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Via Electronic Mail

February 27, 2025

Ms. Lisa Danek Burke
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New England Region
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Re: GE-Pittsfield/Housatonic River Site
Rest of River (GECD850)
Treatability Studies Summary Report for Reach 5A

Dear Ms. Danek Burke:

Enclosed is GE's *Treatability Studies Summary Report for Reach 5A*. This report summarizes the results of the treatability study activities described in GE's 2023 *Treatability Study Work Plan for Reach 5A* and the Revised Addendum to that work plan submitted in June 2025. With respect to the kinetic and isotherm testing components of the treatability studies, this summary report includes results from only the first eight weeks of testing, as directed in EPA's May 5, 2025 conditional approval letter for the work plan. That testing is ongoing, and additional data generated beyond that initial eight-week period will be included as available in the design of the cap chemical isolation layer, which will be provided in the forthcoming Final RD/RA Work Plan for Reach 5A.

Please let me know if you have any questions about the enclosed report.

Very truly yours,



Kevin G. Mooney
Senior Project Manager

Enclosure

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February 2026
Housatonic River – Rest of River

Treatability Studies Summary Report for Reach 5A

Prepared for General Electric Company
Pittsfield, Massachusetts

February 2026
Housatonic River – Rest of River

Treatability Studies Summary Report for Reach 5A

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ABBREVIATIONS

^{13}C	carbon-13
AC	activated carbon
ASTM	ASTM International
cm	centimeter
Conceptual RD/RA Work Plan	*Conceptual Remedial Design/Remedial Action Work Plan for Reach 5A*
DI	deionized
DO	dissolved oxygen
DOC	dissolved organic carbon
DOM	dissolved organic matter
DQO	data quality objective
EGL	Environmental Geochemistry Laboratory
EPA	U.S. Environmental Protection Agency
Eurofins	Eurofins TestAmerica in Knoxville, Tennessee
f_e	fraction of equilibrium
FSP/QAPP	*Field Sampling Plan/Quality Assurance Project Plan*
g	gram
GAC	granular activated carbon
GE	General Electric Company
HPLC	high-performance liquid chromatography
K_{ow}	octanol-water partitioning coefficient
L	liter
LDPE	low-density polyethylene
M	mole
mg/kg	milligrams per kilogram
mL	milliliter
MW	molecular weight
µm	micrometer
oz	ounce
PAC	powdered activated carbon
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PDI	pre-design investigation
PDMS	polydimethylsiloxane
PRC	performance reference compound
psi	pound per square inch
PVDF	polyvinylidene fluoride

QA	quality assurance
QC	quality control
Revised Final Permit	*Revised Final Resource Conservation and Recovery Act Permit Modification*
Revised Pilot Work Plan	*Revised Vernal Pool Pilot Study Work Plan*
Revised Treatability Study Work Plan Addendum	*Revised Addendum to Treatability Study Work Plan for Reach 5A*
ROR	Rest of River
rpm	revolutions per minute
SC	specific conductivity
SGS Dayton	SGS North America in Dayton, New Jersey
SGS Wilmington	SGS North America in Wilmington, North Carolina
SOP	Standard Operating Procedure
SPME	solid-phase microextraction
TOC	total organic carbon
Treatability Studies Summary Report	*Treatability Studies Summary Report for Reach 5A*
Treatability Study Work Plan	*Treatability Study Work Plan for Reach 5A*
TSS	total suspended solids
UDF	Upland Disposal Facility
USCS	Unified Soil Classification System
VOC	volatile organic compound

1 Introduction

1.1 Background

On September 28, 2023, as part of preparatory activities for the required Remedial Action at the Rest of River (ROR) under the Revised Final Resource Conservation and Recovery Act Permit Modification (Revised Final Permit) issued by the U.S. Environmental Protection Agency (EPA) on December 16, 2020, the General Electric Company (GE) submitted a *Conceptual Remedial Design/Remedial Action Work Plan for Reach 5A* (Conceptual RD/RA Work Plan; Anchor QEA et al. 2023). Appendix H to that work plan contained a *Treatability Study Work Plan for Reach 5A* (Treatability Study Work Plan or Work Plan). The Conceptual RD/RA Work Plan (including the Treatability Study Work Plan) was conditionally approved by the U.S. Environmental Protection Agency (EPA) on December 3, 2024. Condition 159 of EPA's conditional approval letter required GE to submit an addendum to the Treatability Study Work Plan to address three other conditions, which required collection of additional samples for treatability testing (Condition 160) and clarification of certain procedures including submission of new Standard Operating Procedures (SOPs) (Conditions 161 and 162). That *Addendum to Treatability Study Work Plan for Reach 5A* was submitted to EPA on February 3, 2025 (Anchor QEA 2025a) and was conditionally approved by EPA in a letter dated May 5, 2025.

EPA's May 5, 2025 conditional approval letter directed GE to submit a revised addendum that addressed EPA's conditions. Also, Condition 3 of that letter directed GE to submit to EPA for approval by email the calculated initial target aqueous polychlorinated biphenyl (PCB) concentration and target congener composition for each porewater sample to be used in the kinetic testing. The *Revised Addendum to Treatability Study Work Plan for Reach 5A* (Revised Treatability Study Work Plan Addendum or Revised Addendum; Anchor QEA 2025b) and email with the initial target concentrations were both submitted to EPA on June 4, 2025. The target concentrations were approved by EPA in an email dated June 5, 2025, and the Revised Treatability Study Work Plan Addendum was conditionally approved by EPA on June 24, 2025.

This *Treatability Studies Summary Report for Reach 5A* (Treatability Studies Summary Report) summarizes the results of the treatability study activities described in the original work plan and addenda described above. With respect to the kinetic and isotherm testing components of the treatability studies, this summary report includes results from only the first eight weeks of testing pursuant to Condition 1 in EPA's May 5, 2025, conditional approval letter. That testing is ongoing, and additional data generated beyond that initial eight-week period will be included as available in the design of the cap chemical isolation layer to be provided in the forthcoming Final RD/RA Work Plan for Reach 5A.

1.2 Treatability Study Purpose and Objectives

As described in the Treatability Study Work Plan, the specific data quality objectives (DQOs) for this study included the following:

DQO 1. Evaluate the effectiveness of potential dewatering methods for sediment to be removed from Reach 5A.

DQO 2. Evaluate potential PCB and sediment concentrations within water to be generated during sediment dewatering activities associated with Reach 5A.

DQO 3. Evaluate the effectiveness of various amendment types and doses in reducing bioavailable porewater PCB concentrations in backwater sediments in BW5A-1.

DQO 4. Evaluate carbon-based amendment types and doses to be used for the chemical isolation layer of the engineered caps in Reach 5A.

The overall objective of the treatability studies was to provide information needed to support ongoing remedial design evaluations, supplement data gathered during the Reach 5A pre-design investigation (PDI), and provide data to be used by a remediation contractor during construction.

1.3 Report Organization

This Treatability Studies Summary Report presents the data generated pursuant to the approved Treatability Study Work Plan and Revised Treatability Study Work Plan Addendum. Figure 1-1 shows the locations where sediment samples were collected to support the treatability studies. The remainder of this Treatability Studies Summary Report is organized as follows:

- Section 2 summarizes the methods and results of the sediment dewatering treatability testing.
- Section 3 summarizes the methods and results of the backwater sediment treatability testing.
- Section 4 summarizes the methods and results of the chemical isolation layer amendment testing.
- Section 5 lists the references cited in this report.

2 Sediment Dewatering Treatability Testing

This section describes the sediment dewatering treatability study performed to evaluate the sediment dewatering and treatment options most suited to meet transportation and disposal facility requirements, including the requirements for placement in the Upland Disposal Facility (UDF).

2.1 Sediment Collection

Bulk sediment samples and associated surface water were collected from a total of six locations in Reach 5A, as shown on Figure 1-1, for use in the sediment dewatering treatability testing. These locations consisted of four in the main river channel (TS-S1, TS-S2, TS-S3, and TS-S4), one from backwater area BW5A-5 (TS-BW5), and one from West Pond (TS-WP). At each of the sample locations, approximately 20 gallons of bulk sediment were collected through manual grab sampling, composited, and containerized in sealable buckets. In addition, 15 gallons of surface water were collected at each location using grab sampling methods to facilitate generation of sediment/water mixes needed during the testing. These bulk sediment and surface water samples were shipped to Arcadis's laboratory in Durham, North Carolina, for treatability testing. After receipt at the treatability testing laboratory, the bulk sediment was homogenized thoroughly, and subsamples of sediment from each bulk sample were submitted for the following analyses:[1]

- PCBs as Aroclors using EPA Method 8082;
- Moisture content (by ASTM International [ASTM] D2216);
- Grain size distribution (by ASTM D6913/D7928);
- Atterberg (liquid and plastic) limits (by ASTM D4318);
- Specific gravity (by ASTM D854);[2]
- Organic content (by ASTM D2974); and
- Presence of free liquids (by the paint filter test, EPA Method 9095B).

The samples for PCB analysis were submitted to SGS North America Inc. in Dayton, New Jersey (SGS Dayton) for analysis. The remainder of the testing was performed in a geotechnical laboratory (Geotechnics located in Raleigh, North Carolina). A summary of the bulk sediment samples collected

[1] Water that could not be uniformly blended back into the bulk sediment during thorough homogenization of the initial samples was removed before collection of subsamples for initial testing and the remainder of the treatability testing. A table summarizing the volume of water removed is included in Appendix A1.

[2] Although analysis of dry density (by ASTM D2937) was specified in the Work Plan and Revised Addendum, specific gravity was requested by the treatability testing laboratory instead at the time of sampling based on the experience of that laboratory and the ability to collect a relatively undisturbed sample for this testing procedure. Additionally, it was determined by the treatability testing laboratory that analysis for unconfined compressive strength (by ASTM D2166), as specified in the Work Plan, was not necessary for this initial assessment, and hence such testing was not performed.

and initial total PCB results are presented in Table 2-1, and a summary of the initial analytical and geotechnical results are provided in the attached Tables 2-2 and 2-3. Complete analytical results and geotechnical reports associated with the initial testing are provided in Appendix A1. Example photographs of the initial bulk sediment samples are provided in Appendix A2.

Table 2-1
Sediment Dewatering Treatability Study Bulk Sediment Sample Summary

Sample ID	Collection Location	Depth of Sample	Total PCB Concentration
TS-S1	Main channel	1 foot	19.2 mg/kg
TS-WP	West Pond	1 foot	0.0644 mg/kg
TS-S4	Main channel	2 feet	0.949 mg/kg
TS-S2	Main channel	1 foot	1.08 mg/kg
TS-BW5	Backwater area	1 foot	2.03 mg/kg
TS-S3	Main channel	1 foot	12.0 mg/kg

Notes:
Samples listed north to south.
mg/kg: milligrams per kilogram

Following these initial analyses, the sediment samples were used for treatability testing, as described in Section 2.2.

2.2 Treatability Testing

2.2.1 Gravity Drainage Study

A drainage study was performed to evaluate the ability of dredged sediment to passively dewater via gravity drainage. The purpose of this study was to estimate the water content before and after gravity drainage to evaluate whether the dredged material will need additional treatment to meet transportation and disposal facility requirements. The drainage study was performed on homogenized samples from each of the six bulk sediment sampling locations referenced in Section 2.1 and conducted in general accordance with the Work Plan and Revised Addendum (including relevant SOPs) with the following exceptions:

- The SOP required dewatering a one-liter (L) sediment sample; however, the sediment sample volume was upsized to five gallons (about 19 L) to conduct geotechnical testing that was planned for the dewatered sample.
- The upsizing of the sediment volume to be dewatered necessitated the use of a screen other than the No. 200 sieve specified in the SOP. Instead, a stainless steel (304) screen with 50×50 mesh was used.
- Filtrate for additional chemical analysis was collected from the bulk sediment sample with the *second* highest PCB concentration rather than the first (see below for additional details).

- Although not required by the work plan, a suite of geotechnical tests was performed on the samples to assess post-drainage physical properties, strength, and hydraulic conductivity to evaluate material for placement in the UDF (see below for additional details).

The drainage study involved placing sediment samples within a screen and allowing the sample to drain by gravity for a period of 72 hours. During this period, samples were collected at multiple time intervals (i.e., 6, 24, 48, and 72 hours) from each homogenized sample for moisture content and paint filter testing. Results of this testing are summarized in Table 2-4 (attached) and discussed in Section 2.4.

Geotechnical testing, in addition to what was required by the Work Plan, was performed on the gravity drained sediment samples to evaluate the physical properties, strength, and hydraulic conductivity of the samples following gravity drainage.

For the first phase of geotechnical testing for the physical properties, each treatability sample following gravity drainage was tested for moisture content (by ASTM D2216), grain size distribution (by ASTM D6913/D7928), and Atterberg Limits (by ASTM D4318), along with Standard Proctor (by ASTM D698). The results, shown in the attached Table 2-5, were reviewed to select the treatability samples to continue for strength and hydraulic conductivity testing. Treatability samples TS-S3 and TS-BW5 were not selected for strength and hydraulic conductivity testing because, based on the results of the physical properties testing, both of these samples would most likely be mixed with other soil types for placement in the UDF given initial indications of their poor compaction and low strength characteristics. The remaining four post-gravity drainage treatability samples were tested for Hydraulic Conductivity (by ASTM D5084), unconfined compressive strength (by ASTM D2166), and Triaxial Undrained Shear Strength (by ASTM 4767). Before testing, each sample was remolded to approximately 90% of the maximum dry density at the optimum moisture content, as determined by the Standard Proctor results from the first phase of geotechnical testing. The remolding properties and results of the strength and hydraulic conductivity testing performed in the second phase of geotechnical testing are presented in the attached Table 2-6.

Water that drained from the samples during the drainage study was collected and the volume measured, and a sample was sent to SGS Dayton for analysis of total suspended solids (TSS) (by Standard Method 2540D), PCBs (by EPA Method 608.3), total metals (by EPA Method 200.8/245.1), and oil and grease (by EPA Method 1664A) to characterize the supernatant. In addition, each water filtrate sample was tested for pH. Finally, based on the PCB concentration observed in the bulk

sediment samples, a water sample collected from TS-S3[3] was sent to SGS Dayton for analysis of the following additional parameters:

- Volatile organic compounds (VOCs) using EPA Method 624.1;[4]
- Polycyclic aromatic hydrocarbons (PAHs) using EPA Method 625.1;
- Other semi-volatile organic compounds using EPA Method 625.1;
- Total petroleum hydrocarbons (C6 to C10 and C10 to C28) using EPA Method 8015D;
- Dissolved metals using EPA Method 200.8/245.1;
- Alkalinity using Standard Method 2320B;
- Hardness using Standard Method 2340C; and
- Total organic carbon (TOC) using Standard Method 5310B.

The results of this analytical testing are summarized in the attached Table 2-7 and discussed in Section 2.4. The treatability laboratory results and geotechnical reports associated with the gravity drainage study are provided in Appendix A3. Example photographs of the gravity drainage study are provided in Appendix A2.

2.2.2 Sediment Stabilization Amendment Testing

Stabilization of samples was investigated using a variety of commercially available amendments at various dosages with the bulk sediment collected from each location without initial gravity drainage (in accordance with the SOP), with the goal of determining effective amendments/doses needed to meet transportation and disposal facility requirements for paint filter testing and structural strength.

[3] Although the Work Plan and Revised Addendum called for the water sample to be collected from the bulk sediment sample with the highest PCB concentration (based on the initial testing described in Section 2.1), insufficient water was generated by the initial and additional gravity drainage testing. Instead, GE proposed to EPA that the water collected from the bulk sediment sample with the second highest PCB concentration (TS-S3; 12.0 mg/kg; vs. highest at relatively similar 19.2 mg/kg at TS-S1) would be sent for the additional analyses (for VOCs, semivolatile organic compounds, total petroleum hydrocarbons, dissolved metals, alkalinity, hardness, and TOC). EPA agreed with this proposed approach in an email dated August 18, 2025.

[4] VOC samples were collected and preserved within the first 24 hours of filtrate generation to minimize losses due to volatilization. Because it was not yet known within those first 24 hours whether EPA would have concerns with the proposal to analyze filtrate from the bulk sediment sample with the second-highest PCB concentration, samples were collected from both TS-S3 and TS-S1 and sent to SGS Dayton and analyzed for VOCs. Due to a laboratory error, TS-S3 was analyzed by EPA Method 8260 instead of EPA Method 624.1; however, TS-S1 was correctly analyzed by EPA Method 624.1, and results were similar for both samples.

The sediment stabilization amendment testing was conducted in general accordance with the Work Plan and Revised Addendum, with the following exceptions:

- The amendment types evaluated were adjusted based on discussions with vendors regarding long-term availability.[5]
- The type of geotechnical tests performed on the samples was modified to target a smaller suite of strength testing; namely, Undrained Shear Strength was found not to be necessary and was not performed.
- A second round of solidification testing was not completed because findings from the initial amendment testing satisfied the treatment study goals.

The remainder of this section describes the initial evaluation of sediment stabilization mixes and the evaluation of the selected type and dose of sediment stabilization mixes.

2.2.2.1 Initial Sediment Stabilization Mixes

For the initial screening phase, mix ratios were evaluated at cure periods of 12, 24, 48, and 72 hours. Evaluations included paint filter testing, percent solids analysis, moisture content, weight change, and visual observations at the specified cure periods. A pocket penetrometer was also used to estimate the strength of the amended sediment. The following stabilization amendments were evaluated in the testing:

- Eco-Cal (lime kiln dust/calciment) from Mintek;
- Quick Lime, (calcium oxide) from Carmeuse;
- Type II Portland cement from Amrize; and
- Type 1L Portland cement from Heidelberg,

Vendor-provided specification sheets for each amendment are included in Appendix A4.

The treatability testing was performed using these commercially available amendments at multiple mix ratios. Initially, mix ratios of 2.5%, 5%, and 7.5% by weight were used for each amendment type for each sample. Additional mix ratios using the Portland cement amendments were evaluated for samples TS-WP and TS-BW5 in response to low strength readings from the pocket penetrometer. For

[5] Based on discussions with suppliers, Type 1L Portland cement was utilized instead of Type 1 Portland cement. Type 1L is considered a more sustainable product and is likely to be more readily available during construction. Additionally, based on discussions with suppliers, cement kiln dust was not included in the study as it is not expected to be commercially available in adequate supply at the time of construction. In addition, Type II Portland cement was initially utilized because it is readily available in proximity to the ROR; however, further discussions with the material vendor indicated that production of Type II Portland cement is being phased out in preference for Type 1L Portland cement.

sample TS-WP, an added mix ratio of 10% was applied for both Type II and Type IL amendments. Added mix ratios of 10% and 12.5% were evaluated for sample TS-BW5.

The testing was performed to determine effective and efficient combinations of amendment, mix ratio, and cure time to allow the end-product to pass the paint filter test and achieve minimum strength requirements for placement and UDF design. Table 2-8 (attached) provides a summary of the base findings for each sample and each amendment with respect to paint filter testing and pocket penetrometer strength. Tables detailing further test findings on this initial stabilization phase are provided in Appendix A5. Example photographs of the sediment stabilization amendment tests are provided in Appendix A2.

It was determined that the test results provided sufficient information to select an appropriate mix ratio and amendment for advancing the treatability study to geotechnical laboratory testing on the treated sediment.

2.2.2.2 Selected Type and Dose of Sediment Stabilization Mixes

Based on the results in the attached Table 2-8, each sediment sample was prepared with the selected amendment and optimum dosage for the geotechnical testing. Table 2-9 summarizes the selected amendment, optimum dosage, and minimum cure times. To facilitate the production of a large volume of stabilized sediment consistent with the list of geotechnical tests that were to be performed, a five-gallon bucket of each sediment sample was prepared and dosed with the selected amendment and dosage listed in Table 2-9. All stabilized five-gallon buckets were delivered to Geotechnics for geotechnical testing.

Table 2-9
Sediment Geotechnical Results—Cement Stabilization—Selected Amendment, Dosage, and Minimum Cure Time

Sample ID	Amendment	Mix Ratio (%)	Minimum Cure Time (hours)
TS-S1	Type IL Portland Cement	2.5	10
TS-WP	Type 1L Portland Cement	5.0	48
TS-S4	Type 1L Portland Cement	2.5	10
TS-S2	Type 1L Portland Cement	2.5	24
TS-BW5	Type 1L Portland Cement	12.5	72
TS-S3	Type 1L Portland Cement	5.0	24

Note:
Samples listed north to south.

Following the minimum cure time for the amended samples, the same two phases of geotechnical tests as completed for the gravity drainage study were performed to determine the strength and physical properties of the treated sediment—all tests in both phases were performed on all six samples. Actual cure times were greater than those shown in Table 2-9 and ranged from 25 days to

41 days as measured from dosage to start of testing. The results of the geotechnical testing of the treated sediment samples are summarized in the attached Tables 2-10 (dosage/amendment, moisture content, gradation, Unified Soil Classification System [USCS], and Standard Proctor) and 2-11 (strength and hydraulic conductivity).

The treatability laboratory results and geotechnical reports associated with the sediment stabilization amendment testing are provided in Appendix A5. Example photographs of the sediment stabilization amendment testing are provided in Appendix A2.

2.2.3 Shake/Vibration Testing

Shake/vibration testing was also performed on the sediment samples to evaluate whether free liquids could be liberated from the excavated and processed materials as a result of handling and transportation. The testing used shaker equipment to simulate motion similar to that which might be imparted during transport of dewatered sediments to a disposal destination. The shaker was operated for approximately five days, as required by the work plan, to simulate transit for disposal. The transport-simulated samples were then examined and tested for free water. The shake/vibration testing was conducted in general accordance with the Work Plan and Revised Addendum with the exception that the tubing used was Schedule 40 clear PVC rather than Lexan.

The test used sediment samples from each field sample location before any drainage or amendment testing, samples from each field sample location that was subject to gravity drainage testing, and stabilized sediment samples from each field sample location that cured for a period of time with the preferred amendment type and dose. Upon completion of the test, any stratification or liquid accumulation on the surface or the bottom was noted, and the samples underwent a paint filter test.

The treatability laboratory results associated with the shake/vibration testing are provided in Appendix A6. Example photographs of the shake/vibration testing are provided in Appendices A2 and A6.

2.3 Laboratory Data Quality Assessment

Following receipt of the analytical results from analysis of the bulk sediment and filtrate samples, the data collected by GE underwent data review and validation in accordance with the pertinent procedures specified in GE's *Field Sampling Plan/Quality Assurance Project Plan* (FSP/QAPP; Arcadis 2023). This included validation of all such data to a Tier I level and validation of a minimum of 25% of the data to a Tier II level (all data was validated to a Tier II level). The data validation results are presented in reports provided in Appendix C. As summarized in Table 2-12, 100% of the data are considered usable.

Table 2-12
Summary of Data Validation

Data Validation Report	Sample Data Group	Validation Level	Sample Count	Percent Usability
62024R	JE14797	Tier II	6	100%
62025R	JE17629	Tier II	3	100%
62026R	JE16862	Tier II	3	100%

2.4 Results

The treatability testing on Reach 5A sediment samples has provided successful results to allow for planning and management of dredged sediments. A further summary of the treatability testing results is provided in the following sections.

2.4.1 Initial Sediment Testing

As shown in Table 2-2, the sediment samples collected from Reach 5A for this treatability study were typically poorly graded sands with varying amounts of gravel and USCS symbols of SP and SM. Fines content for the sands ranged from 3 to 28 percent and initial moisture contents of between 10.6 and 93.5 percent. One sediment sample (TS-BW5) was classified as an elastic silt (USCS symbol MH) with a fines content of approximately 87 percent. Initial moisture content for this sample was 155.3 percent. With exception of sample TS-WP, sediment samples passed paint-filter testing in their untreated conditions, as shown in Table 2-3.

2.4.2 Gravity Drainage Study

Paint filter testing was conducted for each sediment sample for the gravity drainage study at the hours of 6, 24, 48, and 72. As shown in Table 2-4, each sample passed paint filter at the initial testing period of six hours. Recorded moisture contents generally showed a decreasing trend with time as paint filter testing progressed to the 72-hour maximum timeframe, with slower progression of moisture content reduction after 48 hours. In most cases, a large difference in moisture content was not observed after 24 hours. This can be contributed to the free draining nature of the poorly graded sands, in comparison to the samples with higher fines, where the moisture content is slower to decrease.

Four sediment samples (TS-S1, TS-S2, TS-S4, and TS-WP) were selected for hydraulic conductivity and strength testing. These samples were remolded at density and unit weights corresponding to 90% maximum dry density and optimum moisture content, as determined from Standard Proctor testing of each sample. These remolding parameters are also consistent with currently specified QC criteria for placement of materials in the UDF. Results for hydraulic conductivity ranged from 6.6E-04 (TS-S1) to 1.1E-03 (TS-WP, TS-S4, and TS-S2) centimeters per second (cm/sec). Overall, the hydraulic conductivity values support the free-draining characteristics of the sediment samples as observed

from the grain size evaluations, which will be considered when evaluating suitability of material for placement in the UDF.

Unconfined compressive strength testing was also completed on the remolded samples and results ranged from 0.36 (TS-S4) to 0.77 (TS-S2) pounds per square inch (psi). Because of the low fines content of these samples and the unconfined nature of this testing procedure, the results indicate a low strength material and are not considered representative of the sample's shear strength. Effective shear strength estimated from consolidated-undrained triaxial testing, however, is considered representative for the remolded samples. The internal friction angle from the consolidated-undrained testing ranged from 35.7 (TS-S2) to 39.9 (TS-WP) degrees. When compared to the basis of design for the UDF global stability, these shear strength results exceed the values assumed for the UDF design. Results are shown in the attached Table 2-6.

Finally, the results of the filtrate analytical testing summarized in the attached Table 2-7 will be used to design the water treatment system to handle liquids generated during remediation of Reach 5A.

Additional details of the treatability laboratory results and geotechnical reports associated with the gravity drainage study are provided in Appendix A3.

2.4.3 Sediment Stabilization Amendment Testing

Each bulk sediment sample without initial gravity drainage was treated with four different amendments for paint filter and pocket penetrometer testing at noted cure times (see Table 2-8). In general, all but two of the test samples passed paint filter testing at the lowest cure time of 10 hours. Samples TS-SP and TS-S3 each required 24 hours to pass paint filter for the Eco-Cal amendment at a 5% mix ratio.

A review of the pocket penetrometer findings aided in selection of the amendment and dosage for laboratory geotechnical testing of hydraulic conductivity and strength. The selected amendment Type IL Portland cement was used to treat each sediment sample at the mix ratios shown in Table 2-9, which varied from 2.5% to 12%.

All sediment samples were amended with Type IL Portland Cement prior to laboratory hydraulic conductivity and strength testing. These samples were remolded at density and unit weights corresponding to 90% maximum dry density and optimum moisture content as determined from Standard Proctor testing, again consistent with the current specified quality control criteria for placement in the UDF. Results for hydraulic conductivity ranged from 9.2E-04 cm/sec for sample TS-S1 to 1.5E-05 cm/sec for sample TS-WP. These values show a slight decrease in hydraulic conductivity when compared to the gravity drainage study but are still generally indicative of a free-draining material.

Similar to the gravity drainage study, strength testing for the amended samples consisted of both unconfined compressive strength and consolidated-undrained triaxial testing. Unconfined compressive strength testing results ranged from 2.75 psi for sample TS-S1 to 13.3 psi for TS-BW5. While these results are greater than the unconfined compressive strength values from the gravity drainage study, the results are not considered representative of the amended samples strength given the granular nature of these sediments. The consolidated-undrained triaxial testing provided representative strengths with effective shear strength values ranging from 36 degrees for TS-S3 to 42.8 degrees for TS-WP. Results are shown in the attached Table 2-11.

The mix ratios used in this study were based on the goal of stabilization to meet paint filter acceptance, and this stabilization study does successfully meet that criterion. With respect to strength, the amended samples also meet the strength values assumed for the basis of design for the UDF stability evaluation, similar to the findings from the gravity drainage study. Currently the QC criteria during placement of amended material in the UDF require laboratory unconfined compressive strength testing. Given the findings from this study, clarifications on the QC aspect of material placement in the UDF are recommended. Modifications to the QC criteria based on these treatability study findings will be incorporated into the future Supplemental Information Package for UDF operations.

Additional details of the treatability laboratory results and geotechnical reports associated with the sediment stabilization amendment testing are provided in Appendix A5.

2.4.4 Shake/Vibration Testing

For the as-received samples, all samples passed the paint filter test in their untreated condition (Table 2-3). After shaking for five days, samples TS-S1 and TS-S4 had no stratification or measurable liquid accumulation on the surface or bottom of the sediment. Between 1.5 and 112 grams of liquid accumulated on the surface of the remaining samples (i.e., TS-S2, TS-S3, TS-WP, and TS-BW5) resulting from the shake/vibration test (Table A6-1 in Appendix A6). This accumulated liquid represents between less than 1% and nearly 5% of the initial sample mass. All samples were able to pass the paint filter test after the accumulated liquid was removed.

For the samples that were first subject to gravity drainage testing, all samples passed the paint filter test after the initial drainage testing (Table 2-4). After shaking for five days, only sample TS-WP had stratification and measurable liquid accumulation resulting from the shake/vibration test; the remainder of the samples did not (Table A6-2 in Appendix A6). The accumulated liquid measured from TS-WP (2.0 grams) represents less than 1% of the initial sample mass. All samples were able to pass the paint filter test after the accumulated liquid was removed.

Finally, for the samples that were first subject to sediment stabilization amendment testing, all samples passed the paint filter test after the initial drainage testing (Table 2-8). After being subjected

to the shake/vibration test, two samples (TS-S2 and TS-S3) had stratification and measurable liquid accumulation resulting from the shake/vibration test (Table A6-3 in Appendix A6). The accumulated liquid measured represents between 2% and 3% of the initial sample mass (before adding amendment). All samples were able to pass the paint filter test after the accumulated liquid was removed.

Additional details of the treatability laboratory results and geotechnical reports associated with the shake/vibration testing are provided in Appendix A6.

3 Backwater Sediment Amendment Jar Testing

As described in Section 1.1, DQO 3 pertains to the effectiveness of various amendments, including effective doses and placement methods, which was evaluated through bench-scale jar testing of backwater sediments treated with amendments. The results of this testing will be used to develop a design recommendation for the amendment type and dose to be applied in the Core Area 1 portion of backwater BW5A-1, which has total PCB concentrations between 1 and 50 milligrams per kilogram (mg/kg).

3.1 Sediment Collection

Two bulk surface sediment samples (TS-BW1A and TS-BW1B) were collected from backwater BW5A-1 on June 18, 2025. Figure 1-1 shows these sediment sample collection locations. The sediments were collected using a grab sampler and containerized in two sealable five-gallon buckets. Sediments were immediately shipped overnight on ice to the Anchor QEA Environmental Geochemistry Laboratory (EGL) in Portland, Oregon. Upon arrival, the sediments were stored in a cold room and maintained at 4°C. Prior to testing, the sediment samples were thoroughly homogenized using a paddle mixer. The sediment contained large amounts of rocks and wood debris. To minimize heterogeneity and potential bias in amendment dosing, rocks and wood debris were removed by wet sieving through a No. 4 (4.75-mm) standard sieve using the same process identified in Appendix B of the *Revised Vernal Pool Pilot Study Work Plan* (Anchor QEA and AECOM 2023).

3.2 Sediment Characterization

Following homogenization, an aliquot of each sediment sample was collected and shipped to the laboratory selected by GE for this testing (Eurofins TestAmerica in Knoxville, Tennessee [Eurofins]) for analysis of PCB congeners (by EPA Method 1668), PCB Aroclors (by EPA Method 8082), and TOC (by the Lloyd Kahn method). The Aroclor PCB concentrations reported by Eurofins were 2.1 and 0.9 mg/kg at TS-BW1A and TS-BW1B, respectively (Table 3-1). These results were considerably lower than anticipated based on the Aroclor PCB concentrations measured during PDI sediment sampling at these backwater locations (i.e., 43 and 69 mg/kg); therefore, additional analysis of these samples was performed at the request of EPA. Specifically, sub-samples of the remaining homogenized sediment analyzed by Eurofins were shipped to a second laboratory (SGS North America in Wilmington, North Carolina [SGS Wilmington]) for Aroclor and congener PCB analysis.[6] The Aroclor and congener PCB results from both laboratories, and TOC results from Eurofins, are provided in Table 3-1. The Aroclor and congener PCB results from SGS Wilmington show reasonably good

[6] SGS Wilmington was the analytical laboratory that performed Aroclor PCB analysis of sediment originally collected at these locations during the PDI. Because Eurofins was the laboratory selected by GE to perform analysis of PCB samples for this treatability testing, duplicate analysis of these sediments was performed by SGS to evaluate whether there was any systematic difference in PCB results between these two laboratories.

comparability to the concentrations reported by Eurofins; therefore, these results do not suggest any systematic difference in results between laboratories.

Table 3-1
Summary of PCB and Total Organic Carbon Results in Backwater Sediment

PDI Sample		Treatability Study Bulk Sediment					
	Total PCB Aroclors (mg/kg)			Total PCB Aroclors (mg/kg)		Total PCB Congeners (mg/kg)	
Location ID	SGS	Sample ID	TOC (%)	Eurofins	SGS	Eurofins	SGS
SE-BW5A-1-E-F-9-10	42.7	TS-BW1A	7.4	2.1	0.28	11	9.17
SE-BW5A-1-C-D-7-8	68.7	TS-BW1B	2.7	0.94	0.14	5.4	7.57
—	—	TS-BW1A-SPIKED (Initial Spike)	—	24	—	38	—
—	—	TS-BW1A-SPIKED2 (2nd Spike)	—	44	—	84	—

Note:
The SGS laboratory used for this testing was SGS Wilmington.

Because the PCB concentrations in these bulk sediment samples were lower than the sediment concentrations targeted for this study, a subset of the sediment from TS-BW1A was spiked with PCBs at the EGL to evaluate the effectiveness of carbonaceous materials in reducing bioavailable PCB concentrations in sediment porewater under higher PCB concentrations. An Aroclor 1260 stock solution (5.0 mg per milliliter [mL] in methanol) was purchased from AccuStandard, Inc. (New Haven, Connecticut), and was spiked into a subset of the sediment from TS-BW1A to produce sediment with an increased PCB concentration; however, a portion of the material from TS-BW1A was left unspiked to allow for testing of unspiked sediment. Approximately 1.8 kg of sediment were spiked with 5 mL of the Aroclor 1260 stock solution with a goal of increasing the sediment concentration to 40 mg/kg. The methanol was allowed to evaporate under a fume hood for several hours. Following spiking, the jars containing the PCB-spiked sediment slurry were agitated on a shaker table for approximately two weeks for equilibration. Following that mixing period, an aliquot of the sediment was collected and shipped to Eurofins for analysis; however, the resulting Aroclor concentration (24 mg/kg) was lower than the target level, so the sediment spiking was repeated with the addition of 2.5 mL of the Aroclor 1260 stock solution. Due to schedule considerations, the decision to perform a second round of spiking was made before the congener results were received. After approximately two weeks of agitation, an aliquot of the spiked sediment was collected and submitted to Eurofins, and the resulting total PCB concentration was 44 mg/kg using the Aroclor method and 84 mg/kg using the congener method (Table 3-1). These levels were substantially higher than in the unspiked sediment and more comparable to concentrations observed during the PDI.

The two unspiked sediments (TS-BW1A and TS-BW1B) and the second spiked TS-BW1A sediment (TS-BW1A-SPIKED2) were then used to evaluate the effectiveness of the amendments to reduce bioavailable PCB concentrations in sediment porewater.[7]

3.3 Amendments Tested

As described in the Revised Treatability Study Work Plan Addendum, three types of carbonaceous amendments—powdered activated carbon (PAC), granular activated carbon (GAC), and activated biochar (biochar)—were tested in the jar testing. Table 3-2 summarizes the specific amendments used in the testing and their vendor sources; specification sheets for each of these amendments are provided in Appendix B.

Table 3-2
Summary of Carbonaceous Amendments Used in Bench-Scale Testing

Amendment Type	Vendor/Source	Product Name	Particle Size Range (µm)
PAC	Calgon Carbon	WPH	45-150
GAC	Calgon Carbon	FILTRASORB 400	500-750
Biochar	Pacific Coast Carbon	PCC-BioCarbon	200-1,000

3.4 Jar Test Setup

The backwater jar testing was performed to evaluate the effectiveness of PAC, GAC, and biochar in reducing bioavailable PCB concentrations in sediment porewater. Eight unique test batches were prepared for each of the three sediments (TS-BW1A, TS-BW1B, and TS-BW1A-SPIKED2), as summarized in Table 3-3.

Table 3-3
Experimental Design for Bench-Scale Jar Tests

Sample ID	Test Batch (Amendment to Backwater Sediment)[1]	Soil Mass (grams dry mass basis)	Amendment Mass (grams dry mass basis)	Number of Replicates
TS-BW1A	Control	250	0	2
	1% PAC	250	2.5	2
	2% PAC	250	5.0	2
	5% PAC	250	12.5	2
	2% GAC	250	5.0	2
	5% GAC	250	12.5	2
	5% Activated Biochar	250	12.5	2
	10% Activated Biochar	250	25.0	2

[7] Sediments from the first spiked sediment sample (TS-BW1A-SPIKED) were not used in the amendment testing given that the measured PCB concentration in that sample was lower than the target.

Sample ID	Test Batch (Amendment to Backwater Sediment)[1]	Soil Mass (grams dry mass basis)	Amendment Mass (grams dry mass basis)	Number of Replicates
TS-BW1B	Control	250	0	2
	1% PAC	250	2.5	2
	2% PAC	250	5.0	2
	5% PAC	250	12.5	2
	2% GAC	250	5.0	2
	5% GAC	250	12.5	2
	5% Activated Biochar	250	12.5	2
	10% Activated Biochar	250	25.0	2
TS-BW1A-SPIKED2	Control	62.5	0	2
	1% PAC	62.5	0.63	2
	2% PAC	62.5	1.25	2
	5% PAC	62.5	3.13	2
	2% GAC	62.5	1.25	2
	5% GAC	62.5	3.13	2
	5% Activated Biochar	62.5	3.13	2
	10% Activated Biochar	62.5	6.25	2

Note:

1. All amendment percentages are on a mass basis.

3.4.1 Sediment Slurry Preparation

As described in Section 3.1, the sediments were thoroughly homogenized using a paddle mixer, and rocks and wood debris were removed using a No. 4 (4.75-mm) standard sieve. The unspiked sediments and spiked sediments were evenly distributed into 32-ounce (oz) and 8-oz EPA-pre-cleaned glass jars, respectively. Deionized water was added to the sediments prior to beginning the jar tests to achieve a final moisture content of 70%, allowing for slurry formation and proper mixing during testing. The soil slurry formation and continuous mixing also served to accelerate PCB mass-transfer kinetics with the intent of driving the PCB partitioning between the porewater and polydimethylsiloxane (PDMS) polymer of the solid-phase microextraction (SPME) fibers to reach near-equilibrium conditions (Ghosh et al. 2014).

3.4.2 Measurement of PCBs in Porewater

SPME fibers were used in the jar tests to measure freely dissolved PCB concentrations (C_{free}) in sediment porewater. SPME fibers were obtained from Polymicro Technologies, Inc., in Phoenix, Arizona (part number: 1068020213, product ID: FSS10001070), and consisted of a 1,000-micrometer (µm)-diameter inert glass core coated with a 35-µm layer of PDMS. Prior to use, each SPME fiber was cut to a 10-cm length using a ceramic cutter and sequentially soaked in high-performance liquid

chromatography (HPLC)-grade hexane, methanol, and deionized water in a glass tube on a shaker table to remove potential background contaminants that could interfere with subsequent analyses. The cleaned SPME fibers were then soaked in an 80:20 methanol/water solution spiked with eight isotope-labeled performance reference compounds (PRCs)[8] (^{13}C-PCB-8, ^{13}C-PCB-28, ^{13}C-PCB-47, ^{13}C-PCB-70, ^{13}C-PCB-80, ^{13}C-PCB-111, ^{13}C-PCB-141, and ^{13}C-PCB-182) purchased from Cambridge Isotope Laboratories, Inc. (Tewksbury, Massachusetts). The fibers were allowed to equilibrate in the PRC solution for 14 days on a shaker table. Following equilibration, all SPME fibers were removed from the PRC solution and rinsed with HPLC-grade water to remove residual methanol. Five QA/QC SPME fiber samples (each consisting of five 10-cm fibers, for a total fiber length of 50 cm per sample) were stored in EPA-precleaned vials and immediately shipped to Eurofins to measure initial PRC concentrations and PCB congener concentrations by EPA Method 1668.

The amendments were added to each jar on September 26, 2025 (unspiked), and October 27, 2025 (spiked), in accordance with the quantities summarized in Table 3-3. Each amended jar was continuously agitated on an orbital shaker table at approximately 120 revolutions per minute (rpm) for approximately 30 days (i.e., until October 27, 2025, for the unspiked sediment and November 26, 2025, for the spiked sediment) to allow the sediment and amendments to equilibrate prior to deployment of SPMEs in each jar. Following the equilibration period, SPME fibers were encased in stainless-steel mesh sleeves and deployed in the sediment jars. Five 10-cm SPME fibers were deployed in the unspiked sediments, and two 10-cm SPME fibers were deployed in the spiked sediment.

The sediment slurry jars containing the SPME fibers were returned to the orbital shaker table for an additional 30 days and were periodically inverted to facilitate equilibration between the porewater and the PDMS polymer of the SPME fibers. The SPME fibers were retrieved from the jars on December 1, 2025 (unspiked), and December 29, 2025 (spiked), rinsed with HPLC-grade water, wiped clean with Kimwipes®, and submitted to Eurofins for PCB congener analysis by EPA Method 1668.

3.4.3 SPME Data Analysis

Freely dissolved PCB concentrations in sediment porewater can be calculated by dividing the PCB concentrations measured on the SPME fibers after deployment by the PDMS-water partitioning coefficient and the fraction of equilibrium achieved within the SPME fiber, as shown in Equation 3-1.

[8] PRCs are used in passive samplers to determine the fraction of equilibrium achieved for each passive sampler, which is in turn used to calculate the freely dissolved porewater concentration of the passive sampler at equilibrium.

Equation 3-1

$$C_d = \frac{C_p}{K_{pw} \times f_e}$$

where:

C_d	=	concentration in porewater (µg/L)
C_p	=	concentration in PDMS polymer (µg/kg)
K_{pw}	=	PDMS-water partitioning coefficient (L/kg)
f_e	=	fraction of equilibrium (unitless)

A regression was developed between measured PDMS-water partitioning coefficient (K_{pw}) values and published octanol-water partitioning coefficient (K_{ow}) values based on data provided for PCBs in Smedes et al. (2009) (Equation 3-2). The selected PCB congeners provided in Smedes et al. (2009) have log K_{pw}-log K_{ow} pairs that, when plotted, line up consistently and are well correlated (R^2= 0.913). By incorporating PCB congeners that span a range of K_{ow} values (i.e., 4.97 to 7.76, which covers the vast majority of PCB congeners), the regression is more robust and can be used for all PCB congeners. Using this regression equation, the K_{pw} value for each PCB congener was calculated based on its K_{ow} value. The log K_{ow} of PCB congeners were obtained from Hawker and Connell (1988) and were adjusted based on the K_{ow} values measured by De Bruijn et al. (1989) with a slow stirring method, which is generally considered to be a more reliable method for K_{ow} values (OECD 2006).

Equation 3-2

$$\log K_{pw} = 0.903 \times \log K_{ow} - 0.159 \qquad (r^2 = 0.937)$$

where:

K_{pw}	=	PDMS-water partitioning coefficient
K_{ow}	=	Octanol-water partitioning coefficient

The fraction of equilibrium (f_e) of each PRC was calculated using the ratio of the final concentration (i.e., following deployment) to its initial concentration (i.e., prior to deployment), as shown in Equation 3-3.

Equation 3-3

$$f_e = 1 - \frac{C_{PRC,final}}{C_{PRC,init}}$$

where:

f_e	=	fraction of equilibrium
$C_{PRC,final}$	=	final PRC concentration in SPME fiber (µg/kg)
$C_{PRC,init}$	=	initial PRC concentration in SPME fiber (µg/kg)

Subsequently, the calculated f_e values of the PRCs were incorporated into a logistic regression to estimate the f_e values of the PCB congeners (Perron et al. 2013). The freely dissolved concentrations of the PCB congeners in sediment porewater were estimated from the measured concentrations sorbed to the SPME fiber and the corresponding K_{pw} and f_e values.

3.5 Laboratory Data Quality Assessment

3.5.1 Quality Assurance/Quality Control

A method blank, PRC-loaded SPME passive sampler reproducibility standards, laboratory duplicates, and unamended control duplicates were prepared to assess the data quality of the SPME passive sampling in the jar tests. Details of these QA/QC samples are summarized as follows:

- **Method blank:** A method blank was used to assess whether any background contamination was introduced to the SPME fibers during cutting and cleaning. The method blank was cut and cleaned with the other SPME fibers, then wrapped with aluminum foil, and stored in an air-tight mylar bag in a freezer until the other SPME fibers were deployed in the jars. It was shipped alongside the PRC-loaded SPME passive sampler reproducibility standards to Eurofins for analysis. The total PCB concentration on the method blank was 0.001 picograms per milligram of PDMS polymer, which is several orders of magnitude lower than the range of total PCB concentrations measured in the deployed SPME fibers.
- **PRC-loaded SPME passive sampler reproducibility standards:** These QA/QC samples were used to assess variability in the initial PRC concentrations. A coefficient of variation less than 20% is the recommended criterion for acceptable variability of the initial PRC concentrations (ESTCP 2021). Five QA/QC samples were collected on October 14, 2025, and sent for analysis prior to beginning the jar testing. Among these five samples, the coefficients of variation for the eight PRCs ranged from 14% to 19%. These results indicate good QC of the PRC spiking on the SPME fibers used for the jar testing.

- **Laboratory duplicates:** A laboratory duplicate is a sample that is prepared and handled identically to a "parent" sample and is used to measure variability in sample preparation at the EGL. Additional laboratory duplicate samples were prepared by the analytical laboratories (Eurofins and SGS Wilmington); the duplicates prepared by the analytical laboratory are provided in the data validation reports provided in Appendix C.
- **Unamended control duplicates:** All jar testing samples were prepared and run in duplicate, but only the jar testing unamended control samples were used for evaluation of reproducibility. The control jars for TS-BW1A, TS-BW1B, and TS-BW1A-SPIKED2 had relative percent differences of approximately 67%, 3%, and 16% in their control replicates, respectively.

3.5.2 Data Validation

Following receipt of the sediment and SPME analytical results (initial characterization and backwater jar testing), the PCB data were subject to data review and validation in accordance with GE's FSP/QAPP (Arcadis 2023). This included validation of all data to a Tier I Plus level. The data validation results are presented in reports provided in Appendix C. As summarized in Appendix C, 100% of the backwater sediment amendment jar testing data are considered usable. A tabular summary of all validated data is provided in Appendix D.

3.6 Results

As discussed in the Treatability Study Work Plan, the objective of the backwater sediment amendment jar testing was to evaluate the effectiveness of various amendment types and doses in reducing bioavailable porewater PCB concentrations in backwater sediments in BW5A-1 (DQO 3). Freely dissolved porewater total PCB concentrations measured in all jars are summarized in Table 3-4 and shown on Figures 3-1 to 3-3 for TS-BW1A, TS-BW1B, and TS-BW1A-SPIKED2, respectively. The concentrations showed some variability among jars despite best efforts to thoroughly homogenize the samples prior to testing, likely due to small-scale sample heterogeneity. Nonetheless, the reductions in freely dissolved porewater total PCB concentrations were sufficiently high to show a difference from the unamended controls.

Jars amended with 2% and 5% PAC achieved the greatest reductions (97.7% to 99.8%) of freely dissolved porewater total PCB concentrations across the three sediments tested. Jars amended with 1% PAC achieved similar reductions for TS-BW1A and TS-BW1A-SPIKED2 (92.1% and 96.9%), but the reduction measured for TS-BW1B (75.2%) was the lowest of all amendment types for that sediment. Jars amended with GAC achieved similar reductions (88.1% to 99.4%) for the unspiked sediments (TS-BW1A and TS-BW1B), but reductions in the spiked sediment (TS-BW1A-SPIKED2) were lower (37.4% to 60.4%). The lower reductions for GAC in the spiked sediment are likely a result of not

reaching equilibrium.[9] The activated biochar achieved similar porewater reductions (77.3% to 99.6%) for all sediments at both 5% and 10% doses. Among these treatments, PAC achieved the greatest freely dissolved porewater total PCB concentration reduction at the lowest dose.

Table 3-4
Freely Dissolved Concentrations of Total PCB Congeners in Jar Testing

Sediment	Amendment	Total PCB Congeners (ng/L) Average (Range)	% Reduction Average (Range)
TS-BW1A	Control	41.8 (27.7 – 55.8)	—
	1% PAC	1.31 (0.742 – 1.87)	96.9% (93.3% – 98.7%)
	2% PAC	0.716 (0.674 – 0.758)	98.3% (97.3% – 98.8%)
	5% PAC	0.163 (0.161 – 0.165)	99.6% (99.4% – 99.7%)
	2% GAC	4.96 (4.03 – 5.89)	88.1% (78.8% – 92.8%)
	5% GAC	0.886 (0.567 – 1.21)	97.9% (95.7% – 99.0%)
	5% Activated Biochar	4.24 (4.19 – 4.28)	89.9% (84.6% – 92.5%)
	10% Activated Biochar	0.942 (0.883 – 1.00)	97.7% (96.4% – 98.4%)
TS-BW1B	Control	87.5 (86.2 – 88.8)	—
	1% PAC	21.7 (1.51 – 41.8)	75.2% (51.5% – 98.3%)
	2% PAC	0.354 (0.318 – 0.391)	99.6% (99.5% – 99.6%)
	5% PAC	0.150 (0.125 – 0.175)	99.8% (99.8% – 99.9%)
	2% GAC	4.14 (3.43 – 4.86)	95.3% (94.4% – 96.1%)
	5% GAC	0.490 (0.463 – 0.517)	99.4% (99.4% – 99.5%)
	5% Activated Biochar	2.20 (2.13 – 2.26)	97.5% (97.4% – 97.6%)
	10% Activated Biochar	0.367 (0.351 – 0.383)	99.6% (99.5% – 99.6%)
TS-BW1A-SPIKED2 (PCB spiked)	Control	323 (298 – 348)	—
	1% PAC	25.5 (23.2 – 27.8)	92.1% (90.7% – 93.3%)
	2% PAC	7.49 (7.46 – 7.53)	97.7% (97.5% – 97.9%)
	5% PAC	0.897 (0.852 – 0.941)	99.7% (99.7% – 99.8%)
	2% GAC	202 (200 – 204)	37.4% (31.4% – 42.6%)
	5% GAC	128 (124 – 132)	60.4% (55.7% – 64.4%)
	5% Activated Biochar	73.5 (68.4 – 78.7)	77.3% (73.6% – 80.4%)
	10% Activated Biochar	17.9 (15.9 – 19.9)	92.1% (93.3% – 95.4%)

Note:
The values presented are the average of two replicates for each jar, and values in parentheses represent the individual results for each jar (i.e., the range).

[9] Activated carbon particles have a complex network of pore spaces that allow the AC particles to have a much larger surface area to mass than organic carbon or other forms of organic matter. Initial sorption of PCBs on to AC happens quickly at the outer most binding sites, and then the PCBs migrate slowly via intra-particle diffusion to the inner binding sites (Shen et al. 2023). Because the migration of PCBs via intra-particle diffusion is a slow process, it limits the rate at which PCBs can be taken up once all of the outer binding sites are taken up. The relatively lower percent reductions measured for GAC in the spiked sediment sample indicates that the higher PCB concentration likely saturated the outer binding sites of the carbon. If these tests were given more time to reach equilibrium, it is expected the reductions for both GAC doses would be significantly higher; it can take 12 months or more for GAC to achieve equilibrium (Shen et al. 2023). This effect is apparent in GAC and not PAC because the larger particle size of GAC means a smaller number of outer binding sites and a larger number of inner binding sites compared to PAC.

4 Chemical Isolation Layer Amendment Testing

Adsorption isotherm and kinetic testing were performed to evaluate the equilibrium and kinetic adsorption characteristics for PCBs with PAC and GAC, which are candidate adsorptive amendment materials for the Reach 5A sediment caps. These tests were performed to support the refinement of the amendment type(s) and dosage(s) recommended for the design of the chemical isolation layer in the cap. Isotherm testing characterizes the adsorptive capacity of an amendment (in this case, PAC or GAC) for sequestering dissolved-phase PCBs transported by porewater within the chemical isolation layer of the cap when the phases are at equilibrium. Kinetic testing evaluates the rates at which PCBs adsorb from porewater onto an amendment. Isotherm testing evaluates the amount of PCBs that can be adsorbed by amendments across a range of concentrations at a constant temperature and helps identify adsorption behavior and mechanisms. Although equilibrium adsorption isotherm properties for PCBs with PAC and GAC have been documented elsewhere (e.g., McDonough et al. 2008; Zhou et al. 2022), those properties have been shown to vary from site to site (due to effects from other constituents in the porewater such as dissolved organic matter [DOM]) and with material type of PAC or GAC. In addition, understanding the kinetics of PAC and GAC adsorption can be important for cap environments in which the thickness of the amended layer is relatively small and/or the groundwater seepage rate is relatively high (Shen et al. 2023; Ajemigbitse et al. 2023). As such, results from the isotherm and kinetic testing described in this section provide site-specific PCB adsorption parameters that can be incorporated into the cap design model, supporting optimization of amendment selection and dosage to achieve the project performance standards.

4.1 Sediment Collection

Two surface bulk sediment samples (TS-PW1 and TS-PW2) were collected from Reach 5A on December 26, 2024. Figure 1-1 shows these sediment sample collection locations. The sediments were collected using a grab sampler and containerized in sealable five-gallon buckets. The sediments were shipped overnight on ice and delivered to the Anchor QEA EGL in Portland, Oregon, on December 31, 2024. Upon arrival, the sediments were stored in a cold room and maintained at 4°C. Prior to use, the sediment samples were thoroughly homogenized using a paddle mixer, and large rocks and wood debris were removed by gloved hands, if present, to avoid damage to glass jars during the sediment porewater sample preparation step described in Section 4.2.1. To better reproduce site sediment porewater, finer rocks and wood debris were left in the sediments.

4.2 Treatability Test Preparation

A flow chart of the sample preparation procedures for the isotherm/kinetic testing is presented in Figure 4-1. Details of sediment porewater and activated carbon (AC) preparation are described in the following subsections.

4.2.1 Sediment Porewater

Site-specific isotherm and kinetic parameters can be obtained from these tests using sediment porewater generated through direct water extraction, in which porewater is prepared by equilibrating site sediment with deionized water. Natural organic matter can reduce PCB uptake by AC through competitive adsorption and pore blockage (McDonough et al. 2008; Fairey et al. 2010). Isotherm and kinetic testing were, therefore, performed to evaluate these effects on a site-specific basis and to support selection of an appropriate amendment type and dosage, thereby allowing refinement of amendment dosages for the final design.

Isotherm and kinetic tests were conducted using two porewater samples generated by direct water extraction from the two bulk sediment samples that were collected for this study (TS-PW1 and TS-PW2), which were selected to be representative of porewater expected beneath the chemical isolation layer of Reach 5A sediment caps.

Two simulated sediment porewater samples were prepared by mixing 1.6 L of deionized (DI) water with 300 grams (g) of homogenized wet sediment in 2-L wide-mouth glass jars and agitating the mixtures on a shaker table at 100 rpm for 30 days to allow equilibration. After equilibration, the supernatant in each jar was filtered through 0.45-µm in-line filters to remove suspended solids. Following filtration, the simulated sediment porewaters were subsampled and sent to Eurofins for analysis of PCB congeners by EPA Method 1668C, as well as for TSS, TOC, and dissolved organic carbon (DOC). Specific conductivity (SC) and pH were also measured using electrodes at EGL. Calcium chloride was added to the sediment porewaters to a final molar concentration of 0.01 moles (M)/L to adjust ionic strength, and sodium azide was added at 50 mg/L to prevent bacterial growth. The sediment porewaters were then stored in a refrigerator at 4°C until further use.

The total PCB concentrations in the two porewater samples equilibrated with sediments by direct water extraction were low (1.0 ng/L in TS-PW1 and 0.1 ng/L in TS-PW2, respectively), which necessitated spiking with PCBs prior to proceeding with further testing. Results for TSS, TOC, DOC, pH, and SC in the porewater samples are presented in Table 4-1. Because the porewater samples were filtered prior to analysis, TSS was not detected as expected, and TOC and DOC concentrations were nearly identical due to the lack of particulate matter in the samples. The DOC concentration in TS-PW1 was 8.3 mg/L, which was higher than in TS-PW2 (3.1 mg/L). This corresponds to the visual observation that the porewater sample equilibrated with sediment TS-PW1 had a darker color than the porewater equilibrated with sediment TS-PW2.

4.2.2 Activated Carbon

As described in the Revised Treatability Study Work Plan Addendum, WPH (PAC) and Filtrasorb 400 (GAC) were obtained from Calgon Carbon Corporation and tested. Specification sheets for these amendments are provided in Appendix B. Prior to the isotherm and kinetic tests, a few grams of the

PAC and GAC were transferred into 250-mL glass beakers and washed with DI water several times to remove undesirable fine particles as recommended by Randtke and Snoeyink (1983). This step was continued until the floating fine particles were completely removed. The washed PAC and GAC were dried in an oven overnight at 110°C to a constant weight and kept in a desiccator until further use. For the kinetic testing, the washed PAC and GAC were used without further preparation. For the isotherm testing, because uptake of highly chlorinated PCBs by the GAC may not reach equilibrium within the study timeframe, the GAC was ground to reduce equilibration time, sieved to collect the 200 to 325 standard mesh fraction (45 to 75 µm), and rinsed with DI water to remove fines. The crushed GAC was dried to constant mass at 105°C and stored in a desiccator following these steps.

