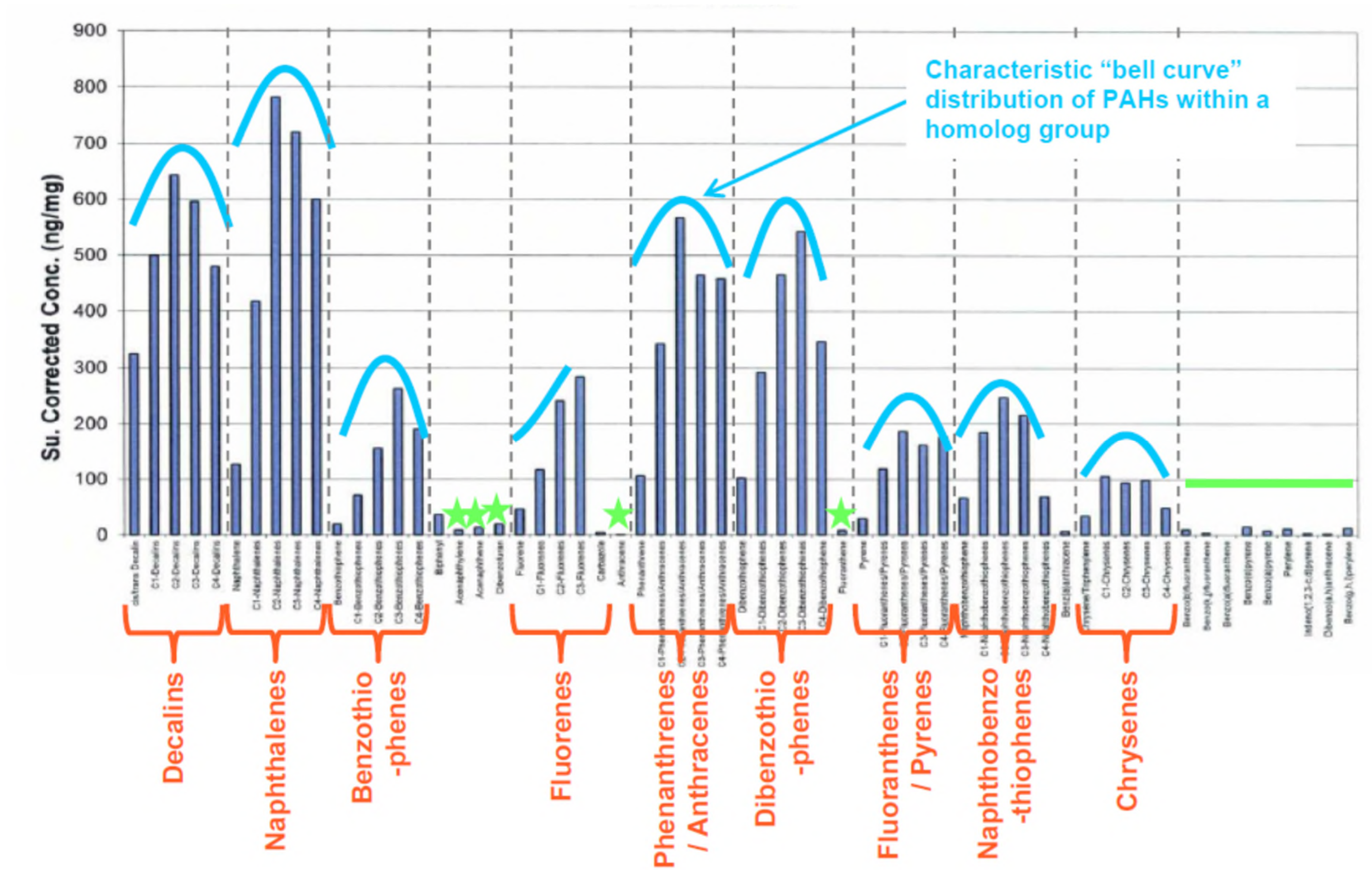
EXAMPLE PAH BAR CHART FOR PYROGENIC SOURCE

ARCADIS

FIGURE

A-1

Crude Oil Sample (Petrogenic Source)



Legend:

★ Indicate compounds commonly associated with pyrogenic PAHs

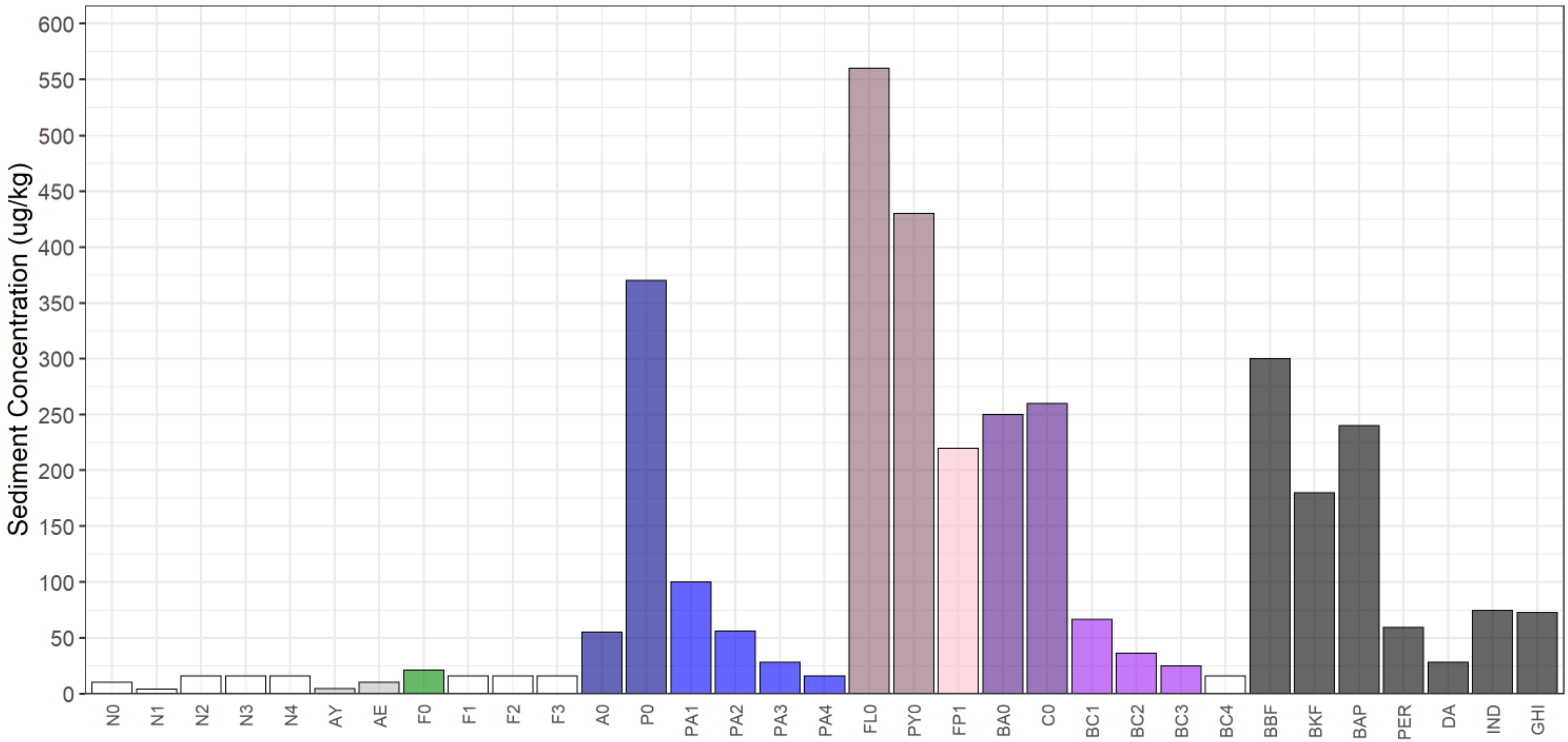
● Compound not analyzed for this example sample

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

EXAMPLE PAH BAR CHART FOR PETROGENIC SOURCE

ARCADIS

FIGURE
A-2



Legend:

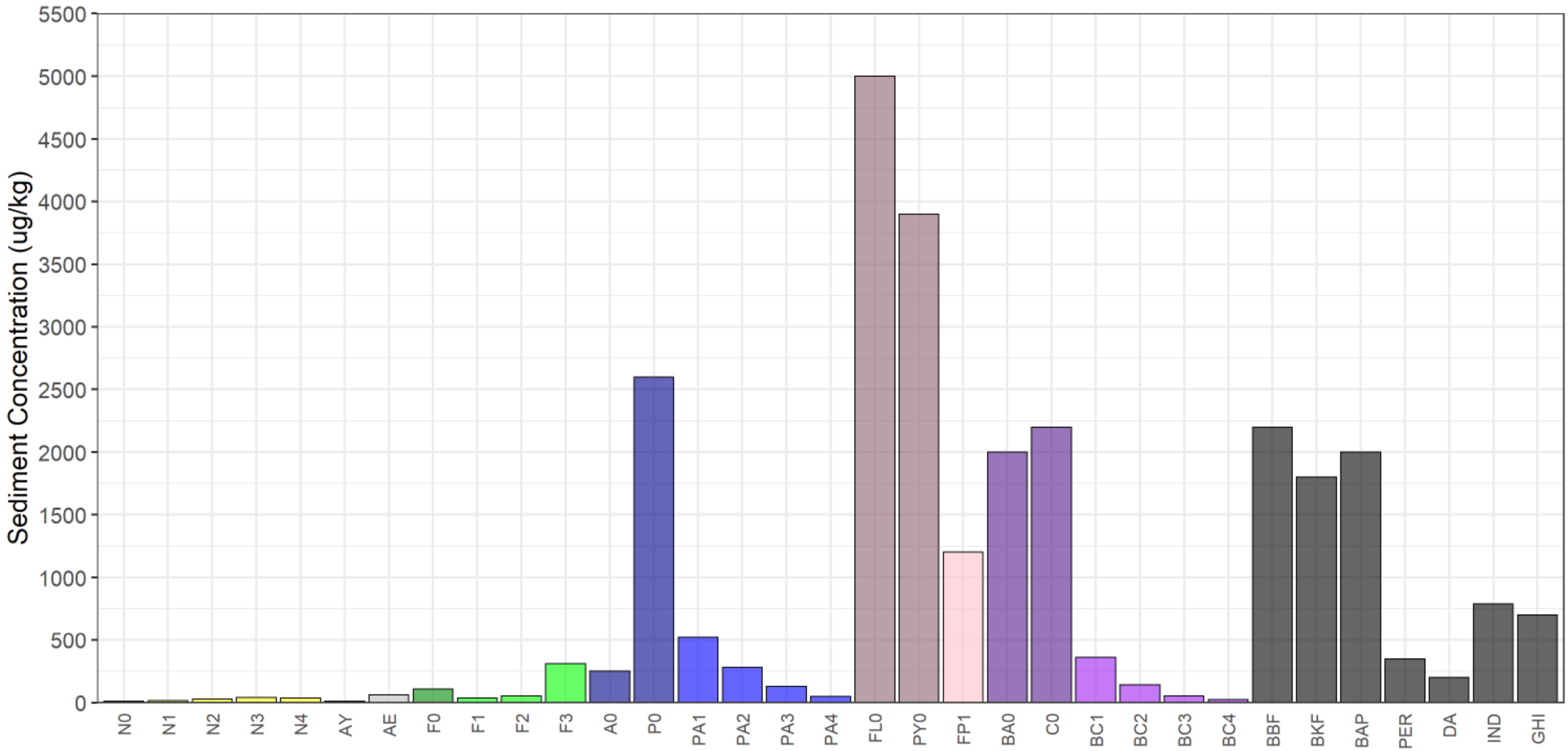
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R1-PDI-SED-1RR
SAMPLE ID: R1-PDI-SED-1RR(0-0.3)

ARCADIS

FIGURE
A-3



Legend:

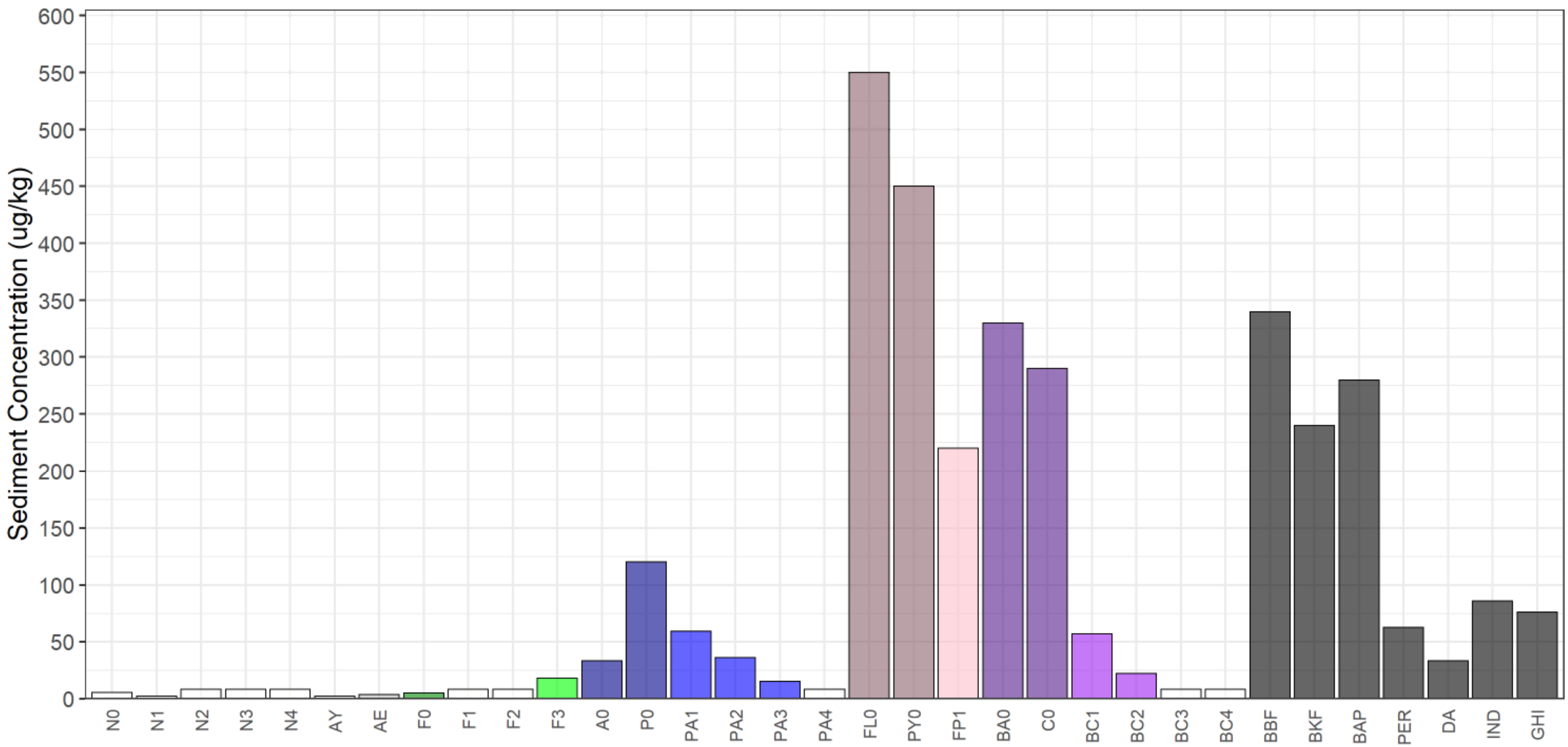
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R1-PDI-SED-2DEP
SAMPLE ID: R1-PDI-SED-2DEP(0-0.9)

ARCADIS

FIGURE
A-4



Legend:

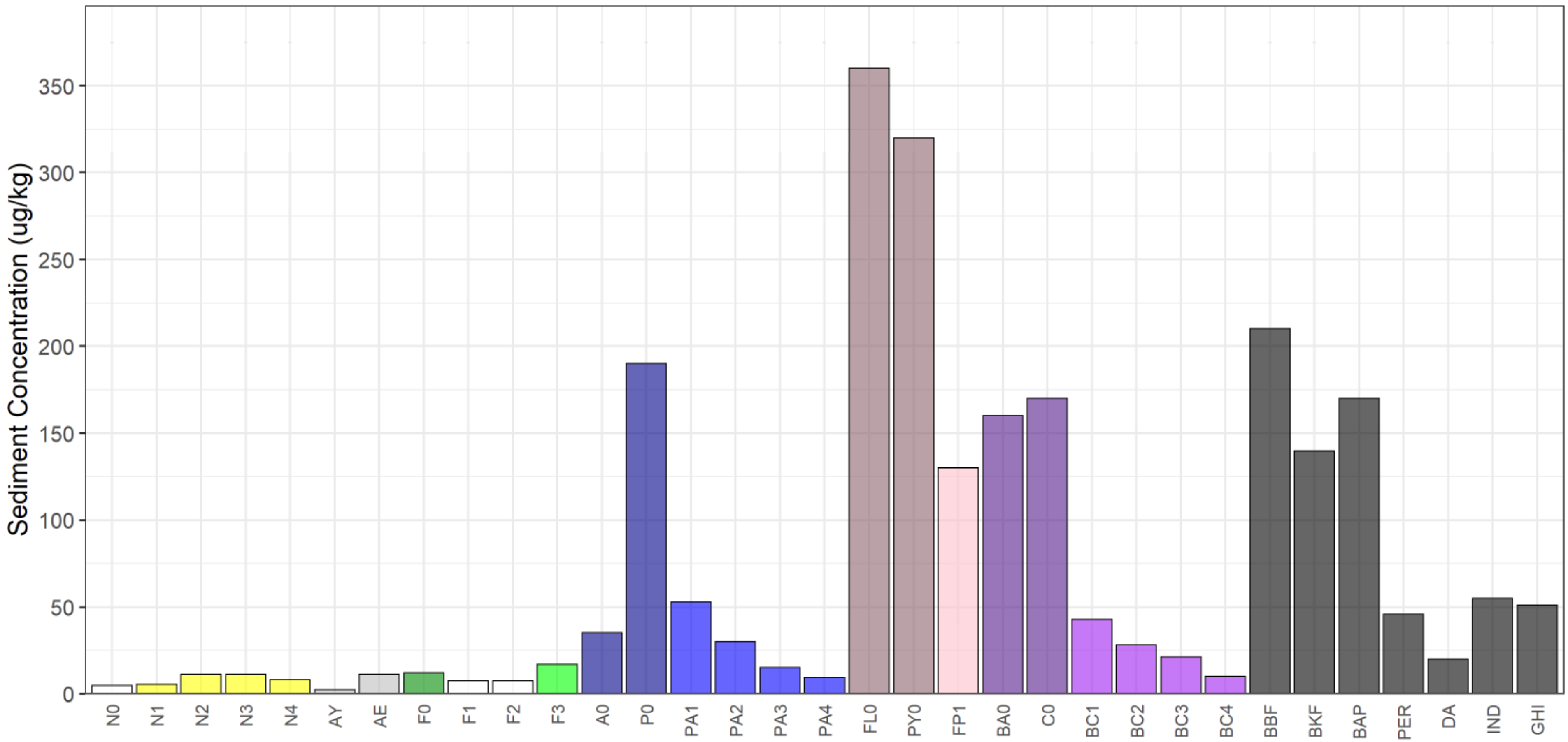
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R1-PDI-SED-3RR
SAMPLE ID: R1-PDI-SED-3RR(0-0.3)

ARCADIS

FIGURE
A-5



Legend:

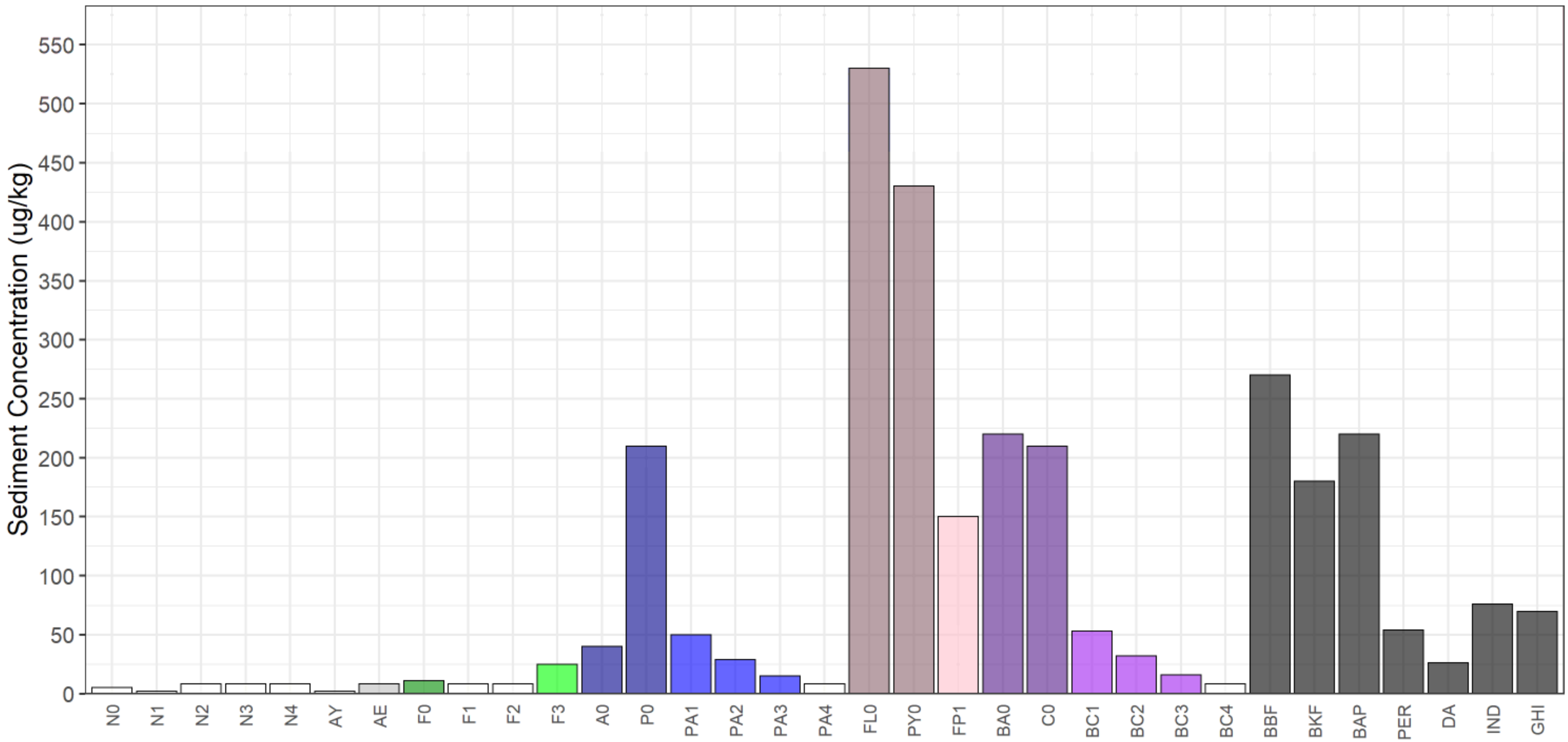
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R1-PDI-SED-4DEP
SAMPLE ID: R1-PDI-SED-4DEP(0-0.2)

ARCADIS

FIGURE
A-6



Legend:

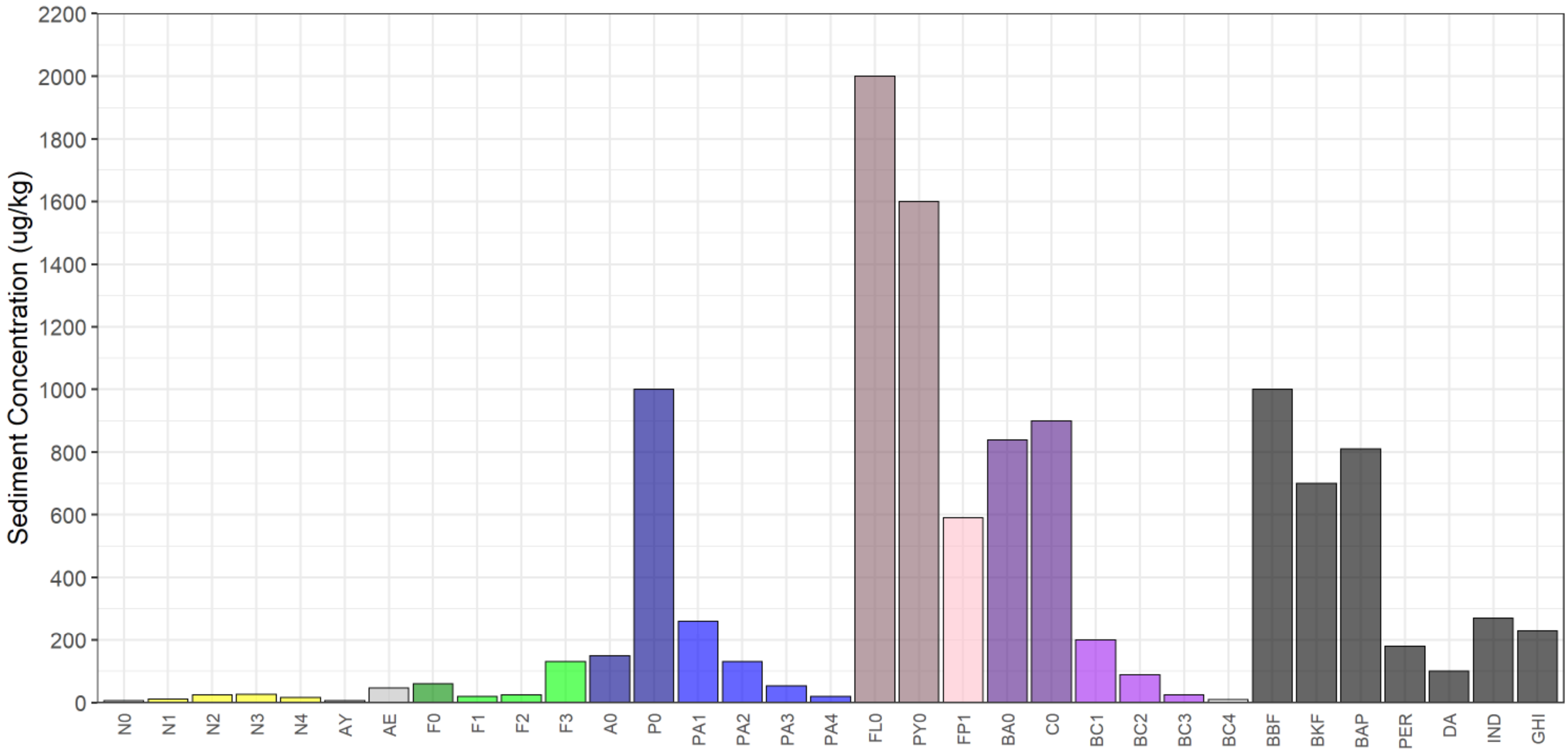
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R1-PDI-SED-5RR
SAMPLE ID: R1-PDI-SED-5RR(0-0.2)

ARCADIS

FIGURE
A-7



Legend:

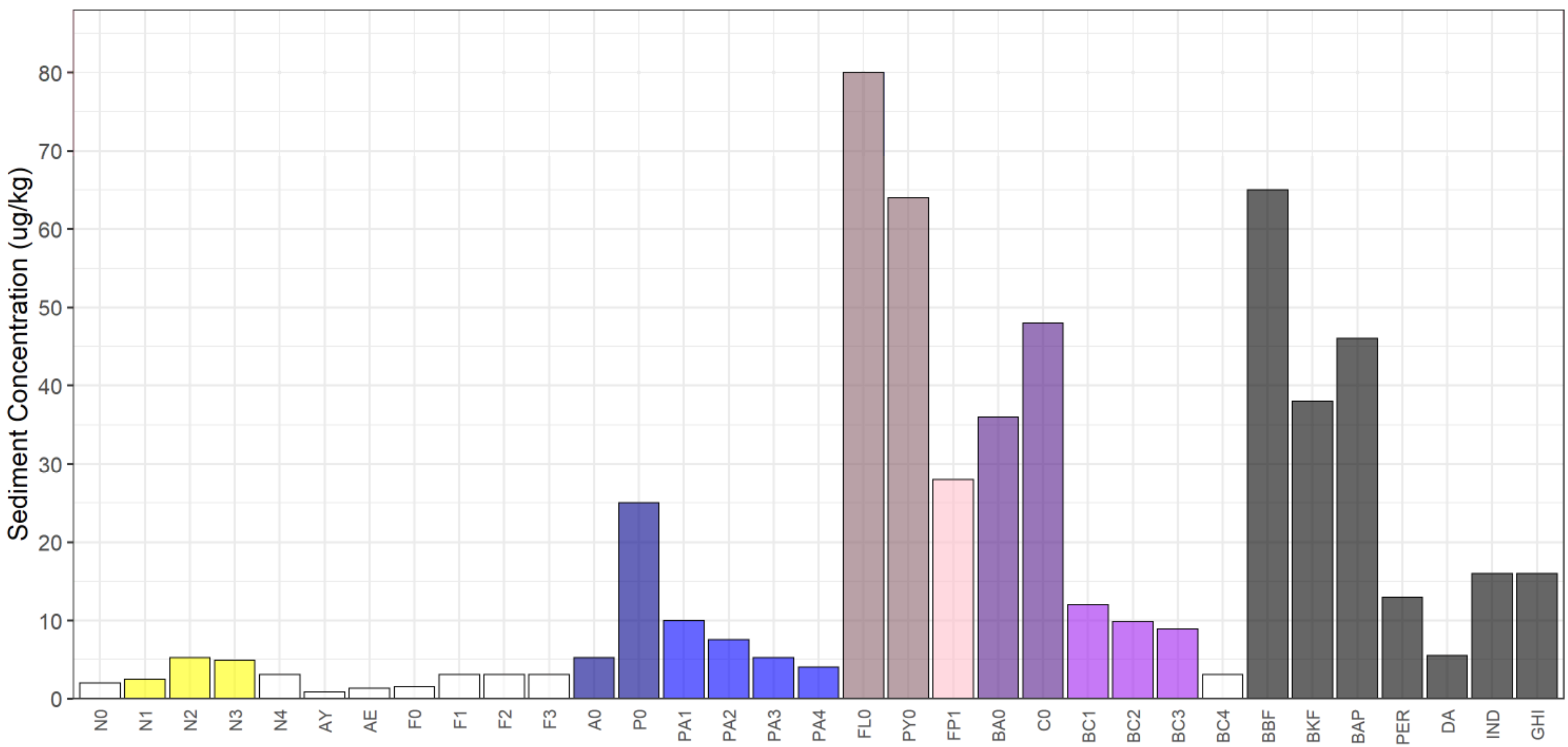
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R1-PDI-SED-6DEP
SAMPLE ID: R1-PDI-SED-6DEP(0-0.5)

ARCADIS

FIGURE
A-8



Legend:

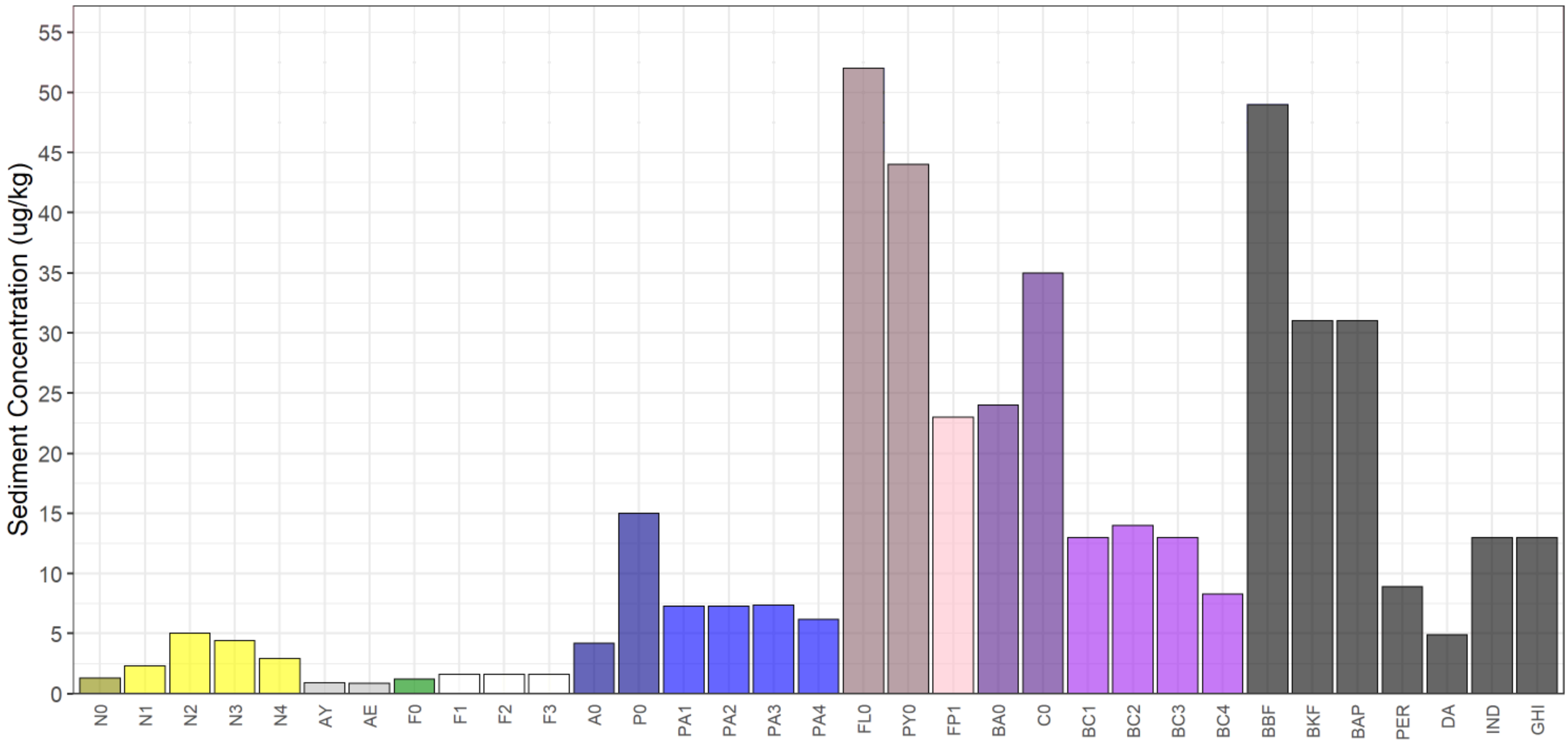
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R1-PDI-SED-7DEP
SAMPLE ID: R1-PDI-SED-7DEP(0-0.4)

ARCADIS

FIGURE
A-9



Legend:

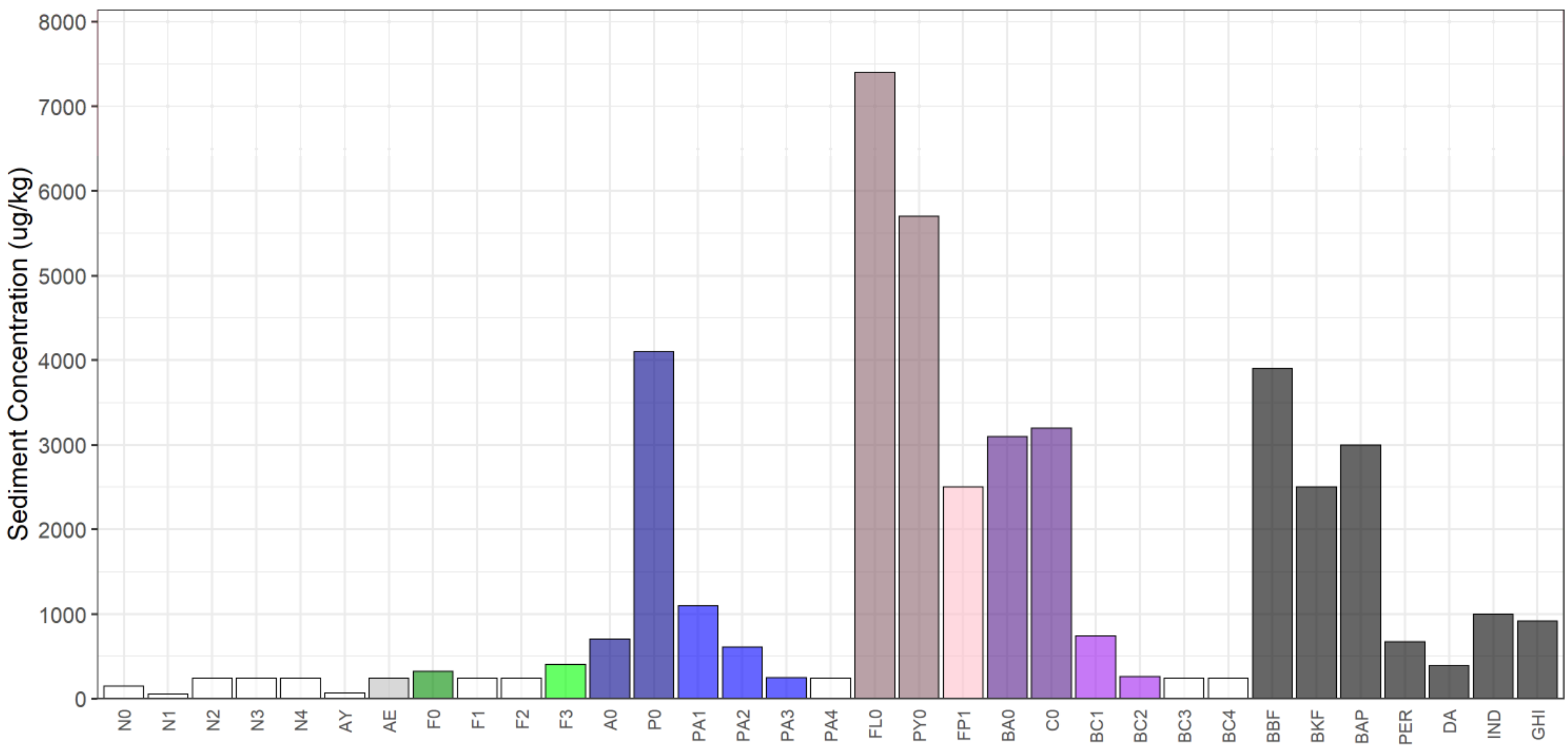
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R1-PDI-SED-8RR
SAMPLE ID: R1-PDI-SED-8RR(0-0.2)

ARCADIS

FIGURE
A-10



Legend:

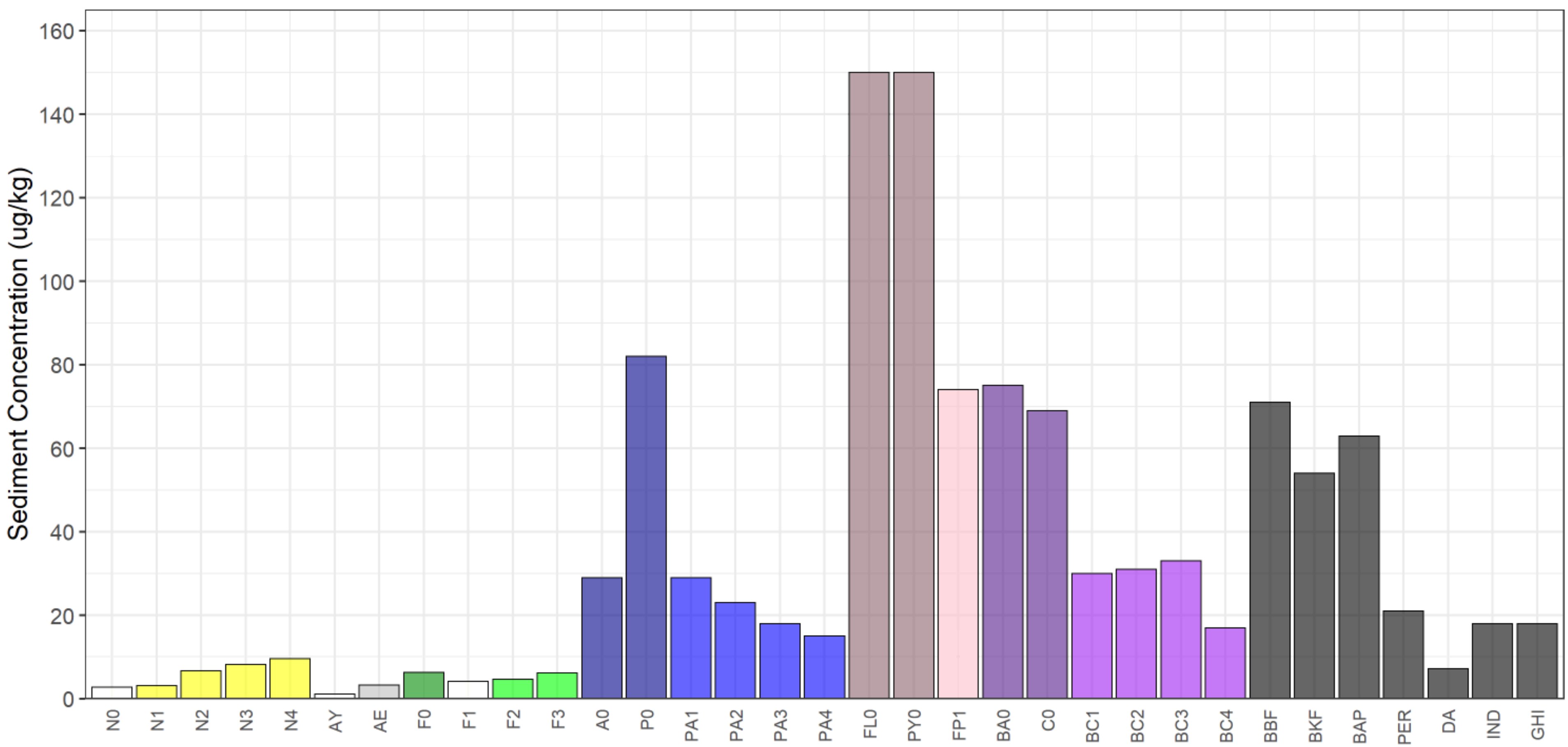
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R2-PDI-SED-10DEP
SAMPLE ID: R2-PDI-SED-10DEP(0-0.3)

ARCADIS

FIGURE
A-11



Legend:

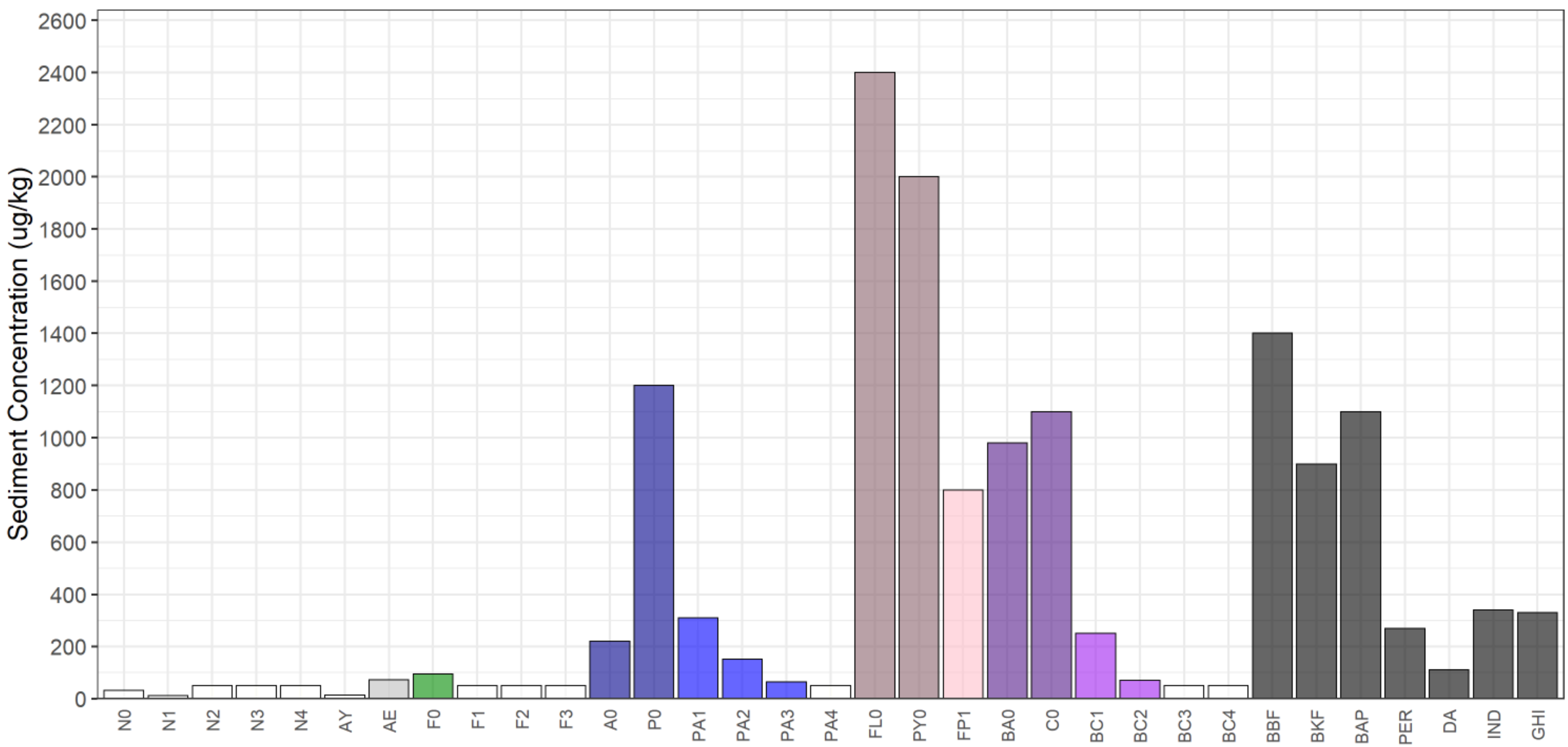
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R2-PDI-SED-11RR
SAMPLE ID: R2-PDI-SED-11RR(0-0.3)

ARCADIS

FIGURE
A-12



Legend:

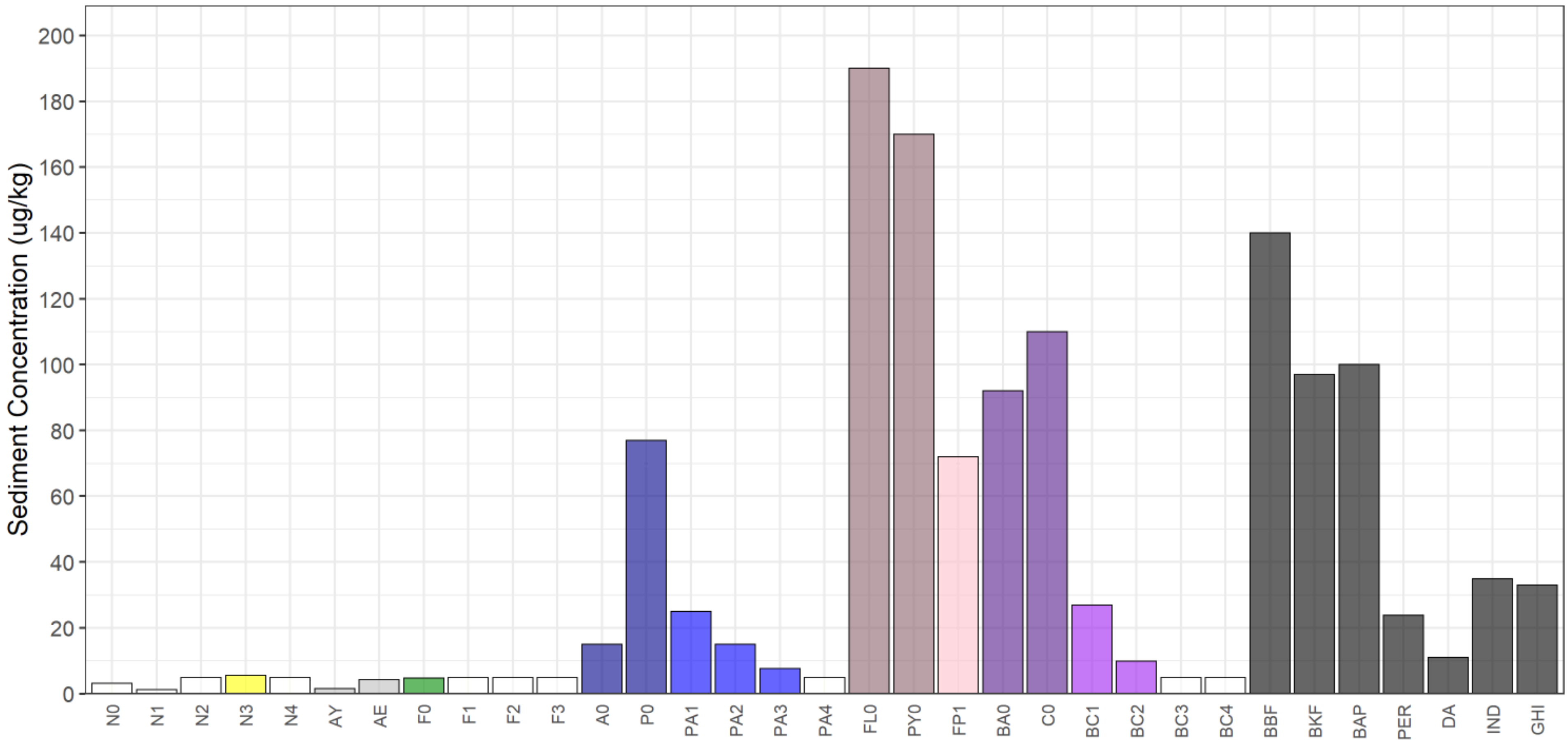
☐ Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R2-PDI-SED-12DEP
SAMPLE ID: R2-PDI-SED-12DEP(0-0.3)

ARCADIS

FIGURE
A-13



Legend:

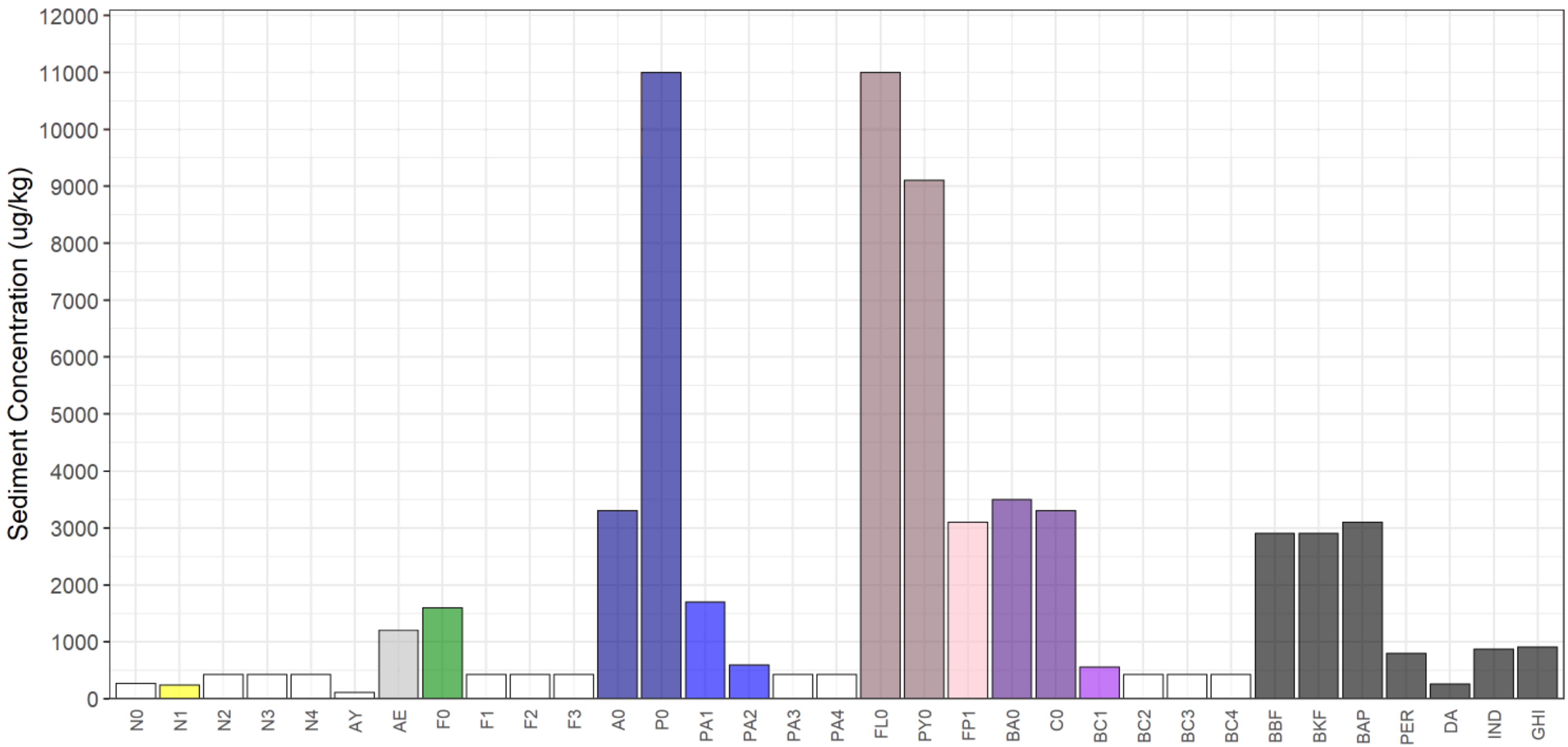
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R2-PDI-SED-13RR
SAMPLE ID: R2-PDI-SED-13RR(0-0.3)

ARCADIS

FIGURE
A-14



Legend:

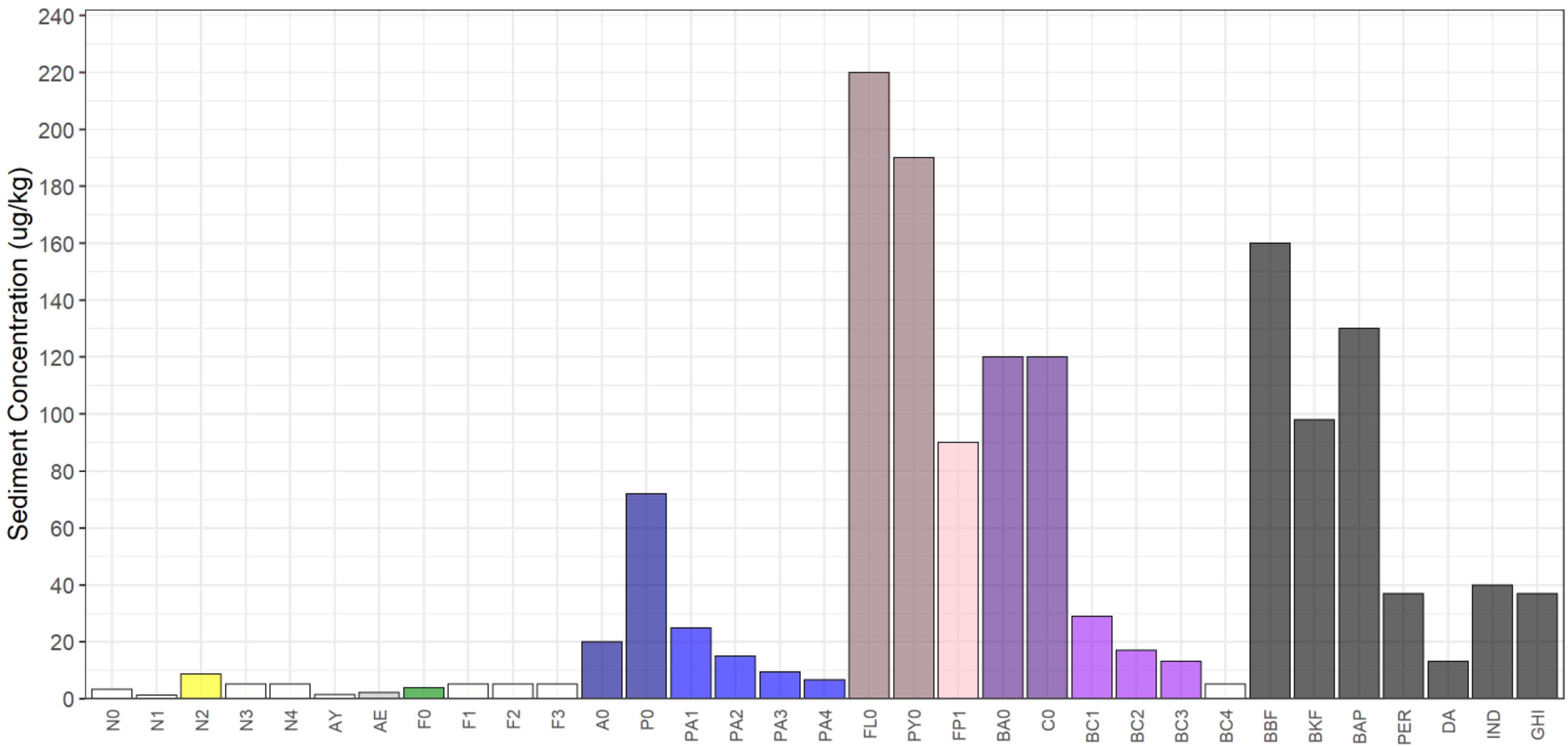
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R2-PDI-SED-14DEP
SAMPLE ID: R2-PDI-SED-14DEP(0-0.5)

ARCADIS

FIGURE
A-15



Legend:

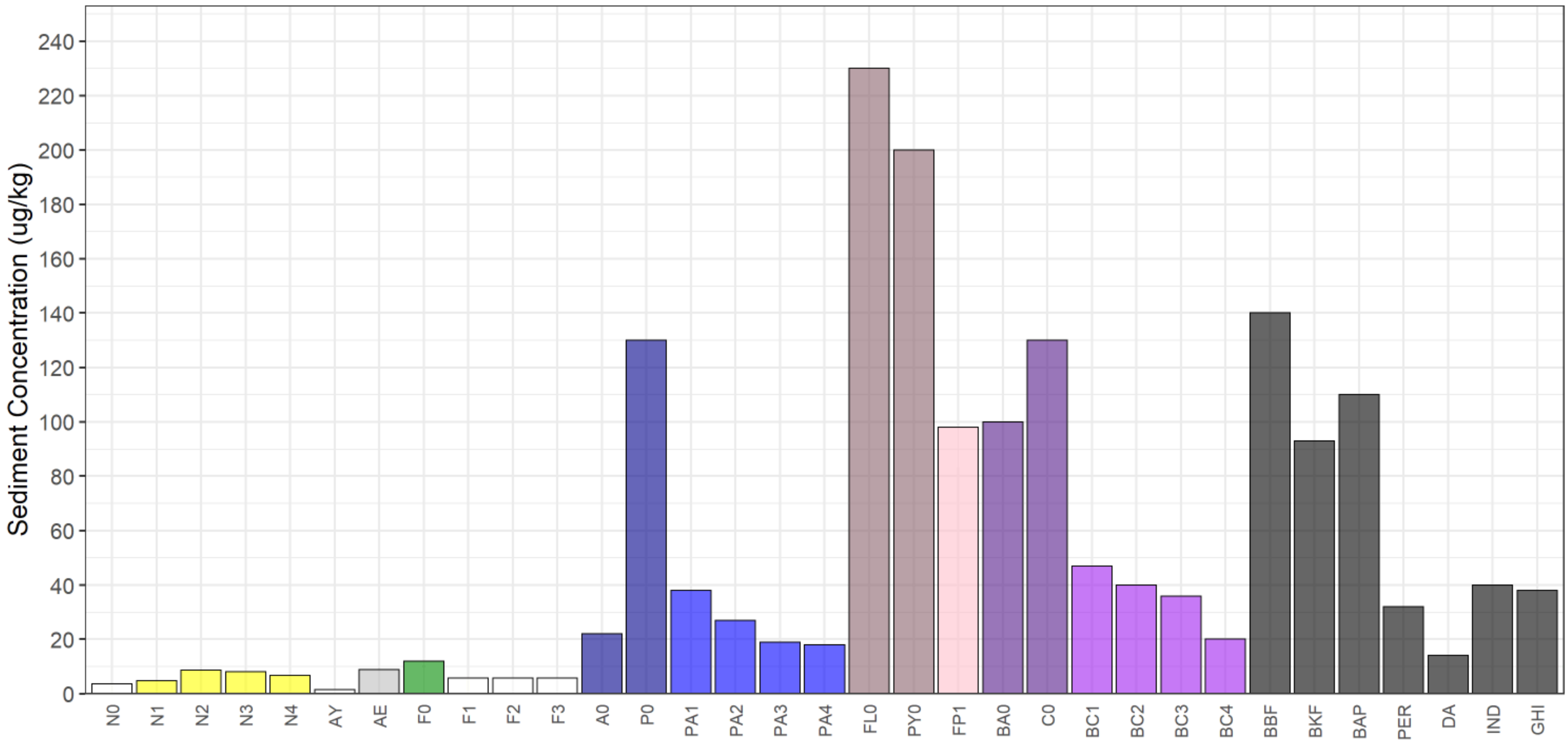
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R2-PDI-SED-15RR
SAMPLE ID: R2-PDI-SED-15RR(0-0.2)

ARCADIS

FIGURE
A-16



Legend:

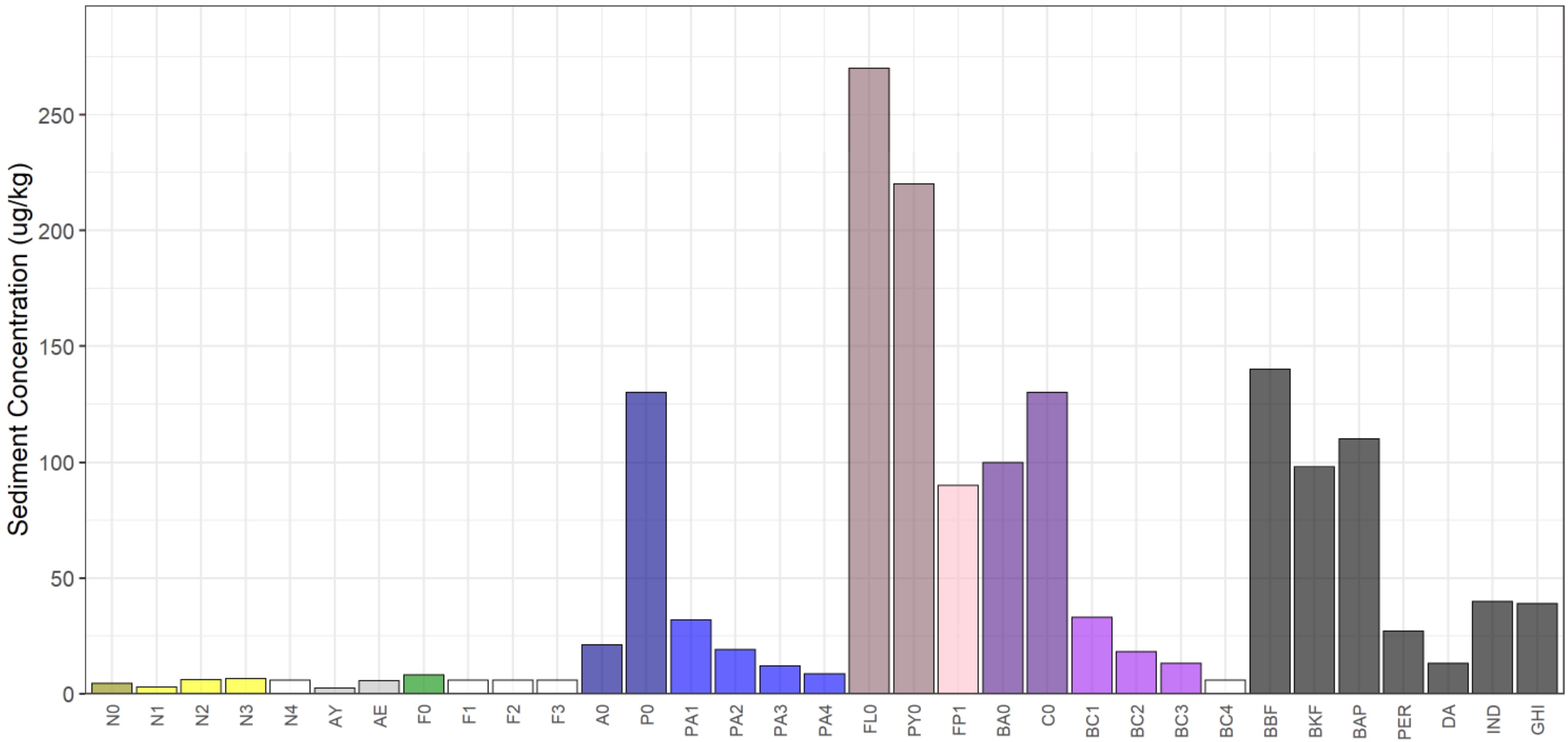
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R2-PDI-SED-16DEP
SAMPLE ID: R2-PDI-SED-16DEP(0-0.3)

ARCADIS

FIGURE
A-17



Legend:

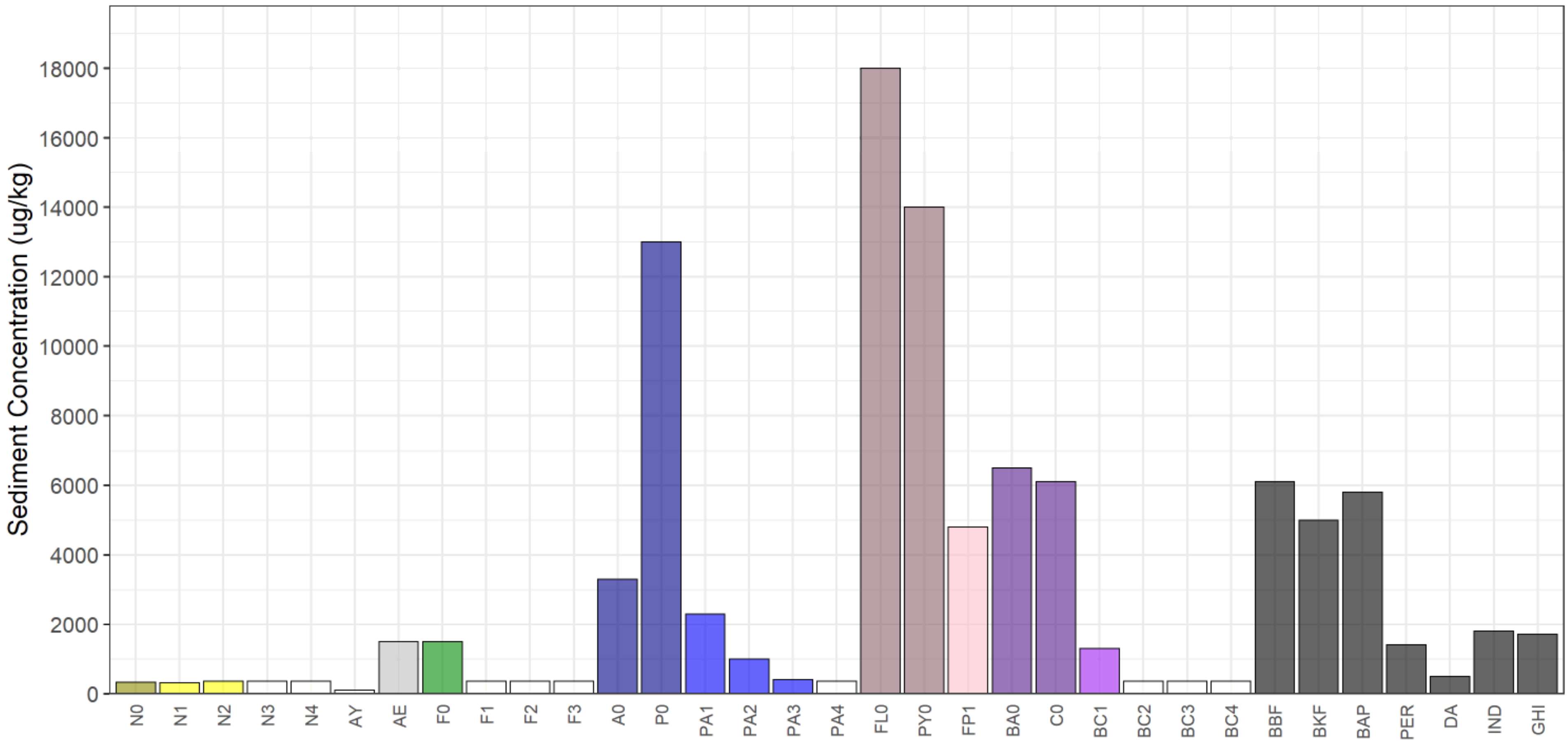
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R2-PDI-SED-17DEP
SAMPLE ID: R2-PDI-SED-17DEP(0-0.7)

ARCADIS

FIGURE
A-18



Legend:

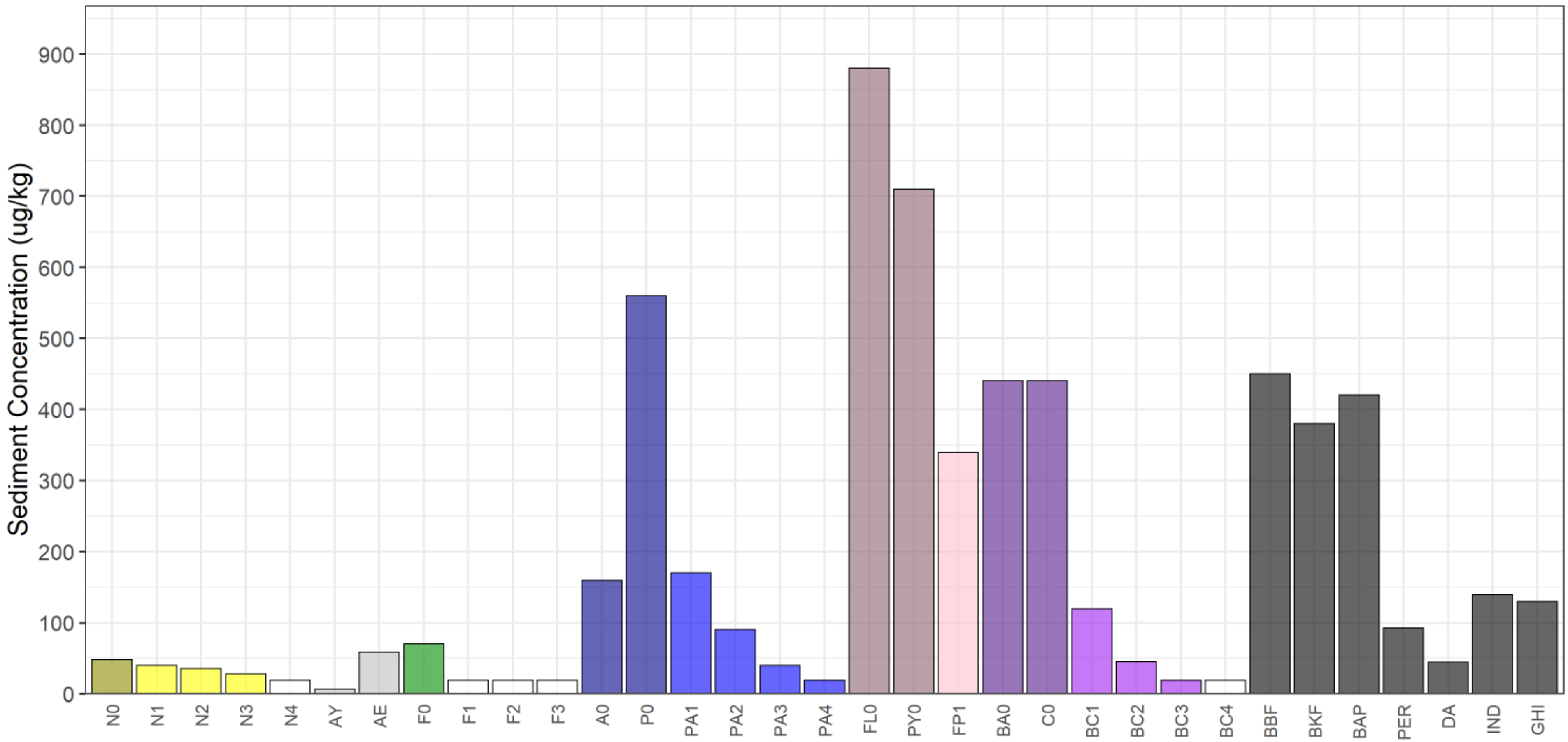
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R2-PDI-SED-18DEP
SAMPLE ID: R2-PDI-SED-18DEP(0-0.4)

ARCADIS

FIGURE
A-19



Legend:

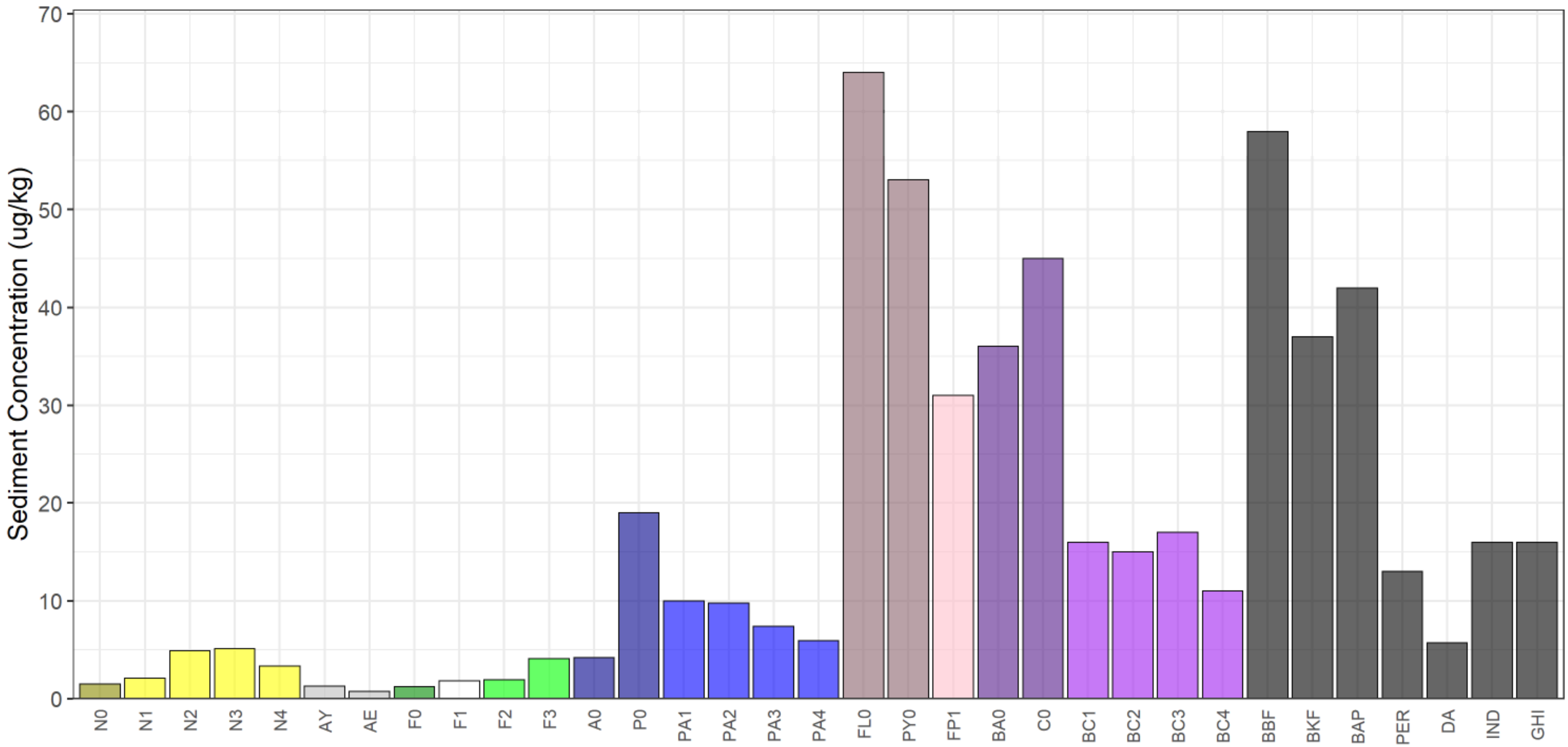
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R2-PDI-SED-19DEP
SAMPLE ID: R2-PDI-SED-19DEP(0-0.5)

ARCADIS

FIGURE
A-20



Legend:

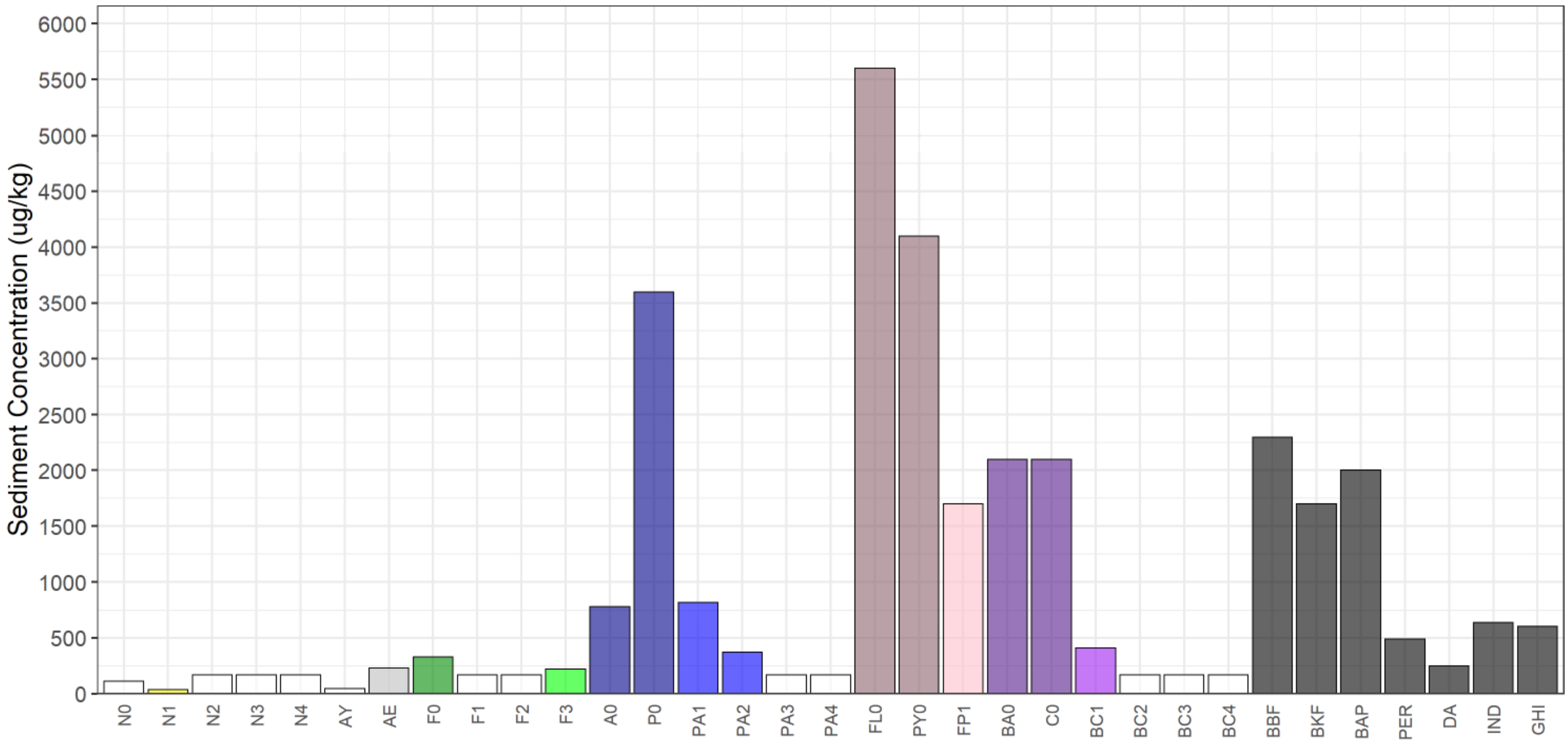
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R2-PDI-SED-20RR
SAMPLE ID: R2-PDI-SED-20RR(0-0.3)

ARCADIS

FIGURE
A-21



Legend:

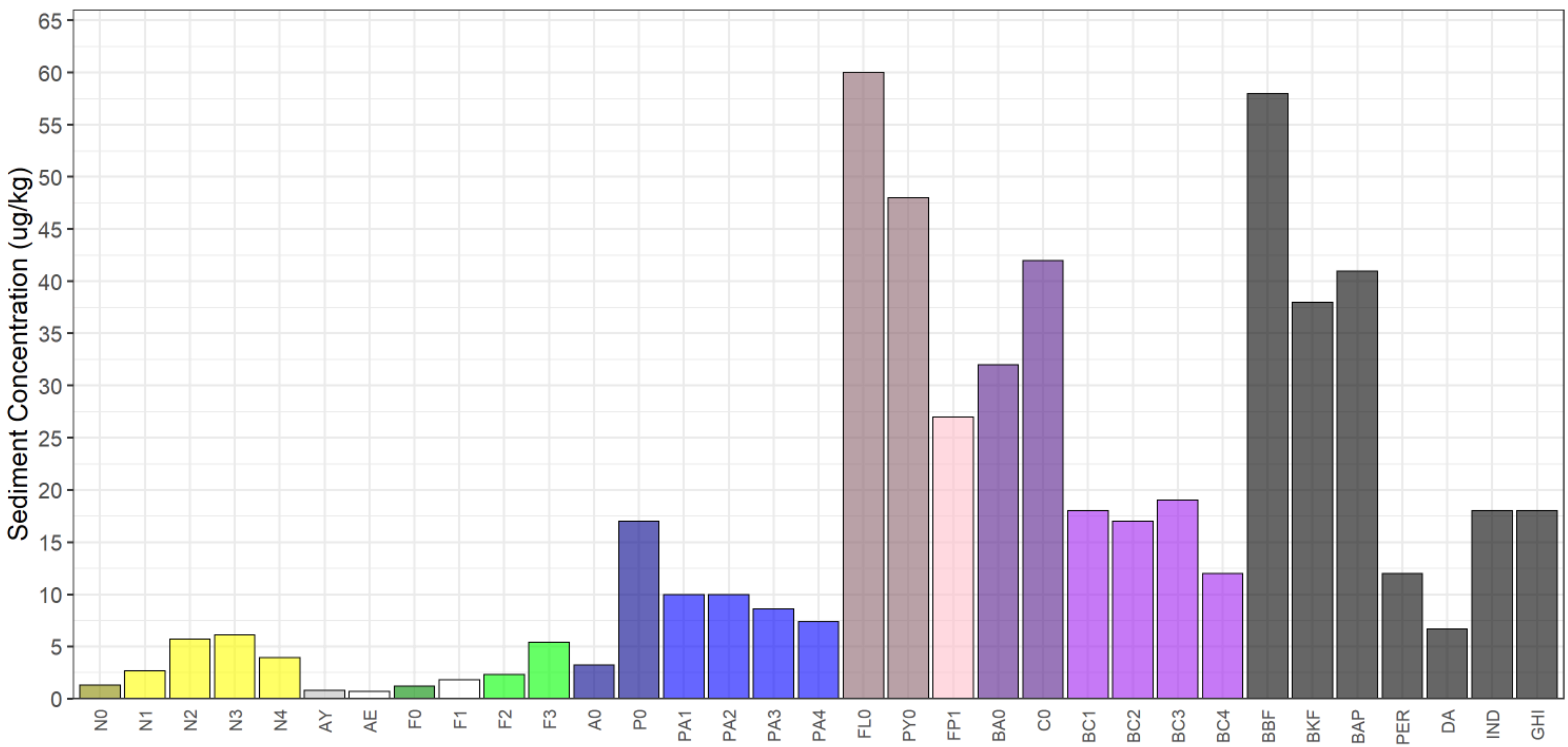
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R2-PDI-SED-9DEP
SAMPLE ID: R2-PDI-SED-9DEP(0-0.5)

ARCADIS

FIGURE
A-22



Legend:

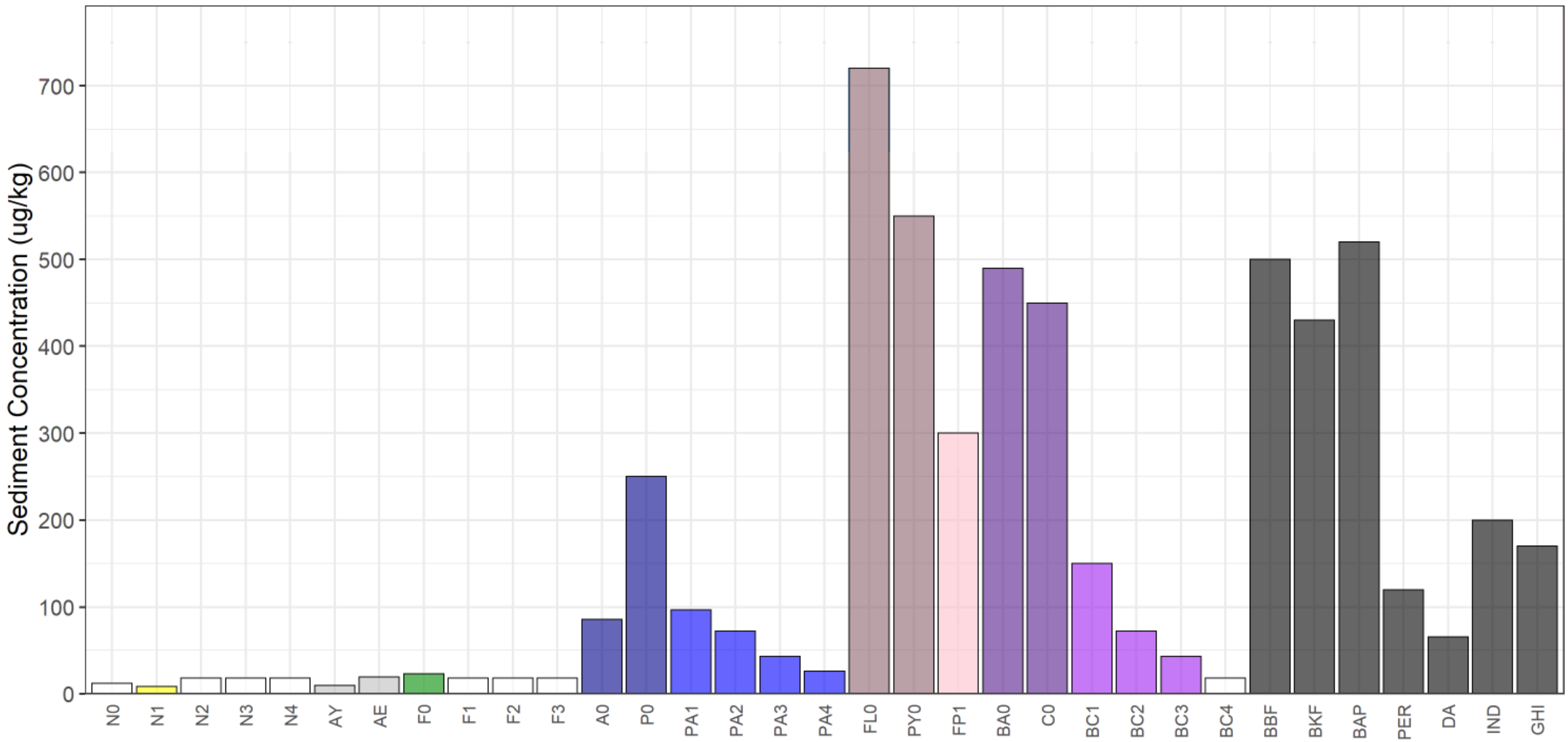
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-21RR
SAMPLE ID: R3-PDI-SED-21RR(0-0.3)

ARCADIS

FIGURE
A-23



Legend:

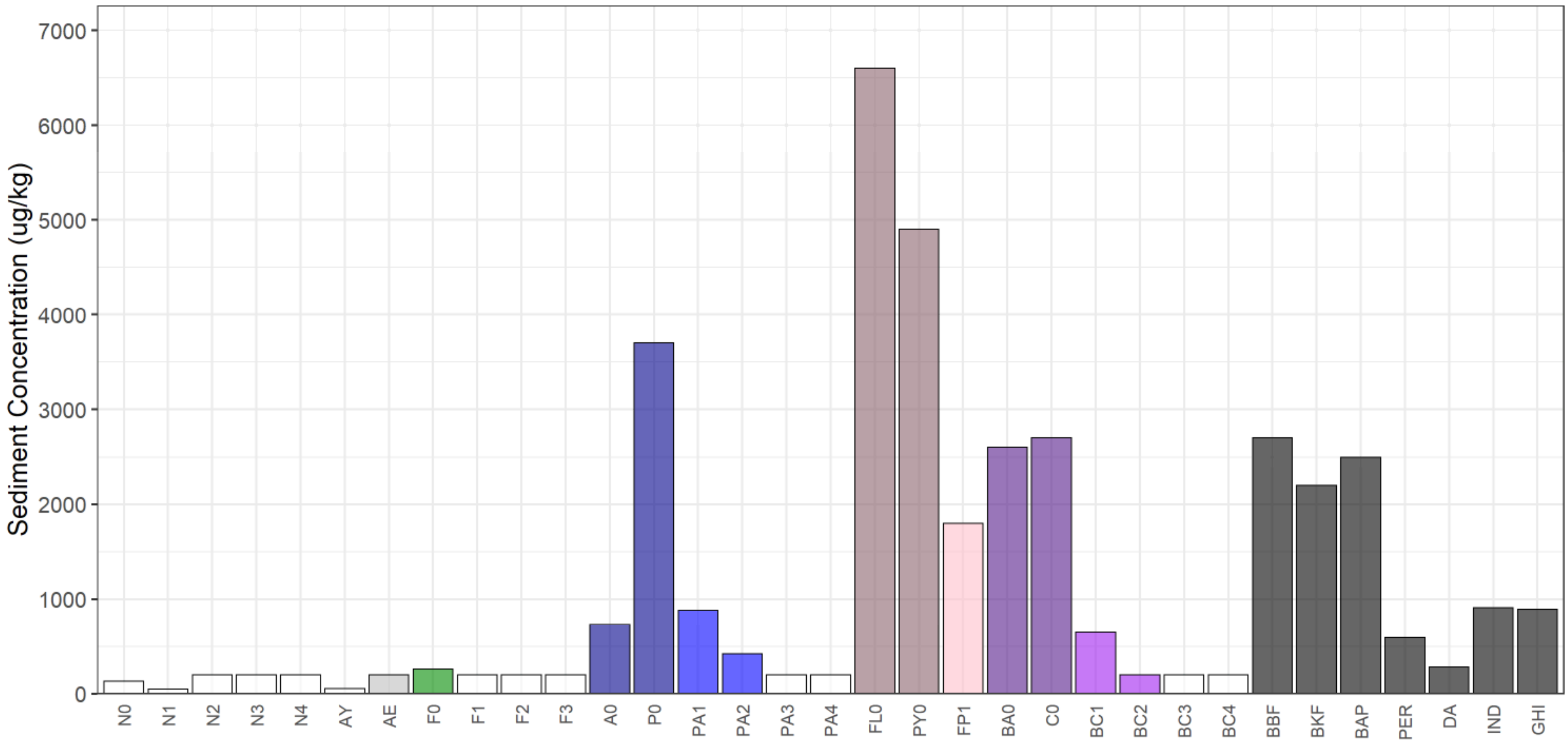
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-22DEP
SAMPLE ID: R3-PDI-SED-22DEP(0-0.3)

ARCADIS

FIGURE
A-24



Legend:

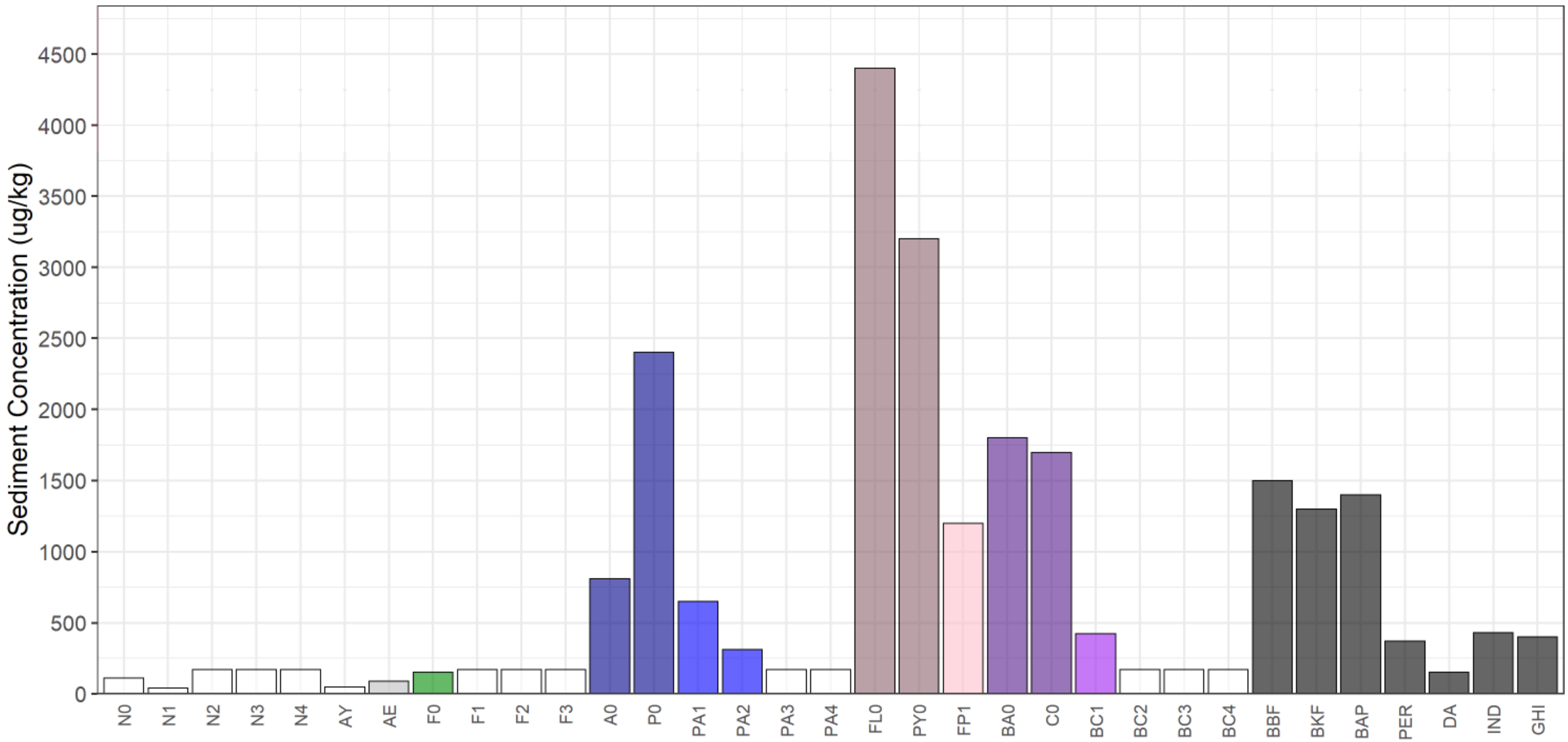
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-23DEP
SAMPLE ID: R3-PDI-SED-23DEP(0-0.6)

ARCADIS

FIGURE
A-25



Legend:

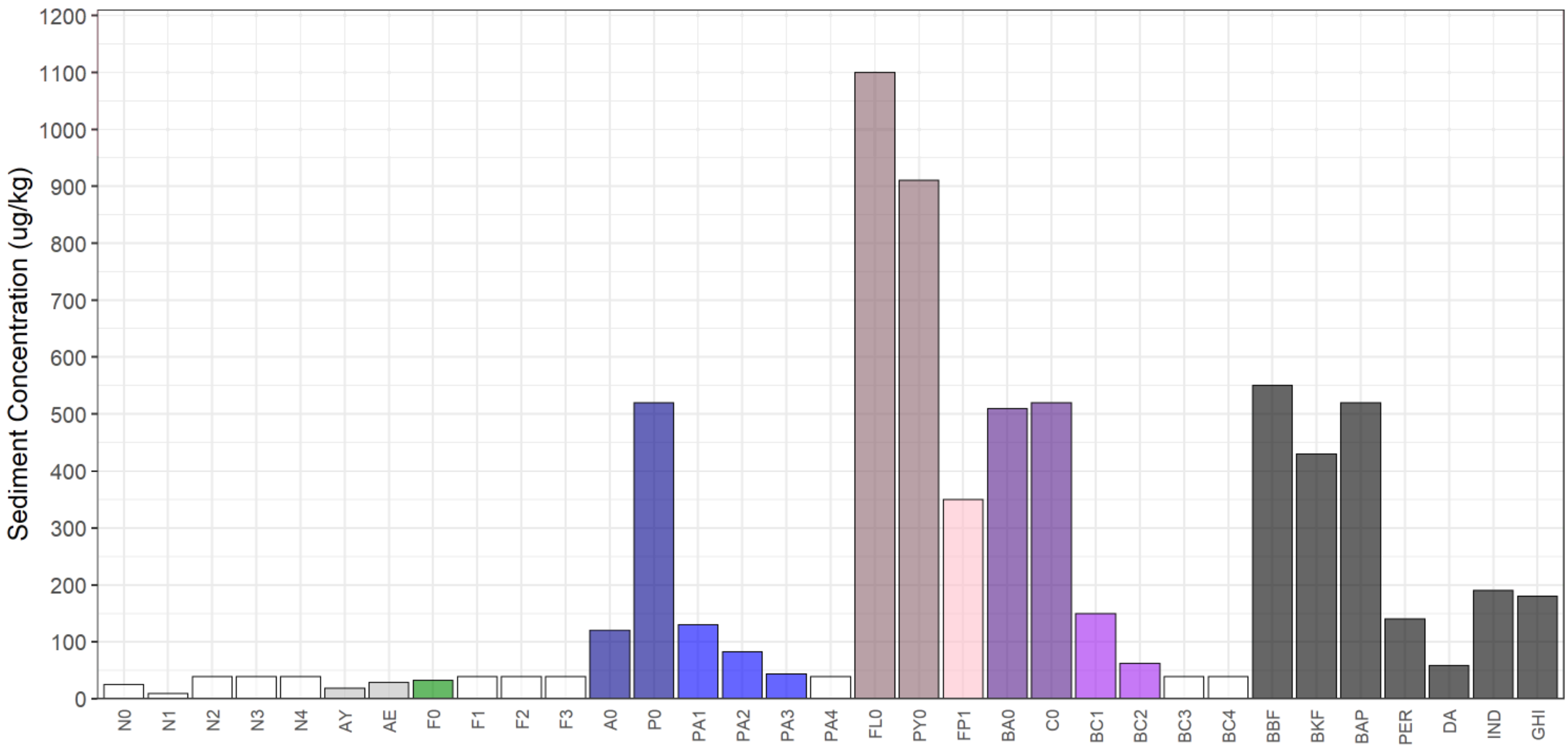
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-24DEP
SAMPLE ID: R3-PDI-SED-24DEP(0-1)

ARCADIS

FIGURE
A-26



Legend:

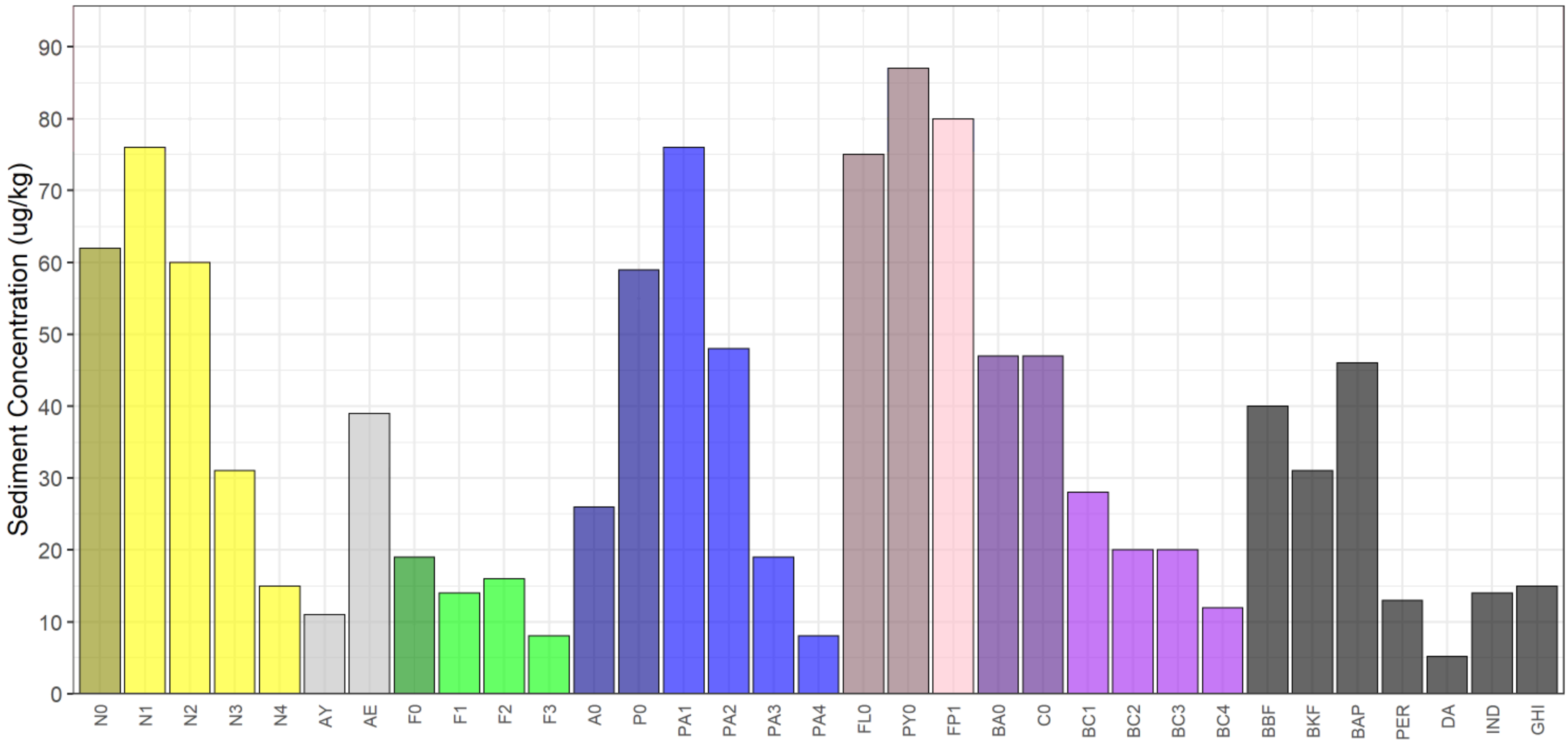
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-24DEP
SAMPLE ID: R3-PDI-SED-24DEP(1-1.8)

ARCADIS

FIGURE
A-27



Legend:

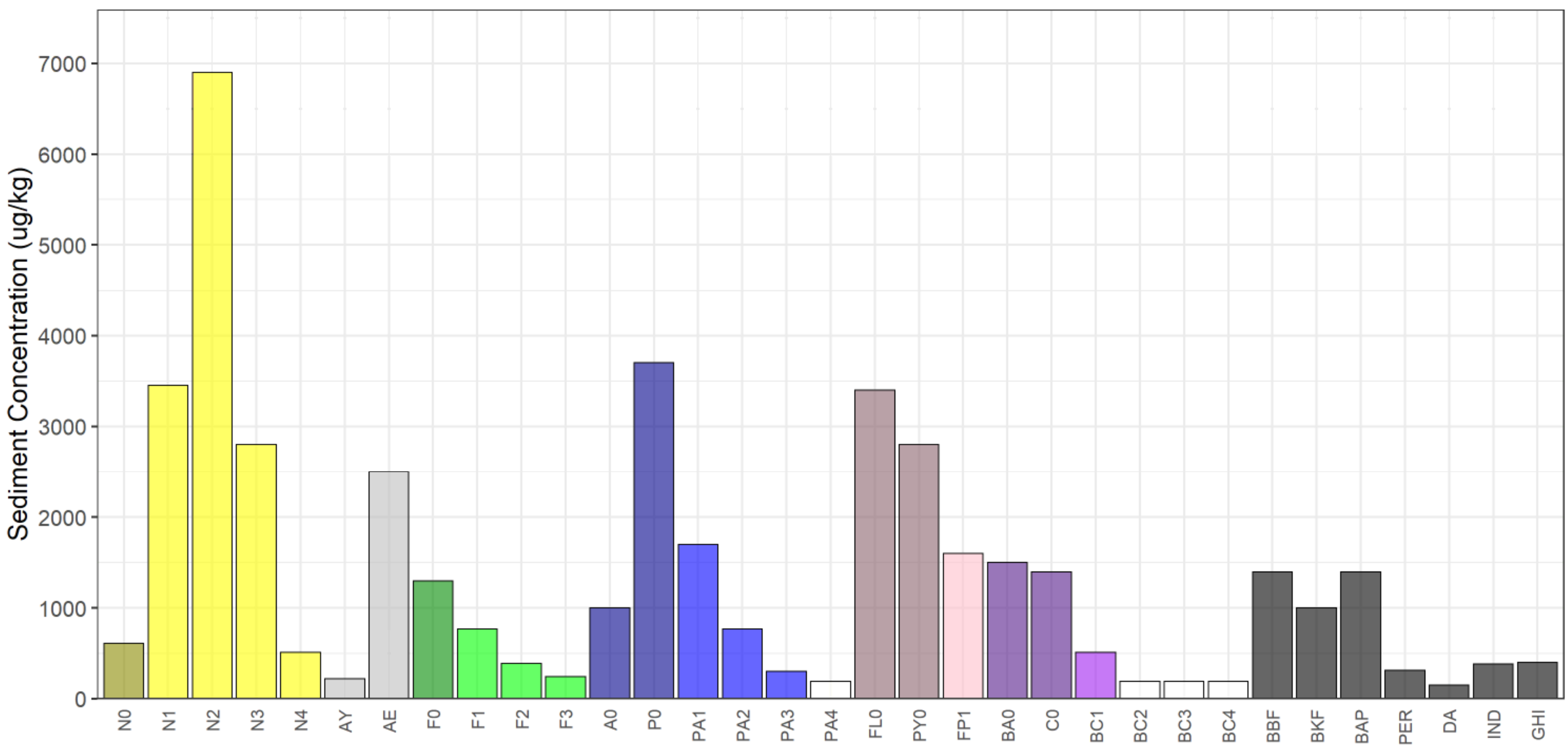
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-25DEP
SAMPLE ID: R3-PDI-SED-25DEP(0-0.3)

ARCADIS

FIGURE
A-28



Legend:

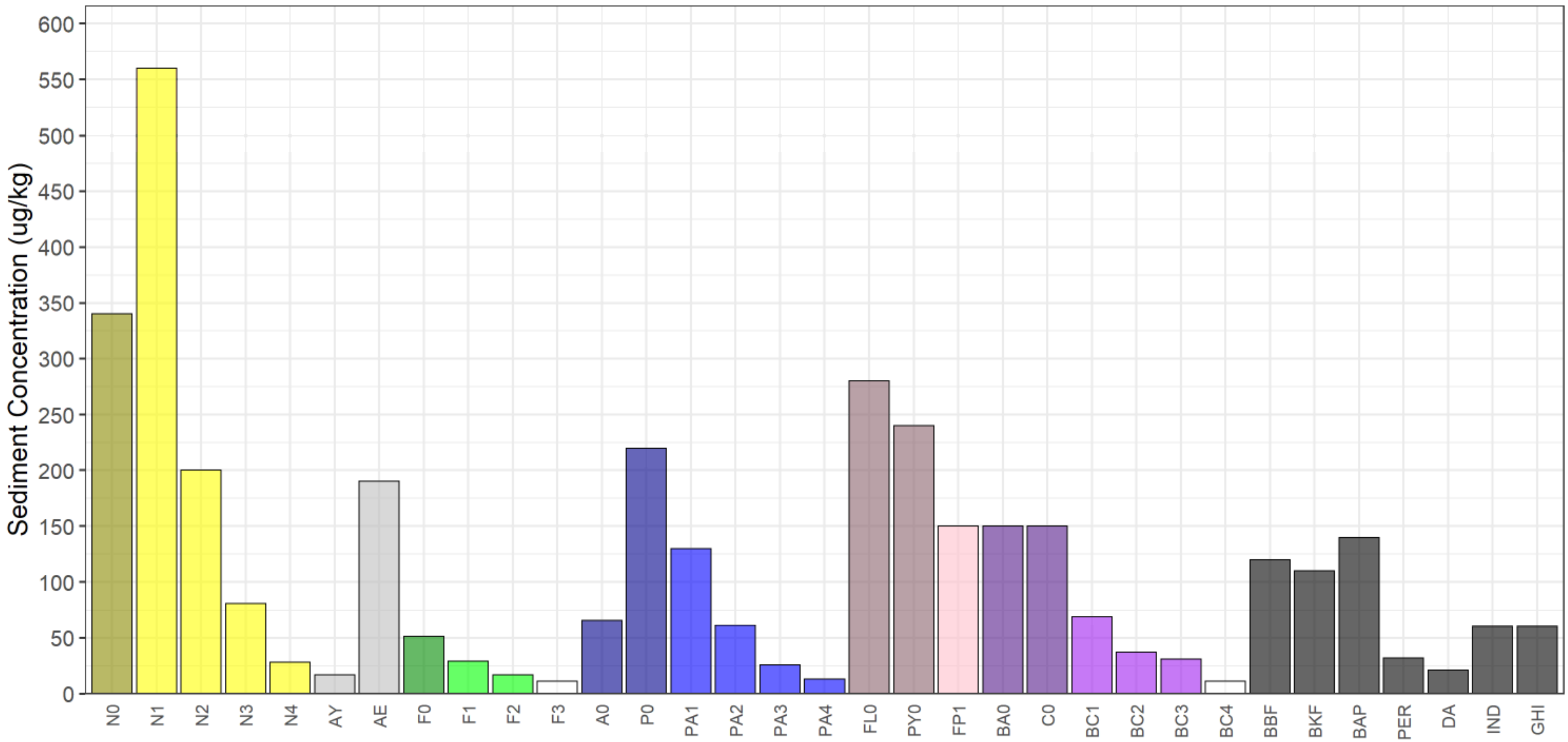
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-26DEP
SAMPLE ID: R3-PDI-SED-26DEP(0-0.4)

ARCADIS

FIGURE
A-29



Legend:

Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-27RR
SAMPLE ID: R3-PDI-SED-27RR(0-0.4)

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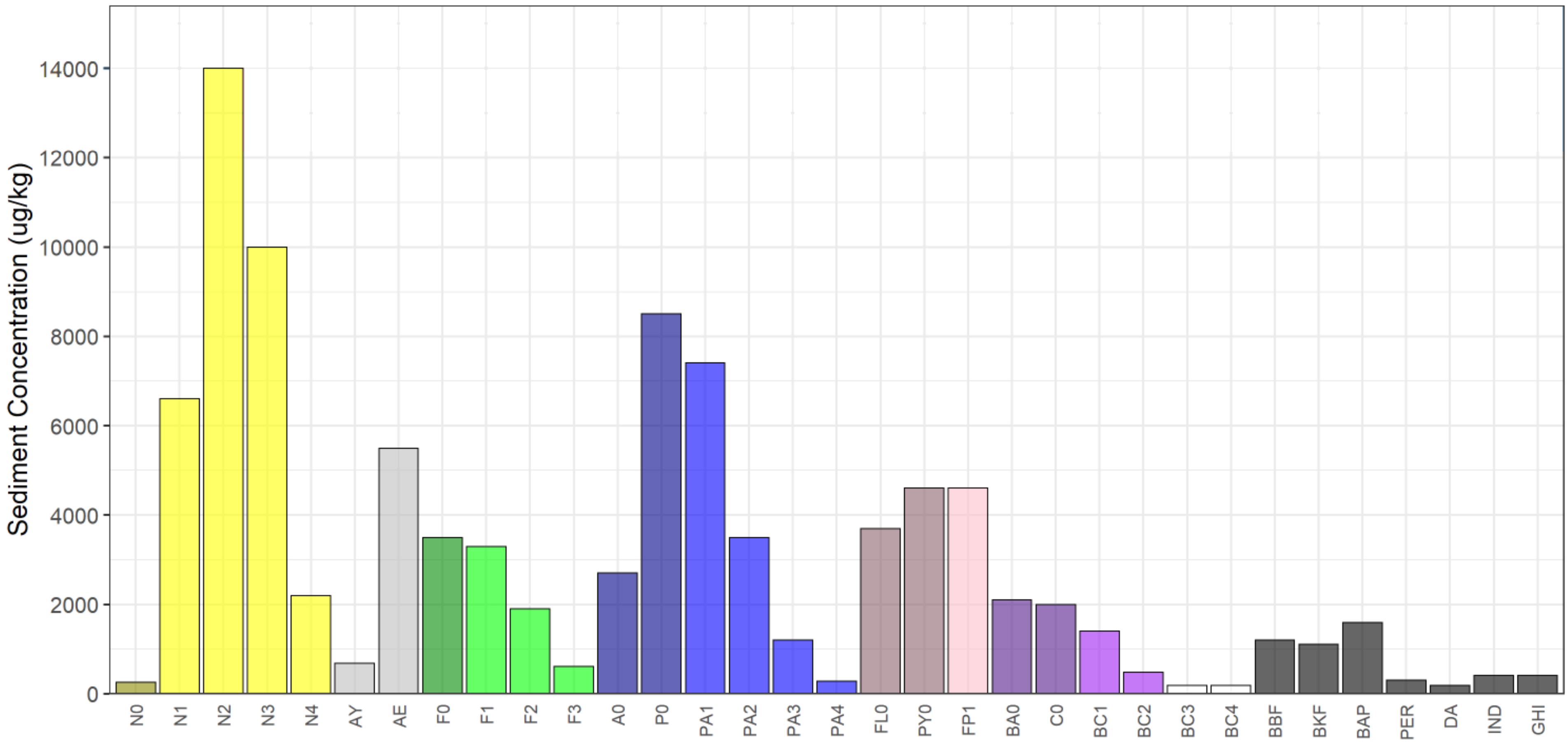
FIGURE
A-30



Legend:

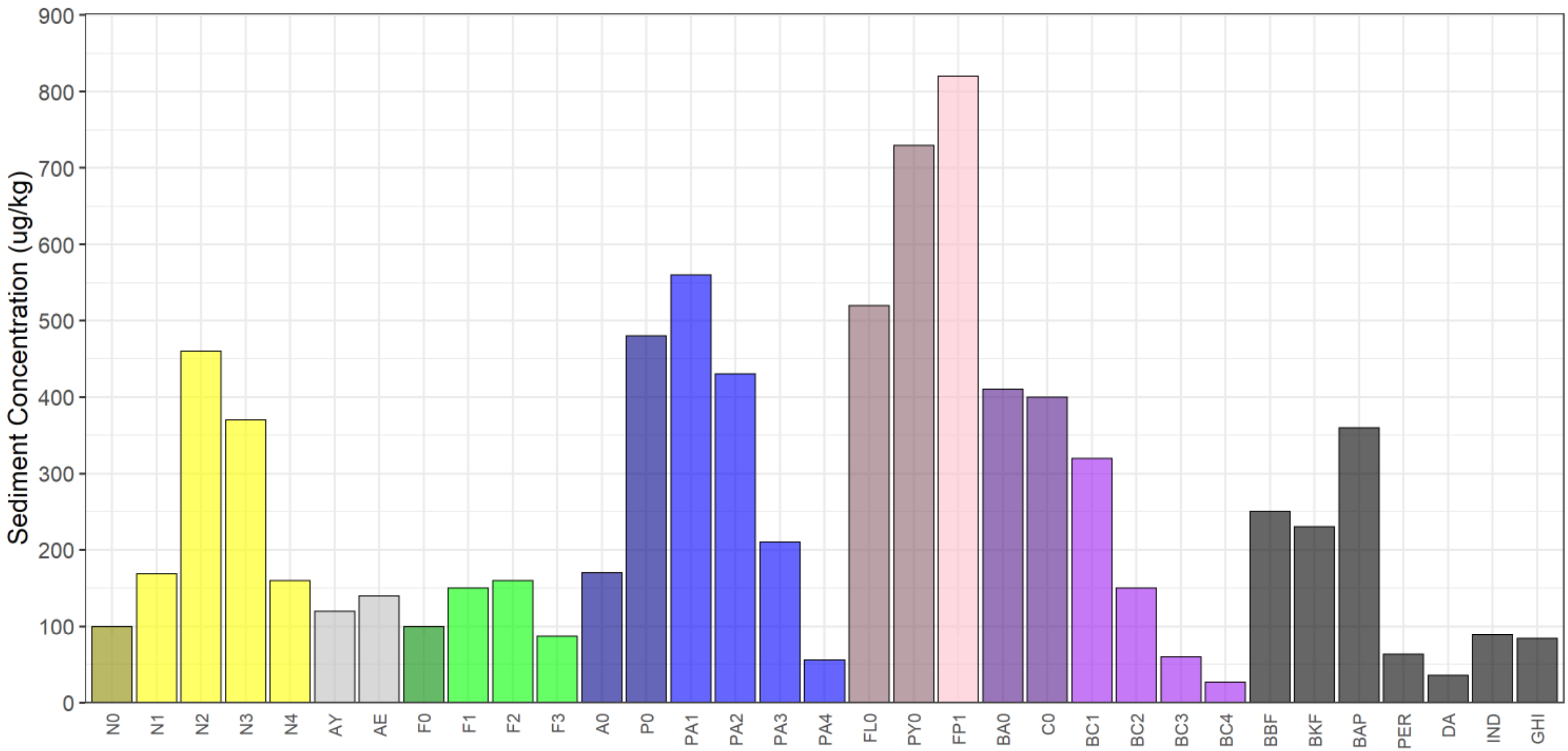
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-28DEP
SAMPLE ID: R3-PDI-SED-28DEP(0-0.8)

ARCADIS

FIGURE
A-31



Legend:

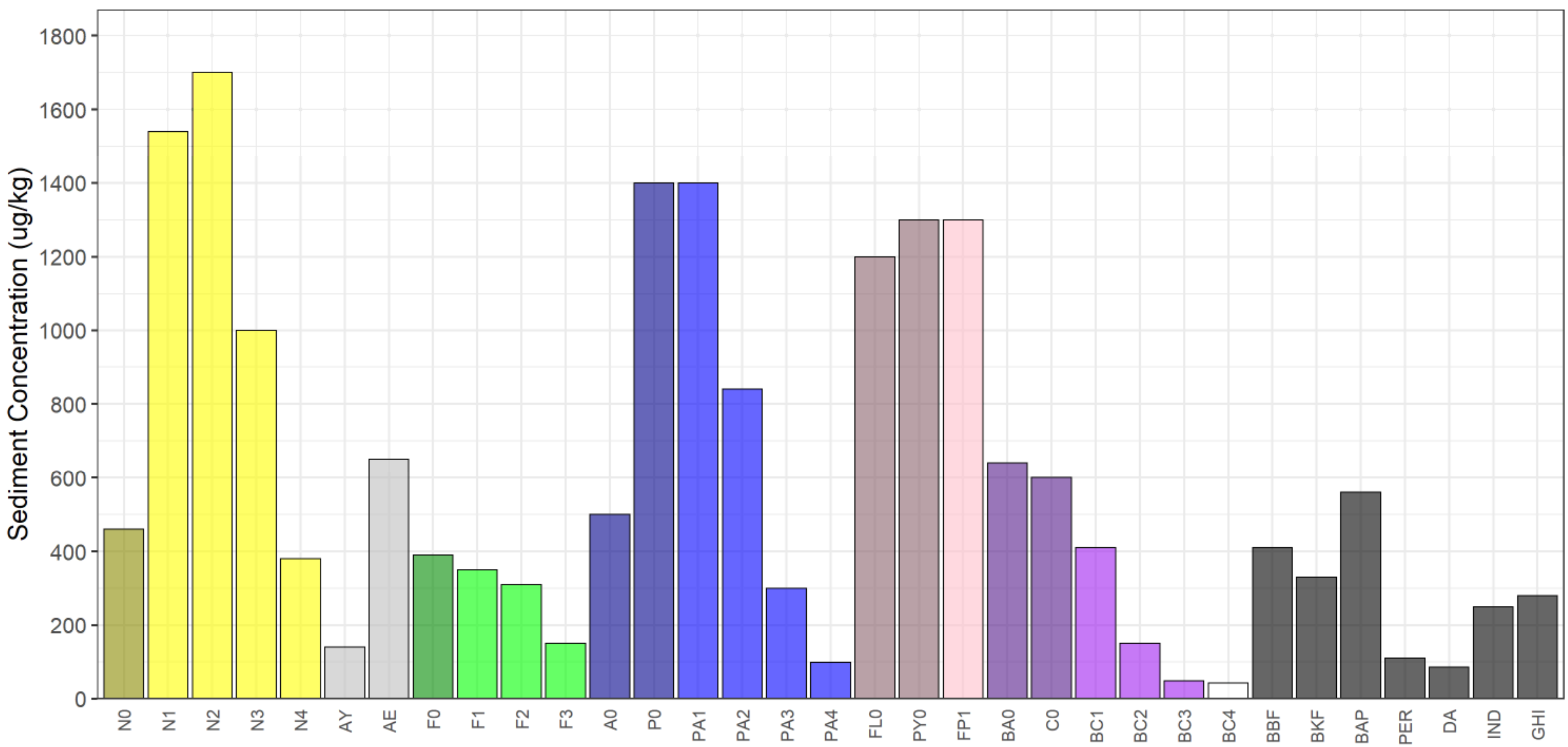
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-29RR
SAMPLE ID: R3-PDI-SED-29RR(0-0.2)

ARCADIS

FIGURE
A-32



Legend:

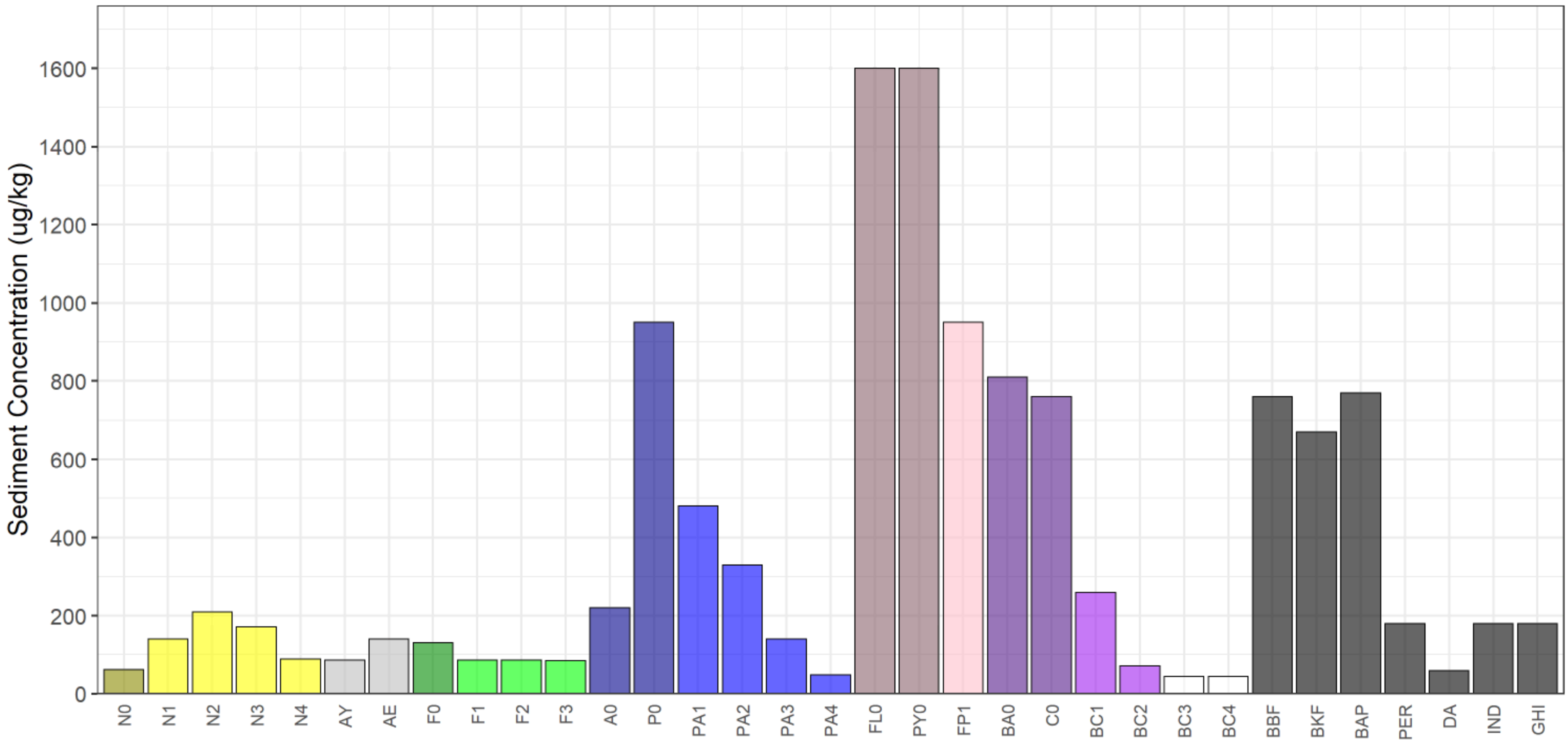
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-30DEP
SAMPLE ID: R3-PDI-SED-30DEP(0-0.6)

ARCADIS

FIGURE
A-33



Legend:

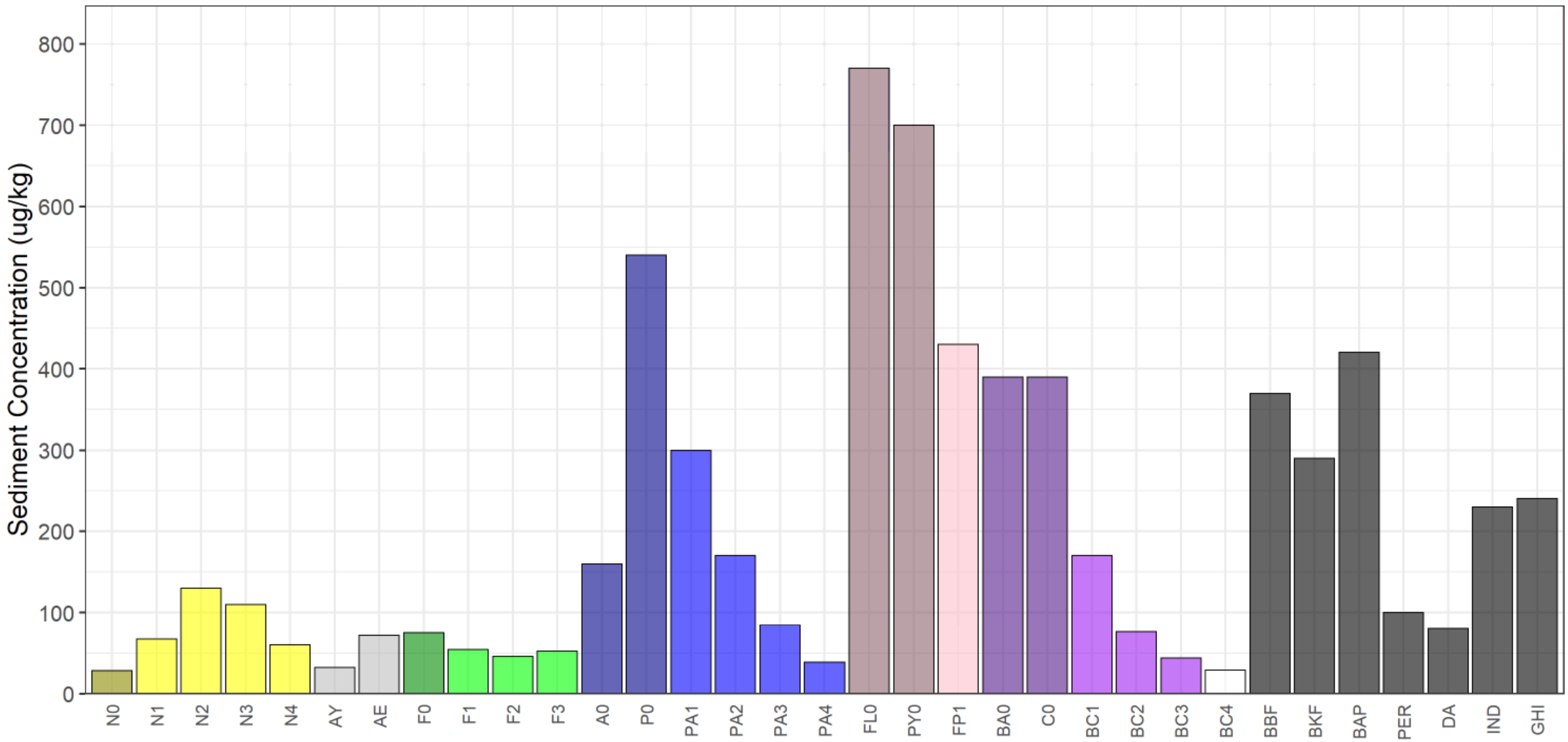
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-31DEP
SAMPLE ID: R3-PDI-SED-31DEP(0-0.6)

ARCADIS

FIGURE
A-34



Legend:

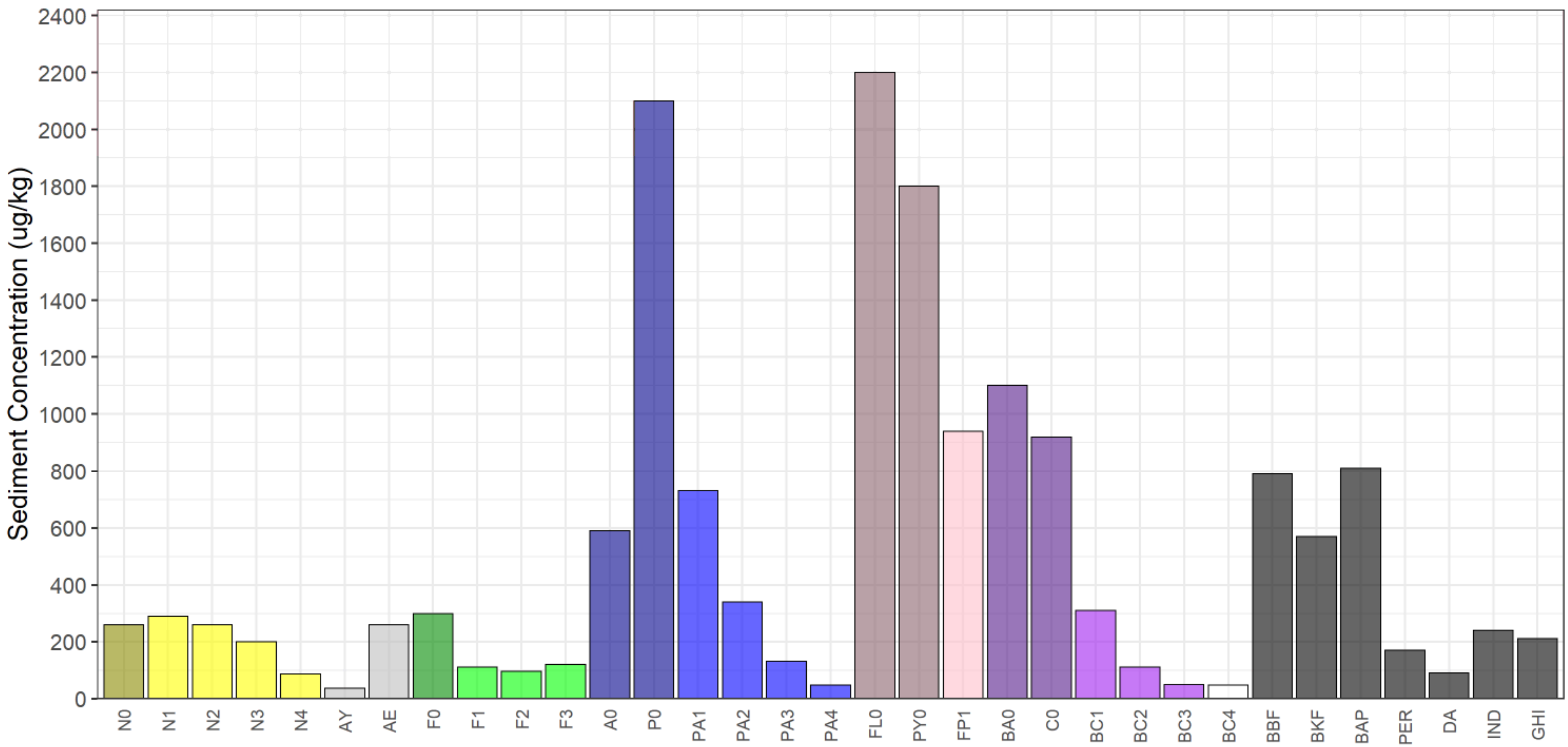
☐ Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-32RR
SAMPLE ID: R3-PDI-SED-32RR(0-0.4)

ARCADIS

FIGURE
A-35



Legend:

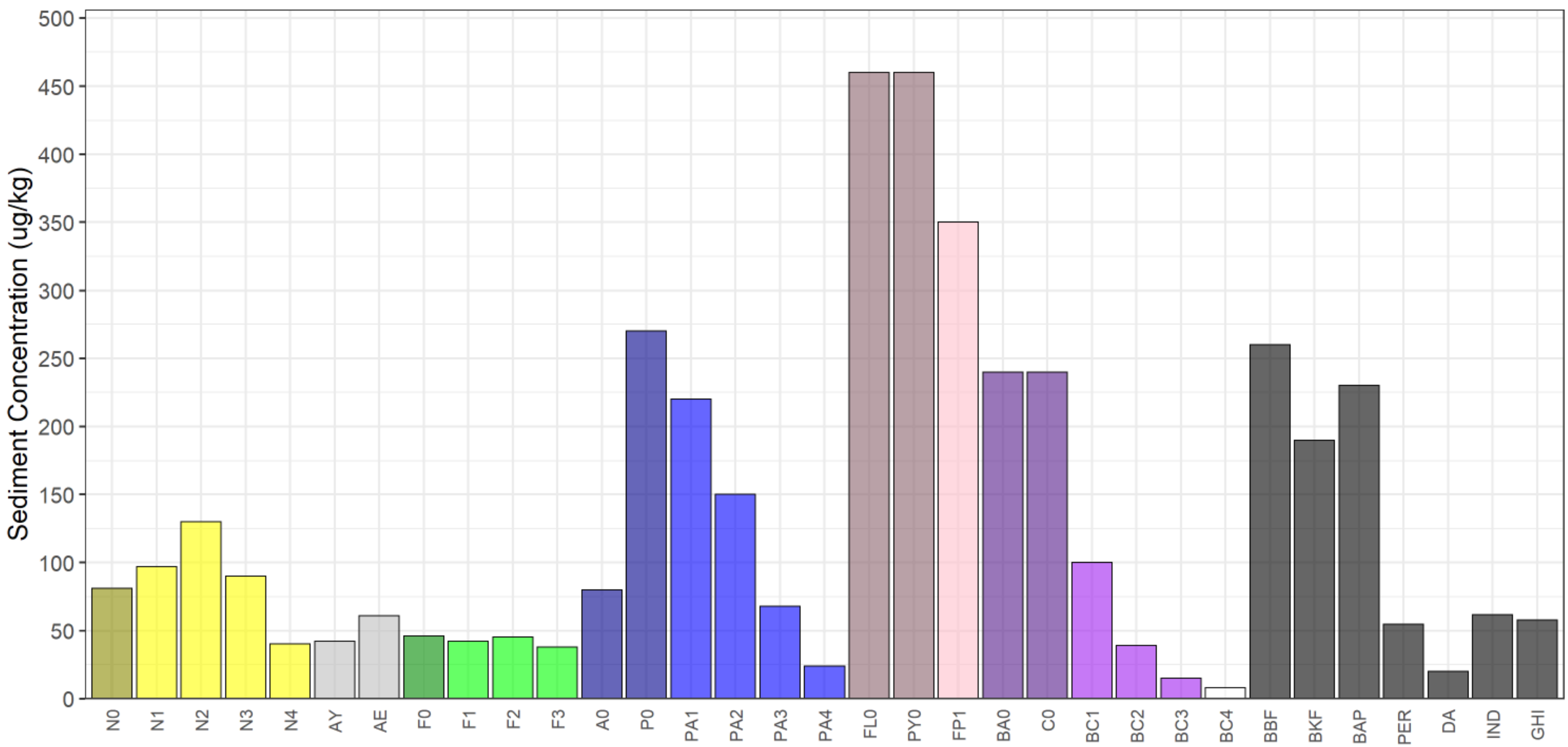
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-33RR
SAMPLE ID: R3-PDI-SED-33RR(0-0.3)

ARCADIS

FIGURE
A-36



Legend:

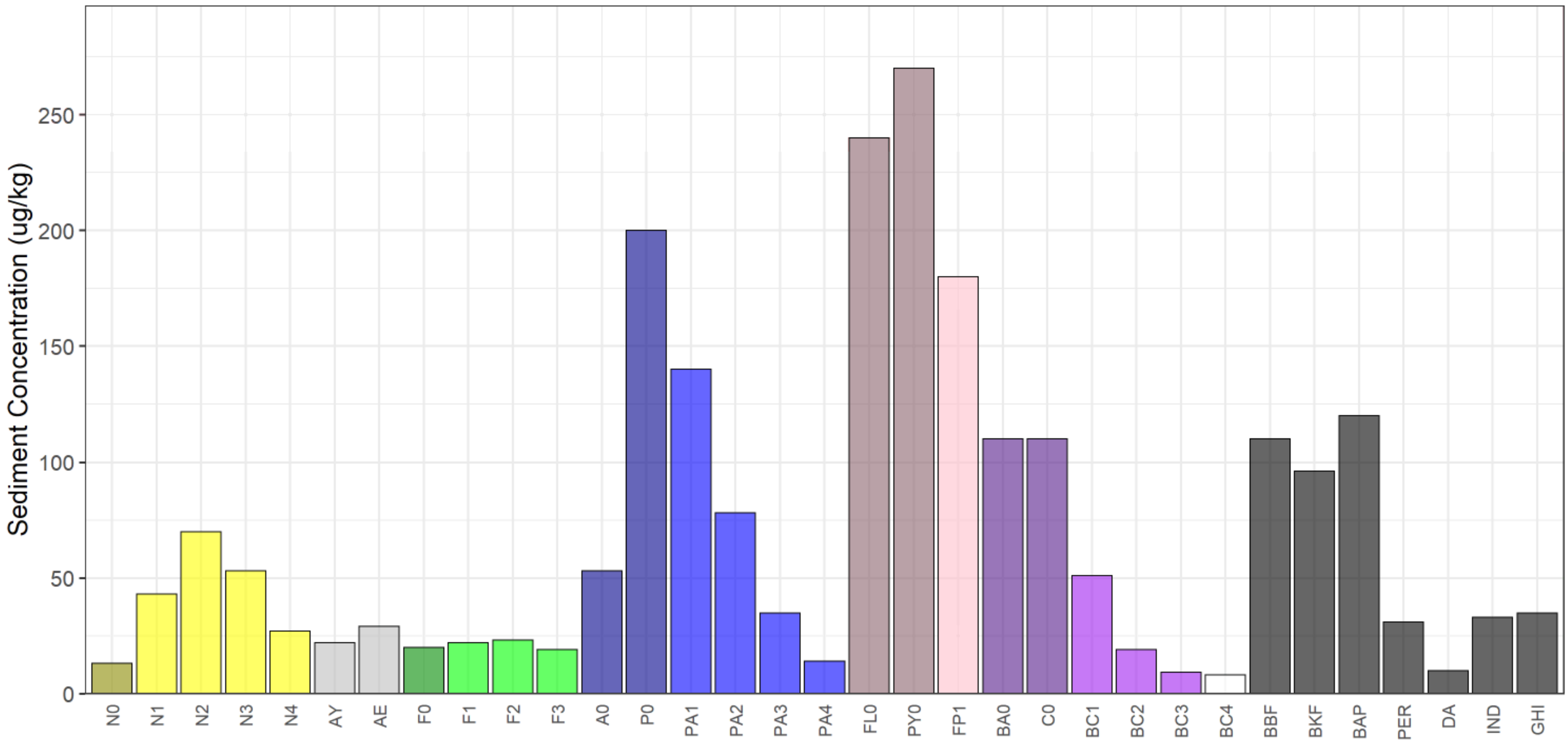
☐ Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-34DEP
SAMPLE ID: R3-PDI-SED-34DEP(0-0.4)

ARCADIS

FIGURE
A-37



Legend:

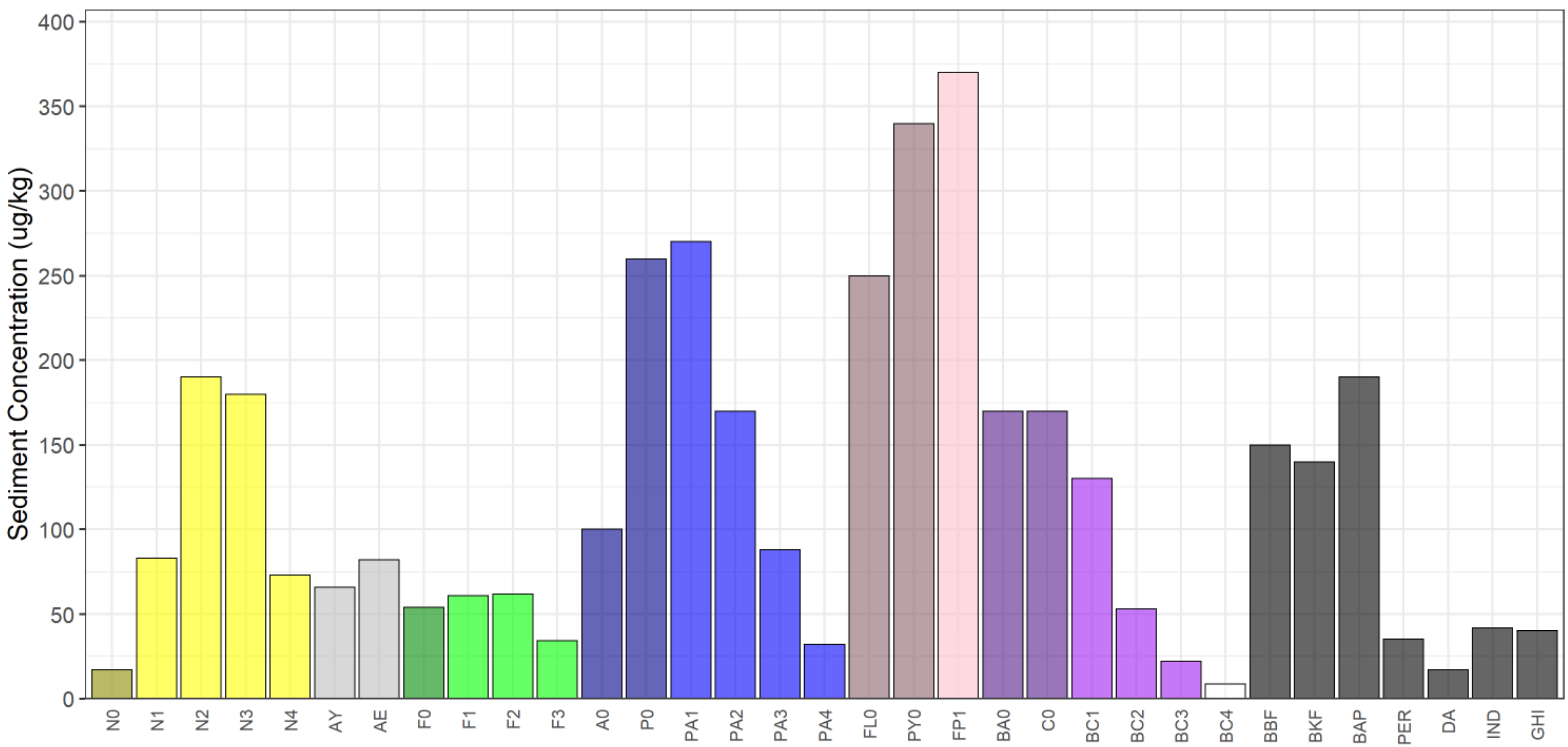
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-35RR
SAMPLE ID: R3-PDI-SED-35RR(0-0.2)

ARCADIS

FIGURE
A-38



Legend:

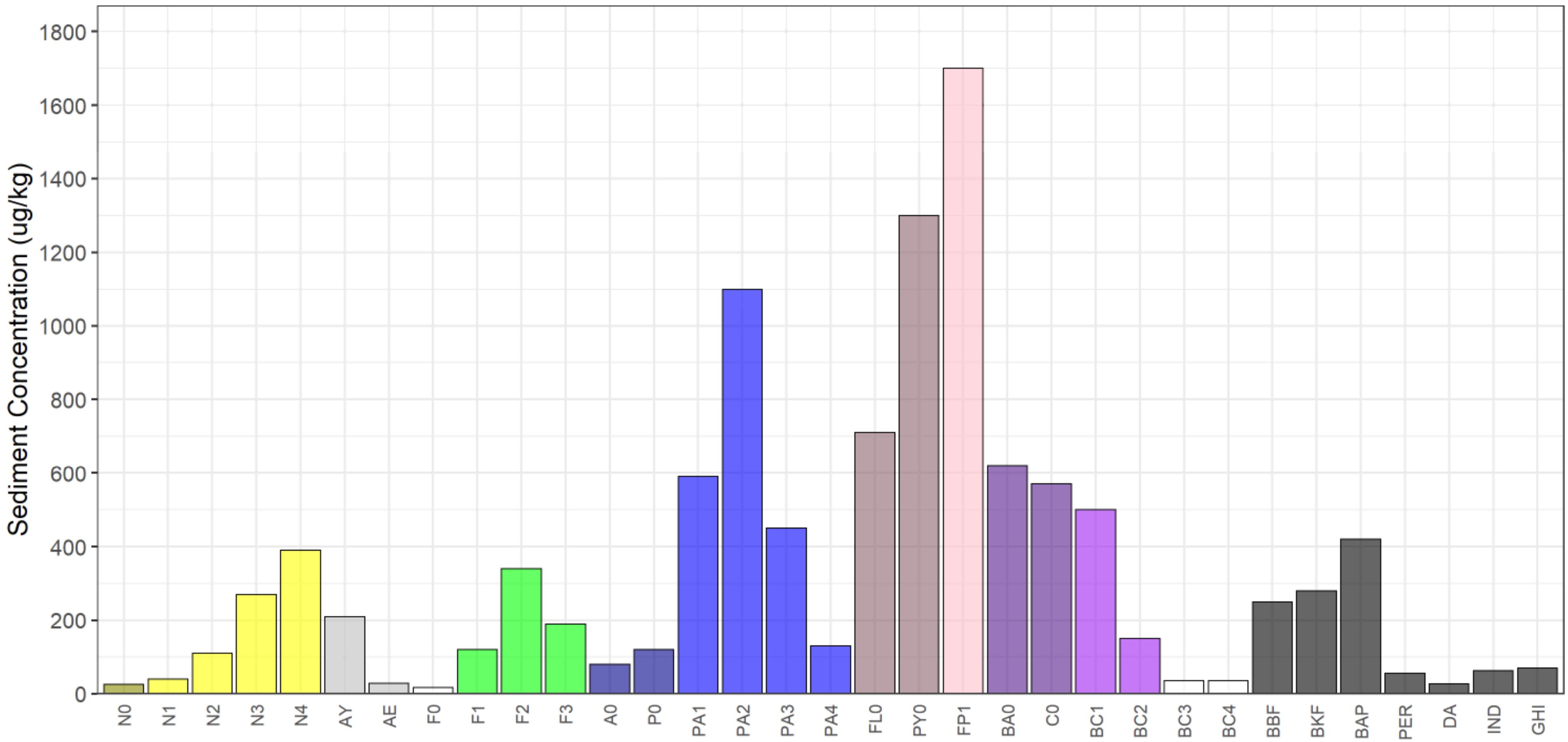
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-36RR
SAMPLE ID: R3-PDI-SED-36RR(0-0.3)

ARCADIS

FIGURE
A-39



Legend:

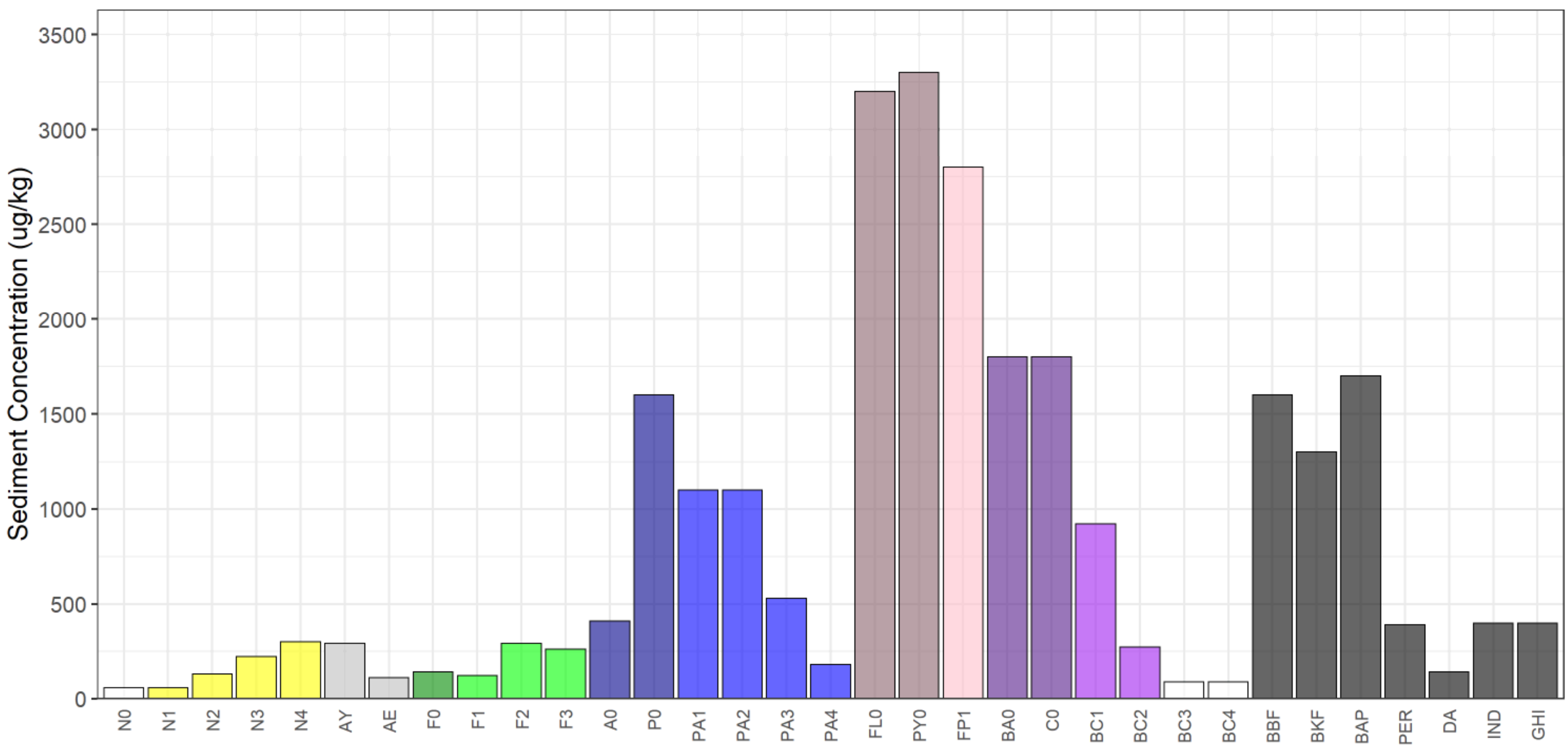
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-37RR
SAMPLE ID: R3-PDI-SED-37RR(0-0.3)

ARCADIS

FIGURE
A-40



Legend:

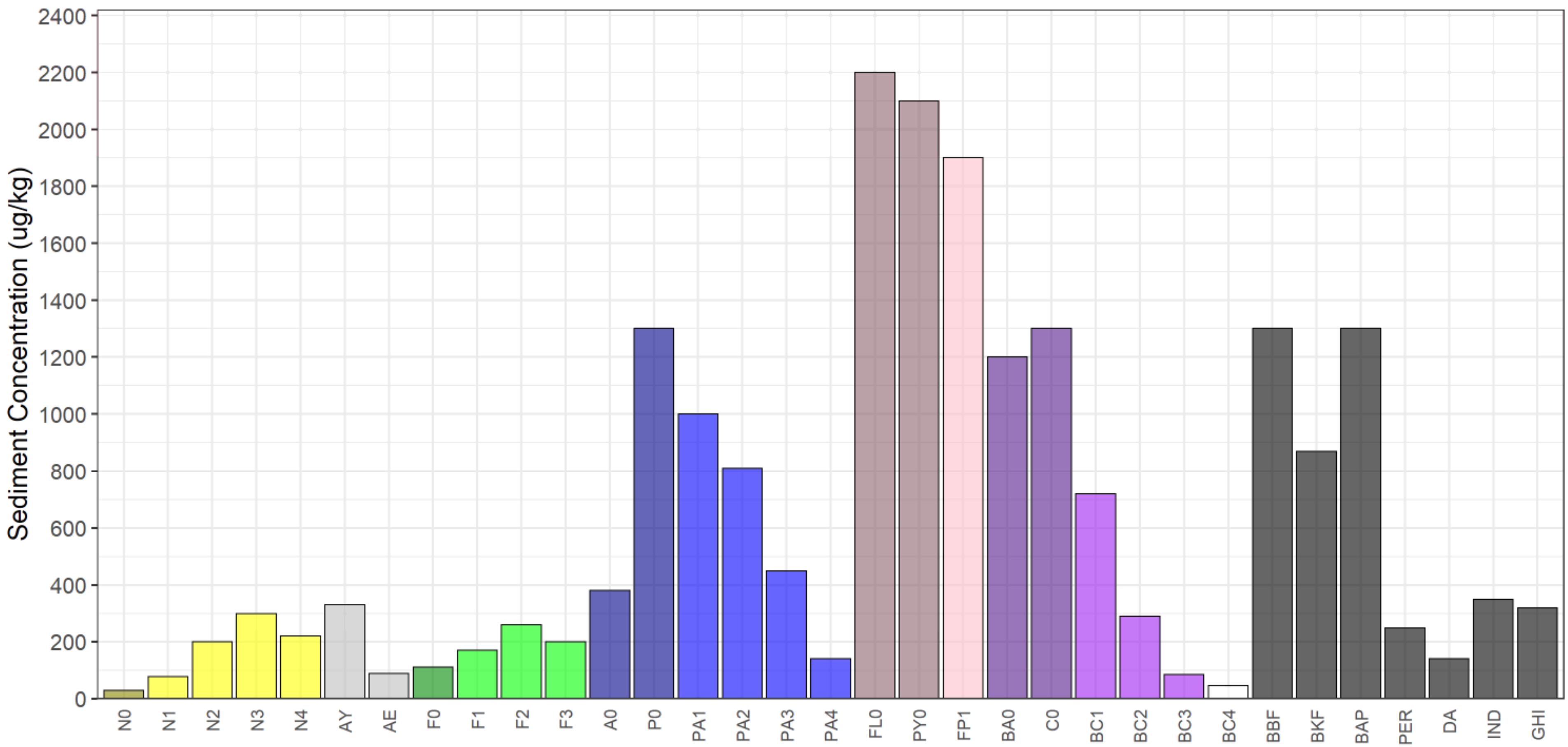
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-38DEP
SAMPLE ID: R3-PDI-SED-38DEP(0-0.6)