AC in an amended sediment cap can be exposed to DOM, which can reduce AC's effective PCB uptake capacity and slow uptake kinetics. Therefore, prior to these tests, the PAC and GAC were preloaded with DOM from the porewater samples generated from site sediments, as would be expected when AC is placed in a natural system. To avoid underestimating PCB uptake capacity, residual PCBs in the porewater samples were removed using low-density polyethylene (LDPE) sheets prior to DOM preloading onto the PAC and GAC. Approximately two grams of LDPE sheets were deployed in one-L porewater samples collected in HDPE bottles and equilibrated on a shaker table for 50 days. After removal of residual PCBs, approximately 200 mg of PAC or GAC was added to one-L porewater samples to preload DOM, and the HDPE bottles were gently shaken for seven days at 120 rpm on an orbital shaker. The DOM-loaded AC was then collected by vacuum filtration using 0.45-µm pore-size polyvinylidene fluoride (PVDF) membranes, and the membranes were dried at 105°C overnight in an oven to constant mass. The DOM-loaded AC was carefully scraped from the dried PVDF membranes, collected in one-oz glass jars, and stored in a desiccator until further use.

4.3 Isotherm Testing

4.3.1 Test Setup

The isotherm testing for PCBs was conducted using the DOM-loaded PAC and GAC over a wide range of target equilibrium (post-test) aqueous PCB concentrations (approximately 1 to 1,000 ng/L), which is generally consistent with the range of PCB concentrations measured in Reach 5A sediment porewater as part of the PDI conducted in 2022. Due to the high PCB uptake capacity of AC and the likelihood that the generated porewater PCB concentrations would be too low to yield meaningful isotherm results, the porewater samples used for the isotherm testing were spiked with stock solutions of Aroclor 1254 and 1260 (the Aroclors historically identified in Reach 5A sediments) and nine selected PCB congeners (PCB-004, -010, -019, -044, -052, -054, -070, -086, and -090) of known concentration to elevate their initial concentrations. Stock solutions of Aroclor 1254 and 1260 (1,000 µg/mL in methanol) and the nine PCB congeners (100 µg/mL in isooctane) were purchased from AccuStandard, Inc. (New Haven, Connecticut). The nine PCB congeners have relatively high aqueous solubility (Shiu and Mackay 1986) and were previously detected at elevated concentrations in

sediment porewater samples collected during the 2022 PDI. Methanol is the carrier solvent for the Aroclor 1254 and 1260 stock solutions, and isooctane is the carrier solvent for the individual PCB congener stock solutions. Because isooctane is immiscible with water, it was replaced with methanol using a nitrogen blowdown evaporator prior to spiking. Aroclor 1254, Aroclor 1260, and the nine PCB congeners dissolved in methanol were then spiked into the porewater samples at varying volumes to achieve the desired initial aqueous PCB congener concentrations. The initial concentrations of major PCB congeners in the two porewater samples for the isotherm testing are provided in Tables 4-2 and 4-3. These major PCB congeners were detected at elevated concentrations in site sediment porewater in the PDI and were detected both before and after AC treatment during the isotherm testing, allowing adsorption isotherm curves to be developed. Although other PCB congeners were detected in porewater samples prior to AC treatment, they were not detected following AC treatment and, therefore, did not yield adsorption isotherm curves. The initial concentrations of PCB congeners were set to levels below their expected intrinsic aqueous solubility (Shiu and Mackay 1986). The spiked methanol volumes do not significantly influence PCB partitioning between the water and sorbing phases, as indicated by estimated activity coefficients for systems with and without methanol calculated by the UNIQUAC Functional-group Activity Coefficient (UNIFAC) calculator (Choy and Reible 1996). After the stock solutions were added, the spiked porewater samples were stirred in the dark for three hours on magnetic stir plates to ensure thorough mixing and complete dissolution of the PCBs.

A schematic of test bottle setup for the isotherm testing is provided in Figure 4-2. The isotherm testing was conducted in eight-oz Boston amber glass bottles with polytetrafluoroethylene (PTFE)-lined polypropylene caps. A previous study concluded that Teflon-lined lids did not compromise the integrity of their isotherm studies for PCBs (McDonough et al. 2008). A fixed mass of DOM-loaded PAC or GAC (10 mg) was weighed into each test bottle. Eight test bottles were prepared for each treatment (i.e., control, PAC treatment, and GAC treatment) for each of the PCB-spiked porewater samples. An 11-cm PDMS-coated glass fiber (SPME fiber) with a 1,070 µm outside diameter and a 1,000 µm glass core (Polymicro Technologies, Phoenix, Arizona) was transferred to each test bottle to measure freely dissolved PCB concentrations. The SPME fibers allow measurement of freely dissolved PCB concentrations in each test bottle without the need to separate the AC from the water. Prior to use, the SPME fibers were washed with HPLC-grade hexane, methanol, and water to remove background contaminants. Then, 230 mL of the PCB-spiked porewater was added to each test bottle. The headspace in the bottles was minimized while still allowing adequate mixing of the solution. The bottles were tightly sealed, packed into cartons, and continuously agitated at 120 rpm for eight weeks to achieve equilibrium partitioning of PCBs among the water phase, the DOM phase, the PDMS phase, and the AC phase (Figure 4-3 provides an illustration of the conservation of mass in this batch experiment system). Mixing accelerates the mass-transfer kinetics and is expected to achieve near-equilibrium conditions. This mixing period was expected to be sufficient to achieve adsorption equilibrium between most of PCB congeners and fine-grained ACs based on previous studies documented in literature (McDonough et al. 2008; Zhou et al. 2022). Following the eight-week

equilibration period, the SPME fibers were retrieved, rinsed with deionized water, and wiped with damp and dry laboratory wipes and submitted to Eurofins for PCB congener analysis by EPA Method 1668C.

4.3.2 Data Analysis

At equilibrium, PCB congeners in a test bottle distribute between the water (freely dissolved) phase, DOM phase, PDMS phase, and AC phase. This can be expressed by the following mass balance equation:

Equation 4-1

$$M_T = C_w V_w + C_{DOM} V_w + C_p V_p + q_{ac} m_{ac}$$

where:

M_T	=	Total mass of PCB congener in a test bottle (mg)
C_w	=	Freely dissolved concentration of PCB congener in water (mg/L)
V_w	=	Water volume in a test bottle (L)
C_{DOM}	=	DOM-associated PCB congener concentration in water (mg/L)
C_p	=	PCB congener concentration in PDMS polymer (mg/L)
V_p	=	PDMS polymer volume in a test bottle (L)
q_{ac}	=	PCB congener concentration in AC (mg/kg)
m_{ac}	=	AC mass in a test bottle (kg)

At equilibrium, freely dissolved PCB congener concentrations in water (C_w) can be calculated from the PCB congener concentrations in PDMS polymer (C_p) and the PDMS-water partitioning coefficients (K_{pw}), as follows:

Equation 4-2

$$C_w = \frac{C_p}{K_{pw}}$$

where:

C_w	=	Freely dissolved concentration of PCB congener in water (mg/L)
C_p	=	PCB congener concentration in PDMS polymer (mg/kg)
K_{pw}	=	PDMS-water partitioning coefficient (L/kg)

The PCB congener concentrations in PDMS polymer (C_p) are directly measured and reported by the analytical laboratory. The PDMS-water partitioning coefficients (K_{pw}) for PCBs were calculated from the linear regression between K_{pw} and K_{ow} for PCBs, as shown in Equation 3-2.

In these studies, DOC concentrations were previously measured in the porewater samples instead of measuring DOM concentrations in the test bottles. The fraction of PCB congeners associated with DOM can be expressed using the DOC-water partition coefficient (K_{DOC}) instead of the DOM-water partition coefficient (K_{DOM}). The K_{DOC} values for PCB congeners can be calculated from the DOM-associated PCB congener concentration in water (C_{DOM}), the freely dissolved PCB congener concentration in water (C_w), and DOC concentrations in water (ρ_{DOC}) as follows:

Equation 4-3

$$K_{DOC} = \frac{C_{DOM}/\rho_{DOC}}{C_w} = \frac{(C_{diss} - C_w)/\rho_{DOC}}{C_w}$$

where:

K_{DOC}	=	DOC-water partition coefficient of PCB congener (L/kg)
C_w	=	PCB congener concentration in freely dissolved phase in water (mg/L)
ρ_{DOC}	=	DOC concentration in water (kg/L)
C_{DOM}	=	DOM-associated PCB congener concentration in water (mg/L)
C_{diss}	=	Total dissolved PCB congener concentration in water (mg/L)

The PCB-spiked porewater samples used for the kinetic testing were sent for analysis to measure total dissolved PCB concentrations in water (C_{diss}) and DOC concentrations (ρ_{DOC}). SPME fibers were deployed in the porewater samples and allowed to equilibrate to measure C_w. K_{DOC} values for each PCB congener can be calculated with those results using Equation 4-3. Combining Equations 4-1 and 4-3, the mass balance equation can be expressed as follows:

Equation 4-4

$$M_T = (1 + \rho_{DOC}K_{DOC})C_wV_w + C_pV_p + q_{ac}m_{ac}$$

where:

M_T	=	Total PCB congener mass in a test bottle (mg)
C_w	=	PCB congener concentration in freely dissolved phase in water (mg/L)
V_w	=	Water volume in a test bottle (L)
ρ_{DOC}	=	DOC concentration in water (kg/L)
K_{DOC}	=	DOC partition coefficient of PCB congener (L/kg)
C_p	=	PCB congener concentration in PDMS polymer (mg/L)
V_p	=	PDMS polymer volume in a test bottle (L)
q_{ac}	=	PCB congener concentration in activated carbon (mg/kg)
m_{ac}	=	AC mass in a test bottle (kg)

Because AC was not added in the control bottles (i.e., m_{ac} = 0), the total PCB congener mass (M_T) in the control can be calculated from other known parameters. Once M_T is calculated from the control test bottles, q_{ac} can be calculated. At equilibrium, q_{ac} and C_w can be expressed by the nonlinear equation such as the Freundlich isotherm model (Equation 4-5). The Freundlich isotherm parameters (i.e., K_F and n) were calculated for the PAC and GAC for each PCB congener. The Freundlich isotherm model fits adsorption isotherm data well and has been broadly applied to the adsorption of hydrophobic organic compounds onto AC in previous studies (McDonough et al. 2008; Zhou et al. 2022).

Equation 4-5

$$q_{ac,e} = K_F\left(C_{w,e}\right)^{1/n}$$

where:

$q_{ac,e}$	=	Equilibrium concentration of PCB congener in AC (µg/kg)
$C_{w,e}$	=	Freely dissolved PCB congener concentration at equilibrium (µg/L)
K_F	=	Freundlich capacity constant (mg/L) ([µg/kg]/[µg/L]$^{1/n}$)
1/n	=	Freundlich exponent (-)

4.4 Kinetic Testing

4.4.1 Test Setup

The kinetic testing was performed to quantify PCB uptake rates from porewater as they sorb onto the PAC and GAC. The tests involved contacting the PCB-spiked porewater samples with the PAC or GAC and measuring changes in PCB concentrations in the PDMS-coated glass fibers at various intervals over time, up to 24 weeks (i.e., 0.43, 1, 2, 3, 4, 6, 8, 12, 16, and 24 weeks).[10] The results were used to quantify site-specific PCB uptake rates for the PAC and GAC, which will be used to further refine the chemical isolation model simulations to establish amendment dosages for the final design.

In the kinetic testing, test bottles were prepared with porewater spiked at a single initial PCB concentration and sacrificed for sampling at the specific times listed above, up to 24 weeks. Test bottles for the kinetic testing were prepared in the same manner as those used for the isotherm testing (Figure 4-2). The two sediment porewater samples were spiked with Aroclor 1254, Aroclor 1260, and nine selected PCB congeners (PCB-004, -010, -019, -044, -052, -054, -070, -086, and -090). The initial concentrations of major PCB congeners for the kinetic testing were provided in Table 4-4. Ten milligrams of DOM-loaded PAC or GAC was weighed into pre-cleaned 250-mL amber glass bottles, and an 11-cm PDMS-coated glass fiber (SPME fiber) with a 1,070 µm outside diameter and a 1,000 µm glass core

[10] As noted in Section 1.1, while the testing is ongoing up to 24 weeks, this summary report includes results from only the first eight weeks of testing pursuant to Condition 1 in EPA's May 5, 2025 conditional approval letter.

(Polymicro Technologies, Phoenix, Arizona) was transferred to each test bottle to measure freely dissolved PCB concentrations. Next, 230 mL of PCB-spiked porewater was added to each test bottle. Headspace in the bottles was minimized while still allowing adequate mixing of the solution on a shaker table. The bottles were tightly sealed, packed into cartons, and continuously agitated at 120 rpm on a shaker table until they were sacrificed for analysis at the specific sampling times. At the designated sampling times, the SPME fibers were retrieved from the batch bottles, cleaned with HPLC-grade water and Kimwipes, and submitted to Eurofins for PCB congener analysis by EPA Method 1668C.

4.4.2 Data Analysis

4.4.2.1 Controls

The PCB uptake and release processes in PDMS polymer can be described by a classical first-order model (Shen et al. 2023), in which the rate is proportional to the difference between the freely dissolved PCB concentration in water (C_w) and the PCB concentration in PDMS divided by the PDMS-water partition coefficient (C_p/K_{pw}). The mass transfer coefficient (k_p) can vary due to mixing conditions and must be calibrated for each experiment for each PCB congener. Based on mass balance calculations, the following equation can be obtained:

Equation 4-6

$$\frac{dC_p}{dt} = \frac{k_p A_p}{V_p}\left(C_w - \frac{C_p}{K_{pw}}\right)$$

where:

C_p	=	PCB congener concentration in PDMS (mg/kg)
C_w	=	Freely dissolved PCB congener concentration (mg/L)
K_{pw}	=	PDMS-water partitioning coefficient (L/kg)
k_p	=	Mass transfer coefficient (m/day)
A_p	=	PDMS polymer surface area (m^2)
V_p	=	PDMS polymer volume (m^3)

For the controls, the mass of AC (m_{ac}) is zero, and PCBs in the aqueous phase can partition to DOM and the PDMS polymer (Figure 4-3). By combining the mass conservation equation (Equation 4-4) and the first-order uptake model (Equation 4-6), the analytical solution for the PCB uptake mass time profile in the PDMS polymer in the controls can be derived as follows:

Equation 4-7

$$C_p = \frac{MK_{pw}}{K_{pw}V_p + V_w(1+\rho_{DOC}K_{DOC})}\left(1 - exp(\lambda_p t)\right)$$

$$\lambda_p = \left(\frac{1}{V_w(1+\rho_{DOC}K_{DOC})} + \frac{1}{K_{pw}V_p}\right)A_p k_p$$

The PCB concentrations in the PDMS polymer in the controls over time were fit to Equation 4-7 using a nonlinear least-squares method to calculate the mass transfer coefficients (k_p). The calculated k_p values were then used to calculate the PCB uptake rates by ACs in the following section.

4.4.2.2 AC Treatments

The adsorption of PCBs to AC in the stirred systems can be assumed to be controlled by intraparticle transport in the AC and described by the first-order model (Shen et al. 2023). The model is described by an empirical kinetic constant $\lambda_{ac,F}$ and the difference between the freely dissolved concentration at the time of sampling and the freely dissolved concentration that would be present when adsorption to the AC reaches equilibrium (C_w). As discussed in Section 4.2, equilibrium partitioning of PCBs between water and AC can be described by the nonlinear adsorption model such as Freundlich isotherm (Equation 4-5). Based on mass balance calculations, the following equation that describes the variation in mass sorbed to AC with time can be obtained:

Equation 4-8

$$\rho_{ac}\frac{dq_{ac}}{dt} = \lambda_{ac,F}\left(C_w - \left(\frac{q_{ac}}{K_F}\right)^n\right)$$

where:

q_{ac}	=	PCB congener concentration in AC (mg/kg)
C_w	=	Freely dissolved PCB congener concentration at equilibrium (mg/L)
K_F	=	Freundlich adsorption coefficient
n	=	Freundlich exponent
$\lambda_{ac,F}$	=	First-order kinetic coefficients assuming a Freundlich isotherm

As illustrated in Figure 4-3, the batch bottles with AC treatment contain four different phases: water, DOC, PDMS polymer, and AC. To calculate $\lambda_{ac,F}$, the other parameters must be known. K_{DOC} and k_p can be calculated from the controls in the kinetic testing, and K_F and 1/n can be obtained from the isotherm testing. Therefore, the empirical kinetic constants $\lambda_{ac,F}$ in Equation 4-8 can be calculated from the results of the AC treatments in the kinetic testing. A numerical solution of PDMS uptake

profiles was developed using the first-order kinetic model with Freundlich isotherm. The numerical model was fit to the PCB concentrations in PDMS polymer in the AC treatments by optimizing the first-order rate coefficient $\lambda_{ac, F}$. The nonlinear differential equations are solved by nonlinear least square methods with fitting of the two coefficients.

4.5 Laboratory Data Quality Assessment

4.5.1 Quality Assurance/Quality Control

A method blank was prepared to assess the data quality of SPME fibers used in the kinetic and isotherm testing. The method blank was used to evaluate whether any background contamination was introduced to the SPME fibers during cutting, cleaning, and transport to the analytical lab. The method blank was cut and cleaned with the other SPME fibers, wrapped with aluminum foil, and stored in an airtight Mylar bag in a freezer until it was shipped together with the 3-day and 1-week kinetic samples to Eurofins for PCB analysis. The total PCB concentration in the method blank was 0.31 ng/sample, which was more than three orders of magnitude lower than the total PCB concentrations detected in the deployed SPME fibers.

4.5.2 Data Validation

Following receipt of the water and SPME analytical results, the PCB data were subject to data review and validation in accordance with GE's FSP/QAPP (Arcadis 2023). This included validation of all data to a Tier I Plus level. The data validation results are presented in reports provided in Appendix C. As summarized in Appendix C, more than 99% of the data are considered usable. A tabular summary of all validated data is provided in Appendix D.

4.6 Results

This section provides a summary of the isotherm and kinetic testing data and preliminary analysis of those data. It should be noted that additional analysis of those data is ongoing in support of the Reach 5A final design, including evaluation of additional data collected beyond the initial eight weeks of testing that are the subject of this report. Accordingly, the results described in this section are subject to change and will be described further in the forthcoming Final RD/RA Work Plan for Reach 5A.

4.6.1 Dissolved Organic Carbon-Water Partition Coefficients

As stated in Section 4.2, the two PCB-spiked porewater samples used for the kinetic testing were analyzed for total dissolved PCB congener concentrations (C_{diss}), and freely dissolved PCB congener concentrations (C_w) were measured using SPME fibers in the control samples of the kinetic testing. After four weeks, all PCB congeners reached apparent equilibrium between the water and PDMS polymer in the controls (Section 4.5.3.1). At equilibrium, K_{DOC} values for PCB congeners can be

calculated using Equation 4-3. The relationship between log K_{DOC} and log K_{ow} for the detected PCB congeners is shown in Figure 4-4, along with log–log correlations previously reported in the literature. The K_{DOC} values for the detected PCB congeners are also presented in Table 4-5. The K_{DOC} values for PCB congeners are nearly identical in the two porewater samples and showed a positive correlation to the hydrophobicity of the congeners.

The K_{DOC} values determined in this study are considerably higher than the values previously used for this site—namely, $K_{DOC} = 0.10 \times K_{OW}$, cited in the RCRA Facility Investigation Report (BBL and QEA 2003)—which were consistent with a regression of $K_{DOC} = 0.08 \times K_{OW}$ for naturally occurring DOC reported in a critical review (Burkhard 2000). It should be noted, however, that K_{DOC} values can be highly variable, with much of the variability attributed to the structure and composition of the DOM (Burkhard 2000). Numerous methods have been used to measure K_{DOC}, and each approach has limitations that may introduce artifacts into K_{DOC} measurements. In this study, freely dissolved PCB concentrations were directly measured using SPME fibers and calculated using Equation 4-2. Although K_{PDMS-W} values used in this study are well-cited (Ghosh et al. 2014), uncertainty in K_{PDMS-W} values cannot be ruled out. The magnitude of the K_{DOC} values calculated here is consistent with values reported in relatively recent literature using a polymer-based approach (Durjava et al. 2007; Ter Laak et al. 2009; Schacht et al. 2020; Shen et al. 2023), and those values are somewhat higher than the K_{DOC} values cited in older literature. A similar observation was made by Ter Laak et al. (2009) and Schacht et al. (2020). Lower K_{DOC} values reported in older studies may be attributed to difficulties in measuring freely dissolved concentrations of highly hydrophobic compounds, as well as to overestimation of freely dissolved aqueous concentrations resulting from incomplete phase separation (Durjava et al. 2007). In addition, as noted previously, DOM is heterogeneous by nature, and its structure and composition can be variable and site-specific. Considering this potential variability in K_{DOC} values, a sensitivity analysis will be considered during future cap design modeling to evaluate the influence of such variability on the results.

4.6.2 Isotherm Testing

Adsorption isotherms for PCB congeners on PAC and GAC were estimated, and they are presented for the PCB congeners detected after contacting with the ACs (n = 24) in Figure 4-5. The adsorption isotherms were fitted with the Freundlich isotherm model (Equation 4-5), and the Freundlich isotherm parameters (K_F and 1/n) for the congeners, along with their R-squared (R^2) values, are summarized in Tables 4-6 and 4-7 for porewater samples TS-PW1 and TS-PW2, respectively. Overall, the PAC exhibited a much greater adsorption capacity than the GAC for all PCB congeners (as indicated by the higher K_F values), even though both were derived from coal. Overall, the adsorption capacity of the PAC for the PCB congeners was more than 100 times greater than that of the GAC. Although the PAC and GAC were derived from coal, the difference in adsorption capacity may be attributed to the differences in their intrinsic adsorption properties. The difference in adsorption capacity between PAC and GAC was greater for higher-molecular weight (MW) PCB congeners than

for lower-MW congeners. One possible explanation for this result is that adsorption equilibrium was not fully achieved for higher-MW PCB congeners (beginning with PCB-129/138/160/163) within the eight-week testing period, despite grinding the GAC to the 200 to 325 standard mesh fraction (45 to 75 µm) to promote adsorption equilibrium. As discussed in the next section (Section 4.5.3), kinetic test results for both PAC and GAC indicate that adsorption equilibrium was not reached after eight weeks for the higher-MW PCB congeners. Therefore, it is likely that the adsorption capacities of PAC and GAC for higher MW PCBs were underestimated in the isotherm testing.

Overall, PCB adsorption isotherms were linear on the log-log plot across the range of aqueous concentrations and were fit well by the Freundlich isotherm model (average R^2 values = 0.76 for PAC in TS-PW1, 0.75 for PAC in TS-PW2, 0.85 for GAC in TS-PW1, and 0.70 for GAC in TS-PW2). For some lower molecular weight PCB congeners (e.g., PCB-004, 010, 019 for the GAC in TS-PW2), the data were more scattered and the R^2 values were as low as 0.40 to 0.50, indicating that the Freundlich isotherm model did not provide as good of a fit for those congeners. While porewater TS-PW1 had higher DOC concentration (8.3 mg/L) than porewater TS-PW2 (3.1 mg/L), the effect of DOC concentration on adsorption capacity of PAC for PCBs was not clearly observed in Figure 4-5. The GAC exhibited greater adsorption capacity in TS-PW1, which had a higher DOC concentration, than in TS-PW2.

The K_F and 1/n values for the PCB congeners are plotted against their log K_{ow} values in Figure 4-6. K_F is an empirical constant related to the adsorption capacity of the adsorbent. Higher K_F indicates greater adsorption capacity at a given equilibrium concentration. The K_F values were relatively constant across PCB congeners for both PAC and GAC (Figure 4-6), consistent with the trend of K_F reported in Shen et al. (2023). McDonough et al. (2008) also indicated that equilibrium adsorption capacities of PCBs on AC did not increase with increasing congener hydrophobicity. The Freundlich isotherm equation exponents (nonlinearity parameter), 1/n, for the PAC were within the range of 0.75 to 1.25 for most PCB congeners (i.e., within 25% of linearity), whereas the Freundlich exponents for the GAC were lower than those for the PAC and increased with log K_{OW}. As discussed previously, adsorption of higher MW PCB congeners on the GAC did not fully reach equilibrium within eight weeks, so the fitted Freundlich parameters likely deviate from their intrinsic values. Although the effect of DOC concentration on adsorption capacity of PAC for PCBs was not clearly observed in Figure 4-5, the Freundlich capacity constant, K_F, is slightly lower in the porewater TS-PW1, which had higher DOC concentration (8.3 mg/L) than porewater TS-PW2 (3.1 mg/L) (Figure 4-6).

4.6.3 Kinetic Testing

4.6.3.1 PCB Uptake Kinetics by PDMS

Selected PCB congener concentrations in the PDMS polymer in the controls are presented as a function of sampling time in Figure 4-7. The data show that all PCB congeners reached equilibrium in

the control test bottles within approximately four weeks, with most congeners reaching equilibrium by the first sampling time (i.e., 3 days). As expected from the literature (Shen et al. 2023), the equilibration time increased with the hydrophobicity of the congeners, ranging from a couple of days for lower MW PCB congeners to a few weeks for higher MW congeners. The analytical solution of Equation 4-7 was fitted to the experimental data (by adjusting k_p and K_{DOC}) and is shown as a solid line in Figure 4-7. The kinetic formulation for PDMS uptake given by Equation 4-7 fits the data well, across the full range of congeners. The PDMS polymer mass transfer coefficients (k_p) for selected PCB congeners were calculated and provided in Table 4-8. The fitted k_p values ranged from 6.9 to 320 m/day and 4.2 to 220 m/day in TS-PW1 and TS-PW2, respectively. Because most PCB congeners reached equilibrium by the first sampling time (i.e., 3 days), the model fitting was highly sensitive to the initial data point, resulting in some relatively high estimated k_p values. These values were up to two orders of magnitude higher than those reported by Shen et al. (2023). Those investigators indicated that the PDMS mass transfer coefficients k_p reflect a combination of internal (polymer-side) and external (thin water film) mass transfer resistances. Therefore, the k_p values depend on mixing conditions, because mixing affects the external mass transfer resistance. Mixing on the shaker table in this study may have been more vigorous than in the previous study, which likely resulted in higher k_p values. However, the use of the higher k_p values resulted in poor model fitting in the following sections. Therefore, larger λ_p values in Equation 4-7 were fixed at 5.0 to align with the values reported by Shen et al. (2023) (Table 4-8), which significantly improved the data analysis presented in the following section. It should be noted that the ultimate purpose of kinetic testing is to calculate PCB uptake kinetics by ACs ($\lambda_{ac,F}$), as discussed in Section 4.6.3.2.

4.6.3.2 PCB Adsorption Kinetics by ACs

The PDMS polymer mass transfer coefficients for PCBs (k_p) and K_{DOC} for PCBs were calculated from the control results presented in Section 4.6.3.1. The Freundlich isotherm parameters (i.e., K_F and 1/n) were obtained from the isotherm testing results, as presented in Section 4.6.2 (e.g., Tables 4-6 and 4-7). These parameters were then used with Equation 4-8 to calculate the first-order kinetic coefficients for adsorption of PCBs onto PAC and GAC (i.e., $\lambda_{ac,\,F}$ in Equation 4-8) for each of the various PAC and GAC treatments (Figure 4-3).

It should be noted that, instead of conducting isotherm tests, Shen et al. (2023) conducted only kinetic tests and treated the linear adsorption constant or the nonlinear Freundlich adsorption coefficient (K_F) (with fixed Freundlich exponent, 1/n) as an additional fitting parameter along with the first-order kinetic coefficients, $\lambda_{ac,\,F}$. Shen et al. (2023) fitted the K_F values to the results for PAC and applied them to GAC, assuming that both materials have the same adsorption capacity given that the PAC was prepared by grinding GAC in that study. Having data from isotherm tests, as was the case in this study, provides an opportunity to independently quantify the equilibrium adsorption parameters (i.e., K_F and 1/n), leaving only the kinetic parameter ($\lambda_{ac,\,F}$) to be derived from the kinetic test results. This latter approach was originally planned for this study, as described in the Revised Treatability

Study Work Plan Addendum; both this approach (Approach 1) and the approach used by Shen et al. (2023) (Approach 2) are illustrated and compared in Figure 4-8. For the PAC, because the isotherm test results were of good data quality (including consistently good fits with the Freindlich isotherm equation), the first-order kinetic coefficients, $\lambda_{ac,\,F}$ were calculated using both approaches and compared. For the GAC, the latter approach was taken to calculate $\lambda_{ac,\,F}$, although it should be noted that adsorption of higher MW PCB congeners did not appear to reach equilibrium. The approach used by Shen et al. (2023) was also applied for GAC to calculate $\lambda_{ac,\,F}$, applying the fitted K_F values obtained from the PAC results, given that both the PAC and GAC were derived from coal (K_F and $\lambda_{ac,\,F}$ could not be simultaneously calculated for the GAC due to slower PCB uptake by GAC).

PCB congener concentrations in the PDMS polymer deployed in the PAC treatment and GAC treatments are presented as a function of contact time in Figures 4-9 and 4-10, respectively. The PCB concentrations in the PDMS initially increased rapidly as freely dissolved PCBs were taken up by the PDMS samplers, and subsequently decreased as the PCBs adsorbed to the AC (given PCBs have a higher affinity for AC than PDMS), eventually approaching a state of equilibrium among the various phases in the system (i.e., freely dissolved, DOC-bound, PDMS, and AC). The observed decreases in PCB concentrations of the PDMS polymer occurred much more slowly with GAC than with PAC, indicating adsorption kinetics for GAC were slower than PAC, as expected (Shen et al. 2023; Ajemigbitse et al. 2023). The slower PCB uptake kinetics of the GAC resulted in sustained higher concentrations in PDMS polymer in the GAC treatments. PCBs first partitioned into the PDMS and DOM and were then gradually adsorbed onto the GAC. A numerical solution for Equation 4-8 was derived and fitted to the experimental data and shown as solid lines for PAC and GAC in Figures 4-9 and 4-10, respectively. The first-order kinetic coefficients ($\lambda_{ac,\,F}$) of PCBs for the PAC and GAC are summarized in Table 4-9.

The different PCB uptake kinetics between the PAC and GAC were reflected in the fitted first-order rate constants ($\lambda_{ac,\,F}$). For the PAC, the values were $10^{7.0\pm0.4}$ day^{-1} (TS-PW1, Approach 1), $10^{7.0\pm0.2}$ day^{-1} (TS-PW1, Approach 2), $10^{7.3\pm0.3}$ day^{-1} (TS-PW2, Approach 1), and $10^{7.5\pm0.2}$ day^{-1} (TS-PW2, Approach 2). For the GAC, the corresponding values were $10^{4.1\pm0.5}$ day^{-1} (TS-PW1, Approach 1), $10^{3.8\pm0.5}$ day^{-1} (TS-PW1, Approach 2), $10^{4.8\pm0.6}$ day^{-1} (TS-PW2, Approach 1) and $10^{4.1\pm0.3}$ day^{-1} (TS-PW2, Approach 2) for the GAC. These values are consistent with the values reported in Shen et al. (2023) (i.e., $10^{7.1\pm0.3}$ day^{-1} for PAC and $10^{4.4\pm0.3}$ day^{-1} for GAC). There was no apparent correlation between the kinetic rate coefficient and congener hydrophobicity, which agreed with the trend shown in the literature (Shen et al. 2023). The $\lambda_{ac,\,F}$ values calculated using the two different approaches illustrated in Figure 4-8 are compared for the PAC and GAC in Figure 4-11. This experimental observation demonstrated the faster adsorption rate in the carbon of finer particle size (i.e., faster kinetics for PAC than GAC, consistent with previous studies).

4.7 Use of These Data in Cap Chemical Isolation Layer Design

The isotherm and adsorption kinetics parameters obtained from the testing described above will be incorporated into a one-dimensional numerical fate and transport model (CapSim) to predict PCB concentrations and fluxes within the cap over time and to simulate PCB adsorption and attenuation within the chemical isolation layer in the final cap design. This process is shown in the flow chart in Figure 4-12. CapSim is a widely applied numerical model to evaluate the effectiveness of sediment caps in reducing contaminant migration from sediments to the overlying surface water (Shen et al. 2018). The model simulates vertical contaminant transport through a layered system that includes contaminated sediment, one or more cap layers, and the overlying water column.

CapSim incorporates adsorption kinetics to represent time-dependent mass transfer between dissolved PCBs in porewater and AC within the cap, as well as isotherm relationships to describe equilibrium partitioning behavior. This allows the model to capture both short-term, non-equilibrium conditions following cap placement and long-term, steady-state cap performance. Therefore, adsorption kinetics and isotherm parameters are critical inputs for simulating the effectiveness of AC–amended caps in reducing the upward mass flux of PCBs from contaminated sediments.

In addition to adsorption processes, CapSim can simulate multiple transport and fate mechanisms, including advection, diffusion, dispersion, and processes occurring at the sediment–water interface. These processes include bioturbation of solids and porewater, sediment deposition, consolidation, and interactions with the overlying surface water. Site-specific parameters and cap design–specific inputs will be developed separately and incorporated into the CapSim modeling framework (Figure 4-11). Specific to the amendment testing described herein, the coefficient values derived from the isotherm and kinetics tests (K_F, 1/n, $\lambda_{ac, F}$) will be used in CapSim model simulations during final design of the sediment cap to identify the chemical isolation layer thickness, amendment type (i.e., PAC vs. GAC), and amendment dosage needed to achieve the design target of a 99% reduction of total PCB flux (relative to uncapped conditions).

5 References

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Tables

Table 2-2

Initial Sediment Geotechnical Results—Moisture Content, Gradation, and Atterberg Limits

Sample ID	Moisture Content (%)	Particle Size			Atterberg Limits			USCS Symbol and Description
		Gravel (%)	Sand (%)	Fines (%)	LL	PL	PI	
	ASTM D2216	ASTM D6913			ASTM D4318			
TS-S1	10.6	37	61	2	—	NP	—	SP – Poorly Graded Sand with Gravel
TS-WP	93.5	8	64	28	61	39	22	SM – Silty Sand
TS-S4	14.2	23	74	3	—	NP	—	SP – Poorly Graded Sand with Gravel
TS-S2	18.5	9	88	3	—	NP	—	SP – Poorly Graded Sand
TS-BW5	155.3	0	13.5	86.5	81	61	20	MH – Elastic Silt
TS-S3	31.4	0.1	97.2	2.7	—	NP	—	SP – Poorly Graded Sand

Notes:

ASTM: ASTM International

NP: non-plastic

USCS: Unified Soil Classification System

Table 2-3

Initial Sediment Geotechnical Results—Specific Gravity, Organic Content, and Paint Filter

Sample ID	USCS Symbol	Specific Gravity	Organic Content %	Paint Filter
		ASTM D854	ASTM D2974	
TS-S1	SP	2.77	0.5	Passed
TS-WP	SM	2.6	6.6	Failed
TS-S4	SP	2.68	1.9	Passed
TS-S2	SP	2.67	1.4	Passed
TS-BW5	MH	2.51	13.6	Passed
TS-S3	SP	2.72	0.6	Passed

Notes:

ASTM: ASTM International

USCS: Unified Soil Classification System

Table 2-4

Gravity Drainage Testing Metrics—Paint Filter and Moisture Content

Sample ID	USCS Symbol	Initial Moisture Content (%)	Sample Hour	Paint Filter	Moisture Content[(1)] (%)
TS-S1	SP	10.6	6	Passed	26.61
			24	Passed	8.05
			48	Passed	8.45
			72	Passed	7.13
TS-WP	SM	93.5	6	Passed	73.7
			24	Passed	73.78
			48	Passed	63.25
			72	Passed	68.21
TS-S4	SP	14.2	6	Passed	13.32
			24	Passed	15.24
			48	Passed	12.92
			72	Passed	10.41
TS-S2	SP	18.5	6	Passed	15.99
			24	Passed	16.53
			48	Passed	3.79
			72	Passed	13.05
TS-BW5	MH	155.3	6	Passed	152.98
			24	Passed	138.84
			48	Passed	123.98
			72	Passed	131.88
TS-S3	SP	31.4	6	Passed	4.13
			24	Passed	21.13
			48	Passed	15.77
			72	Passed	15.03

Note:

Moisture content estimated from a grab sample. Variability in moisture content may result from remixing of sample per SOP at every time interval prior to resuming testing.

SOP: standard operating procedure

USCS: Unified Soil Classification System

Table 2-5

Sediment Geotechnical Results—Gravity Drainage—Moisture Content, Gradation, USCS, and Standard Proctor

	Moisture Content (%)	Particle Size				Standard Proctor	
		Gravel (%)	Sand (%)	Fines (%)	USCS Symbol	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
Sample ID	ASTM D2216	ASTM D6913				ASTM D698	
TS-S1	8.9	35	61	4	SP	129.1	9.8
TS-WP	63.6	10	61	29	SM	112.3	11
TS-S4	14.6	21	75	4	SP	117	7.9
TS-S2	19.6	8	86	6	SP-SM	113.3	12.1
TS-BW5	110	0	15.7	84.3	MH	63.5	48.1
TS-S3	21.8	0	96.5	3.5	SP	100.9	18.8

Notes:

ASTM: ASTM International

USCS: Unified Soil Classification System

Table 2-6

Sediment Geotechnical Results—Gravity Drainage—Strength and Hydraulic Conductivity

Sample ID	USCS Symbol	Remolding Properties		Hydraulic Conductivity (cm/sec)	Unconfined Compressive Strength (psi)	CU Triaxial Effective Strength	
		Dry Density (pcf)	Optimum Moisture Content (%)			Φ' (deg)	c' (psf)
				ASTM D5084	ASTM D2166	ASTM D4767	
TS-S1	SP	116.2	9.8	6.60E-04	0.55	39.6	0
TS-WP	SM	101.1	11.1	1.10E-03	0.66	39.9	0
TS-S4	SP	105.3	7.9	1.10E-03	0.36	38.1	0
TS-S2	SP-SM	102	12.1	1.10E-03	0.77	35.7	0

Notes:

cm/sec: centimeter per second

pcf: pound per cubic foot

psi: pound per square inch

UCSC: Unified Soil Classification System

Table 2-7
Filtrate Analytical Results

	Units	Sample ID					
		TS-BW5	TS-S1	TS-S2	TS-S3	TS-S4	TS-WP
PCBs (by 8082)							
Aroclor-1016	µg/L	ND(0.19 J)	NA	ND(0.19)	NA	NA	ND(0.18 J)
Aroclor-1221	µg/L	ND(0.19 J)	NA	ND(0.19)	NA	NA	ND(0.18 J)
Aroclor-1232	µg/L	ND(0.19 J)	NA	ND(0.19)	NA	NA	ND(0.18 J)
Aroclor-1242	µg/L	ND(0.19 J)	NA	ND(0.19)	NA	NA	ND(0.18 J)
Aroclor-1248	µg/L	ND(0.19 J)	NA	ND(0.19)	NA	NA	ND(0.18 J)
Aroclor-1254	µg/L	ND(0.19 J)	NA	ND(0.19)	NA	NA	ND(0.18 J)
Aroclor-1260	µg/L	0.58 J	NA	1.5 J	NA	NA	0.11 J
Aroclor-1262	µg/L	ND(0.19 J)	NA	ND(0.19)	NA	NA	ND(0.18 J)
Aroclor-1268	µg/L	ND(0.19 J)	NA	ND(0.19)	NA	NA	ND(0.18 J)
Total PCBs	µg/L	0.58 J	NA	1.5 J	NA	NA	0.11 J
PCBs (by 608)							
Aroclor-1016	µg/L	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)
Aroclor-1221	µg/L	ND(0.80)	ND(0.80)	ND(0.80)	ND(0.80)	ND(0.80)	ND(0.80)
Aroclor-1232	µg/L	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)
Aroclor-1242	µg/L	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)
Aroclor-1248	µg/L	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)
Aroclor-1254	µg/L	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)
Aroclor-1260	µg/L	3.3	3.0 J	14.5	38.8 DJ	4.1 J	0.34 J
Aroclor-1262	µg/L	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)
Aroclor-1268	µg/L	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)
Total PCBs	µg/L	3.3	3.0 J	14.5	38.8 DJ	4.1 J	0.34 J
Volatile Organics							
1,1,1-Trichloroethane	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
1,1,2,2-Tetrachloroethane	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
1,1,2-trichloro-1,2,2-trifluoroethane	µg/L	NA	ND(2.0)	NA	ND(5.0 J)	NA	NA
1,1,2-Trichloroethane	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
1,1-Dichloroethane	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
1,1-Dichloroethene	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
1,2,3-Trichlorobenzene	µg/L	NA	ND(2.0)	NA	ND(1.0 J)	NA	NA
1,2,4-Trichlorobenzene	µg/L	NA	ND(2.0)	NA	ND(1.0 J)	NA	NA
1,2-Dibromo-3-chloropropane	µg/L	NA	ND(2.0)	NA	ND(2.0 J)	NA	NA
1,2-Dibromoethane	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
1,2-Dichlorobenzene	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
1,2-Dichloroethane	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
1,2-Dichloropropane	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
1,3-Dichlorobenzene	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
1,4-Dichlorobenzene	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA

Table 2-7
Filtrate Analytical Results

	Units	Sample ID					
		TS-BW5	TS-S1	TS-S2	TS-S3	TS-S4	TS-WP
2-Butanone	µg/L	NA	ND(5.0)	NA	ND(10 J)	NA	NA
2-Hexanone	µg/L	NA	ND(5.0)	NA	ND(5.0 J)	NA	NA
4-Methyl-2-pentanone	µg/L	NA	ND(5.0)	NA	ND(5.0 J)	NA	NA
Acetone	µg/L	NA	ND(5.0)	NA	4.7 J	NA	NA
Bromochloromethane	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
Bromodichloromethane	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
Bromoform	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
Bromomethane	µg/L	NA	ND(1.0)	NA	ND(2.0 J)	NA	NA
Carbon Disulfide	µg/L	NA	ND(1.0)	NA	ND(2.0 J)	NA	NA
Carbon Tetrachloride	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
Chlorobenzene	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
Chloroethane	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
Chloroform	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
Chloromethane	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
cis-1,2-Dichloroethene	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
cis-1,3-Dichloropropene	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
Cyclohexane	µg/L	NA	ND(2.0)	NA	ND(5.0 J)	NA	NA
Dibromochloromethane	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
Dichlorodifluoromethane	µg/L	NA	ND(2.0)	NA	ND(2.0 J)	NA	NA
Isopropylbenzene	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
m,p-Xylene	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
Methyl acetate	µg/L	NA	ND(5.0)	NA	ND(5.0 J)	NA	NA
Methylcyclohexane	µg/L	NA	ND(5.0)	NA	ND(5.0 J)	NA	NA
Methylene Chloride	µg/L	NA	ND(1.0)	NA	ND(2.0 J)	NA	NA
o-Xylene	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
Styrene	µg/L	NA	ND(2.0)	NA	ND(1.0 J)	NA	NA
Tetrachloroethene	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
trans-1,2-Dichloroethene	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
trans-1,3-Dichloropropene	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
Trichloroethene	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
Trichlorofluoromethane	µg/L	NA	ND(2.0)	NA	ND(2.0 J)	NA	NA
Vinyl Chloride	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
Benzene	µg/L	NA	ND(1.0)	NA	ND(0.50 J)	NA	NA
Toluene	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
Ethylbenzene	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
Xylenes (total)	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA
Methyl tert-butyl ether	µg/L	NA	ND(1.0)	NA	ND(1.0 J)	NA	NA

Table 2-7
Filtrate Analytical Results

	Units	Sample ID					
		TS-BW5	TS-S1	TS-S2	TS-S3	TS-S4	TS-WP
Semivolatile Organics							
1,1'-Biphenyl	µg/L	NA	NA	NA	ND(1.0)	NA	NA
1,2,4,5-Tetrachlorobenzene	µg/L	NA	NA	NA	ND(2.0)	NA	NA
1,4-Dioxane	µg/L	NA	NA	NA	ND(1.0)	NA	NA
2,2'-Oxybis(1-Chloropropane)	µg/L	NA	NA	NA	ND(2.0)	NA	NA
2,3,4,6-Tetrachlorophenol	µg/L	NA	NA	NA	ND(5.0)	NA	NA
2,4,5-Trichlorophenol	µg/L	NA	NA	NA	ND(5.0)	NA	NA
2,4,6-Trichlorophenol	µg/L	NA	NA	NA	ND(5.0 J)	NA	NA
2,4-Dichlorophenol	µg/L	NA	NA	NA	ND(2.0)	NA	NA
2,4-Dimethylphenol	µg/L	NA	NA	NA	ND(5.0)	NA	NA
2,4-Dinitrophenol	µg/L	NA	NA	NA	ND(10 J)	NA	NA
2,4-Dinitrotoluene	µg/L	NA	NA	NA	ND(1.0 J)	NA	NA
2,6-Dinitrotoluene	µg/L	NA	NA	NA	ND(1.0 J)	NA	NA
2-Chloronaphthalene	µg/L	NA	NA	NA	ND(2.0)	NA	NA
2-Chlorophenol	µg/L	NA	NA	NA	ND(5.0)	NA	NA
2-Methylnaphthalene	µg/L	NA	NA	NA	ND(1.0)	NA	NA
2-Methylphenol	µg/L	NA	NA	NA	ND(2.0)	NA	NA
2-Nitroaniline	µg/L	NA	NA	NA	ND(5.0)	NA	NA
2-Nitrophenol	µg/L	NA	NA	NA	ND(5.0 J)	NA	NA
3,3'-Dichlorobenzidine	µg/L	NA	NA	NA	ND(2.0)	NA	NA
3-Nitroaniline	µg/L	NA	NA	NA	ND(5.0)	NA	NA
4,6-Dinitro-2-methylphenol	µg/L	NA	NA	NA	ND(5.0 J)	NA	NA
4-Bromophenyl-phenylether	µg/L	NA	NA	NA	ND(2.0)	NA	NA
4-Chloro-3-Methylphenol	µg/L	NA	NA	NA	ND(5.0)	NA	NA
4-Chloroaniline	µg/L	NA	NA	NA	ND(5.0)	NA	NA
4-Chlorophenyl-phenylether	µg/L	NA	NA	NA	ND(2.0)	NA	NA
4-Nitroaniline	µg/L	NA	NA	NA	ND(5.0)	NA	NA
4-Nitrophenol	µg/L	NA	NA	NA	ND(10)	NA	NA
Acenaphthene	µg/L	NA	NA	NA	ND(1.0)	NA	NA
Acenaphthylene	µg/L	NA	NA	NA	0.21 J	NA	NA
Acetophenone	µg/L	NA	NA	NA	ND(2.0)	NA	NA
Anthracene	µg/L	NA	NA	NA	ND(1.0)	NA	NA
Atrazine	µg/L	NA	NA	NA	ND(2.0)	NA	NA
Benzaldehyde	µg/L	NA	NA	NA	ND(5.0)	NA	NA
Benzo(a)anthracene	µg/L	NA	NA	NA	0.54 J	NA	NA
Benzo(a)pyrene	µg/L	NA	NA	NA	0.55 J	NA	NA
Benzo(b)fluoranthene	µg/L	NA	NA	NA	0.65 J	NA	NA
Benzo(g,h,i)perylene	µg/L	NA	NA	NA	0.46 J	NA	NA

Table 2-7
Filtrate Analytical Results

	Units	Sample ID					
		TS-BW5	TS-S1	TS-S2	TS-S3	TS-S4	TS-WP
Benzo(k)fluoranthene	µg/L	NA	NA	NA	0.25 J	NA	NA
bis(2-Chloroethoxy)methane	µg/L	NA	NA	NA	ND(2.0)	NA	NA
bis(2-Chloroethyl)ether	µg/L	NA	NA	NA	ND(2.0)	NA	NA
bis(2-Ethylhexyl)phthalate	µg/L	NA	NA	NA	ND(2.0)	NA	NA
Butylbenzylphthalate	µg/L	NA	NA	NA	ND(2.0 J)	NA	NA
Caprolactam	µg/L	NA	NA	NA	ND(2.0)	NA	NA
Carbazole	µg/L	NA	NA	NA	ND(1.0)	NA	NA
Chrysene	µg/L	NA	NA	NA	0.50 J	NA	NA
Dibenzo(a,h)anthracene	µg/L	NA	NA	NA	ND(1.0)	NA	NA
Dibenzofuran	µg/L	NA	NA	NA	ND(5.0)	NA	NA
Diethylphthalate	µg/L	NA	NA	NA	ND(2.0)	NA	NA
Dimethylphthalate	µg/L	NA	NA	NA	ND(2.0)	NA	NA
Di-n-Butylphthalate	µg/L	NA	NA	NA	ND(2.0)	NA	NA
Di-n-Octylphthalate	µg/L	NA	NA	NA	ND(2.0)	NA	NA
Fluoranthene	µg/L	NA	NA	NA	0.72 J	NA	NA
Fluorene	µg/L	NA	NA	NA	ND(1.0)	NA	NA
Hexachlorobenzene	µg/L	NA	NA	NA	ND(1.0)	NA	NA
Hexachlorobutadiene	µg/L	NA	NA	NA	ND(1.0)	NA	NA
Hexachlorocyclopentadiene	µg/L	NA	NA	NA	ND(10 J)	NA	NA
Hexachloroethane	µg/L	NA	NA	NA	ND(2.0)	NA	NA
Indeno(1,2,3-cd)pyrene	µg/L	NA	NA	NA	0.38 J	NA	NA
Isophorone	µg/L	NA	NA	NA	ND(2.0)	NA	NA
Methylphenol	µg/L	NA	NA	NA	ND(2.0)	NA	NA
Naphthalene	µg/L	NA	NA	NA	ND(1.0)	NA	NA
Nitrobenzene	µg/L	NA	NA	NA	ND(2.0)	NA	NA
N-Nitroso-di-n-propylamine	µg/L	NA	NA	NA	ND(2.0)	NA	NA
N-Nitrosodiphenylamine	µg/L	NA	NA	NA	ND(5.0)	NA	NA
Pentachlorophenol	µg/L	NA	NA	NA	ND(5.0)	NA	NA
Phenanthrene	µg/L	NA	NA	NA	0.33 J	NA	NA
Phenol	µg/L	NA	NA	NA	ND(2.0)	NA	NA
Pyrene	µg/L	NA	NA	NA	0.79 J	NA	NA
Inorganics							
Aluminum	µg/L	10500	88600	45700	46300	32300	11400
Antimony	µg/L	ND(3.3 J)	ND(2.0)	ND(3.3 J)	ND(2.0)	ND(2.0)	ND(3.3 J)
Arsenic	µg/L	4.7 J	19.1	17.4 J	10	10.3	3.1 J
Barium	µg/L	118 J	349	303 J	266	182	53.4 J
Beryllium	µg/L	ND(0.83)	2.5	2.8	1.5	1.1	ND(0.83)
Cadmium	µg/L	1.5	2.4	4.9	2.4	1.5	ND(0.83)

Table 2-7
Filtrate Analytical Results

	Units	Sample ID					
		TS-BW5	TS-S1	TS-S2	TS-S3	TS-S4	TS-WP
Calcium	µg/L	69600	73100	104000	60200	76200	69500
Chromium	µg/L	35.5 J	223	ND(330 J)	213	77.8	16.1 J
Cobalt	µg/L	10.5 J	70.9	74.5 J	42.5	31.9	7.8 J
Copper	µg/L	55.9 J	384	ND(330 J)	208	189	34.9 J
Iron	µg/L	15300	189000	96600	80100	79800	12700
Lead	µg/L	99.8 J	862	469 J	261	360	48.2 J
Magnesium	µg/L	26400	56600	61500	40700	39800	28200
Manganese	µg/L	379	4900	6720	5530	4330	164
Mercury	µg/L	ND(1.2 J)	2.2	2.3 J	1.7	ND(1.2)	ND(1.2 J)
Molybdenum	µg/L	2.0 J	2.4	ND(1.7 J)	1.7	2.0	ND(1.7 J)
Nickel	µg/L	23.2 J	171	115 J	72.9	54.1	19.8 J
Potassium	µg/L	1390	6030	4720	4370	4290	3940
Selenium	µg/L	ND(1.7 J)	2.6	4.1 J	2.0	2.1	1.9 J
Silver	µg/L	ND(3.3)	3.2	ND(3.3)	2.6	ND(2.0)	ND(3.3)
Sodium	µg/L	11700	25600	12400	11000	22700	9730
Thallium	µg/L	ND(0.83)	ND(0.50)	ND(42)	ND(0.50)	ND(0.50)	ND(0.83)
Titanium	µg/L	230	686	807	552	396	146
Vanadium	µg/L	19.0 J	77.8	75.1 J	44.8	33.8	12.0 J
Zinc	µg/L	200	1020	988	706	526	113
Inorganics-Filtered							
Aluminum	µg/L	NA	NA	NA	ND(50)	NA	NA
Antimony	µg/L	NA	NA	NA	ND(2.0)	NA	NA
Arsenic	µg/L	NA	NA	NA	ND(1.0)	NA	NA
Barium	µg/L	NA	NA	NA	27.4	NA	NA
Beryllium	µg/L	NA	NA	NA	ND(0.50)	NA	NA
Cadmium	µg/L	NA	NA	NA	ND(0.50)	NA	NA
Calcium	µg/L	NA	NA	NA	35200	NA	NA
Chromium	µg/L	NA	NA	NA	ND(4.0)	NA	NA
Cobalt	µg/L	NA	NA	NA	ND(0.50)	NA	NA
Copper	µg/L	NA	NA	NA	ND(4.0)	NA	NA
Iron	µg/L	NA	NA	NA	ND(50 J)	NA	NA
Lead	µg/L	NA	NA	NA	ND(0.50)	NA	NA
Magnesium	µg/L	NA	NA	NA	14700	NA	NA
Manganese	µg/L	NA	NA	NA	1340 J	NA	NA
Molybdenum	µg/L	NA	NA	NA	1.2	NA	NA
Nickel	µg/L	NA	NA	NA	ND(4.0)	NA	NA
Potassium	µg/L	NA	NA	NA	2060	NA	NA
Selenium	µg/L	NA	NA	NA	ND(1.0 J)	NA	NA

Table 2-7
Filtrate Analytical Results

	Units	Sample ID					
		TS-BW5	TS-S1	TS-S2	TS-S3	TS-S4	TS-WP
Silver	µg/L	NA	NA	NA	ND(2.0)	NA	NA
Sodium	µg/L	NA	NA	NA	6570	NA	NA
Thallium	µg/L	NA	NA	NA	ND(0.50)	NA	NA
Titanium	µg/L	NA	NA	NA	ND(1.0)	NA	NA
Vanadium	µg/L	NA	NA	NA	ND(4.0)	NA	NA
Zinc	µg/L	NA	NA	NA	ND(10)	NA	NA
TPH							
Diesel C10-C28	mg/L	NA	NA	NA	ND(0.079)	NA	NA
Gasoline C6-C10	mg/L	NA	NA	NA	ND(0.20)	NA	NA
Wet Chemistry							
Alkalinity (as CaCO3)	mg/L	NA	NA	NA	228	NA	NA
Oil and Grease	mg/L	ND(6.7)	ND(5.0)	ND(7.1)	ND(7.1)	ND(5.0)	ND(5.0)
Total Hardness	mg/L	NA	NA	NA	320	NA	NA
Total Organic Carbon	mg/L	NA	NA	NA	7.9	NA	NA
Total Suspended Solids	mg/L	557	2640	2050	6390	944	597

Notes:

µg/L: microgram per liter

D: Concentration is based on a diluted sample analysis

J: Indicates an estimated value.

mg/L: milligram per liter

NA: not analyzed

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

Due to laboratory error, some samples were analyzed for Total PCBs also by Method 8082.