ARCADIS

FIGURE
A-41



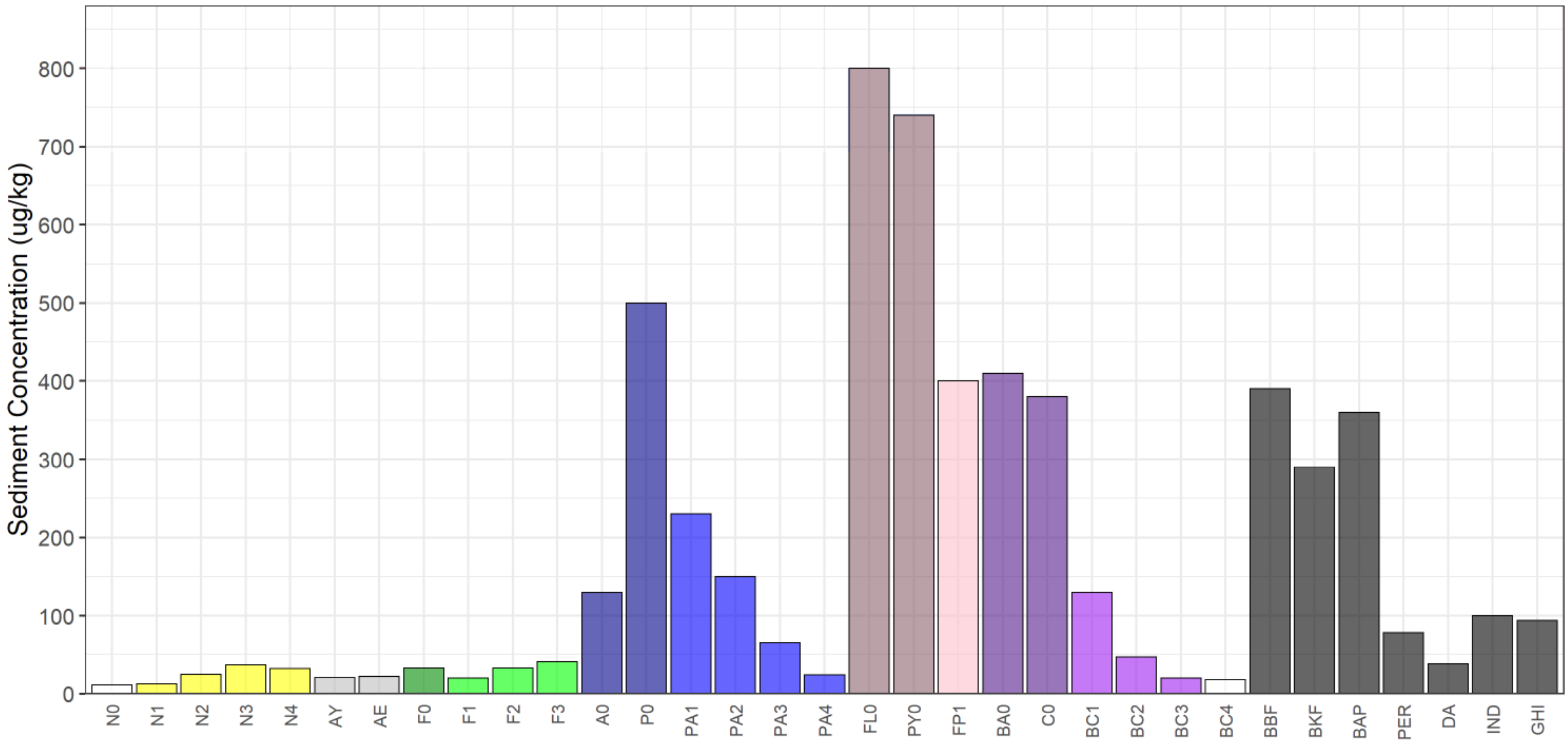
Legend:

Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-38DEP
SAMPLE ID: R3-PDI-SED-38DEP(0-0.6)-FD

FIGURE
A-42



Legend:

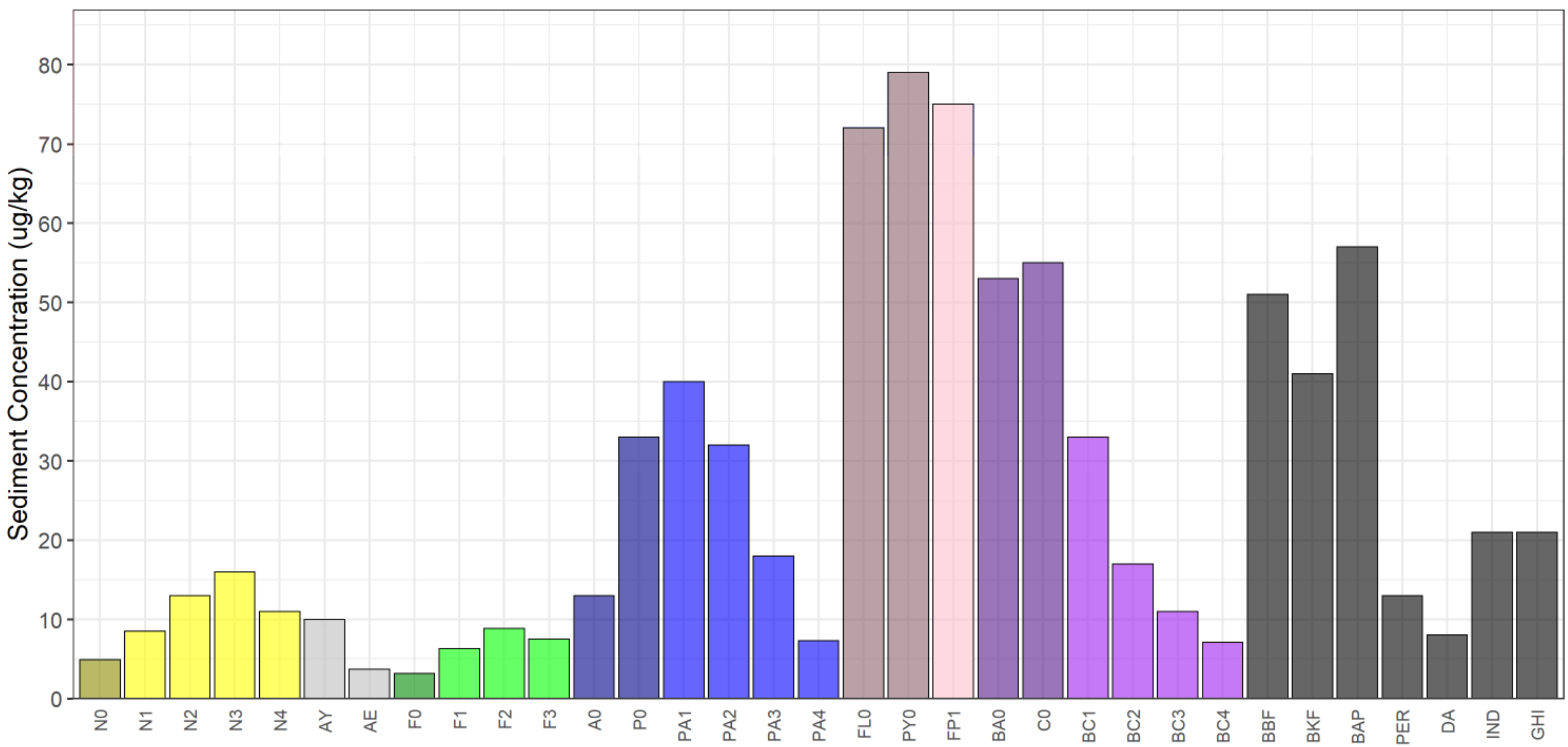
☐ Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R3-PDI-SED-39RR
SAMPLE ID: R3-PDI-SED-39RR(0-0.3)

ARCADIS

FIGURE
A-43



Legend:

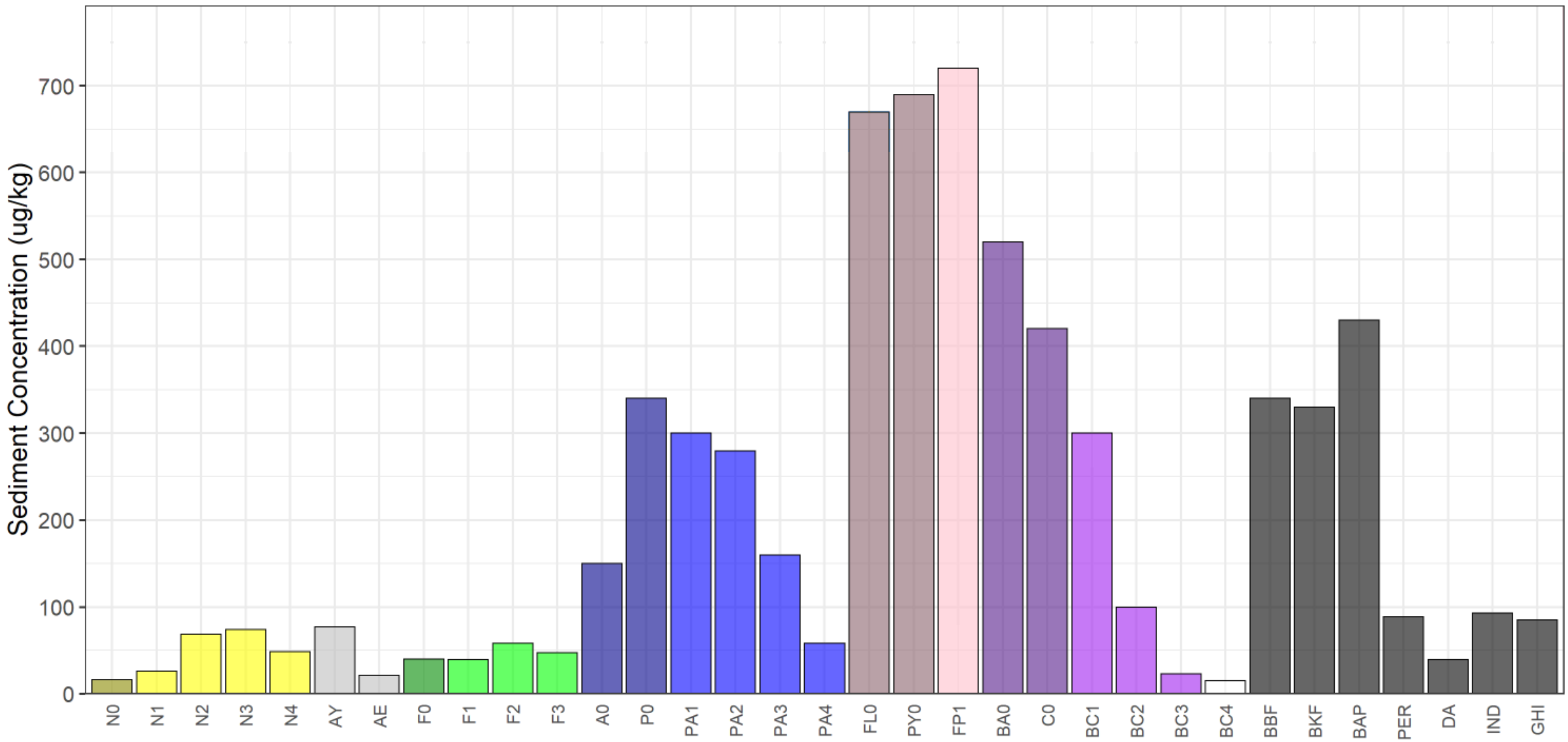
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-40RR
SAMPLE ID: R4-PDI-SED-40RR(0-0.3)

ARCADIS

FIGURE
A-44



Legend:

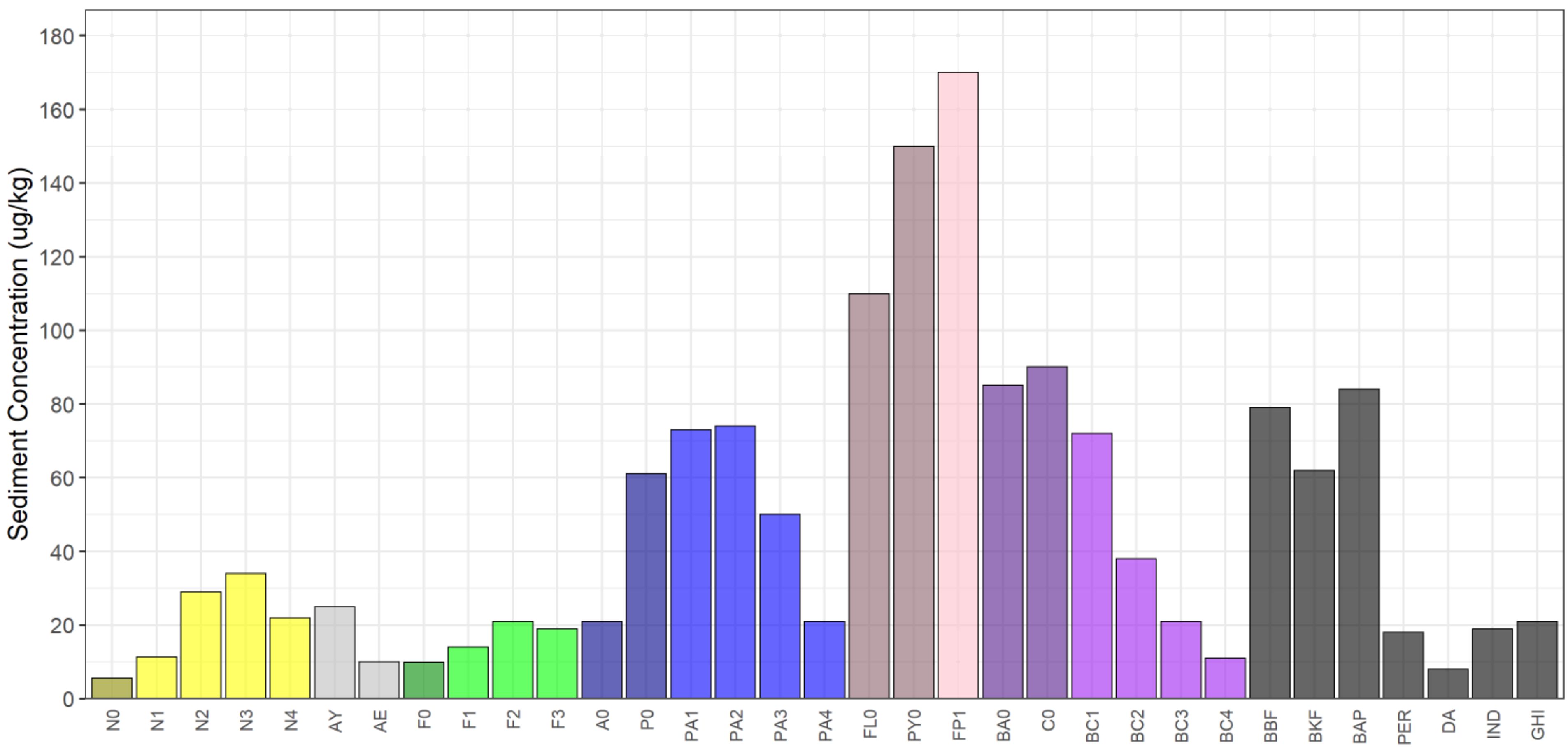
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-41RR
SAMPLE ID: R4-PDI-SED-41RR(0-0.2)

ARCADIS

FIGURE
A-45



Legend:

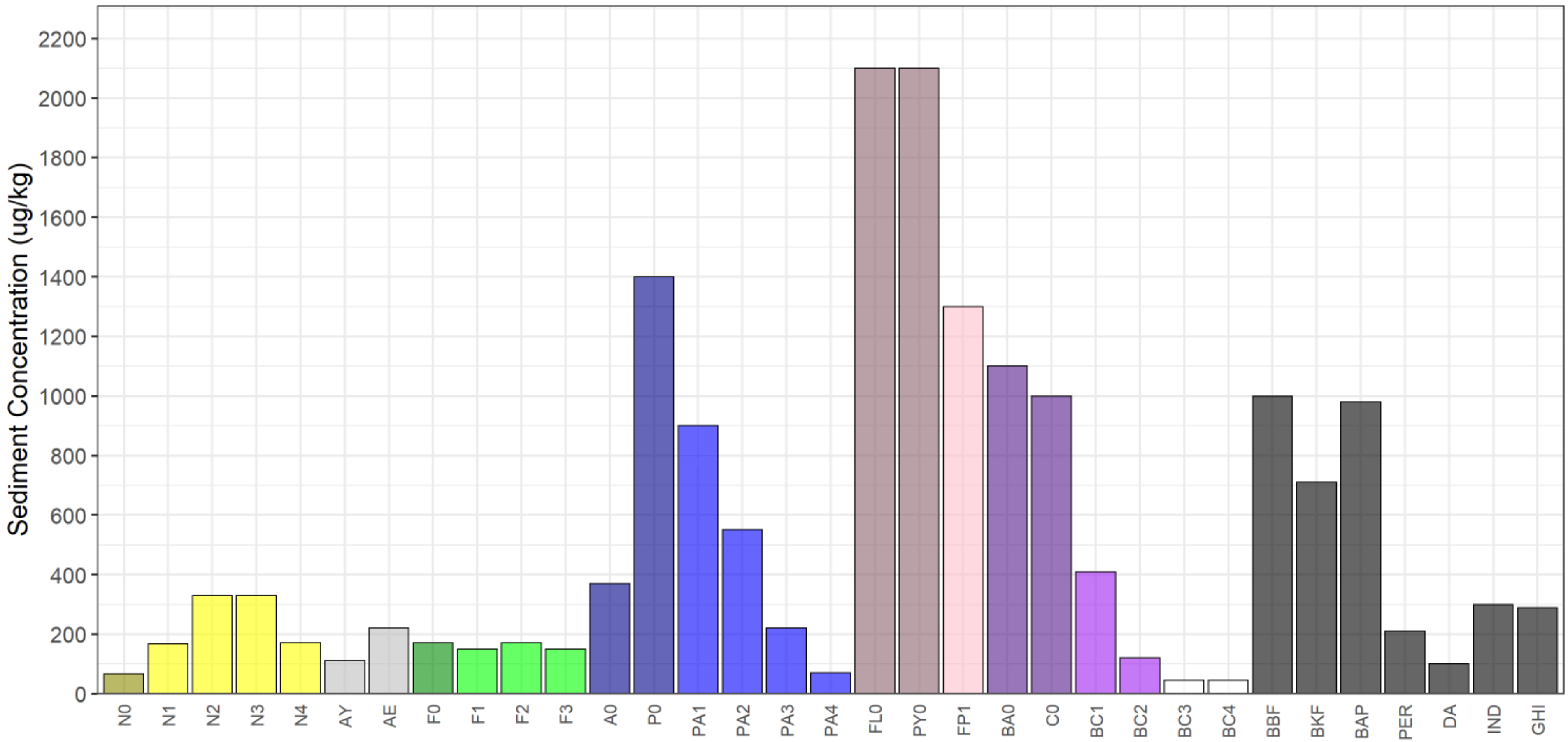
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-42DEP
SAMPLE ID: R4-PDI-SED-42DEP(0-0.2)

ARCADIS

FIGURE
A-46



Legend:

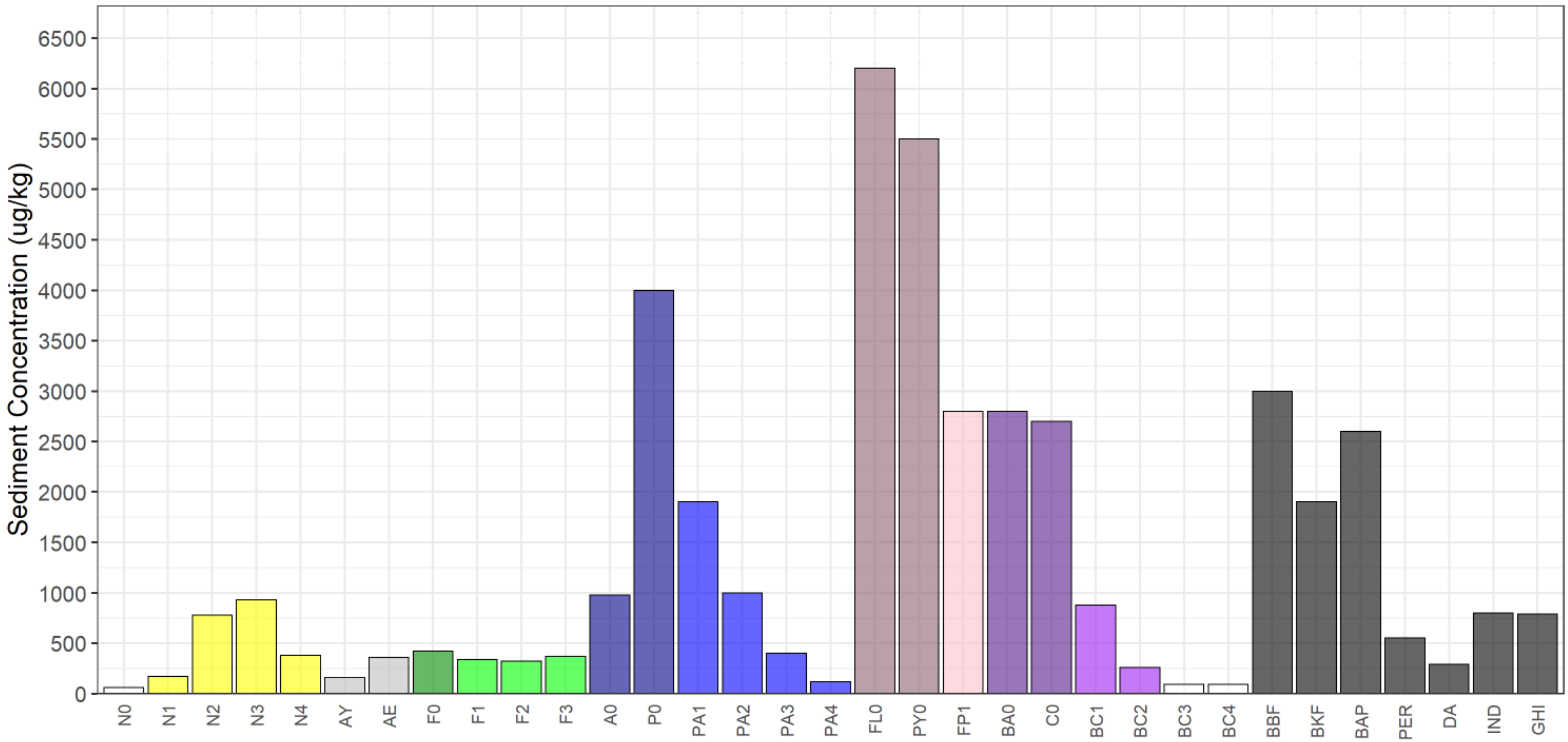
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-43DEP
SAMPLE ID: R4-PDI-SED-43DEP(0-1)

ARCADIS

FIGURE
A-47



Legend:

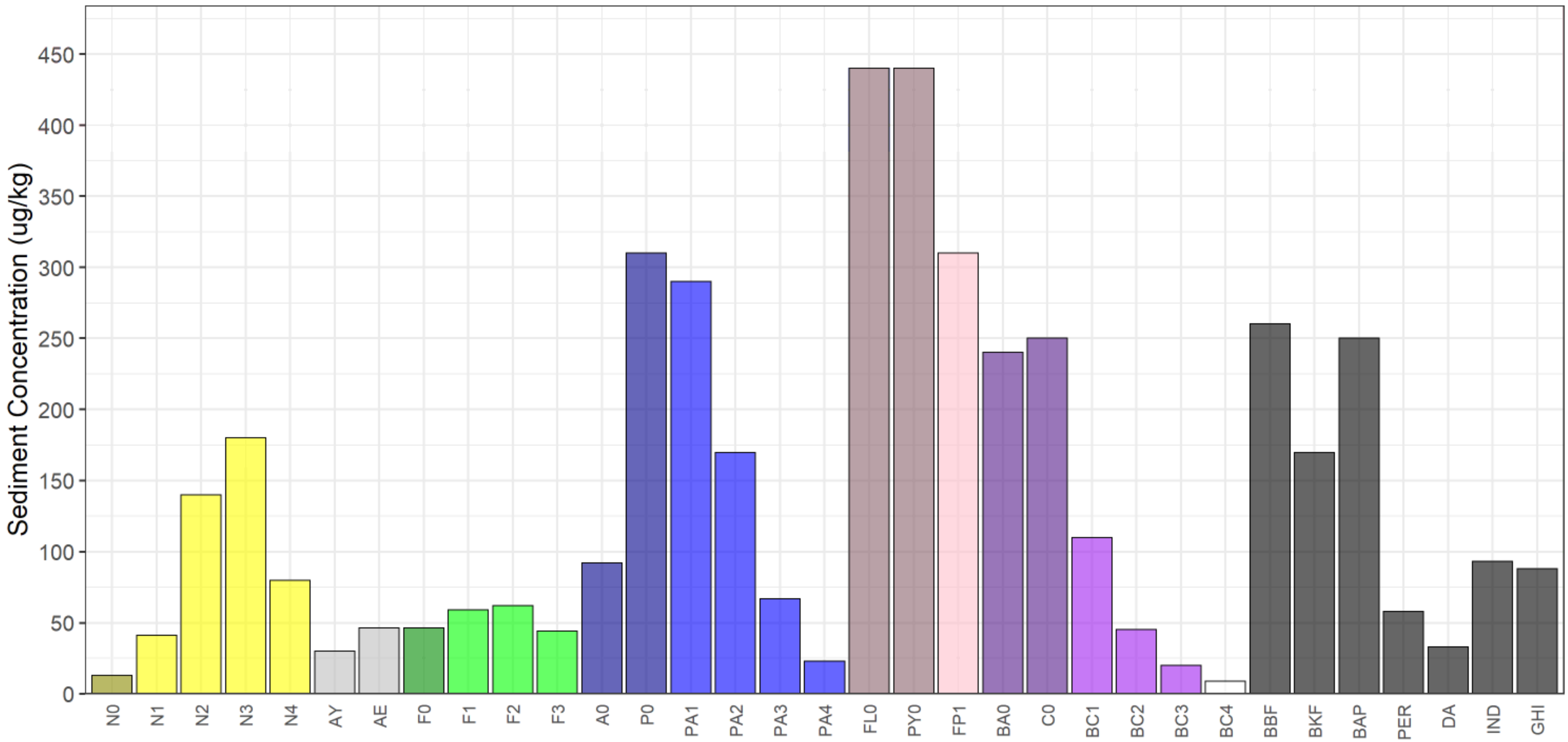
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-43DEP
SAMPLE ID: R4-PDI-SED-43DEP(1-1.2)

ARCADIS

FIGURE
A-48



Legend:

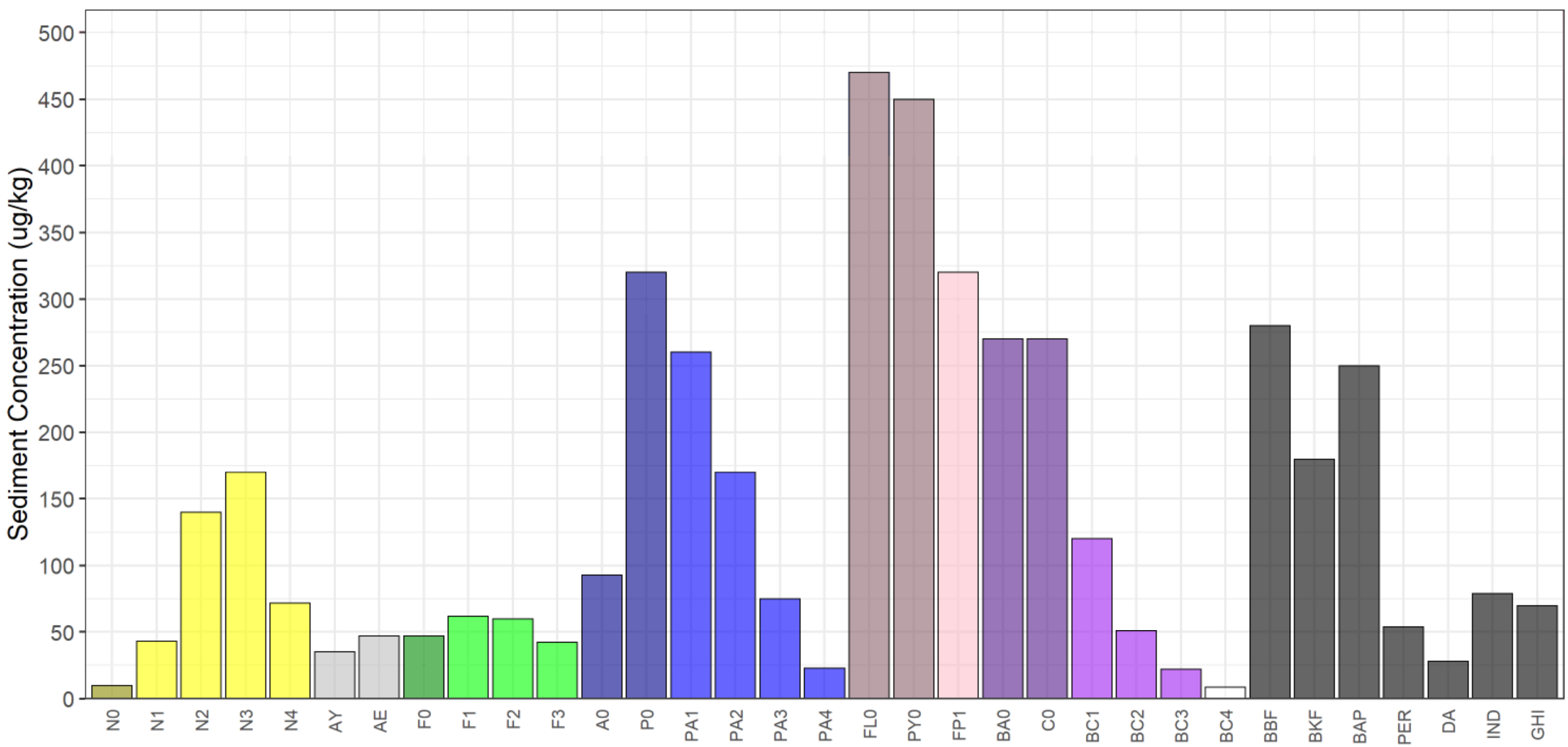
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-44DEP
SAMPLE ID: R4-PDI-SED-44DEP(0-1)

ARCADIS

FIGURE
A-49



Legend:

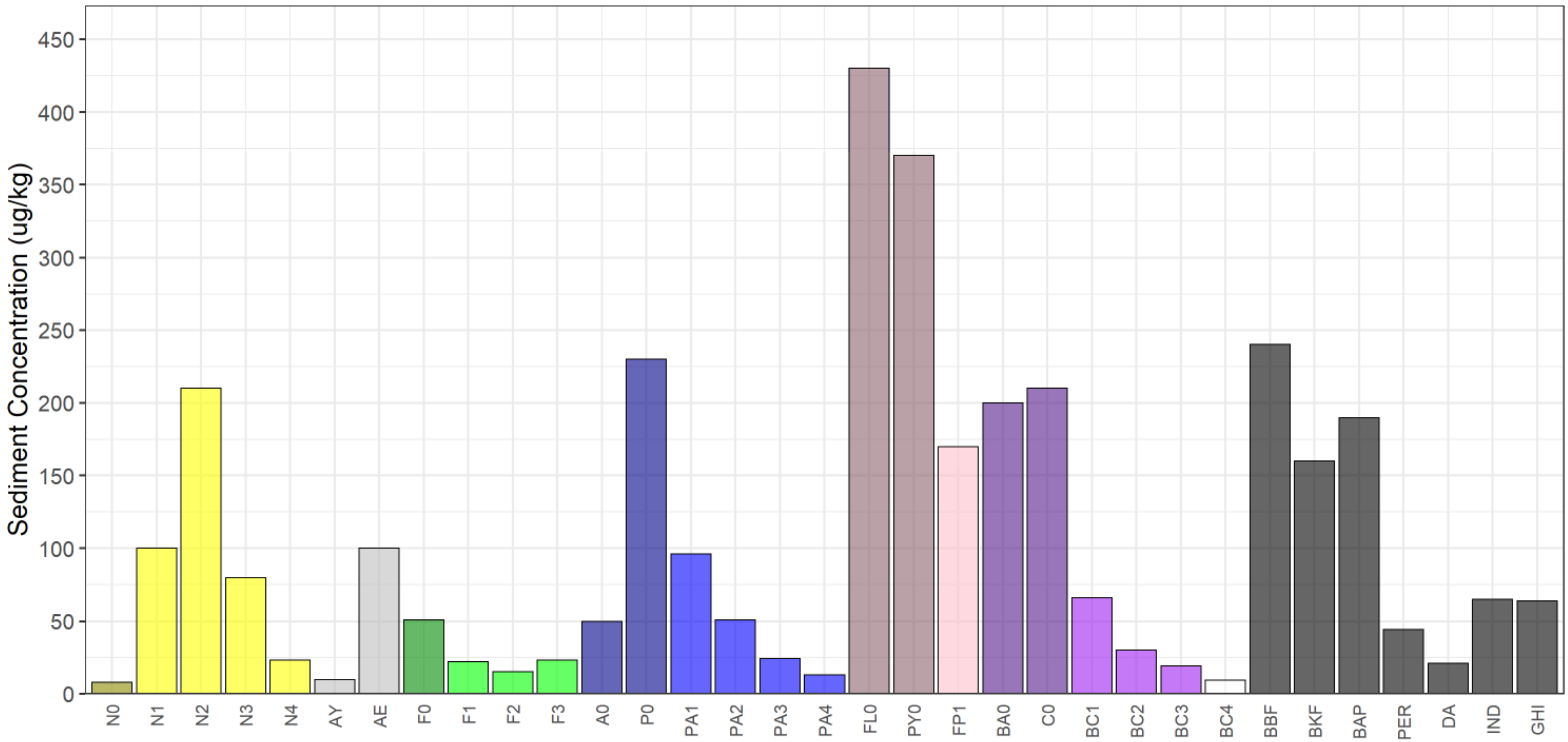
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-44DEP
SAMPLE ID: R4-PDI-SED-44DEP(0-1)-FD

ARCADIS

FIGURE
A-50



Legend:

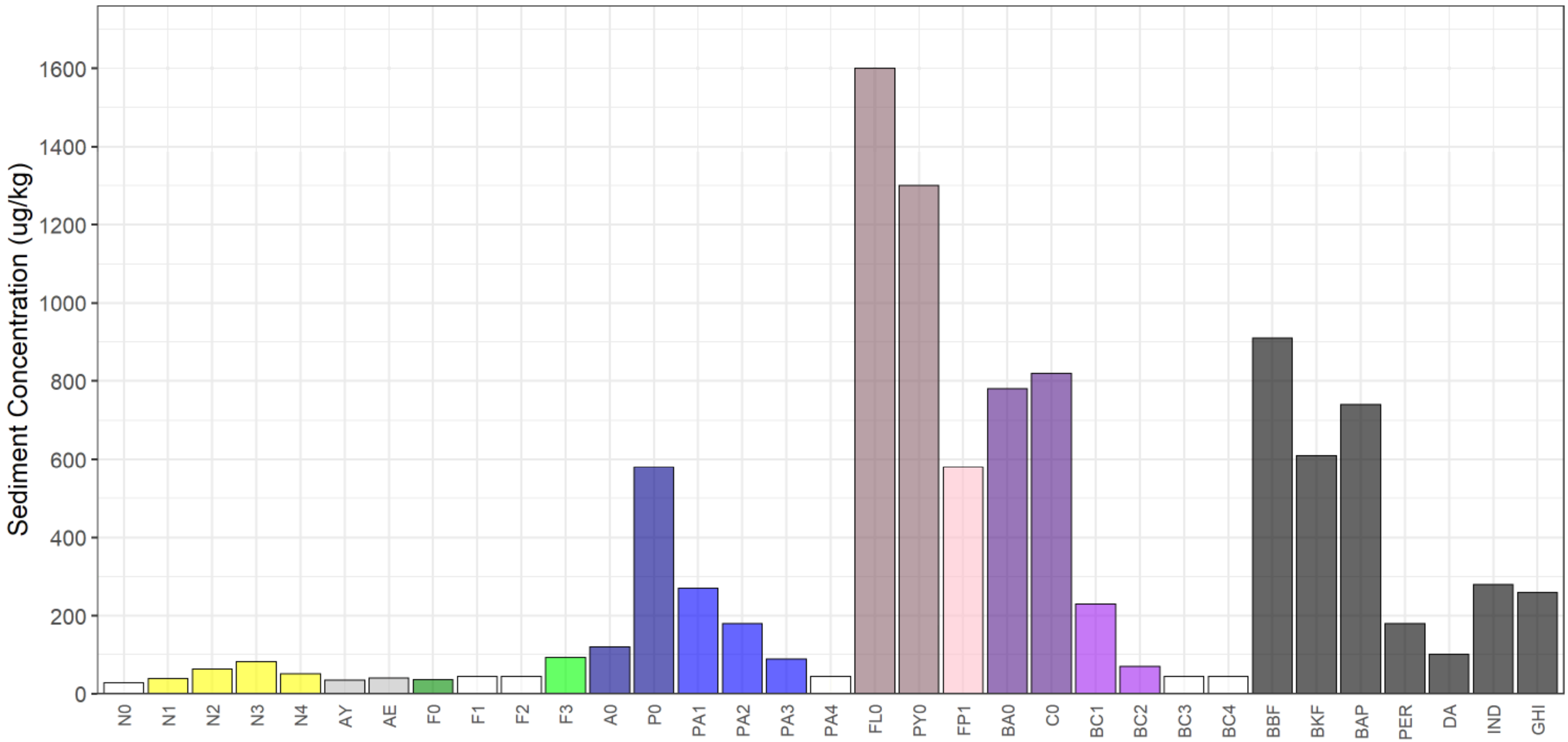
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-44DEP
SAMPLE ID: R4-PDI-SED-44DEP(1-1.4)

ARCADIS

FIGURE
A-51



Legend:

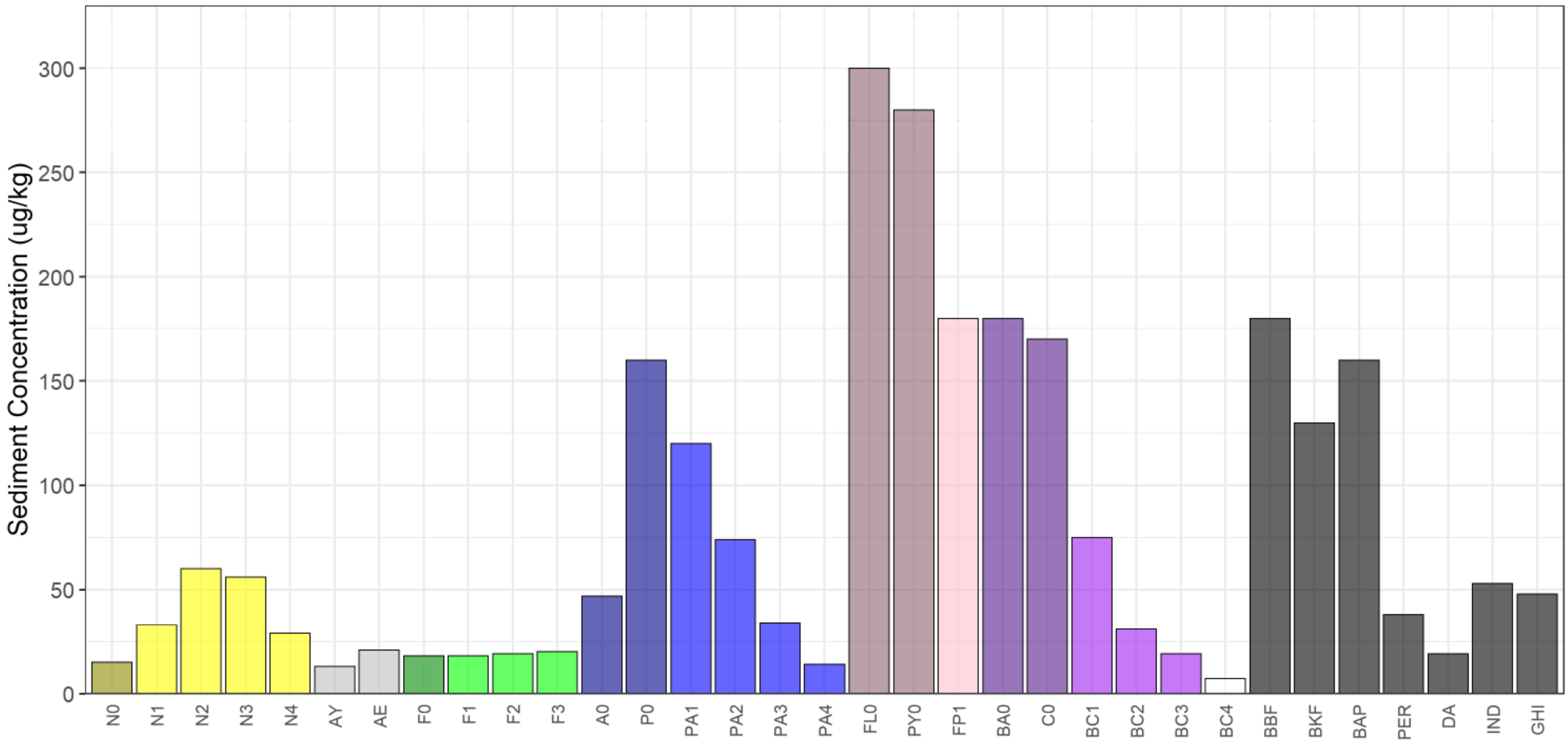
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-45RR
SAMPLE ID: R4-PDI-SED-45RR(0-0.2)

ARCADIS

FIGURE
A-52



Legend:

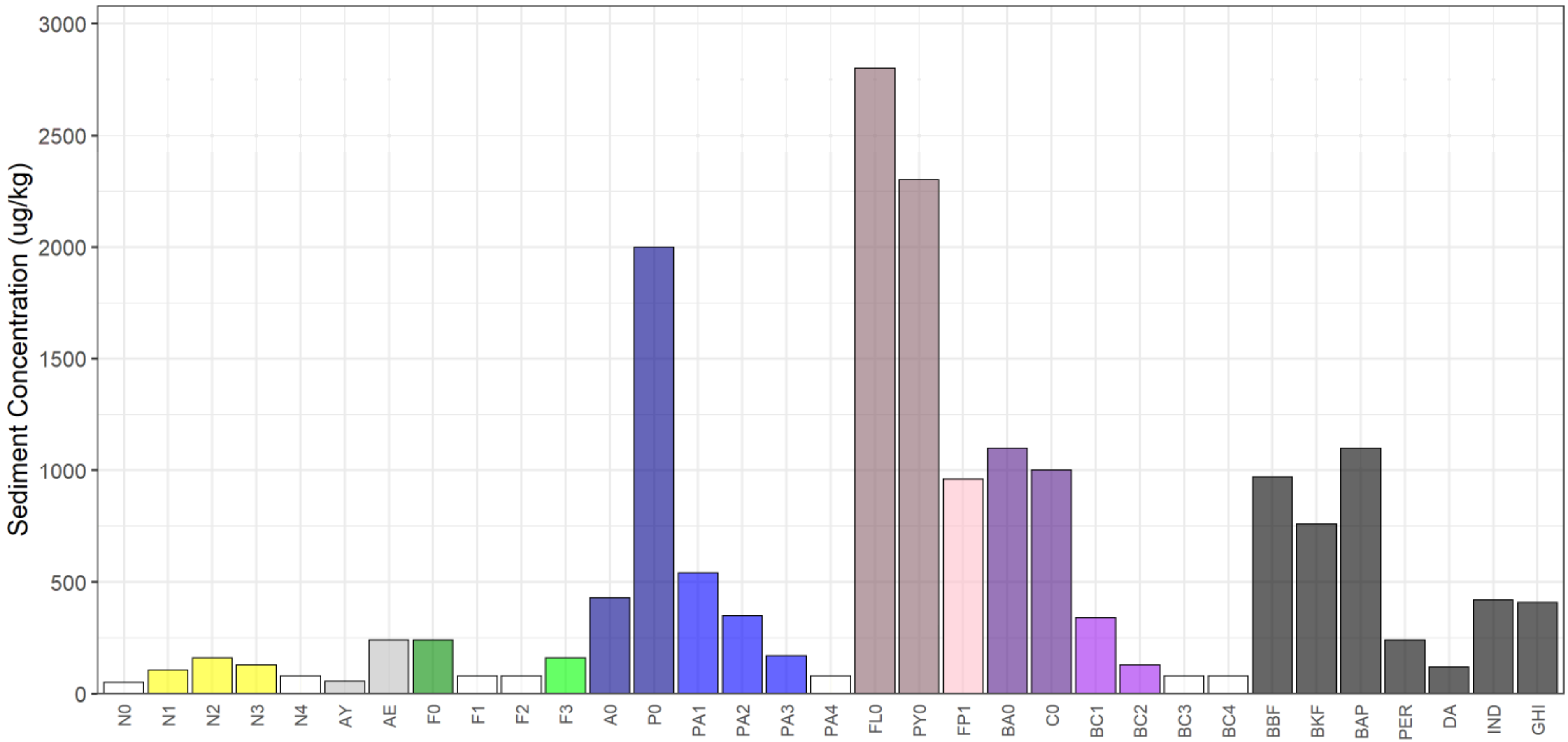
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-46RR
SAMPLE ID: R4-PDI-SED-46RR(0-0.2)

ARCADIS

FIGURE
A-53



Legend:

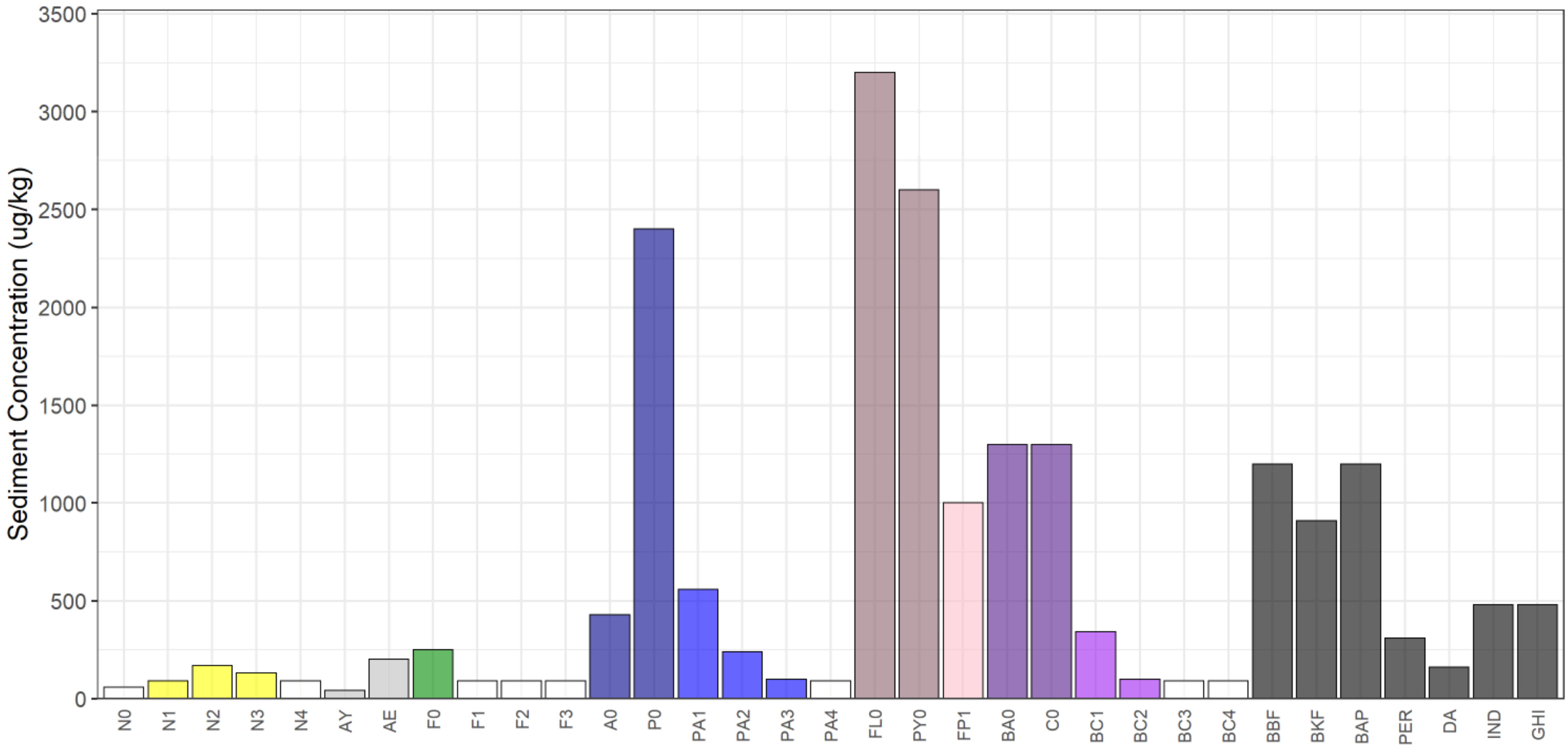
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-47RR
SAMPLE ID: R4-PDI-SED-47RR(0-0.2)

ARCADIS

FIGURE
A-54



Legend:

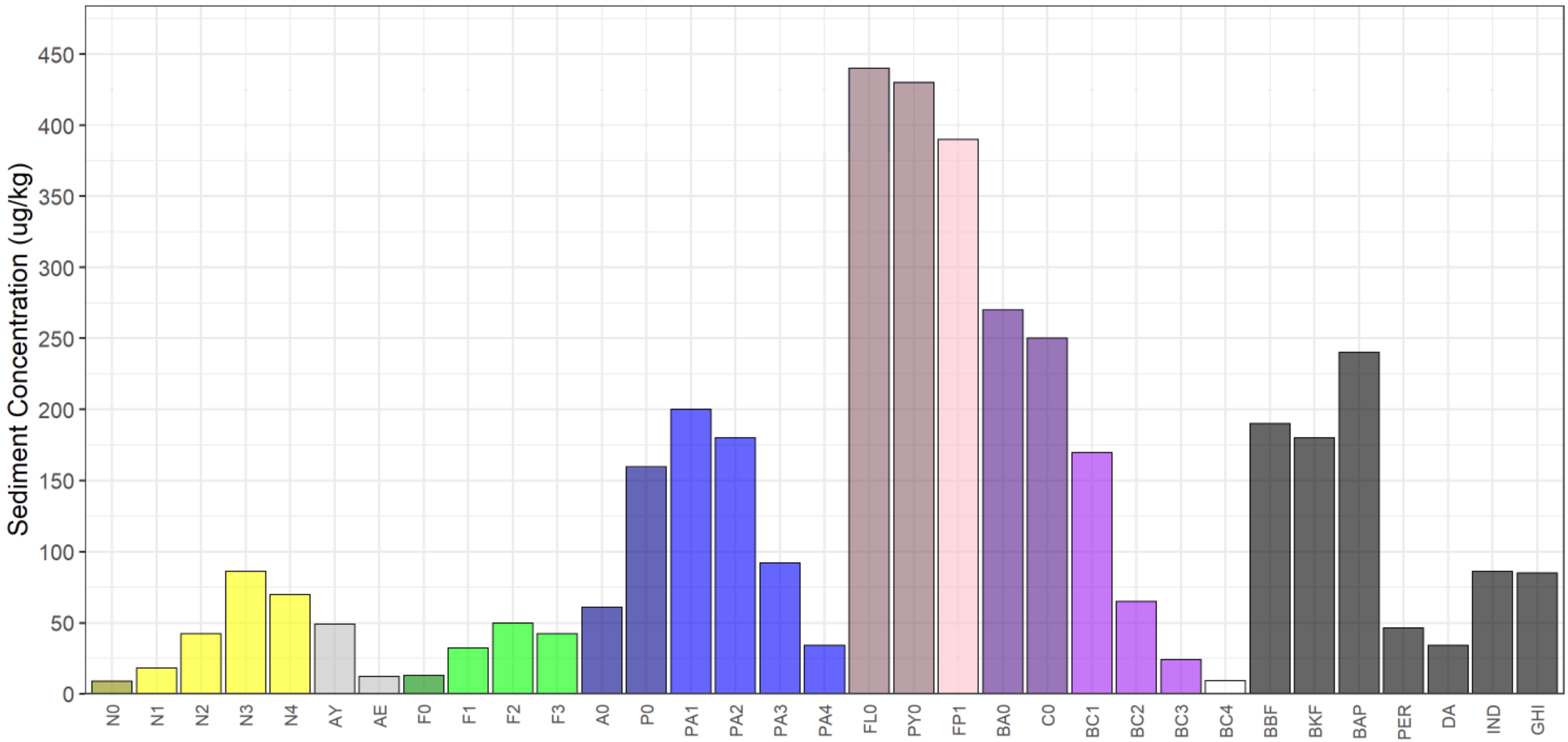
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-48RR
SAMPLE ID: R4-PDI-SED-48RR(0-0.3)

ARCADIS

FIGURE
A-55



Legend:

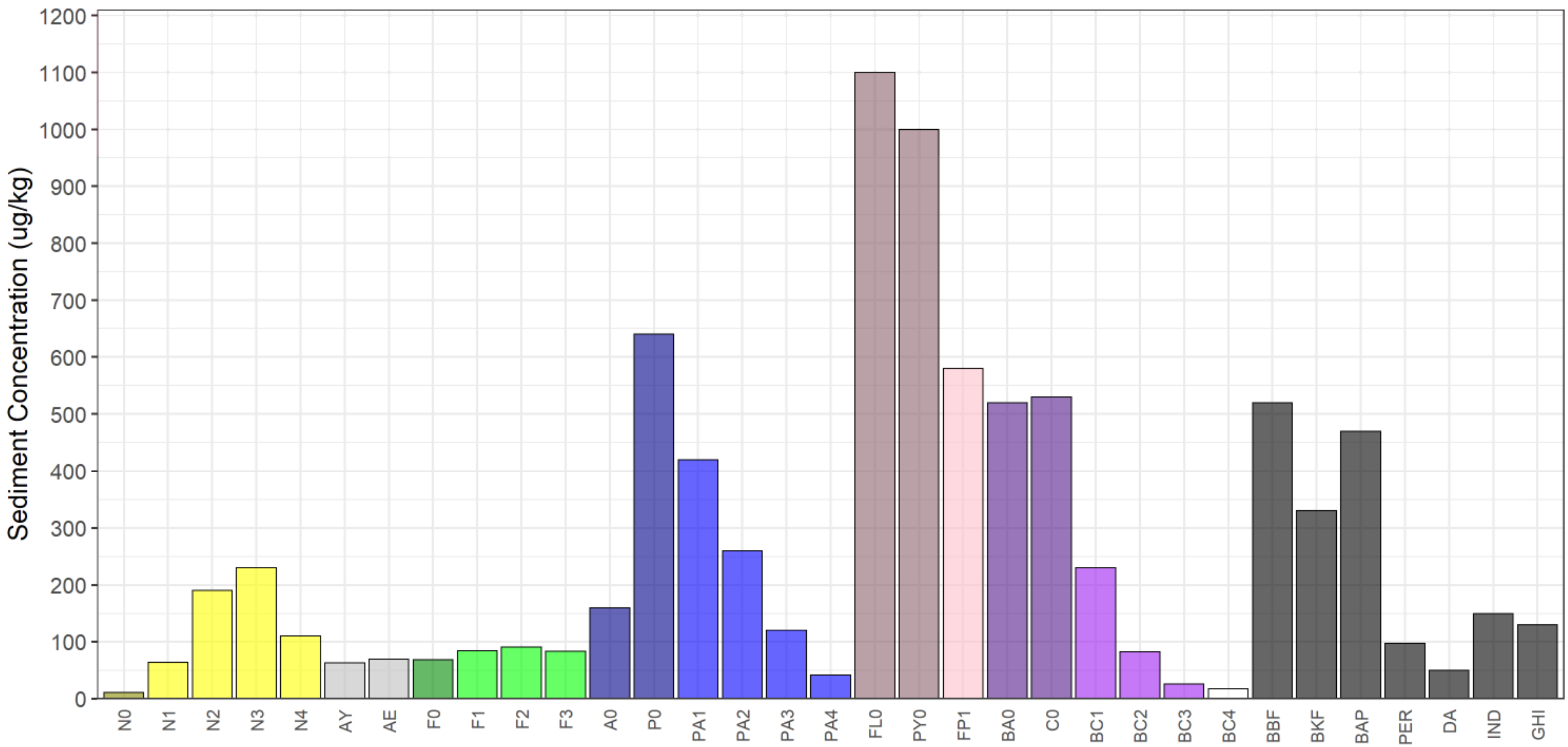
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-49DEP
SAMPLE ID: R4-PDI-SED-49DEP(0-1)

ARCADIS

FIGURE
A-56



Legend:

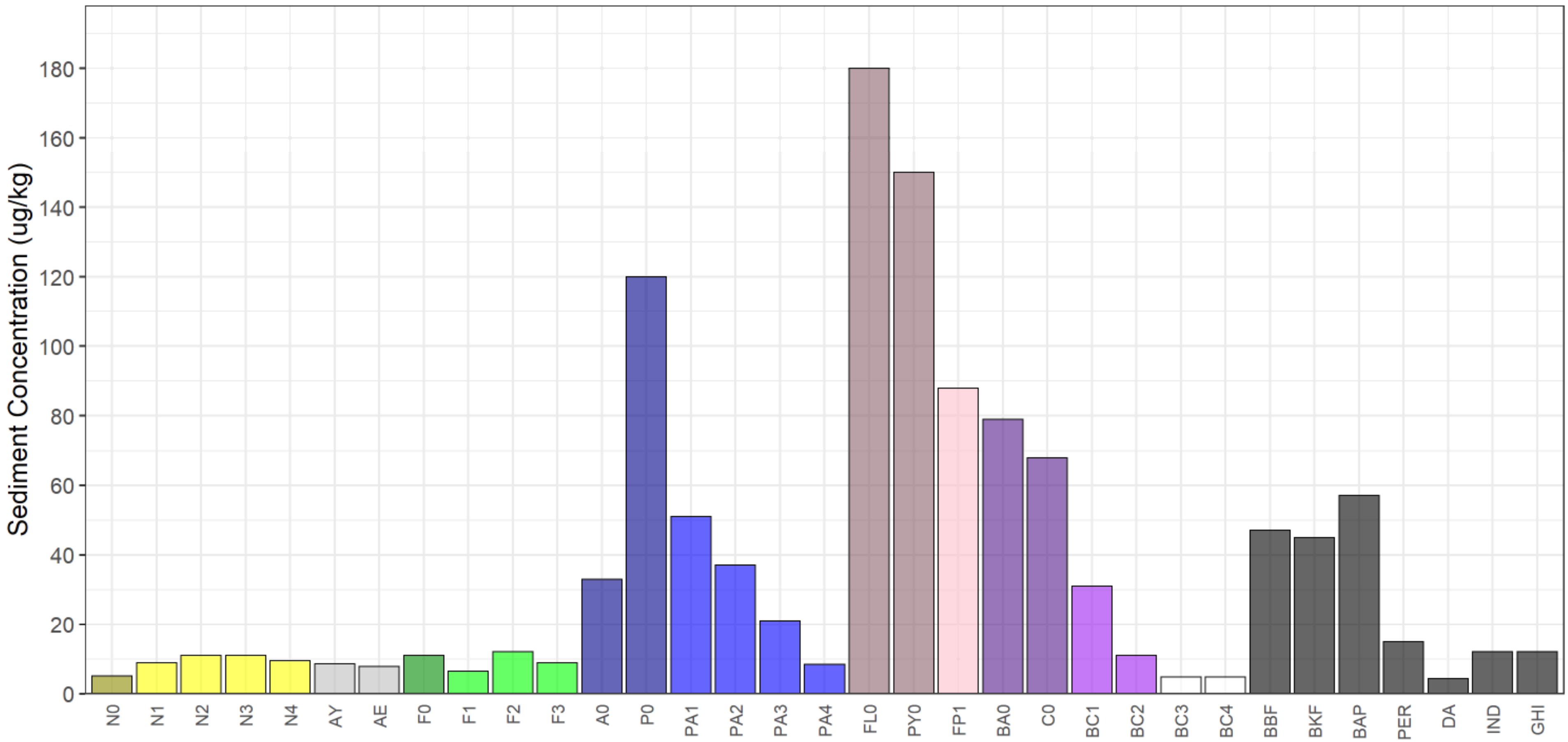
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-50RR
SAMPLE ID: R4-PDI-SED-50RR(0-1)

ARCADIS

FIGURE
A-57



Legend:

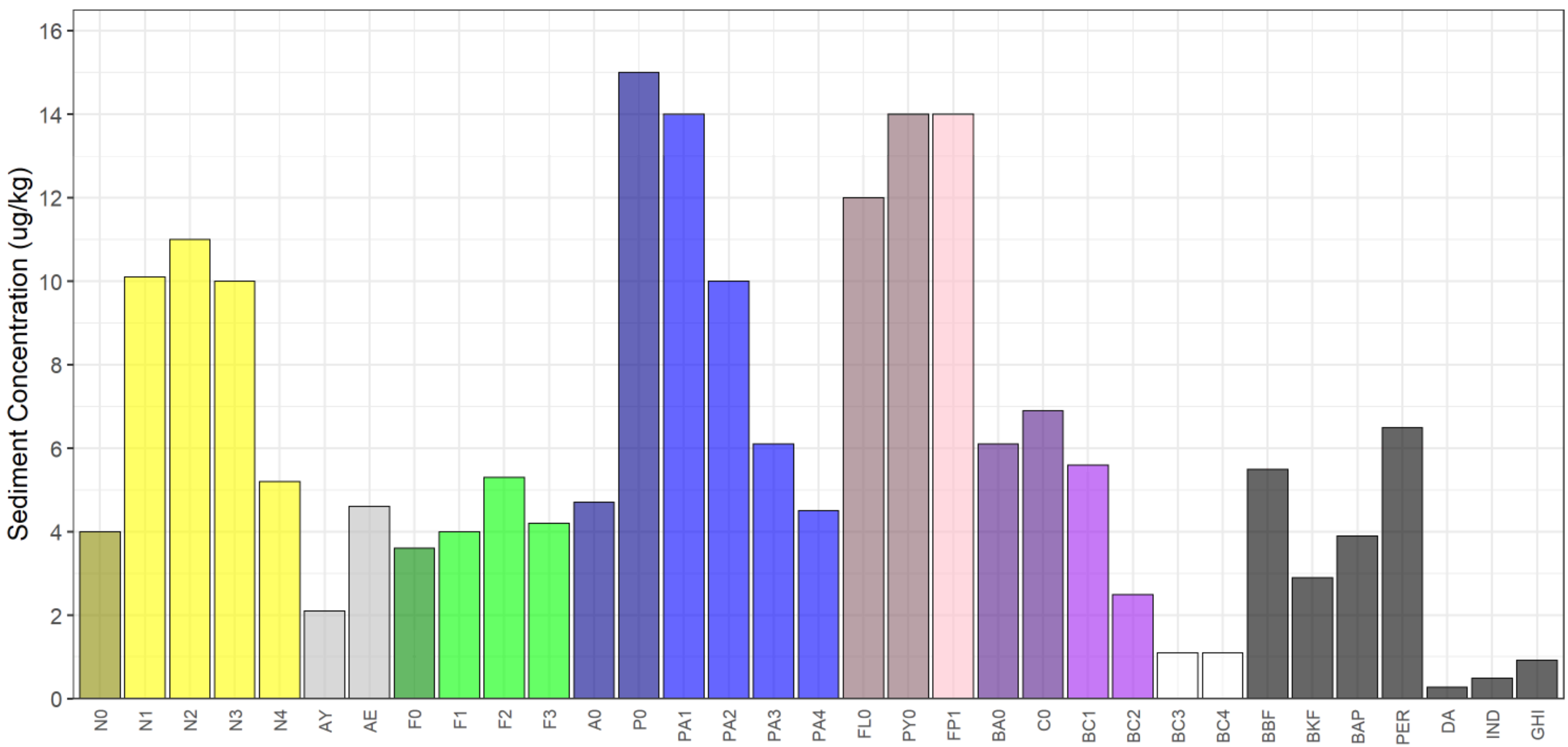
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-51DEP
SAMPLE ID: R4-PDI-SED-51DEP(0-1)

ARCADIS

FIGURE
A-58



Legend:

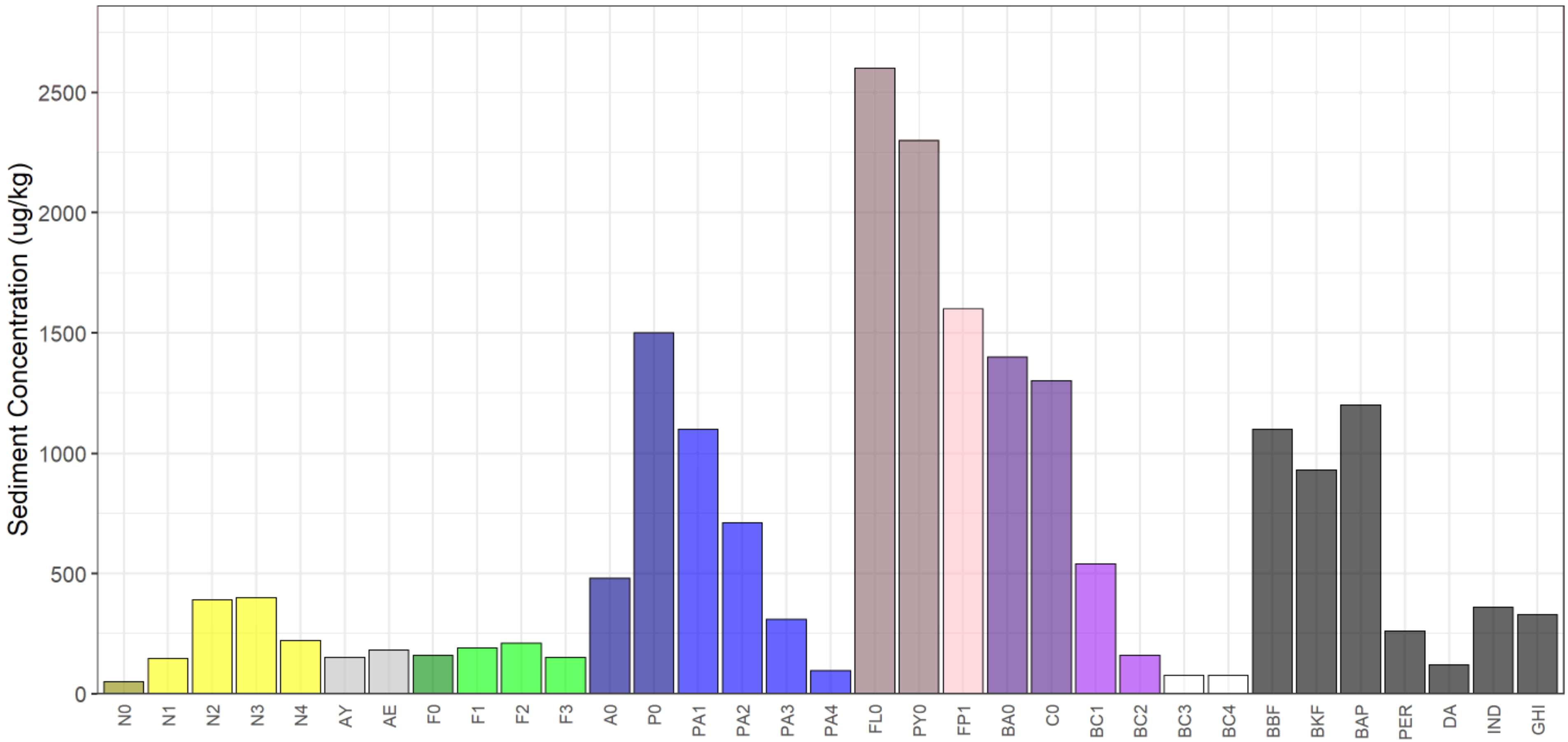
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-51DEP
SAMPLE ID: R4-PDI-SED-51DEP(1-1.2)

ARCADIS

FIGURE
A-59



Legend:

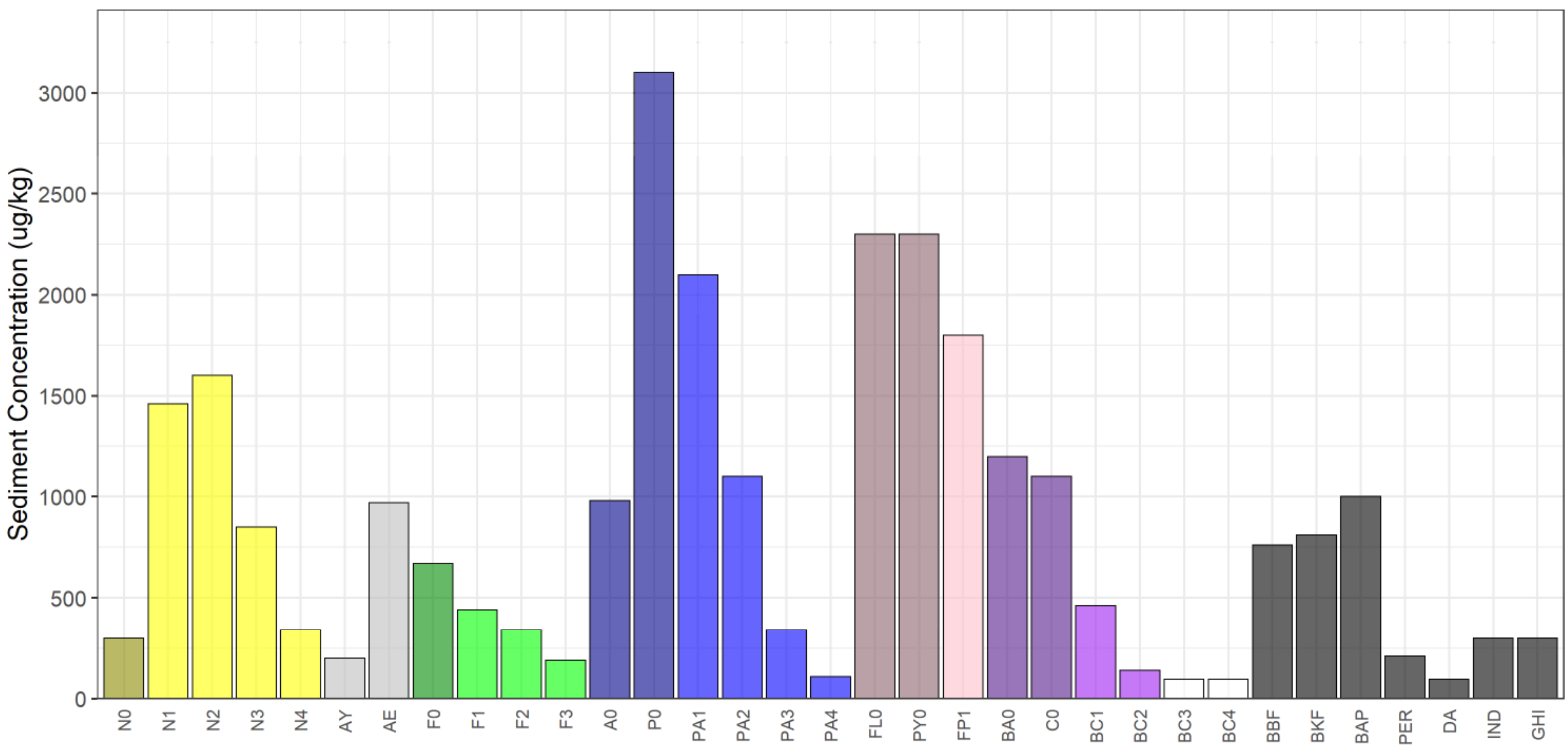
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-52DEP
SAMPLE ID: R4-PDI-SED-52DEP(0-1)

ARCADIS

FIGURE
A-60



Legend:

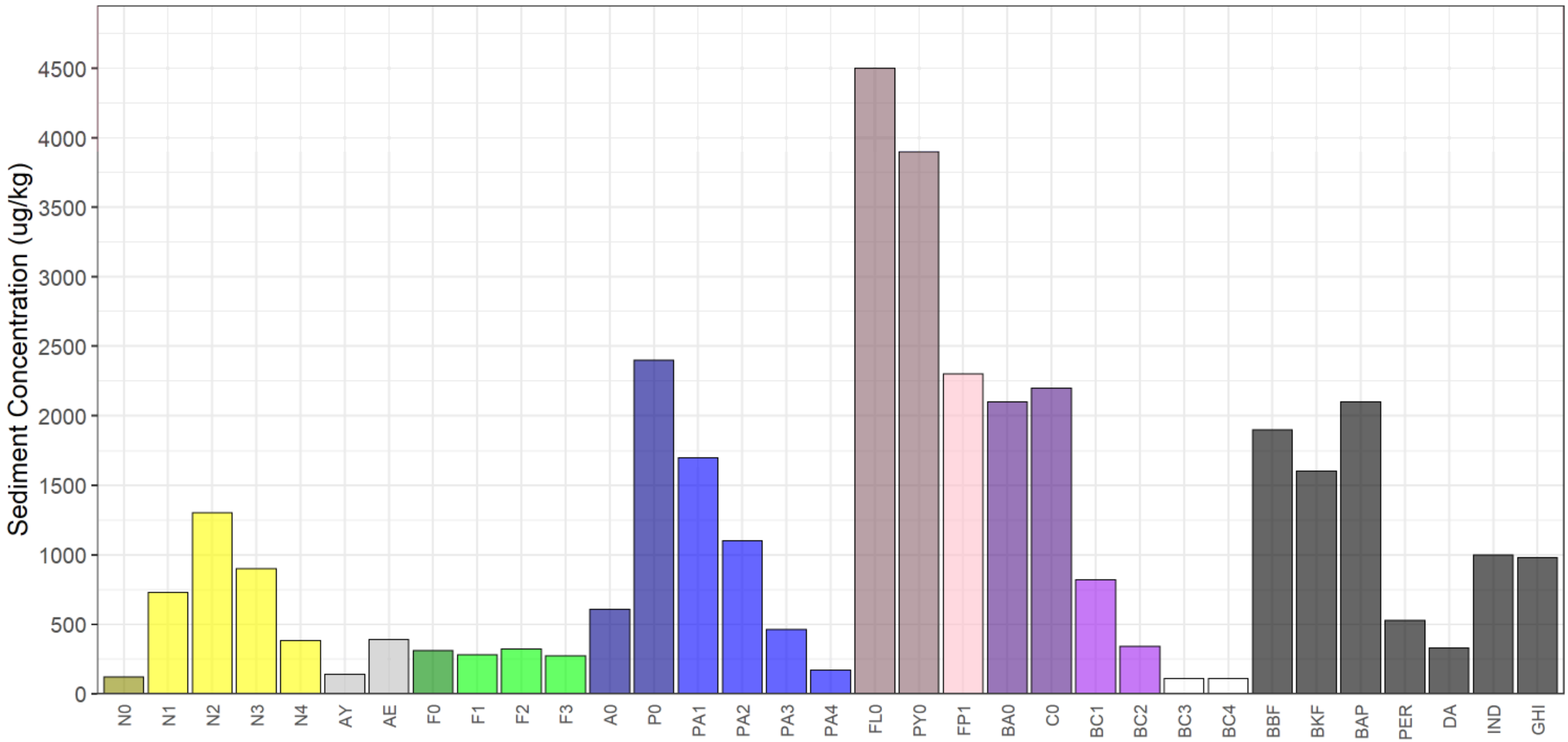
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-52DEP
SAMPLE ID: R4-PDI-SED-52DEP(0-1)-FD

ARCADIS

FIGURE
A-61



Legend:

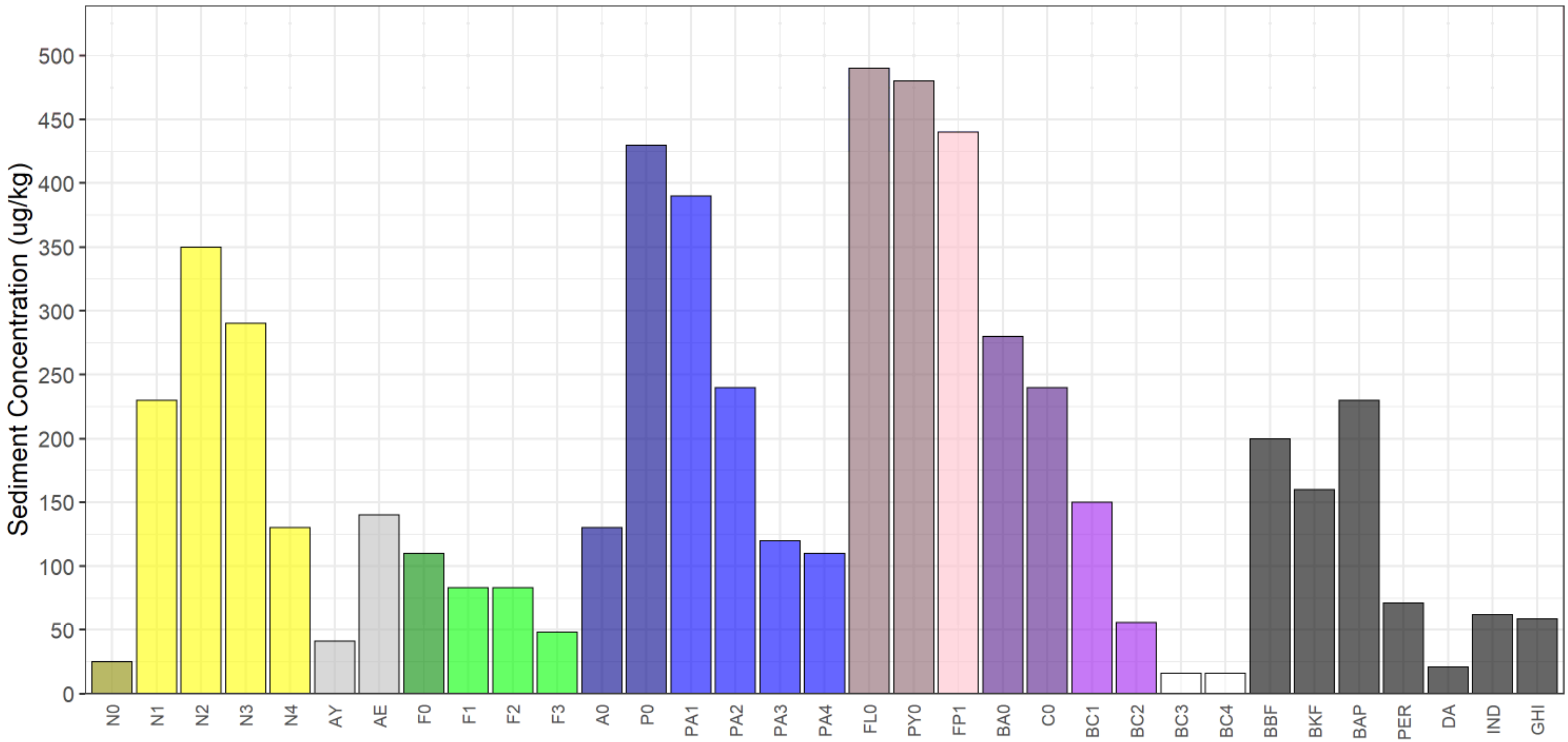
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-52DEP
SAMPLE ID: R4-PDI-SED-52DEP(1-1.7)

ARCADIS

FIGURE
A-62



Legend:

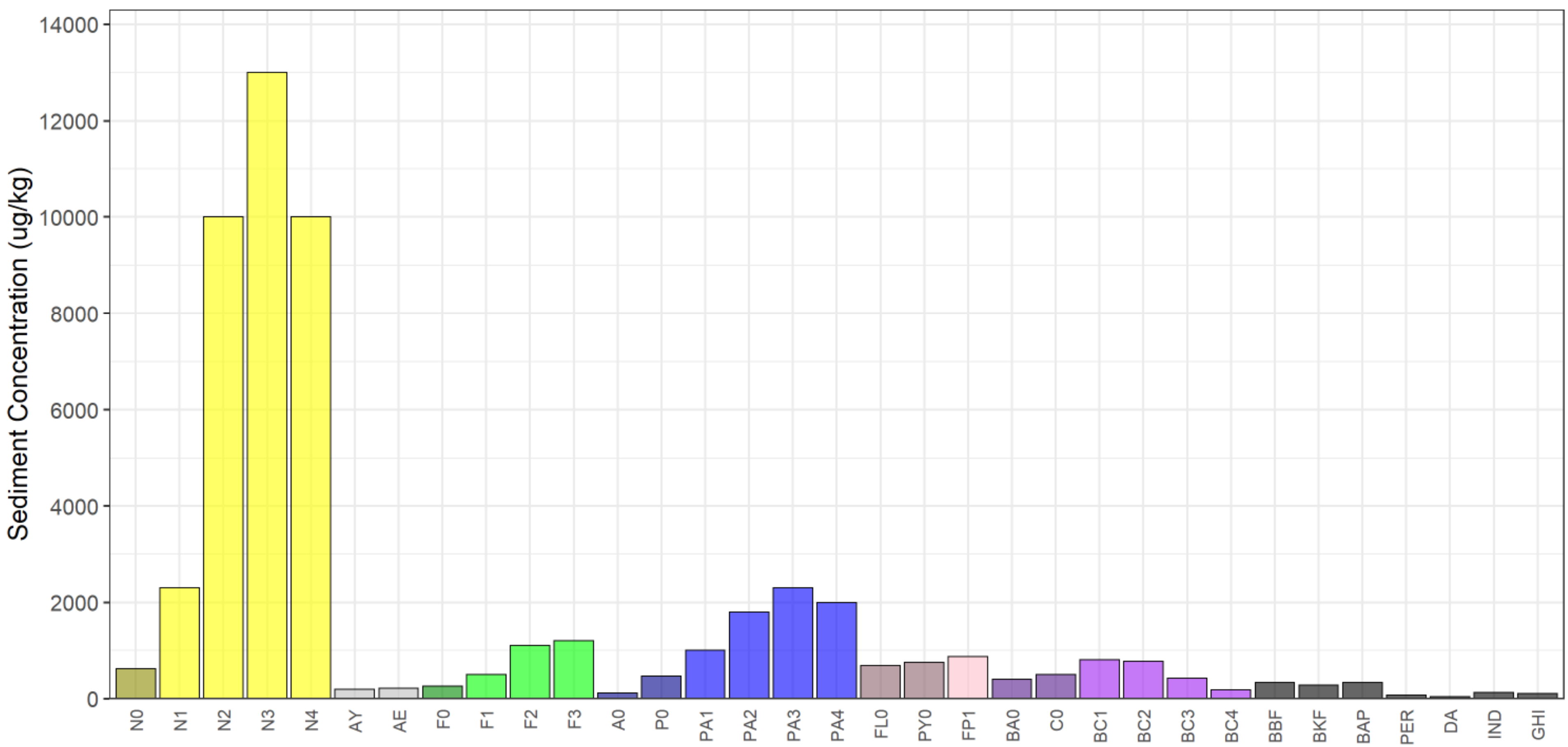
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R5-PDI-SED-53RR
SAMPLE ID: R5-PDI-SED-53RR-(0-0.7)

ARCADIS

FIGURE
A-63



Legend:

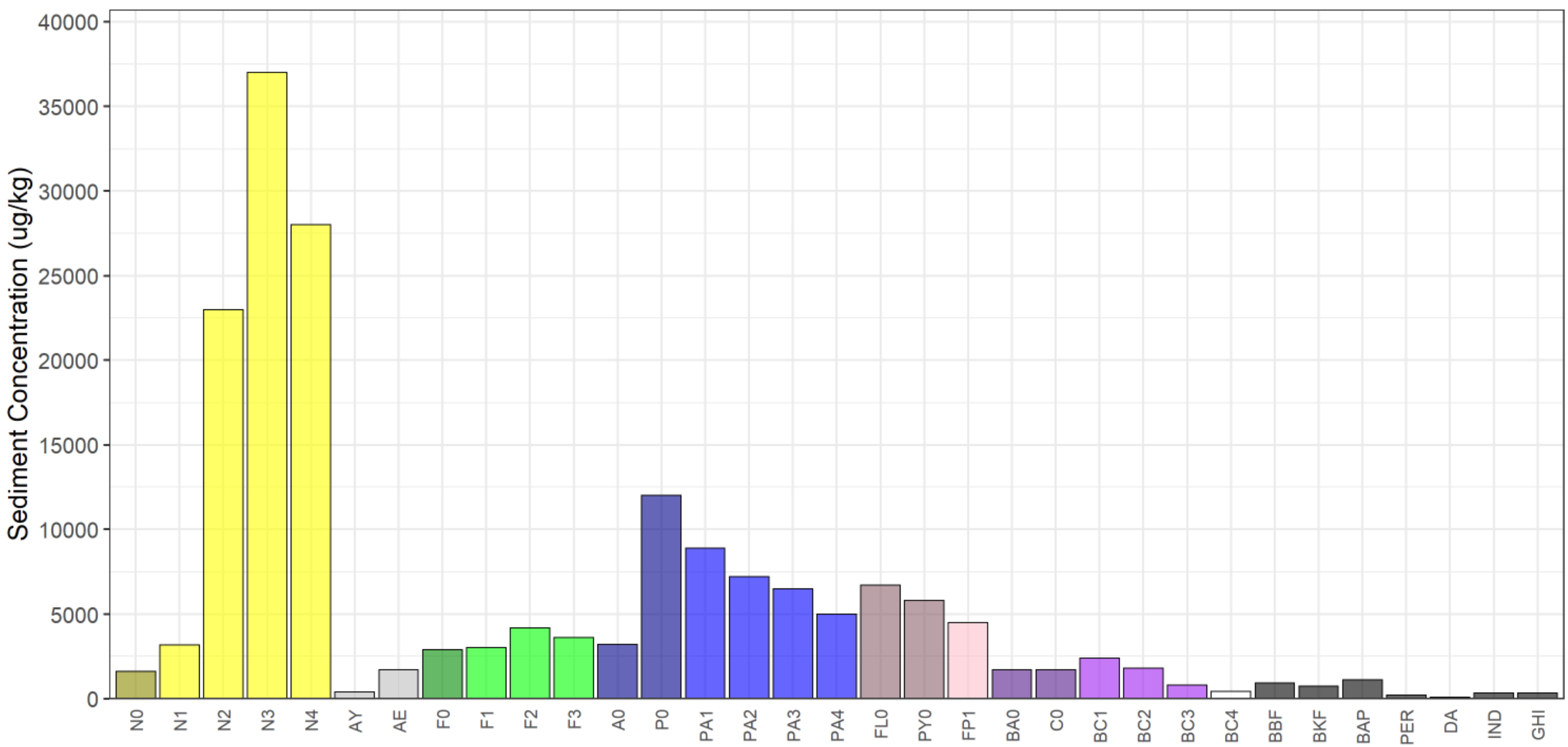
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R5-PDI-SED-54RR
SAMPLE ID: R5-PDI-SED-54RR(0-0.5)

ARCADIS

FIGURE
A-64



Legend:

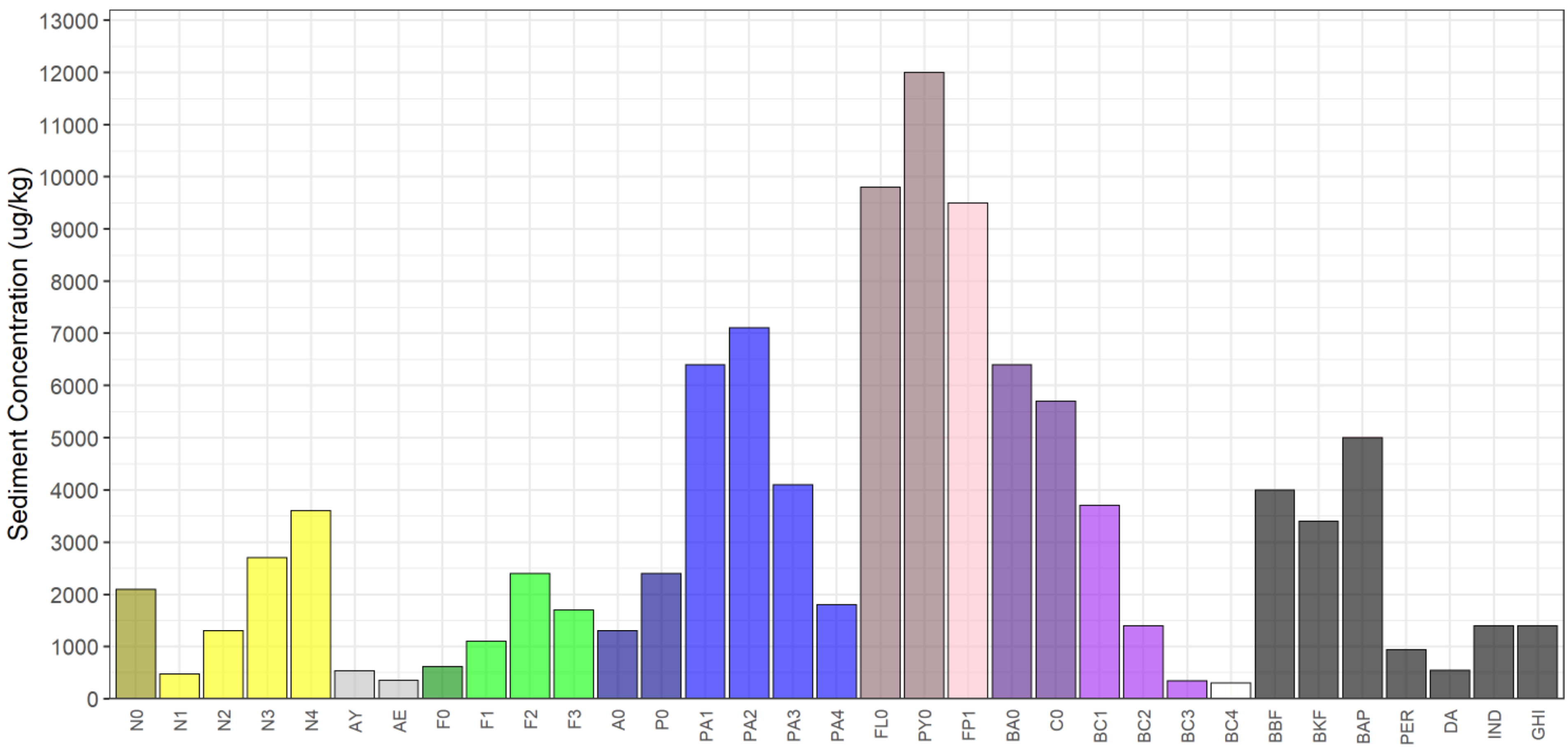
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R5-PDI-SED-55RR
SAMPLE ID: R5-PDI-SED-55RR(0-1)

ARCADIS

FIGURE
A-65



Legend:

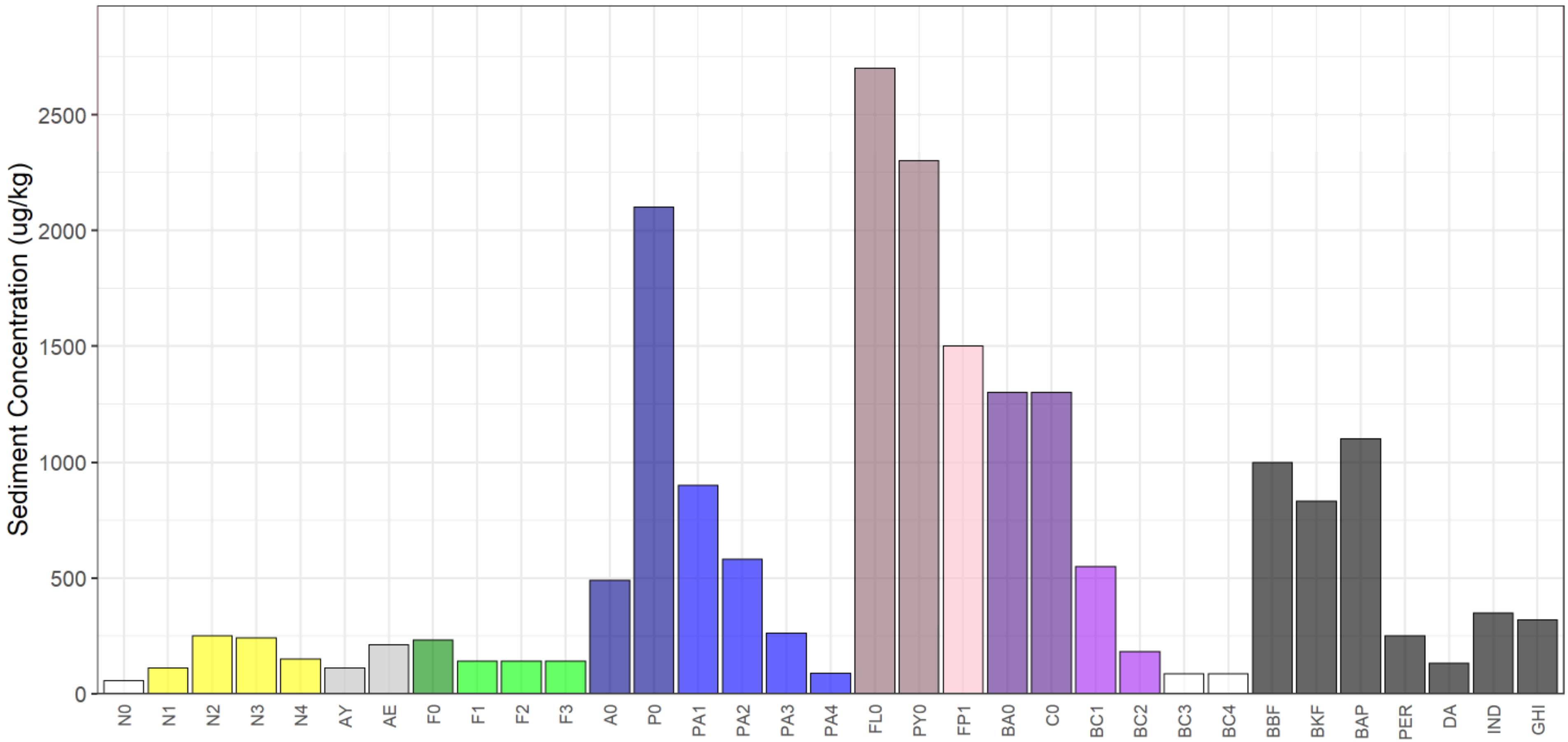
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R4-PDI-SED-55RR
SAMPLE ID: R5-PDI-SED-55RR(1-1.3)

ARCADIS

FIGURE
A-66



Legend:

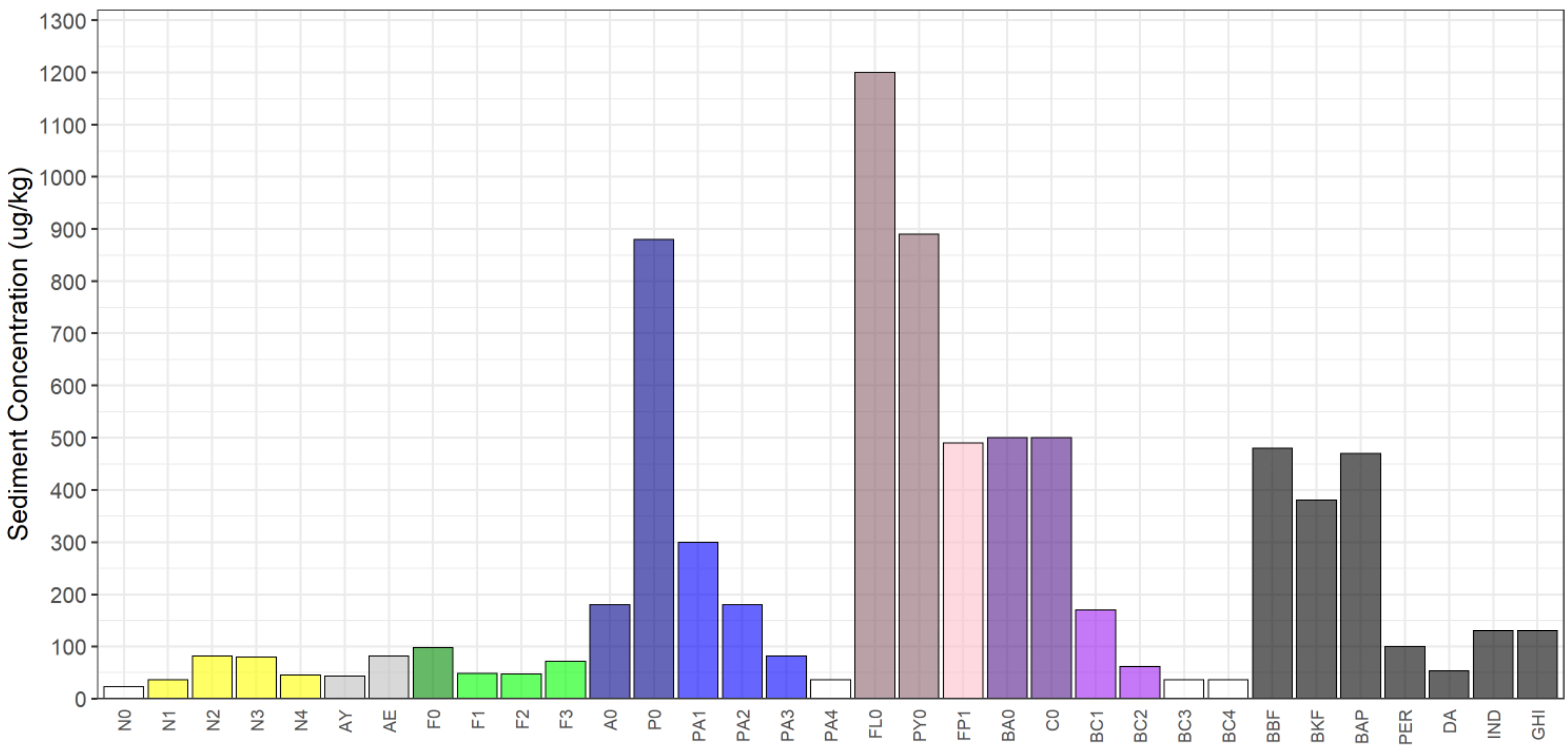
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R5-PDI-SED-56DEP
SAMPLE ID: R5-PDI-SED-56DEP(0-1)

ARCADIS

FIGURE
A-67



Legend:

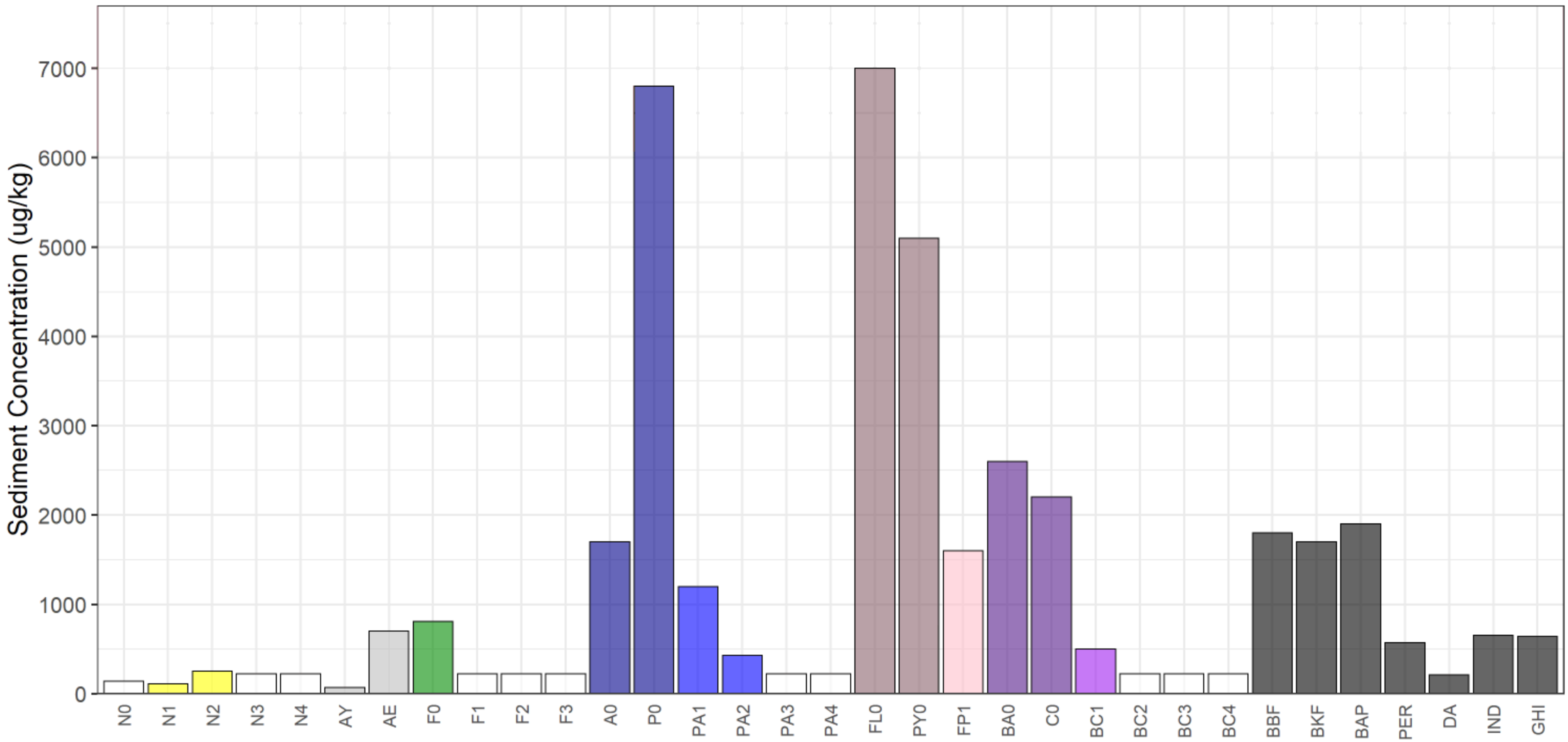
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R5-PDI-SED-56DEP
SAMPLE ID: R5-PDI-SED-56DEP(0-1)-FD

ARCADIS

FIGURE
A-68



Legend:

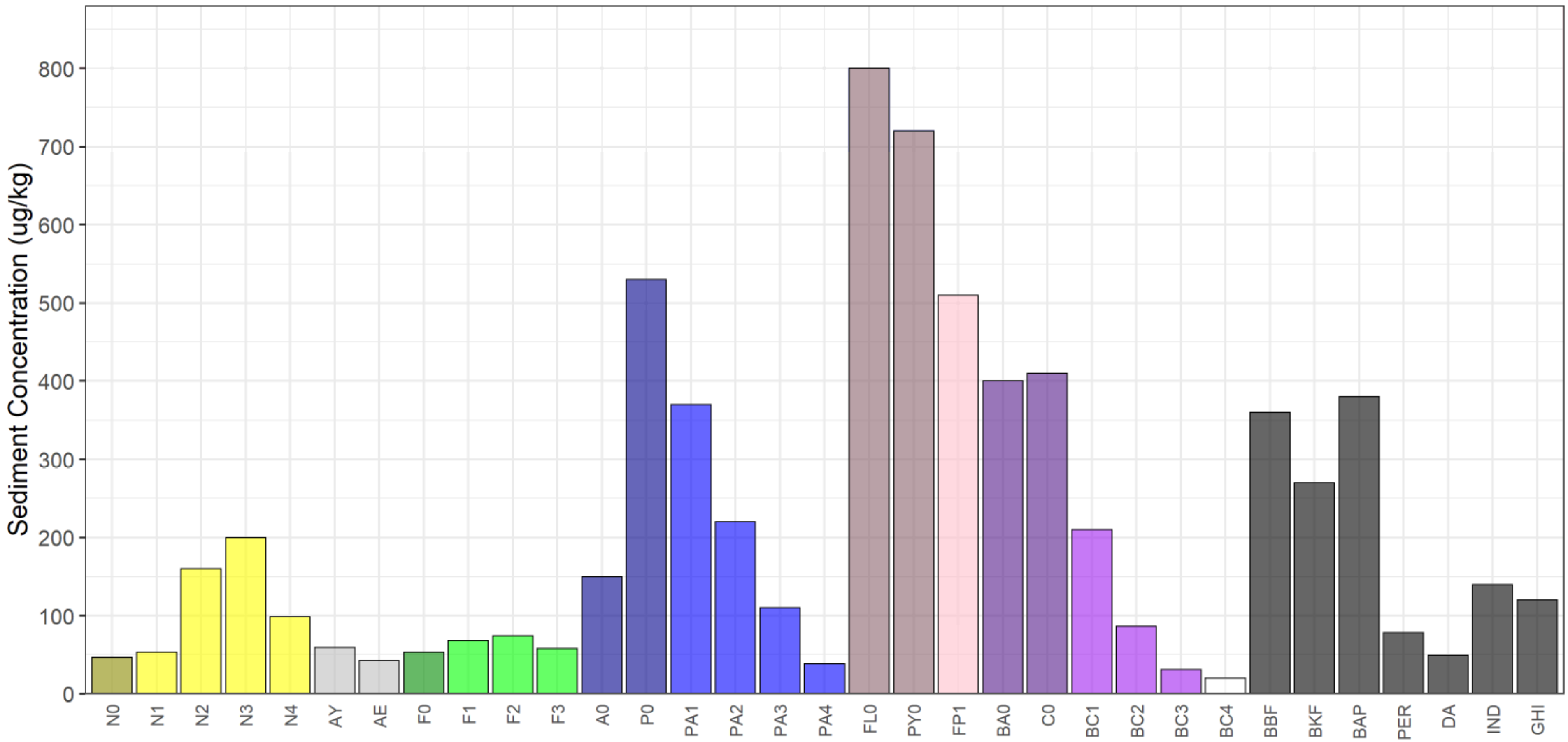
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R5-PDI-SED-56DEP
SAMPLE ID: R5-PDI-SED-56DEP(1-1.2)

ARCADIS

FIGURE
A-69



Legend:

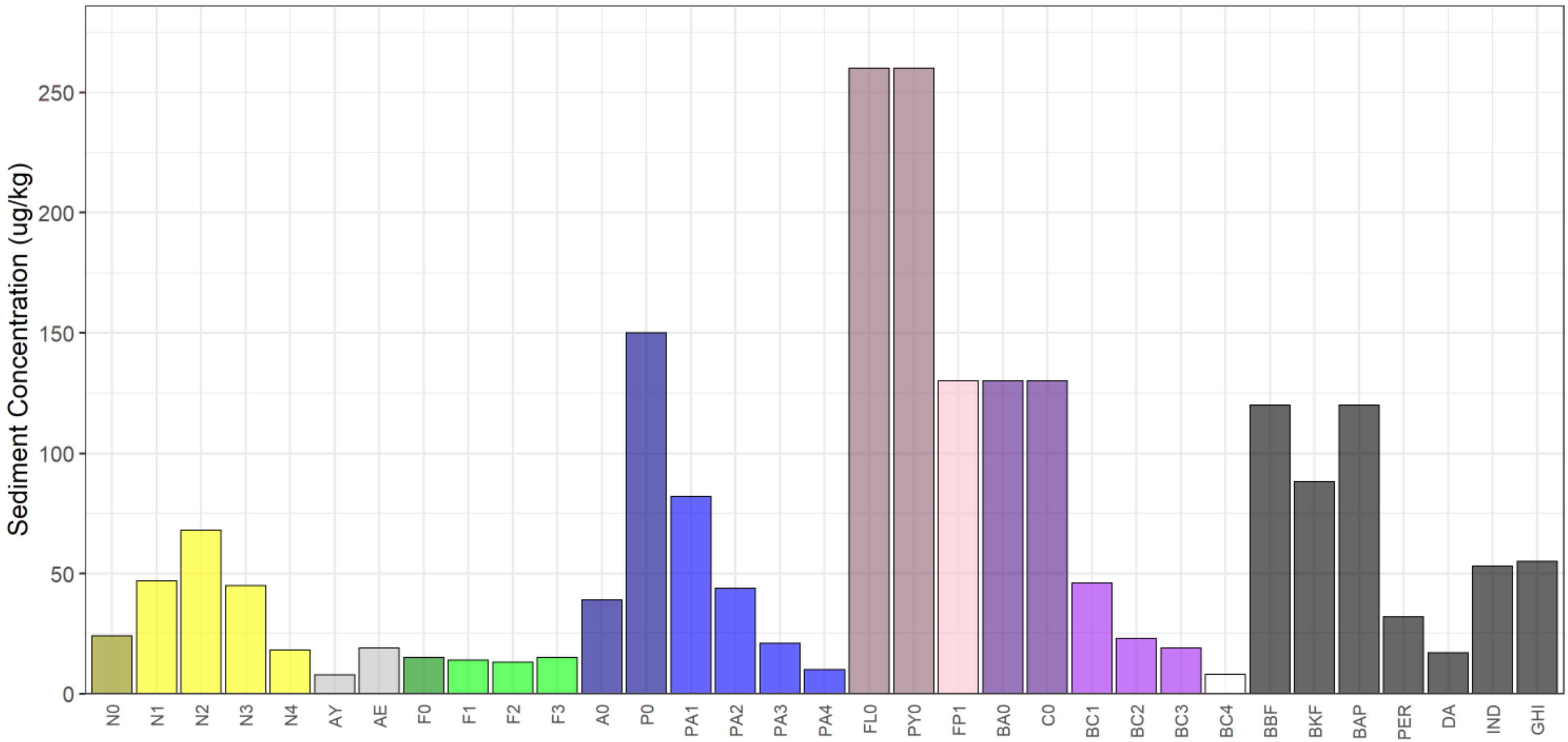
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R5-PDI-SED-57DEP
SAMPLE ID: R5-PDI-SED-57DEP(0-0.5)

ARCADIS

FIGURE
A-70



Legend:

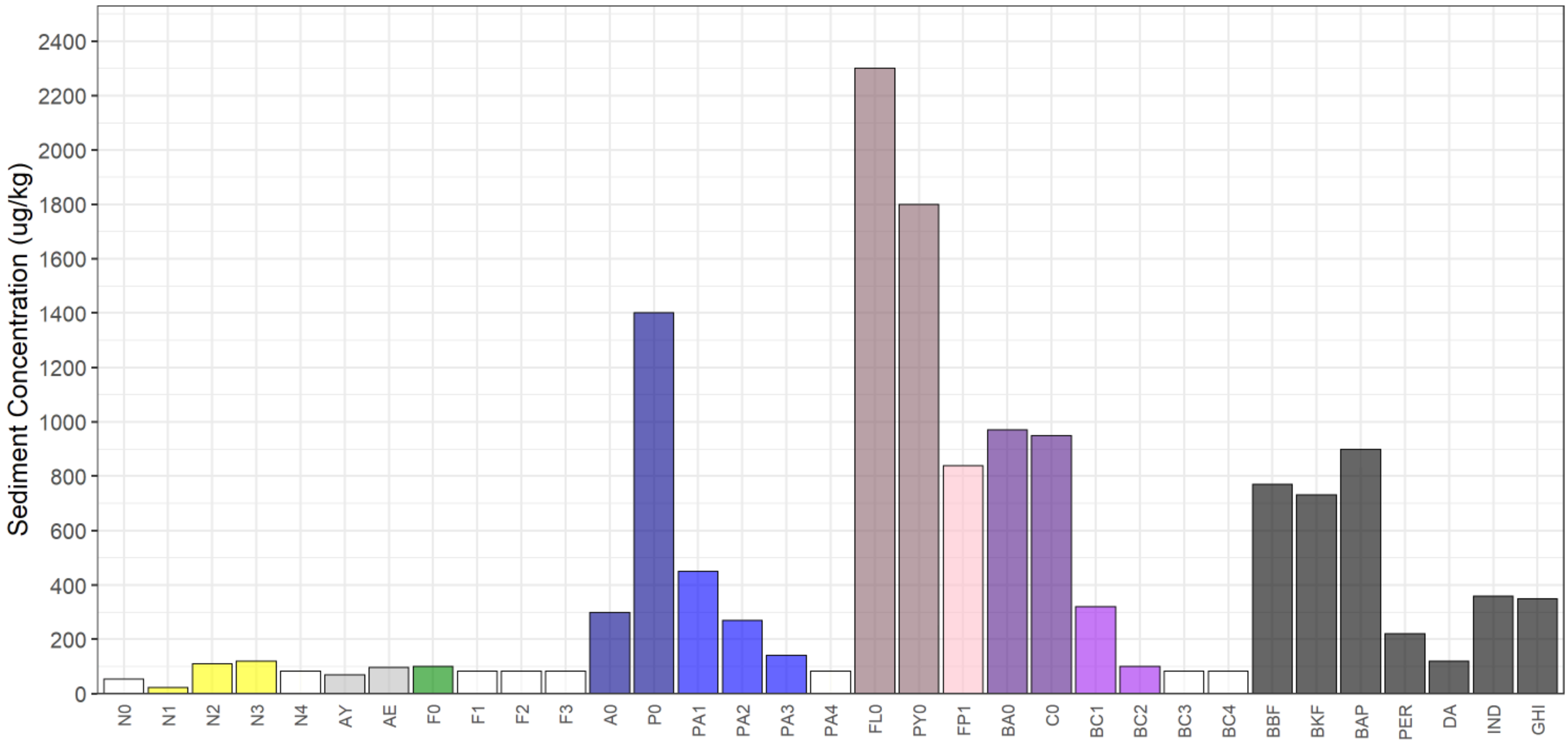
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R5-PDI-SED-58RR
SAMPLE ID: R5-PDI-SED-58RR(0-0.4)

ARCADIS

FIGURE
A-71



Legend:

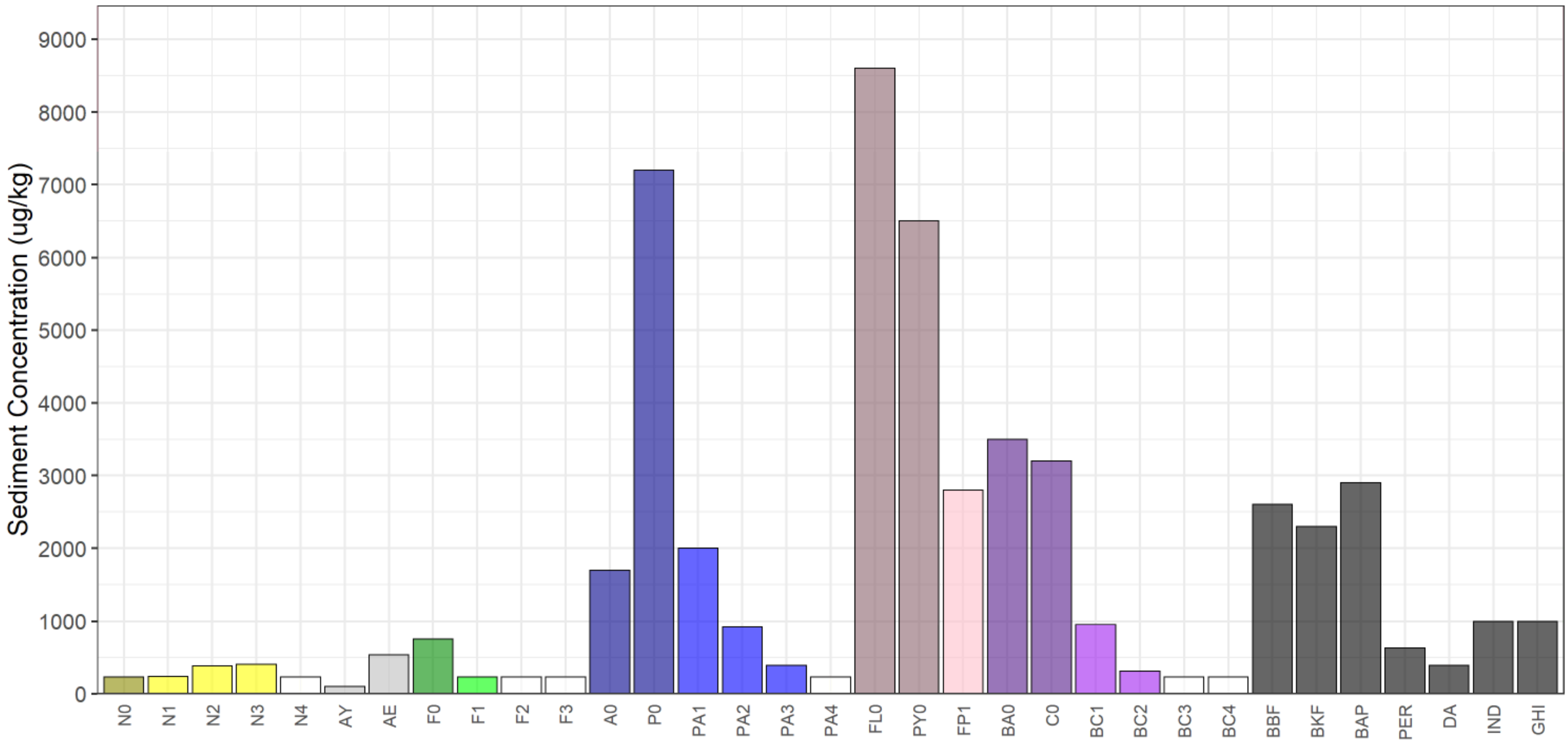
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R5-PDI-SED-59DEP
SAMPLE ID: R5-PDI-SED-59DEP(0-1)

ARCADIS

FIGURE
A-72



Legend:

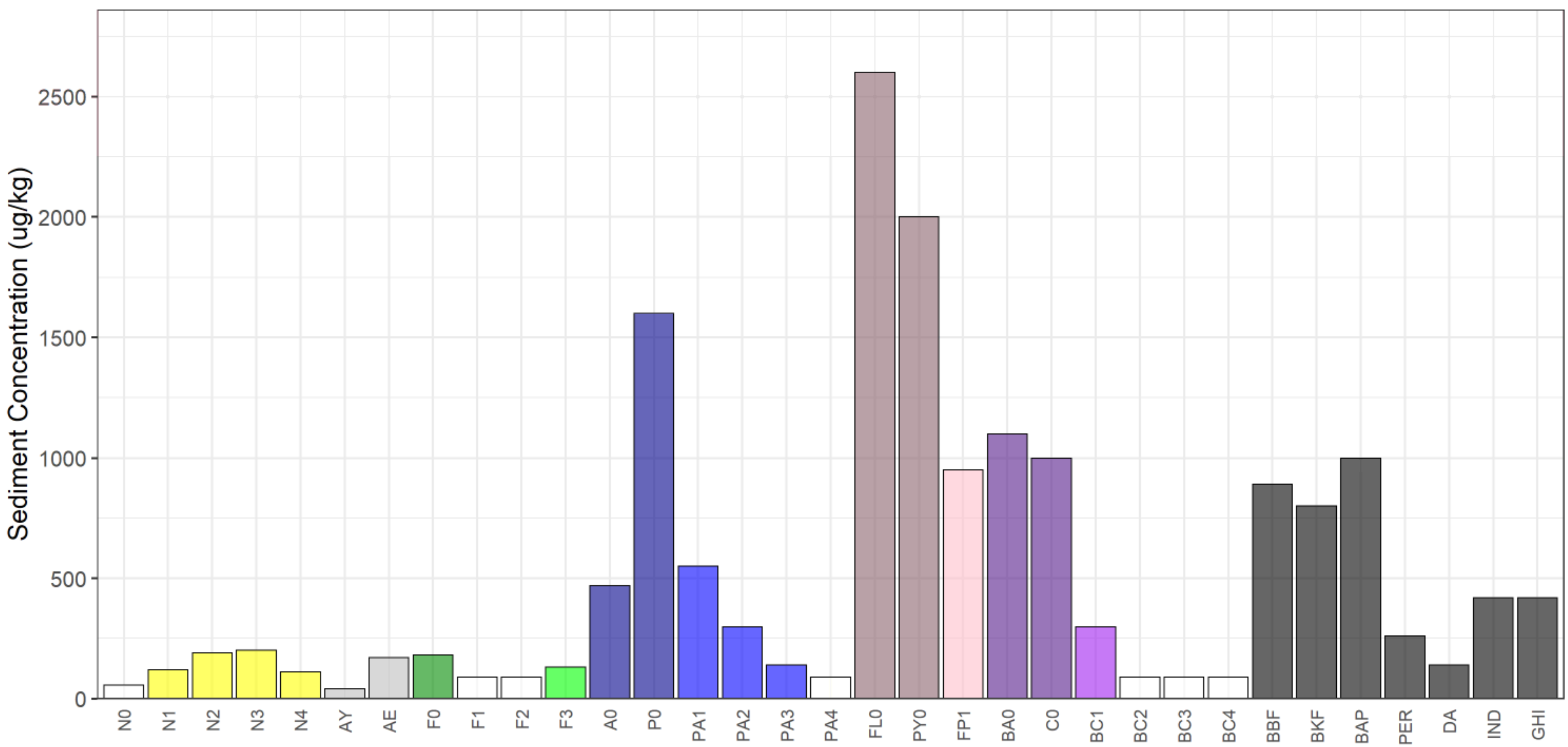
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R5-PDI-SED-59DEP
SAMPLE ID: R5-PDI-SED-59DEP(1-1.2)

ARCADIS

FIGURE
A-73



Legend:

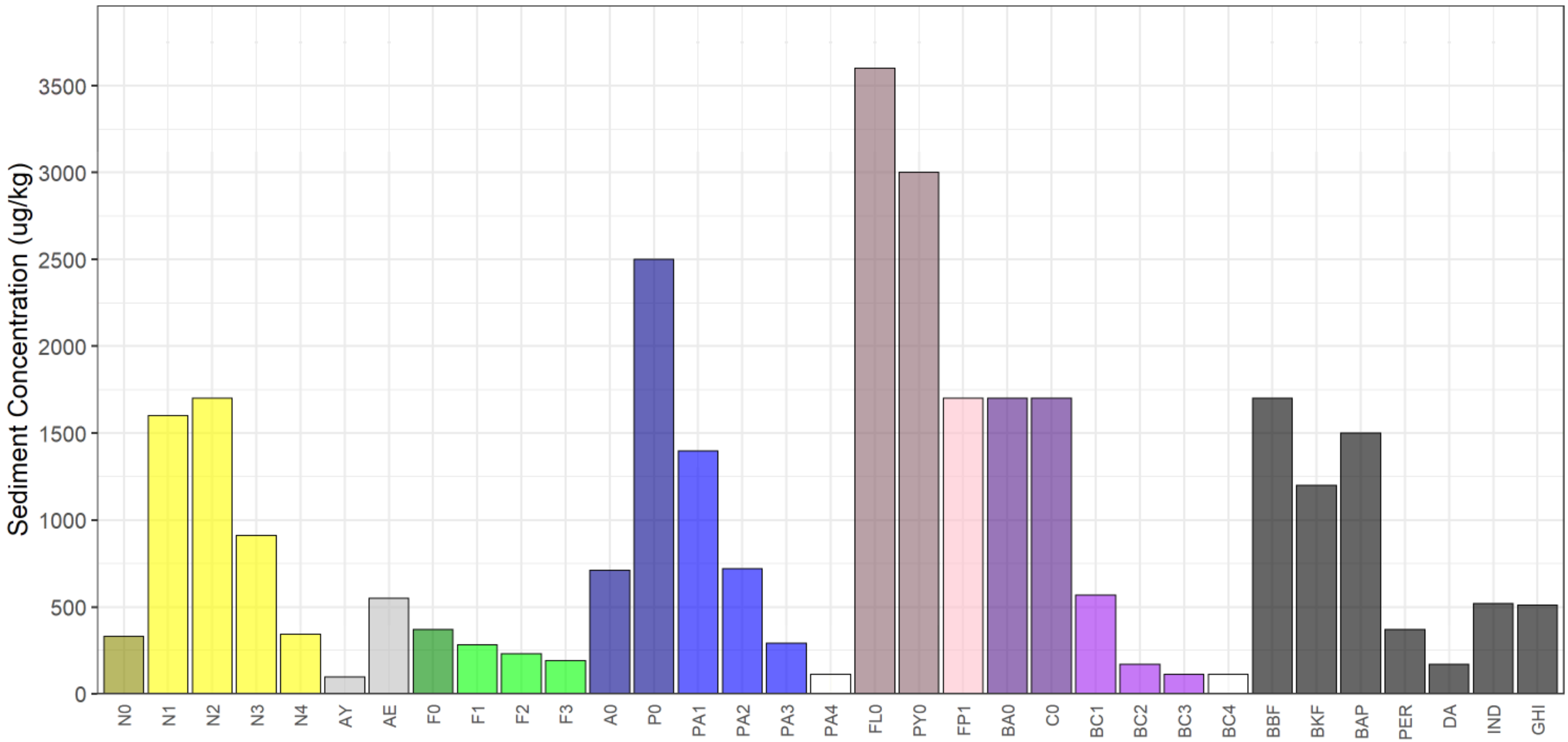
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R5-PDI-SED-60DEP
SAMPLE ID: R5-PDI-SED-60DEP(0-1)

ARCADIS

FIGURE
A-74



Legend:

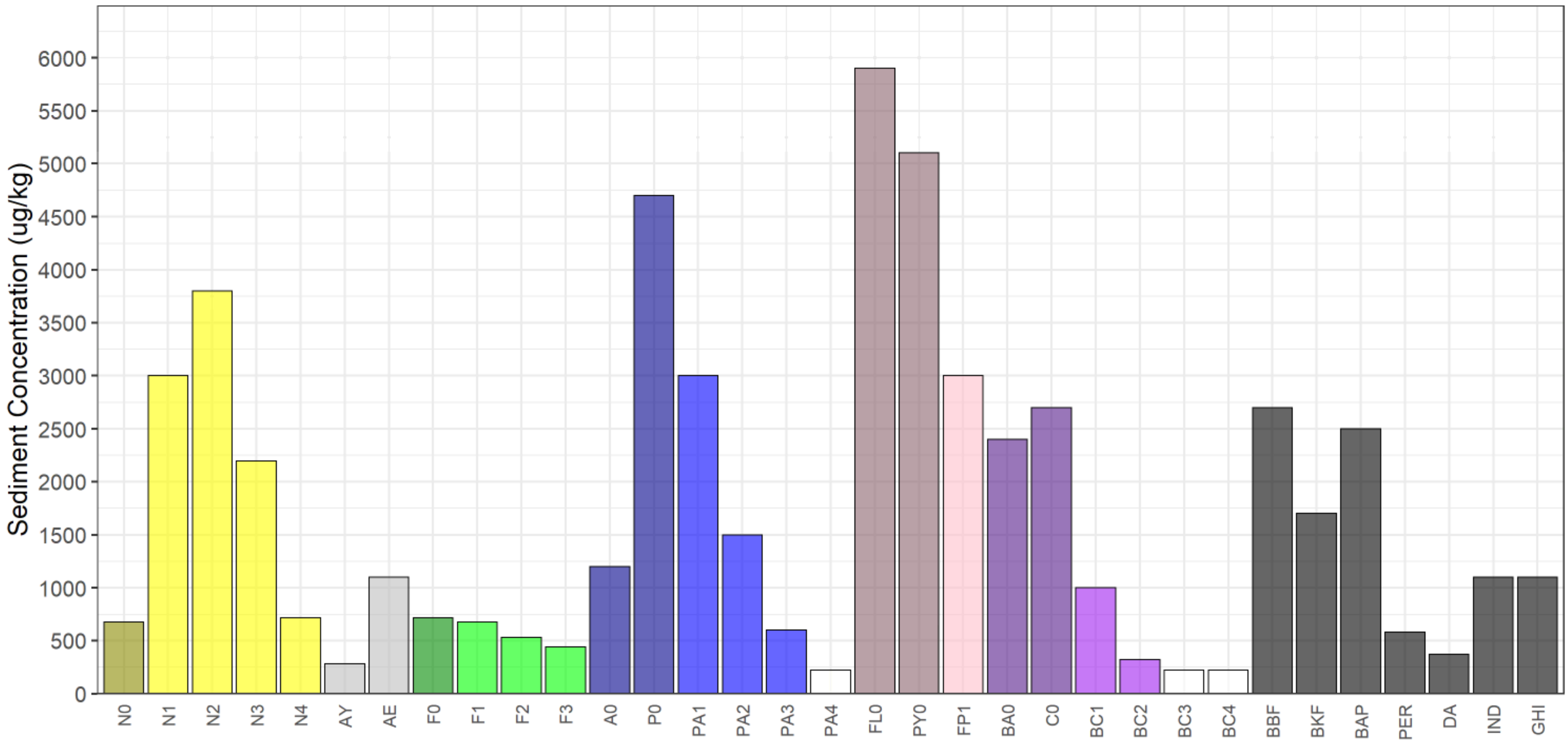
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R5-PDI-SED-60DEP
SAMPLE ID: R5-PDI-SED-60DEP(0-1)-FD

ARCADIS

FIGURE
A-75



Legend:

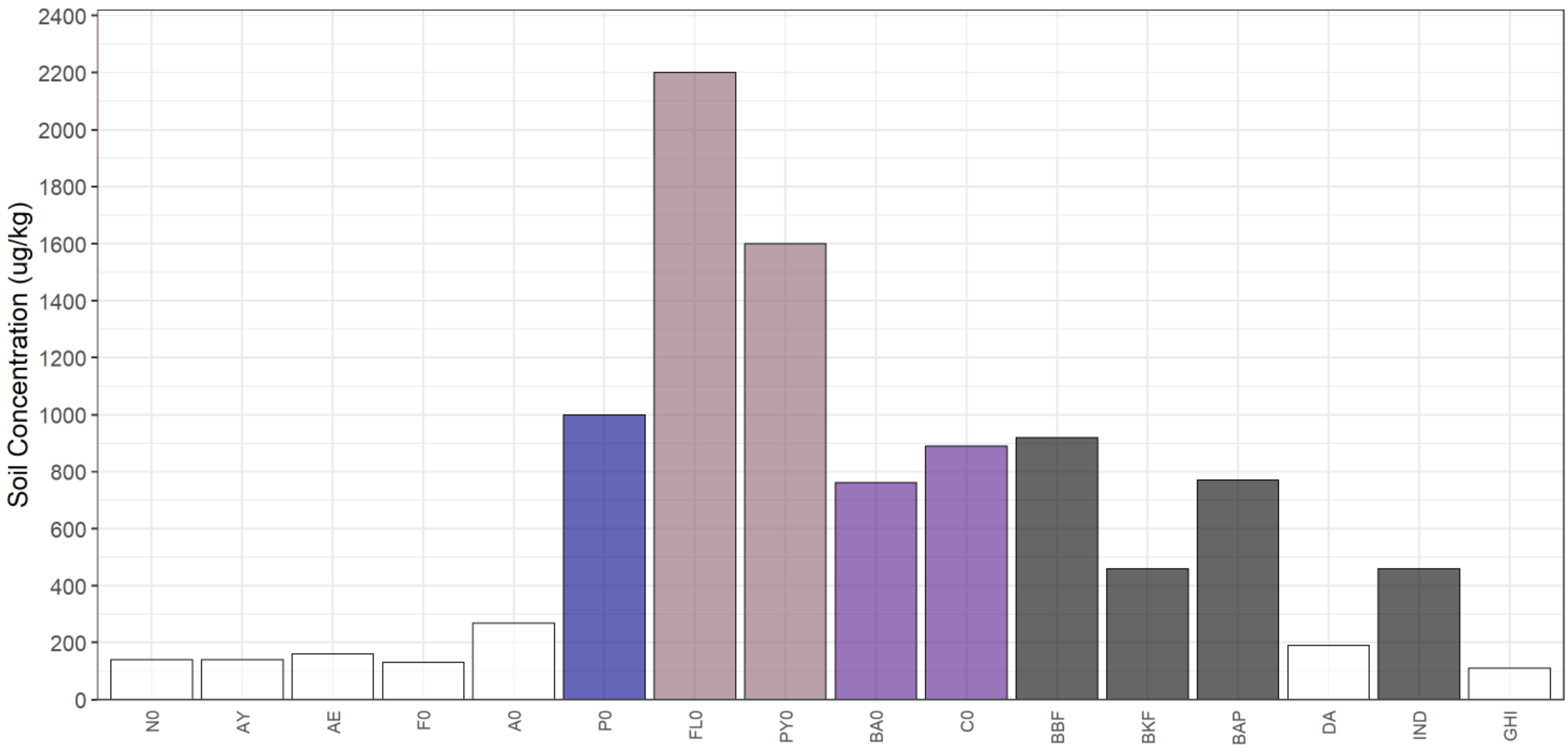
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: R5-PDI-SED-60DEP
SAMPLE ID: R5-PDI-SED-60DEP(1-1.9)

ARCADIS

FIGURE
A-76



Legend:

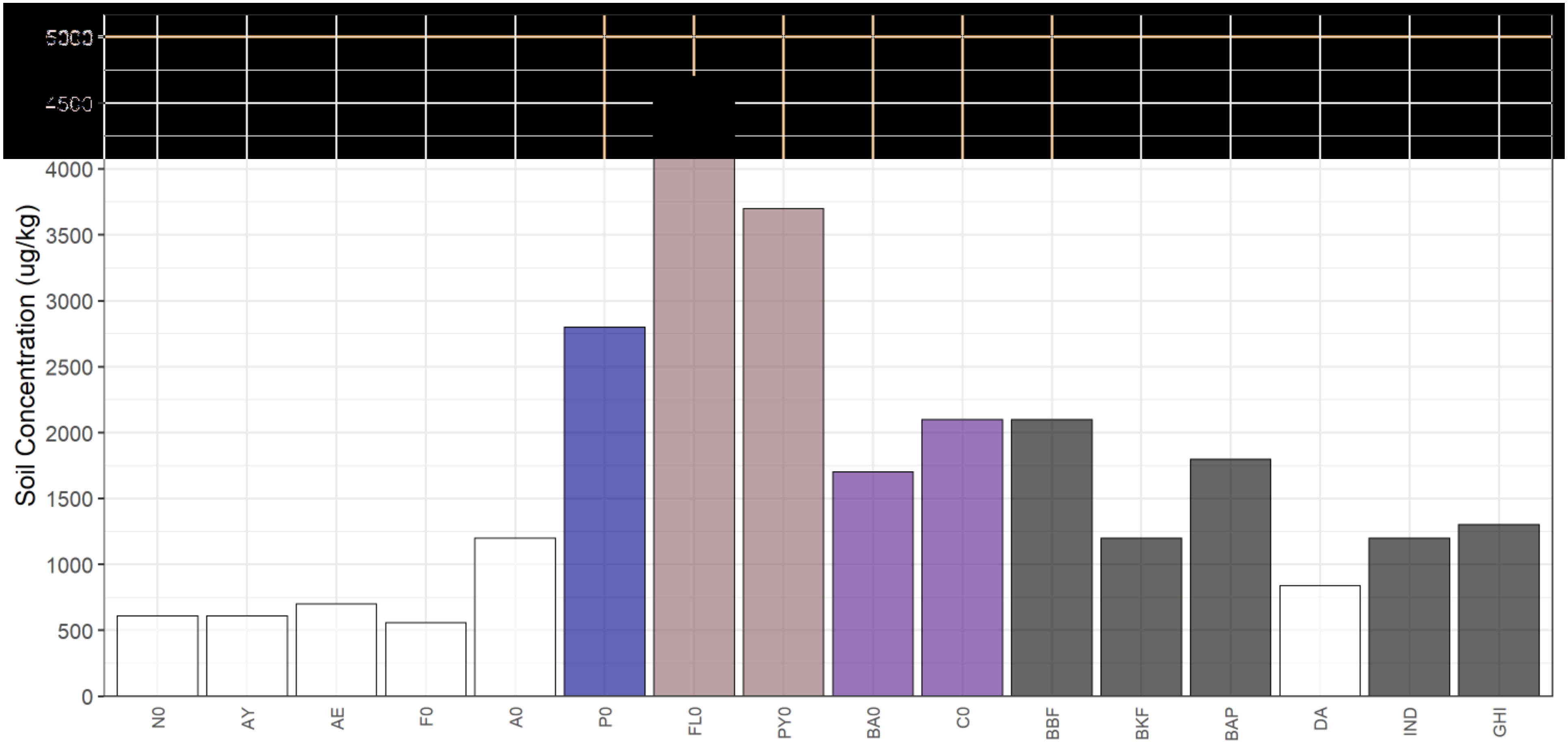
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-11-LB-MB
SAMPLE ID: PDI-T-11-LB-MB (0-0.3')

ARCADIS

FIGURE
A-77



Legend:

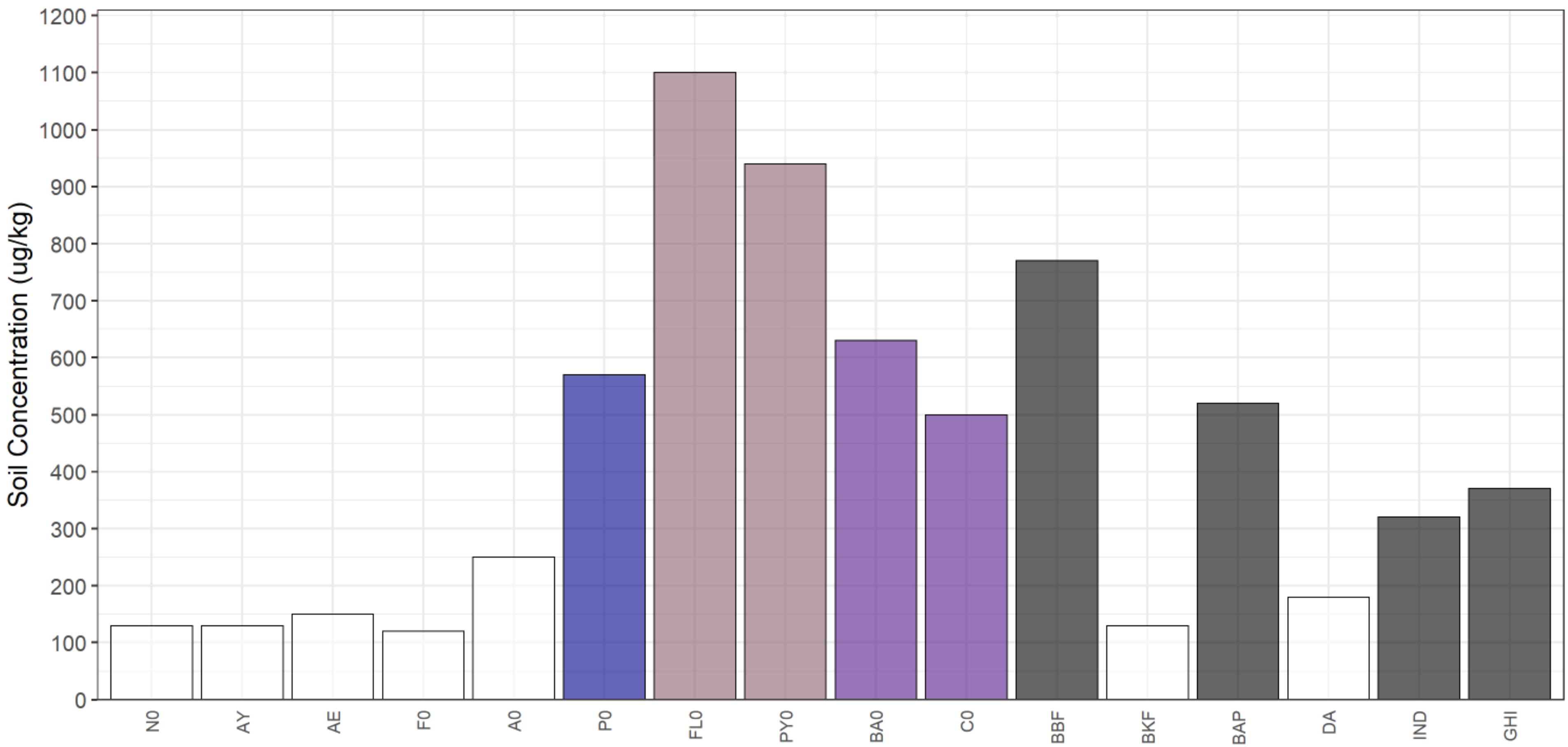
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-11-LB-MHWL
SAMPLE ID: PDI-T-11-LB-MHWL (0-0.4')

ARCADIS

FIGURE
A-78



Legend:

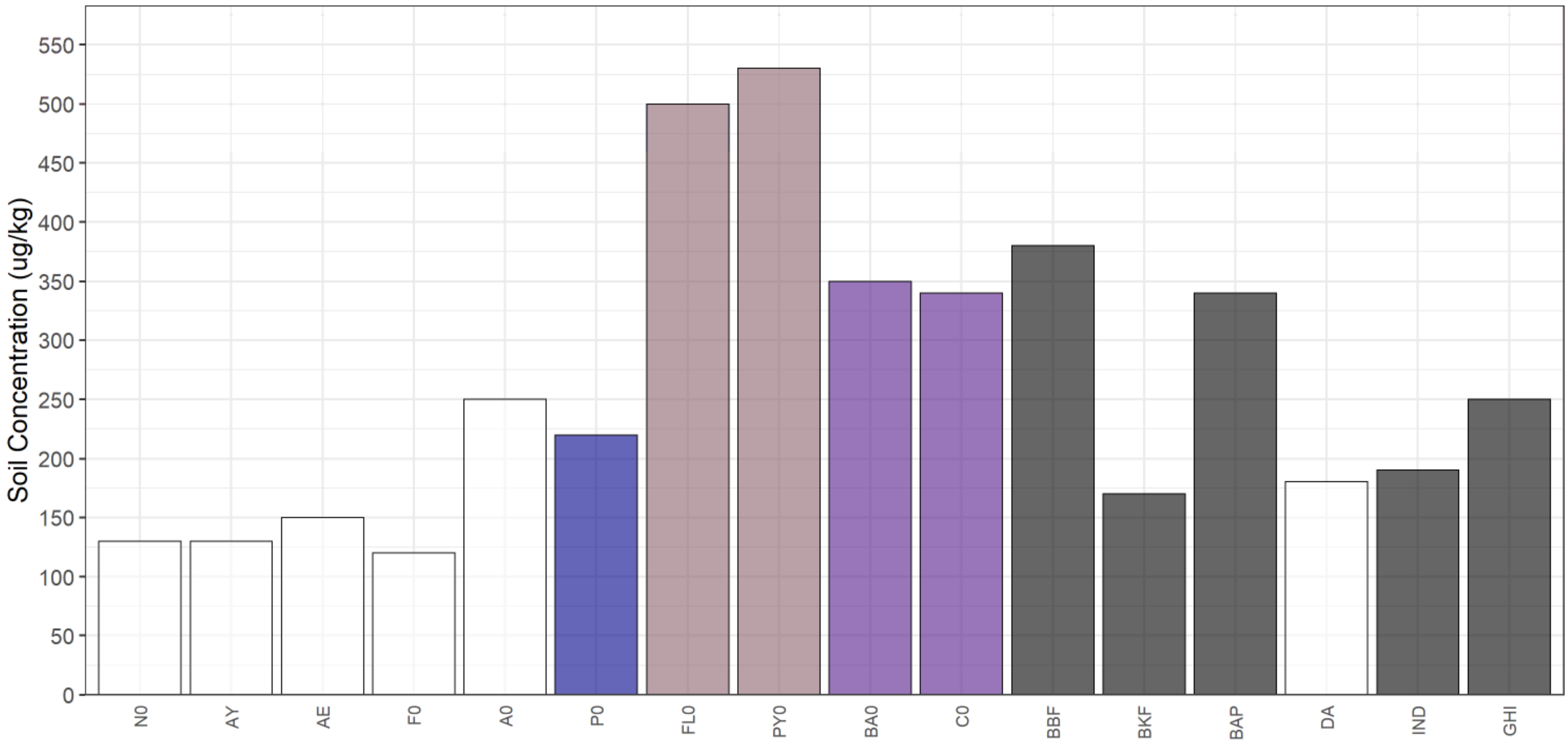
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-12-LB-MB
SAMPLE ID: PDI-T-12-LB-MB (0-0.5")

ARCADIS

FIGURE
A-79



Legend:

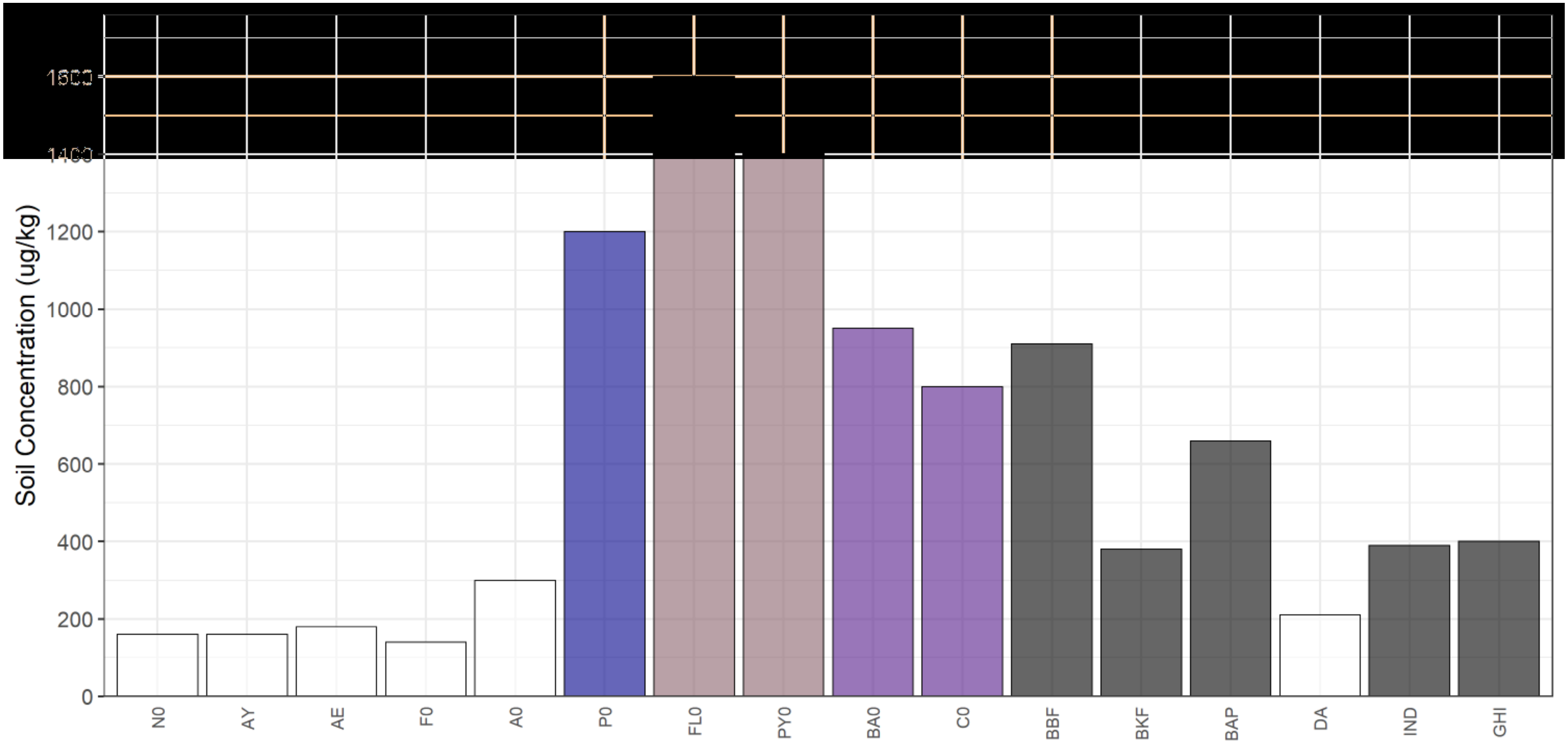
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-12-LB-MB
SAMPLE ID: PDI-T-12-LB-MB (0.5-0.8')

ARCADIS

FIGURE
A-80



Legend:

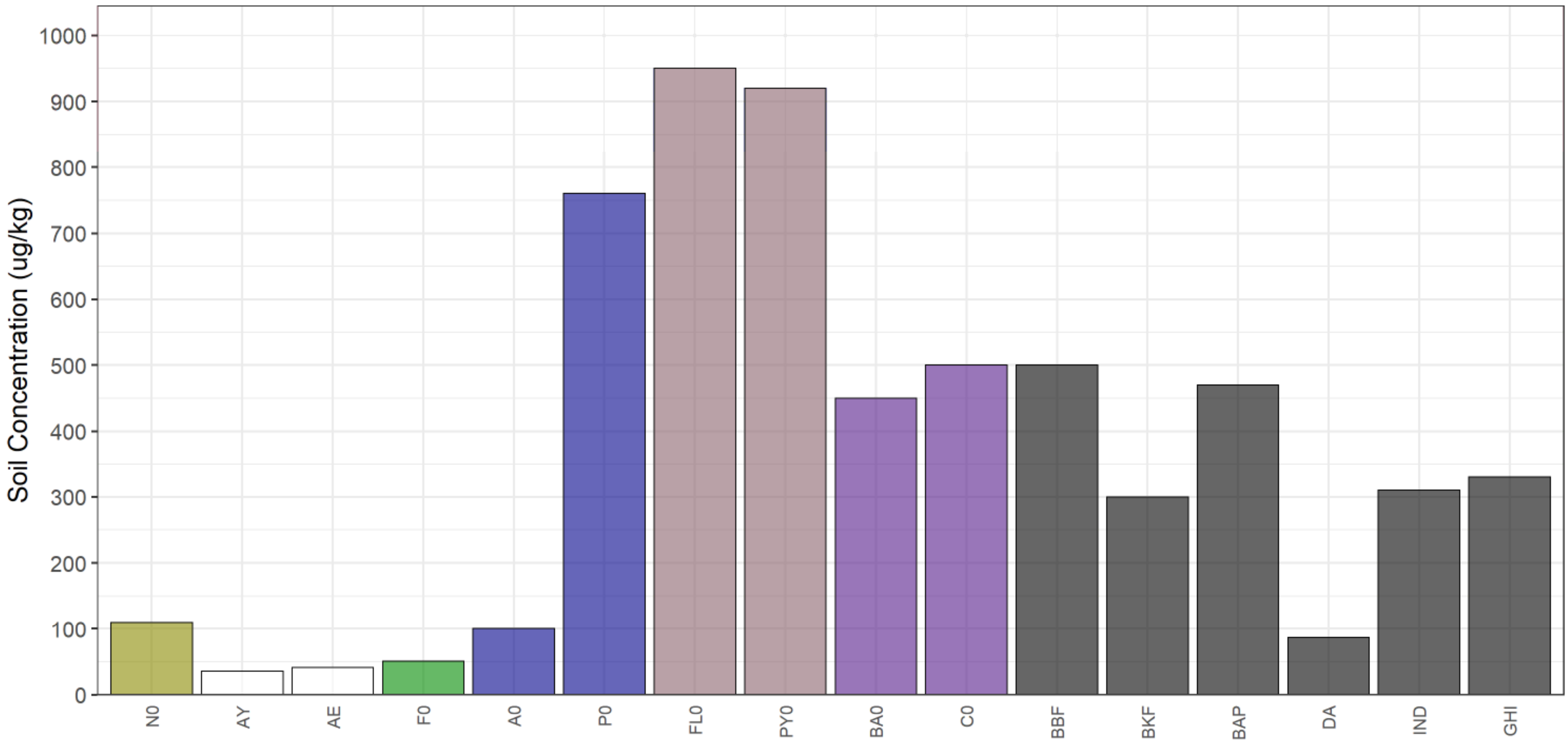
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-12-LB-MWHL
SAMPLE ID: PDI-T-12-LB-MWHL (0-0.5')

ARCADIS

FIGURE
A-81



Legend:

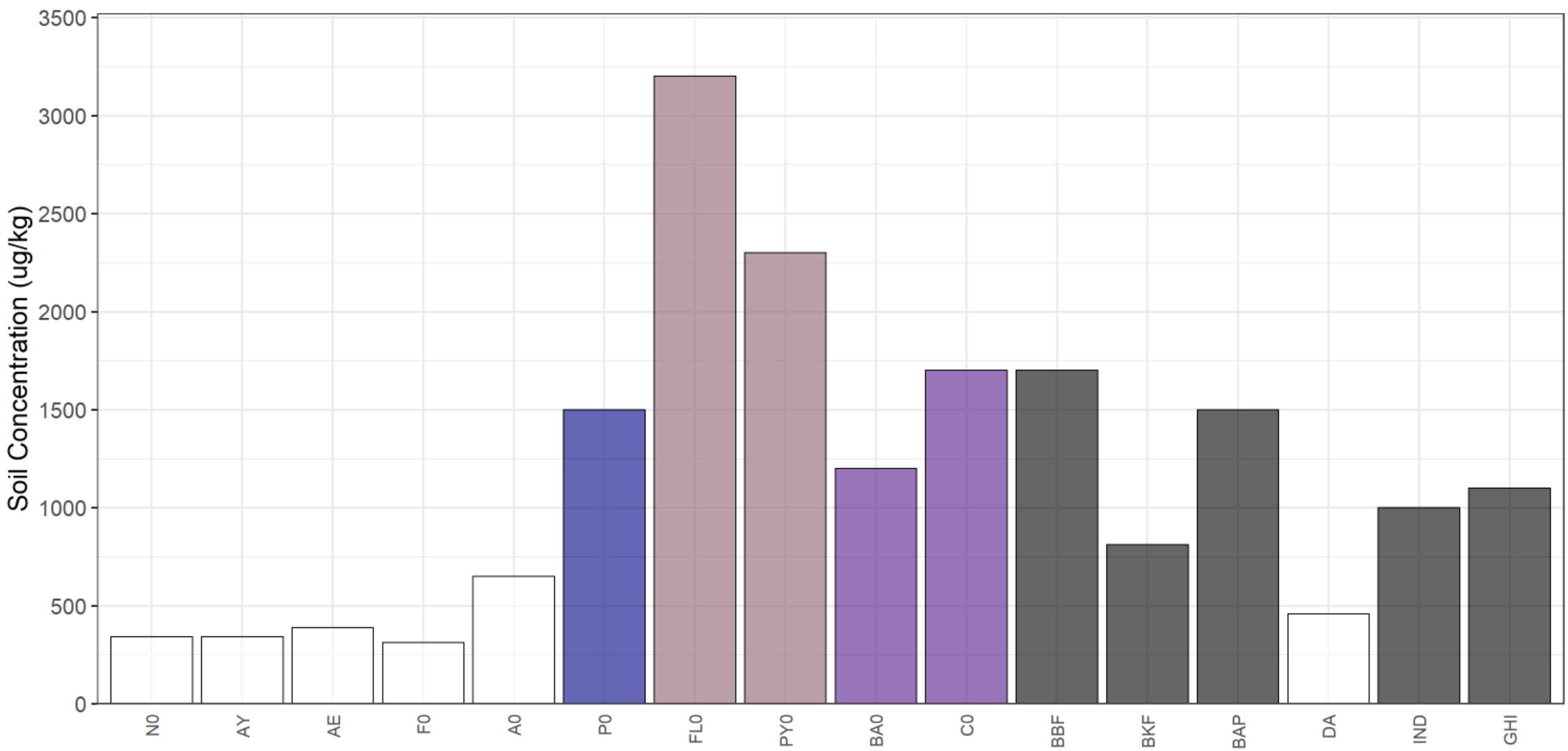
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-12-LB-MWHL
SAMPLE ID: PDI-T-12-LB-MWHL (0.5-0.7')

ARCADIS

FIGURE
A-82



Legend:

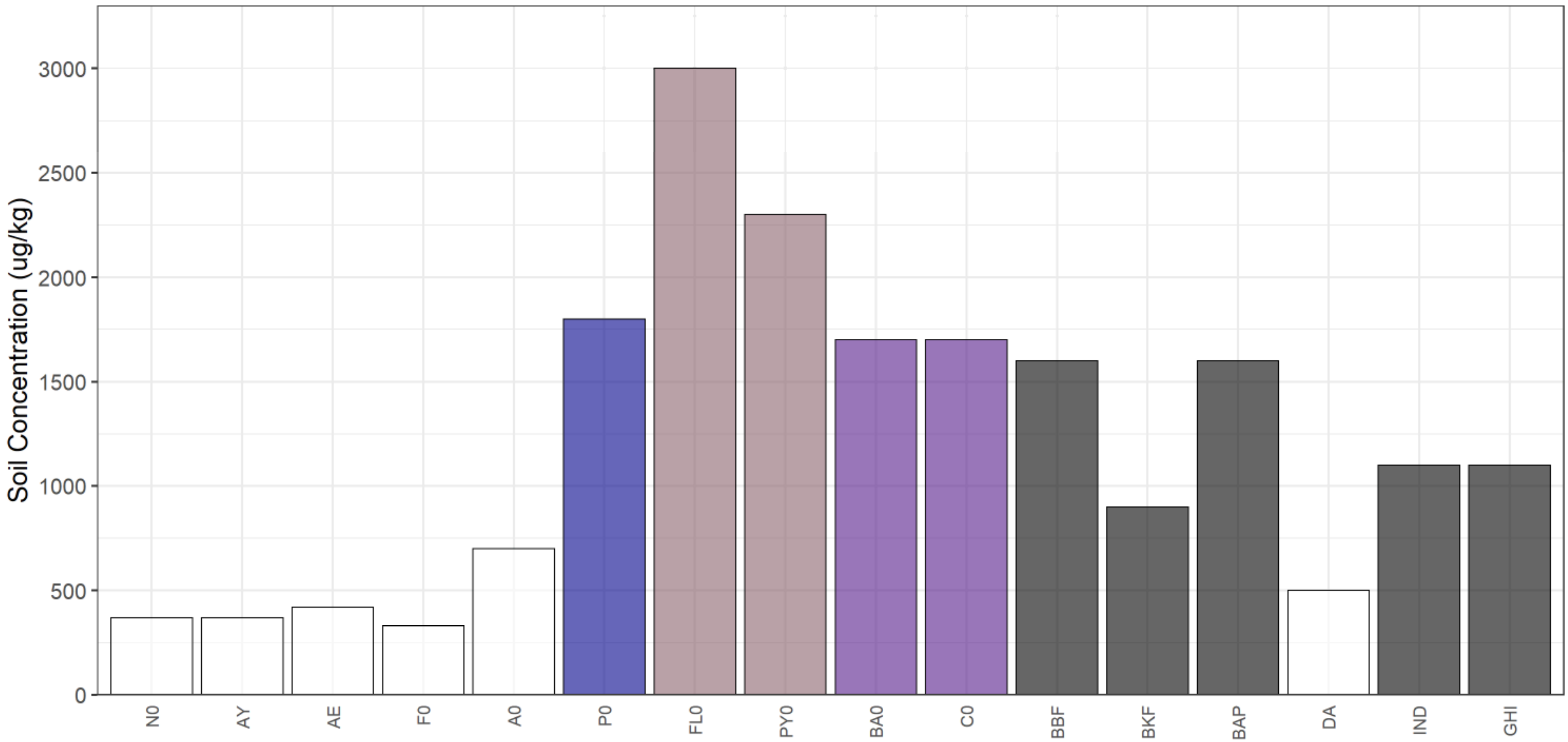
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-15-RB-MB
SAMPLE ID: PDI-T-15-RB-MB (0-0.5')