Table 2-8
Sediment Stabilization Testing Metrics—Dosage, Paint Filter, and Pocket Penetrometer

Sample ID and USCS Symbol	Initial Moisture Content (%)	Amendment	Paint Filter		Pocket Penetrometer		
			Min. Mix Ratio and Cure Time to Pass	Amended Moisture Content (%)	Min. Mix Ratio and Cure Time to Exceed Pocket Pen Reading of 1 tsf	Pocket Pen Reading (tsf)	Amended Moisture Content (%)
TS-S1 (SP)	10.6	Eco-Cal	5% at 10 hours	20	5% at 48 hours	1	11
		Quick Lime	2.5% at 10 hours	15	7.5% at 48 hours	1.25	7
		Type 1L	**2.5% at 10 hours**	**20**	**2.5% at 10 hours**	**1**	**20**
		Type II	2.5% at 10 hours	17	5% at 10 hours	2	16
TS-WP (SM)	93.5	Eco-Cal	5% at 24 hours	68	7.5% at 72 hours	0	71
		Quick Lime	2.5% at 10 hours	71	7.5% at 72 hours	0	63
		Type 1L	**2.5% at 10 hours**	**78**	**5% at 48 hours**	**1.5**	**74**
		Type II	2.5% at 10 hours	74	10% at 24 hours	1	66
TS-S4 (SP)	14.2	Eco-Cal	2.5% at 24 hours	19	2.5% at 48 hours	1.75	19
		Quick Lime	2.5% at 10 hours	19	5% at 10 hours	1.25	17
		Type 1L	**2.5% at 10 hours**	**20**	**2.5% at 10 hours**	**1.5**	**20**
		Type II	2.5% 10 10 hours	23	5% at 10 hours	1	19
TS-S2 (SP)	18.5	Eco-Cal	2.5% at 10 hours	21	5% at 72 hours	1	21
		Quick Lime	2.5% at 10 hours	21	7.5% at 72 hours	0.25	13
		Type 1L	**2.5% at 10 hours**	**22**	**2.5% at 24 hours**	**3.5**	**19**
		Type II	2.5% at 10 hours	21	2.5% at 10 hours	1	21
TS-BW5 (MH)	155.3	Eco-Cal	2.5% at 10 hours	151	7.5% at 72 hours	0	143
		Quick Lime	2.5% at 10 hours	141	7.5% at 72 hours	0	120
		Type 1L	**2.5% at 10 hours**	**147**	**12.5% at 72 hours**	**1**	**114**
		Type II	2.5% at 10 hours	152	12.5% at 72 hours	1	125
TS-S3 (SP)	31.4	Eco-Cal	5% at 24 hours	25	7.5% at 72 hours	0	26
		Quick Lime	7.5% at 10 hours	21	7.5% at 24 hours	1.25	20
		Type 1L	**2.5% at 10 hours**	**29**	**5% at 24 hours**	**1.5**	**26**
		Type II	2.5% at 10 hours	35	7.5% at 24 hours	2.5	23

Table 2-8
Sediment Stabilization Testing Metrics—Dosage, Paint Filter, and Pocket Penetrometer

Notes:

Bolded values indicate selected amendment and mix ratio based on lowest mix ratio to attain minimum estimated strength of 1 tsf at referenced cure time interval.

tsf: tons per square foot

USCS: Unified Soil Classification System

Table 2-10

Sediment Geotechnical Results—Cement Stabilization—Dosage/Amendment, Moisture Content, Gradation, USCS, and Standard Proctor

Sample ID	Selected Dosage and Amendment	Moisture Content (%)	Particle Size				Standard Proctor	
			Gravel (%)	Sand (%)	Fines (%)	USCS Symbol	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
		ASTM D2216	ASTM D6913				ASTM D698	
TS-S1	2.5% Type 1L	9.7	55	43	2	GW	125.7	10.2
TS-WP	5% Type 1L	68.2	17	57	26	SM	83.3	31.8
TS-S4	2.5% Type 1L	16.3	20	73	7	SP-SM	119.9	10
TS-S2	2.5% Type 1L	18.6	11	81	8	SP-SM	114.1	11.7
TS-BW5	12.5% Type 1L	106	0	30.5	69.5	MH	58.2	59
TS-S3	5% Type 1L	23.1	0.1	90.1	9.8	SP-SM	103.1	17.3

Notes:

ASTM: ASTM International

pcf: pound per cubic foot

USCS: Unified Soil Classification System

Table 2-11

Sediment Geotechnical Results—Cement Stabilization—Strength and Hydraulic Conductivity

Sample ID	USCS Symbol	Remolding Properties			Hydraulic Conductivity (cm/sec)	Unconfined Compressive Strength (psi)	CU Triaxial Effective Strength	
		Dose/Reagent	Dry Density (pcf)	Optimum Moisture Content (%)	ASTM D5084	ASTM D2166	Φ' (deg)	c' (psf)
							ASTM D4767	
TS-S1	GW	2.5% Type 1L	113.1	10.2	9.20E-04	2.75	40.7	0
TS-WP	SM	5% Type 1L	75	31.8	1.50E-05	9.54	42.8	0
TS-S4	SP-SM	2.5% Type 1L	107.9	10	1.30E-04	2.2	39.4	0
TS-S2	SP-SM	2.5% Type 1L	102.7	11.7	4.00E-04	1.78	40.2	0
TS-BW5	MH	12.5% Type 1L	52.4	59	3.10E-05	13.3	39.7	0
TS-S3	SP-SM	5% Type 1L	92.8	17.3	4.70E-04	5	36	0

Notes:

ASTM: ASTM International

cm/sec: centimeter per second

pcf: pound per cubic foot

psi: pound per square inch

UCSC: Unified Soil Classification System

Table 4-1
Water Quality Parameters for the Porewater Samples

Sample ID	TSS (mg/L)	TOC (mg/L)	DOC (mg/L)	pH	Specific Conductivity (µS/cm)
TS-PW1	4.4 U	6.8	8.3	8.2	205
TS-PW2	4.4 U	2.9	3.1	8.0	138

Notes:
DOC: dissolved organic carbon
mg/L: milligram per liter
TOC: total organic carbon
TSS: total suspended solids

Table 4-2

Initial Concentrations of PCB Congeners in Porewater TS-PW1 for the Isotherm Testing

Chemical	Concentration (ng/L)							
	Bottle 1	Bottle 2	Bottle 3	Bottle 4	Bottle 5	Bottle 6	Bottle 7	Bottle 8
PCB-004	92.4	179	454	803	1,630	3,240	3,790	7,190
PCB-010	94.5	190	517	918	1,730	3,620	4,420	8,380
PCB-019	61.5	126	318	550	1,140	2,300	2,640	5,090
PCB-044/047/065	37.7	74.9	187	332	617	1,290	1,610	3,250
PCB-052	71.1	102	221	432	703	1,330	2,490	4,710
PCB-054	105	173	343	603	1,120	2,190	2,960	7,070
PCB-061/070/074/076	87.8	262	411	519	997	1,900	3,150	7,550
PCB-083/099	2.17	4.17	10.8	20.2	45.6	73.8	88.2	187
PCB-084	1.19	2.42	6.03	11.6	29.5	47.5	57.2	118
PCB-086/087/097/109/119/125	87.9	107	191	276	407	592	786	1,170
PCB-090/101/113	140	175	321	424	647	1,040	1,280	1,980
PCB-095	4.96	9.58	23.7	46.3	113	180	223	470
PCB-110/115	4.03	8.44	20	39.2	91.4	150	188	397
PCB-118	3.13	5.9	14.8	27.4	65.1	101	130	293
PCB-129/138/160/163	5.97	11.8	29.7	55.7	140	219	283	604
PCB-132	1.71	3.76	9.74	18.2	42.8	69.8	95.5	193
PCB-135/151	2.73	5.58	13.6	27.3	66.7	104	125	269
PCB-141	1.46	2.83	7.26	13.4	34.2	52	68.3	144
PCB-147/149	4.58	9.41	24	48.4	111	184	235	499
PCB-153/168	4.52	8.82	22.5	43.1	104	165	213	460
PCB-170	1.83	3.77	9.81	18.5	41.8	68	89.3	188
PCB-174	2.1	3.94	10.1	19.7	45.9	72.1	99	193
PCB-180/193	4.51	8.13	20.7	40.4	96.1	152	196	404
PCB-183/185	1.43	2.87	7.09	14.5	31.8	53.2	66.8	141

Notes:

Cited from Shiu and Mackay (1986). If aqueous solubility data were not available for a specific congener, its aqueous solubility was estimated using data from other congeners with similar congener number.

ng/L: nanogram per liter

PCB: polychlorinated biphenyl

Table 4-3

Initial Concentrations of PCB Congeners in Porewater TS-PW2 for the Isotherm Testing

Chemical	Concentration (ng/L)							
	Bottle 1	Bottle 2	Bottle 3	Bottle 4	Bottle 5	Bottle 6	Bottle 7	Bottle 8
PCB-004	92.4	187	440	756	1,590	3,090	6,640	3,740
PCB-010	99.2	198	470	964	1,870	3,240	8,290	4,470
PCB-019	66.5	128	318	574	1,220	2,420	5,040	3,150
PCB-044/047/065	37.7	73.9	164	309	652	1,290	3,100	1,740
PCB-052	67.8	102	199	399	747	1,210	4,220	2,630
PCB-054	105	173	343	603	1,170	2,190	6,460	3,940
PCB-061/070/074/076	78.7	262	401	372	997	1,800	6,490	3,280
PCB-083/099	1.99	4.32	9.9	19.3	40.3	70.2	176	107
PCB-084	1.19	2.58	5.74	11.6	25.6	45.5	116	64.7
PCB-086/087/097/109/119/125	91.6	107	182	276	389	546	1,160	848
PCB-090/101/113	148	168	312	432	604	955	1,960	1,380
PCB-095	4.77	9.58	23.7	47.3	104	180	456	254
PCB-110/115	4.28	8.44	20	40	91.4	150	393	215
PCB-118	2.82	5.9	13.2	26.6	62	101	267	147
PCB-129/138/160/163	5.34	11.2	26.5	54.2	132	211	597	294
PCB-132	1.71	3.62	8.11	16.6	42.8	68.2	183	96.5
PCB-135/151	2.73	5.51	12.8	25.7	62	95.8	274	135
PCB-141	1.31	2.83	6.5	13.4	32	52.8	143	70.5
PCB-147/149	4.42	9.41	20	43.7	111	176	486	245
PCB-153/168	4.14	8.82	20.2	41.7	96.8	165	448	215
PCB-170	1.76	3.54	8.41	16.4	39.7	77.1	172	90.3
PCB-174	1.89	3.88	8.65	18.3	43.7	79.3	198	100
PCB-180/193	4.1	8.13	19.3	37.7	89.2	159	413	205
PCB-183/185	1.36	2.75	6.45	13.2	31.8	53.9	139	68.2

Notes:

ng/L: nanogram per liter

PCB: polychlorinated biphenyl

Table 4-4
Initial Concentrations of PCB Congeners for the Kinetic Testing

Chemical	Concentration (ng/L)	
	TS-PW1	TS-PW2
PCB-004	1,700	1,800
PCB-010	2,000	2,000
PCB-019	1,500	1,600
PCB-044/047/065	370	400
PCB-052	340	390
PCB-054	390	430
PCB-061/070/074/076	420	450
PCB-083/099	61	63
PCB-084	34	37
PCB-086/087/097/109/119/125	230	230
PCB-090/101/113	190	200
PCB-095	140	150
PCB-110/115	150	160
PCB-118	120	120
PCB-129/138/160/163	360	280
PCB-132	94	78
PCB-135/151	120	120
PCB-141	80	69
PCB-147/149	250	210
PCB-153/168	290	240
PCB-170	140	120
PCB-174	140	120
PCB-180/193	330	260
PCB-183/185	100	85

Notes:
ng/L: nanogram per liter
PCB: polychlorinated biphenyl

Table 4-5

DOC-Water Partition Coefficients for Selected PCB Congeners in Two Porewater Samples

Chemical	log K_{OW}	log K_{DOC}	
		TS-PW1	TS-PW2
PCB-004	4.97	5.18	5.12
PCB-010	4.98	5.20	5.14
PCB-019	5.41	5.58	5.51
PCB-044/047/065	6.14	6.23	6.15
PCB-052	6.23	6.31	6.23
PCB-054	5.94	6.04	5.97
PCB-061/070/074/076	6.41	6.46	6.38
PCB-083/099	6.65	6.68	6.60
PCB-084	6.43	6.49	6.41
PCB-086/087/097/109/119/125	6.62	6.65	6.58
PCB-090/101/113	6.75	6.77	6.69
PCB-095	6.52	6.57	6.49
PCB-110/115	6.87	6.88	6.79
PCB-118	7.14	7.1	7.02
PCB-129/138/160/163	7.13	7.10	7.01
PCB-132	6.97	6.97	6.88
PCB-135/151	7.03	7.02	6.94
PCB-141	7.22	7.18	7.09
PCB-147/149	7.03	7.02	6.94
PCB-153/168	7.32	7.27	7.18
PCB-170	7.67	7.58	7.49
PCB-174	7.51	7.44	7.35
PCB-180/193	7.76	7.66	7.57
PCB-183/185	7.60	7.52	7.43

Notes:

DOC: dissolved organic carbon

K_{OW}: octanol-water partition coefficient

K_{DOC}: dissolved organic carbon-water partition coefficient

PCB: polychlorinated biphenyl

Table 4-6

Freundlich Isotherm Parameters of PCB Congeners for Porewater TS-PW1

Chemical	Activated Carbon Type	log K_F	1/n	R^2 Value
PCB-004	GAC	5.10	0.24	0.93
PCB-004	PAC	8.19	0.79	0.85
PCB-010	GAC	5.14	0.23	0.90
PCB-010	PAC	7.97	0.70	0.88
PCB-019	GAC	4.80	0.23	0.88
PCB-019	PAC	7.61	0.62	0.93
PCB-044/047/065	GAC	4.69	0.27	0.73
PCB-044/047/065	PAC	8.95	0.84	0.53
PCB-052	GAC	4.65	0.24	0.78
PCB-052	PAC	10.1	1.04	0.80
PCB-054	GAC	4.60	0.24	0.75
PCB-054	PAC	8.85	0.97	0.91
PCB-061/070/074/076	GAC	4.85	0.23	0.66
PCB-061/070/074/076	PAC	10.3	1.02	0.68
PCB-083/099	GAC	4.34	0.46	0.81
PCB-083/099	PAC	8.76	0.83	0.57
PCB-084	GAC	3.57	0.27	0.98
PCB-084	PAC	8.00	0.73	0.52
PCB-086/087/097/109/119/125	GAC	4.39	0.25	0.74
PCB-086/087/097/109/119/125	PAC	8.36	0.74	0.69
PCB-090/101/113	GAC	4.58	0.25	0.73
PCB-090/101/113	PAC	9.09	0.86	0.81
PCB-095	GAC	4.17	0.35	0.82
PCB-095	PAC	8.99	0.88	0.78
PCB-110/115	GAC	4.37	0.38	0.80
PCB-110/115	PAC	9.38	0.86	0.73
PCB-118	GAC	4.68	0.45	0.86
PCB-118	PAC	11.4	1.19	0.61

Table 4-6

Freundlich Isotherm Parameters of PCB Congeners for Porewater TS-PW1

Chemical	Activated Carbon Type	log K_F	1/n	R^2 Value
PCB-129/138/160/163	GAC	4.96	0.58	0.91
PCB-129/138/160/163	PAC	8.85	0.91	0.69
PCB-132	GAC	4.71	0.60	0.90
PCB-132	PAC	8.41	0.86	0.82
PCB-135/151	GAC	4.88	0.62	0.91
PCB-135/151	PAC	7.63	0.70	0.79
PCB-141	GAC	4.80	0.60	0.94
PCB-141	PAC	8.21	0.78	0.77
PCB-147/149	GAC	4.96	0.63	0.92
PCB-147/149	PAC	8.93	0.96	0.87
PCB-153/168	GAC	4.93	0.58	0.89
PCB-153/168	PAC	8.71	0.85	0.74
PCB-170	GAC	4.84	0.62	0.88
PCB-170	PAC	8.58	0.85	0.69
PCB-174	GAC	4.99	0.68	0.92
PCB-174	PAC	9.46	1.08	0.91
PCB-180/193	GAC	4.93	0.60	0.89
PCB-180/193	PAC	9.40	1.00	0.72
PCB-183/185	GAC	4.89	0.66	0.89
PCB-183/185	PAC	9.95	1.15	0.84

Note:

PCB: polychlorinated biphenyl

Table 4-7

Freundlich Isotherm Parameters and R-Squared Value for Porewater TS-PW2

Chemical	Activated Carbon Type	log K_F	1/n	R^2 Value
PCB-004	GAC	6.46	0.69	0.43
PCB-004	PAC	8.79	0.93	0.41
PCB-010	GAC	7.03	0.85	0.58
PCB-010	PAC	10.5	1.34	0.78
PCB-019	GAC	5.07	0.38	0.45
PCB-019	PAC	9.08	0.91	0.85
PCB-044/047/065	GAC	4.87	0.52	0.55
PCB-044/047/065	PAC	9.14	0.86	0.72
PCB-052	GAC	4.81	0.47	0.50
PCB-052	PAC	10.0	1.01	0.85
PCB-054	GAC	4.73	0.42	0.42
PCB-054	PAC	8.21	0.73	0.86
PCB-061/070/074/076	GAC	4.99	0.46	0.58
PCB-061/070/074/076	PAC	10.1	1.06	0.47
PCB-083/099	GAC	4.93	0.80	0.74
PCB-083/099	PAC	10.7	1.20	0.54
PCB-084	GAC	4.66	0.75	0.72
PCB-084	PAC	19.1	2.67	0.50
PCB-086/087/097/109/119/125	GAC	4.51	0.47	0.42
PCB-086/087/097/109/119/125	PAC	10.0	1.09	0.79
PCB-090/101/113	GAC	4.68	0.48	0.45
PCB-090/101/113	PAC	11.6	1.41	0.82
PCB-095	GAC	4.86	0.74	0.76
PCB-095	PAC	10.5	1.14	0.61
PCB-110/115	GAC	5.11	0.75	0.77
PCB-110/115	PAC	9.89	0.98	0.66
PCB-118	GAC	5.27	0.75	0.79
PCB-118	PAC	11.4	1.21	0.37

Table 4-7

Freundlich Isotherm Parameters and R-Squared Value for Porewater TS-PW2

Chemical	Activated Carbon Type	log K_F	1/n	R^2 Value
PCB-129/138/160/163	GAC	5.31	0.86	0.87
PCB-129/138/160/163	PAC	10.6	1.25	0.79
PCB-132	GAC	5.14	0.88	0.88
PCB-132	PAC	9.91	1.15	0.97
PCB-135/151	GAC	4.99	0.80	0.87
PCB-135/151	PAC	8.84	0.92	0.92
PCB-141	GAC	5.23	0.84	0.87
PCB-141	PAC	10.4	1.17	0.96
PCB-147/149	GAC	5.43	0.93	0.90
PCB-147/149	PAC	10.4	1.23	0.95
PCB-153/168	GAC	5.33	0.83	0.86
PCB-153/168	PAC	10.4	1.18	0.78
PCB-170	GAC	5.78	0.95	0.87
PCB-170	PAC	9.22	0.99	0.75
PCB-174	GAC	5.57	0.95	0.88
PCB-174	PAC	9.65	1.12	0.89
PCB-180/193	GAC	5.57	0.87	0.85
PCB-180/193	PAC	10.0	1.13	0.82
PCB-183/185	GAC	5.56	0.91	0.88
PCB-183/185	PAC	7.05	0.60	0.85

Notes:

DOC: dissolved organic carbon

TOC: total organic carbon

TSS: total suspended solids

Table 4-8
PDMS Polymer Mass Transfer Coefficients of PCB Congeners

Chemical	k_p from the Data Fitting (m/day)		Modified k_p (m/day)[1]	
	TW-PW1	TW-PW2	TW-PW1	TW-PW2
PCB-004	13.8	13.8	0.36	0.36
PCB-010	13.3	13.3	0.34	0.34
PCB-019	6.6	6.9	0.74	0.74
PCB-044/047/065	107	6.9	2.76	2.76
PCB-052	138	116	3.29	3.29
PCB-054	62.7	3.8	1.91	1.91
PCB-061/070/074/076	186	175	4.83	4.83
PCB-083/099	17.8	10.1	8.77	8.77
PCB-084	202	141	5.51	5.51
PCB-086/087/097/109/119/125	12.0	9.3	8.39	8.39
PCB-090/101/113	16.1	13.3	11.0	11.0
PCB-095	273	9.8	6.39	6.39
PCB-110/115	19.5	15.9	14.7	14.7
PCB-118	31.1	30.3	23.4	23.4
PCB-129/138/160/163	14.0	14.2	14.0	14.2
PCB-132	15.3	14.8	13.7	13.7
PCB-135/151	17.5	18.8	17.5	18.8
PCB-141	17.7	17.7	17.7	17.7
PCB-147/149	14.6	15.5	14.6	15.5
PCB-153/168	19.8	18.6	19.8	18.6
PCB-170	17.9	18.5	17.9	18.5
PCB-174	16.6	17.0	16.6	17.0
PCB-180/193	17.8	17.6	17.8	17.6
PCB-183/185	16.5	16.7	16.5	16.7

Notes:

1. k_p values were fixed for PCB congeners with λ_p (see Equation 4-7) higher than 5.0 to avoid overestimate the PCB uptake kinetics by PDMS.

PCB: polychlorinated biphenyl

PDMS: polydimethylsiloxane

Table 4-9
First-Order Kinetic Coefficients of PAC and GAC

Chemical	Homolog	K_F and 1/n from Isotherm Testing								Calibrated K_F with Fixed 1/n							
		PAC				GAC				PAC (1/n = 0.8)				GAC (1/n = 0.3) [1]			
		TS-PW1		TS-PW2		TS-PW1		TS-PW2		TS-PW1		TS-PW2		TS-PW1		TS-PW2	
		log K_F (ng/kg)/(ng/L)$^{1/n}$	log $\lambda_{ac,F}$ (day^{-1})	log K_F (ng/kg)/(ng/L)$^{1/n}$	log $\lambda_{ac,F}$ (day^{-1})	log K_F (ng/kg)/(ng/L)$^{1/n}$	log $\lambda_{ac,F}$ (day^{-1})	log K_F (ng/kg)/(ng/L)$^{1/n}$	log $\lambda_{ac,F}$ (day^{-1})	log K_F (ng/kg)/(ng/L)$^{1/n}$	log $\lambda_{ac,F}$ (day^{-1})	log K_F (ng/kg)/(ng/L)$^{1/n}$	log $\lambda_{ac,F}$ (day^{-1})	log K_F (ng/kg)/(ng/L)$^{1/n}$	log $\lambda_{ac,F}$ (day^{-1})	log K_F (ng/kg)/(ng/L)$^{1/n}$	log $\lambda_{ac,F}$ (day^{-1})
PCB-004	Di-CB	8.83	5.72	8.99	6.68	7.40	4.15	7.39	4.09	8.13	6.82	8.73	7.27	8.83	3.49	8.99	3.67
PCB-010	Di-CB	8.88	5.92	9.50	6.79	7.44	4.22	7.48	4.12	8.35	7.00	8.46	7.61	8.88	3.55	9.50	3.70
PCB-019	Tri-CB	8.76	6.62	9.35	7.07	7.11	4.11	6.93	4.08	8.81	6.68	8.93	7.45	8.76	3.73	9.35	3.66
PCB-044/047/065	Tetra-CB	9.42	7.18	9.56	7.30	6.87	4.49	6.31	4.40	8.94	7.20	8.88	7.83	9.42	4.07	9.56	3.98
PCB-052	Tetra-CB	9.94	7.19	9.94	7.38	6.94	4.46	6.40	4.44	8.83	7.17	8.83	7.92	9.94	4.05	9.94	4.03
PCB-054	Tetra-CB	8.93	6.57	9.01	7.06	6.89	3.74	6.47	3.90	8.48	6.57	8.70	7.34	8.93	3.33	9.01	3.49
PCB-061/070/074/076	Tetra-CB	10.2	7.55	9.95	7.54	7.16	4.74	6.62	4.68	9.06	7.60	8.90	7.98	10.2	4.33	9.95	4.25
PCB-083/099	Penta-CB	9.26	7.15	10.2	7.41	5.95	3.03	5.53	4.56	8.71	7.19	8.69	7.74	9.26	2.61	10.2	4.00
PCB-084	Penta-CB	8.80	6.93	14.1	7.04	5.75	3.80	5.43	4.46	8.46	6.97	8.36	7.42	8.8	3.39	14.1	3.92
PCB-086/087/097/109/119/125	Penta-CB	9.14	7.11	9.76	7.23	6.65	3.74	6.09	4.43	8.80	7.10	8.84	7.51	9.14	3.32	9.76	3.97
PCB-090/101/113	Penta-CB	9.51	7.17	10.4	7.41	6.82	3.62	6.24	4.49	8.91	7.16	9.00	7.64	9.51	3.20	10.4	4.06
PCB-095	Penta-CB	9.35	6.99	10.1	7.15	6.13	3.30	5.64	4.27	8.67	6.99	8.74	7.51	9.35	2.89	10.1	3.89
PCB-110/115	Penta-CB	9.78	7.26	9.94	7.57	6.22	4.38	5.85	4.82	8.97	7.27	8.88	7.66	9.78	3.97	9.94	4.29
PCB-118	Penta-CB	10.9	7.55	10.7	7.89	6.32	4.90	6.03	5.05	9.01	7.56	9.01	8.05	10.9	4.48	10.7	4.62
PCB-129/138/160/163	Hexa-CB	9.14	7.18	9.81	7.42	6.21	4.67	5.74	4.76	9.14	7.11	9.08	7.44	9.14	4.21	9.81	4.41
PCB-132	Hexa-CB	8.81	6.97	9.47	7.14	5.90	4.19	5.51	4.87	8.80	6.95	8.71	7.26	8.81	3.79	9.47	4.24
PCB-135/151	Hexa-CB	8.52	6.92	9.08	7.60	6.01	3.00	5.59	4.51	9.01	6.90	8.97	7.38	8.52	4.06	9.08	3.89
PCB-141	Hexa-CB	8.86	7.14	9.87	7.43	6.00	4.73	5.71	5.39	9.04	7.14	8.83	7.49	8.86	4.32	9.87	4.49
PCB-147/149	Hexa-CB	9.05	6.94	9.65	7.23	6.09	4.19	5.63	4.76	9.25	6.90	9.05	7.31	9.05	3.75	9.65	4.20
PCB-153/168	Hexa-CB	9.15	7.18	9.86	7.47	6.20	4.64	5.84	5.68	9.21	7.12	9.27	7.51	9.15	4.24	9.86	4.52
PCB-170	Hepta-CB	9.02	7.03	9.24	7.46	5.99	4.71	5.92	6.57	9.13	7.01	9.12	7.37	9.02	4.20	9.24	4.66
PCB-174	Hepta-CB	9.21	6.81	9.29	7.19	5.95	4.35	5.74	5.58	9.14	6.77	9.07	7.22	9.21	4.10	9.29	4.35
PCB-180/193	Hepta-CB	9.40	6.98	9.63	7.32	6.13	4.33	5.96	4.86	9.30	6.95	9.09	7.36	9.4	3.92	9.63	4.48
PCB-183/185	Hepta-CB	9.49	6.83	8.26	6.43	5.92	4.03	5.82	5.28	9.07	6.79	8.91	7.24	9.49	4.12	8.26	4.27

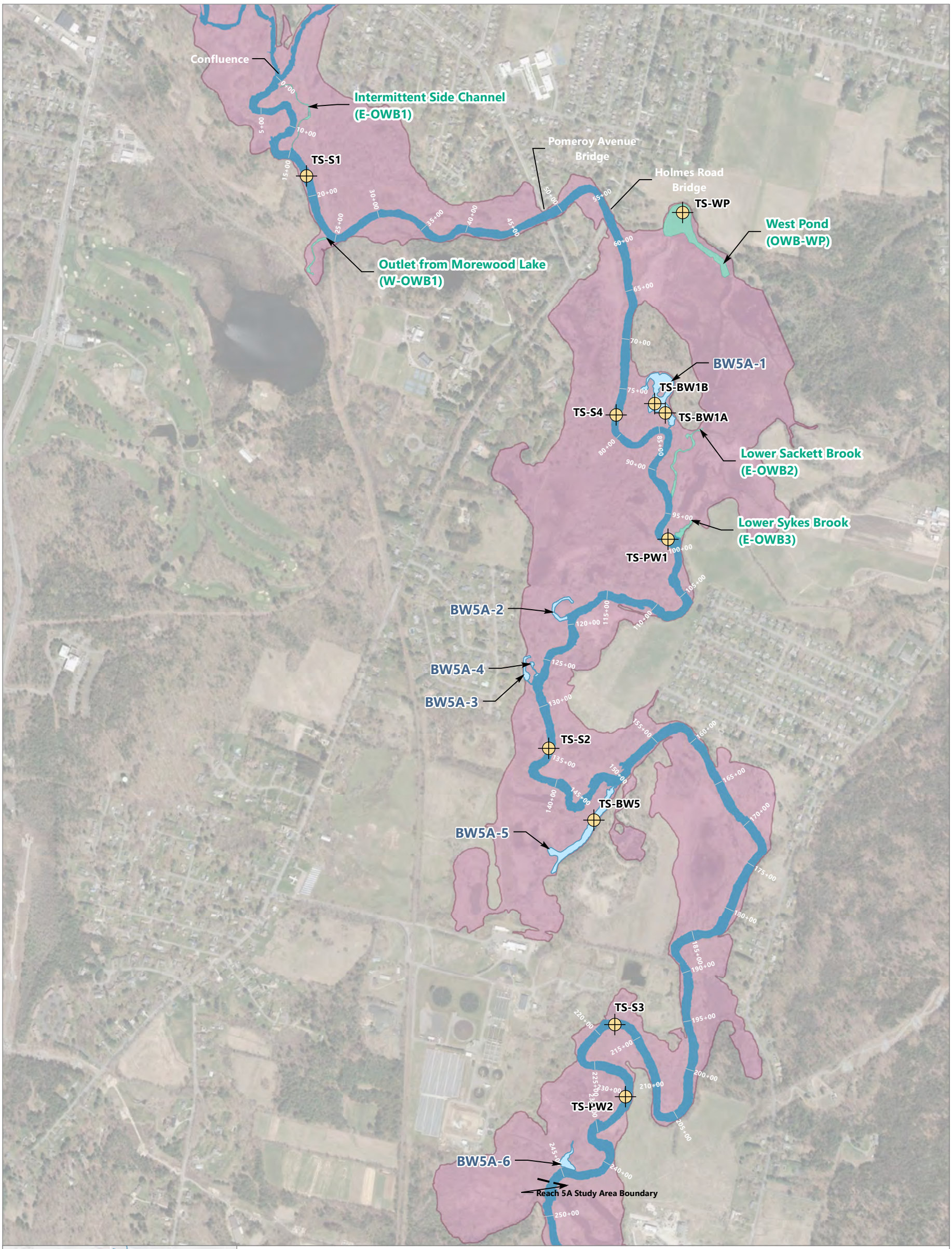
Notes:

1. The K_F values were adopted from those determined for PAC in the isotherm testing because reasonable K_F values were not obtained when the two parameters were calculated simultaneously from the PCB congener profiles for the GAC.

GAC: granular activated carbon

PAC: powdered activated carbon

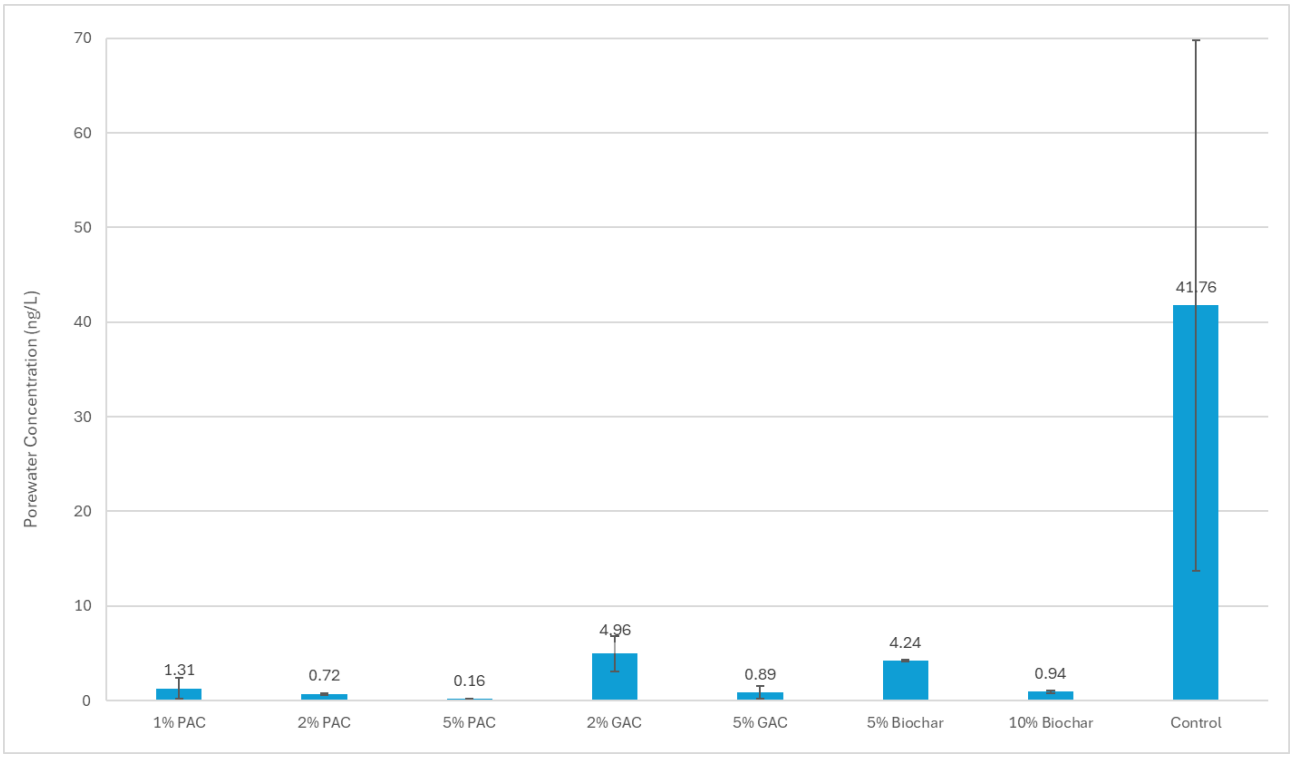
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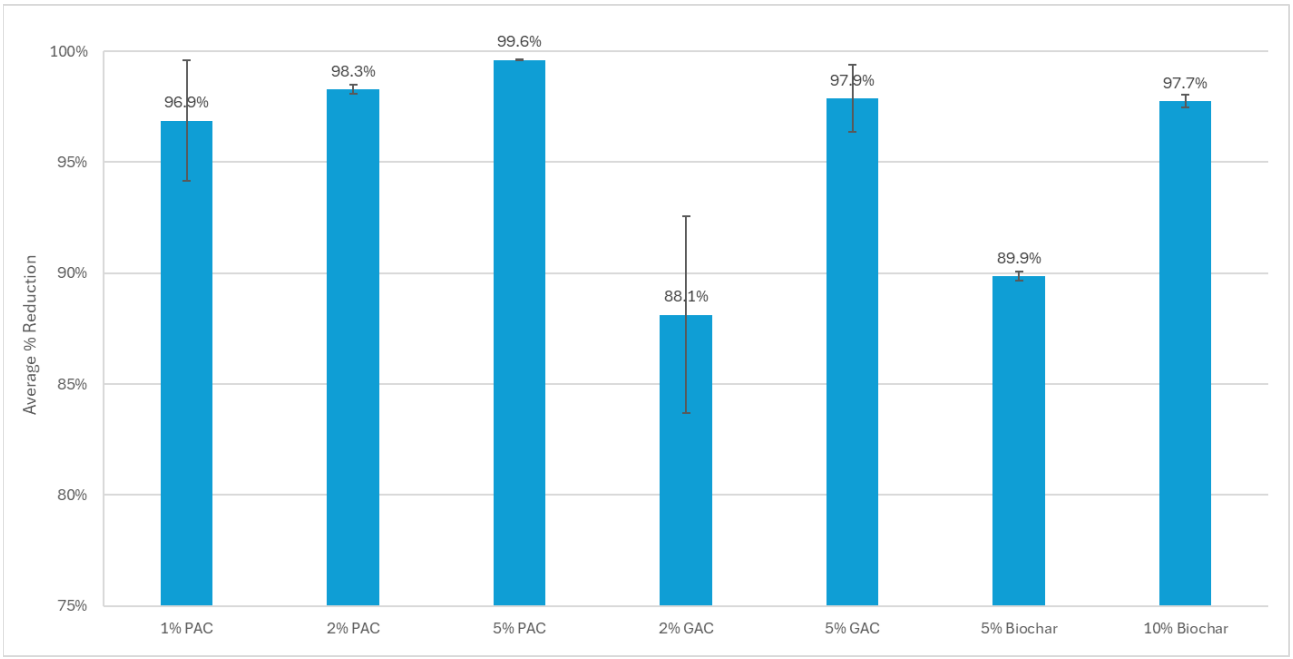


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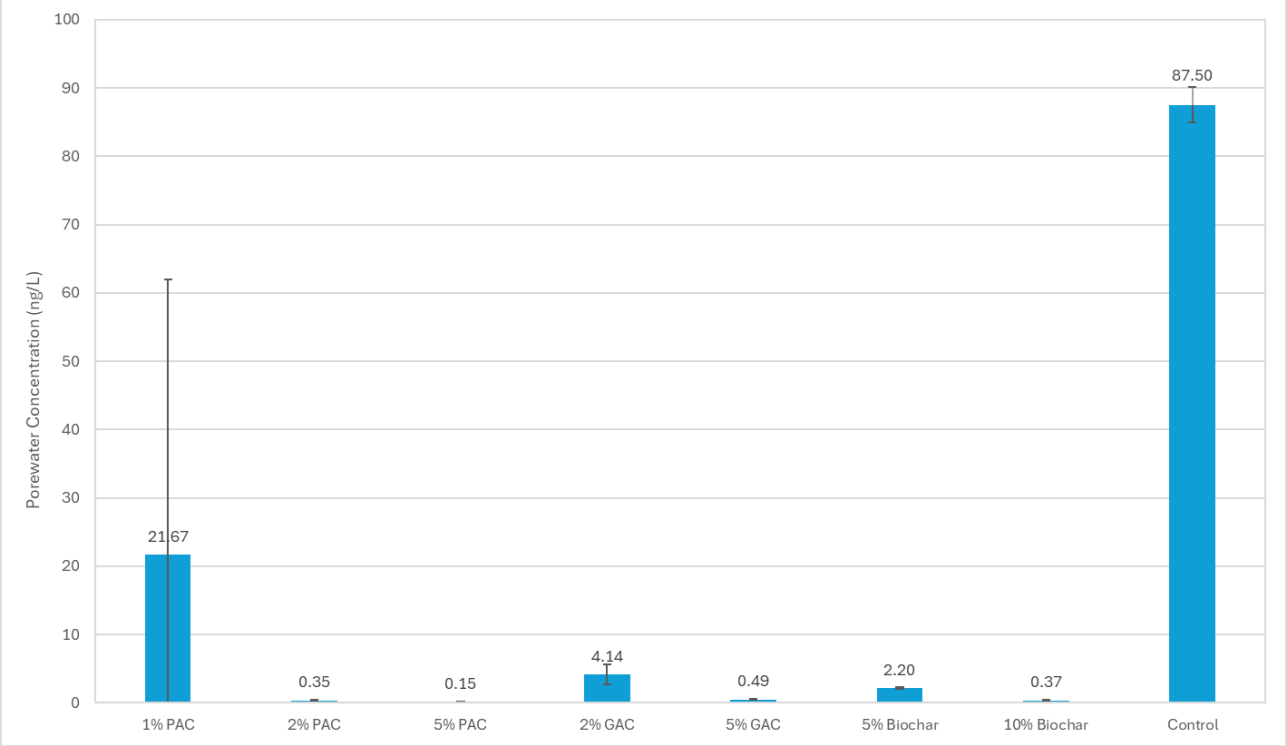
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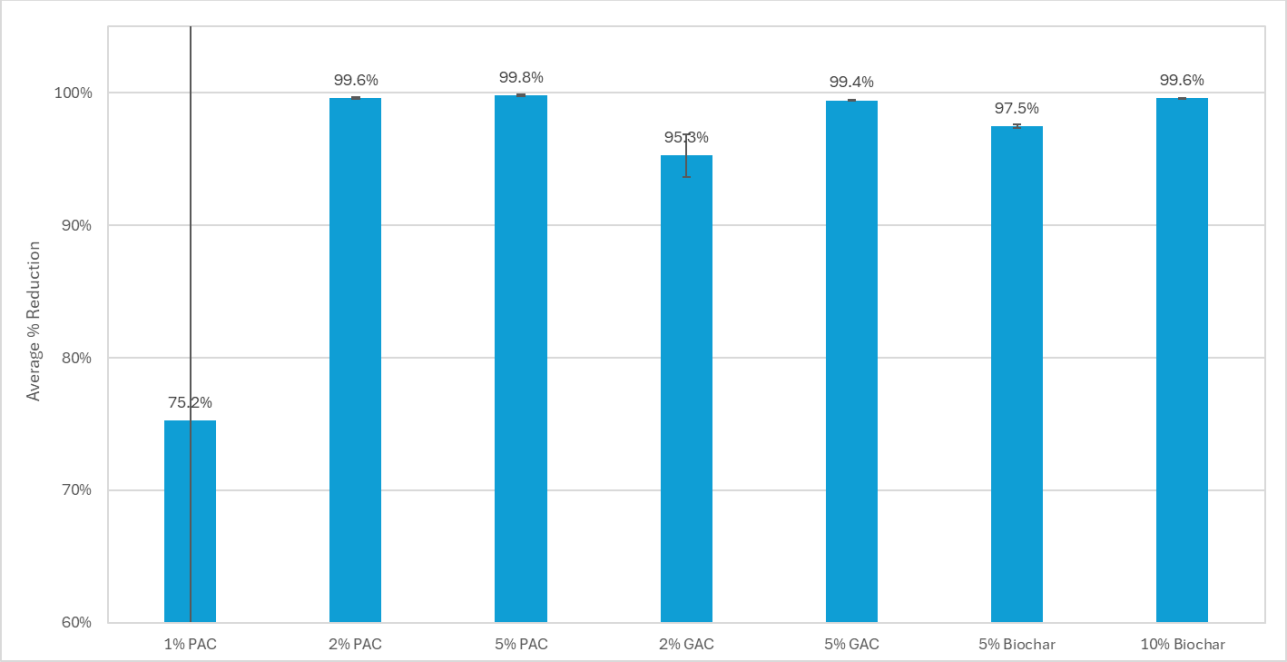
Figure 1-1
Treatability Study Sampling Locations
Treatability Studies Summary Report for Reach 5A
Housatonic River – Rest of River



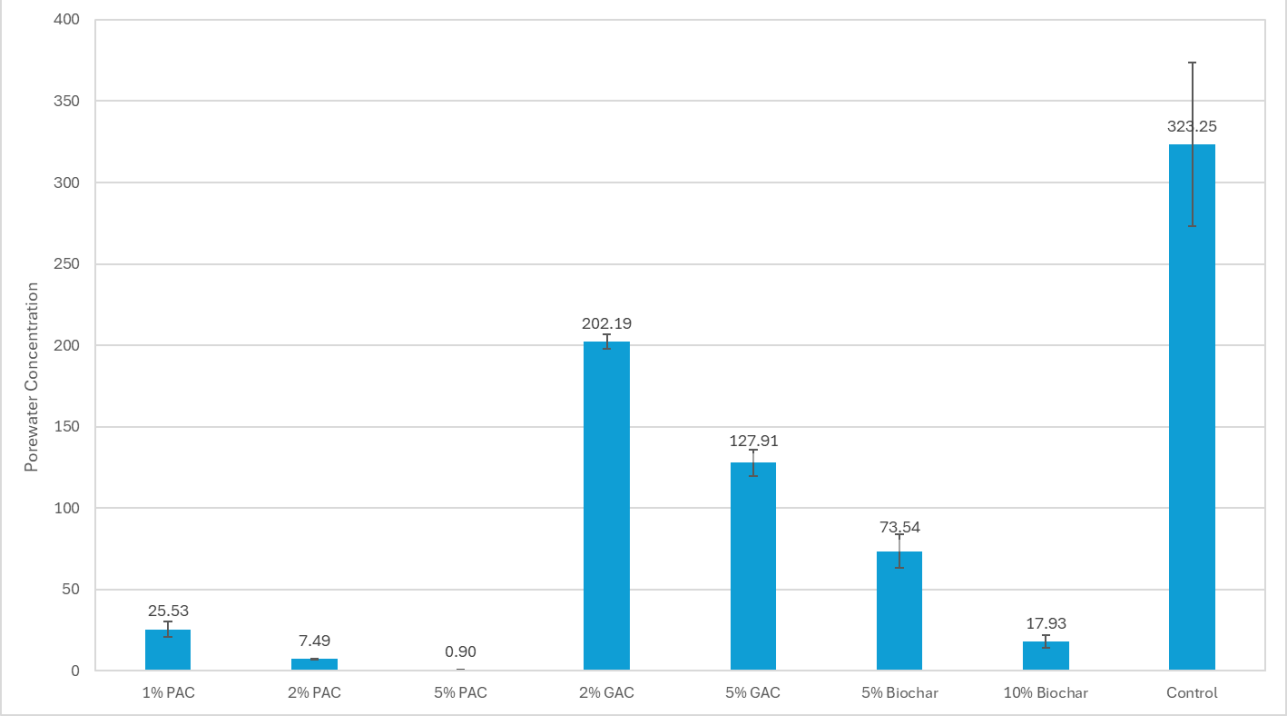


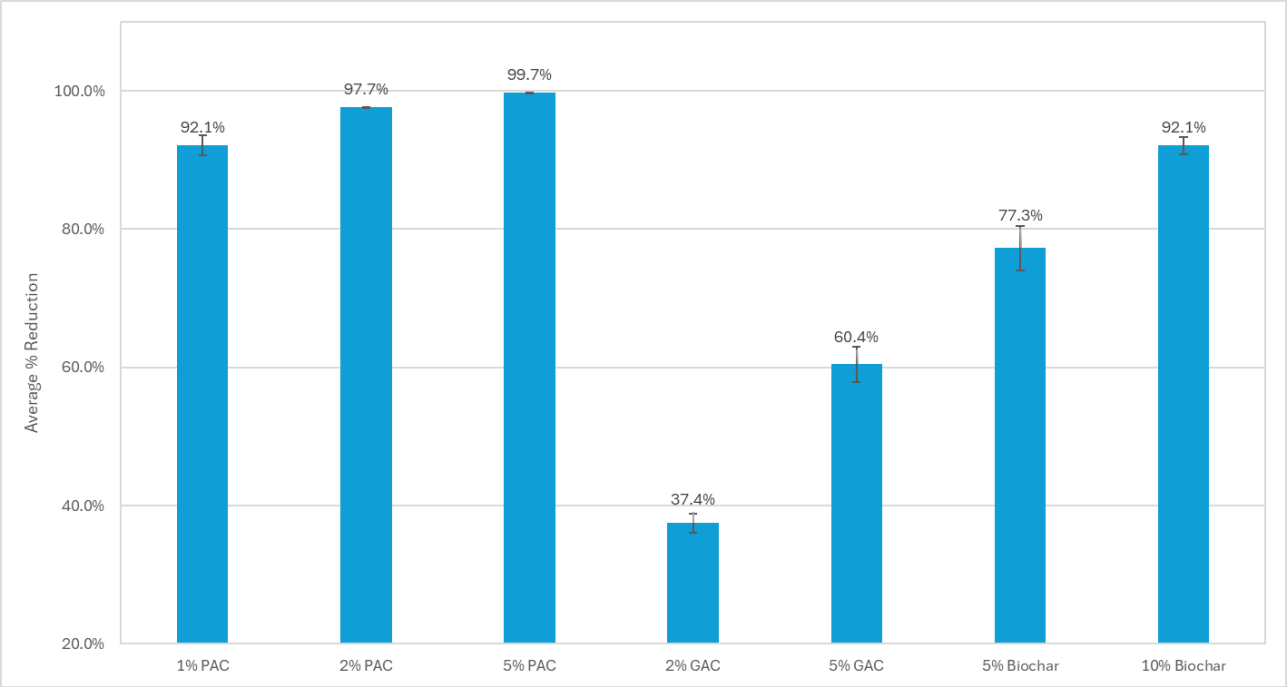
Note: Error bars represent the range of results between the two replicates for each jar.



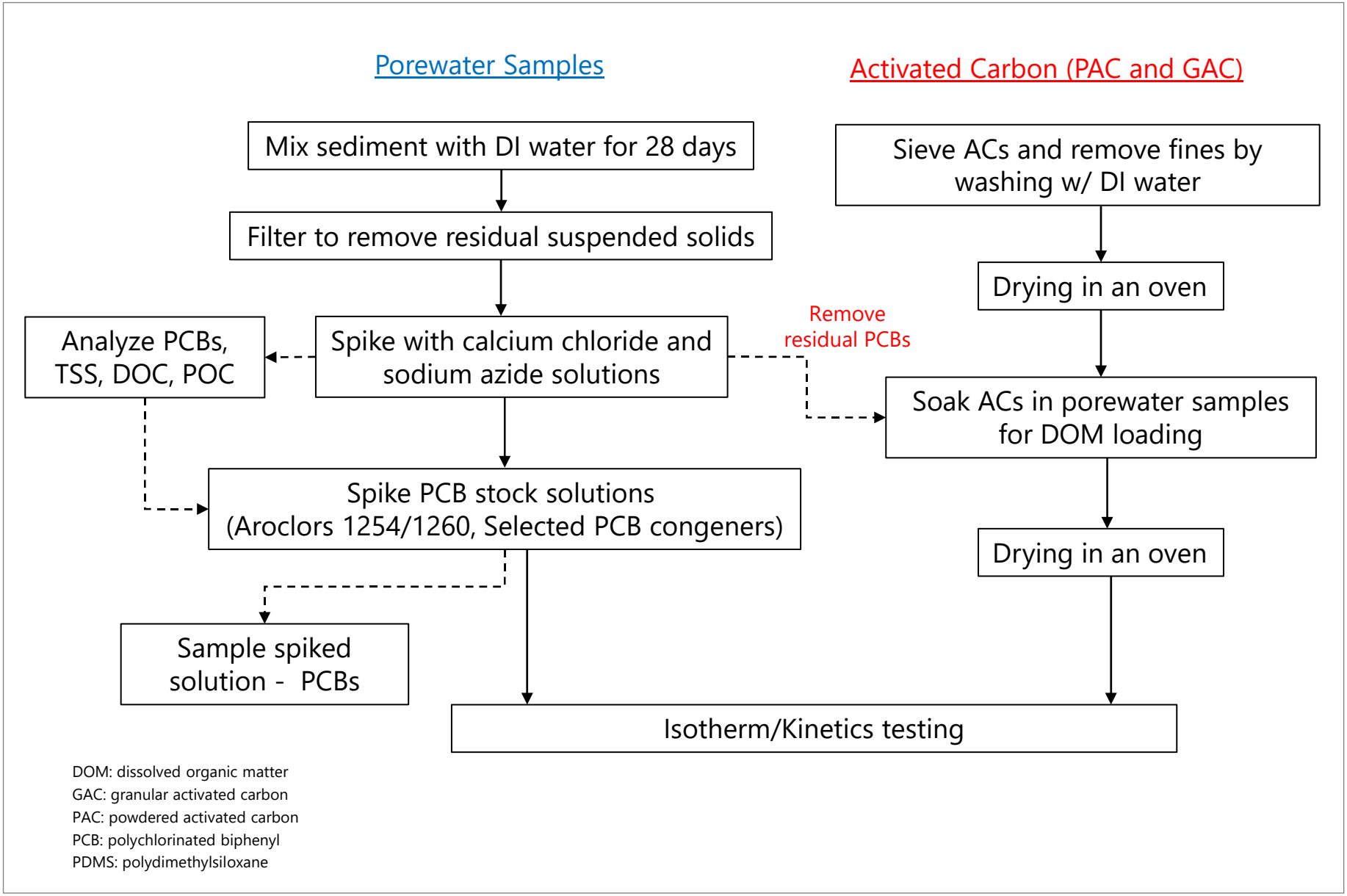


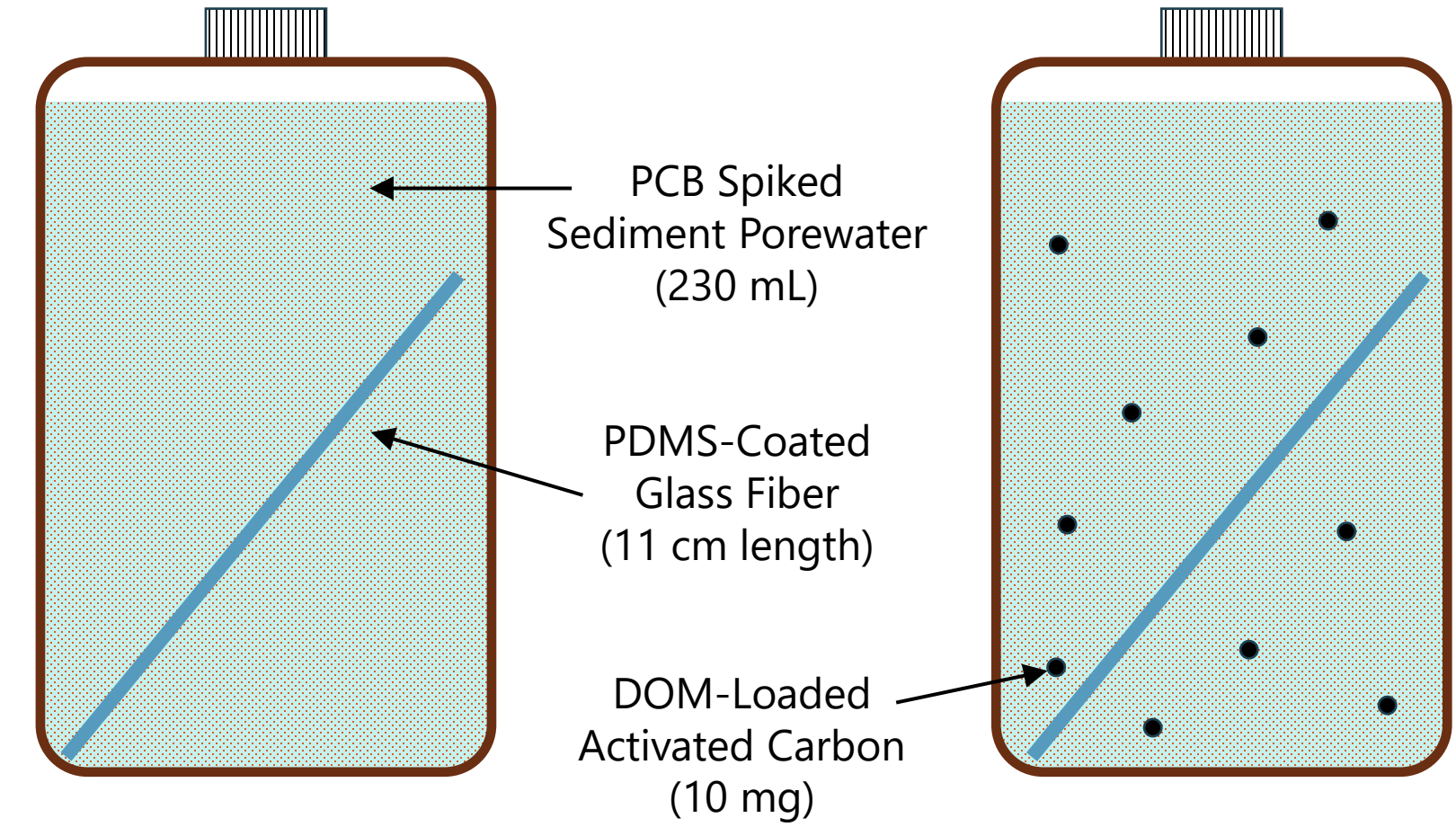
Note: Error bars represent the range of results between the two replicates for each jar.



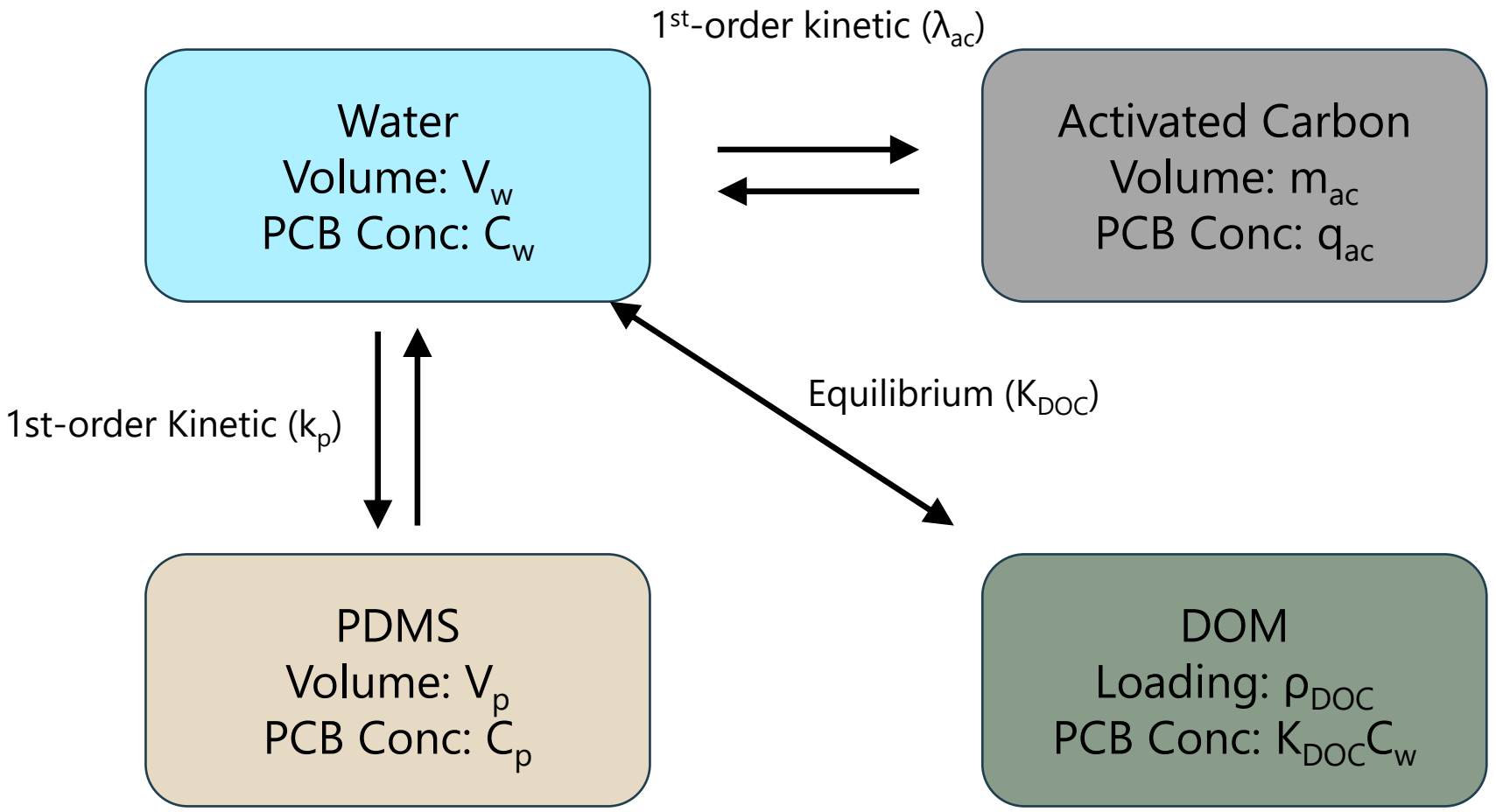


Note: Error bars represent the range of results between the two replicates for each jar.