ARCADIS

FIGURE
A-83



Legend:

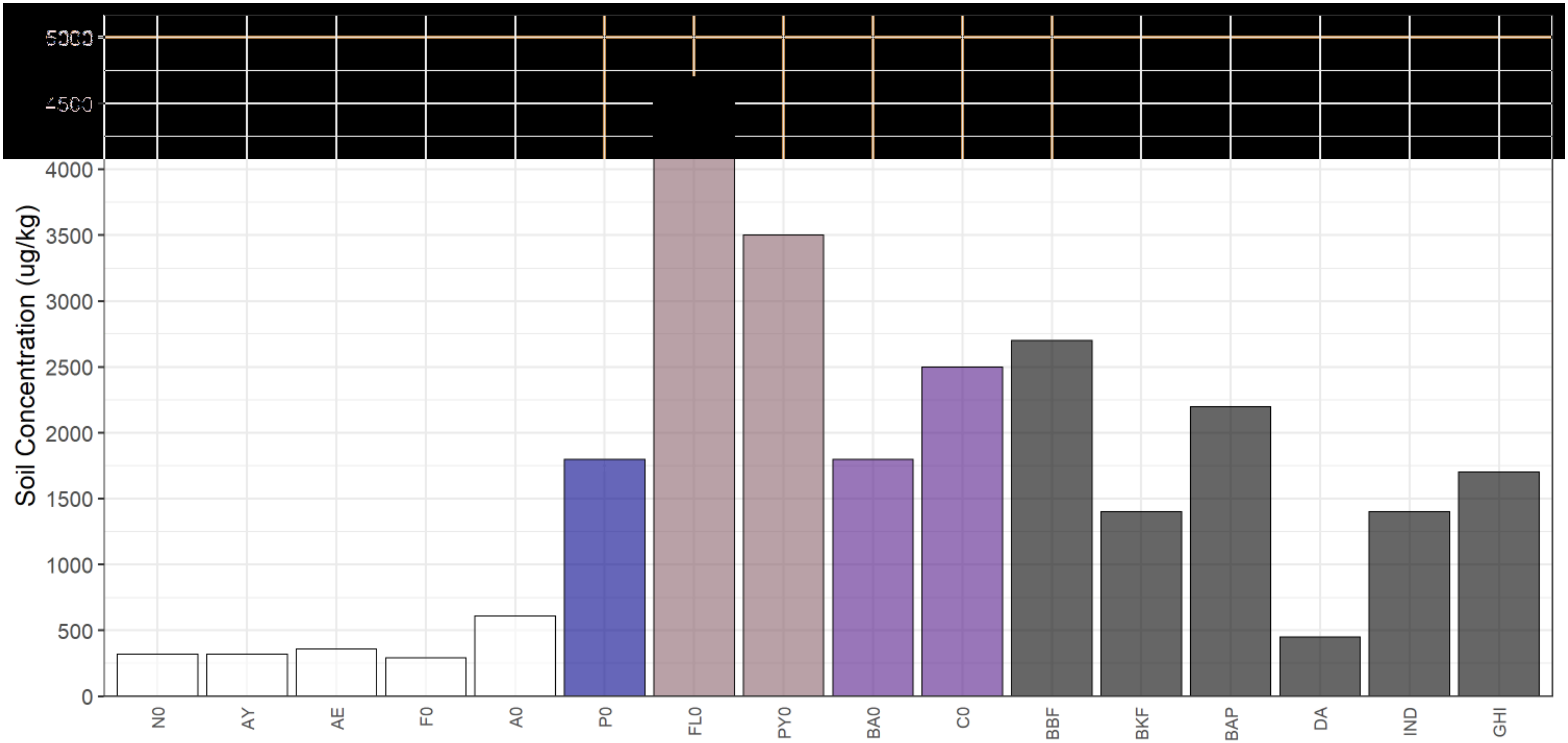
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-15-RB-MB
SAMPLE ID: PDI-T-15-RB-MB (0.5-0.7')

ARCADIS

FIGURE
A-84



Legend:

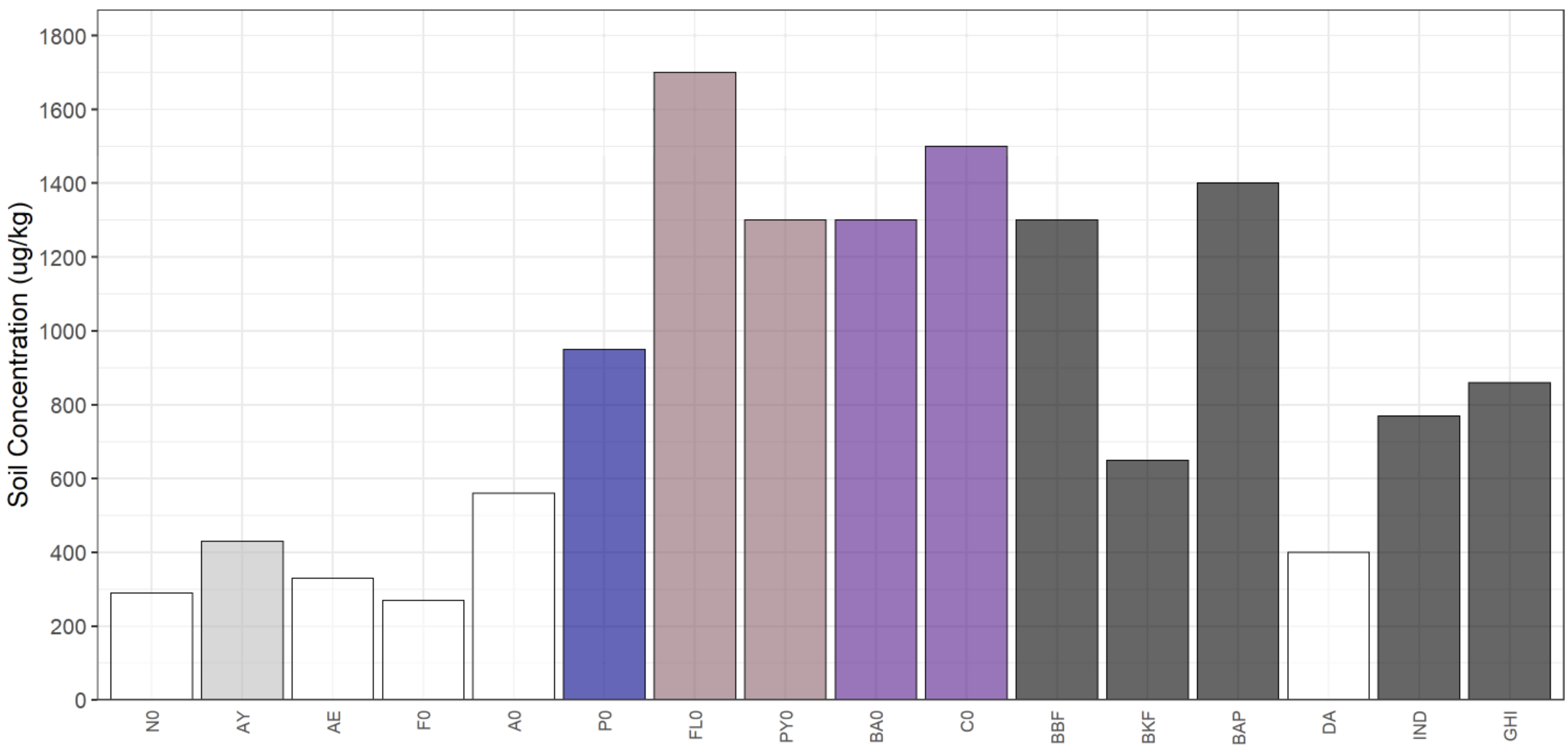
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-15-RB-MHWL
SAMPLE ID: PDI-T-15-RB-MHWL (0-0.5')

ARCADIS

FIGURE
A-85



Legend:

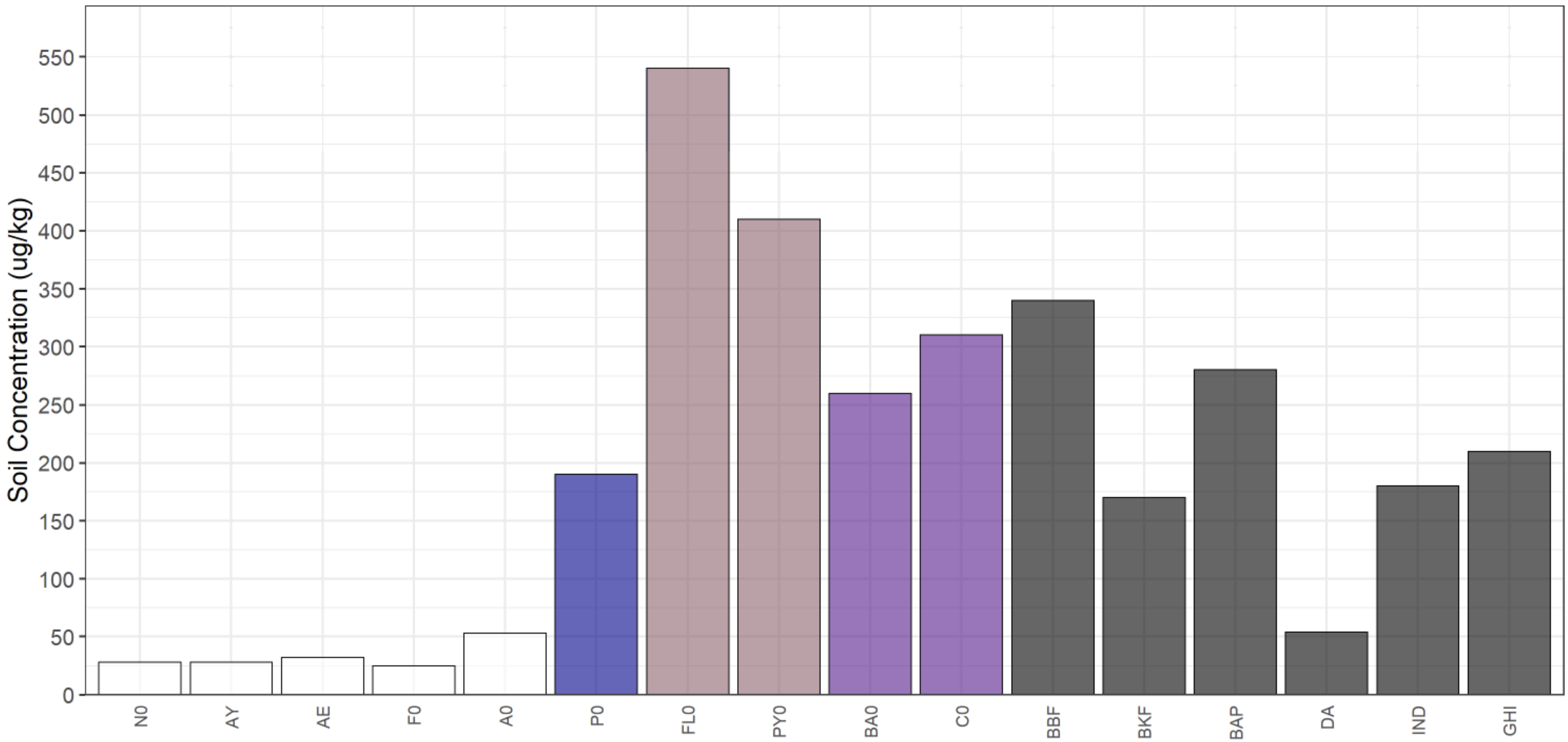
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-15-RB-MHWL
SAMPLE ID: PDI-T-15-RB-MHWL (0.5-0.8')

ARCADIS

FIGURE
A-86



Legend:

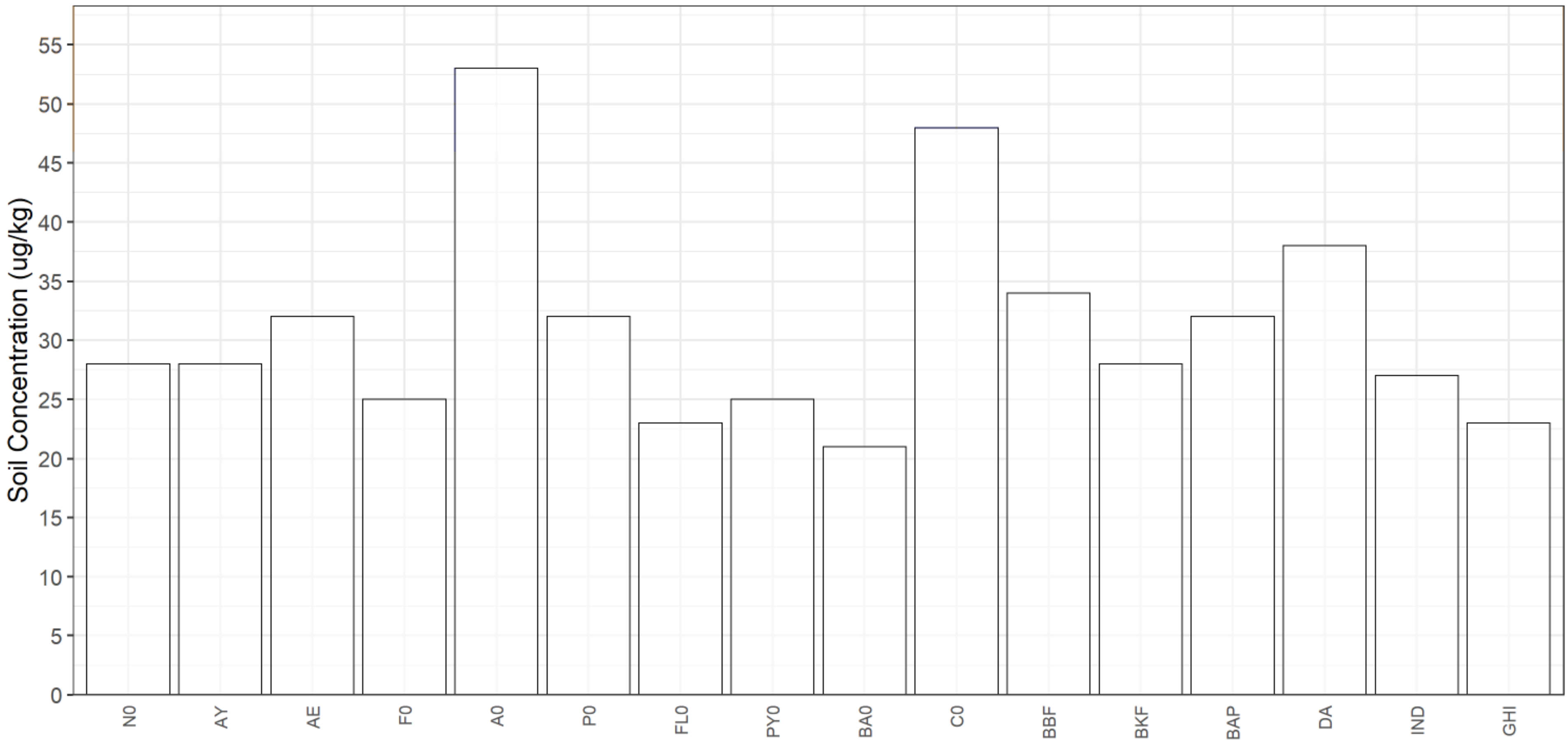
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-16-LB-MB
SAMPLE ID: PDI-T-16-LB-MB (0-0.5')

ARCADIS

FIGURE
A-87



Legend:

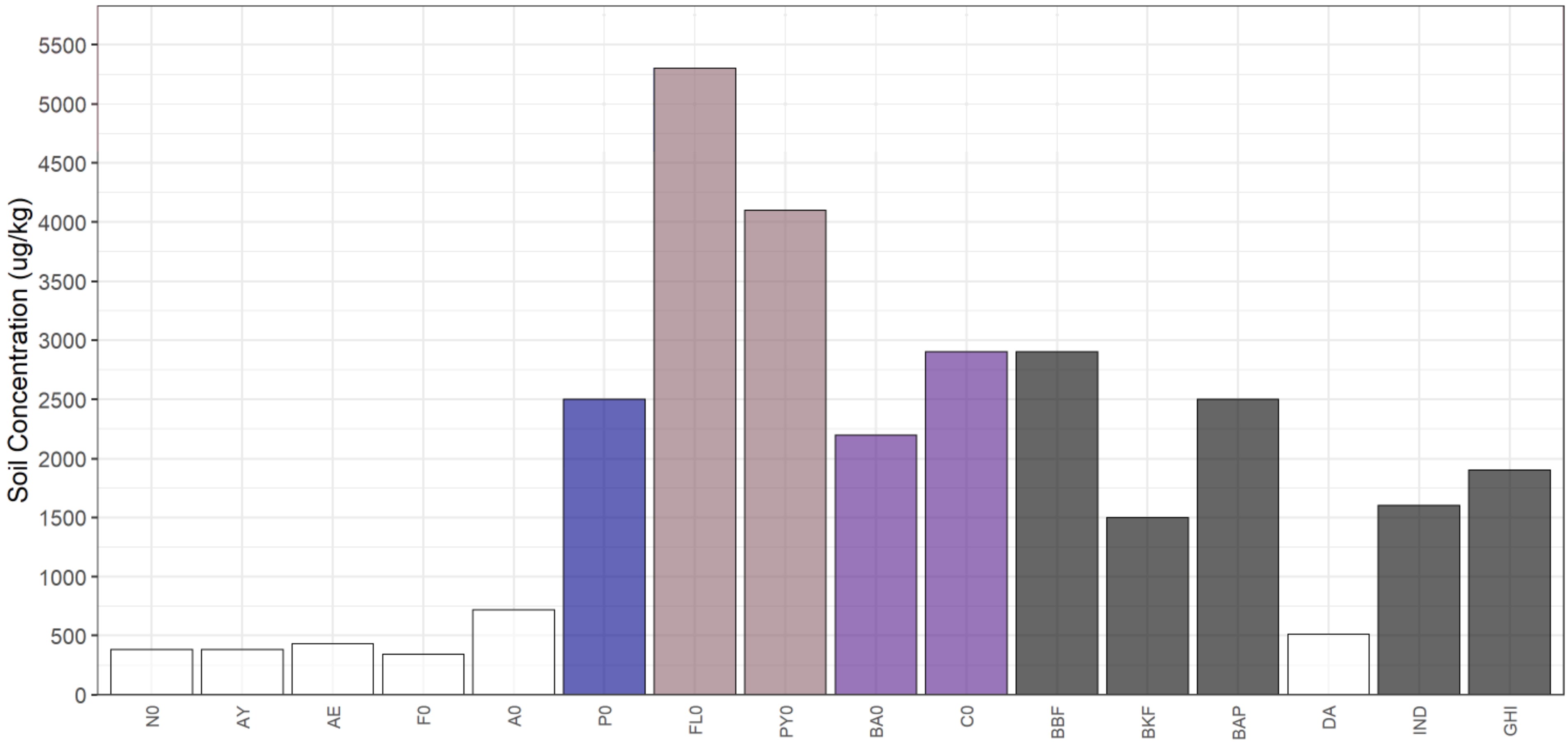
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-16-LB-MB
SAMPLE ID: PDI-T-16-LB-MB (0.5-0.8')

ARCADIS

FIGURE
A-88



Legend:

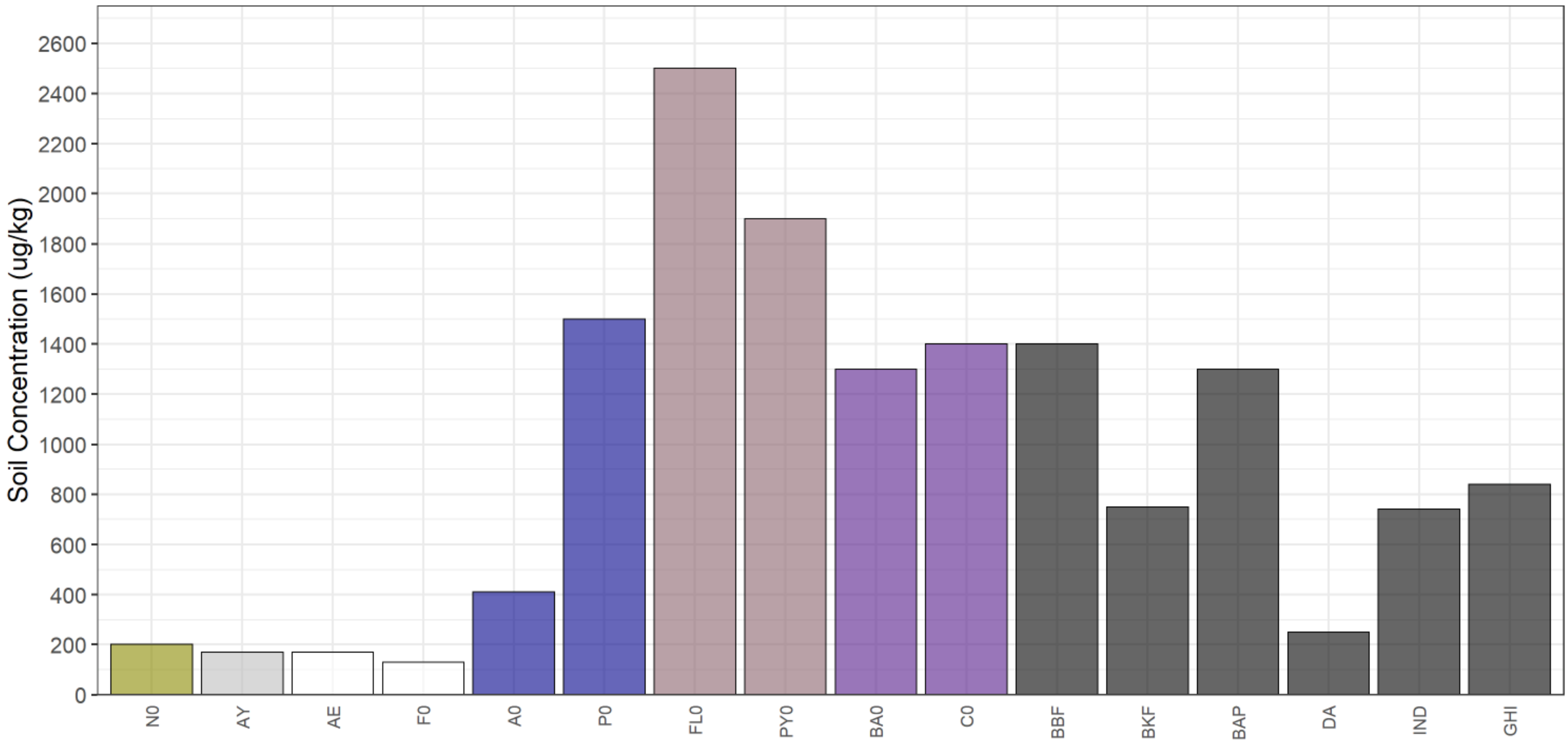
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-16-LB-MHWL
SAMPLE ID: PDI-T-16-LB-MHWL (0-0.3')

ARCADIS

FIGURE
A-89



Legend:

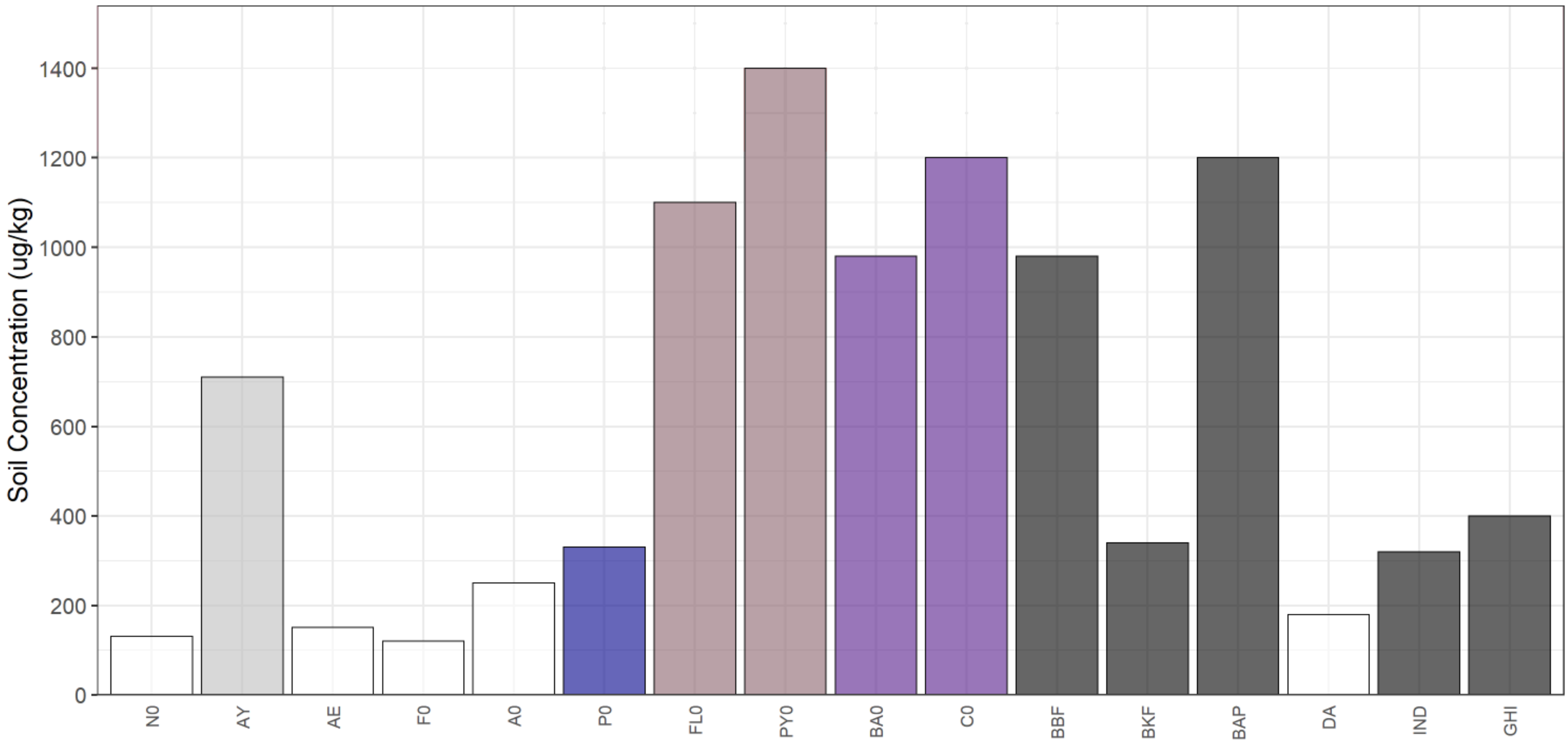
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-16-RB-MB
SAMPLE ID: PDI-T-16-RB-MB (0-0.5')

ARCADIS

FIGURE
A-90



Legend:

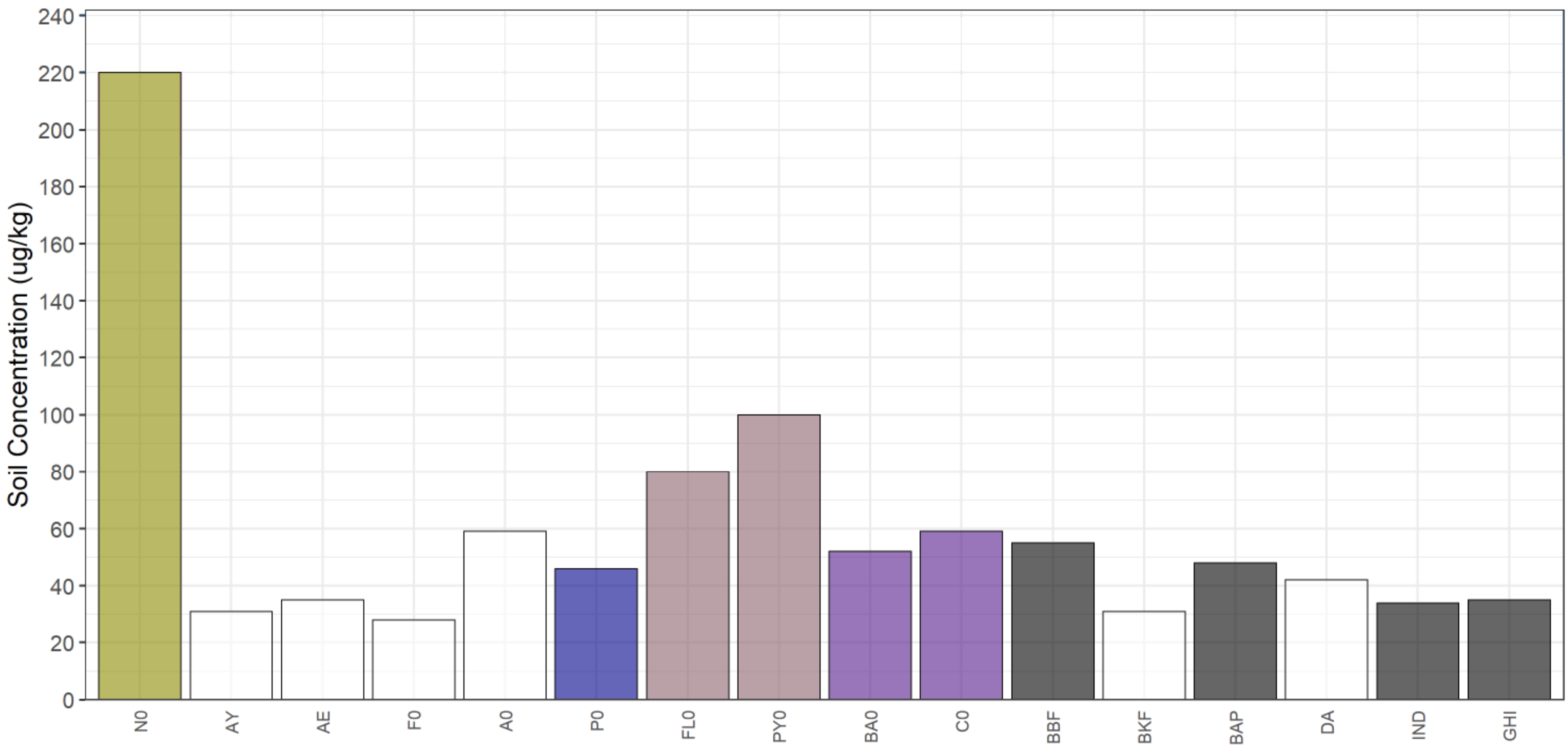
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-16-RB-MHWL
SAMPLE ID: PDI-T-16-RB-MHWL (0-0.5')

ARCADIS

FIGURE
A-91



Legend:

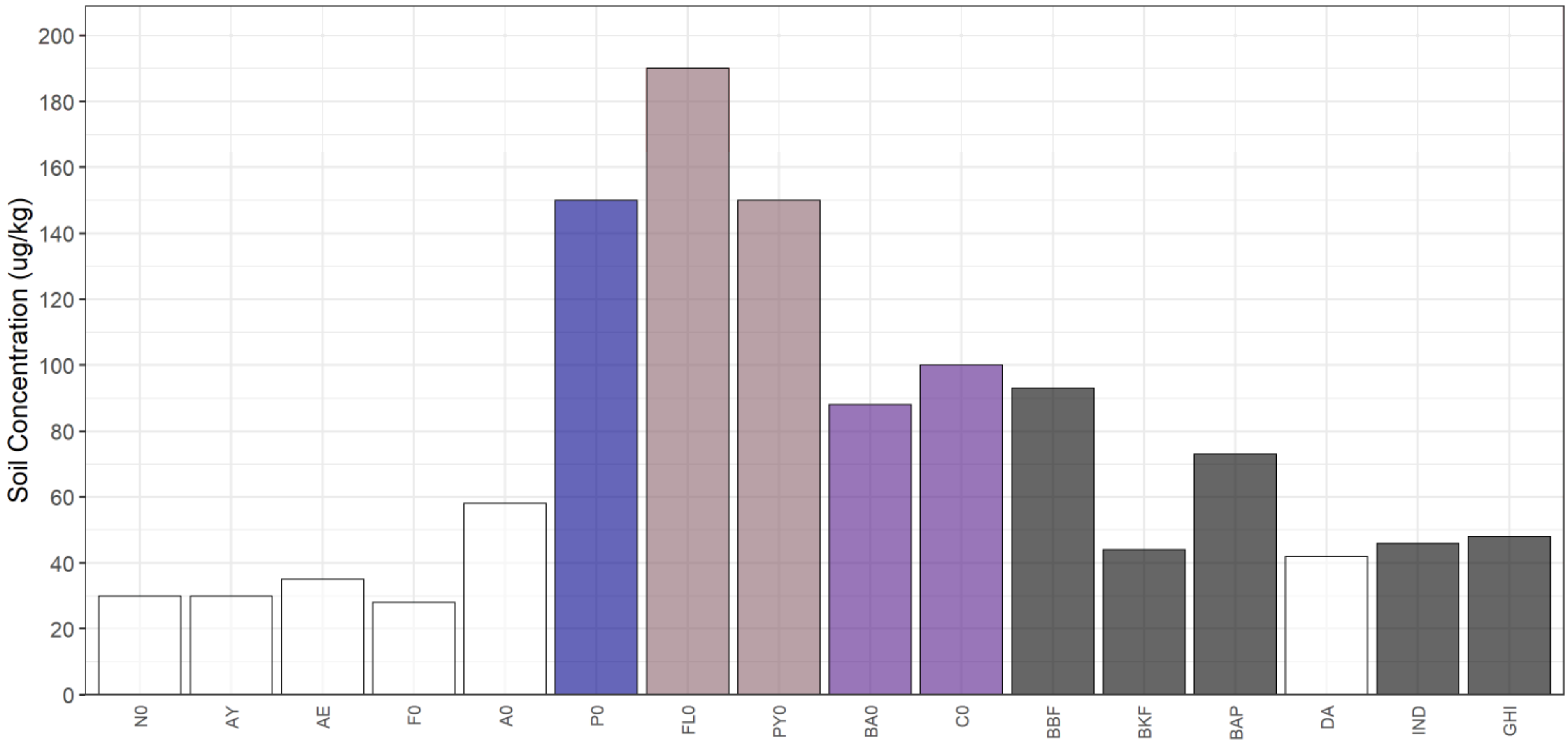
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-16-RB-MHWL
SAMPLE ID: PDI-T-16-RB-MHWL (0.5-1.0')

ARCADIS

FIGURE
A-92



Legend:

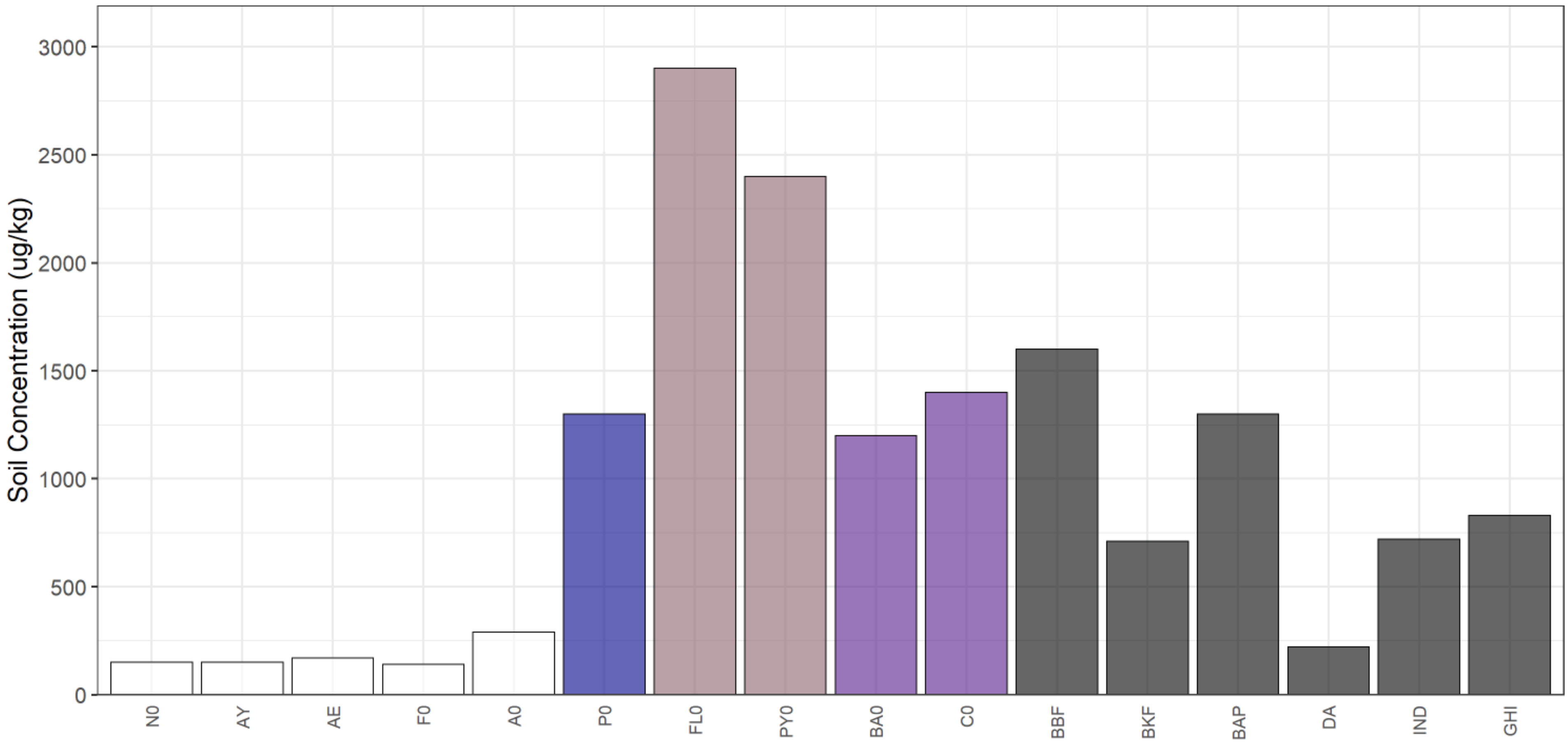
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-16-RB-MHWL
SAMPLE ID: PDI-T-16-RB-MHWL (1.0-1.8)

ARCADIS

FIGURE
A-93



Legend:

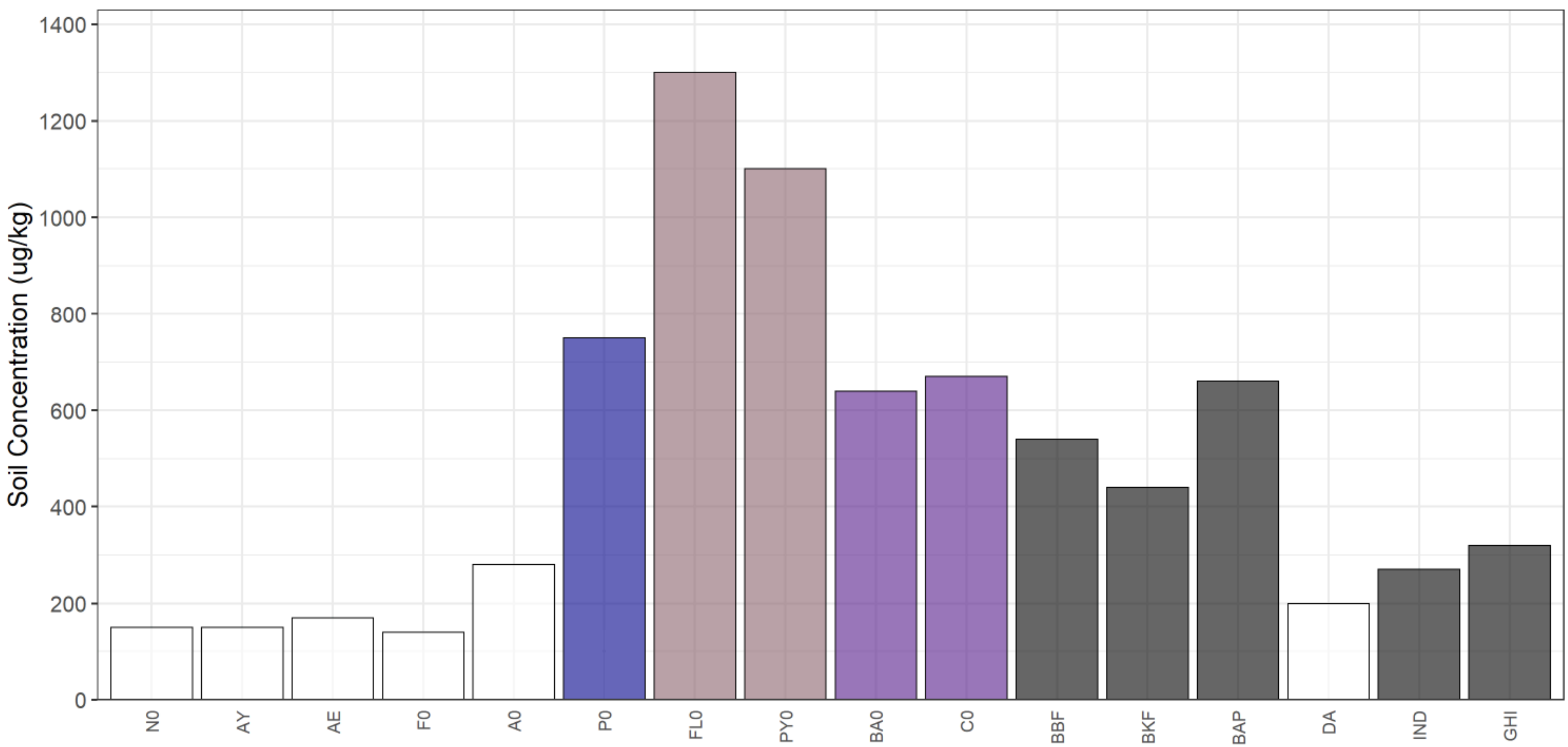
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-17-LB-MB
SAMPLE ID: PDI-T-17-LB-MB (0-0.5')

ARCADIS

FIGURE
A-94



Legend:

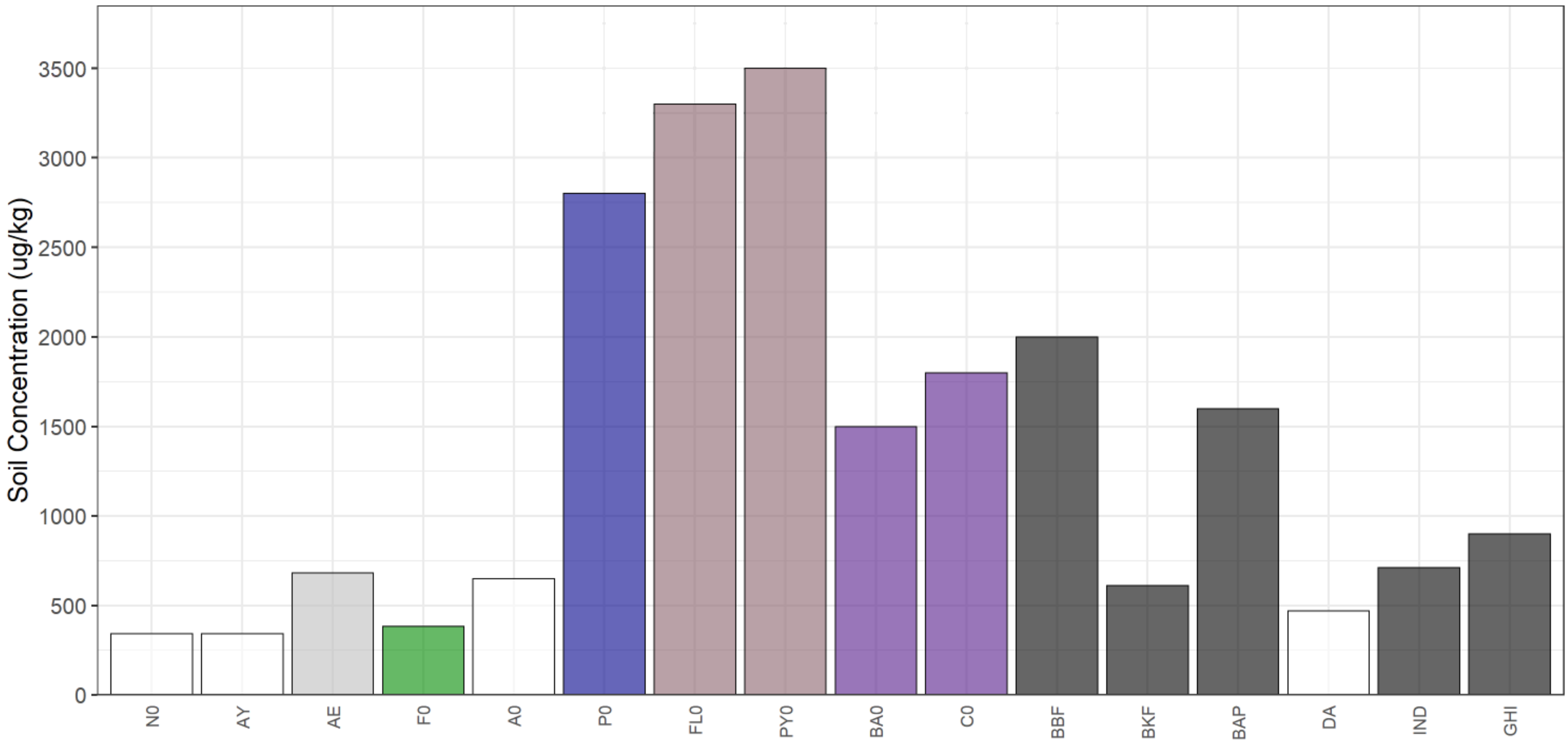
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-17-LB-MB
SAMPLE ID: PDI-T-17-LB-MB (0.5-0.8')

ARCADIS

FIGURE
A-95



Legend:

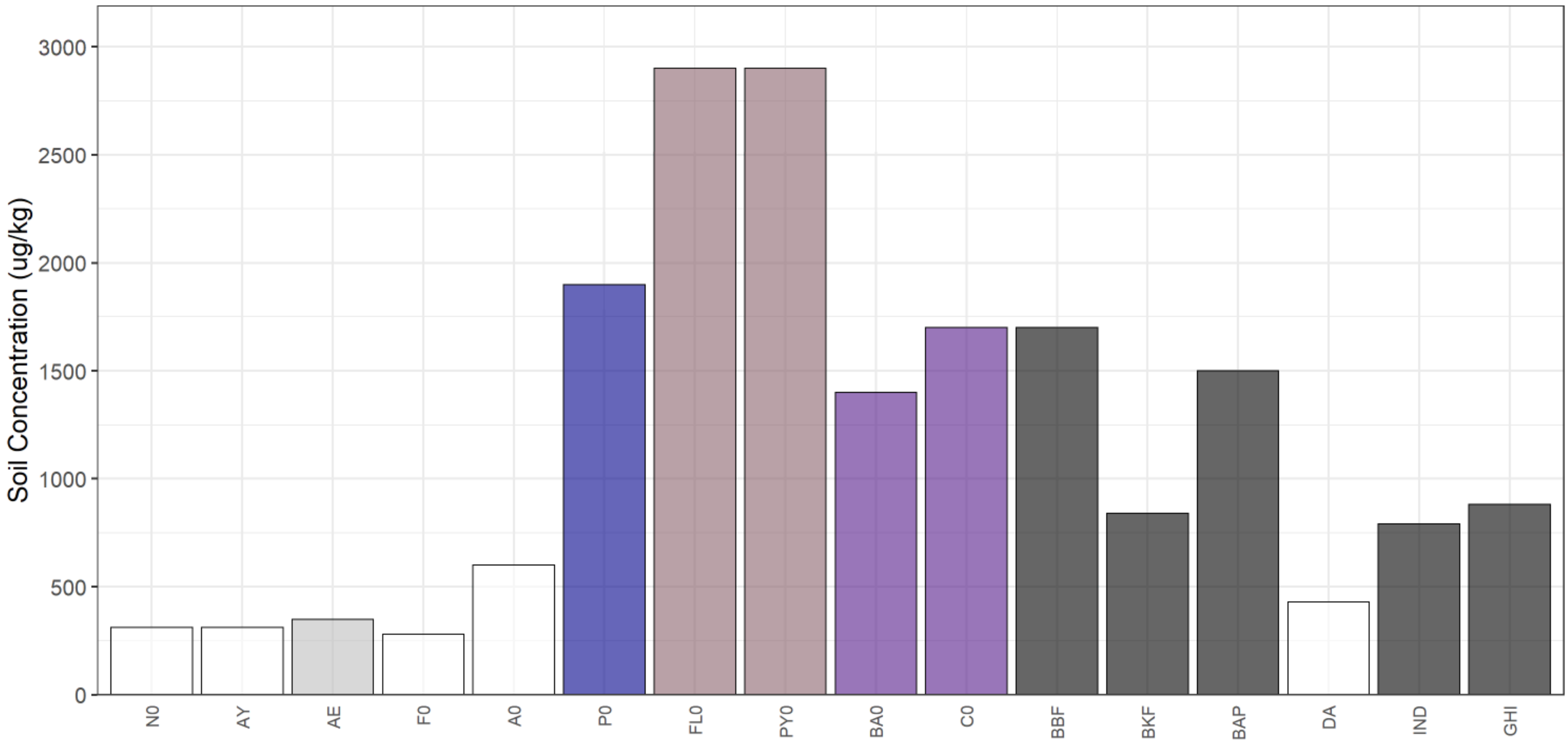
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-17-LB-MHWL
SAMPLE ID: PDI-T-17-LB-MHWL (0-0.5')

ARCADIS

FIGURE
A-96



Legend:

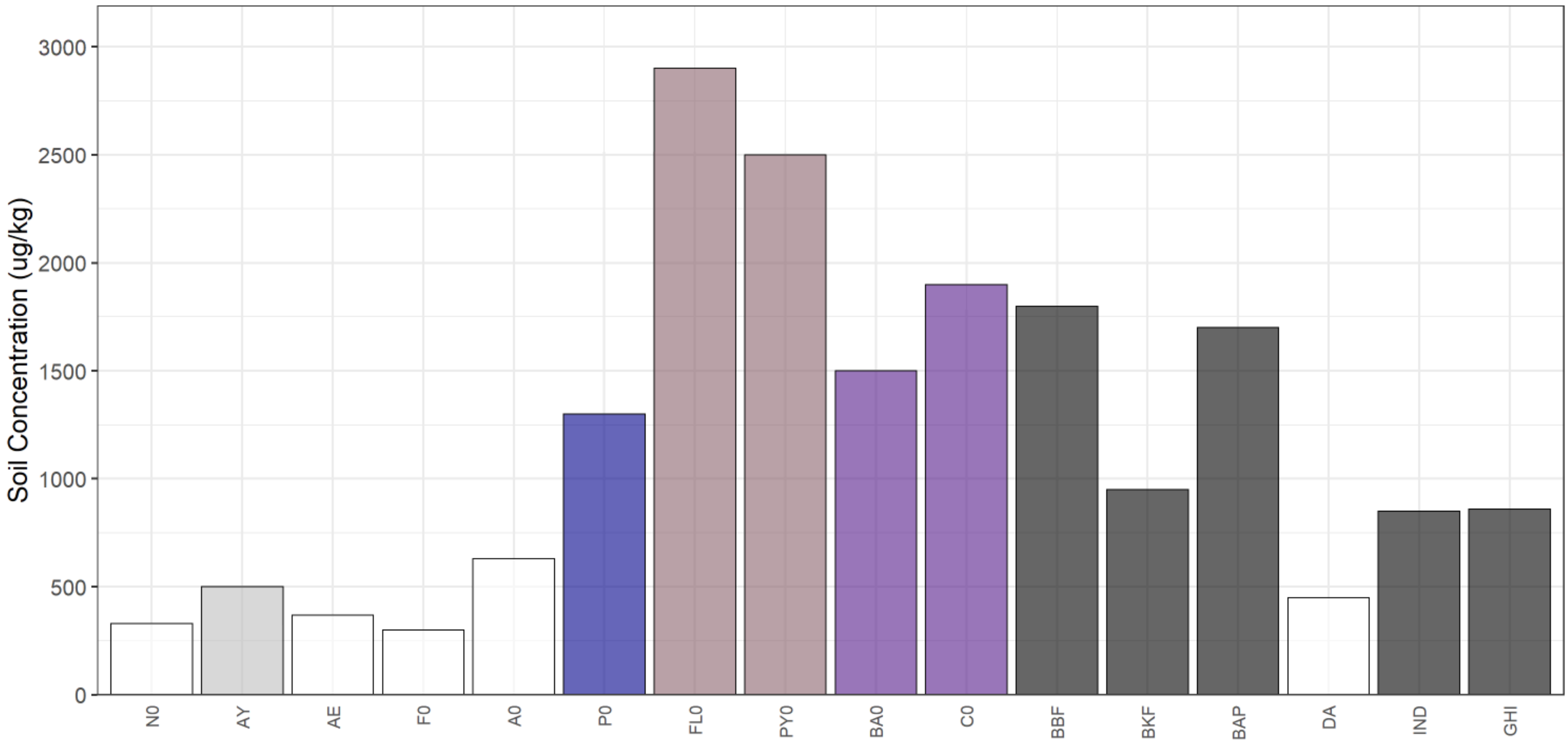
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-17-LB-MHWL
SAMPLE ID: PDI-T-17-LB-MHWL (0.5-0.9')

ARCADIS

FIGURE
A-97



Legend:

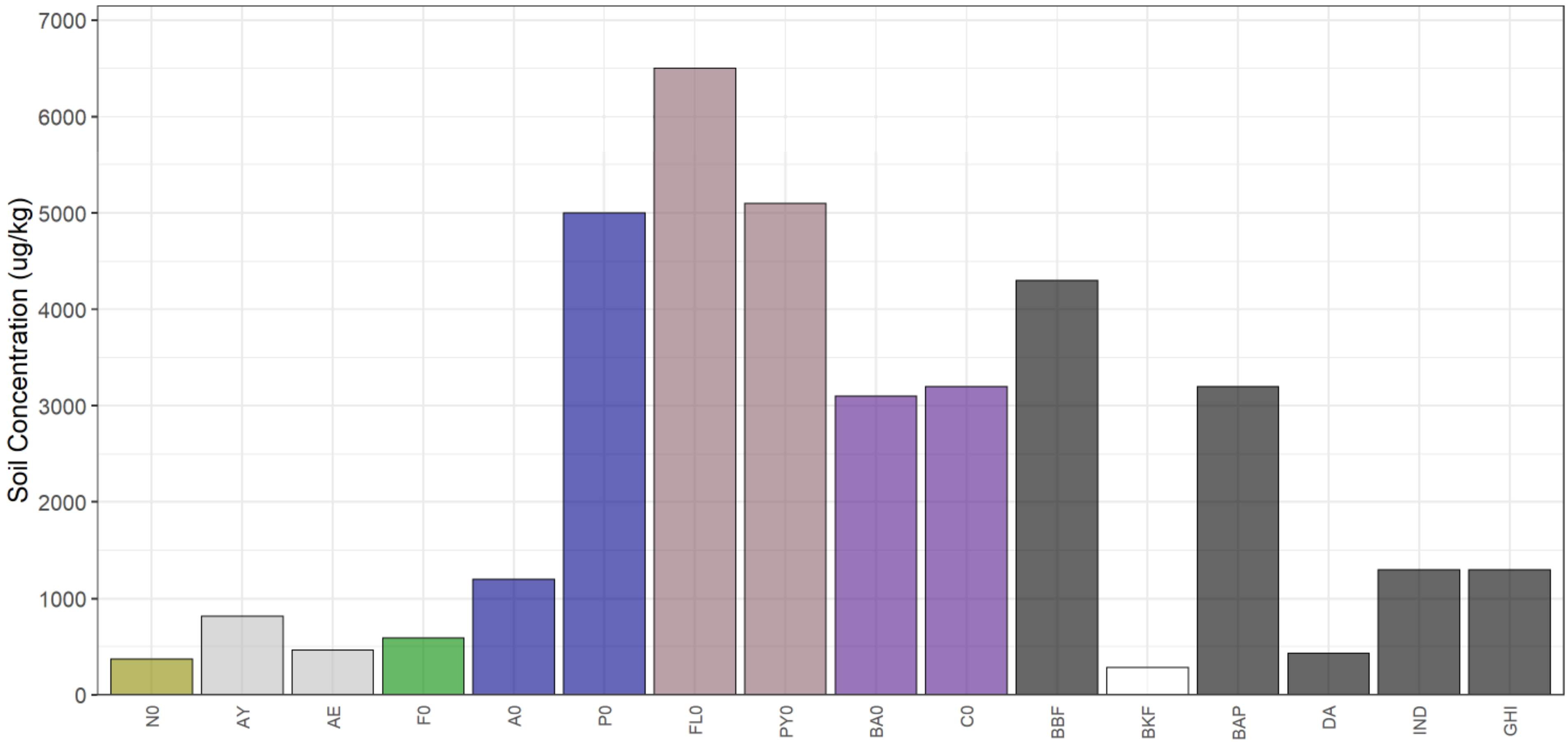
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-17-RB-MB
SAMPLE ID: PDI-T-17-RB-MB (0.0-0.5')

ARCADIS

FIGURE
A-98



Legend:

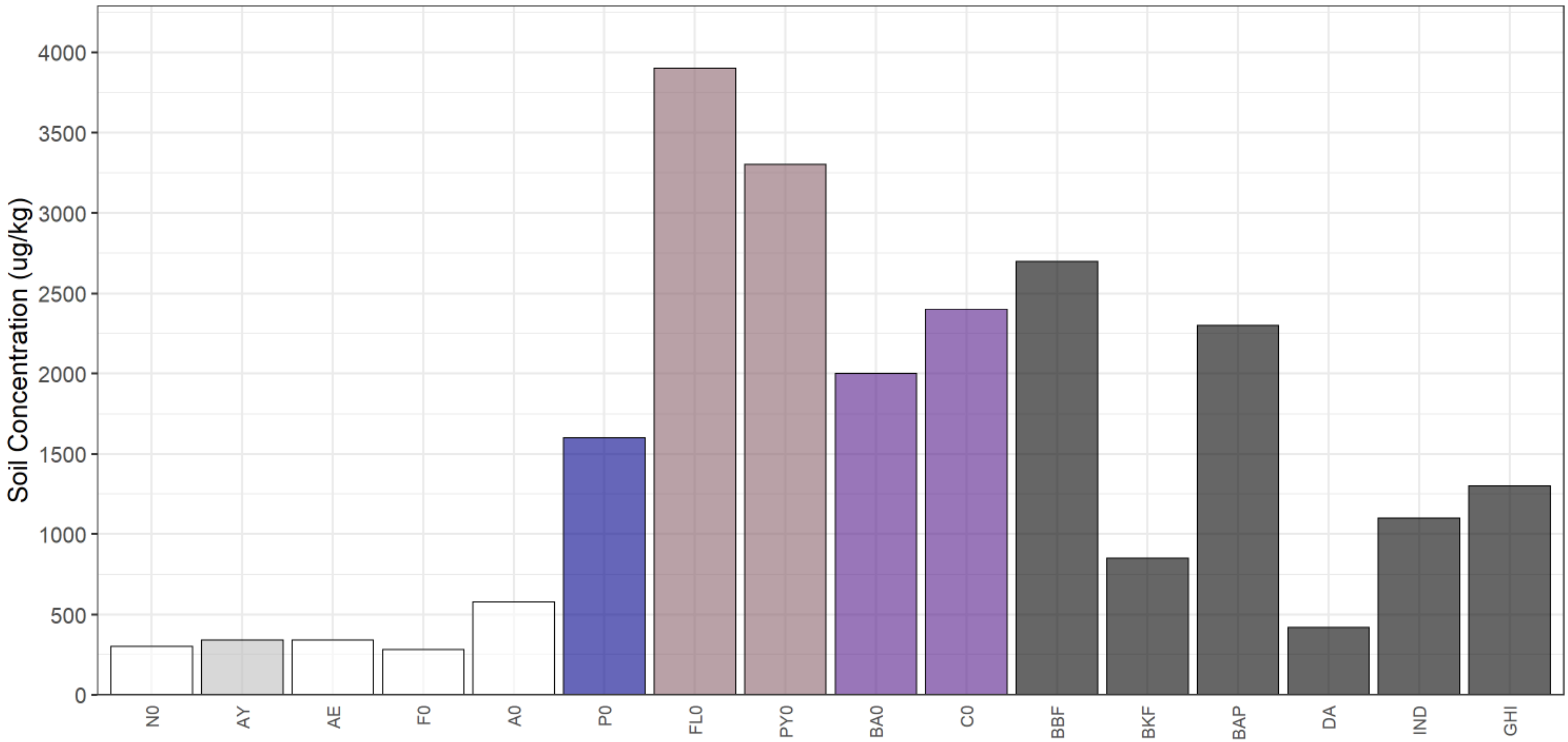
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-17-RB-MB
SAMPLE ID: PDI-T-17-RB-MB (0.5-0.7')

ARCADIS

FIGURE
A-99



Legend:

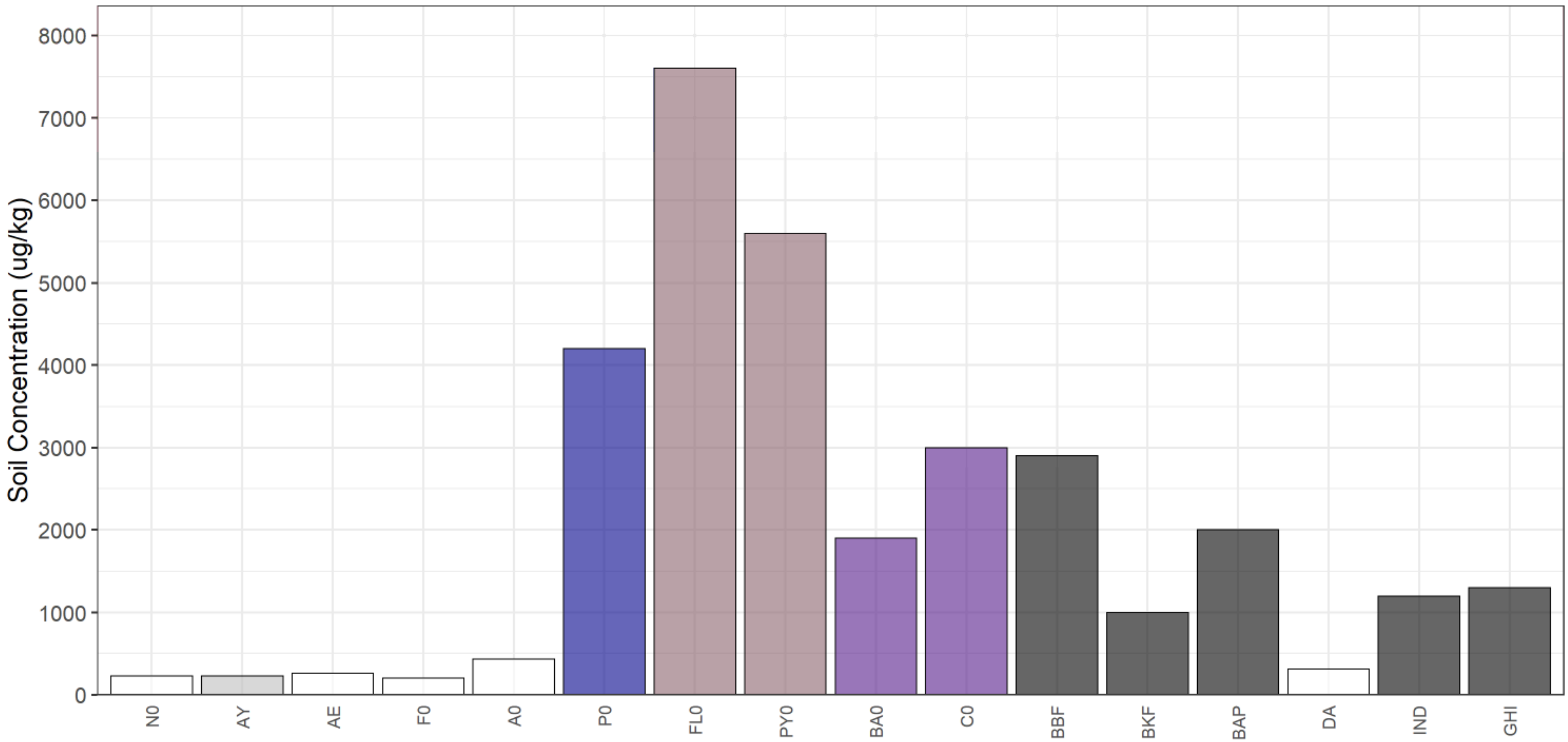
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-17-RB-MHWL
SAMPLE ID: PDI-T-17-RB-MHWL (0-0.4')

ARCADIS

FIGURE
A-100



Legend:

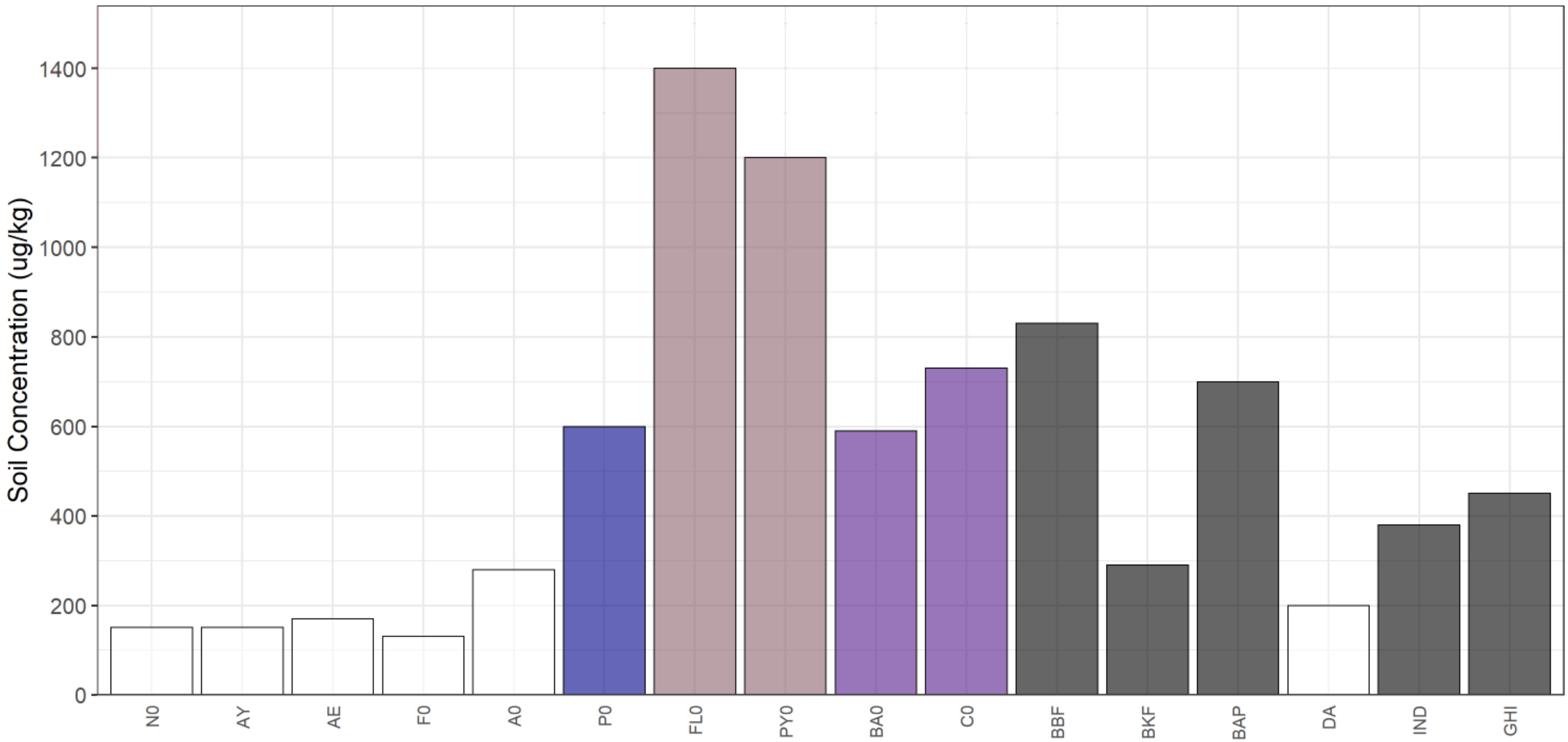
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-18-LB-MB
SAMPLE ID: PDI-T-18-LB-MB (0.0-0.5')

ARCADIS

FIGURE
A-101



Legend:

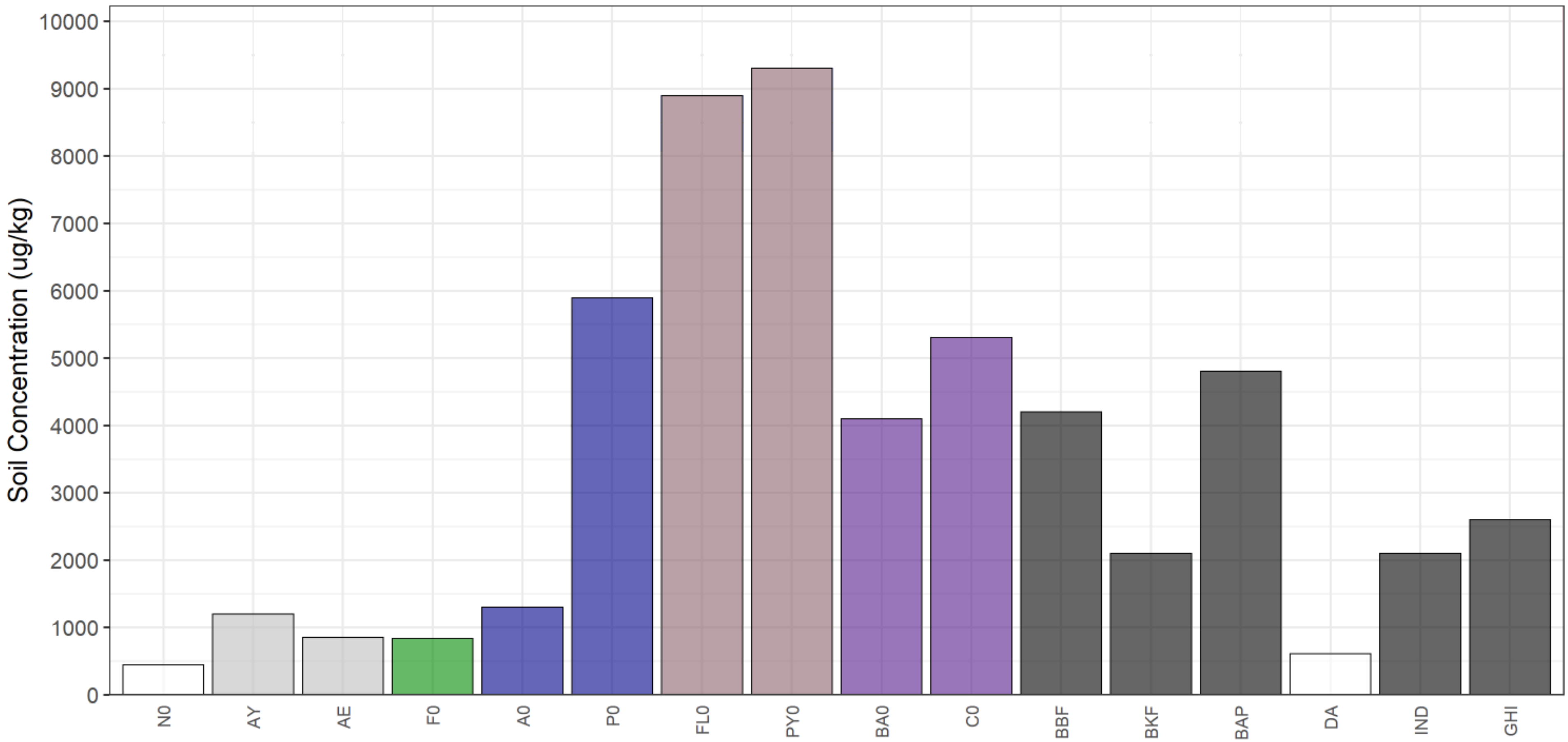
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-18-LB-MB
SAMPLE ID: PDI-T-18-LB-MB (0.5-0.9')

ARCADIS

FIGURE
A-102



Legend:

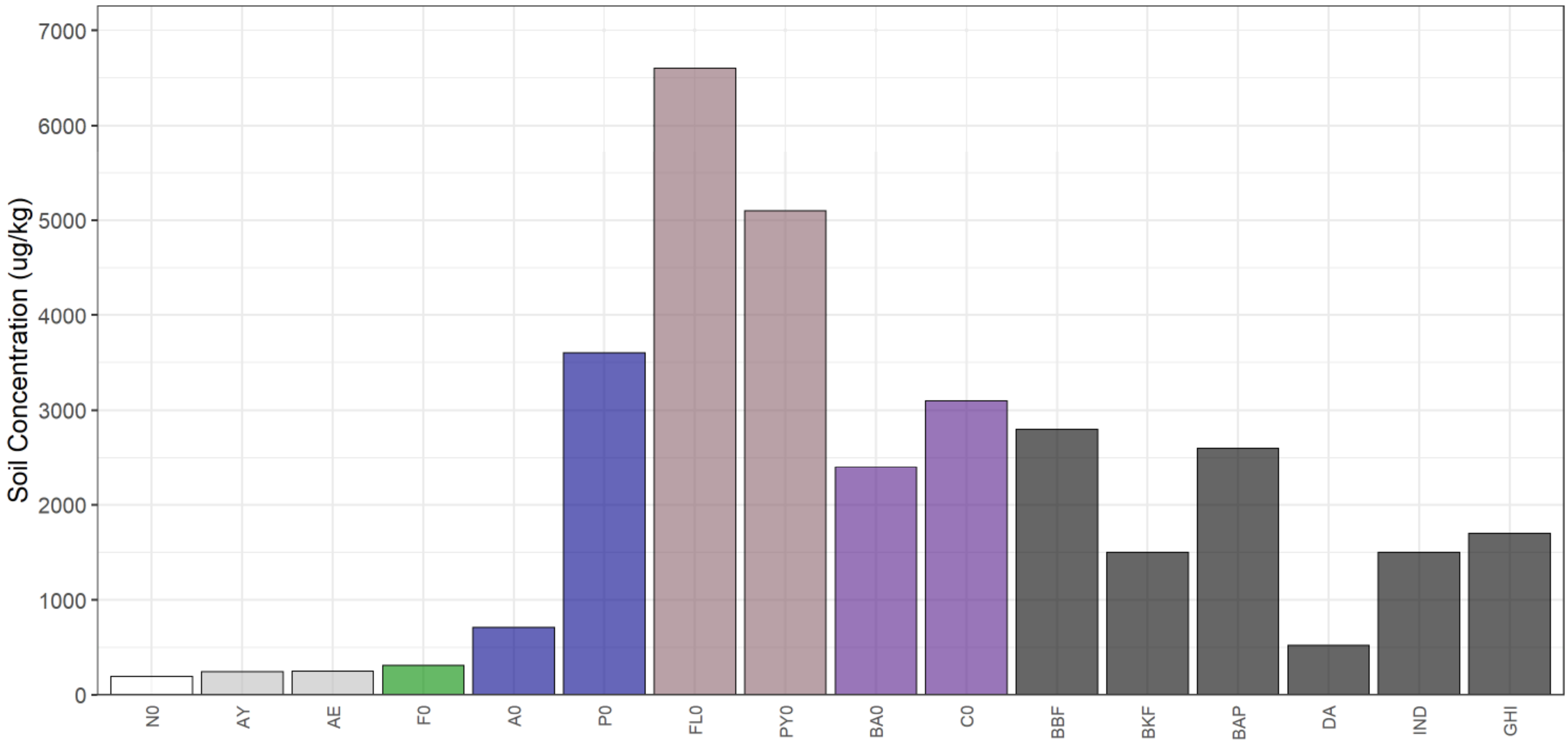
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-18-LB-MHWL
SAMPLE ID: PDI-T-18-LB-MHWL (0-0.5')

ARCADIS

FIGURE
A-103



Legend:

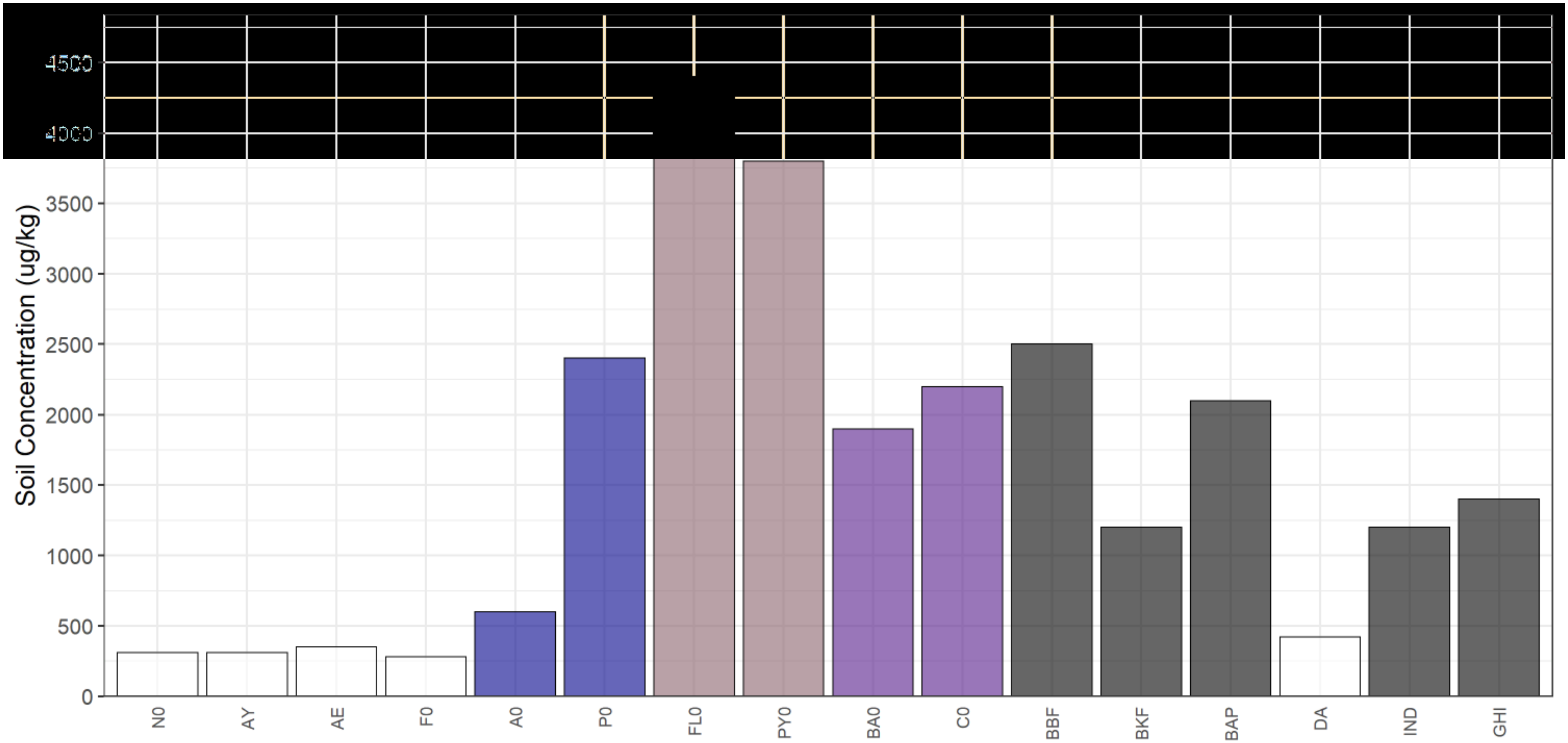
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-18-RB-MB
SAMPLE ID: PDI-T-18-RB-MB (0-0.5')

ARCADIS

FIGURE
A-104



Legend:

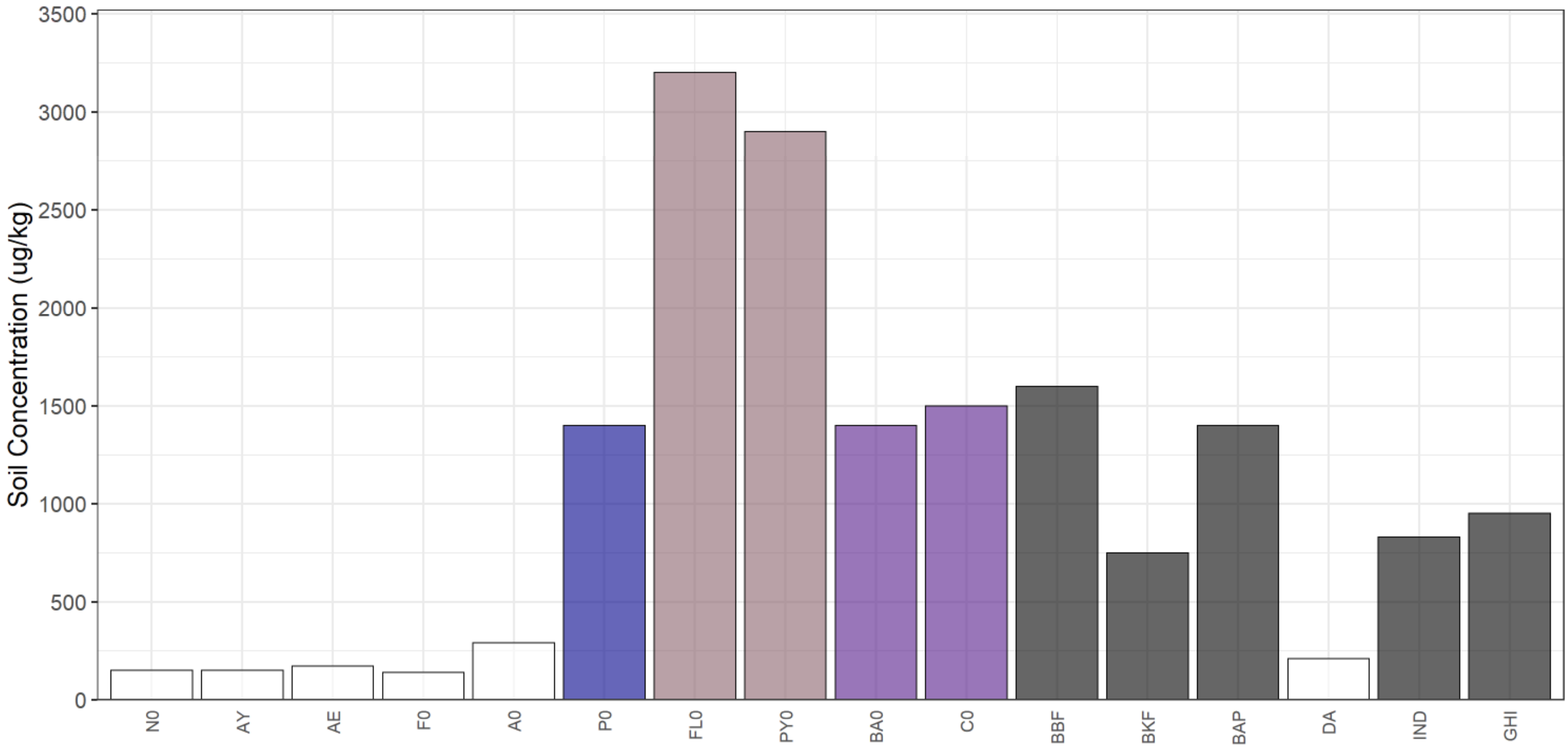
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-18-RB-MB
SAMPLE ID: PDI-T-18-RB-MB (0.5-0.6')

ARCADIS

FIGURE
A-105



Legend:

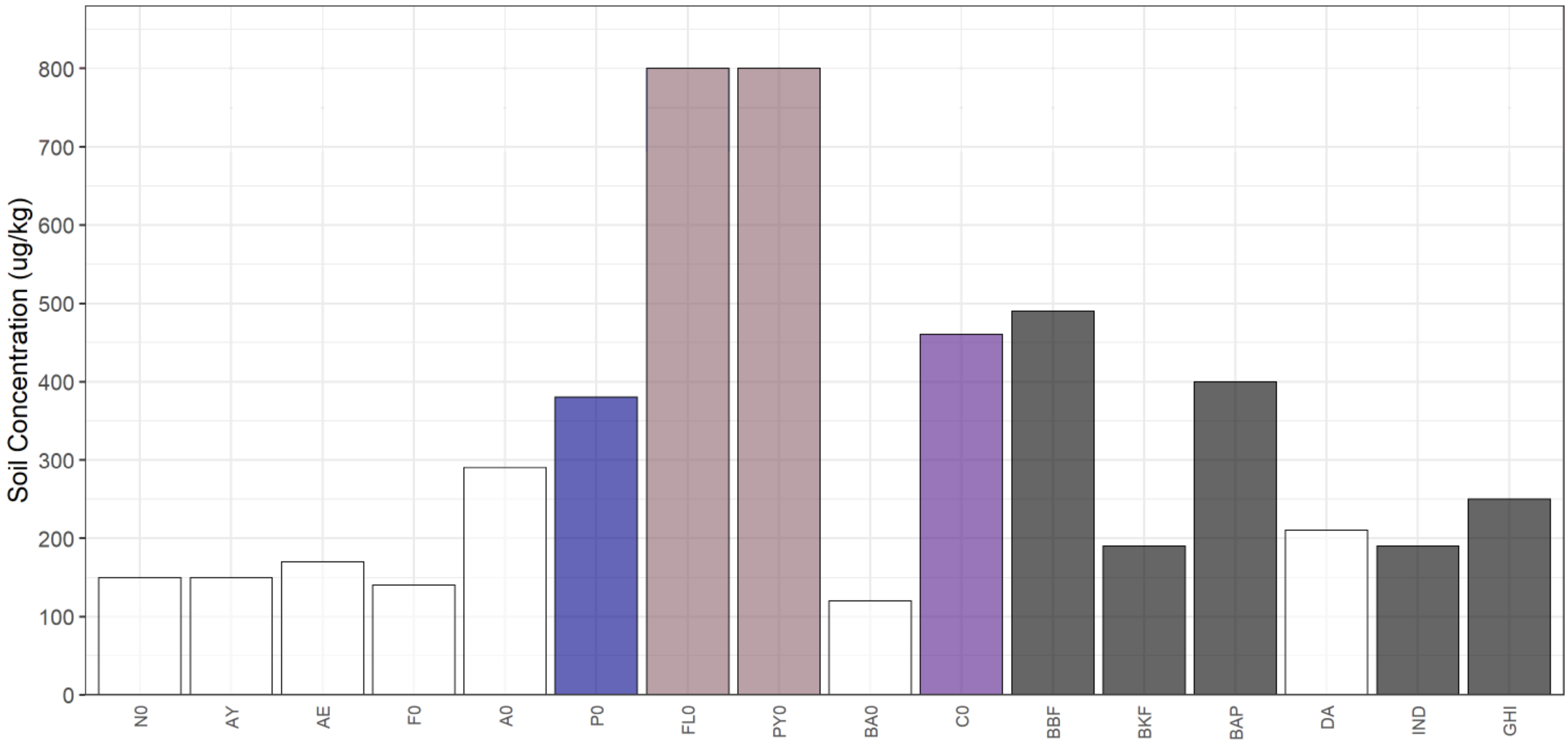
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-18-RB-MHWL
SAMPLE ID: PDI-T-18-RB-MHWL (0-0.5')

ARCADIS

FIGURE
A-106



Legend:

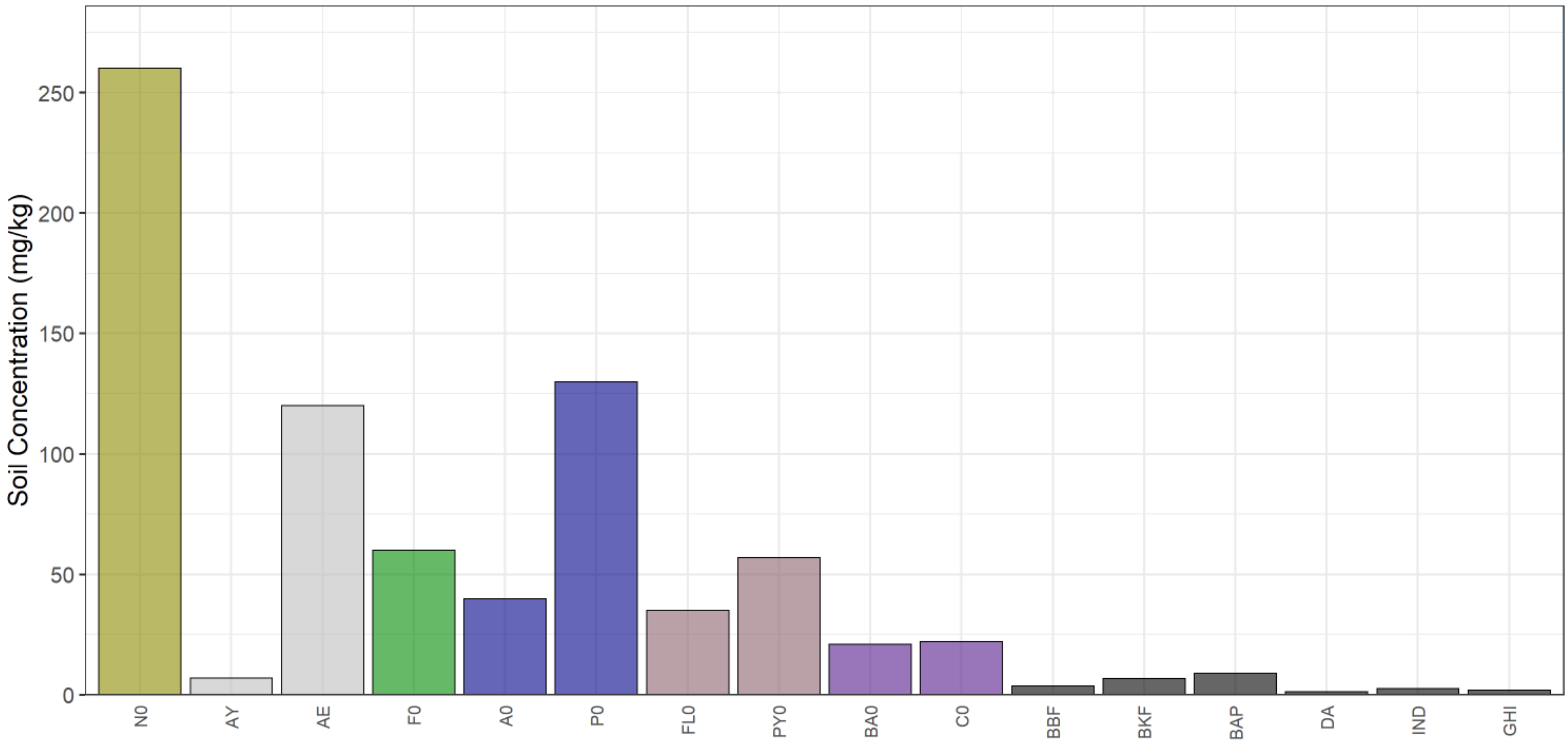
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: PDI-T-18-RB-MHWL
SAMPLE ID: PDI-T-18-RB-MHWL (0.5-1.0')

ARCADIS

FIGURE
A-107



Legend:

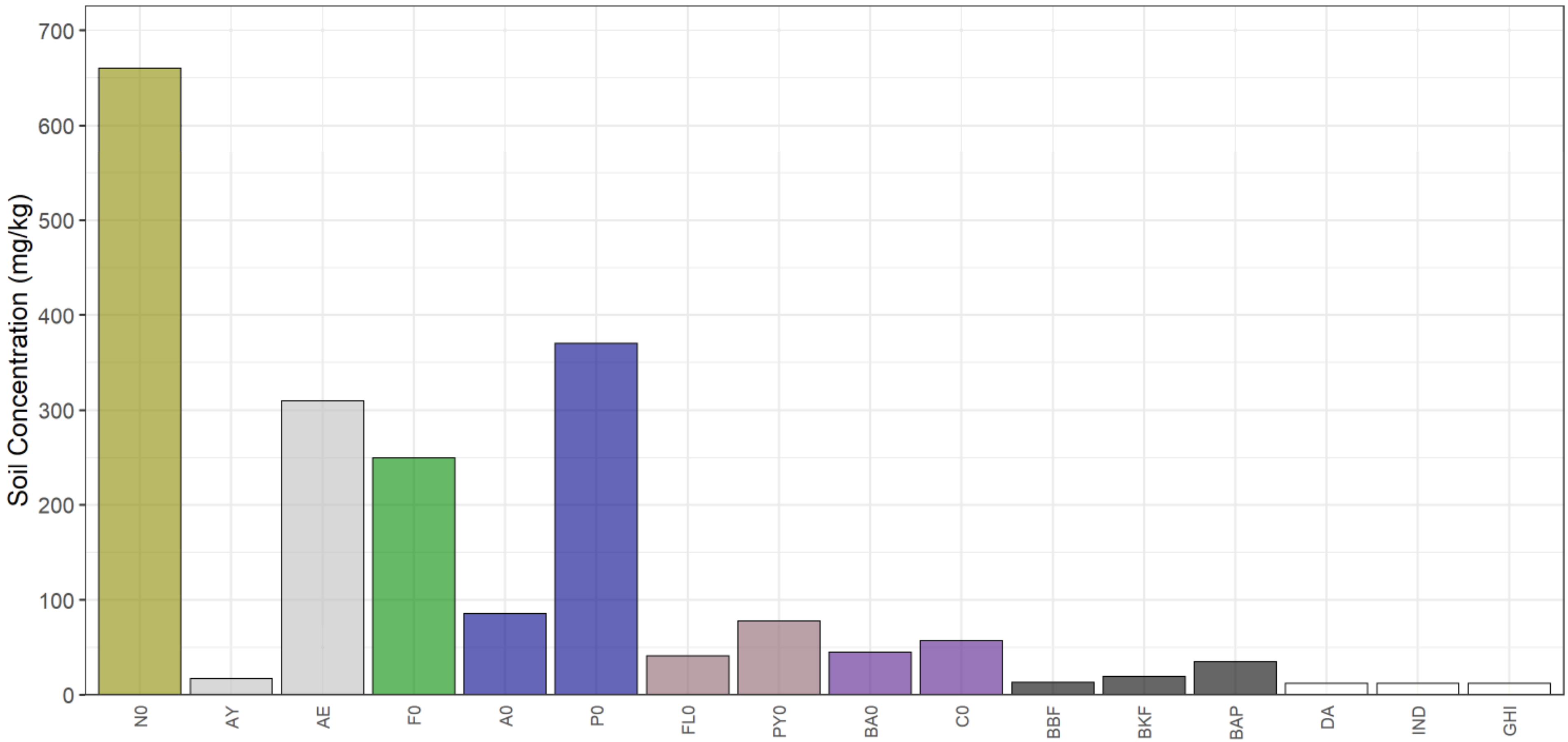
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: GB-53
DEPTH (FT): 6-8

ARCADIS

FIGURE
A-108



Legend:

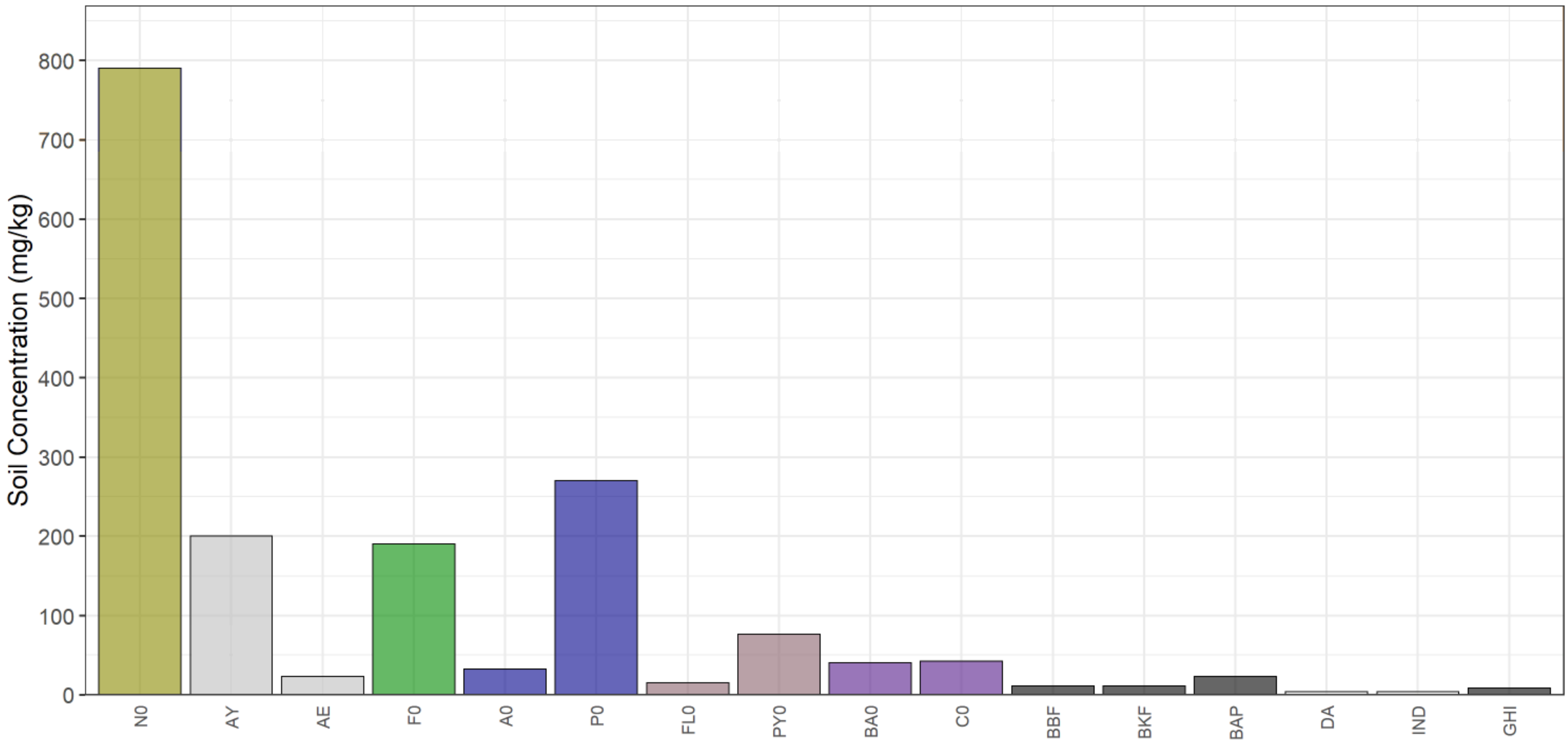
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: GB-58
DEPTH (FT): 2-4

ARCADIS

FIGURE
A-109



Legend:

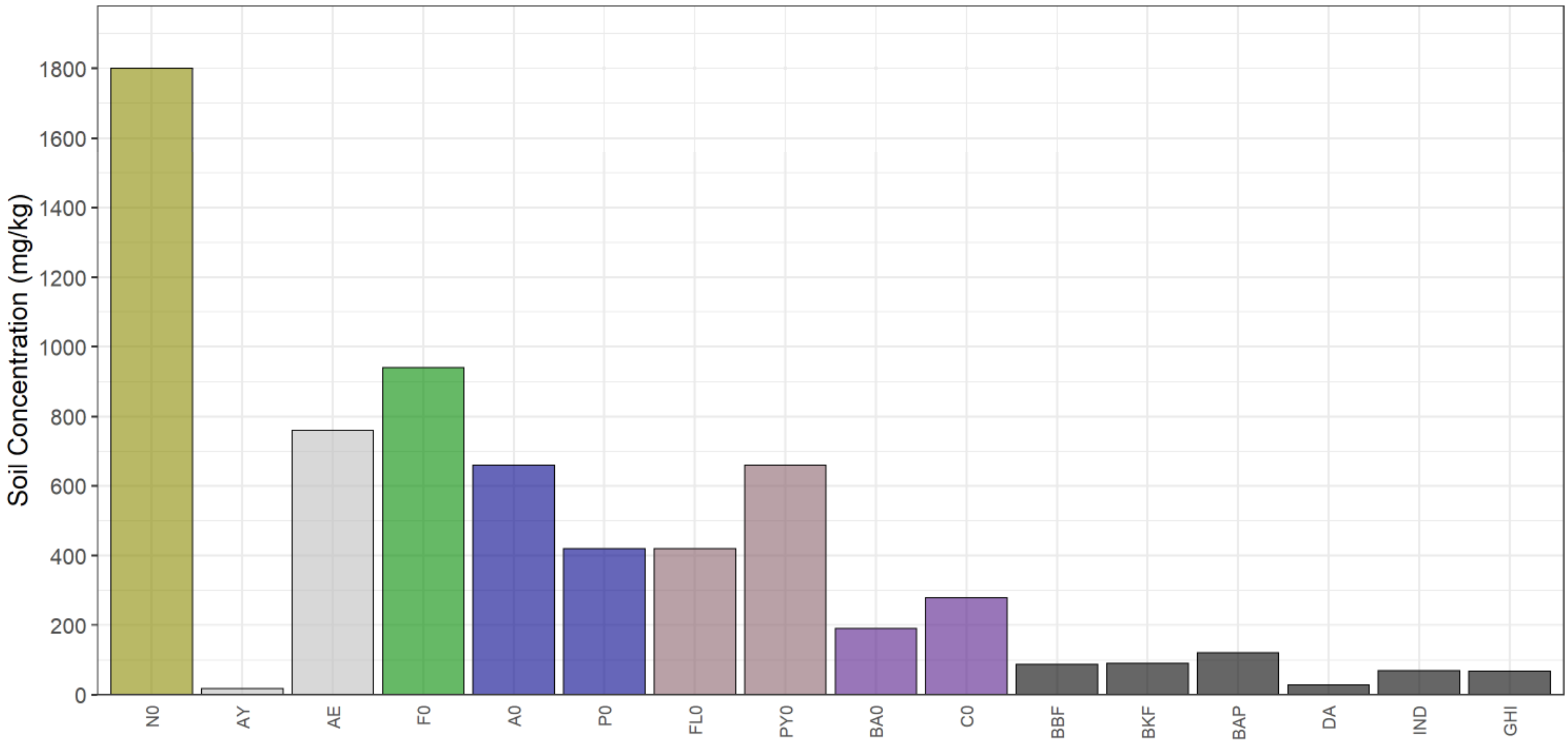
Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: GB-64
DEPTH (FT): 10-12

ARCADIS

FIGURE
A-110



Legend:

Indicate non-detect results plotted using the reporting limit.

NATIONAL GRID
GLOVERSVILLE
REPORT TITLE

PAH PROFILE
LOCATION: GB-74
DEPTH (FT): 10-12

ARCADIS

FIGURE
A-111

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