Porewater Samples
Activated Carbon (PAC and GAC)
Mix sediment with DI water for 28 days
Filter to remove residual suspended solids
Spike with calcium chloride and sodium azide solutions
Analyze PCBs, TSS, DOC, POC
Spike PCB stock solutions (Aroclors 1254/1260, Selected PCB congeners)
Sample spiked solution - PCBs
Sieve ACs and remove fines by washing w/ DI water
Drying in an oven
Remove residual PCBs
Soak ACs in porewater samples for DOM loading
Drying in an oven
Isotherm/Kinetics testing
DOM: dissolved organic matter
GAC: granular activated carbon
PAC: powdered activated carbon
PCB: polychlorinated biphenyl
PDMS: polydimethylsiloxane



DOM: dissolved organic matter
GAC: granular activated carbon
PAC: powdered activated carbon
PCB: polychlorinated biphenyl
PDMS: polydimethylsiloxane



Cp: PCB congener concentration in PDMS polymer
Cw: PCB congener concentration in freely dissolved phase in water
DOM: dissolved organic matter
K_{DOC}: dissolved organic carbon partition coefficient of PCB congener
k_p: mass transfer coefficient
m_{ac}: activated carbon mass in a test bottle

PCB: polychlorinated biphenyl
ρ_{DOC}: dissolved organic carbon concentration in water
q_{ac}: PCB congener concentration in activated carbon
Vp: polydimethylsiloxane polymer volume in a test bottle
Vw: water volume in a test bottle

Figure 4-3
Schematic of the Mass Conservation in the Batch Experiment System

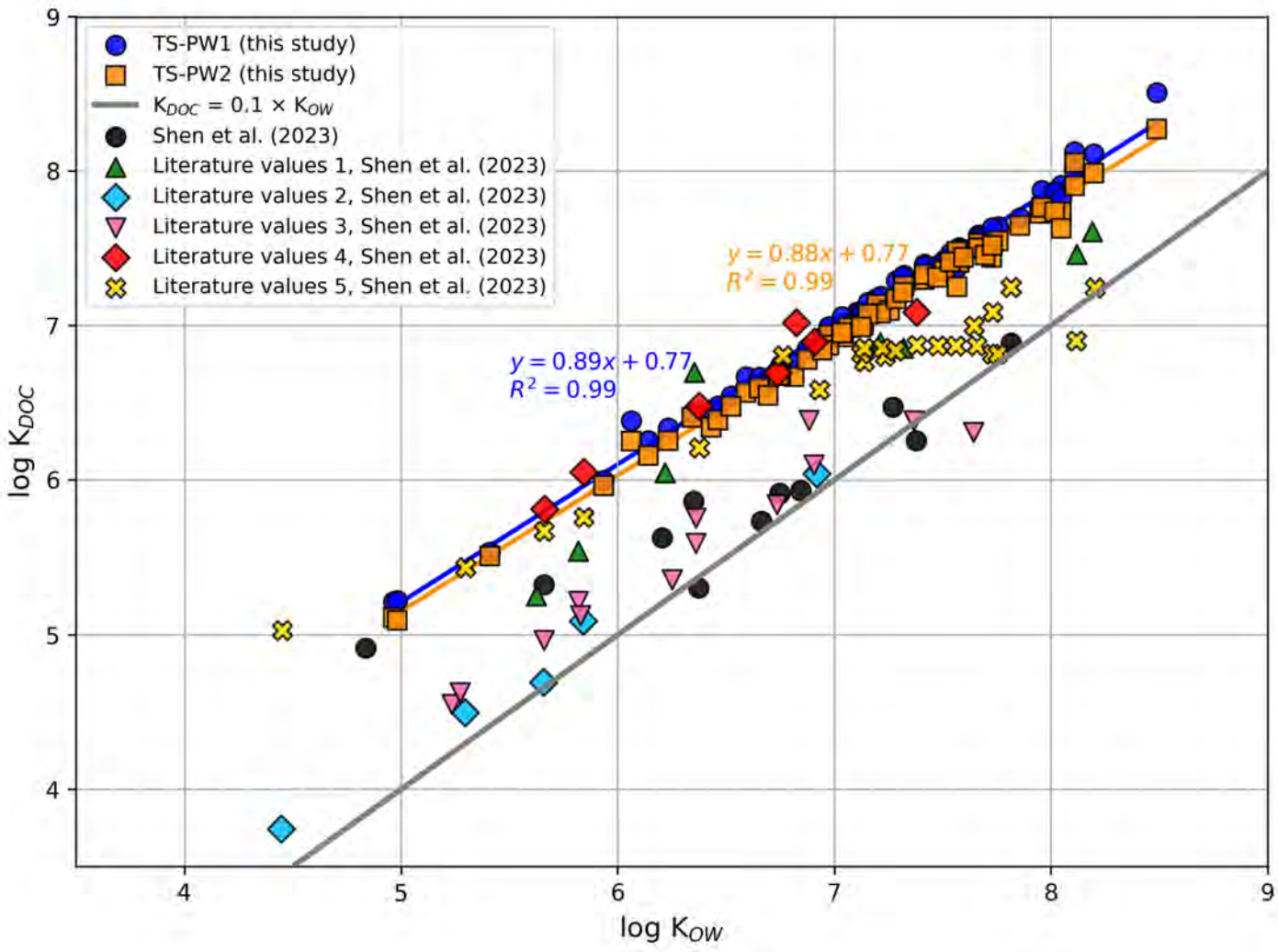


Figure 4-4

Relationship Between log K_{DOC} and log K_{OW} for PCB Congeners in Two Porewater Samples

Treatability Studies Summary Report for Reach 5A
Housatonic River – Rest of River

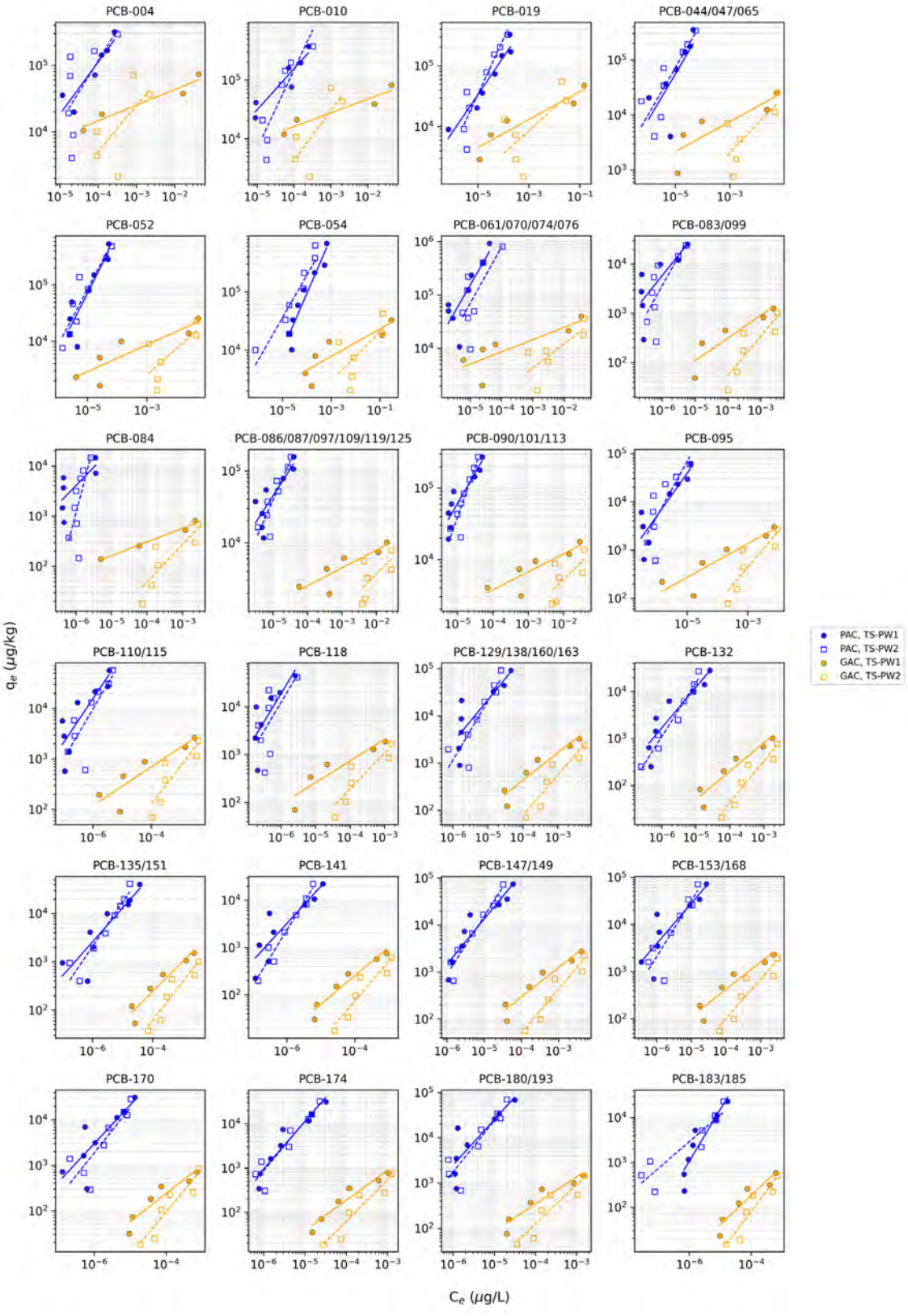


Figure 4-5
Adsorption Isotherms of Selected PCB Congeners on the PAC and GAC

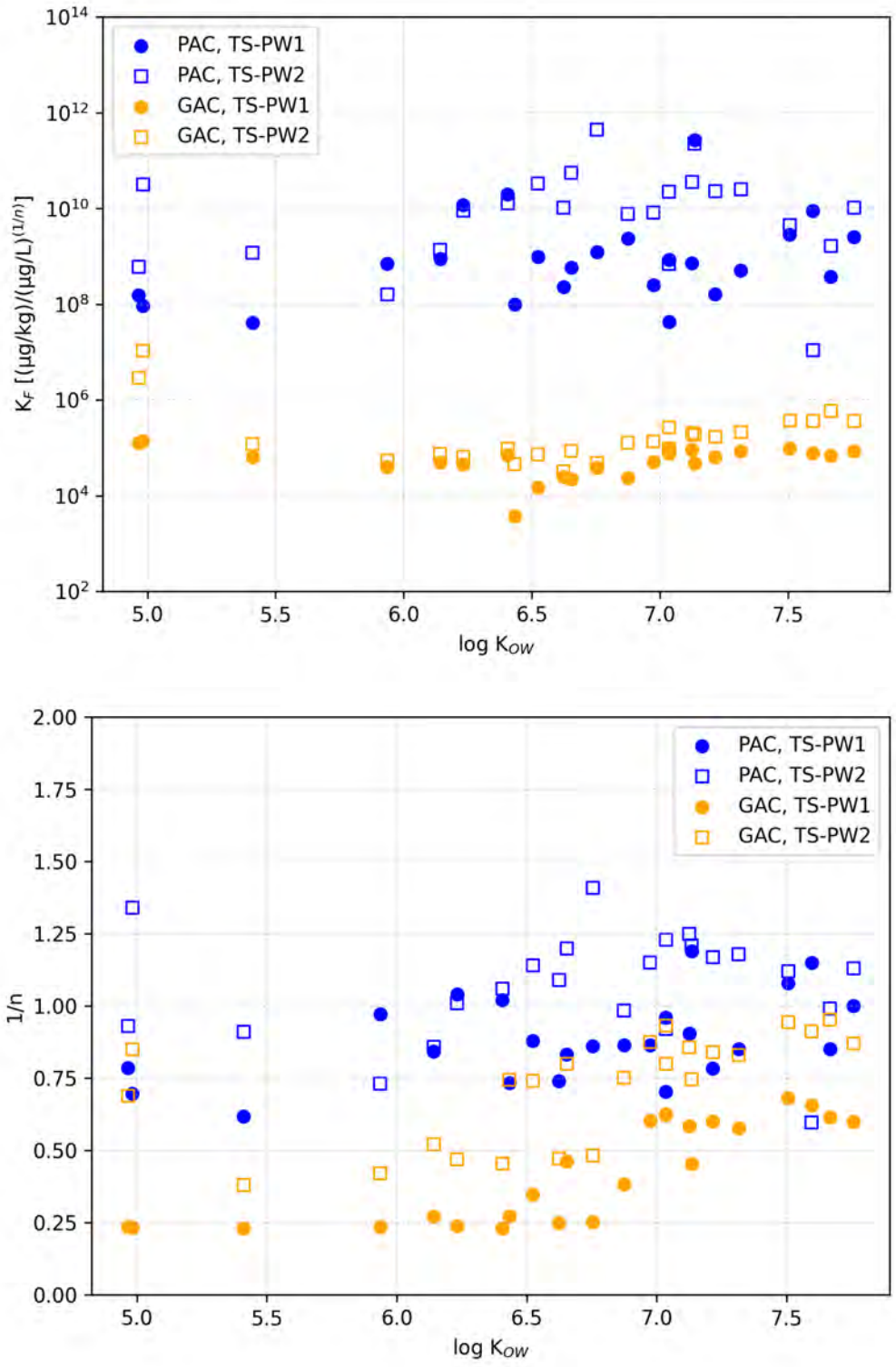


Figure 4-6
Freundlich Isotherm Parameters for PCBs on PAC and GAC Plotted Against log K_{OW}

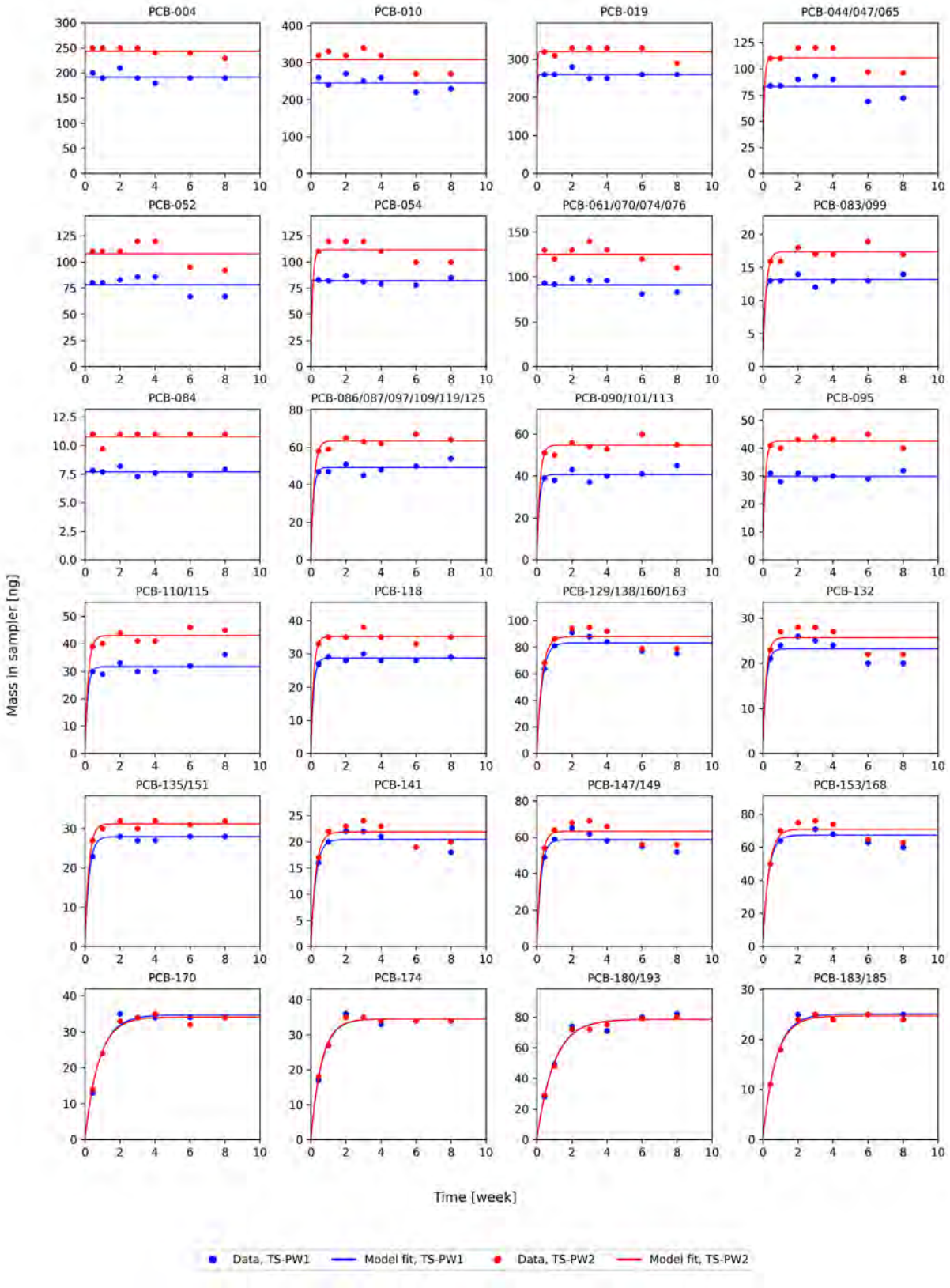
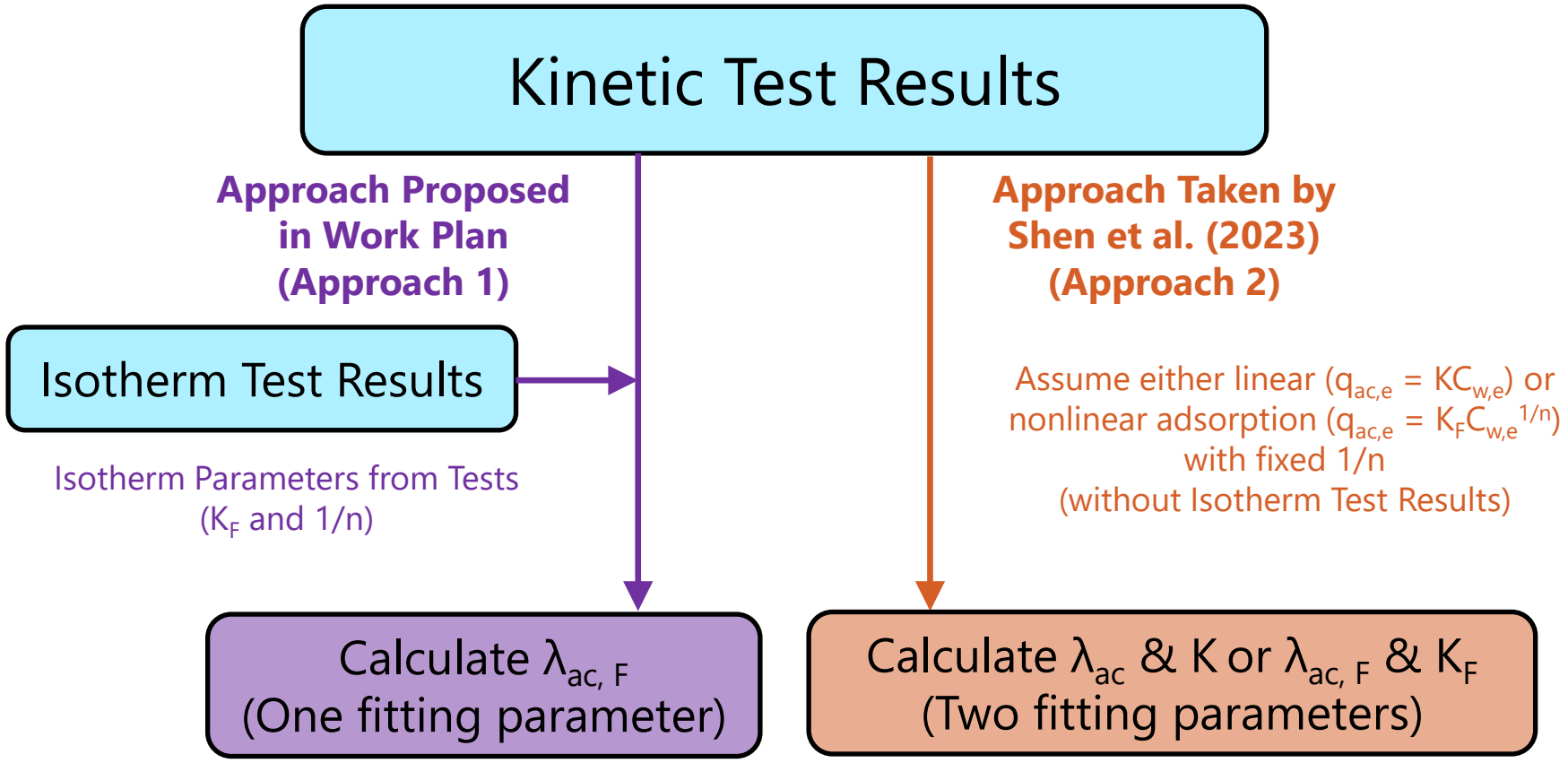


Figure 4-7
Profiles of PCB Uptake by PDMS Polymer in Controls and Model Fitting



K_F and 1/n: Freundlich isotherm parameters (K_F: Freundlich capacity constant, 1/n: Freundlich exponent); K: Linear adsorption coefficient; $q_{ac,e}$: Equilibrium concentration of PCB congener in activated carbon; $C_{w,e}$: Freely-dissolved PCB congener concentration at equilibrium; λ_{ac}: First-order kinetic coefficients assuming a linear isotherm, $\lambda_{ac,F}$: First-order kinetic coefficients assuming a Freundlich isotherm

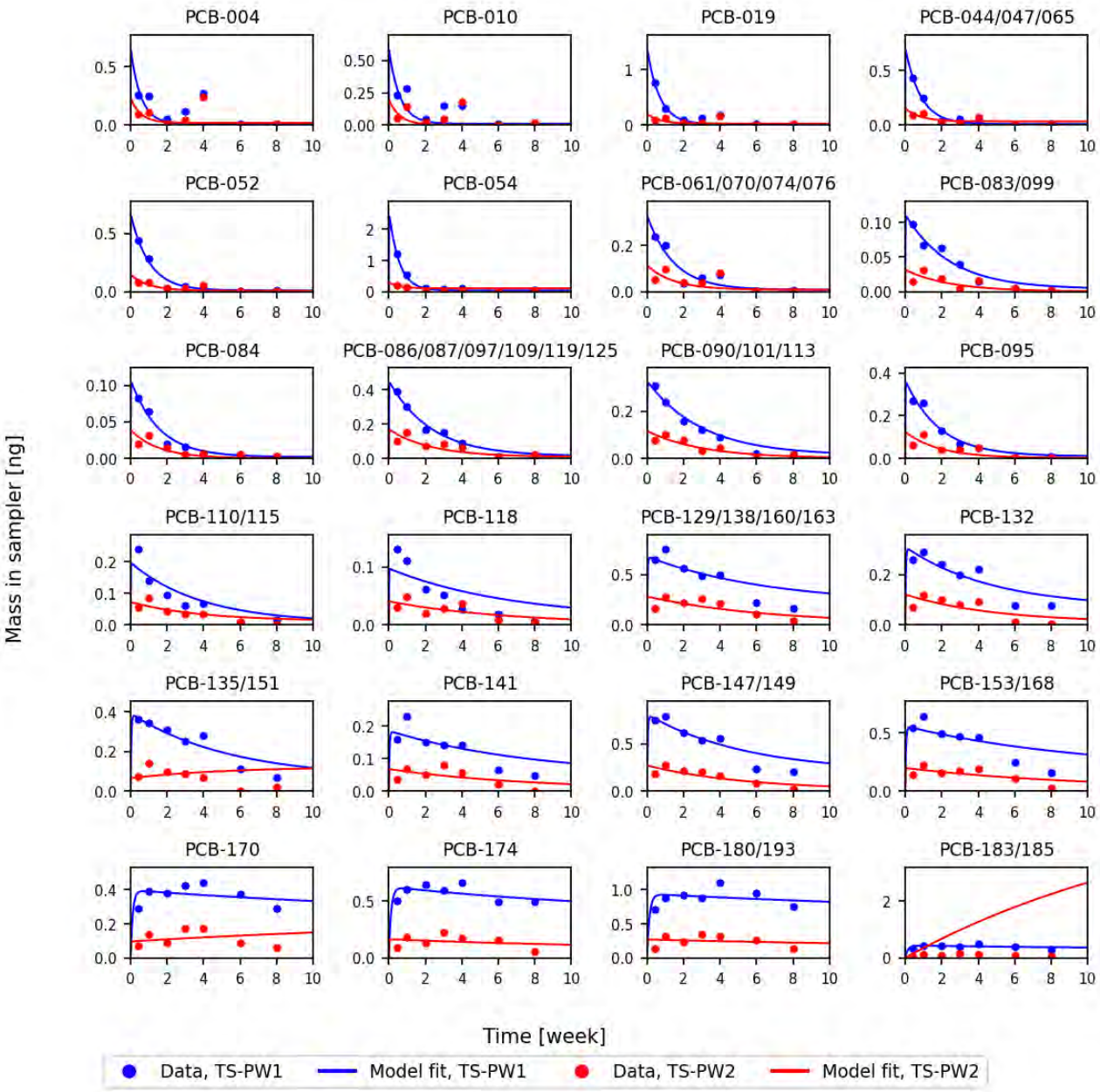


Figure 4-9
Profiles of PCB Uptake by PDMS Polymer in PAC Samples and Model Fitting

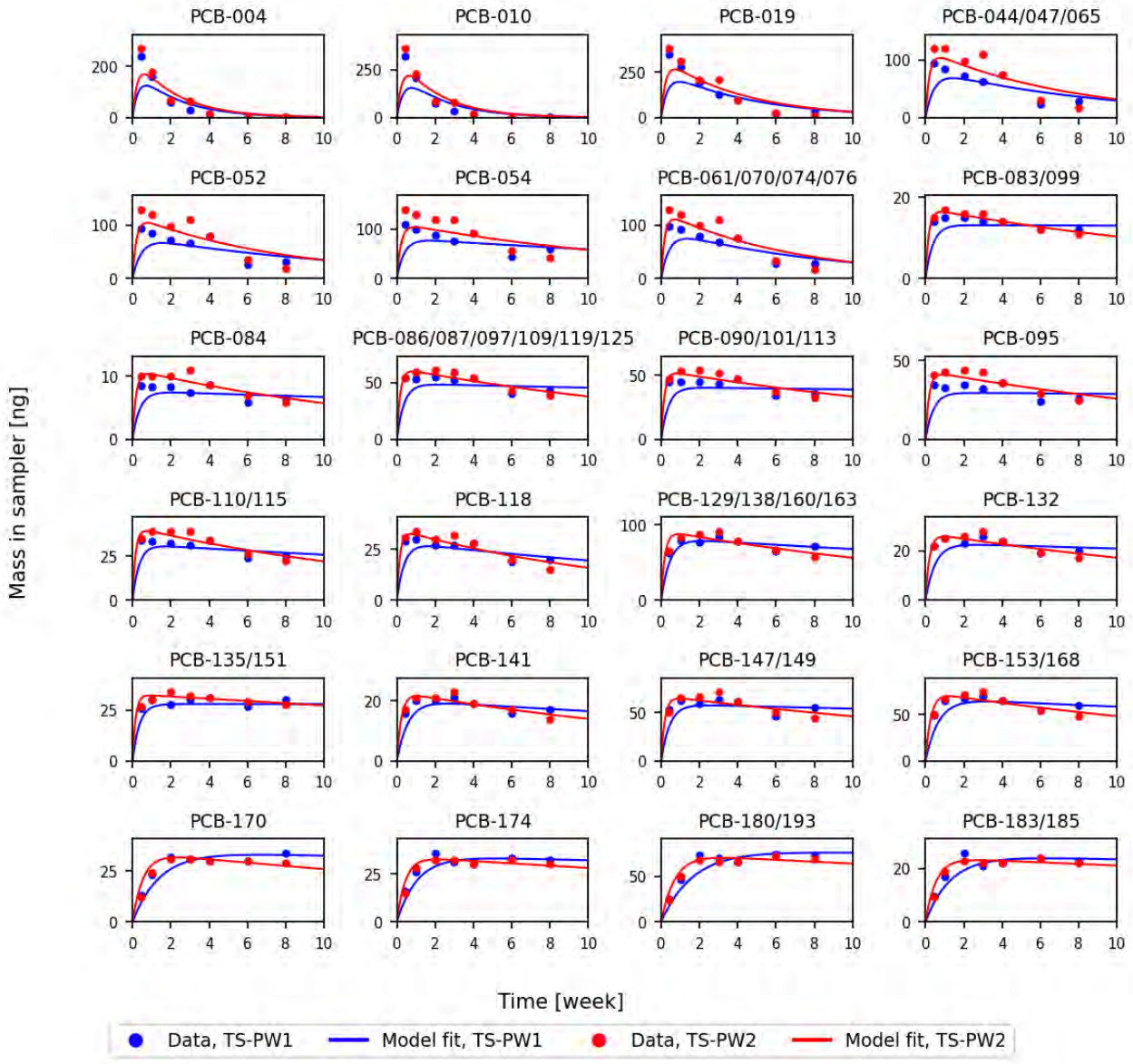


Figure 4-10
Profiles of PCB Uptake by PDMS Polymer in GAC Samples and Model Fitting

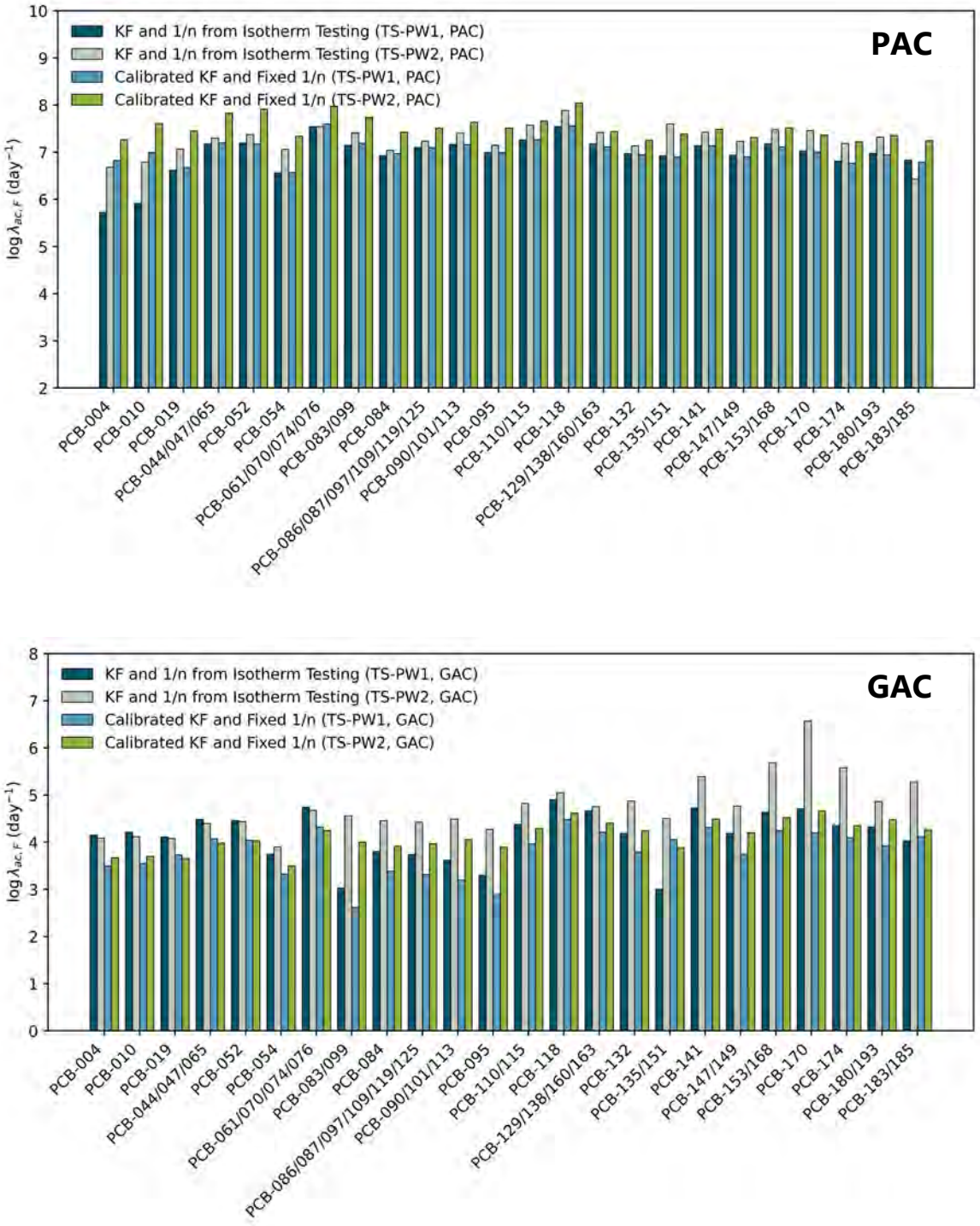
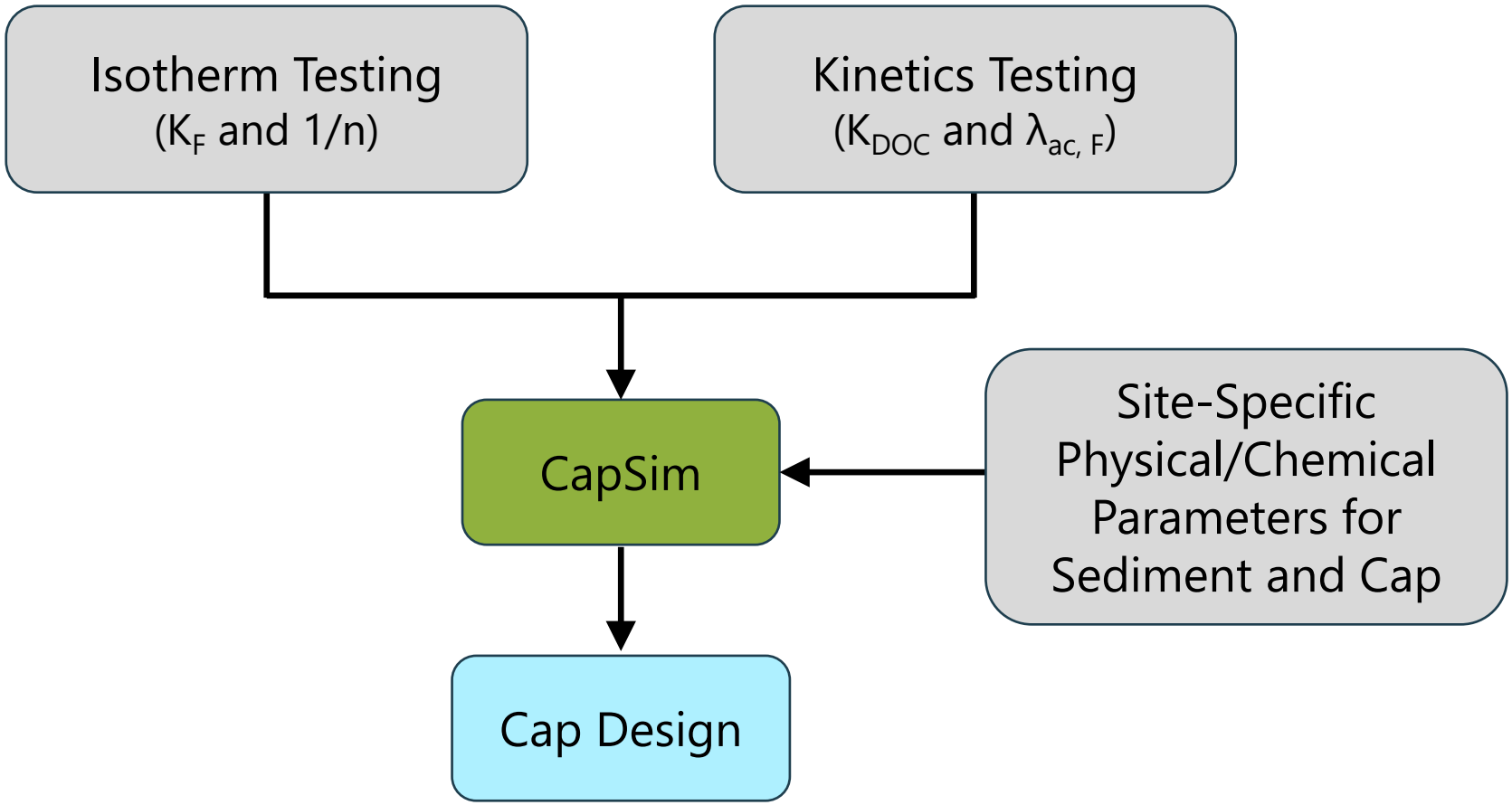


Figure 4-11
Comparison First-Order Rate Constants for PCB Uptake onto PAC and GAC



K_F and 1/n: Freundlich isotherm parameters

K_{DOC}: dissolved organic carbon partition coefficient

$\lambda_{ac, F}$:

Appendix A
Sediment Dewatering Treatability Study Results

- A1: Initial Testing Results
- A2: Photograph Log
- A3: Gravity Drainage Results
- A4: Sediment Stabilization Agent Specification Sheets
- A5: Sediment Stabilization Amendment Testing Results
- A6: Shake/Vibration Testing Results

Appendix A1
Initial Testing Results

Treatability Laboratory Results

Table A1-1
Approximate Volume of Water Removed from As-Received Sediment

A1: Sediment Dewatering Treatability Study Initial Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Sample ID	Gallons
TS-S1	1.1
TS-WP	2.4
TS-S4	1.6
TS-S2	1.5
TS-BW5	0
TS-S3	1.2

Notes:

1. Water that could not be uniformly blended back into the bulk sediment during thorough homogenization of the initial samples was removed before collection of subsamples for initial testing and the remainder of the treatability testing.
2. Samples listed north to south.

Geotechnical Report

August 01, 2025

Project No. R-2025-197-001

David Liles
Arcadis U.S., Inc.
4915 Prospectus Dr., Suite G
Durham, NC 27713

david.liles@arcadis.com

Transmittal
Laboratory Test Results
Housatonic 5A

Please find attached the laboratory test results for the above referenced project. The tests were outlined on the Project Verification Form that was transmitted to your firm prior to the testing. The testing was performed in general accordance with the methods listed on the enclosed data sheets. The test results are believed to be representative of the samples that were submitted for testing and are indicative only of the specimens which were evaluated. We have no direct knowledge of the origin of the samples and imply no position with regard to the nature of the test results, i.e. pass/fail and no claims as to the suitability of the material for its intended use.

The test data and all associated project information provided shall be held in strict confidence and disclosed to other parties only with authorization by our Client. The test data submitted herein is considered integral with this report and is not to be reproduced except in whole and only with the authorization of the Client and Geotechnics. The remaining sample materials for this project will be retained for a minimum of 90 days as directed by the Geotechnics' Quality Program.

We are pleased to provide these testing services. Should you have any questions or if we may be of further assistance, please contact our office.

Respectively submitted,
Geotechnics, Inc.

Michael P. Smith
Regional Manager

We understand that you have a choice in your laboratory services and we thank you for choosing Geotechnics.

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MOISTURE CONTENT

ASTM D 2216-19

Client: Arcadis U.S., Inc.
Client Reference: Houseatonic 5A
Project No.: R-2025-197-001

Lab ID:	001	002	003	004	005
Boring No.:	NA	NA	NA	NA	NA
Depth (ft):	NA	NA	NA	NA	NA
Sample No.:	TS-WP	TS-BW5	TS-S1	TS-S2	TS-S3
Tare Number	46-A	469	743	33-A	463
Wt. of Tare & Wet Sample (g)	649.19	695.38	658.41	561.00	728.25
Wt. of Tare & Dry Sample (g)	394.79	361.22	608.48	494.83	589.03
Weight of Tare (g)	122.60	146.00	138.20	137.87	145.38
Weight of Water (g)	254.40	334.16	49.93	66.17	139.22
Weight of Dry Sample (g)	272.19	215.22	470.28	356.96	443.65
Water Content (%)	**93.5**	**155.3**	**10.6**	**18.5**	**31.4**

Lab ID	006
Boring No.	NA
Depth (ft)	NA
Sample No.	TS-S4
Tare Number	11-A
Wt. of Tare & Wet Sample (g)	377.84
Wt. of Tare & Dry Sample (g)	341.94
Weight of Tare (g)	89.10
Weight of Water (g)	35.90
Weight of Dry Sample (g)	252.84
Water Content (%)	**14.2**

Notes :

Tested By BS *Date* 7/16/25 *Checked By* AES *Date* 7/17/25

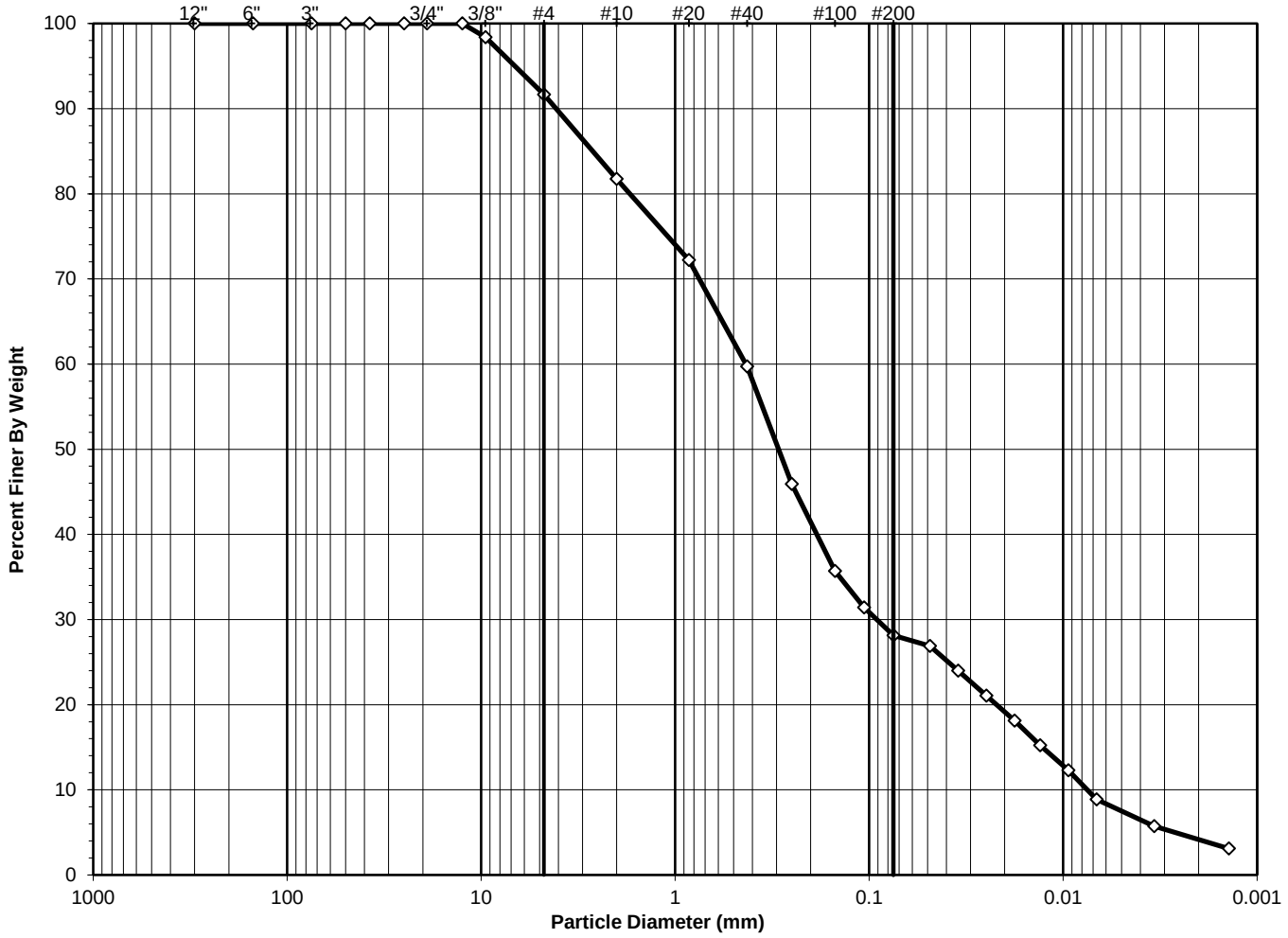
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-WP
Lab ID:	R-2025-197-001-001	Soil Color:	Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SM, TESTED

D50 = 0.29

USCS Classification:
SILTY SAND

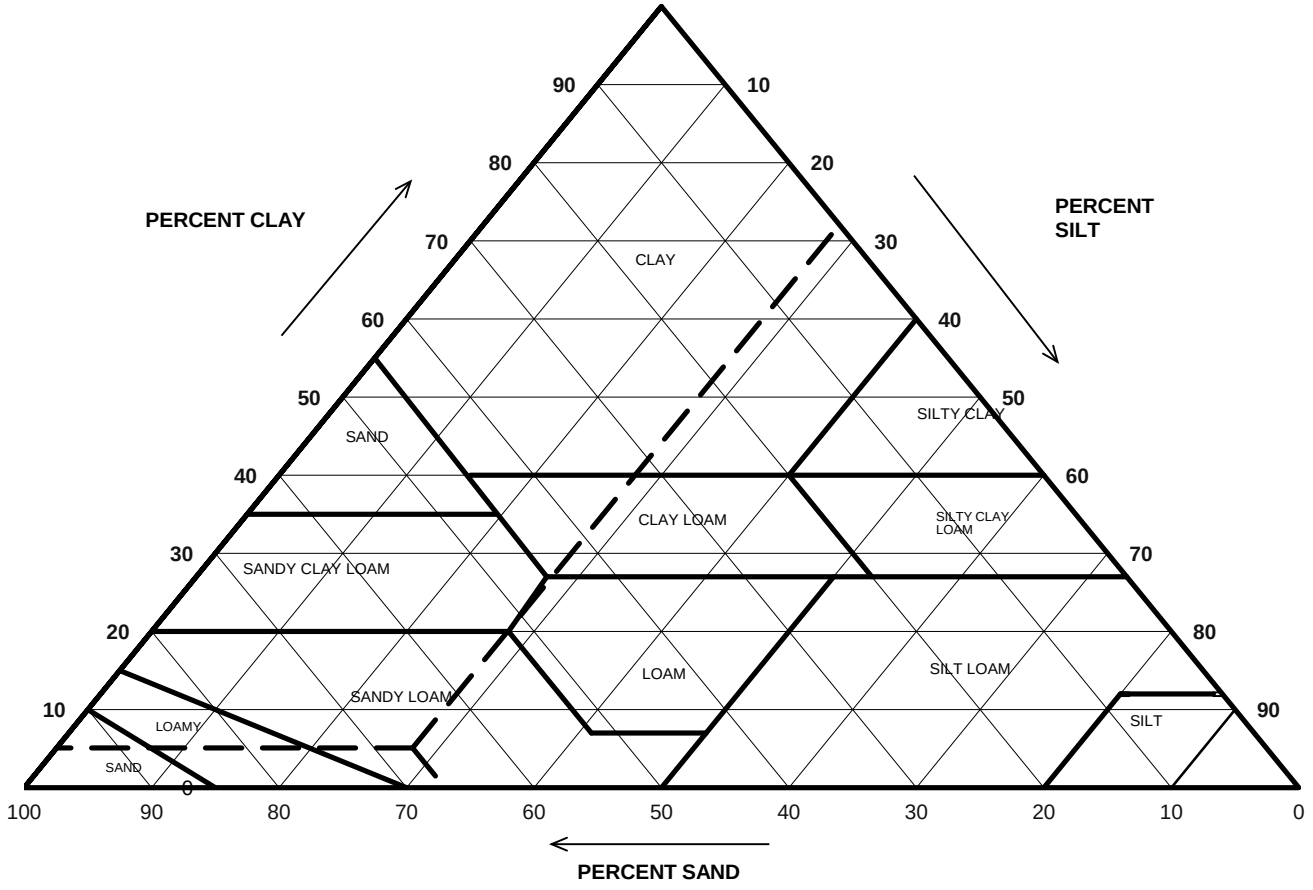
Tested By BS Date 7/24/25 Checked By AES Date 7/24/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-WP
Lab ID:	R-2025-197-001-001	Soil Color:	Brown



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**18.26**	
2	**81.74**	**Sand**	**54.76**	**66.98**
0.05	**26.99**	**Silt**	**22.83**	**27.93**
0.002	**4.16**	**Clay**	**4.16**	**5.09**

USDA Classification: SANDY LOAM

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-WP
Lab ID:	R-2025-197-001-001	Soil Color:	Brown

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	46-A	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	649.19	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	394.79	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	122.60	Weight of Tare (g):	NA
Weight of Water (g):	254.40	Weight of Water (g):	NA
Weight of Dry Soil (g):	272.19	Weight of Dry Soil (g):	NA
Moisture Content (%):	**93.5**	**Moisture Content (%):**	**0.0**

Dry Weight of Sample (g):	NA	Total Dry Weight of Sample (g):	272.19
Tare No. (Sub-Specimen)	46-A	Wet Weight of +3/4" Sample (g):	0.00
Wt. of Tare & Wet Sub-Specimen (g):	649.19	Dry Weight of + 3/4" Sample (g):	0.00
Weight of Tare (g):	122.60	Dry Weight of - 3/4" Sample (g):	272.19
Sub-Specimen Wet Weight (g):	526.59	Dry Weight -3/4" +3/8" Sample (g):	4.39
Tare No. (-3/8" Sub-Specimen):	NA	Dry Weight of -3/8" Sample (g):	267.80
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	NA	J - Factor (% Finer than 3/4"):	NA
Weight of Tare (g):	NA	J - Factor (% Finer than 3/8"):	NA
Sub-Specimen -3/8" Wet Weight (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100**
6"	150	0.00		0.00	0.00	100.00	**100**
3"	75	0.00		0.00	0.00	100.00	**100**
2"	50	0.00	(*)	0.00	0.00	100.00	**100**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100**
1"	25	0.00		0.00	0.00	100.00	**100**
3/4"	19	0.00		0.00	0.00	100.00	**100**
1/2"	12.5	0.00	(**)	0.00	0.00	100.00	**100**
3/8"	9.5	4.39		1.61	1.61	98.39	**98**
#4	4.75	18.30		6.72	8.34	91.66	**92**
#10	2	27.00		9.92	18.26	81.74	**82**
#20	0.85	25.90	(**)	9.52	27.77	72.23	**72**
#40	0.425	34.08		12.52	40.29	59.71	**60**
#60	0.25	37.57		13.80	54.09	45.91	**46**
#100	0.15	27.80		10.21	64.31	35.69	**36**
#140	0.106	11.62		4.27	68.58	31.42	**31**
#200	0.075	8.99		3.30	71.88	28.12	**28**
Pan	-	76.54		28.12	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By BS Date 7/24/25 Checked By AES Date 7/24/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-WP
Lab ID:	R-2025-197-001-001	Soil Color:	Brown

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	20.5	23.1	4.40	12.9	0.0485	95.7	26.9
2	18.8	23.1	4.40	13.2	0.0347	85.3	24.0
4	17.0	23.1	4.40	13.5	0.0248	74.9	21.1
8	15.3	23.1	4.40	13.9	0.0178	64.5	18.1
15	13.5	23.1	4.40	14.2	0.0131	54.1	15.2
30	11.8	23.1	4.40	14.5	0.0094	43.7	12.3
60	9.8	23.0	4.43	14.8	0.0067	31.6	8.9
240	7.8	23.3	4.32	15.2	0.0034	20.4	5.7
1440	6.3	23.1	4.40	15.5	0.0014	11.0	3.1

Soil Specimen Data

Tare No.:	217	Percent Finer than # 200:	28.12
Wt. of Tare & Dry Material (g):	192.49		
Weight of Tare (g):	170.46	Specific Gravity:	2.60 Measured
Weight of Deflocculant (g):	5.0		
Weight of Dry Material (g):	17.03		

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By BS Date 7/24/25 Checked By AES Date 7/28/25

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ATTERBERG LIMITS

ASTM D 4318-17

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-001	Sample No.:	TS-WP
Lab ID:	R-2025-197-001-001	Soil Description:	BROWN ELASTIC SILT

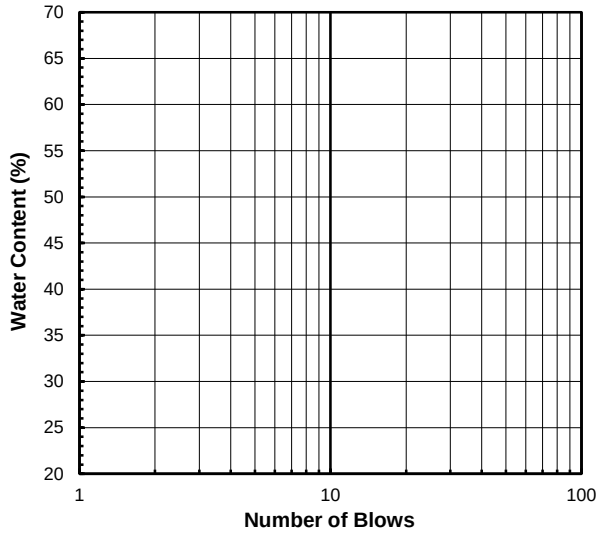
Note: The* USCS symbol used with this test refers only to the minus No. 40 *sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description. (Minus #40 sieve material, Air dried)

As Received Moisture Content		Liquid Limit Test			
ASTM D2216-19		1	2	3	M
Tare Number:	46-A	B	1	A-B	U
Wt. of Tare & Wet Sample (g):	649.19	28.44	28.62	28.09	L
Wt. of Tare & Dry Sample (g):	394.79	23.46	23.68	23.20	T
Weight of Tare (g):	122.60	15.08	15.55	15.46	I
Weight of Water (g):	254.4	5.0	4.9	4.9	P
Weight of Dry Sample (g):	272.2	8.4	8.1	7.7	O
Was As Received MC Preserved:	**Yes**				I
Moisture Content (%):	**93.5**	**59.4**	**60.8**	**63.2**	N
Number of Blows:		**32**	**24**	**16**	T

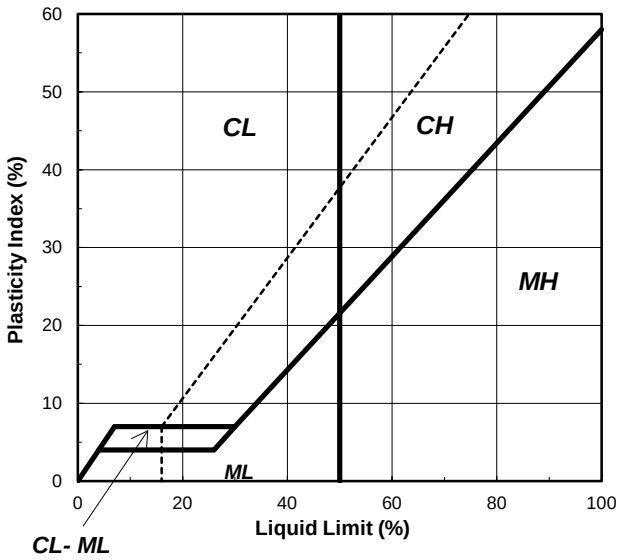
Plastic Limit Test	1	2	Range
Tare Number:	20	29	
Wt. of Tare & Wet Sample (g):	15.62	15.60	
Wt. of Tare & Dry Sample (g):	13.20	13.17	
Weight of Tare (g):	7.01	6.99	
Weight of Water (g):	2.4	2.4	
Weight of Dry Sample (g):	6.2	6.2	
Moisture Content (%):	**39.1**	**39.3**	**-0.2**
Note: The acceptable range of the two Moisture Contents is ±			0.84

Test Results	
Liquid Limit (%):	**61**
Plastic Limit (%):	**39**
Plasticity Index (%):	**22**
USCS Symbol:	**MH**

Flow Curve



Plasticity Chart



Tested By CB *Date* 7/24/25 *Checked By* AES *Date* 7/24/25

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Moisture, Ash, and Organic Matter (Loss on Ignition)

ASTM D 2974-20e1

Client: Arcadis U.S., Inc.
Client Reference: Housatonic 5A
Project No.: R-2025-197-001

Method A (To 0.1%)

Moisture Content
ASTM D2216

Lab ID:	.001	.001
Boring No.:	NA	NA
Depth (ft):	NA	NA
Sample No.:	TS-WP	TS-WP
Tare Number	1	2
Weight of Tare & Wet Sample (g)	65.17	62.70
Weight of Tare & Dry Sample (g)	50.06	47.57
Weight of Tare (g)	30.24	28.20
Weight of Water (g)	15.110	15.130
Weight of Dry Sample (g)	19.820	19.370
Moisture Content	**76.2%**	**78.1%**

Method A

Furnace Temperature (°C)		440	440
Weight of Tare & Ash (g)		48.74	46.30
Weight of Volatiles (g)		1.32	1.27
Weight of Ash (g)		18.50	18.10
Ash Content (%)		**93.3%**	**93.4%**
	Average:	**93.4%**	
Organic Matter (%)		**6.7%**	**6.6%**
	Average:	**6.6%**	

Tested By BS *Date* 7/24/25 *Checked By* AES *Date* 7/24/25

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SPECIFIC GRAVITY

ASTM D 854-14

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-001	Sample No.:	TS-WP
Lab ID:	R-2025-197-001-001	Visual Description:	Brown Silty Sand

(MInus No.4 sieve material,oven dried)

Replicate Number	**1**	**2**
Pycnometer ID:	R 544	R 713
Weight of Pycnometer & Soil & Water (g):	709.92	698.62
Temperature (^{o}C):	22.4	22.4
Weight of Pycnometer & Water (g):	663.83	652.38
Tare Number:	544	713
Weight of Tare & Dry Soil (g):	240.92	229.57
Weight of Tare (g):	165.86	154.47
Weight of Dry Soil (g):	75.06	75.10
Specific Gravity of Soil @ Measured Temperature:	2.591	2.602
Specific Gravity of Water @ Measured Temperature:	0.99768	0.99768
Conversion Factor for Measured Temperature:	0.99948	0.99948
Specific Gravity @ 20^{o} Celsius:	2.592	2.603

Average Specific Gravity @ 20^{o} Celsius	2.60

Tested By BS *Date* 7/23/25 *Checked By* AES *Date* 7/23/25

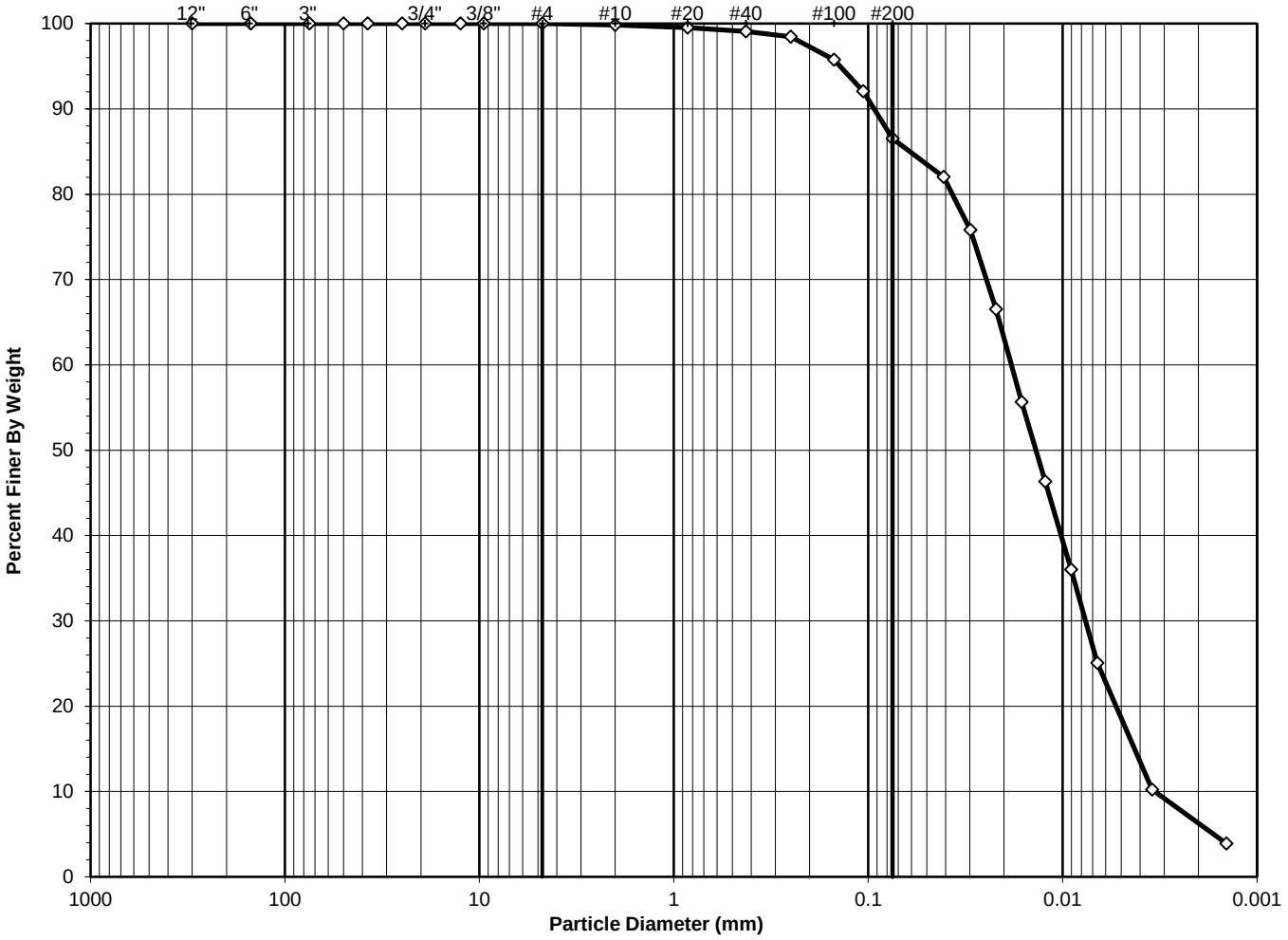
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-BW5
Lab ID:	R-2025-197-001-002	Soil Color:	Dark Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
MH, TESTED

USCS Classification:
ELASTIC SILT

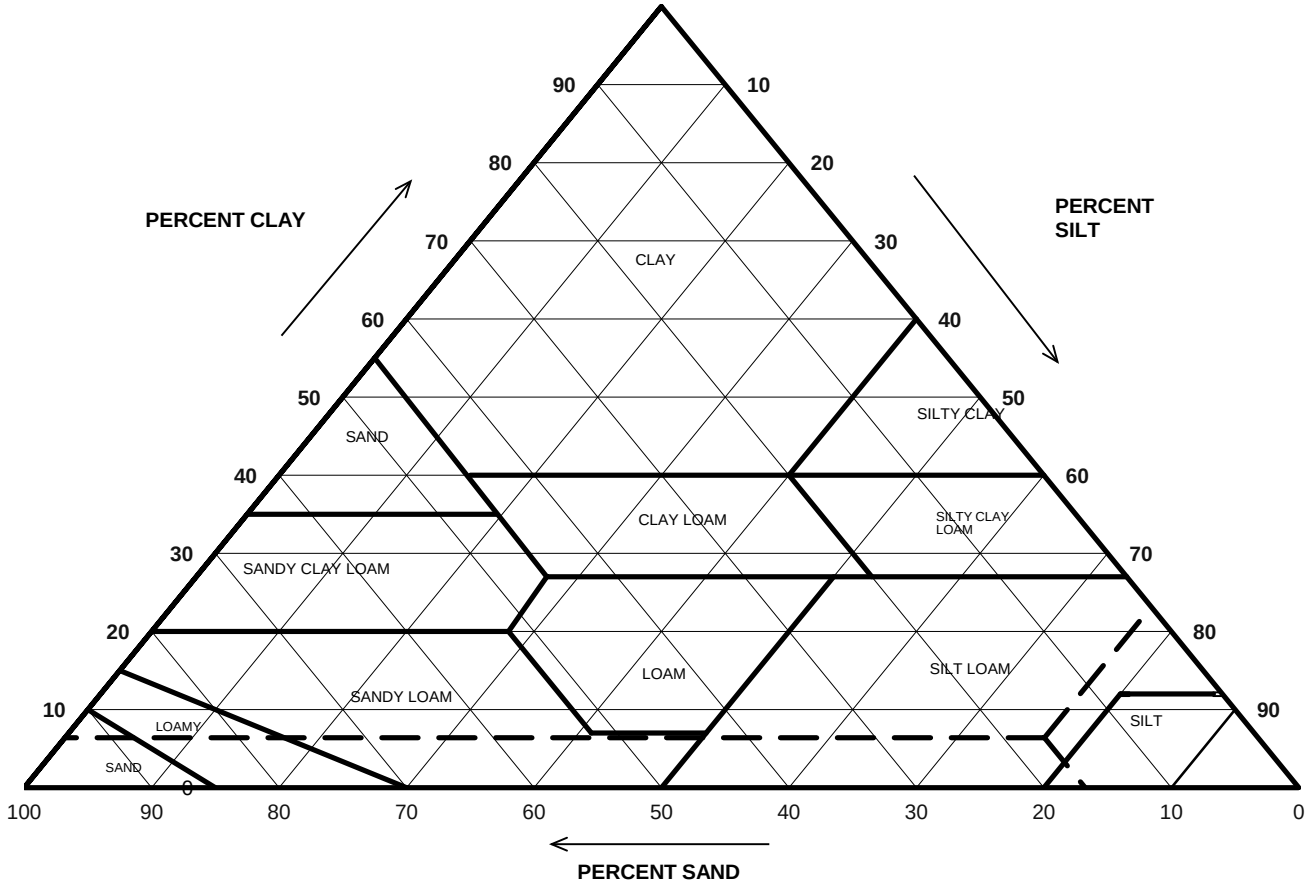
Tested By CB Date 7/29/25 Checked By AES Date 7/30/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-BW5
Lab ID:	R-2025-197-001-002	Soil Color:	Dark Brown



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**0.17**	
2	**99.83**	**Sand**	**16.73**	**16.76**
0.05	**83.10**	**Silt**	**76.71**	**76.85**
0.002	**6.38**	**Clay**	**6.38**	**6.39**

USDA Classification: SILT LOAM

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-BW5
Lab ID:	R-2025-197-001-002	Soil Color:	Dark Brown

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	469	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	695.38	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	361.20	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	146.00	Weight of Tare (g):	NA
Weight of Water (g):	334.18	Weight of Water (g):	NA
Weight of Dry Soil (g):	215.20	Weight of Dry Soil (g):	NA
Moisture Content (%):	**155.3**	**Moisture Content (%):**	**0.0**

Dry Weight of Sample (g):	NA	Total Dry Weight of Sample (g):	215.20
Tare No. (Sub-Specimen)	469	Wet Weight of +3/4" Sample (g):	0.00
Wt. of Tare & Wet Sub-Specimen (g):	695.38	Dry Weight of + 3/4" Sample (g):	0.00
Weight of Tare (g):	146.00	Dry Weight of - 3/4" Sample (g):	215.20
Sub-Specimen Wet Weight (g):	549.38	Dry Weight -3/4" +3/8" Sample (g):	0.00
Tare No. (-3/8" Sub-Specimen):	NA	Dry Weight of -3/8" Sample (g):	215.20
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	NA	J - Factor (% Finer than 3/4"):	NA
Weight of Tare (g):	NA	J - Factor (% Finer than 3/8"):	NA
Sub-Specimen -3/8" Wet Weight (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100.0**
6"	150	0.00		0.00	0.00	100.00	**100.0**
3"	75	0.00		0.00	0.00	100.00	**100.0**
2"	50	0.00	(*)	0.00	0.00	100.00	**100.0**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100.0**
1"	25	0.00		0.00	0.00	100.00	**100.0**
3/4"	19	0.00		0.00	0.00	100.00	**100.0**
1/2"	12.5	0.00	(**)	0.00	0.00	100.00	**100.0**
3/8"	9.5	0.00		0.00	0.00	100.00	**100.0**
#4	4.75	0.00		0.00	0.00	100.00	**100.0**
#10	2	0.37		0.17	0.17	99.83	**99.8**
#20	0.85	0.64	(**)	0.30	0.47	99.53	**99.5**
#40	0.425	1.00		0.46	0.93	99.07	**99.1**
#60	0.25	1.30		0.60	1.54	98.46	**98.5**
#100	0.15	5.78		2.69	4.22	95.78	**95.8**
#140	0.106	7.96		3.70	7.92	92.08	**92.1**
#200	0.075	11.97		5.56	13.49	86.51	**86.5**
Pan	-	186.18		86.51	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By CB Date 7/29/25 Checked By AES Date 7/30/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-BW5
Lab ID:	R-2025-197-001-002	Soil Color:	Dark Brown

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	44.0	23.2	4.36	8.7	0.0409	94.8	82.0
2	41.0	23.2	4.36	9.2	0.0298	87.6	75.8
4	36.5	23.2	4.36	10.0	0.0220	76.9	66.5
8	31.3	23.2	4.36	11.0	0.0163	64.3	55.6
15	26.8	23.2	4.36	11.8	0.0123	53.6	46.3
30	21.8	23.2	4.36	12.7	0.0090	41.6	36.0
60	16.5	23.1	4.40	13.6	0.0066	29.0	25.0
240	9.3	23.3	4.32	14.9	0.0035	11.8	10.2
1440	6.3	23.2	4.36	15.5	0.0014	4.5	3.9

Soil Specimen Data

Tare No.:	215	Percent Finer than # 200:	86.51	
Wt. of Tare & Dry Material (g):	219.91			
Weight of Tare (g):	171.64	Specific Gravity:	2.51	Measured
Weight of Deflocculant (g):	5.0			
Weight of Dry Material (g):	43.27			

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By BS Date 7/31/25 Checked By AES Date 8/1/25

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ATTERBERG LIMITS

ASTM D 4318-17

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-001	Sample No.:	TS-BW5
Lab ID:	R-2025-197-001-002	Soil Description:	DARK BROWN ELASTIC SILT

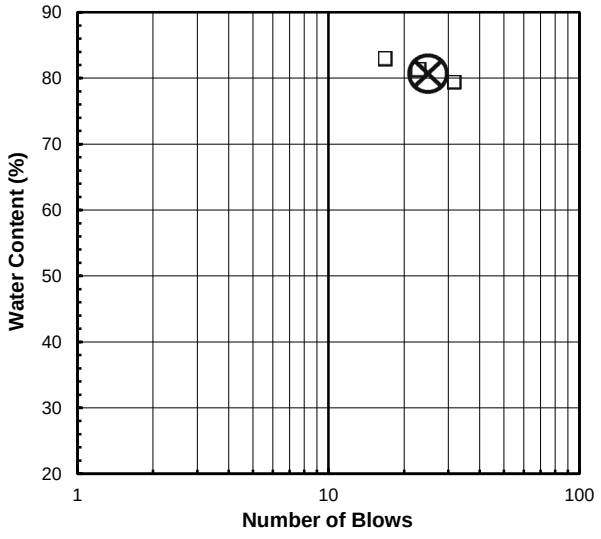
***Note: The* USCS symbol used with this test refers only to the minus No. 40 sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description.** (Minus #40 sieve material, Air dried)

As Received Moisture Content		Liquid Limit Test			
ASTM D2216-19		1	2	3	MU
Tare Number:	469	S	3M	L2	
Wt. of Tare & Wet Sample (g):	695.38	27.04	27.01	29.71	L
Wt. of Tare & Dry Sample (g):	361.20	21.75	21.85	23.10	T
Weight of Tare (g):	146.00	15.08	15.49	15.12	I
Weight of Water (g):	334.2	5.3	5.2	6.6	P
Weight of Dry Sample (g):	215.2	6.7	6.4	8.0	O
Was As Received MC Preserved:	**Yes**				I
Moisture Content (%):	**155.3**	**79.3**	**81.1**	**82.8**	N
Number of Blows:		**32**	**23**	**17**	T

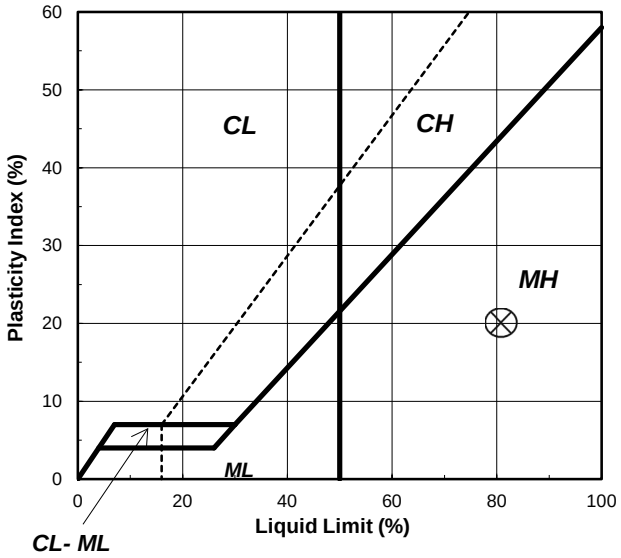
Plastic Limit Test	1	2	Range
Tare Number:	16	32	
Wt. of Tare & Wet Sample (g):	16.96	16.88	
Wt. of Tare & Dry Sample (g):	13.21	13.13	
Weight of Tare (g):	7.04	6.96	
Weight of Water (g):	3.8	3.8	
Weight of Dry Sample (g):	6.2	6.2	
Moisture Content (%):	**60.8**	**60.8**	**0.0**
Note: The acceptable range of the two Moisture Contents is ±			0.84

Test Results	
Liquid Limit (%):	**81**
Plastic Limit (%):	**61**
Plasticity Index (%):	**20**
USCS Symbol:	**MH**

Flow Curve



Plasticity Chart



Tested By CB *Date* 7/29/25 *Checked By* AES *Date* 7/30/25

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Moisture, Ash, and Organic Matter (Loss on Ignition)

ASTM D 2974-20e1

Client: Arcadis U.S., Inc.
Client Reference: Housatonic 5A
Project No.: R-2025-197-001

Method A (To 0.1%)

Moisture Content
ASTM D2216

Lab ID:	.002	.002
Boring No.:	NA	NA
Depth (ft):	NA	NA
Sample No.:	TS-BW5	TS-BW5
Tare Number	3	4
Weight of Tare & Wet Sample (g)	59.17	58.44
Weight of Tare & Dry Sample (g)	41.23	40.12
Weight of Tare (g)	29.43	28.11
Weight of Water (g)	17.940	18.320
Weight of Dry Sample (g)	11.800	12.010
Moisture Content	**152.0%**	**152.5%**

Method A

Furnace Temperature (°C)	440	440	
Weight of Tare & Ash (g)	39.63	38.48	
Weight of Volatiles (g)	1.60	1.64	
Weight of Ash (g)	10.20	10.37	
Ash Content (%)	**86.4%**	**86.3%**	
Average:		**86.4%**	
Organic Matter (%)	**13.6%**	**13.7%**	
Average:		**13.6%**	

Tested By BS *Date* 7/25/25 *Checked By* AES *Date* 7/25/25

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SPECIFIC GRAVITY

ASTM D 854-14

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-001	Sample No.:	TS-BW5
Lab ID:	R-2025-197-001-002	Visual Description:	Dark Brown Elastic Silt

(MInus No.4 sieve material,oven dried)

Replicate Number	**1**	**2**
Pycnometer ID:	R 713	R 749
Weight of Pycnometer & Soil & Water (g):	694.2	685.96
Temperature (^{o}C):	24.4	24.4
Weight of Pycnometer & Water (g):	652.14	640.80
Tare Number:	713	749
Weight of Tare & Dry Soil (g):	224.57	218.24
Weight of Tare (g):	154.47	143.22
Weight of Dry Soil (g):	70.10	75.02
Specific Gravity of Soil @ Measured Temperature:	2.500	2.512
Specific Gravity of Water @ Measured Temperature:	0.99720	0.99720
Conversion Factor for Measured Temperature:	0.99900	0.99900
Specific Gravity @ 20^{o} Celsius:	2.502	2.515

Average Specific Gravity @ 20^{o} Celsius	2.51

Tested By BS *Date* 7/23/25 *Checked By* AES *Date* 7/23/25

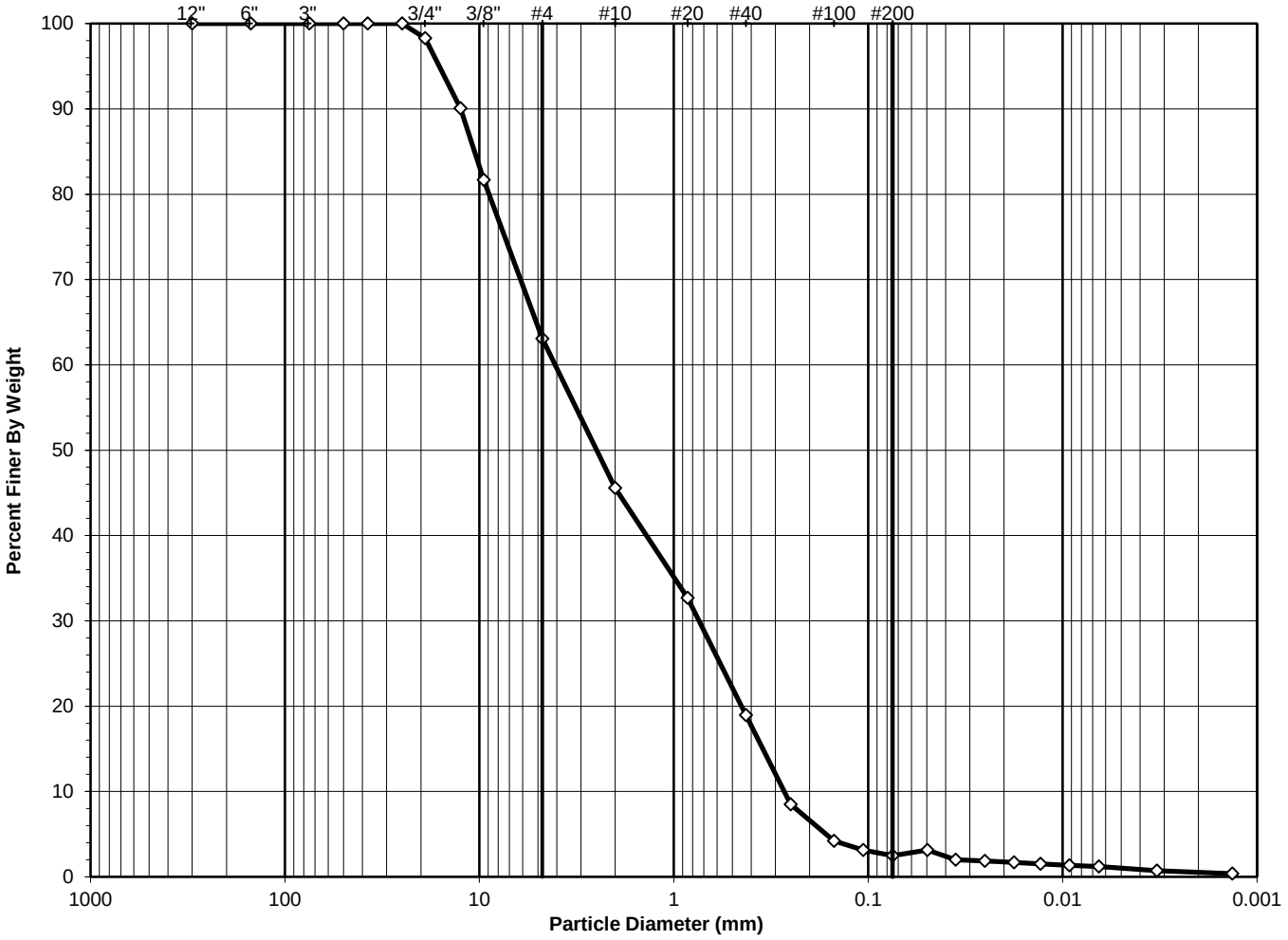
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-S1
Lab ID:	R-2025-197-001-003	Soil Color:	Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP, TESTED

D60 = 4.08 D50 = 2.49

D30 = 0.74 CU = 15.12

USCS Classification:
POORLY GRADED SAND WITH GRAVEL (NON-PLASTIC FINES)

D10 = 0.27

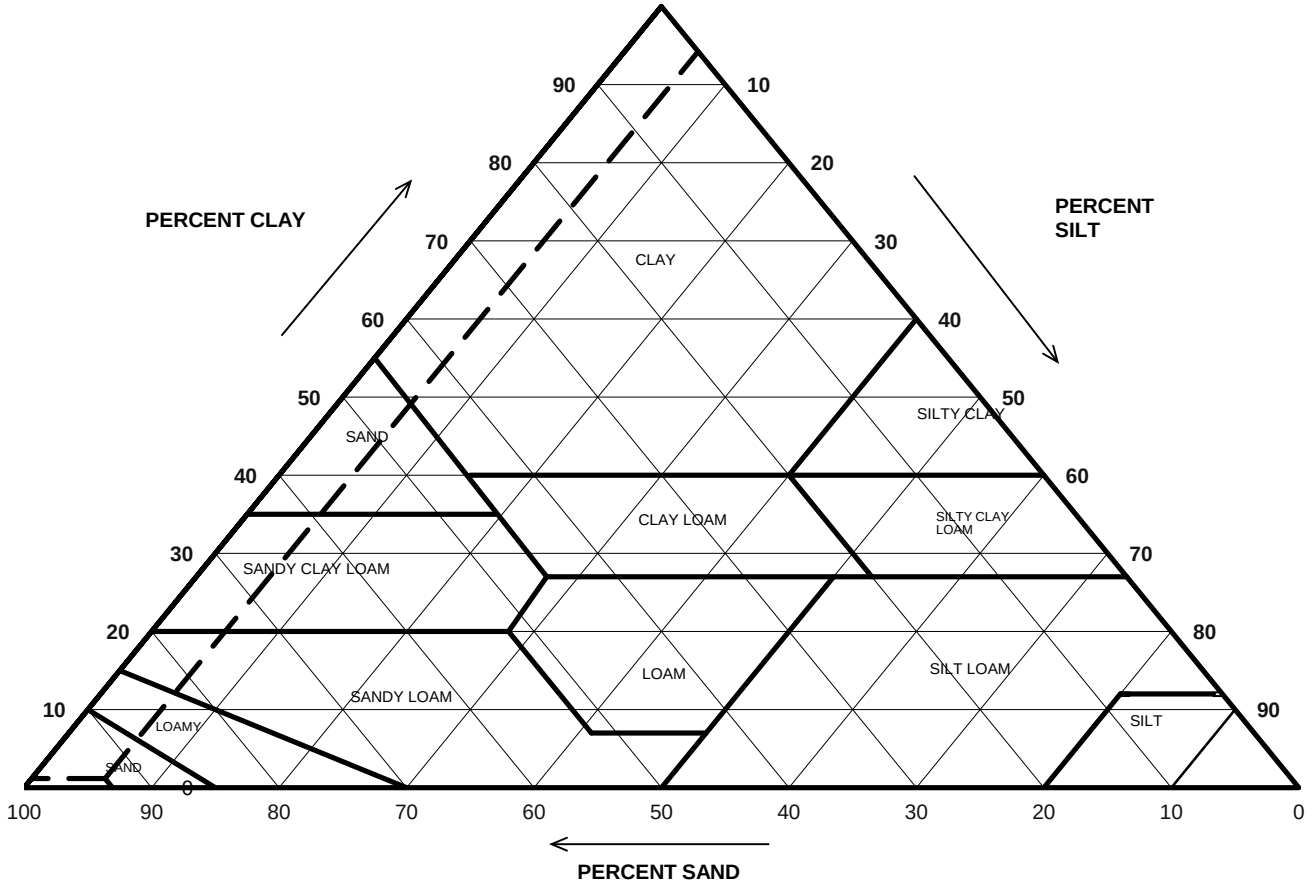
Tested By BS Date 7/24/25 Checked By AES Date 7/24/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-S1
Lab ID:	R-2025-197-001-003	Soil Color:	Brown



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**54.44**	
2	**45.56**	**Sand**	**42.40**	**93.07**
0.05	**3.16**	**Silt**	**2.62**	**5.76**
0.002	**0.53**	**Clay**	**0.53**	**1.17**

USDA Classification: SAND

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-S1
Lab ID:	R-2025-197-001-003	Soil Color:	Brown

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	743	Tare No.:	491
Wt. of Tare & Wet Sample (g):	658.41	Weight of Tare & Wet Sample (g):	241.14
Wt. of Tare & Dry Sample (g):	608.48	Weight of Tare & Dry Sample (g):	234.93
Weight of Tare (g):	138.20	Weight of Tare (g):	100.31
Weight of Water (g):	49.93	Weight of Water (g):	6.21
Weight of Dry Soil (g):	470.28	Weight of Dry Soil (g):	134.62
Moisture Content (%):	**10.6**	**Moisture Content (%):**	**4.6**
Wet Weight of -3/4" Sample (g):	7559.17	Total Dry Weight of Sample (g):	6954.19
Tare No. -3/4" Sub-Specimen (g):	5	Wet Weight of +3/4" Sample (g):	126.11
Wt. of Tare & Wet -3/4" Sub-Specimen (g):	2618.78	Dry Weight of + 3/4" Sample (g):	120.55
Weight of Tare (g):	311.92	Dry Weight of - 3/4" Sample (g):	6833.64
Sub-Specimen 3/4" Wet Weight (g):	2306.86	Dry Weight -3/4" +3/8" Sample (g):	1154.52
Tare No. (-3/8" Sub-Specimen):	722	Dry Weight of -3/8" Sample (g):	5679.11
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	451.05	J - Factor (% Finer than 3/4"):	98.3%
Weight of Tare (g):	89.43	J - Factor (% Finer than 3/8"):	81.7%
Sub-Specimen -3/8" Wet Weight (g):	361.62		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100**
6"	150	0.00		0.00	0.00	100.00	**100**
3"	75	0.00		0.00	0.00	100.00	**100**
2"	50	0.00	(*)	0.00	0.00	100.00	**100**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100**
1"	25	0.00		0.00	0.00	100.00	**100**
3/4"	19	126.11		1.73	1.73	98.27	**98**
1/2"	12.5	174.33	(**)	8.36	8.36	91.64	**90**
3/8"	9.5	178.00		8.54	16.89	83.11	**82**
#4	4.75	74.40		22.76	22.76	77.24	**63**
#10	2	70.14		21.46	44.21	55.79	**46**
#20	0.85	51.46	(**)	15.74	59.96	40.04	**33**
#40	0.425	55.01		16.83	76.78	23.22	**19**
#60	0.25	41.88		12.81	89.59	10.41	**8**
#100	0.15	17.19		5.26	94.85	5.15	**4**
#140	0.106	4.29		1.31	96.16	3.84	**3**
#200	0.075	2.66		0.81	96.98	3.02	**2**
Pan	-	9.88		3.02	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By BS Date 7/24/25 Checked By AES Date 7/24/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-S1
Lab ID:	R-2025-197-001-003	Soil Color:	Brown

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	9.3	23.1	4.40	14.9	0.0496	127.5	3.1
2	7.5	23.1	4.40	15.2	0.0354	81.5	2.0
4	7.3	23.1	4.40	15.3	0.0251	75.0	1.9
8	7.0	23.1	4.40	15.3	0.0178	68.4	1.7
15	6.8	23.0	4.43	15.4	0.0130	60.8	1.5
30	6.5	23.0	4.43	15.4	0.0092	54.3	1.3
60	6.3	23.1	4.40	15.5	0.0065	48.7	1.2
240	5.5	23.2	4.36	15.6	0.0033	30.0	0.7
1440	5.0	23.0	4.43	15.7	0.0013	14.9	0.4

Soil Specimen Data

Tare No.:	215	Percent Finer than # 200:	2.47
Wt. of Tare & Dry Material (g):	180.38		
Weight of Tare (g):	171.67	Specific Gravity:	2.77 Measured
Weight of Deflocculant (g):	5.0		
Weight of Dry Material (g):	3.71		

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By BS Date 7/24/25 Checked By AES Date 7/28/25

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ATTERBERG LIMITS

ASTM D 4318-17

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-001	Sample No.:	TS-S1
Lab ID:	R-2025-197-001-003	Color:	Brown
			(MInus No. 40 sieve material)

As Received
Water Content

Tare Number	743
Wt. of Tare & Wet Sample (g)	658.41
Wt. of Tare & Dry Sample (g)	608.48
Weight of Tare (g)	138.20
Weight of Water (g)	49.93
Weight of Dry Sample (g)	470.28
Water Content (%)	**10.6**

NON - PLASTIC MATERIAL

Tested By *CB* *Date* *7/24/25* *Checked By* *AES* *Date* *7/24/25*

 DCN: CT-S4C, DATE: 4/27/17, REVISION : 4e

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Moisture, Ash, and Organic Matter (Loss on Ignition)

ASTM D 2974-20e1

Client: Arcadis U.S., Inc.
Client Reference: Housatonic 5A
Project No.: R-2025-197-001

Method A (To 0.1%)

Moisture Content
ASTM D2216

Lab ID:	.003	.003
Boring No.:	NA	NA
Depth (ft):	NA	NA
Sample No.:	TS-S1	TS-S1
Tare Number	11	12
Weight of Tare & Wet Sample (g)	64.65	65.17
Weight of Tare & Dry Sample (g)	61.87	61.39
Weight of Tare (g)	29.92	28.92
Weight of Water (g)	2.780	3.780
Weight of Dry Sample (g)	31.950	32.470
Moisture Content	**8.7%**	**11.6%**

Method A

Furnace Temperature (°C)		440	440
Weight of Tare & Ash (g)		61.73	61.18
Weight of Volatiles (g)		0.14	0.21
Weight of Ash (g)		31.81	32.26
Ash Content (%)		**99.6%**	**99.4%**
	Average:	**99.5%**	
Organic Matter (%)		**0.4%**	**0.6%**
	Average:	**0.5%**	

Tested By *BS* *Date* *7/24/25* *Checked By* *AES* *Date* 7/24/25

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SPECIFIC GRAVITY

ASTM D 854-14

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-001	Sample No.:	TS-S1
Lab ID:	R-2025-197-001-003	Visual Description:	Brown Poorly Graded Sand with Gravel

(MInus No.4 sieve material,oven dried)

Replicate Number	**1**	**2**
Pycnometer ID:	R 745	R 749
Weight of Pycnometer & Soil & Water (g):	699.97	688.89
Temperature (^{o}C):	22.4	22.4
Weight of Pycnometer & Water (g):	651.87	641.04
Tare Number:	745	749
Weight of Tare & Dry Soil (g):	229.29	218.32
Weight of Tare (g):	154.21	143.23
Weight of Dry Soil (g):	75.08	75.09
Specific Gravity of Soil @ Measured Temperature:	2.782	2.756
Specific Gravity of Water @ Measured Temperature:	0.99768	0.99768
Conversion Factor for Measured Temperature:	0.99948	0.99948
Specific Gravity @ 20^{o} Celsius:	2.784	2.758

Average Specific Gravity @ 20^{o} Celsius	2.77

Tested By BS *Date* 7/23/25 *Checked By* AES *Date* 7/23/25

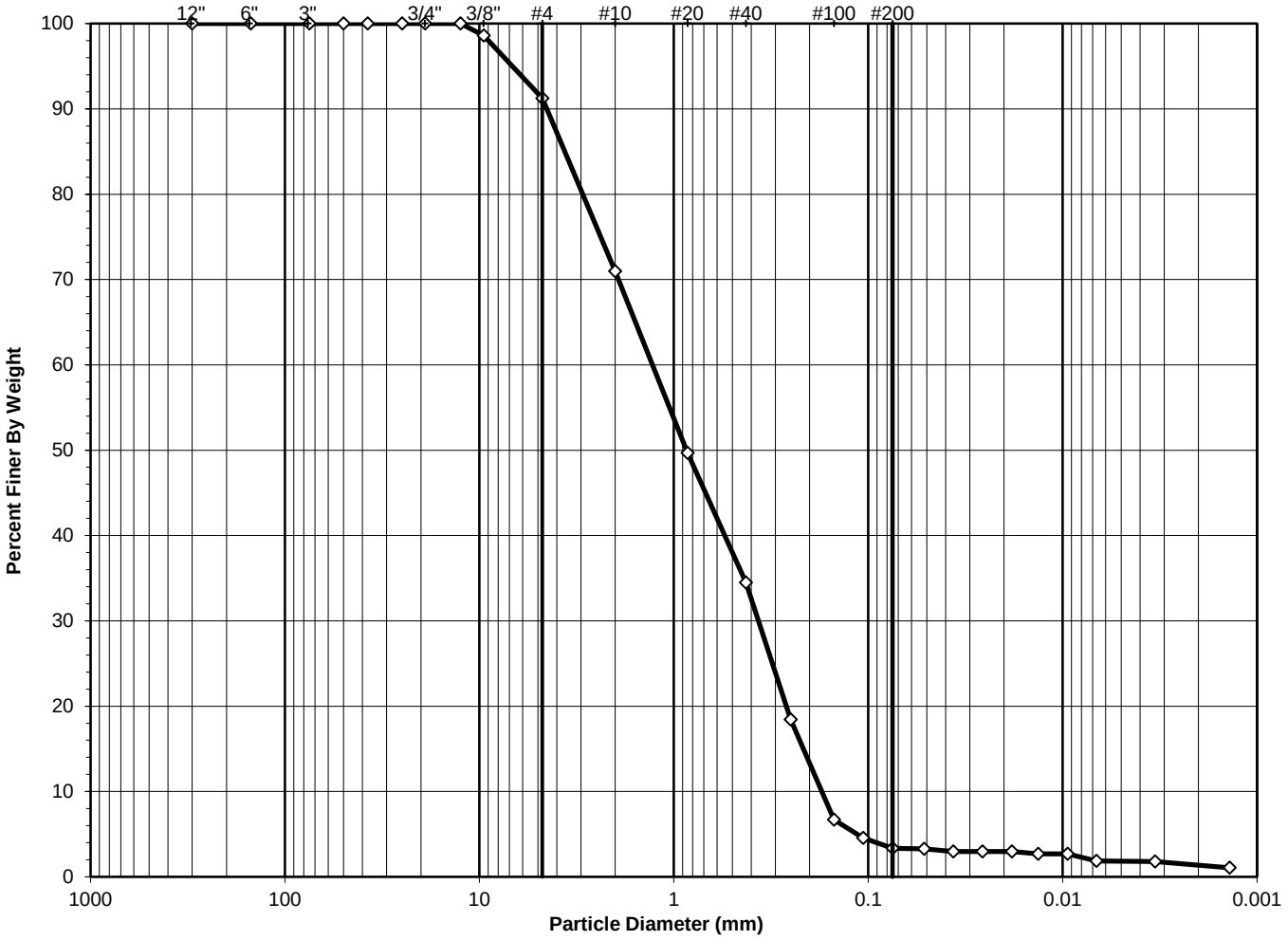
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-S2
Lab ID:	R-2025-197-001-004	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP, TESTED

D60 = 1.29 D50 = 0.86

D30 = 0.37 CU = 7.43

USCS Classification:
POORLY GRADED SAND
(NON-PLASTIC FINES)

D10 = 0.173

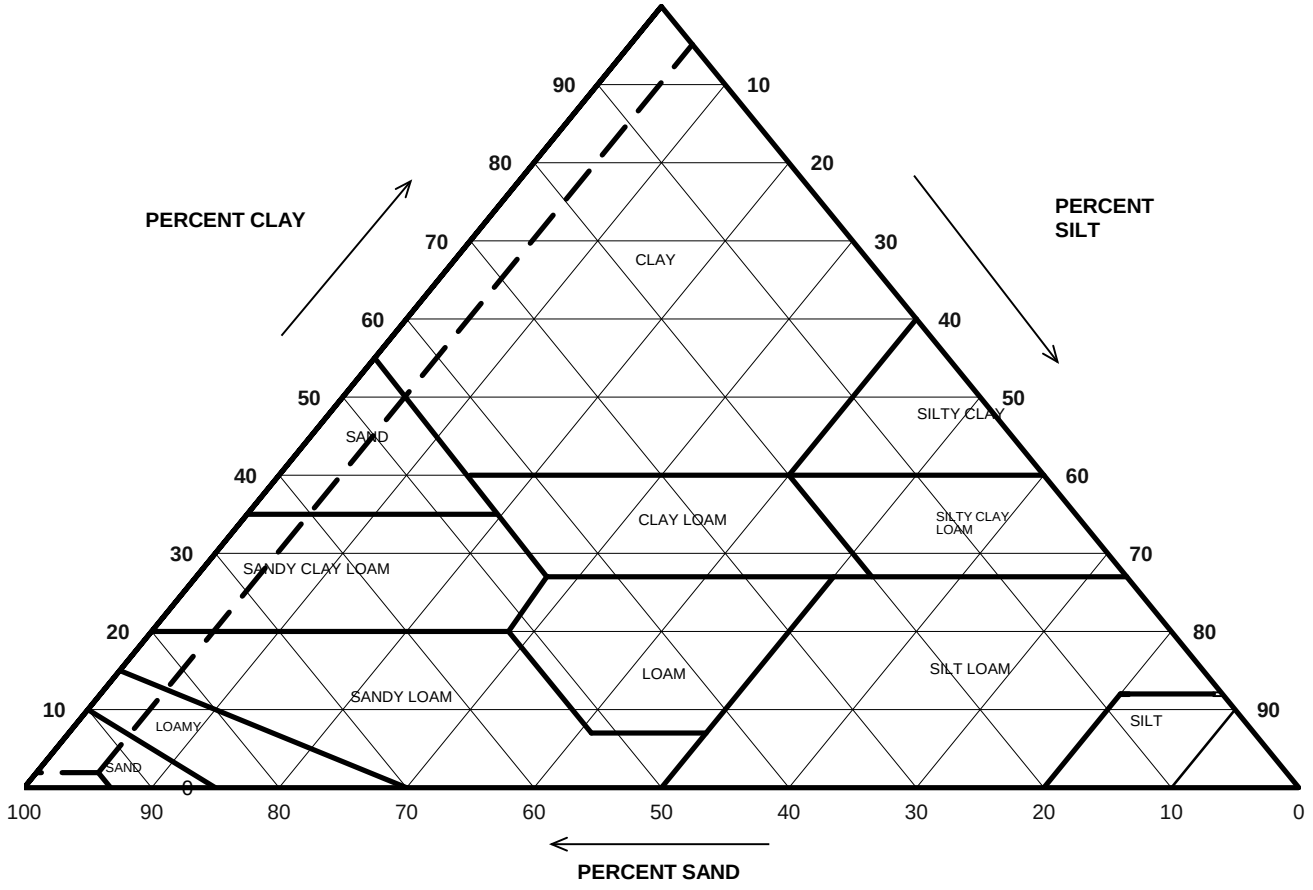
Tested By BS Date 7/21/25 Checked By AES Date 7/22/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-S2
Lab ID:	R-2025-197-001-004	Soil Color:	Gray



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**29.01**	
2	**70.99**	**Sand**	**66.17**	**93.22**
0.05	**4.82**	**Silt**	**3.45**	**4.86**
0.002	**1.37**	**Clay**	**1.37**	**1.93**

USDA Classification: SAND

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-S2
Lab ID:	R-2025-197-001-004	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	33-A	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	561.00	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	493.83	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	137.87	Weight of Tare (g):	NA
Weight of Water (g):	67.17	Weight of Water (g):	NA
Weight of Dry Soil (g):	355.96	Weight of Dry Soil (g):	NA
Moisture Content (%):	**18.9**	**Moisture Content (%):**	**0.0**

Dry Weight of Sample (g):	NA	Total Dry Weight of Sample (g):	355.96
Tare No. (Sub-Specimen)	33-A	Wet Weight of +3/4" Sample (g):	0.00
Wt. of Tare & Wet Sub-Specimen (g):	561.00	Dry Weight of + 3/4" Sample (g):	0.00
Weight of Tare (g):	137.87	Dry Weight of - 3/4" Sample (g):	355.96
Sub-Specimen Wet Weight (g):	423.13	Dry Weight -3/4" +3/8" Sample (g):	4.98
Tare No. (-3/8" Sub-Specimen):	NA	Dry Weight of -3/8" Sample (g):	350.98
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	NA	J - Factor (% Finer than 3/4"):	NA
Weight of Tare (g):	NA	J - Factor (% Finer than 3/8"):	NA
Sub-Specimen -3/8" Wet Weight (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100**
6"	150	0.00		0.00	0.00	100.00	**100**
3"	75	0.00		0.00	0.00	100.00	**100**
2"	50	0.00	(*)	0.00	0.00	100.00	**100**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100**
1"	25	0.00		0.00	0.00	100.00	**100**
3/4"	19	0.00		0.00	0.00	100.00	**100**
1/2"	12.5	0.00	(**)	0.00	0.00	100.00	**100**
3/8"	9.5	4.98		1.40	1.40	98.60	**99**
#4	4.75	26.27		7.38	8.78	91.22	**91**
#10	2	72.02		20.23	29.01	70.99	**71**
#20	0.85	75.88	(**)	21.32	50.33	49.67	**50**
#40	0.425	54.10		15.20	65.53	34.47	**34**
#60	0.25	57.14		16.05	81.58	18.42	**18**
#100	0.15	41.74		11.73	93.31	6.69	**7**
#140	0.106	7.67		2.15	95.46	4.54	**5**
#200	0.075	4.27		1.20	96.66	3.34	**3**
Pan	-	11.89		3.34	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By BS Date 7/21/25 Checked By AES Date 7/22/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-S2
Lab ID:	R-2025-197-001-004	Soil Color:	Gray

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	7.3	23.2	4.36	15.3	0.0516	97.6	3.3
2	7.0	23.3	4.32	15.3	0.0365	89.0	3.0
4	7.0	23.3	4.32	15.3	0.0258	89.0	3.0
8	7.0	23.3	4.32	15.3	0.0183	89.0	3.0
15	6.8	23.3	4.32	15.4	0.0134	80.7	2.7
30	6.8	23.3	4.32	15.4	0.0094	80.7	2.7
60	6.0	23.3	4.32	15.5	0.0067	55.8	1.9
240	5.8	23.8	4.13	15.6	0.0033	53.9	1.8
1440	5.5	22.7	4.55	15.6	0.0014	31.7	1.1

Soil Specimen Data

Tare No.:	200	Percent Finer than # 200:	3.34
Wt. of Tare & Dry Material (g):	179.19		
Weight of Tare (g):	171.19	Specific Gravity:	2.67 Measured
Weight of Deflocculant (g):	5.0		
Weight of Dry Material (g):	3.00		

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By BS Date 7/21/25 Checked By AES Date 7/23/25

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ATTERBERG LIMITS

ASTM D 4318-17

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-001	Sample No.:	TS-S2
Lab ID:	R-2025-197-001-004	Color:	Gray
			(MInus No. 40 sieve material)

As Received
Water Content

Tare Number	33-A
Wt. of Tare & Wet Sample (g)	561.00
Wt. of Tare & Dry Sample (g)	493.83
Weight of Tare (g)	137.84
Weight of Water (g)	67.17
Weight of Dry Sample (g)	355.99
Water Content (%)	**18.9**

NON - PLASTIC MATERIAL

Tested By *CB* *Date* *7/24/25* *Checked By* *AES* *Date* *7/24/25*

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Moisture, Ash, and Organic Matter (Loss on Ignition)

ASTM D 2974-20e1

Client: Arcadis U.S., Inc.
Client Reference: Housatonic 5A
Project No.: R-2025-197-001

Method A (To 0.1%)

Moisture Content
ASTM D2216

Lab ID:	.004	.004
Boring No.:	NA	NA
Depth (ft):	NA	NA
Sample No.:	TS-S2	TS-S2
Tare Number	3	4
Weight of Tare & Wet Sample (g)	63.13	64.49
Weight of Tare & Dry Sample (g)	58.15	59.13
Weight of Tare (g)	29.42	28.11
Weight of Water (g)	4.980	5.360
Weight of Dry Sample (g)	28.730	31.020
Moisture Content	**17.3%**	**17.3%**

Method A

Furnace Temperature (°C)		440	440
Weight of Tare & Ash (g)		57.80	58.63
Weight of Volatiles (g)		0.35	0.50
Weight of Ash (g)		28.38	30.52
Ash Content (%)		**98.8%**	**98.4%**
	Average:	**98.6%**	
Organic Matter (%)		**1.2%**	**1.6%**
	Average:	**1.4%**	

Tested By *BS* *Date* *7/18/25* *Checked By* *AES* *Date* 7/22/25

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SPECIFIC GRAVITY

ASTM D 854-14

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-001	Sample No.:	TS-S2
Lab ID:	R-2025-197-001-004	Visual Description:	Gray Poorly Graded Sand

(MInus No.4 sieve material,oven dried)

Replicate Number	**1**	**2**
Pycnometer ID:	R 543	R 748
Weight of Pycnometer & Soil & Water (g):	708	693.71
Temperature (^{o}C):	22.9	22.9
Weight of Pycnometer & Water (g):	661.30	646.58
Tare Number:	543	748
Weight of Tare & Dry Soil (g):	238.14	223.68
Weight of Tare (g):	163.15	148.68
Weight of Dry Soil (g):	74.99	75.00
Specific Gravity of Soil @ Measured Temperature:	2.650	2.691
Specific Gravity of Water @ Measured Temperature:	0.99757	0.99757
Conversion Factor for Measured Temperature:	0.99936	0.99936
Specific Gravity @ 20^{o} Celsius:	2.652	2.693

Average Specific Gravity @ 20^{o} Celsius	2.67

Tested By BS *Date* 7/21/25 *Checked By* AES *Date* 7/22/25

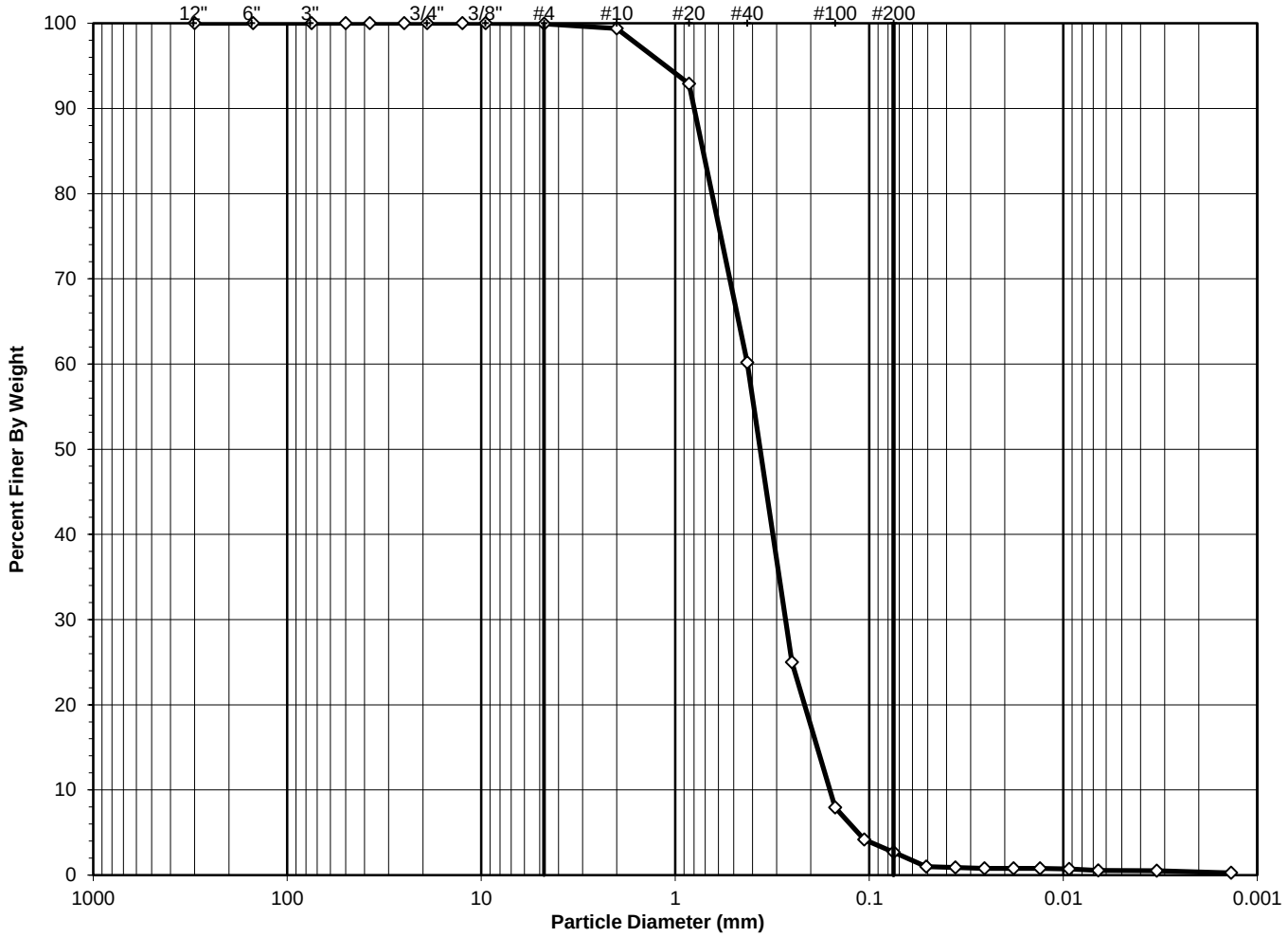
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-S3
Lab ID:	R-2025-197-001-005	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP, TESTED

D60 = 0.42 D50 = 0.36

D30 = 0.27 CU = 2.66

USCS Classification:
POORLY GRADED SAND
(NON-PLASTIC FINES)

D10 = 0.16

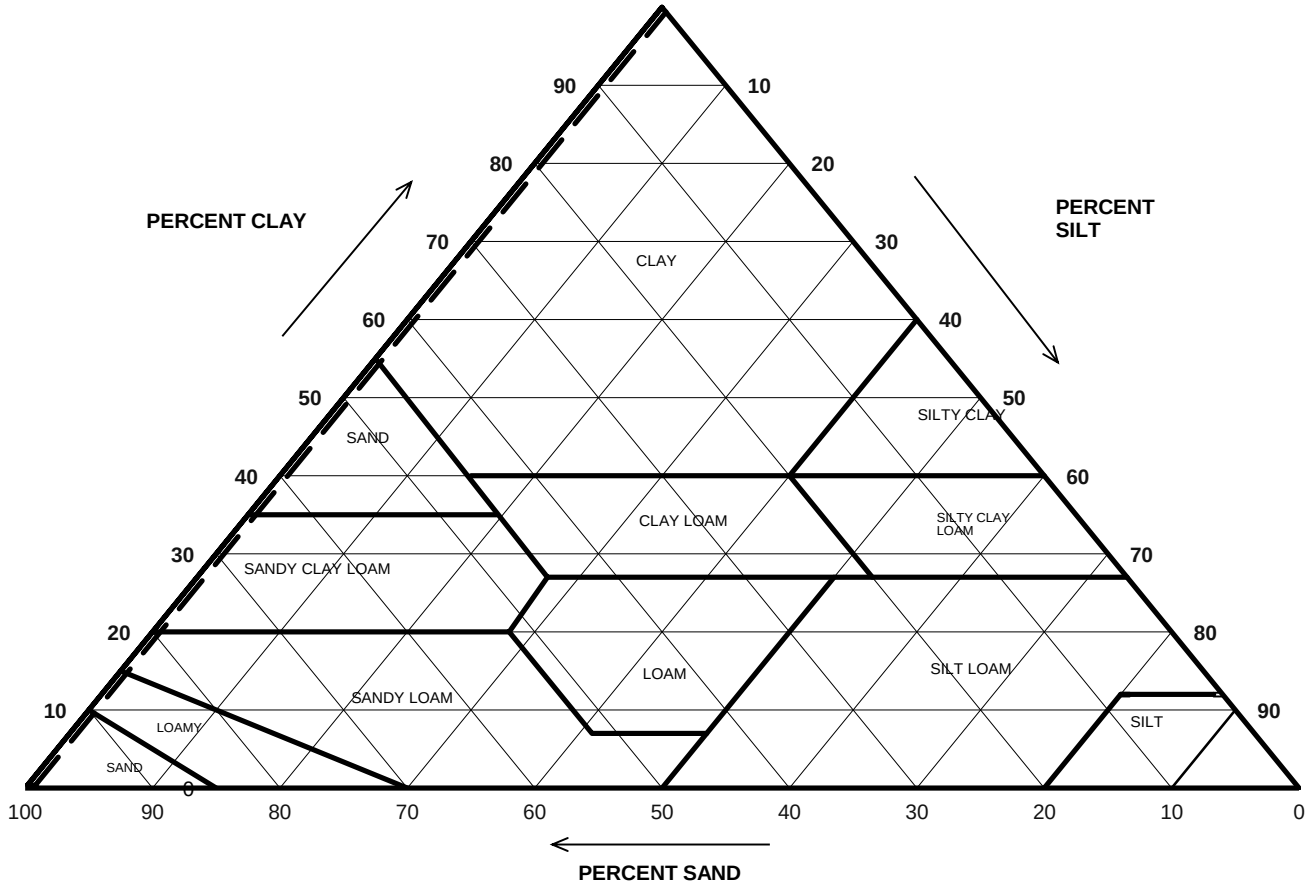
Tested By CB Date 7/21/25 Checked By AES Date 7/22/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-S3
Lab ID:	R-2025-197-001-005	Soil Color:	Gray



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**0.62**	
2	**99.38**	**Sand**	**98.40**	**99.01**
0.05	**0.98**	**Silt**	**0.61**	**0.62**
0.002	**0.37**	**Clay**	**0.37**	**0.37**

USDA Classification: SAND

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-S3
Lab ID:	R-2025-197-001-005	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	463	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	728.25	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	589.03	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	145.38	Weight of Tare (g):	NA
Weight of Water (g):	139.22	Weight of Water (g):	NA
Weight of Dry Soil (g):	443.65	Weight of Dry Soil (g):	NA
Moisture Content (%):	**31.4**	**Moisture Content (%):**	**0.0**

Dry Weight of Sample (g):	NA	Total Dry Weight of Sample (g):	443.65
Tare No. (Sub-Specimen)	463	Wet Weight of +3/4" Sample (g):	0.00
Wt. of Tare & Wet Sub-Specimen (g):	728.25	Dry Weight of + 3/4" Sample (g):	0.00
Weight of Tare (g):	145.38	Dry Weight of - 3/4" Sample (g):	443.65
Sub-Specimen Wet Weight (g):	582.87	Dry Weight -3/4" +3/8" Sample (g):	0.00
Tare No. (-3/8" Sub-Specimen):	NA	Dry Weight of -3/8" Sample (g):	443.65
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	NA	J - Factor (% Finer than 3/4"):	NA
Weight of Tare (g):	NA	J - Factor (% Finer than 3/8"):	NA
Sub-Specimen -3/8" Wet Weight (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100.0**
6"	150	0.00		0.00	0.00	100.00	**100.0**
3"	75	0.00		0.00	0.00	100.00	**100.0**
2"	50	0.00	(*)	0.00	0.00	100.00	**100.0**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100.0**
1"	25	0.00		0.00	0.00	100.00	**100.0**
3/4"	19	0.00		0.00	0.00	100.00	**100.0**
1/2"	12.5	0.00	(**)	0.00	0.00	100.00	**100.0**
3/8"	9.5	0.00		0.00	0.00	100.00	**100.0**
#4	4.75	0.25		0.06	0.06	99.94	**99.9**
#10	2	2.49		0.56	0.62	99.38	**99.4**
#20	0.85	28.77	(**)	6.48	7.10	92.90	**92.9**
#40	0.425	145.27		32.74	39.85	60.15	**60.2**
#60	0.25	155.96		35.15	75.00	25.00	**25.0**
#100	0.15	75.71		17.07	92.07	7.93	**7.9**
#140	0.106	16.75		3.78	95.84	4.16	**4.2**
#200	0.075	6.51		1.47	97.31	2.69	**2.7**
Pan	-	11.94		2.69	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By	CB	Date	7/21/25	Checked By	AES	Date	7/22/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-S3
Lab ID:	R-2025-197-001-005	Soil Color:	Gray

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	7.0	23.3	4.32	15.3	0.0509	36.6	1.0
2	6.8	23.3	4.32	15.4	0.0360	33.2	0.9
4	6.5	23.3	4.32	15.4	0.0255	29.7	0.8
8	6.5	23.3	4.32	15.4	0.0180	29.7	0.8
15	6.5	23.3	4.32	15.4	0.0132	29.7	0.8
30	6.3	23.3	4.32	15.5	0.0093	26.3	0.7
60	5.8	23.4	4.28	15.6	0.0066	20.0	0.5
240	5.5	23.8	4.13	15.6	0.0033	18.7	0.5
1440	5.3	22.7	4.55	15.7	0.0014	9.6	0.3

Soil Specimen Data

Tare No.:	201	Percent Finer than # 200:	2.69
Wt. of Tare & Dry Material (g):	176.84		
Weight of Tare (g):	164.62	Specific Gravity:	2.72 Measured
Weight of Deflocculant (g):	5.0		
Weight of Dry Material (g):	7.22		

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By BS Date 7/21/25 Checked By AES Date 7/23/25

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ATTERBERG LIMITS

ASTM D 4318-17

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-001	Sample No.:	TS-S3
Lab ID:	R-2025-197-001-005	Color:	Gray
			(MInus No. 40 sieve material)

As Received
Water Content

Tare Number	463
Wt. of Tare & Wet Sample (g)	728.25
Wt. of Tare & Dry Sample (g)	589.03
Weight of Tare (g)	145.38
Weight of Water (g)	139.22
Weight of Dry Sample (g)	443.65
Water Content (%)	**31.4**

NON - PLASTIC MATERIAL

Tested By *CB* *Date* *7/24/25* *Checked By* *AES* *Date* *7/24/25*

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Moisture, Ash, and Organic Matter (Loss on Ignition)

ASTM D 2974-20e1

Client: Arcadis U.S., Inc.
Client Reference: Housatonic 5A
Project No.: R-2025-197-001

Method A (To 0.1%)

Moisture Content
ASTM D2216

Lab ID:	.005	.005
Boring No.:	NA	NA
Depth (ft):	NA	NA
Sample No.:	TS-S3	TS-S3
Tare Number	1	2
Weight of Tare & Wet Sample (g)	71.38	66.02
Weight of Tare & Dry Sample (g)	61.21	56.58
Weight of Tare (g)	30.26	28.21
Weight of Water (g)	10.170	9.440
Weight of Dry Sample (g)	30.950	28.370
Moisture Content	**32.9%**	**33.3%**

Method A

Furnace Temperature (°C)		440	440
Weight of Tare & Ash (g)		61.02	56.44
Weight of Volatiles (g)		0.19	0.14
Weight of Ash (g)		30.76	28.23
Ash Content (%)		**99.4%**	**99.5%**
	Average:	**99.4%**	
Organic Matter (%)		**0.6%**	**0.5%**
	Average:	**0.6%**	

Tested By *BS* *Date* *7/18/25* *Checked By* *AES* *Date* 7/23/25

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SPECIFIC GRAVITY

ASTM D 854-14

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-001	Sample No.:	TS-S3
Lab ID:	R-2025-197-001-005	Visual Description:	Gray Poorly Graded Gravel with Sand

(MInus No.4 sieve material,oven dried)

Replicate Number	**1**	**2**
Pycnometer ID:	R 746	R 747
Weight of Pycnometer & Soil & Water (g):	696.39	696.89
Temperature (^{o}C):	22.9	22.9
Weight of Pycnometer & Water (g):	648.86	649.47
Tare Number:	746	747
Weight of Tare & Dry Soil (g):	225.87	226.76
Weight of Tare (g):	150.8	151.68
Weight of Dry Soil (g):	75.07	75.08
Specific Gravity of Soil @ Measured Temperature:	2.726	2.715
Specific Gravity of Water @ Measured Temperature:	0.99757	0.99757
Conversion Factor for Measured Temperature:	0.99936	0.99936
Specific Gravity @ 20^{o} Celsius:	2.728	2.716

Average Specific Gravity @ 20^{o} Celsius	2.72

Tested By BS *Date* 7/21/25 *Checked By* AES *Date* 7/22/25

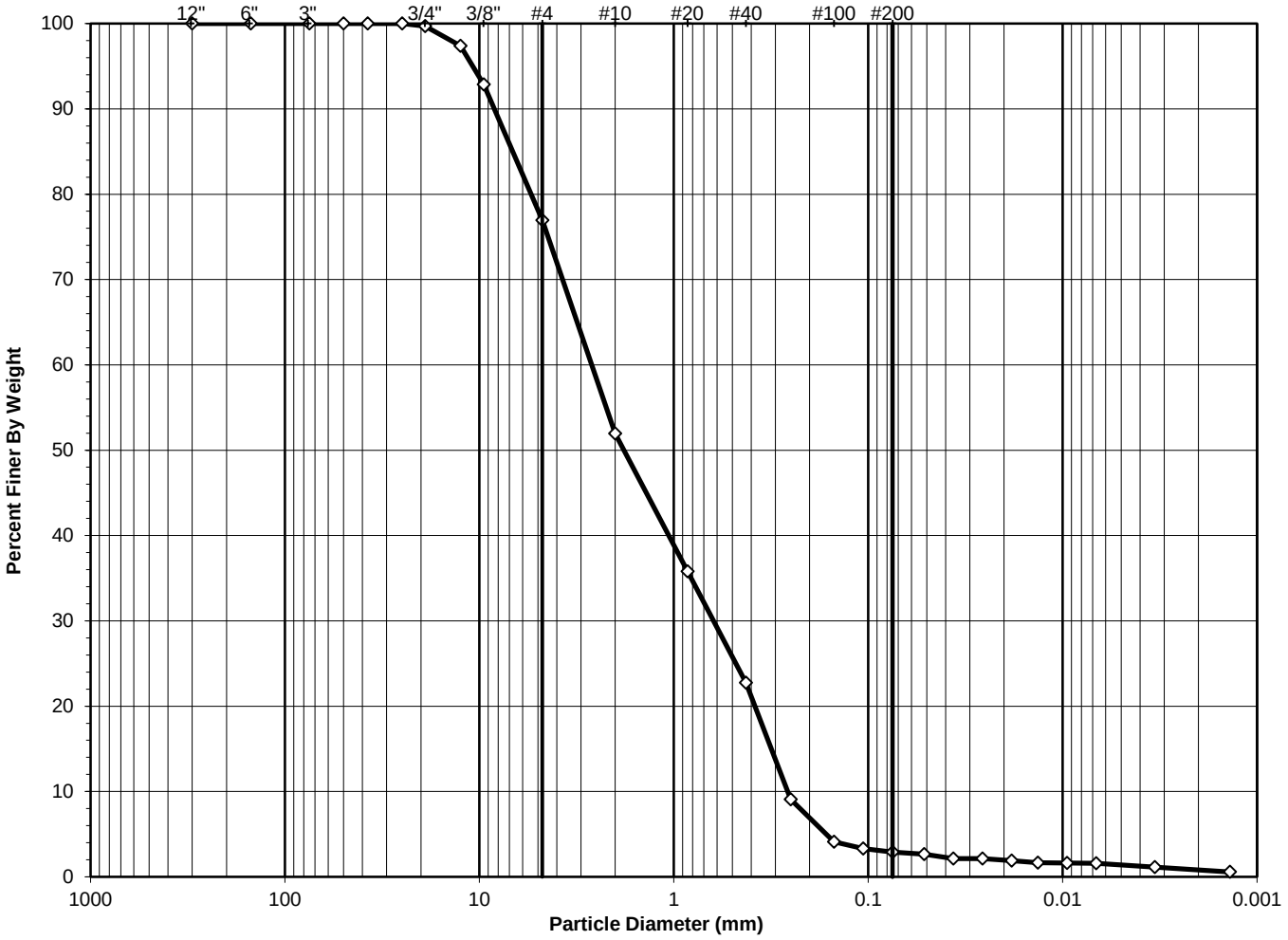
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-S4
Lab ID:	R-2025-197-001-006	Soil Color:	Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP, TESTED

D60 = 2.64 D50 = 1.80

D30 = 0.62 CU = 10.21

USCS Classification:
POORLY GRADED SAND WITH GRAVEL (NON-PLASTIC FINES)

D10 = 0.259

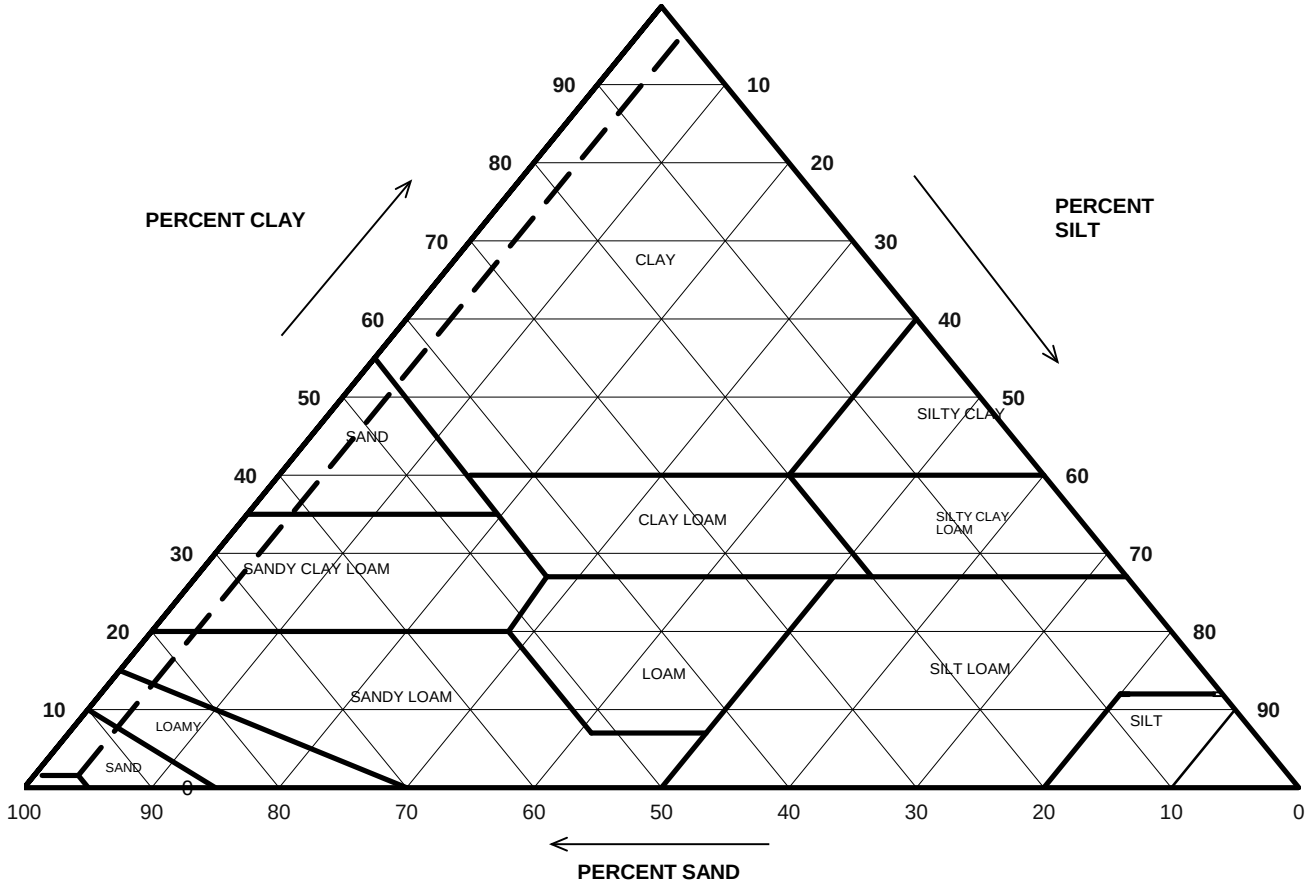
Tested By BS Date 7/30/25 Checked By AES Date 7/30/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-S4
Lab ID:	R-2025-197-001-006	Soil Color:	Brown



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**48.06**	
2	**51.94**	**Sand**	**49.33**	**94.97**
0.05	**2.61**	**Silt**	**1.80**	**3.47**
0.002	**0.81**	**Clay**	**0.81**	**1.56**

USDA Classification: SAND

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-S4
Lab ID:	R-2025-197-001-006	Soil Color:	Brown

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	11-A	Tare No.:	439
Wt. of Tare & Wet Sample (g):	377.84	Weight of Tare & Wet Sample (g):	161.08
Wt. of Tare & Dry Sample (g):	341.87	Weight of Tare & Dry Sample (g):	142.07
Weight of Tare (g):	89.10	Weight of Tare (g):	98.95
Weight of Water (g):	35.97	Weight of Water (g):	19.01
Weight of Dry Soil (g):	252.77	Weight of Dry Soil (g):	43.12
Moisture Content (%):	**14.2**	**Moisture Content (%):**	**44.1**
Wet Weight of -3/4" Sample (g):	7339.00	Total Dry Weight of Sample (g):	6444.44
Tare No. -3/4" Sub-Specimen (g):	4	Wet Weight of +3/4" Sample (g):	28.38
Wt. of Tare & Wet -3/4" Sub-Specimen (g):	2136.34	Dry Weight of + 3/4" Sample (g):	19.70
Weight of Tare (g):	313.48	Dry Weight of - 3/4" Sample (g):	6424.74
Sub-Specimen 3/4" Wet Weight (g):	1822.86	Dry Weight -3/4" +3/8" Sample (g):	439.77
Tare No. (-3/8" Sub-Specimen):	467	Dry Weight of -3/8" Sample (g):	5984.97
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	666.01	J - Factor (% Finer than 3/4"):	99.7%
Weight of Tare (g):	139.39	J - Factor (% Finer than 3/8"):	92.9%
Sub-Specimen -3/8" Wet Weight (g):	526.62		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100**
6"	150	0.00		0.00	0.00	100.00	**100**
3"	75	0.00		0.00	0.00	100.00	**100**
2"	50	0.00	(*)	0.00	0.00	100.00	**100**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100**
1"	25	0.00		0.00	0.00	100.00	**100**
3/4"	19	28.38		0.31	0.31	99.69	**100**
1/2"	12.5	37.09	(**)	2.32	2.32	97.68	**97**
3/8"	9.5	72.14		4.52	6.84	93.16	**93**
#4	4.75	79.09		17.16	17.16	82.84	**77**
#10	2	124.09		26.92	44.07	55.93	**52**
#20	0.85	80.18	(**)	17.39	61.46	38.54	**36**
#40	0.425	64.68		14.03	75.49	24.51	**23**
#60	0.25	67.87		14.72	90.22	9.78	**9**
#100	0.15	24.68		5.35	95.57	4.43	**4**
#140	0.106	3.95		0.86	96.43	3.57	**3**
#200	0.075	2.15		0.47	96.89	3.11	**3**
Pan	-	14.33		3.11	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By BS Date 7/30/25 Checked By AES Date 7/30/25

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-001	Sample No.:	TS-S4
Lab ID:	R-2025-197-001-006	Soil Color:	Brown

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	7.0	23.2	4.36	15.3	0.0515	92.1	2.7
2	6.5	23.2	4.36	15.4	0.0366	74.7	2.2
4	6.5	23.2	4.36	15.4	0.0258	74.7	2.2
8	6.3	23.2	4.36	15.5	0.0183	66.0	1.9
15	6.0	23.2	4.36	15.5	0.0134	57.3	1.7
30	6.0	23.1	4.40	15.5	0.0095	55.9	1.6
60	6.0	23.0	4.43	15.5	0.0067	54.6	1.6
240	5.5	23.2	4.36	15.6	0.0034	39.8	1.1
1440	5.0	23.0	4.43	15.7	0.0014	19.8	0.6

Soil Specimen Data

Tare No.:	217	Percent Finer than # 200:	2.89	
Wt. of Tare & Dry Material (g):	178.30			
Weight of Tare (g):	170.45	Specific Gravity:	2.68	Measured
Weight of Deflocculant (g):	5.0			
Weight of Dry Material (g):	2.85			

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By BS Date 7/31/25 Checked By AES Date 8/1/25

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ATTERBERG LIMITS

ASTM D 4318-17

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-001	Sample No.:	TS-S4
Lab ID:	R-2025-197-001-006	Color:	Brown
			(MInus No. 40 sieve material)

As Received
Water Content

Tare Number	11-A
Wt. of Tare & Wet Sample (g)	377.84
Wt. of Tare & Dry Sample (g)	341.87
Weight of Tare (g)	89.10
Weight of Water (g)	35.97
Weight of Dry Sample (g)	252.77
Water Content (%)	**14.2**

NON - PLASTIC MATERIAL

Tested By *CB* *Date* *7/30/25* *Checked By* *AES* *Date* *7/30/25*

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Moisture, Ash, and Organic Matter (Loss on Ignition)

ASTM D 2974-20e1

Client: Arcadis U.S., Inc.
Client Reference: Housatonic 5A
Project No.: R-2025-197-001

Method A (To 0.1%)

Moisture Content
ASTM D2216

Lab ID:	.006	.006
Boring No.:	NA	NA
Depth (ft):	NA	NA
Sample No.:	TS-S4	TS-S4
Tare Number	1	2
Weight of Tare & Wet Sample (g)	64.97	64.67
Weight of Tare & Dry Sample (g)	60.40	59.76
Weight of Tare (g)	30.25	28.20
Weight of Water (g)	4.570	4.910
Weight of Dry Sample (g)	30.150	31.560
Moisture Content	**15.2%**	**15.6%**

Method A

Furnace Temperature (°C)		440	440
Weight of Tare & Ash (g)		59.65	59.33
Weight of Volatiles (g)		0.75	0.43
Weight of Ash (g)		29.40	31.13
Ash Content (%)		**97.5%**	**98.6%**
	Average:	**98.1%**	
Organic Matter (%)		**2.5%**	**1.4%**
	Average:	**1.9%**	

Tested By BS *Date* 7/29/25 *Checked By* AES *Date* 7/30/25

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SPECIFIC GRAVITY

ASTM D 854-14

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-001	Sample No.:	TS-S4
Lab ID:	R-2025-197-001-006	Visual Description:	Brown Poorly Graded Sand with Gravel

(MInus No.4 sieve material,oven dried)

Replicate Number	**1**	**2**
Pycnometer ID:	R 543	R 714
Weight of Pycnometer & Soil & Water (g):	708.15	691.46
Temperature (^{o}C):	23.7	23.7
Weight of Pycnometer & Water (g):	661.21	644.32
Tare Number:	543	714
Weight of Tare & Dry Soil (g):	238.17	221.35
Weight of Tare (g):	163.15	146.3
Weight of Dry Soil (g):	75.02	75.05
Specific Gravity of Soil @ Measured Temperature:	2.672	2.689
Specific Gravity of Water @ Measured Temperature:	0.99738	0.99738
Conversion Factor for Measured Temperature:	0.99917	0.99917
Specific Gravity @ 20^{o} Celsius:	2.674	2.691

Average Specific Gravity @ 20^{o} Celsius	2.68

Tested By BS *Date* 7/29/25 *Checked By* AES *Date* 7/30/25

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Appendix A2
Photograph Log

A2: Log of Example Photographs of Sediment Dewatering Treatability Study

Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A



Photograph: 1

Description:
Sediment sample vessels as received from the field

Location:
Arcadis Treatability Laboratory, Durham, North Carolina

Date: 6/30/2025



Photograph: 2

Description:
Complete gravity drainage setup including coverings to limit evaporation from sediment

Location:
Arcadis Treatability Laboratory, Durham, North Carolina

Date: 7/31/2025

A2: Log of Example Photographs of Sediment Dewatering Treatability Study

Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A



Photograph: 3

Description:
Example of gravity drainage setup without covers on. Sediment samples TS-S4, TS-S3, and TS-S1 depicted

Location:
Arcadis Treatability Laboratory, Durham, North Carolina

Date: 8/15/2025

A2: Log of Example Photographs of Sediment Dewatering Treatability Study

Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A



Photograph: 4

Description:
Shaker test design and setup without sediment in columns

Location:
Arcadis Treatability Laboratory, Durham, North Carolina

Date: 7/31/2025

A2: Log of Example Photographs of Sediment Dewatering Treatability Study

Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A



Photograph: 5

Description:
Example of sediment stabilization test. Sediment sample TS-BW5 with Type 1L PLC after 48 hours depicted

Location:
Arcadis Treatability Laboratory, Durham, North Carolina

Date: 8/29/2025

Appendix A3
Gravity Drainage Results

Treatability Laboratory Results

Table A3-1
Gravity Dewatering Test

A3: Sediment Dewatering Treatability Study Gravity Drainage Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Sample ID	Starting Mass of Sediment	Sample Hour	Total Mass of Underflow	Drained Water	Paint Filter	Gravimetric Moisture	Geotechnical Moisture
	(kilogram)	(hour)	(gram)	(gram)		%	%
TS-S1	38.95	6	1,576	1,315	Passed	21%	27%
TS-S1		24	1,982	406	Passed	7.4%	8.0%
TS-S1		48	2,286	304	Passed	7.8%	8.4%
TS-S1		72	2,455	169	Passed	6.7%	7.1%
TS-S1		FINAL		2,194			
TS-WP	23.85	6	1,548	1,287	Passed	42%	74%
TS-WP		24	2,479	931	Passed	42%	74%
TS-WP		48	3,008	529	Passed	39%	63%
TS-WP		72	3,216	208	Passed	41%	68%
TS-WP		FINAL		2,955			
TS-S4	33.2	6	1,266	1,005	Passed	12%	13%
TS-S4		24	1,921	655	Passed	13%	15%
TS-S4		48	2,157	236	Passed	11%	13%
TS-S4		72	2,339	182	Passed	9.4%	10%
TS-S4		FINAL		2077.8			
TS-S2	34.2	6	1,147	885	Passed	14%	16%
TS-S2		24	1,587	440	Passed	14%	17%
TS-S2		48	1,932	345	Passed	3.7%	3.8%
TS-S2		72	2,056	124	Passed	12%	13%
TS-S2		FINAL		1,795			
TS-BW5	22.4	6	801	540	Passed	60%	153%
TS-BW5		24	1,604	804	Passed	58%	139%
TS-BW5		48	2,083	479	Passed	55%	124%
TS-BW5		72	2,356	273	Passed	57%	132%
TS-BW5		FINAL		2,095			
TS-S3	33.35	6	1,338	1,077	Passed	4.0%	4.1%
TS-S3		24	2,345	1,007	Passed	14%	21%
TS-S3		48	2,805	460	Passed	14%	16%
TS-S3		72	3,138	333	Passed	13%	15%
TS-S3		FINAL		2,877			

Note:
1. Sediment was allowed to drain for a total of 72 hours. At 6, 24, 48, and 72 hours of draining, measurements and data were collected from each sample.

Table A3-2
Sediment Moisture Content Calculation

ARCADIS

A3: Sediment Dewatering Treatability Study Gravity Drainage Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Sample ID	Sample Hour	Pan weight (gram)	Pan + Wet (gram)	Pan + Dry (gram)	Gravimetric Moisture	Geotechnical Moisture
TS-S1	6	1.12	34.7	27.7	21%	27%
TS-S1	24	1.11	29.0	27.0	7.4%	8.0%
TS-S1	48	1.09	27.0	25.0	7.8%	8.4%
TS-S1	72	1.13	23.3	21.8	6.7%	7.1%
TS-WP	6	1.10	33.1	19.5	42%	74%
TS-WP	24	1.09	34.4	20.3	42%	74%
TS-WP	48	1.11	20.1	12.7	39%	63%
TS-WP	72	1.12	30.6	18.7	41%	68%
TS-S4	6	1.14	30.2	26.8	12%	13%
TS-S4	24	1.09	29.4	25.7	13%	15%
TS-S4	48	1.13	26.4	23.5	11%	13%
TS-S4	72	1.10	20.3	18.5	9.4%	10%
TS-S2	6	1.12	26.2	22.8	14%	16%
TS-S2	24	1.12	25.3	21.9	14%	17%
TS-S2	48	1.12	15.8	15.2	3.7%	3.8%
TS-S2	72	1.09	23.1	20.6	12%	13%
TS-BW5	6	1.10	33.1	13.8	60%	153%
TS-BW5	24	1.12	26.5	11.8	58%	139%
TS-BW5	48	1.13	13.4	6.6	55%	124%
TS-BW5	72	1.09	28.3	12.8	57%	132%
TS-S3	6	1.09	32.8	31.5	4.0%	4.1%
TS-S3	24	1.11	28.2	23.4	17%	21%
TS-S3	48	1.11	18.8	16.4	14%	16%
TS-S3	72	1.13	21.0	18.4	13%	15%

Notes:

1. Pan weight (tare) subtracted from the pan + wet and pan + dry before calculating moisture content. Pan + wet indicates starting weight, pan + dry represents ending weight.

Geotechnical Reports

September 24, 2025

Project No. R-2025-197-002

David Liles
Arcadis U.S., Inc.
4915 Prospectus Dr., Suite G
Durham, NC 27713

david.liles@arcadis.com

Transmittal
Laboratory Test Results
Housatonic 5A

Please find attached the laboratory test results for the above referenced project. The tests were outlined on the Project Verification Form that was transmitted to your firm prior to the testing. The testing was performed in general accordance with the methods listed on the enclosed data sheets. The test results are believed to be representative of the samples that were submitted for testing and are indicative only of the specimens which were evaluated. We have no direct knowledge of the origin of the samples and imply no position with regard to the nature of the test results, i.e. pass/fail and no claims as to the suitability of the material for its intended use.

The test data and all associated project information provided shall be held in strict confidence and disclosed to other parties only with authorization by our Client. The test data submitted herein is considered integral with this report and is not to be reproduced except in whole and only with the authorization of the Client and Geotechnics. The remaining sample materials for this project will be retained for a minimum of 90 days as directed by the Geotechnics' Quality Program.

We are pleased to provide these testing services. Should you have any questions or if we may be of further assistance, please contact our office.

Respectively submitted,
Geotechnics, Inc.

Michael P. Smith
Regional Manager

We understand that you have a choice in your laboratory services and we thank you for choosing Geotechnics.

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MOISTURE CONTENT

ASTM D 2216-19

Client: Arcadis U.S., Inc.
Client Reference: Housatonic 5A
Project No.: R-2025-197-002

Lab ID:	001	002	003
Boring No.:	NA	NA	NA
Depth (ft):	NA	NA	NA
Sample No.:	TS-WP	TS-BW5	TS-S2
Tare Number	420	449	42-A
Wt. of Tare & Wet Sample (g)	843.92	775.18	1027.00
Wt. of Tare & Dry Sample (g)	572.56	445.20	406.44
Weight of Tare (g)	145.73	145.34	137.00
Weight of Water (g)	271.36	329.98	620.56
Weight of Dry Sample (g)	426.83	299.86	269.44
Water Content (%)	**63.6**	**110.0**	**230.3**

Notes :

Tested By BS *Date* 9/4/25 *Checked By* AES *Date* 9/8/25

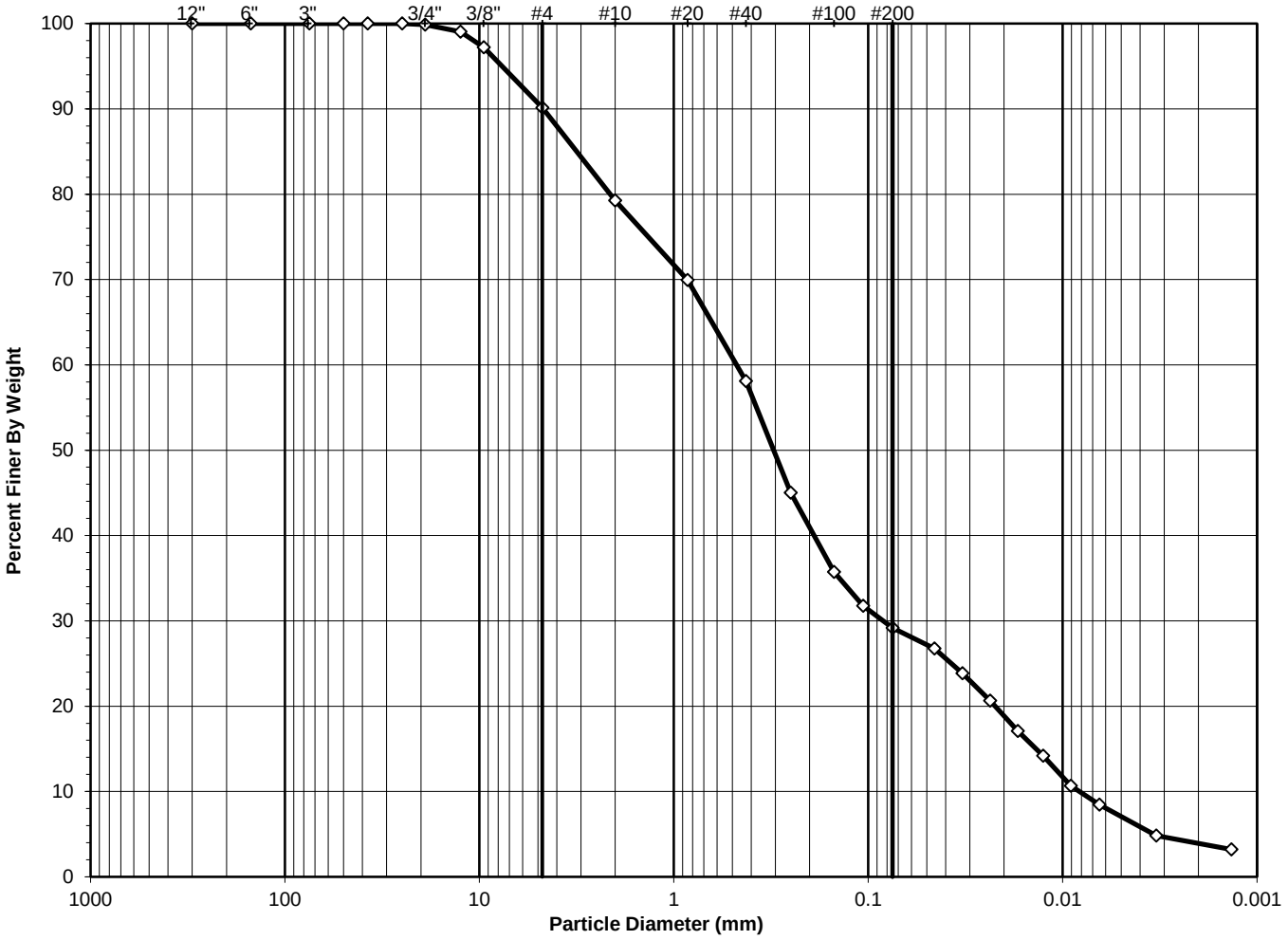
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-002	Sample No.:	TS-WP
Lab ID:	R-2025-197-002-001	Soil Color:	Dark Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SM, TESTED

D50 = 0.31

USCS Classification:
SILTY SAND

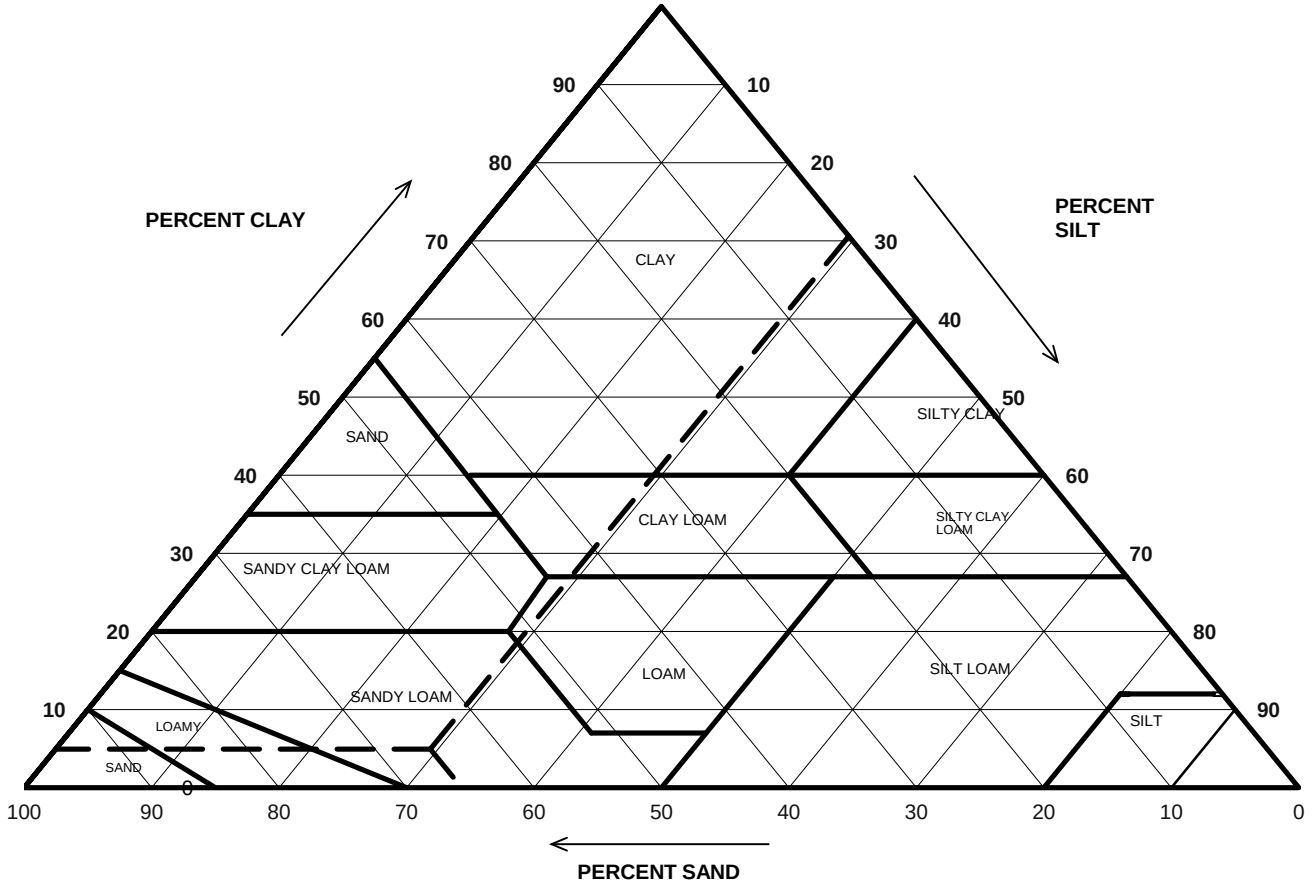
Tested By BS Date 9/10/25 Checked By AES Date 9/11/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-002	Sample No.:	TS-WP
Lab ID:	R-2025-197-002-001	Soil Color:	Dark Brown



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**20.75**	
2	**79.25**	**Sand**	**52.04**	**65.67**
0.05	**27.21**	**Silt**	**23.29**	**29.39**
0.002	**3.91**	**Clay**	**3.91**	**4.94**

USDA Classification: SANDY LOAM

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-002	Sample No.:	TS-WP
Lab ID:	R-2025-197-002-001	Soil Color:	Dark Brown

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	35-A	Tare No.:	487
Wt. of Tare & Wet Sample (g):	679.92	Weight of Tare & Wet Sample (g):	118.53
Wt. of Tare & Dry Sample (g):	479.34	Weight of Tare & Dry Sample (g):	117.93
Weight of Tare (g):	135.12	Weight of Tare (g):	99.15
Weight of Water (g):	200.58	Weight of Water (g):	0.60
Weight of Dry Soil (g):	344.22	Weight of Dry Soil (g):	18.78
Moisture Content (%):	**58.3**	**Moisture Content (%):**	**3.2**
Wet Weight of -3/4" Sample (g):	20180.62	Total Dry Weight of Sample (g):	12768.62
Tare No. -3/4" Sub-Specimen (g):	10	Wet Weight of +3/4" Sample (g):	18.51
Wt. of Tare & Wet -3/4" Sub-Specimen (g):	2219.29	Dry Weight of + 3/4" Sample (g):	17.94
Weight of Tare (g):	312.85	Dry Weight of - 3/4" Sample (g):	12750.68
Sub-Specimen 3/4" Wet Weight (g):	1906.44	Dry Weight -3/4" +3/8" Sample (g):	338.63
Tare No. (-3/8" Sub-Specimen):	406	Dry Weight of -3/8" Sample (g):	12412.05
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	723.72	J - Factor (% Finer than 3/4"):	99.9%
Weight of Tare (g):	140.13	J - Factor (% Finer than 3/8"):	97.2%
Sub-Specimen -3/8" Wet Weight (g):	583.59		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100**
6"	150	0.00		0.00	0.00	100.00	**100**
3"	75	0.00		0.00	0.00	100.00	**100**
2"	50	0.00	(*)	0.00	0.00	100.00	**100**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100**
1"	25	0.00		0.00	0.00	100.00	**100**
3/4"	19	18.51		0.14	0.14	99.86	**100**
1/2"	12.5	9.86	(**)	0.82	0.82	99.18	**99**
3/8"	9.5	22.13		1.84	2.66	97.34	**97**
#4	4.75	26.80		7.27	7.27	92.73	**90**
#10	2	41.33		11.21	18.48	81.52	**79**
#20	0.85	35.32	(**)	9.58	28.06	71.94	**70**
#40	0.425	44.88		12.17	40.23	59.77	**58**
#60	0.25	49.60		13.45	53.68	46.32	**45**
#100	0.15	35.23		9.55	63.23	36.77	**36**
#140	0.106	15.15		4.11	67.34	32.66	**32**
#200	0.075	9.77		2.65	69.99	30.01	**29**
Pan	-	110.65		30.01	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By BS Date 9/10/25 Checked By AES Date 9/11/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-002	Sample No.:	TS-WP
Lab ID:	R-2025-197-002-001	Soil Color:	Dark Brown

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	25.3	22.9	4.47	12.1	0.0456	91.7	26.8
2	23.0	22.9	4.47	12.5	0.0328	81.8	23.9
4	20.5	22.9	4.47	12.9	0.0236	70.8	20.6
8	17.8	22.9	4.47	13.4	0.0170	58.6	17.1
15	15.5	22.9	4.47	13.8	0.0126	48.7	14.2
30	12.8	22.9	4.47	14.3	0.0091	36.5	10.7
60	11.0	23.0	4.43	14.6	0.0065	29.0	8.5
240	8.3	22.8	4.51	15.1	0.0033	16.5	4.8
1440	7.0	22.8	4.51	15.3	0.0014	11.0	3.2

Soil Specimen Data

Tare No.:	215	Percent Finer than # 200:	29.17
Wt. of Tare & Dry Material (g):	199.12		
Weight of Tare (g):	171.72	Specific Gravity:	2.70 Assumed
Weight of Deflocculant (g):	5.0		
Weight of Dry Material (g):	22.40		

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By BS Date 9/17/25 Checked By AES Date 9/19/25

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ATTERBERG LIMITS

ASTM D 4318-17

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-002	Sample No.:	TS-WP
Lab ID:	R-2025-197-002-001	Soil Description:	DARK BROWN ELASTIC SILT

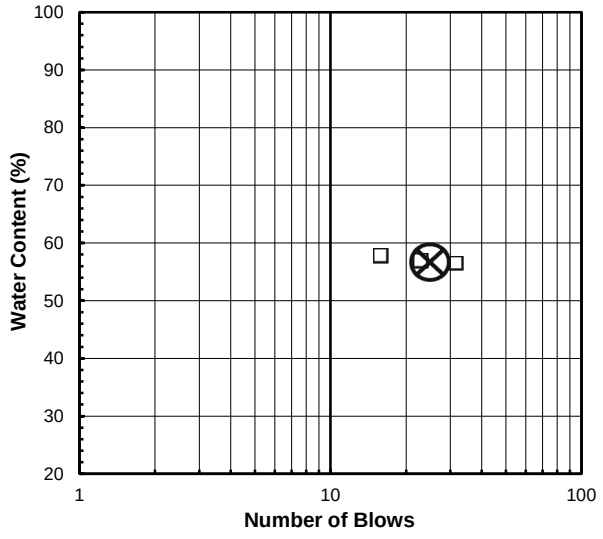
Note: The USCS symbol used with this test refers only to the minus No. 40 sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description. (Minus #40 sieve material, Air dried)

As Received Moisture Content ASTM D2216-19		**Liquid Limit Test** 1	2	3	MULTIPOINT
Tare Number:	420	B	D-1	3	
Wt. of Tare & Wet Sample (g):	843.92	27.00	28.69	26.34	
Wt. of Tare & Dry Sample (g):	572.56	22.70	23.78	22.31	
Weight of Tare (g):	145.73	15.07	15.13	15.32	
Weight of Water (g):	271.4	4.3	4.9	4.0	
Weight of Dry Sample (g):	426.8	7.6	8.7	7.0	
Was As Received MC Preserved:	**Yes**				
Moisture Content (%):	**63.6**	**56.4**	**56.8**	**57.7**	
Number of Blows:		**32**	**23**	**16**	

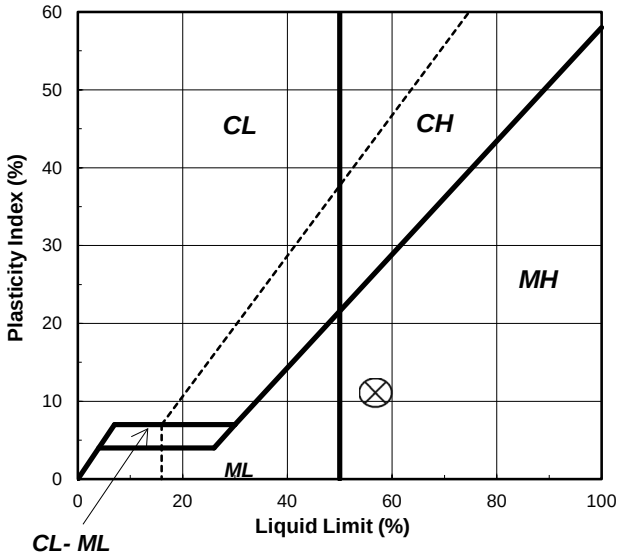
Plastic Limit Test	**1**	**2**	**Range**
Tare Number:	19	24	
Wt. of Tare & Wet Sample (g):	16.12	16.17	
Wt. of Tare & Dry Sample (g):	13.25	13.33	
Weight of Tare (g):	7.00	7.05	
Weight of Water (g):	2.9	2.8	
Weight of Dry Sample (g):	6.3	6.3	
Moisture Content (%):	**45.9**	**45.2**	**0.7**
Note: The acceptable range of the two Moisture Contents is ±			0.84

Test Results	
Liquid Limit (%):	**57**
Plastic Limit (%):	**46**
Plasticity Index (%):	**11**
USCS Symbol:	**MH**

Flow Curve



Plasticity Chart



Tested By CB *Date* 9/18/25 *Checked By* AES *Date* 9/22/25

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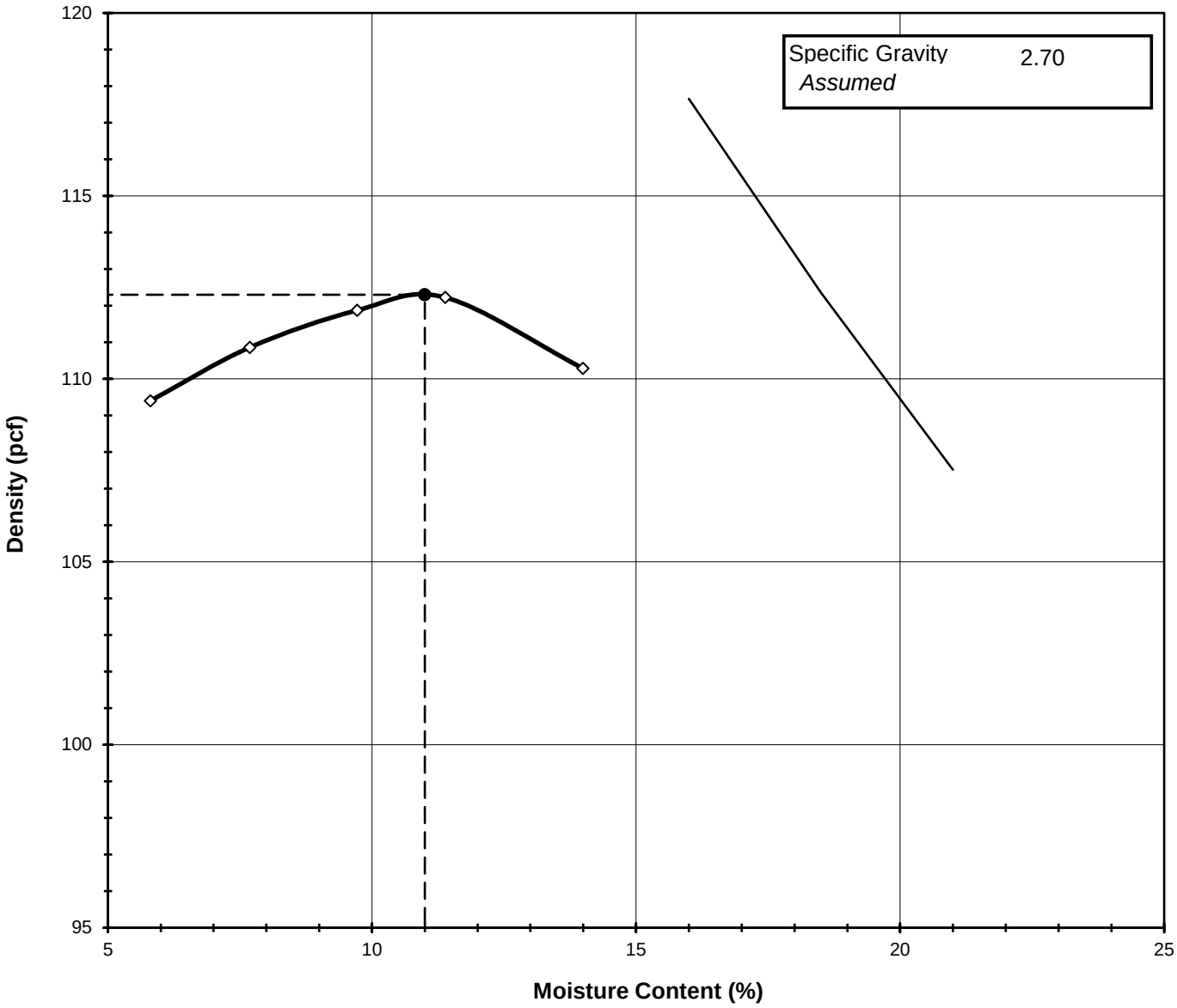
MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-002	Sample No.:	TS-WP
Lab ID:	R-2025-197-002-001	Test Method	**STANDARD**

Visual Description: Dark Brown Silty Sand

Optimum Moisture Content (%): 11.0
Maximum Dry Density (pcf): 112.3



Tested By CRW *Date* 9/9/25 *Checked By* AES *Date* 9/10/25

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MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-002	Sample No.:	TS-WP
Lab ID:	R-2025-197-002-001		

Visual Description: Dark Brown Silty Sand

Total Weight of the Sample (g):	20550
As Received Water Content (%):	NA
Assumed Specific Gravity:	2.70
Percent Retained on 3/4":	NA
Percent Retained on 3/8":	NA
Percent Retained on #4:	NA
Oversize Material:	Not included
Procedure Used:	C

Test Type:	**STANDARD**
Rammer Weight (lb):	5.5
Rammer Drop (in):	12
Rammer Type:	MECHANICAL
Machine ID:	R174
Mold ID:	R608
Mold diameter:	6"
Weight of the Mold (g):	5524
Volume of the Mold (cm^3):	2115

Mold / Specimen

Point No.	**1**	**2**	**3**	**4**	**5**
Weight of Mold & Wet Sample (g):	9448	9571	9685	9762	9786
Weight of Mold (g):	5524	5524	5524	5524	5524
Weight of Wet Sample (g):	3924	4047	4161	4237	4262
Mold Volume (cm^3):	2115	2115	2115	2115	2115

Moisture Content / Density

Tare Number:	21-A	441	721	12-A	440
Weight of Tare & Wet Sample (g):	366.40	423.10	407.70	463.40	454.90
Weight of Tare & Dry Sample (g):	351.32	399.90	379.56	424.98	411.25
Weight of Tare (g):	91.40	98.00	90.00	87.50	99.30
Weight of Water (g):	15.08	23.20	28.14	38.42	43.65
Weight of Dry Sample (g):	259.92	301.90	289.56	337.48	311.95

Wet Density (g/cm^3):	1.85	1.91	1.97	2.00	2.01
Wet Density (pcf):	115.7	119.4	122.7	125.0	125.7
Moisture Content (%):	**5.8**	**7.7**	**9.7**	**11.4**	**14.0**
Dry Density (pcf):	**109.4**	**110.9**	**111.9**	**112.2**	**110.3**

Zero Air Voids

Moisture Content (%):	16.0	18.5	21.0
Dry Unit Weight (pcf):	117.7	112.4	107.5

Tested By CRW *Date* 9/9/25 *Checked By* AES *Date* 9/10/25

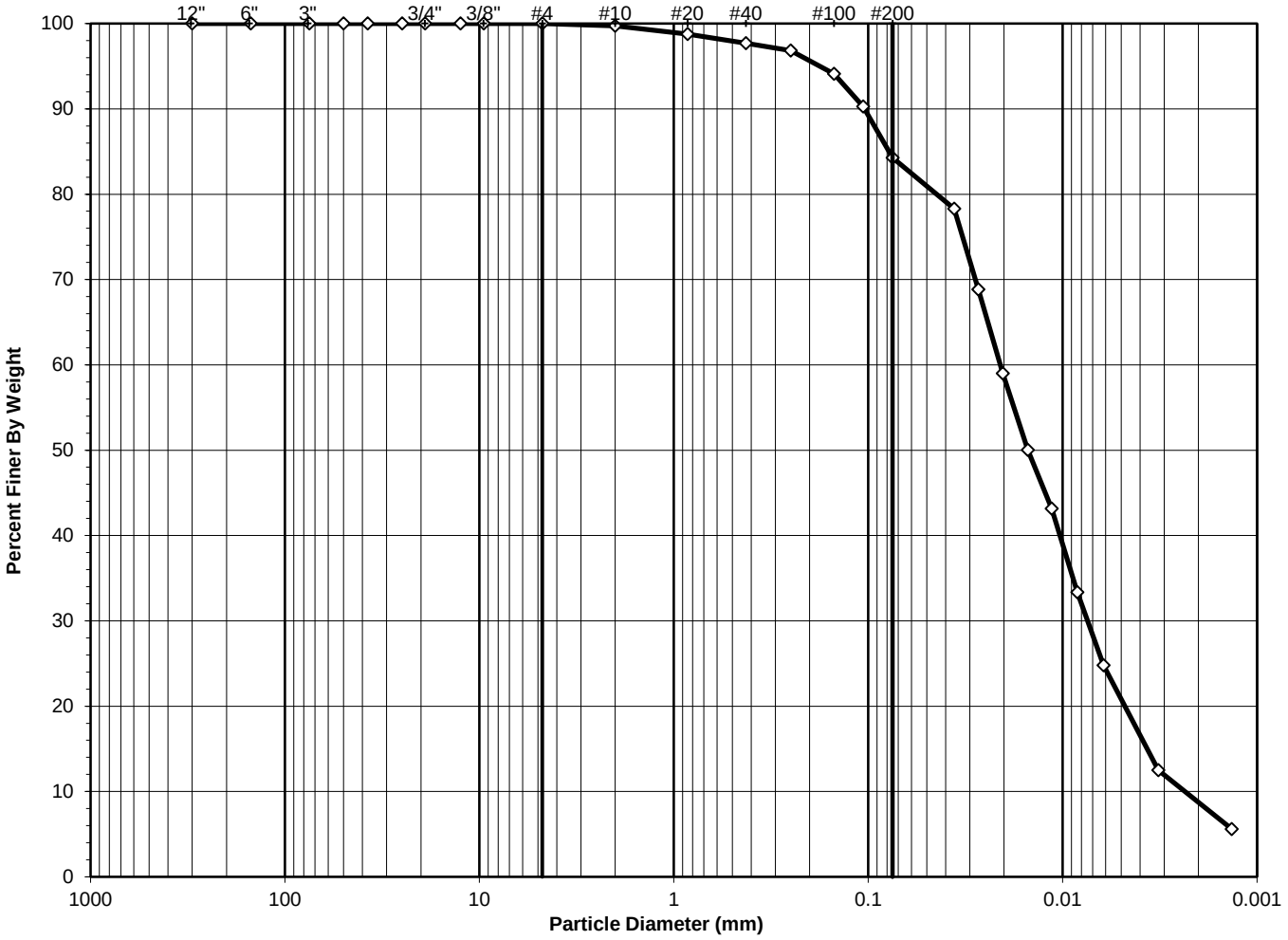
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-002	Sample No.:	TS-BW5
Lab ID:	R-2025-197-002-002	Soil Color:	Dark Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
MH, TESTED

USCS Classification:
ELASTIC SILT WITH SAND

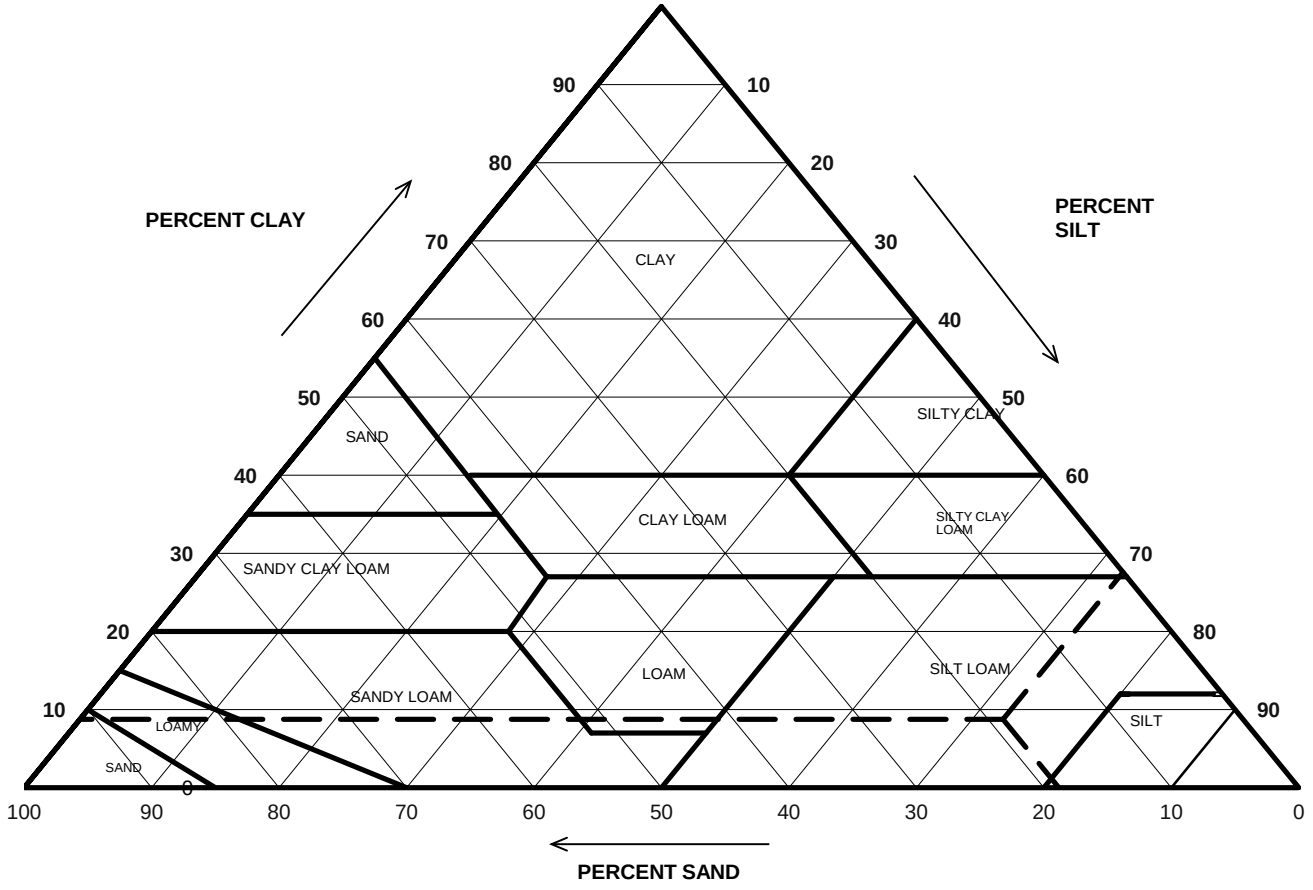
Tested By BS Date 9/16/25 Checked By AES Date 9/17/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-002	Sample No.:	TS-BW5
Lab ID:	R-2025-197-002-002	Soil Color:	Dark Brown



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**0.26**	
2	**99.74**	**Sand**	**18.78**	**18.83**
0.05	**80.96**	**Silt**	**72.23**	**72.42**
0.002	**8.73**	**Clay**	**8.73**	**8.75**

USDA Classification: SILT LOAM

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-002	Sample No.:	TS-BW5
Lab ID:	R-2025-197-002-002	Soil Color:	Dark Brown

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	741	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	590.49	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	479.34	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	139.48	Weight of Tare (g):	NA
Weight of Water (g):	111.15	Weight of Water (g):	NA
Weight of Dry Soil (g):	339.86	Weight of Dry Soil (g):	NA
Moisture Content (%):	**32.7**	**Moisture Content (%):**	**0.0**
Dry Weight of Sample (g):	NA	Total Dry Weight of Sample (g):	339.86
Tare No. (Sub-Specimen)	741	Wet Weight of +3/4" Sample (g):	0.00
Wt. of Tare & Wet Sub-Specimen (g):	590.49	Dry Weight of + 3/4" Sample (g):	0.00
Weight of Tare (g):	139.48	Dry Weight of - 3/4" Sample (g):	339.86
Sub-Specimen Wet Weight (g):	451.01	Dry Weight -3/4" +3/8" Sample (g):	0.00
Tare No. (-3/8" Sub-Specimen):	NA	Dry Weight of -3/8" Sample (g):	339.86
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	NA	J - Factor (% Finer than 3/4"):	NA
Weight of Tare (g):	NA	J - Factor (% Finer than 3/8"):	NA
Sub-Specimen -3/8" Wet Weight (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100.0**
6"	150	0.00		0.00	0.00	100.00	**100.0**
3"	75	0.00		0.00	0.00	100.00	**100.0**
2"	50	0.00	(*)	0.00	0.00	100.00	**100.0**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100.0**
1"	25	0.00		0.00	0.00	100.00	**100.0**
3/4"	19	0.00		0.00	0.00	100.00	**100.0**
1/2"	12.5	0.00	(**)	0.00	0.00	100.00	**100.0**
3/8"	9.5	0.00		0.00	0.00	100.00	**100.0**
#4	4.75	0.00		0.00	0.00	100.00	**100.0**
#10	2	0.87		0.26	0.26	99.74	**99.7**
#20	0.85	3.38	(**)	0.99	1.25	98.75	**98.7**
#40	0.425	3.56		1.05	2.30	97.70	**97.7**
#60	0.25	2.92		0.86	3.16	96.84	**96.8**
#100	0.15	9.36		2.75	5.91	94.09	**94.1**
#140	0.106	13.00		3.83	9.74	90.26	**90.3**
#200	0.075	20.36		5.99	15.73	84.27	**84.3**
Pan	-	286.41		84.27	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By BS Date 9/16/25 Checked By AES Date 9/17/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-002	Sample No.:	TS-BW5
Lab ID:	R-2025-197-002-002	Soil Color:	Dark Brown

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	50.3	22.8	4.51	7.5	0.0361	92.9	78.3
2	44.8	22.8	4.51	8.5	0.0272	81.7	68.8
4	39.0	22.8	4.51	9.6	0.0203	70.0	59.0
8	33.8	22.8	4.51	10.5	0.0151	59.3	50.0
15	29.8	22.8	4.51	11.2	0.0114	51.2	43.2
30	24.0	22.8	4.51	12.3	0.0084	39.6	33.3
60	19.0	22.8	4.51	13.2	0.0062	29.4	24.8
240	11.8	23.0	4.43	14.5	0.0032	14.8	12.5
1440	7.8	22.9	4.47	15.2	0.0013	6.7	5.6

Soil Specimen Data

Tare No.:	217	Percent Finer than # 200:	84.27
Wt. of Tare & Dry Material (g):	224.13		
Weight of Tare (g):	170.40	Specific Gravity:	2.70 Assumed
Weight of Deflocculant (g):	5.0		
Weight of Dry Material (g):	48.73		

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By BS Date 9/22/25 Checked By AES Date 9/24/25

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ATTERBERG LIMITS

ASTM D 4318-17

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-002	Sample No.:	TS-BW5
Lab ID:	R-2025-197-002-002	Soil Description:	DARK BROWN ELASTIC SILT

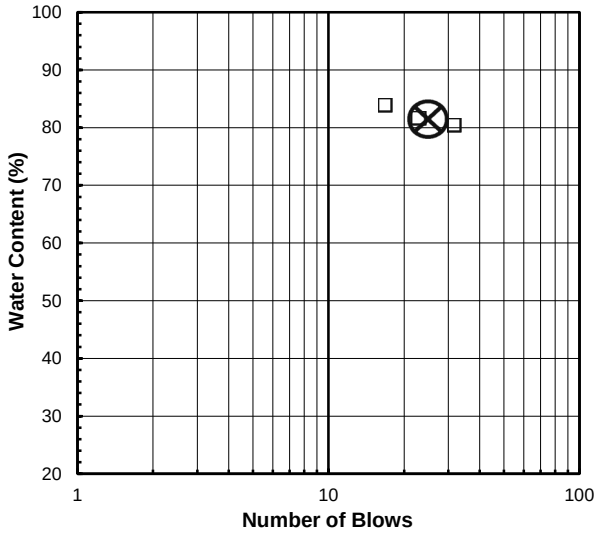
Note: The* USCS symbol used with this test refers only to the minus No. 40 *sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description. (Minus #40 sieve material, Air dried)

As Received Moisture Content		Liquid Limit Test			
ASTM D2216-19		1	2	3	M
Tare Number:	449	A-M	L2	O	U
Wt. of Tare & Wet Sample (g):	775.18	28.62	27.86	27.37	L
Wt. of Tare & Dry Sample (g):	445.20	22.68	22.14	21.78	T
Weight of Tare (g):	145.34	15.28	15.12	15.11	I
Weight of Water (g):	330.0	5.9	5.7	5.6	P
Weight of Dry Sample (g):	299.9	7.4	7.0	6.7	O
Was As Received MC Preserved:	**Yes**				I
Moisture Content (%):	**110.0**	**80.3**	**81.5**	**83.8**	N
Number of Blows:		**32**	**23**	**17**	T

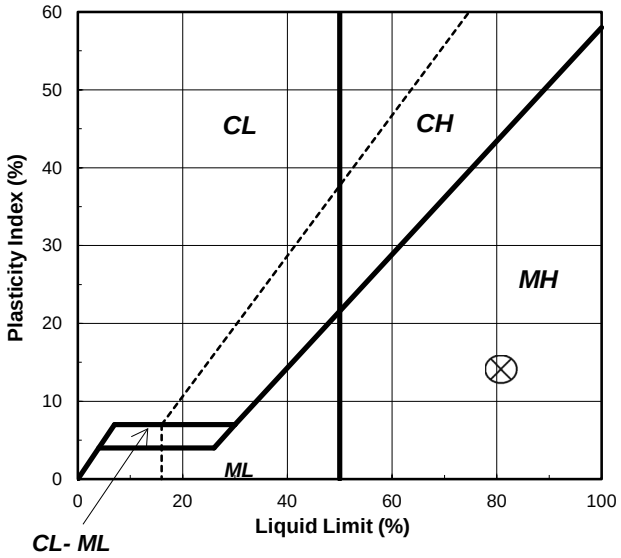
Plastic Limit Test	1	2	Range
Tare Number:	18	28	
Wt. of Tare & Wet Sample (g):	16.01	16.04	
Wt. of Tare & Dry Sample (g):	12.39	12.42	
Weight of Tare (g):	6.98	7.01	
Weight of Water (g):	3.6	3.6	
Weight of Dry Sample (g):	5.4	5.4	
Moisture Content (%):	**66.9**	**66.9**	**0.0**
Note: The acceptable range of the two Moisture Contents is ±			0.84

Test Results	
Liquid Limit (%):	**81**
Plastic Limit (%):	**67**
Plasticity Index (%):	**14**
USCS Symbol:	**MH**

Flow Curve



Plasticity Chart



Tested By CB *Date* 9/15/25 *Checked By* AES *Date* 9/17/25

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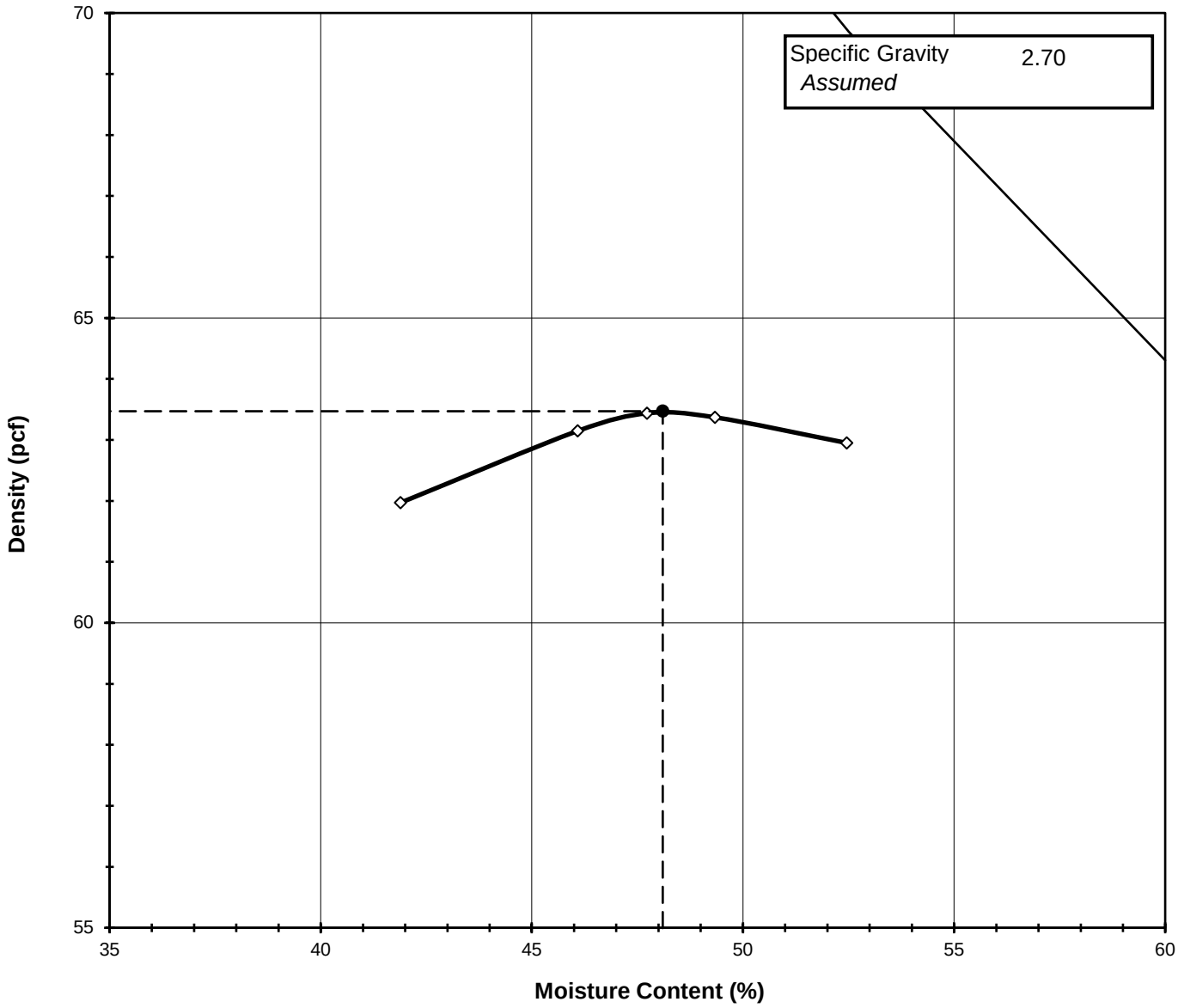
MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-002	Sample No.:	TS-BW5
Lab ID:	R-2025-197-002-002	Test Method	**STANDARD**

Visual Description: Dark Brown Elastic Silt with Sand

Optimum Moisture Content (%): 48.1
Maximum Dry Density (pcf): 63.5



Tested By CRW *Date* 9/15/25 *Checked By* DL *Date* 9/16/25

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MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-002	Sample No.:	TS-BW5
Lab ID:	R-2025-197-002-002		

Visual Description: Dark Brown Elastic Silt with Sand

Total Weight of the Sample (g):	19800
As Received Water Content (%):	NA
Assumed Specific Gravity:	2.70
Percent Retained on 3/4":	0
Percent Retained on 3/8":	0
Percent Retained on #4:	NA
Oversize Material:	Not included
Procedure Used:	B

Test Type:	**STANDARD**
Rammer Weight (lb):	5.5
Rammer Drop (in):	12
Rammer Type:	MECHANICAL
Machine ID:	R174
Mold ID:	R607
Mold diameter:	4"
Weight of the Mold (g):	4233
Volume of the Mold (cm^3):	937

Mold / Specimen

Point No.	**1**	**2**	**3**	**4**	**5**
Weight of Mold & Wet Sample (g):	5553	5618	5640	5654	5674
Weight of Mold (g):	4233	4233	4233	4233	4233
Weight of Wet Sample (g):	1320	1385	1407	1420	1441
Mold Volume (cm^3):	937	937	937	937	937

Moisture Content / Density

Tare Number:	24-A	489	717	482	19-A
Weight of Tare & Wet Sample (g):	351.40	297.80	331.20	311.20	326.30
Weight of Tare & Dry Sample (g):	273.90	234.80	253.40	240.60	244.20
Weight of Tare (g):	88.90	98.10	90.40	97.50	87.70
Weight of Water (g):	77.50	63.00	77.80	70.60	82.10
Weight of Dry Sample (g):	185.00	136.70	163.00	143.10	156.50

Wet Density (g/cm^3):	1.41	1.48	1.50	1.52	1.54
Wet Density (pcf):	87.9	92.2	93.7	94.6	96.0
Moisture Content (%):	**41.9**	**46.1**	**47.7**	**49.3**	**52.5**
Dry Density (pcf):	**62.0**	**63.1**	**63.4**	**63.4**	**62.9**

Zero Air Voids

Moisture Content (%):	45.0	52.5	60.0	
Dry Unit Weight (pcf):	76.1	69.7	64.3	

Tested By CRW *Date* 9/15/25 *Checked By* DL *Date* 9/16/25

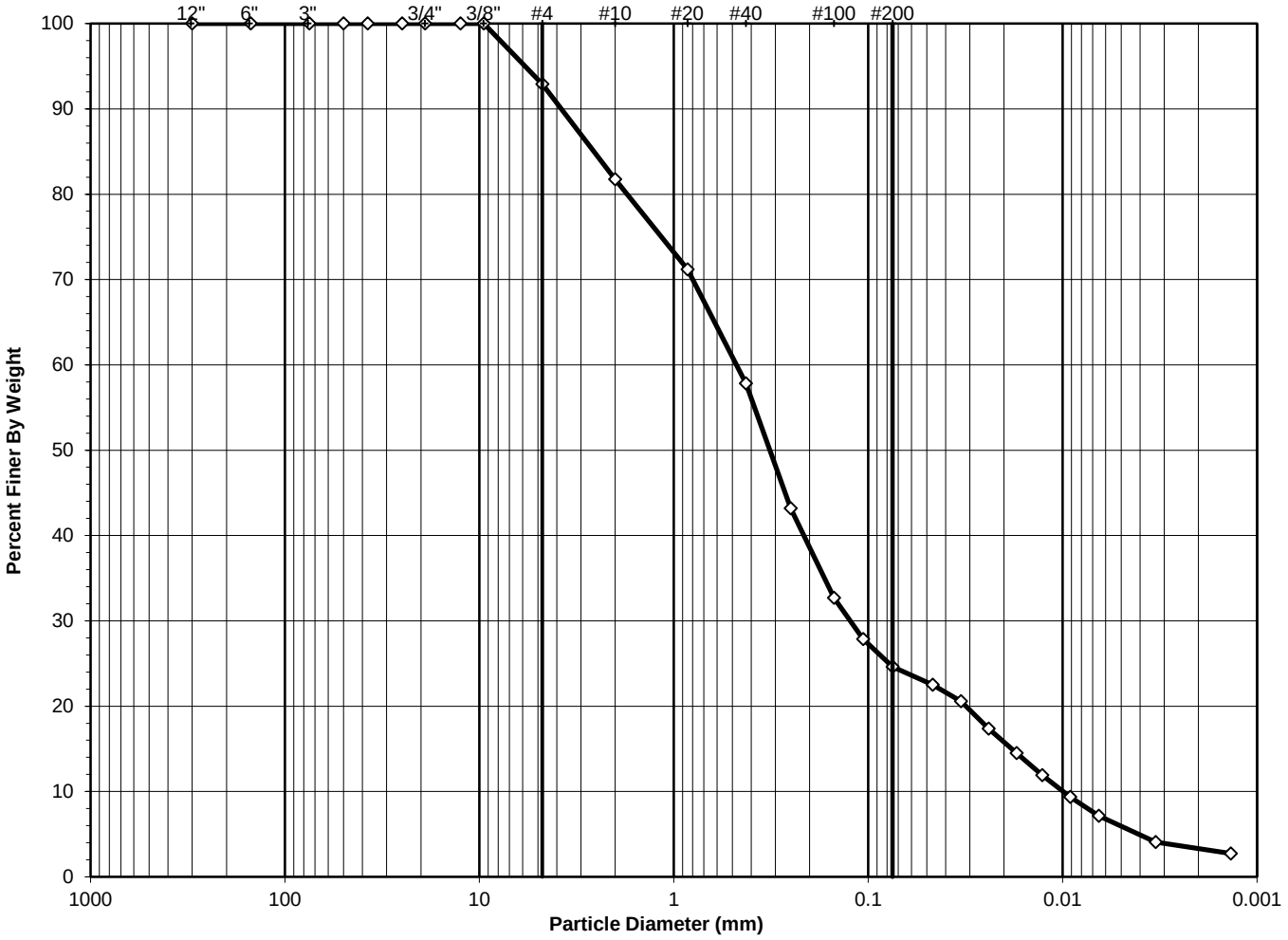
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-002	Sample No.:	TS-S2
Lab ID:	R-2025-197-002-003	Soil Color:	Dark Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SM, TESTED

D50 = 0.32

USCS Classification:
SILTY SAND

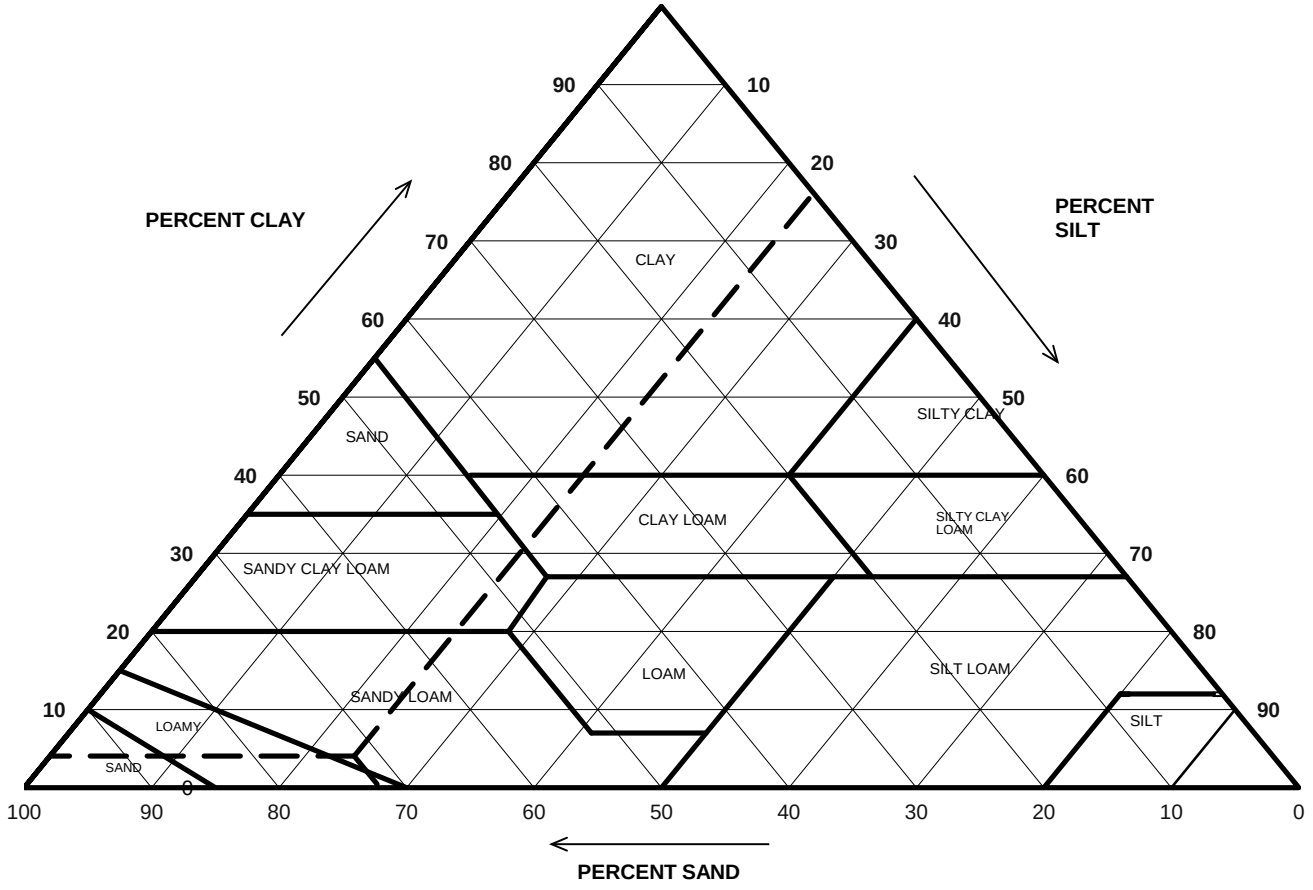
Tested By CB Date 9/16/25 Checked By AES Date 9/17/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-002	Sample No.:	TS-S2
Lab ID:	R-2025-197-002-003	Soil Color:	Dark Brown



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**18.27**	
2	**81.73**	**Sand**	**58.91**	**72.08**
0.05	**22.82**	**Silt**	**19.51**	**23.87**
0.002	**3.31**	**Clay**	**3.31**	**4.05**

USDA Classification: SANDY LOAM

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-002	Sample No.:	TS-S2
Lab ID:	R-2025-197-002-003	Soil Color:	Dark Brown

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	461	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	698.86	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	690.97	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	143.27	Weight of Tare (g):	NA
Weight of Water (g):	7.89	Weight of Water (g):	NA
Weight of Dry Soil (g):	547.70	Weight of Dry Soil (g):	NA
Moisture Content (%):	**1.4**	**Moisture Content (%):**	**0.0**

Dry Weight of Sample (g):	NA	Total Dry Weight of Sample (g):	547.70
Tare No. (Sub-Specimen)	461	Wet Weight of +3/4" Sample (g):	0.00
Wt. of Tare & Wet Sub-Specimen (g):	698.86	Dry Weight of + 3/4" Sample (g):	0.00
Weight of Tare (g):	143.27	Dry Weight of - 3/4" Sample (g):	547.70
Sub-Specimen Wet Weight (g):	555.59	Dry Weight -3/4" +3/8" Sample (g):	0.00
Tare No. (-3/8" Sub-Specimen):	NA	Dry Weight of -3/8" Sample (g):	547.70
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	NA	J - Factor (% Finer than 3/4"):	NA
Weight of Tare (g):	NA	J - Factor (% Finer than 3/8"):	NA
Sub-Specimen -3/8" Wet Weight (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100**
6"	150	0.00		0.00	0.00	100.00	**100**
3"	75	0.00		0.00	0.00	100.00	**100**
2"	50	0.00	(*)	0.00	0.00	100.00	**100**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100**
1"	25	0.00		0.00	0.00	100.00	**100**
3/4"	19	0.00		0.00	0.00	100.00	**100**
1/2"	12.5	0.00	(**)	0.00	0.00	100.00	**100**
3/8"	9.5	0.00		0.00	0.00	100.00	**100**
#4	4.75	38.91		7.10	7.10	92.90	**93**
#10	2	61.16		11.17	18.27	81.73	**82**
#20	0.85	57.71	(**)	10.54	28.81	71.19	**71**
#40	0.425	73.24		13.37	42.18	57.82	**58**
#60	0.25	80.13		14.63	56.81	43.19	**43**
#100	0.15	57.47		10.49	67.30	32.70	**33**
#140	0.106	26.46		4.83	72.13	27.87	**28**
#200	0.075	17.76		3.24	75.38	24.62	**25**
Pan	-	134.86		24.62	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By CB Date 9/16/25 Checked By AES Date 9/17/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-002	Sample No.:	TS-S2
Lab ID:	R-2025-197-002-003	Soil Color:	Dark Brown

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	22.0	22.9	4.47	12.6	0.0467	91.4	22.5
2	20.5	22.9	4.47	12.9	0.0334	83.6	20.6
4	18.0	22.9	4.47	13.4	0.0240	70.6	17.4
8	15.8	22.9	4.47	13.8	0.0172	58.8	14.5
15	13.8	22.9	4.47	14.1	0.0127	48.4	11.9
30	11.8	22.9	4.47	14.5	0.0091	38.0	9.3
60	10.0	23.0	4.43	14.8	0.0065	29.0	7.1
240	7.8	22.6	4.58	15.2	0.0033	16.5	4.1
1440	6.8	22.5	4.62	15.4	0.0014	11.1	2.7

Soil Specimen Data

Tare No.:	213	Percent Finer than # 200:	24.62
Wt. of Tare & Dry Material (g):	196.72		
Weight of Tare (g):	172.76	Specific Gravity:	2.70 Assumed
Weight of Deflocculant (g):	5.0		
Weight of Dry Material (g):	18.96		

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By BS Date 9/17/25 Checked By AES Date 9/19/25

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ATTERBERG LIMITS

ASTM D 4318-17

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-002	Sample No.:	TS-S2
Lab ID:	R-2025-197-002-003	Soil Description:	DARK BROWN ELASTIC SILT

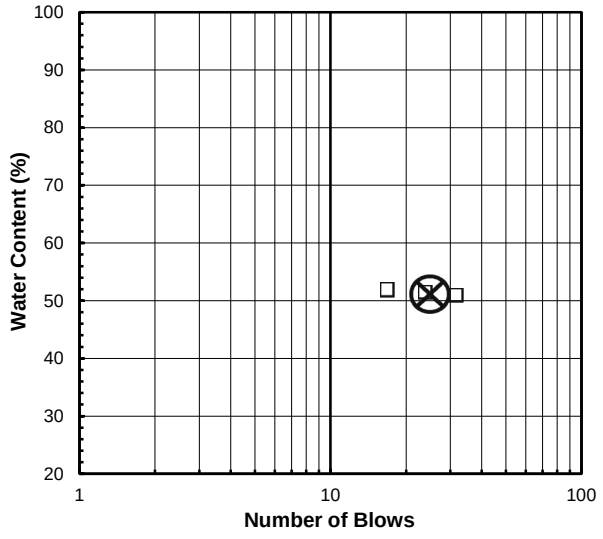
Note: The* USCS symbol used with this test refers only to the minus No. 40 *sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description. (Minus #40 sieve material, Air dried)

As Received Moisture Content		Liquid Limit Test			
ASTM D2216-19		1	2	3	M
Tare Number:	42-A	A-N	M	Q	U
Wt. of Tare & Wet Sample (g):	1027.00	27.34	30.86	29.11	L
Wt. of Tare & Dry Sample (g):	406.44	23.29	25.50	24.32	T
Weight of Tare (g):	137.00	15.32	15.05	15.07	I
Weight of Water (g):	620.6	4.1	5.4	4.8	P
Weight of Dry Sample (g):	269.4	8.0	10.5	9.3	O
Was As Received MC Preserved:	**Yes**				I
Moisture Content (%):	**230.3**	**50.8**	**51.3**	**51.8**	N
Number of Blows:		**32**	**24**	**17**	T

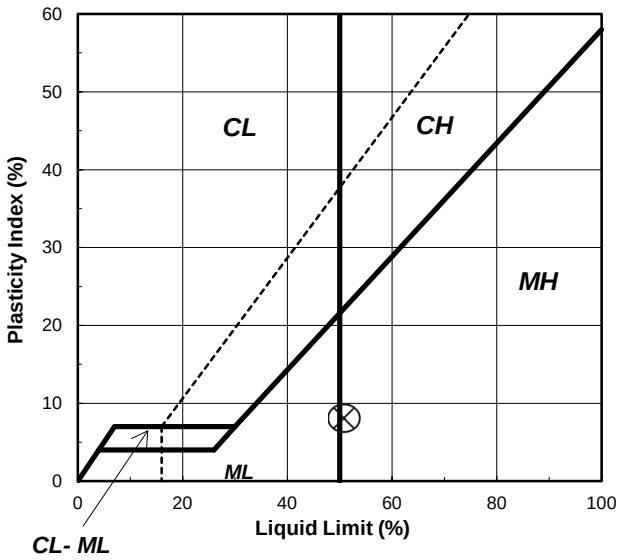
Plastic Limit Test	1	2	Range
Tare Number:	12	16	
Wt. of Tare & Wet Sample (g):	16.64	16.69	
Wt. of Tare & Dry Sample (g):	13.76	13.80	
Weight of Tare (g):	7.00	7.05	
Weight of Water (g):	2.9	2.9	
Weight of Dry Sample (g):	6.8	6.8	
Moisture Content (%):	**42.6**	**42.8**	**-0.2**
Note: The acceptable range of the two Moisture Contents is ±			0.84

Test Results	
Liquid Limit (%):	**51**
Plastic Limit (%):	**43**
Plasticity Index (%):	**8**
USCS Symbol:	**MH**

Flow Curve



Plasticity Chart



Tested By CB *Date* 9/15/25 *Checked By* AES *Date* 9/17/25

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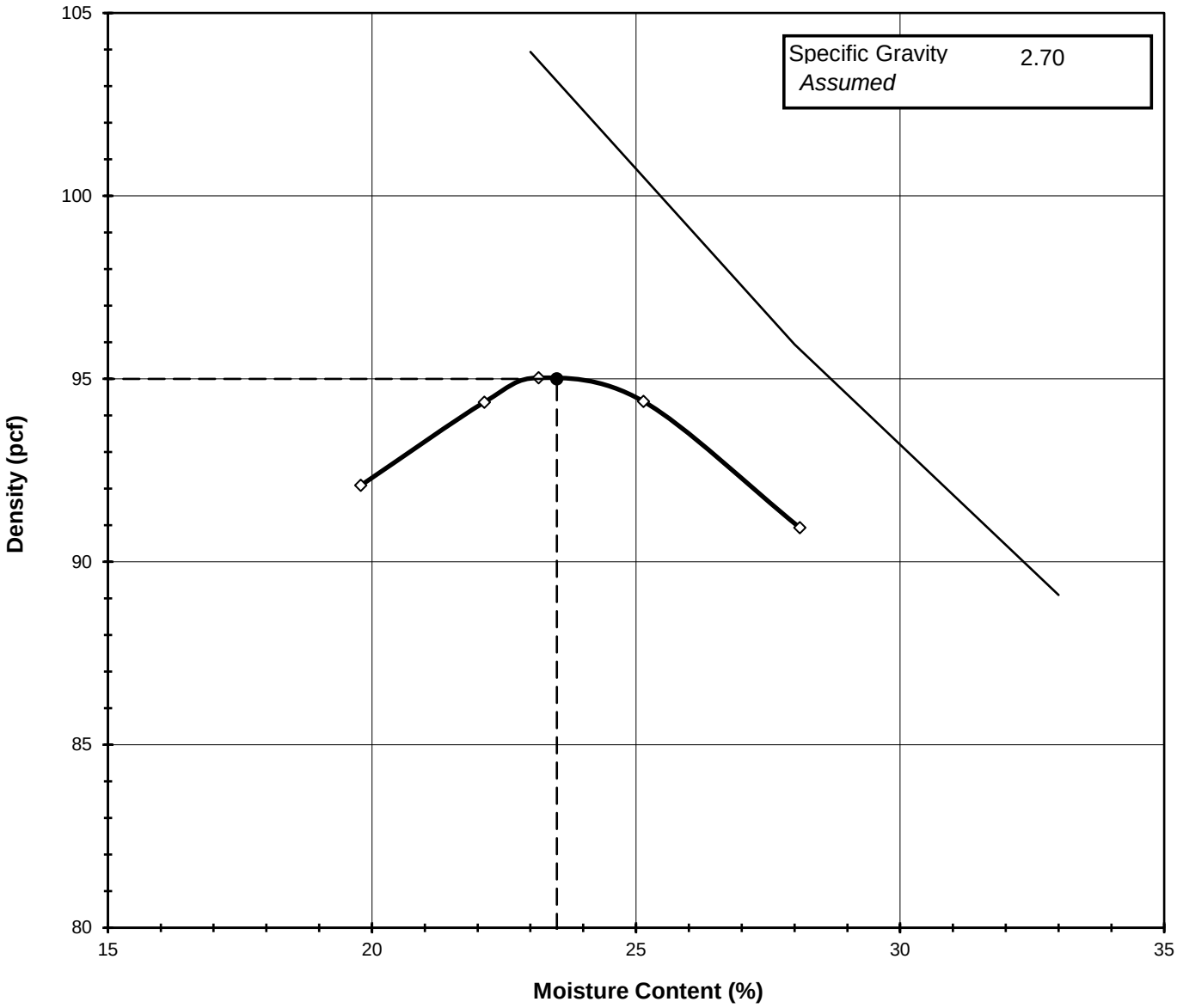
MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-002	Sample No.:	TS-S2
Lab ID:	R-2025-197-002-003	Test Method	**STANDARD**

Visual Description: Dark Brown Silty Sand

Optimum Moisture Content (%): 23.5
Maximum Dry Density (pcf): 95.0



Tested By CRW *Date* 9/5/25 *Checked By* AES *Date* 9/8/25

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MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-002	Sample No.:	TS-S2
Lab ID:	R-2025-197-002-003		

Visual Description: Dark Brown Silty Sand

Total Weight of the Sample (g):	29350
As Received Water Content (%):	NA
Assumed Specific Gravity:	2.70
Percent Retained on 3/4":	NA
Percent Retained on 3/8":	NA
Percent Retained on #4:	NA
Oversize Material:	Not included
Procedure Used:	B

Test Type:	**STANDARD**
Rammer Weight (lb):	5.5
Rammer Drop (in):	12
Rammer Type:	MECHANICAL
Machine ID:	R174
Mold ID:	R607
Mold diameter:	4"
Weight of the Mold (g):	4233
Volume of the Mold (cm^3):	937

Mold / Specimen

Point No.	**1**	**2**	**3**	**4**	**5**
Weight of Mold & Wet Sample (g):	5889	5963	5990	6006	5982
Weight of Mold (g):	4233	4233	4233	4233	4233
Weight of Wet Sample (g):	1656	1730	1757	1773	1748
Mold Volume (cm^3):	937	937	937	937	937

Moisture Content / Density

Tare Number:	434	437	19-A	472	15-A
Weight of Tare & Wet Sample (g):	351.70	341.70	398.00	382.80	380.90
Weight of Tare & Dry Sample (g):	309.99	297.73	339.64	325.83	316.30
Weight of Tare (g):	99.20	99.00	87.60	99.20	86.40
Weight of Water (g):	41.71	43.97	58.36	56.97	64.60
Weight of Dry Sample (g):	210.79	198.73	252.04	226.63	229.90

Wet Density (g/cm^3):	1.77	1.85	1.88	1.89	1.87
Wet Density (pcf):	110.3	115.2	117.0	118.1	116.5
Moisture Content (%):	**19.8**	**22.1**	**23.2**	**25.1**	**28.1**
Dry Density (pcf):	**92.1**	**94.4**	**95.0**	**94.4**	**90.9**

Zero Air Voids

Moisture Content (%):	23.0	28.0	33.0
Dry Unit Weight (pcf):	103.9	95.9	89.1

Tested By CRW *Date* 9/5/25 *Checked By* AES *Date* 9/8/25

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October 07, 2025

Project No. R-2025-197-003

David Liles
Arcadis U.S., Inc.
4915 Prospectus Dr., Suite G
Durham, NC 27713

david.liles@arcadis.com

Transmittal
Laboratory Test Results
Housatonic 5A

Please find attached the laboratory test results for the above referenced project. The tests were outlined on the Project Verification Form that was transmitted to your firm prior to the testing. The testing was performed in general accordance with the methods listed on the enclosed data sheets. The test results are believed to be representative of the samples that were submitted for testing and are indicative only of the specimens which were evaluated. We have no direct knowledge of the origin of the samples and imply no position with regard to the nature of the test results, i.e. pass/fail and no claims as to the suitability of the material for its intended use.

The test data and all associated project information provided shall be held in strict confidence and disclosed to other parties only with authorization by our Client. The test data submitted herein is considered integral with this report and is not to be reproduced except in whole and only with the authorization of the Client and Geotechnics. The remaining sample materials for this project will be retained for a minimum of 90 days as directed by the Geotechnics' Quality Program.

We are pleased to provide these testing services. Should you have any questions or if we may be of further assistance, please contact our office.

Respectively submitted,
Geotechnics, Inc.

Michael P. Smith
Regional Manager

We understand that you have a choice in your laboratory services and we thank you for choosing Geotechnics.

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MOISTURE CONTENT

ASTM D 2216-19

Client:	Arcadis U.S., Inc.
Client Reference:	Housatonic 5A
Project No.:	R-2025-197-003

Lab ID:	001	002	003
Boring No.:	NA	NA	NA
Depth (ft):	NA	NA	NA
Sample No.:	TS-S1	TS-S3	TS-S4
Tare Number	417	420	455
Wt. of Tare & Wet Sample (g)	526.86	526.36	568.51
Wt. of Tare & Dry Sample (g)	495.36	458.29	514.17
Weight of Tare (g)	141.85	145.70	141.30
Weight of Water (g)	31.50	68.07	54.34
Weight of Dry Sample (g)	353.51	312.59	372.87
Water Content (%)	**8.9**	**21.8**	**14.6**

Notes :

Tested By *CRW* *Date* *10/3/25* *Checked By* *AES* *Date* *10/7/25*

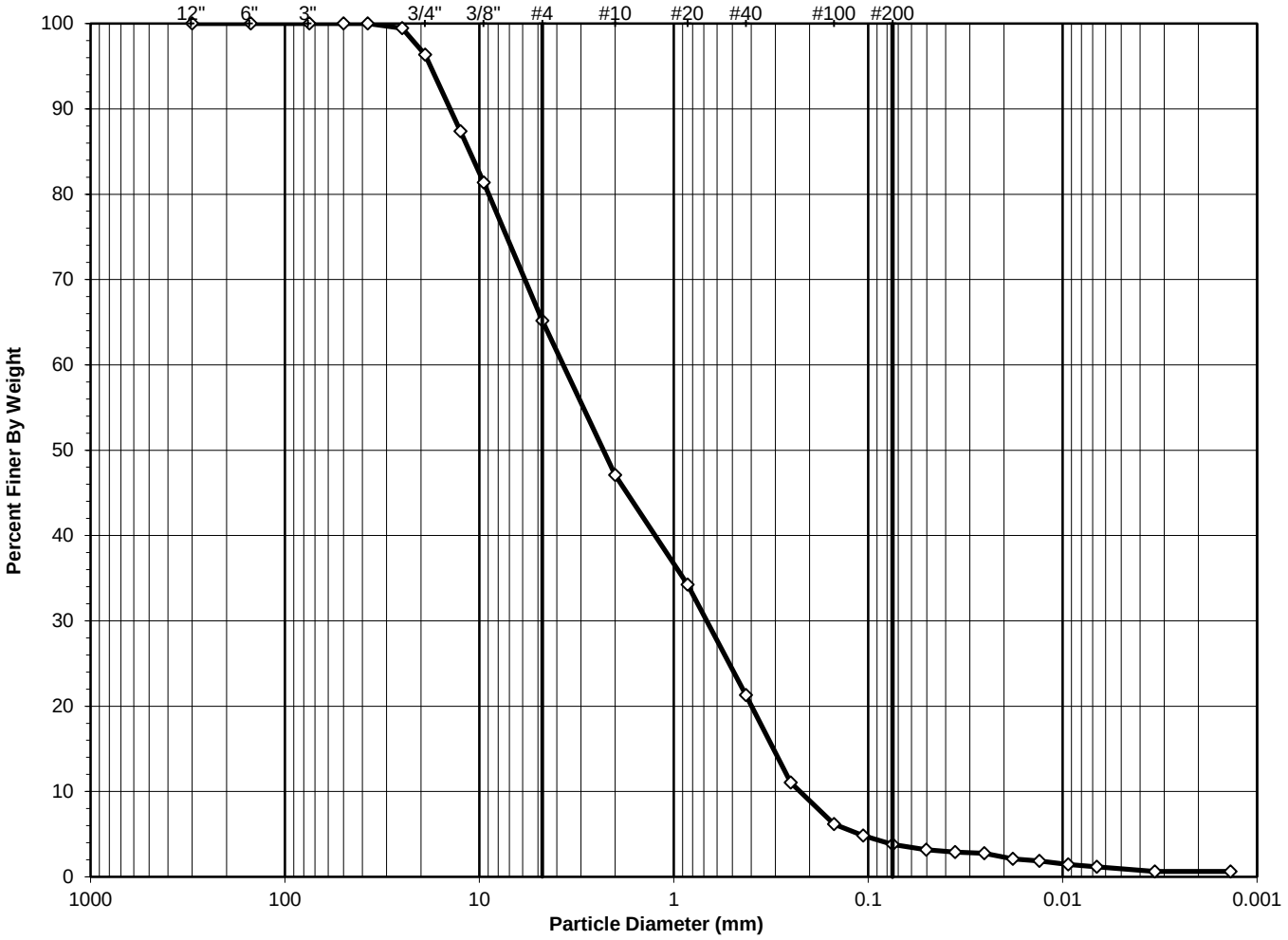
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-003	Sample No.:	TS-S1
Lab ID:	R-2025-197-003-001	Soil Color:	Dark Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP, TESTED

D60 = 3.71 D50 = 2.30

D30 = 0.68 CU = 16.57

USCS Classification:
POORLY GRADED SAND WITH GRAVEL (NON-PLASTIC FINES)

D10 = 0.224

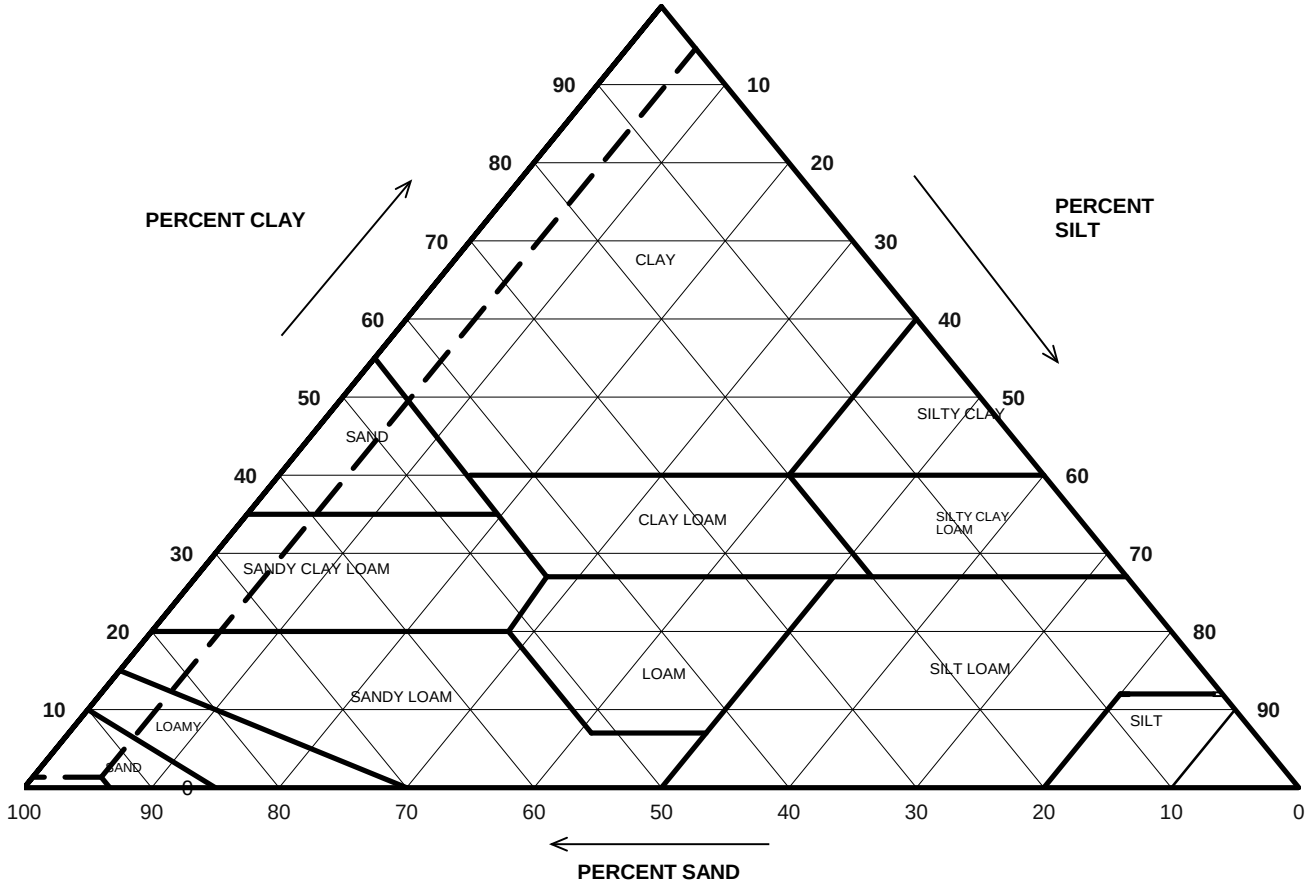
Tested By CB Date 9/29/25 Checked By AES Date 9/30/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-003	Sample No.:	TS-S1
Lab ID:	R-2025-197-003-001	Soil Color:	Dark Brown



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**52.92**	
2	**47.08**	**Sand**	**43.92**	**93.28**
0.05	**3.16**	**Silt**	**2.53**	**5.38**
0.002	**0.63**	**Clay**	**0.63**	**1.34**

USDA Classification: SAND

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-003	Sample No.:	TS-S1
Lab ID:	R-2025-197-003-001	Soil Color:	Dark Brown

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	417	Tare No.:	9
Wt. of Tare & Wet Sample (g):	526.86	Weight of Tare & Wet Sample (g):	1789.27
Wt. of Tare & Dry Sample (g):	495.36	Weight of Tare & Dry Sample (g):	1720.10
Weight of Tare (g):	141.85	Weight of Tare (g):	311.61
Weight of Water (g):	31.50	Weight of Water (g):	69.17
Weight of Dry Soil (g):	353.51	Weight of Dry Soil (g):	1408.49
Moisture Content (%):	**8.9**	**Moisture Content (%):**	**4.9**
Wet Weight of -3/4" Sample (g):	33072.34	Total Dry Weight of Sample (g):	31516.10
Tare No. -3/4" Sub-Specimen (g):	721	Wet Weight of +3/4" Sample (g):	1206.06
Wt. of Tare & Wet -3/4" Sub-Specimen (g):	2021.18	Dry Weight of + 3/4" Sample (g):	1149.60
Weight of Tare (g):	89.97	Dry Weight of - 3/4" Sample (g):	30366.49
Sub-Specimen 3/4" Wet Weight (g):	1931.21	Dry Weight -3/4" +3/8" Sample (g):	4720.56
Tare No. (-3/8" Sub-Specimen):	727	Dry Weight of -3/8" Sample (g):	25645.93
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	526.88	J - Factor (% Finer than 3/4"):	96.4%
Weight of Tare (g):	142.36	J - Factor (% Finer than 3/8"):	81.4%
Sub-Specimen -3/8" Wet Weight (g):	384.52		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100**
6"	150	0.00		0.00	0.00	100.00	**100**
3"	75	0.00		0.00	0.00	100.00	**100**
2"	50	0.00	(*)	0.00	0.00	100.00	**100**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100**
1"	25	185.04		0.56	0.56	99.44	**99**
3/4"	19	1021.02		3.09	3.65	96.35	**96**
1/2"	12.5	165.00	(**)	9.31	9.31	90.69	**87**
3/8"	9.5	110.65		6.24	15.55	84.45	**81**
#4	4.75	70.34		19.92	19.92	80.08	**65**
#10	2	78.45		22.22	42.14	57.86	**47**
#20	0.85	55.63	(**)	15.76	57.90	42.10	**34**
#40	0.425	56.18		15.91	73.81	26.19	**21**
#60	0.25	44.53		12.61	86.42	13.58	**11**
#100	0.15	21.12		5.98	92.41	7.59	**6**
#140	0.106	5.91		1.67	94.08	5.92	**5**
#200	0.075	4.43		1.25	95.34	4.66	**4**
Pan	-	16.47		4.66	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By CB Date 9/29/25 Checked By AES Date 9/30/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-003	Sample No.:	TS-S1
Lab ID:	R-2025-197-003-001	Soil Color:	Dark Brown

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	10.5	22.9	4.47	14.7	0.0504	83.5	3.2
2	10.0	22.9	4.47	14.8	0.0357	76.6	2.9
4	9.8	22.9	4.47	14.8	0.0253	73.1	2.8
8	8.5	22.9	4.47	15.1	0.0180	55.8	2.1
15	8.0	22.9	4.47	15.2	0.0132	48.9	1.9
30	7.3	22.9	4.47	15.3	0.0094	38.5	1.5
60	6.8	22.7	4.55	15.4	0.0067	30.5	1.2
240	5.8	22.7	4.55	15.6	0.0034	16.7	0.6
1440	5.8	22.7	4.55	15.6	0.0014	16.7	0.6

Soil Specimen Data

Tare No.:	213	Percent Finer than # 200:	3.80
Wt. of Tare & Dry Material (g):	184.89		
Weight of Tare (g):	172.75	Specific Gravity:	2.70 Assumed
Weight of Deflocculant (g):	5.0		
Weight of Dry Material (g):	7.14		

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By BS Date 9/30/25 Checked By AES Date 10/3/25

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ATTERBERG LIMITS

ASTM D 4318-17

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-003	Sample No.:	TS-S1
Lab ID:	R-2025-197-003-001	Color:	Dark Brown
			(MInus No. 40 sieve material)

As Received
Water Content

Tare Number	417
Wt. of Tare & Wet Sample (g)	526.86
Wt. of Tare & Dry Sample (g)	495.36
Weight of Tare (g)	141.85
Weight of Water (g)	31.50
Weight of Dry Sample (g)	353.51
Water Content (%)	**8.9**

NON - PLASTIC MATERIAL

Tested By CB *Date* 9/30/25 *Checked By* AES *Date* 9/30/25

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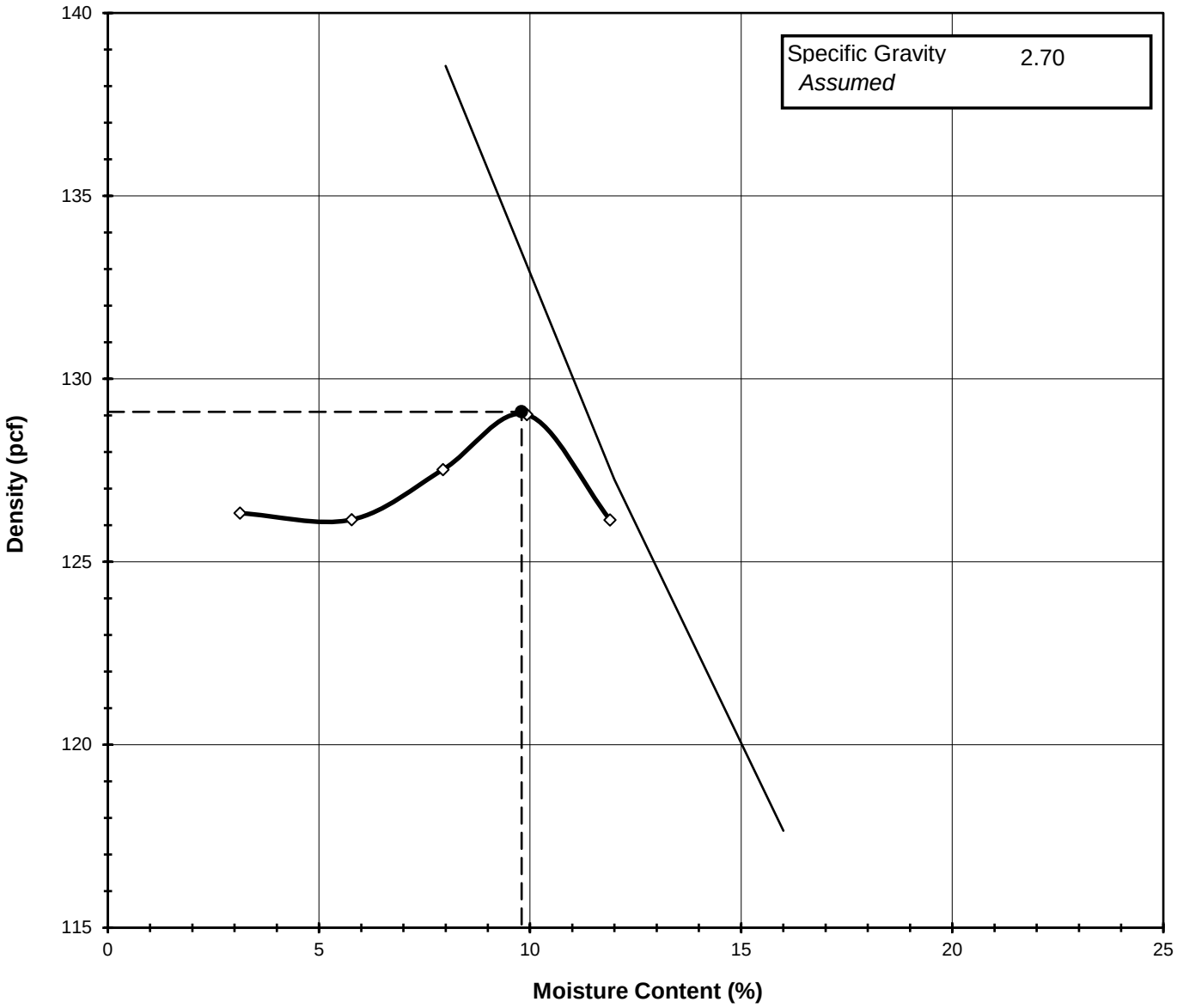
MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-003	Sample No.:	TS-S1
Lab ID:	R-2025-197-003-001	Test Method	**STANDARD**

Visual Description: Dark Brown Poorly Graded Sand with Gravel

Optimum Moisture Content (%): 9.8
Maximum Dry Density (pcf): 129.1



Tested By CRW *Date* 9/9/25 *Checked By* AES *Date* 9/10/25

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MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-003	Sample No.:	TS-S1
Lab ID:	R-2025-197-003-001		

Visual Description: Dark Brown Poorly Graded Sand with Gravel

Total Weight of the Sample (g):	34550
As Received Water Content (%):	NA
Assumed Specific Gravity:	2.70
Percent Retained on 3/4":	NA
Percent Retained on 3/8":	NA
Percent Retained on #4:	NA
Oversize Material:	Not included
Procedure Used:	C

Test Type:	**STANDARD**
Rammer Weight (lb):	5.5
Rammer Drop (in):	12
Rammer Type:	MECHANICAL
Machine ID:	R174
Mold ID:	R608
Mold diameter:	6"
Weight of the Mold (g):	5524
Volume of the Mold (cm^3):	2115

Mold / Specimen

Point No.	**1**	**2**	**3**	**4**	**5**
Weight of Mold & Wet Sample (g):	9941	10048	10190	10332	10309
Weight of Mold (g):	5524	5524	5524	5524	5524
Weight of Wet Sample (g):	4416	4523	4666	4808	4785
Mold Volume (cm^3):	2115	2115	2115	2115	2115

Moisture Content / Density

Tare Number:	435	475	8-A	444	702
Weight of Tare & Wet Sample (g):	421.10	422.10	484.00	544.10	465.90
Weight of Tare & Dry Sample (g):	411.30	404.40	455.10	503.90	426.10
Weight of Tare (g):	98.30	98.00	91.00	99.00	91.50
Weight of Water (g):	9.80	17.70	28.90	40.20	39.80
Weight of Dry Sample (g):	313.00	306.40	364.10	404.90	334.60

Wet Density (g/cm^3):	2.09	2.14	2.21	2.27	2.26
Wet Density (pcf):	130.3	133.4	137.6	141.8	141.2
Moisture Content (%):	**3.1**	**5.8**	**7.9**	**9.9**	**11.9**
Dry Density (pcf):	**126.3**	**126.2**	**127.5**	**129.0**	**126.1**

Zero Air Voids

Moisture Content (%):	8.0	12.0	16.0	
Dry Unit Weight (pcf):	138.6	127.3	117.7	

Tested By CRW *Date* 9/9/25 *Checked By* AES *Date* 9/10/25

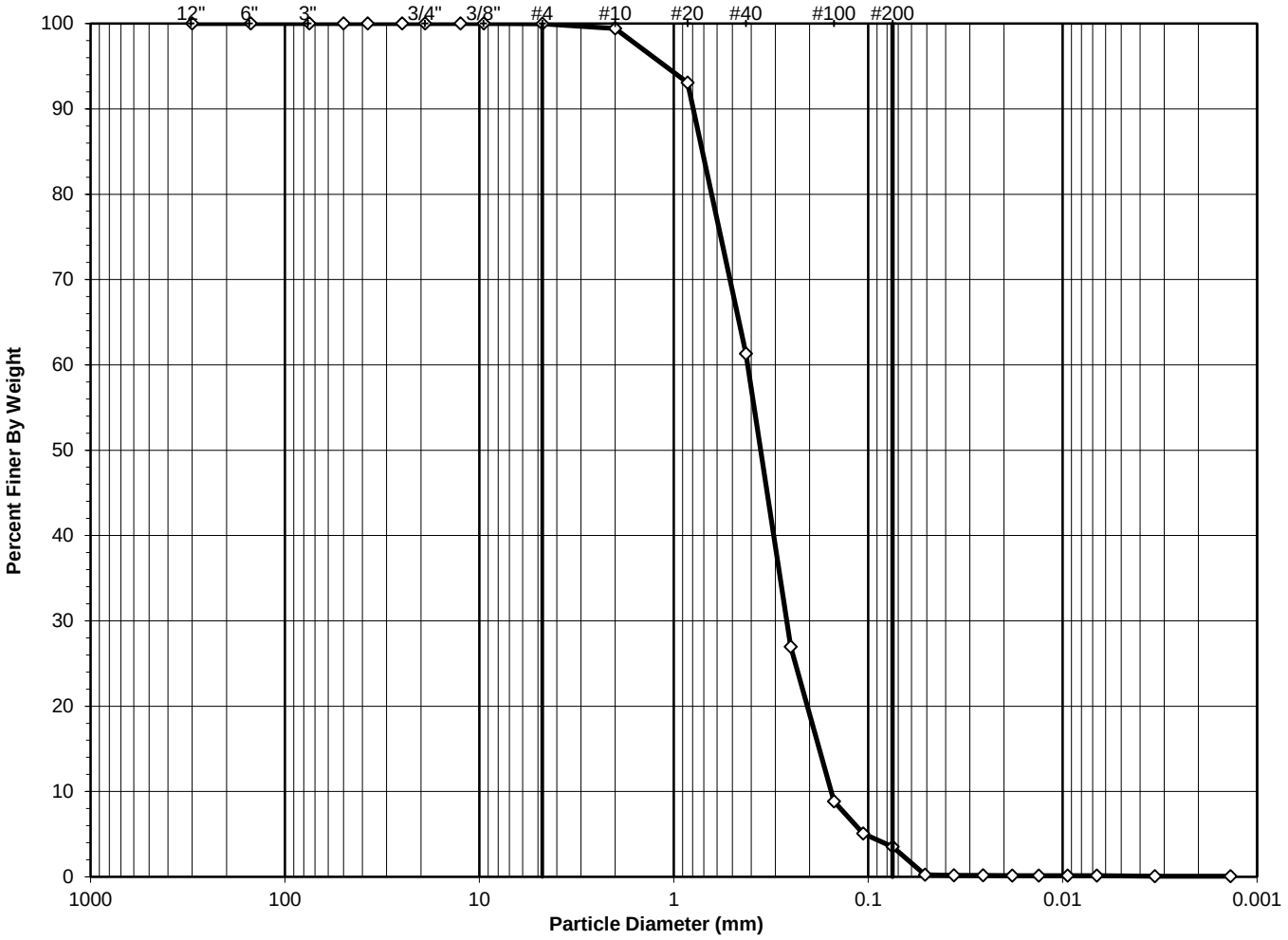
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-003	Sample No.:	TS-S3
Lab ID:	R-2025-197-003-002	Soil Color:	Dark Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP, TESTED

D60 = 0.42 D50 = 0.36

D30 = 0.26 CU = 2.69

USCS Classification:
POORLY GRADED SAND
(NON-PLASTIC FINES)

D10 = 0.155

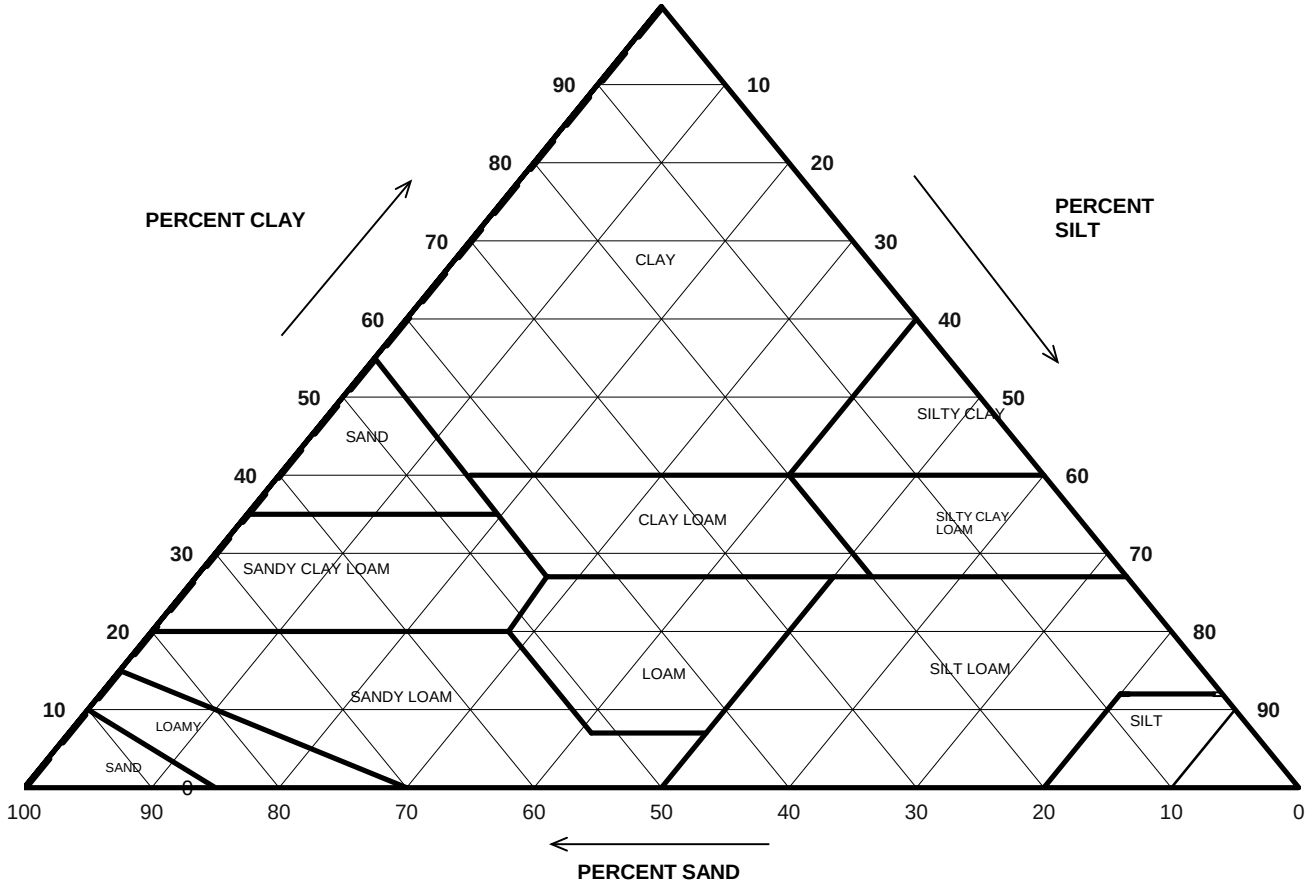
Tested By CB Date 9/29/25 Checked By AES Date 9/30/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-003	Sample No.:	TS-S3
Lab ID:	R-2025-197-003-002	Soil Color:	Dark Brown



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**0.57**	
2	**99.43**	**Sand**	**99.18**	**99.75**
0.05	**0.25**	**Silt**	**0.18**	**0.18**
0.002	**0.07**	**Clay**	**0.07**	**0.07**

USDA Classification: SAND

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-003	Sample No.:	TS-S3
Lab ID:	R-2025-197-003-002	Soil Color:	Dark Brown

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	420	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	526.36	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	458.29	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	145.70	Weight of Tare (g):	NA
Weight of Water (g):	68.07	Weight of Water (g):	NA
Weight of Dry Soil (g):	312.59	Weight of Dry Soil (g):	NA
Moisture Content (%):	**21.8**	**Moisture Content (%):**	**0.0**
Dry Weight of Sample (g):	NA	Total Dry Weight of Sample (g):	312.59
Tare No. (Sub-Specimen)	420	Wet Weight of +3/4" Sample (g):	0.00
Wt. of Tare & Wet Sub-Specimen (g):	526.36	Dry Weight of + 3/4" Sample (g):	0.00
Weight of Tare (g):	145.70	Dry Weight of - 3/4" Sample (g):	312.59
Sub-Specimen Wet Weight (g):	380.66	Dry Weight -3/4" +3/8" Sample (g):	0.00
Tare No. (-3/8" Sub-Specimen):	NA	Dry Weight of -3/8" Sample (g):	312.59
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	NA	J - Factor (% Finer than 3/4"):	NA
Weight of Tare (g):	NA	J - Factor (% Finer than 3/8"):	NA
Sub-Specimen -3/8" Wet Weight (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100.0**
6"	150	0.00		0.00	0.00	100.00	**100.0**
3"	75	0.00		0.00	0.00	100.00	**100.0**
2"	50	0.00	(*)	0.00	0.00	100.00	**100.0**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100.0**
1"	25	0.00		0.00	0.00	100.00	**100.0**
3/4"	19	0.00		0.00	0.00	100.00	**100.0**
1/2"	12.5	0.00	(**)	0.00	0.00	100.00	**100.0**
3/8"	9.5	0.00		0.00	0.00	100.00	**100.0**
#4	4.75	0.11		0.04	0.04	99.96	**100.0**
#10	2	1.67		0.53	0.57	99.43	**99.4**
#20	0.85	19.92	(**)	6.37	6.94	93.06	**93.1**
#40	0.425	99.28		31.76	38.70	61.30	**61.3**
#60	0.25	107.35		34.34	73.04	26.96	**27.0**
#100	0.15	56.59		18.10	91.15	8.85	**8.9**
#140	0.106	11.79		3.77	94.92	5.08	**5.1**
#200	0.075	4.89		1.56	96.48	3.52	**3.5**
Pan	-	10.99		3.52	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By CB Date 9/29/25 Checked By AES Date 9/30/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-003	Sample No.:	TS-S3
Lab ID:	R-2025-197-003-002	Soil Color:	Dark Brown

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	8.8	22.8	4.51	15.0	0.0509	7.3	0.3
2	7.5	22.8	4.51	15.2	0.0363	5.2	0.2
4	7.3	22.8	4.51	15.3	0.0257	4.7	0.2
8	7.0	22.9	4.47	15.3	0.0182	4.4	0.2
15	7.0	22.9	4.47	15.3	0.0133	4.4	0.2
30	6.8	22.7	4.55	15.4	0.0094	3.8	0.1
60	6.8	22.7	4.55	15.4	0.0067	3.8	0.1
240	5.8	22.7	4.55	15.6	0.0034	2.1	0.1
1440	5.8	22.7	4.55	15.6	0.0014	2.1	0.1

Soil Specimen Data

Tare No.:	203	Percent Finer than # 200:	3.52
Wt. of Tare & Dry Material (g):	172.75		
Weight of Tare (g):	110.35	Specific Gravity:	2.70 Assumed
Weight of Deflocculant (g):	5.0		
Weight of Dry Material (g):	57.40		

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By BS Date 9/30/25 Checked By AES Date 10/3/25

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ATTERBERG LIMITS

ASTM D 4318-17

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-003	Sample No.:	TS-S3
Lab ID:	R-2025-197-003-002	Color:	Dark Brown
			(MInus No. 40 sieve material)

As Received
Water Content

Tare Number	420
Wt. of Tare & Wet Sample (g)	526.36
Wt. of Tare & Dry Sample (g)	458.29
Weight of Tare (g)	145.70
Weight of Water (g)	68.07
Weight of Dry Sample (g)	312.59
Water Content (%)	**21.8**

NON - PLASTIC MATERIAL

Tested By *CB* *Date* *9/30/25* *Checked By* *AES* *Date* *10/1/25*

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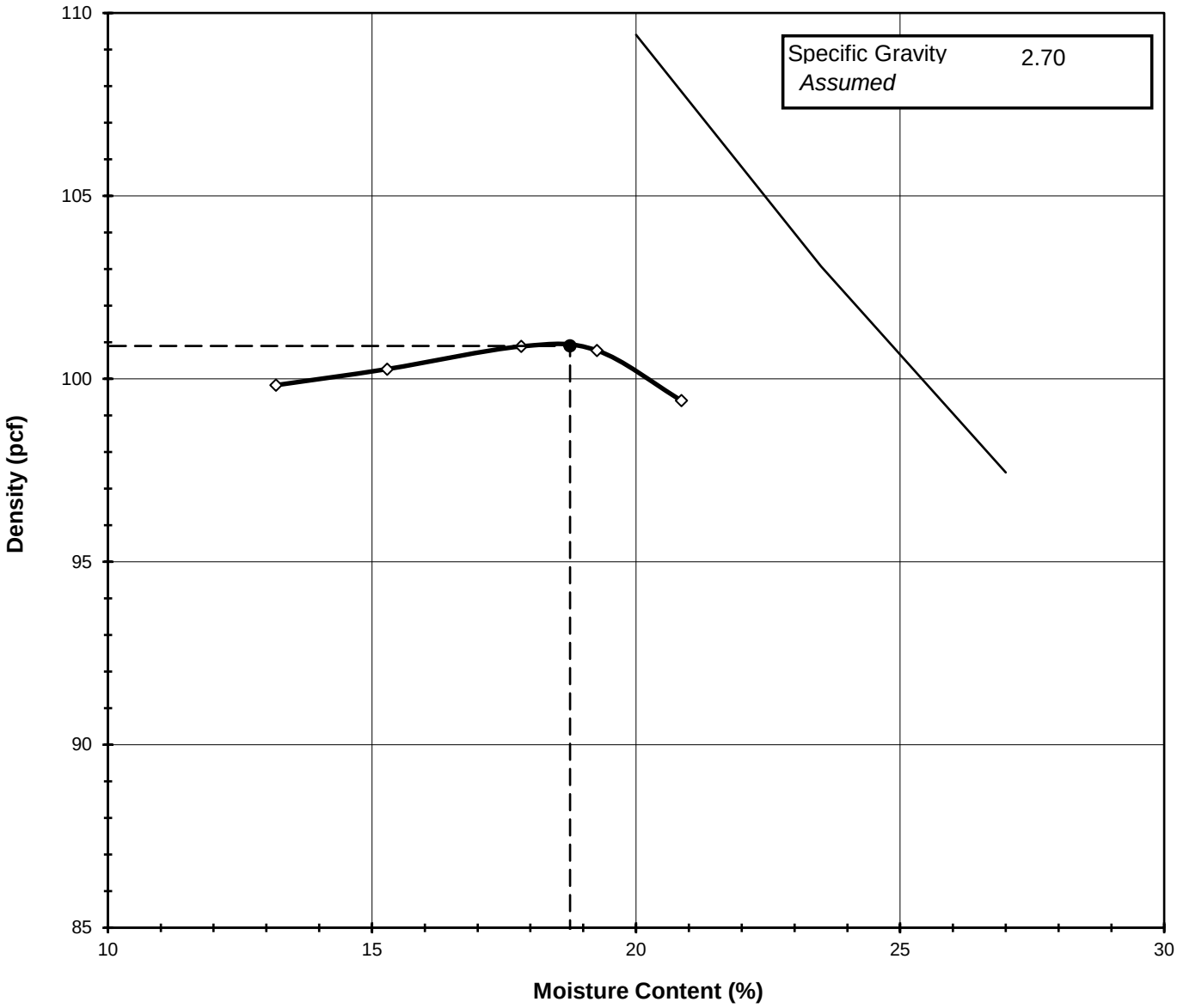
MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-003	Sample No.:	TS-S3
Lab ID:	R-2025-197-003-002	Test Method	**STANDARD**

Visual Description: Dark Brown Poorly Graded Sand

Optimum Moisture Content (%): 18.8
Maximum Dry Density (pcf): 100.9



Tested By CRW *Date* 10/3/25 *Checked By* AES *Date* 10/3/25

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MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-003	Sample No.:	TS-S3
Lab ID:	R-2025-197-003-002		

Visual Description: Dark Brown Poorly Graded Sand

Total Weight of the Sample (g):	28700
As Received Water Content (%):	NA
Assumed Specific Gravity:	2.70
Percent Retained on 3/4":	NA
Percent Retained on 3/8":	NA
Percent Retained on #4:	NA
Oversize Material:	Not included
Procedure Used:	B

Test Type:	**STANDARD**
Rammer Weight (lb):	5.5
Rammer Drop (in):	12
Rammer Type:	MECHANICAL
Machine ID:	R174
Mold ID:	R607
Mold diameter:	4"
Weight of the Mold (g):	4233
Volume of the Mold (cm^3):	937

Mold / Specimen

Point No.	**1**	**2**	**3**	**4**	**5**
Weight of Mold & Wet Sample (g):	5929	5968	6017	6037	6036
Weight of Mold (g):	4233	4233	4233	4233	4233
Weight of Wet Sample (g):	1696	1735	1784	1804	1803
Mold Volume (cm^3):	937	937	937	937	937

Moisture Content / Density

Tare Number:	20-A	8-A	429	435	429
Weight of Tare & Wet Sample (g):	462.70	412.40	404.60	532.40	533.00
Weight of Tare & Dry Sample (g):	419.50	369.80	358.20	462.30	457.90
Weight of Tare (g):	91.80	91.10	97.90	98.30	97.90
Weight of Water (g):	43.20	42.60	46.40	70.10	75.10
Weight of Dry Sample (g):	327.70	278.70	260.30	364.00	360.00

Wet Density (g/cm^3):	1.81	1.85	1.91	1.93	1.93
Wet Density (pcf):	113.0	115.6	118.9	120.2	120.1
Moisture Content (%):	**13.2**	**15.3**	**17.8**	**19.3**	**20.9**
Dry Density (pcf):	**99.8**	**100.3**	**100.9**	**100.8**	**99.4**

Zero Air Voids

Moisture Content (%):	20.0	23.5	27.0
Dry Unit Weight (pcf):	109.4	103.1	97.4

Tested By CRW *Date* 10/3/25 *Checked By* AES *Date* 10/3/25

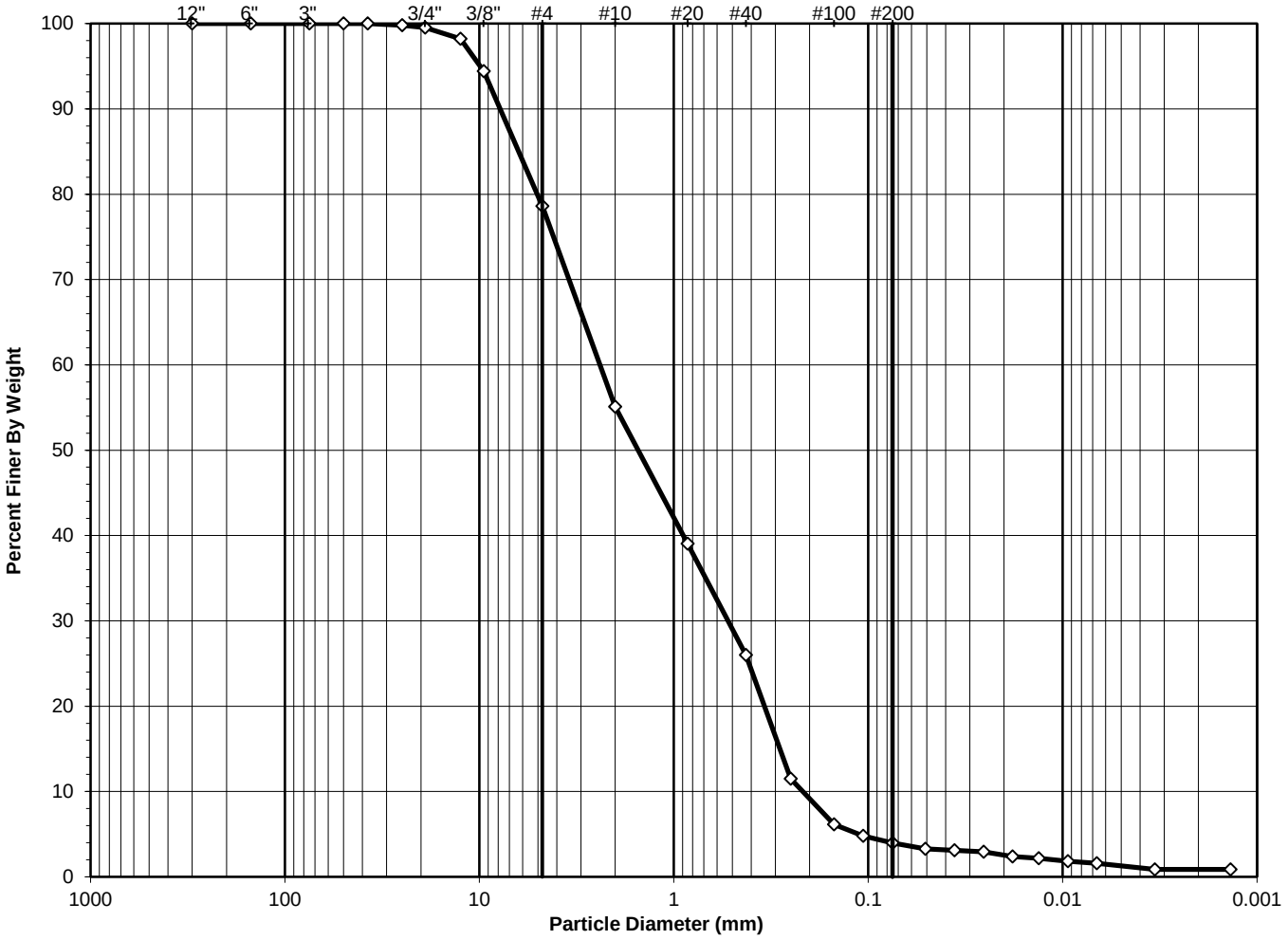
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-003	Sample No.:	TS-S4
Lab ID:	R-2025-197-003-003	Soil Color:	Dark Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP, TESTED

D60 = 2.40 D50 = 1.52

D30 = 0.53 CU = 11.05

USCS Classification:
POORLY GRADED SAND WITH GRAVEL (NON-PLASTIC FINES)

D10 = 0.217

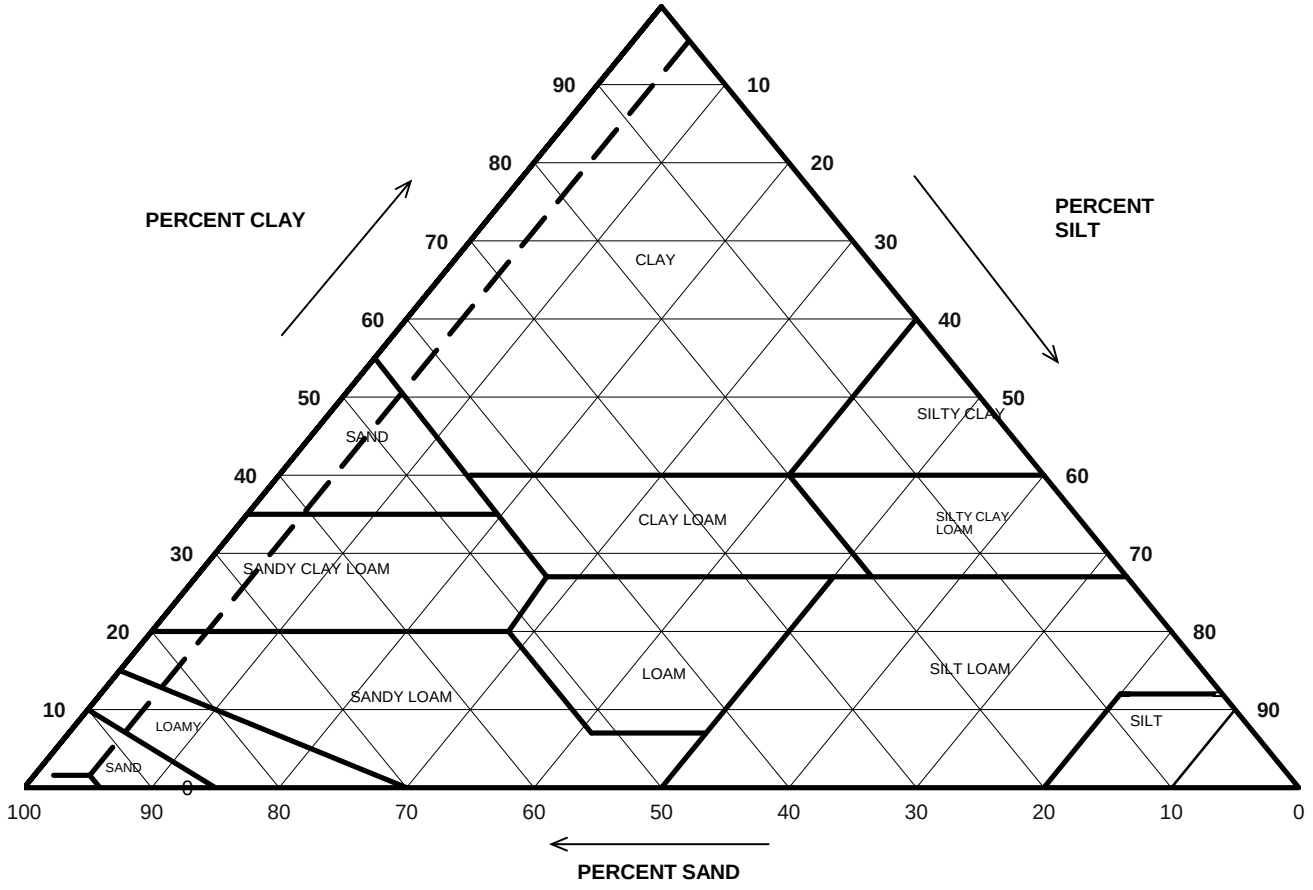
Tested By CB Date 9/29/25 Checked By AES Date 9/30/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-003	Sample No.:	TS-S4
Lab ID:	R-2025-197-003-003	Soil Color:	Dark Brown



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**44.91**	
2	**55.09**	**Sand**	**51.81**	**94.06**
0.05	**3.27**	**Silt**	**2.40**	**4.36**
0.002	**0.87**	**Clay**	**0.87**	**1.58**

USDA Classification: SAND

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-003	Sample No.:	TS-S4
Lab ID:	R-2025-197-003-003	Soil Color:	Dark Brown

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	455	Tare No.:	712
Wt. of Tare & Wet Sample (g):	568.51	Weight of Tare & Wet Sample (g):	300.31
Wt. of Tare & Dry Sample (g):	514.17	Weight of Tare & Dry Sample (g):	264.11
Weight of Tare (g):	141.30	Weight of Tare (g):	90.04
Weight of Water (g):	54.34	Weight of Water (g):	36.20
Weight of Dry Soil (g):	372.87	Weight of Dry Soil (g):	174.07
Moisture Content (%):	**14.6**	**Moisture Content (%):**	**20.8**
Wet Weight of -3/4" Sample (g):	28889.73	Total Dry Weight of Sample (g):	25338.13
Tare No. -3/4" Sub-Specimen (g):	491	Wet Weight of +3/4" Sample (g):	148.70
Wt. of Tare & Wet -3/4" Sub-Specimen (g):	1644.68	Dry Weight of + 3/4" Sample (g):	123.10
Weight of Tare (g):	100.29	Dry Weight of - 3/4" Sample (g):	25215.03
Sub-Specimen 3/4" Wet Weight (g):	1544.39	Dry Weight -3/4" +3/8" Sample (g):	1296.34
Tare No. (-3/8" Sub-Specimen):	452	Dry Weight of -3/8" Sample (g):	23918.69
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	531.17	J - Factor (% Finer than 3/4"):	99.5%
Weight of Tare (g):	146.23	J - Factor (% Finer than 3/8"):	94.4%
Sub-Specimen -3/8" Wet Weight (g):	384.94		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100**
6"	150	0.00		0.00	0.00	100.00	**100**
3"	75	0.00		0.00	0.00	100.00	**100**
2"	50	0.00	(*)	0.00	0.00	100.00	**100**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100**
1"	25	57.60		0.19	0.19	99.81	**100**
3/4"	19	91.10		0.30	0.49	99.51	**100**
1/2"	12.5	17.58	(**)	1.30	1.30	98.70	**98**
3/8"	9.5	51.72		3.84	5.14	94.86	**94**
#4	4.75	56.21		16.73	16.73	83.27	**79**
#10	2	83.71		24.92	41.65	58.35	**55**
#20	0.85	57.05	(**)	16.98	58.63	41.37	**39**
#40	0.425	46.48		13.83	72.46	27.54	**26**
#60	0.25	51.64		15.37	87.83	12.17	**11**
#100	0.15	18.97		5.65	93.48	6.52	**6**
#140	0.106	4.88		1.45	94.93	5.07	**5**
#200	0.075	2.95		0.88	95.81	4.19	**4**
Pan	-	14.09		4.19	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By CB Date 9/29/25 Checked By AES Date 9/30/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-003	Sample No.:	TS-S4
Lab ID:	R-2025-197-003-003	Soil Color:	Dark Brown

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	9.0	22.9	4.47	15.0	0.0508	82.9	3.3
2	8.8	22.9	4.47	15.0	0.0360	78.4	3.1
4	8.5	22.9	4.47	15.1	0.0255	73.8	2.9
8	7.8	22.9	4.47	15.2	0.0181	60.0	2.4
15	7.5	22.8	4.51	15.2	0.0133	54.8	2.2
30	7.0	22.9	4.47	15.3	0.0094	46.3	1.8
60	6.8	22.6	4.58	15.4	0.0067	39.7	1.6
240	5.8	22.7	4.55	15.6	0.0034	22.1	0.9
1440	5.8	22.7	4.55	15.6	0.0014	22.1	0.9

Soil Specimen Data

Tare No.:	2010	Percent Finer than # 200:	3.96
Wt. of Tare & Dry Material (g):	179.06		
Weight of Tare (g):	168.66	Specific Gravity:	2.70 Assumed
Weight of Deflocculant (g):	5.0		
Weight of Dry Material (g):	5.40		

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By BS Date 9/30/25 Checked By AES Date 10/3/25

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ATTERBERG LIMITS

ASTM D 4318-17

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-003	Sample No.:	TS-S4
Lab ID:	R-2025-197-003-003	Color:	Dark Brown
			(MInus No. 40 sieve material)

As Received
Water Content

Tare Number	455
Wt. of Tare & Wet Sample (g)	568.51
Wt. of Tare & Dry Sample (g)	514.17
Weight of Tare (g)	141.30
Weight of Water (g)	54.34
Weight of Dry Sample (g)	372.87
Water Content (%)	**14.6**

NON - PLASTIC MATERIAL

Tested By *CB* *Date* *9/30/25* *Checked By* *AES* *Date* *10/1/25*

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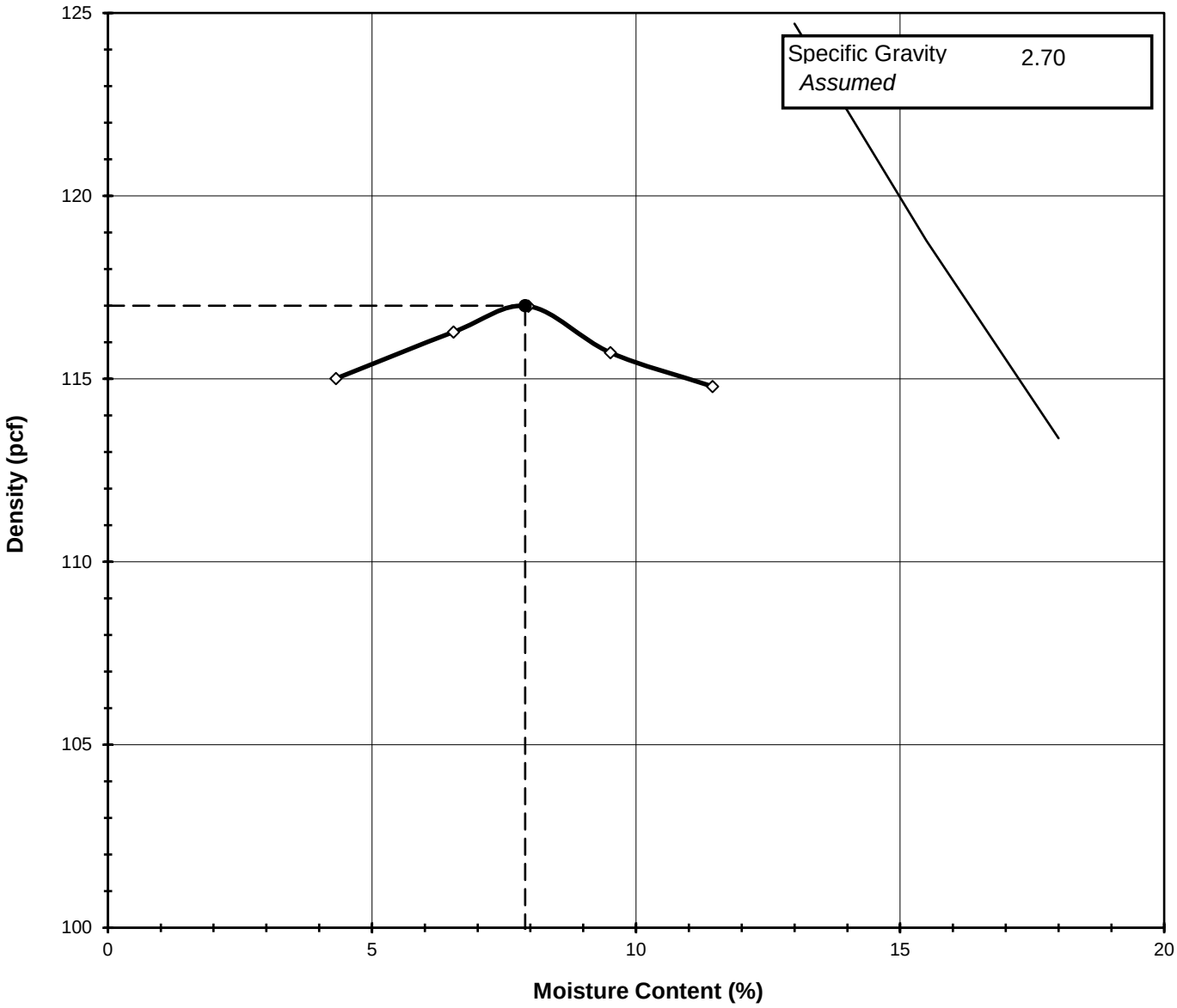
MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-003	Sample No.:	TS-S4
Lab ID:	R-2025-197-003-003	Test Method	**STANDARD**

Visual Description: Dark Brown Poorly Graded Sand with Gravel

Optimum Moisture Content (%): 7.9
Maximum Dry Density (pcf): 117.0



Tested By CRW *Date* 10/3/25 *Checked By* AES *Date* 10/3/25

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MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-003	Sample No.:	TS-S4
Lab ID:	R-2025-197-003-003		

Visual Description: Dark Brown Poorly Graded Sand with Gravel

Total Weight of the Sample (g):	29100
As Received Water Content (%):	NA
Assumed Specific Gravity:	2.70
Percent Retained on 3/4":	NA
Percent Retained on 3/8":	NA
Percent Retained on #4:	NA
Oversize Material:	Not included
Procedure Used:	C

Test Type:	**STANDARD**
Rammer Weight (lb):	5.5
Rammer Drop (in):	12
Rammer Type:	MECHANICAL
Machine ID:	R174
Mold ID:	R608
Mold diameter:	6"
Weight of the Mold (g):	5524
Volume of the Mold (cm^3):	2115

Mold / Specimen

Point No.	**1**	**2**	**3**	**4**	**5**
Weight of Mold & Wet Sample (g):	9591	9724	9806	9820	9861
Weight of Mold (g):	5524	5524	5524	5524	5524
Weight of Wet Sample (g):	4067	4200	4281	4296	4337
Mold Volume (cm^3):	2115	2115	2115	2115	2115

Moisture Content / Density

Tare Number:	20-A	15-A	441	704	424
Weight of Tare & Wet Sample (g):	437.30	441.50	371.80	380.00	348.60
Weight of Tare & Dry Sample (g):	423.00	419.70	351.60	354.80	322.90
Weight of Tare (g):	91.80	86.50	97.90	90.00	98.40
Weight of Water (g):	14.30	21.80	20.20	25.20	25.70
Weight of Dry Sample (g):	331.20	333.20	253.70	264.80	224.50

Wet Density (g/cm^3):	1.92	1.99	2.02	2.03	2.05
Wet Density (pcf):	120.0	123.9	126.3	126.7	127.9
Moisture Content (%):	**4.3**	**6.5**	**8.0**	**9.5**	**11.4**
Dry Density (pcf):	**115.0**	**116.3**	**117.0**	**115.7**	**114.8**

Zero Air Voids

Moisture Content (%):	13.0	15.5	18.0	
Dry Unit Weight (pcf):	124.7	118.8	113.4	

Tested By CRW *Date* 10/3/25 *Checked By* AES *Date* 10/3/25

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October 30, 2025

Project No. R-2025-197-004

David Liles
Arcadis U.S., Inc.
4915 Prospectus Dr., Suite G
Durham, NC 27713

david.liles@arcadis.com

Transmittal
Laboratory Test Results
Housatonic 5A

Please find attached the laboratory test results for the above referenced project. The tests were outlined on the Project Verification Form that was transmitted to your firm prior to the testing. The testing was performed in general accordance with the methods listed on the enclosed data sheets. The test results are believed to be representative of the samples that were submitted for testing and are indicative only of the specimens which were evaluated. We have no direct knowledge of the origin of the samples and imply no position with regard to the nature of the test results, i.e. pass/fail and no claims as to the suitability of the material for its intended use.

The test data and all associated project information provided shall be held in strict confidence and disclosed to other parties only with authorization by our Client. The test data submitted herein is considered integral with this report and is not to be reproduced except in whole and only with the authorization of the Client and Geotechnics. The remaining sample materials for this project will be retained for a minimum of 90 days as directed by the Geotechnics' Quality Program.

We are pleased to provide these testing services. Should you have any questions or if we may be of further assistance, please contact our office.

Respectively submitted,
Geotechnics, Inc.

Michael P. Smith
Regional Manager

We understand that you have a choice in your laboratory services and we thank you for choosing Geotechnics.

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PERMEABILITY TEST

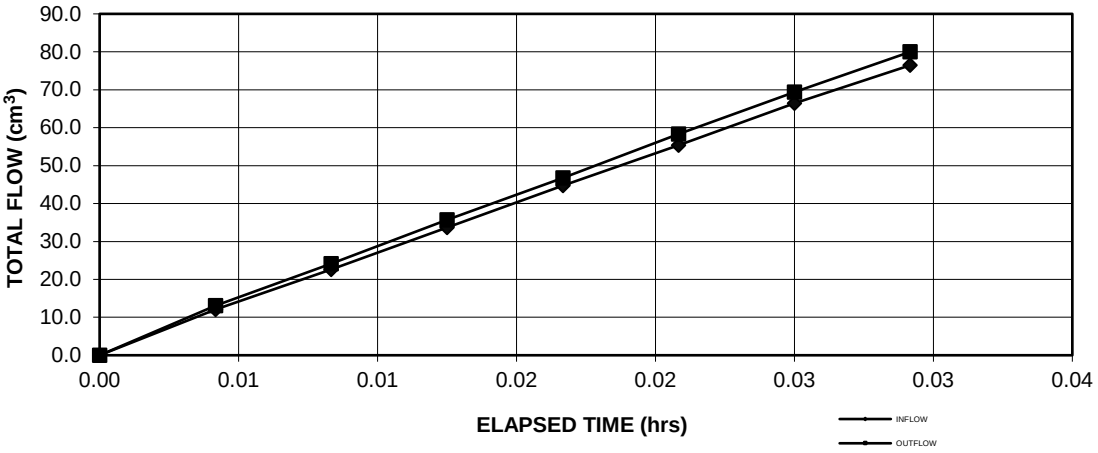
ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-WP
Lab ID No.:	R-2025-197-004-001	Avg. Effective Consol. Pressure (psi):	20

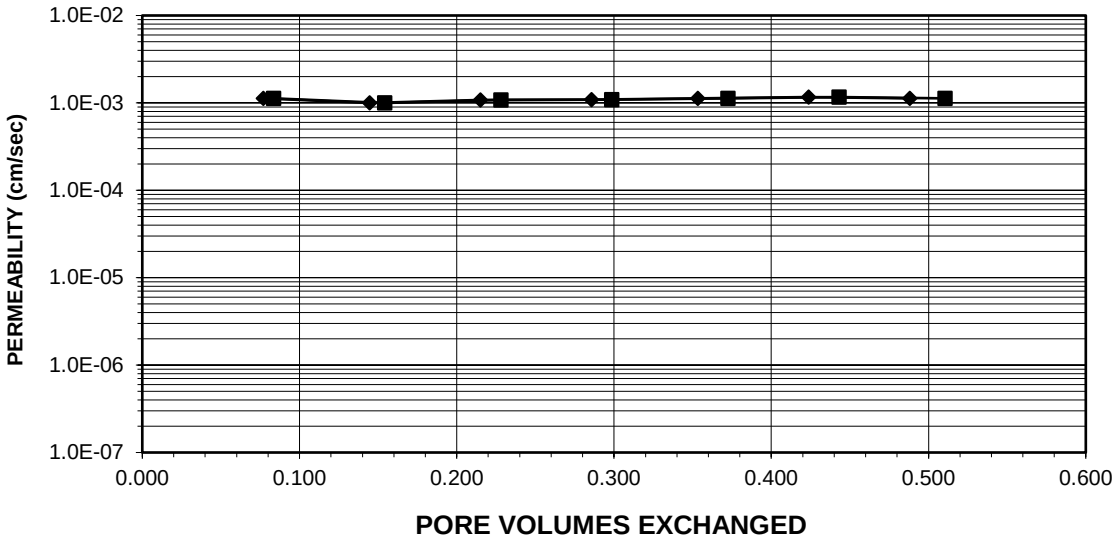
AVERAGE PERMEABILITY = 1.1E-03 cm/sec @ 20°C

AVERAGE PERMEABILITY = 1.1E-05 m/sec @ 20°C

TOTAL FLOW vs. ELAPSED TIME



PORE VOLUMES EXCHANGED vs. PERMEABILITY



Tested By: DL Date: 10/22/25 Checked By: AES Date: 10/27/25

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-WP
Lab ID No.:	R-2025-197-004-001	Avg. Effective Consol. Pressure (psi):	20

Specific Gravity:	2.60	Measured
Sample Condition:		Remolded

Visual Description: Dark Brown Silty Sand

Permeant Type: Deaired Tap Water

MOISTURE CONTENT:	BEFORE TEST	AFTER TEST
Tare Number	444	7-A
Weight of Tare & Wet Sample (g)	353.00	455.41
Weight of Tare & Dry Sample (g)	327.55	398.22
Weight of Tare (g)	98.96	86.68
Weight of Water (g)	25.45	57.19
Weight of Dry Sample (g)	228.59	311.54
Moisture Content (%)	**11.1**	**18.4**

SPECIMEN:	BEFORE TEST	AFTER TEST
Weight of Tube & Wet Sample (g)	2387.86	NA
Weight of Tube (g)	1624.18	NA
Weight of Wet Sample (g)	763.68	813.32
Length 1 (in)	3.995	3.895
Length 2 (in)	3.995	3.902
Length 3 (in)	3.995	3.865
Top Diameter (in)	2.872	2.901
Middle Diameter (in)	2.872	2.912
Bottom Diameter (in)	2.872	2.889
Average Length (in)	4.00	3.89
Average Area (in^2)	6.48	6.61
Sample Volume (cm^3)	424.11	420.96
Unit Wet Weight (g/cm^3)	1.80	1.93
Unit Wet Weight (pcf)	112.4	120.6
Unit Dry Weight (pcf)	101.1	101.9
Unit Dry Weight (g/cm^3)	1.62	1.63
Void Ratio, e	0.60	0.59
Porosity, n	0.38	0.37
Pore Volume (cm^3)	159.8	156.7
Total Weight of Sample After Test (g)		817.37

Tested By: DL Date: 10/22/25 Checked By: AES Date: 10/27/25

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-WP
Lab ID No.:	R-2025-197-004-001	Avg. Effective Consol. Pressure (psi):	20

Pressure Heads (Constant)	
Top Cap (psi)	69.0
Bottom Cap (psi)	71.0
Cell (psi)	90.0
Total Pressure Head (cm)	140.6
Hydraulic Gradient	14.24

Final Sample Dimensions	
Sample Length (cm), L	9.87
Sample Diameter (cm)	7.37
Sample Area (cm^2), A	42.63
Inflow Burette Area (cm^2), a-in	4.590
Outflow Burette Area (cm^2), a-out	4.590
B Parameter (%)	95

AVERAGE PERMEABILITY = 1.1E-03 cm/sec @ 20°C

AVERAGE PERMEABILITY = 1.1E-05 m/sec @ 20°C

DATE	TIME		ELAPSED TIME t	TOTAL INFLOW	TOTAL OUTFLOW	TOTAL HEAD h	FLOW (0 flow)	TEMP.	INCREMENTAL PERMEABILITY @ 20°C
(mm/dd/yy)	(hr)	(min)	(hr)	(cm^3)	(cm^3)	(cm)	(1 stop)	(°C)	(cm/sec)
10/23/25	18	43.0	0.000	0.0	0.0	163.9	0	22.9	NA
10/23/25	18	43.3	0.004	12.1	13.1	158.5	0	22.9	1.1E-03
10/23/25	18	43.5	0.008	22.6	24.1	153.8	0	22.9	1.0E-03
10/23/25	18	43.8	0.013	33.7	35.7	148.8	0	22.9	1.1E-03
10/23/25	18	44.0	0.017	44.8	46.8	144.0	0	22.9	1.1E-03
10/23/25	18	44.3	0.021	55.3	58.3	139.2	0	22.9	1.1E-03
10/23/25	18	44.5	0.025	66.4	69.4	134.4	0	22.9	1.2E-03
10/23/25	18	44.8	0.029	76.5	80.0	129.9	0	22.9	1.1E-03

Tested By: DL Date: 10/23/25 Checked By: AES Date: 10/27/25

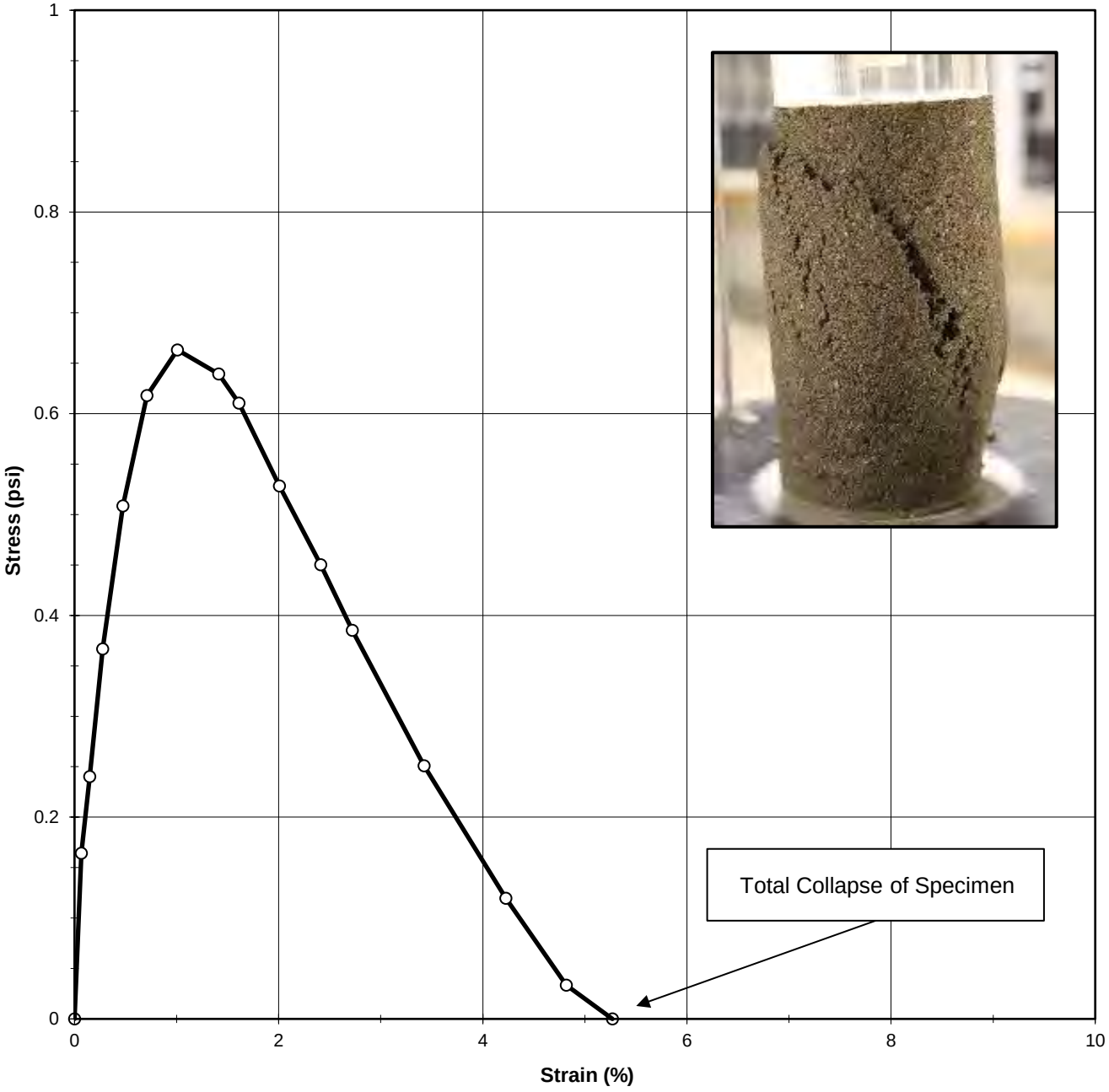
DCN: CT-22 DATE: 1/1/17 REVISION: 11

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-WP
Lab ID:	R-2025-197-004-001	Visual:	Dark Brown Silty Sand



Tested By	DL	Date	10/27/2025	Approved By	MPS	Date	10/28/2025

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-WP
Lab ID:	R-2025-197-004-001	Visual:	Dark Brown Silty Sand

INITIAL SAMPLE DIMENSIONS				WATER CONTENT AFTER TEST	
Length 1 (in):	5.984	Top Diameter (in):	2.873	Tare No.:	444
Length 2 (in):	5.984	Middle Diameter (in):	2.873	Weight of Tare & Wet Sample (g):	353.00
Length 3 (in):	5.984	Bottom Diameter (in):	2.873	Weight of Tare & Dry Sample (g):	327.55
Avg. Length (in):	**5.984**	**Avg. Diameter (in):**	**2.873**	Weight of Tare (g):	98.96
		Area (in^2):	**6.483**	Moisture Content (%):	11.13

UNIT WEIGHT			
Weight of Tube & Wet Sample (g):	2686.07	Sample Volume (cm^3):	635.7
Weight of Tube (g):	1542.73	Unit Wet Weight (g/cm^3):	1.80
Weight of Wet Sample (g):	1143.34	Unit Wet Weight (pcf):	112.23
Average Diameter (in):	2.87	Moisture Content (%):	11.13
Average Length (in):	5.98	Unit Dry Weight (pcf):	100.99
Average Length (cm):	15.20		

ELECTRONIC DEVICE DEFORMATION (in)	*LOAD (lb)*	*ELAPSED TIME (min)*	*STRAIN (%)*	*STRESS (psi)*
0.000	1.1	0.00	0.000	0.000
0.004	2.2	0.07	0.068	0.164
0.009	2.7	0.15	0.149	0.240
0.017	3.5	0.28	0.276	0.367
0.028	4.4	0.48	0.474	0.509
0.042	5.2	0.72	0.710	0.618
0.060	5.5	1.02	1.007	0.663
0.085	5.3	1.42	1.413	0.639
0.096	5.2	1.62	1.611	0.610
0.120	4.6	2.02	2.009	0.528
0.144	4.1	2.42	2.413	0.450
0.163	3.7	2.72	2.721	0.385
0.205	2.8	3.42	3.424	0.251
0.253	1.9	4.23	4.225	0.120
0.288	1.4	4.83	4.819	0.033
0.315	0.9	5.28	5.269	0.000

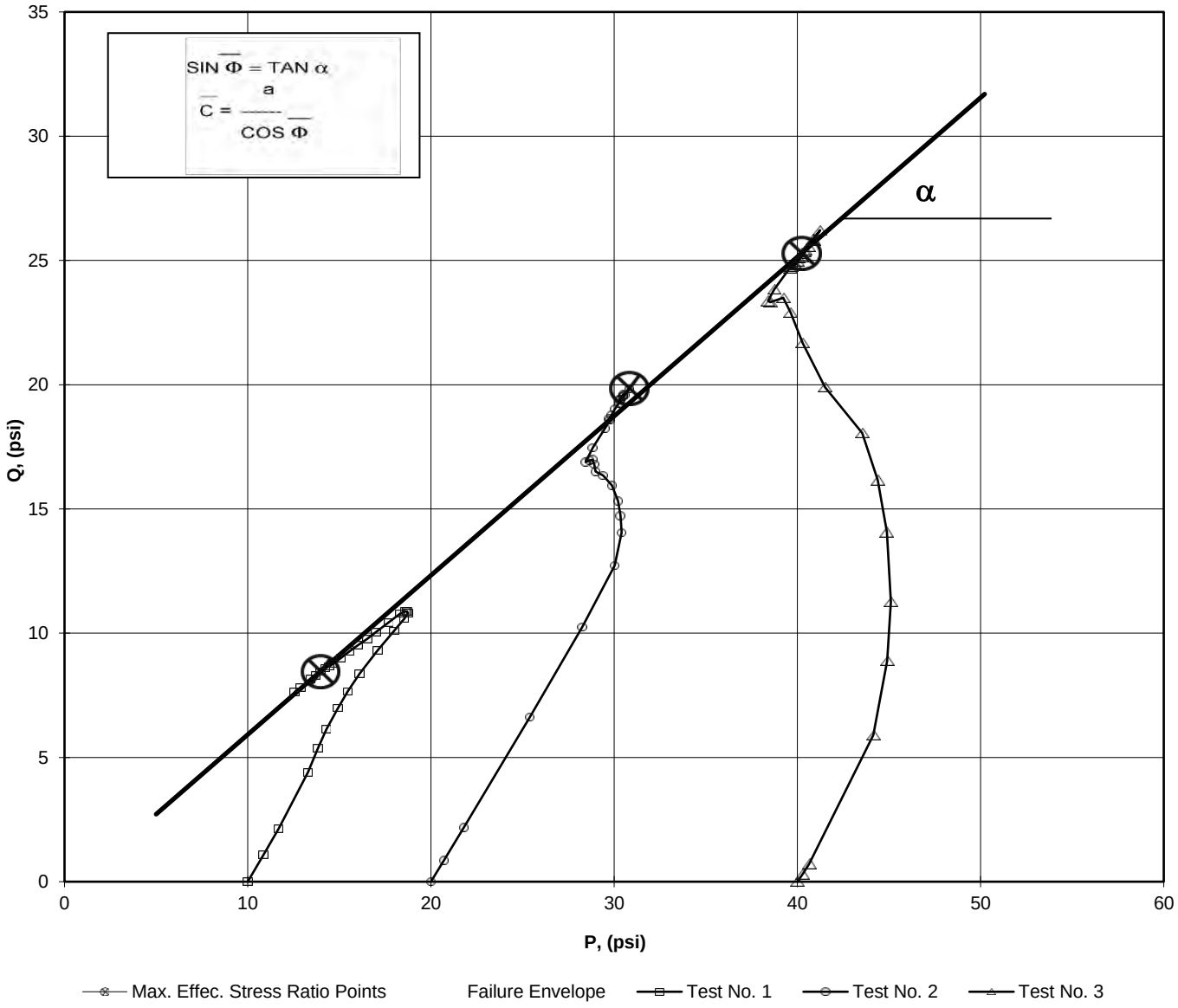
Tested By DL Date 10/27/2025 Input Checked By MPS Date 10/28/2025

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-WP
Lab ID:	R-2025-197-004-001		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	**0.00**	$\overline{C}$	=	**0.00**
α	=	**32.7**	$\overline{\Phi}$	=	**39.85**

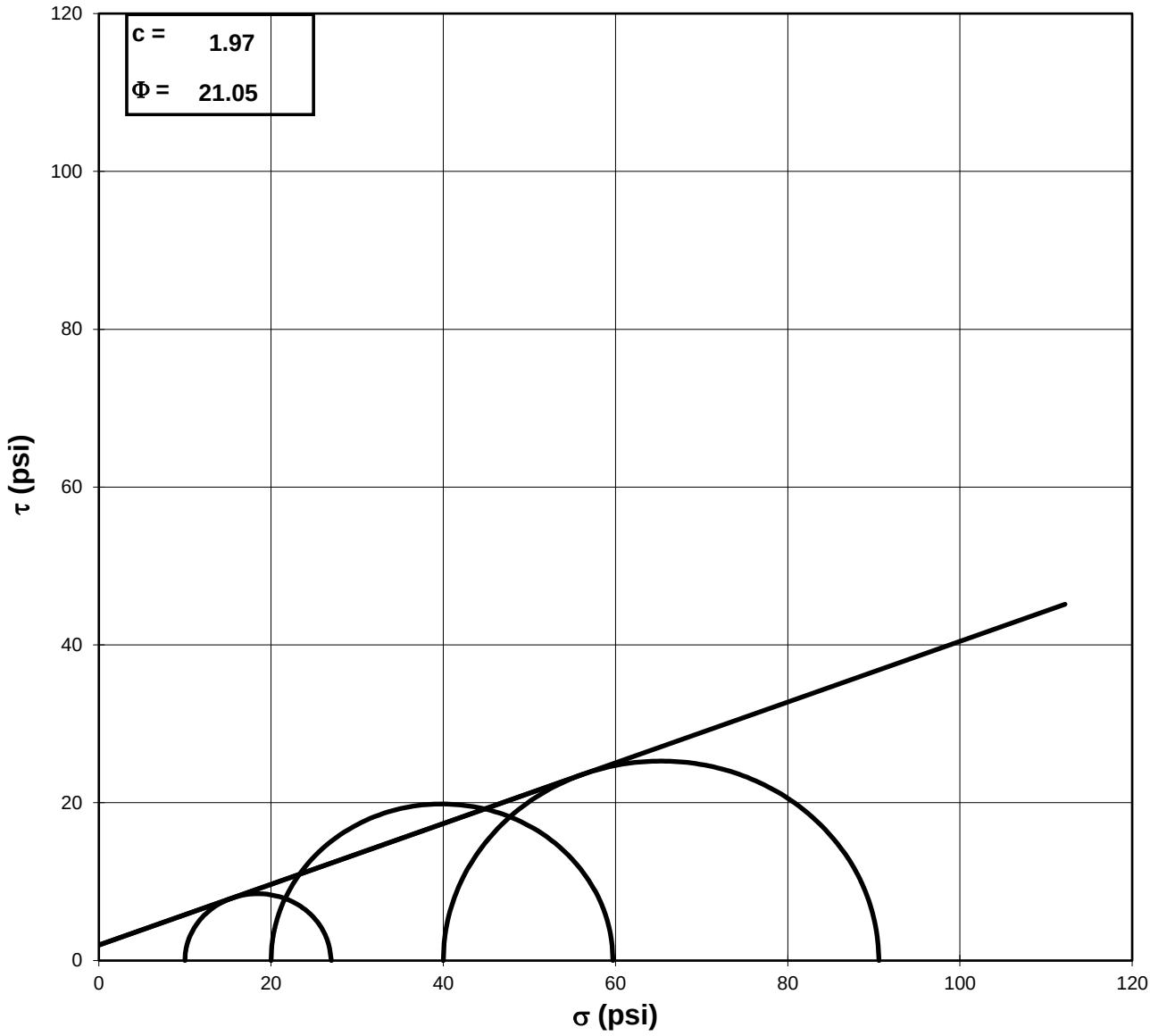
Tested By: DL Date: 10/22/25 Approved By: MPS Date: 10/28/25

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MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-WP
Lab ID:	R-2025-197-004-001		
Visual Description:	Dark Brown Silty Sand (REMOLDED)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: DL *Date:* 10/22/25 *Approved By:* MPS *Date:* 10/28/25

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-WP
Lab ID:	R-2025-197-004-001		

Visual Description: Dark Brown Silty Sand (REMOLDED)

Stage No.	1
Test No.	1

PRESSURES (psi)

Cell Pressure (psi)	80.0
Back Pressure (psi)	70.0
Eff. Conf. Pressure (psi)	10.0
Pore Pressure Response (%)	95

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	13.98
Q	=	8.47

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	10.2
Final Change (ml)	13.8
Initial Dial Reading (mil)	419
Dial Reading After Saturation (mil)	428
Dial Reading After Consolidation (mil)	437

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
17.2	0.000	70.0
31.0	0.001	70.2
44.3	0.002	70.4
72.9	0.008	71.1
85.6	0.014	71.6
95.2	0.019	71.8
106.2	0.029	72.1
114.9	0.037	72.2
124.2	0.049	72.3
136.5	0.070	72.2
147.2	0.099	72.1
154.4	0.134	72.0
158.1	0.170	72.1
159.9	0.211	72.2
160.7	0.241	72.3
160.6	0.281	72.4
157.4	0.338	72.7
153.5	0.396	73.0
150.8	0.440	73.3
148.7	0.499	73.5
146.3	0.543	73.7
143.6	0.587	73.9
141.6	0.632	74.1
140.7	0.661	74.2
140.3	0.691	74.4
139.2	0.720	74.5
137.6	0.749	74.6
136.4	0.794	74.7
132.3	0.838	74.9
130.3	0.867	75.1
127.7	0.897	75.2

Tested By: DL Date: 10/22/25 Input Checked By: MPS Date: 10/28/25

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-WP
Lab ID:	R-2025-197-004-001		

Visual Description: Dark Brown Silty Sand (REMOLDED)

Effective Confining Pressure (psi)	10.0	*Stage No.*	1
		Test No	1

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	37.78
Length After Consolidation (in)	5.97
Area After Consolidation (in^2)	6.332

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	2.17	0.23	11.95	9.8	1.222	0.11	10.86	1.09
0.04	4.28	0.44	13.83	9.6	1.447	0.11	11.70	2.14
0.14	8.78	1.11	17.67	8.9	1.988	0.13	13.28	4.39
0.23	10.77	1.55	19.22	8.4	2.275	0.15	13.84	5.39
0.32	12.27	1.84	20.43	8.2	2.505	0.16	14.29	6.14
0.48	13.99	2.07	21.92	7.9	2.764	0.16	14.93	7.00
0.63	15.32	2.21	23.12	7.8	2.966	0.15	15.46	7.66
0.82	16.75	2.26	24.49	7.7	3.164	0.14	16.12	8.38
1.17	18.62	2.22	26.40	7.8	3.394	0.13	17.09	9.31
1.66	20.19	2.10	28.09	7.9	3.556	0.11	17.99	10.09
2.25	21.17	2.03	29.14	8.0	3.656	0.10	18.55	10.59
2.84	21.62	2.06	29.56	7.9	3.724	0.10	18.75	10.81
3.54	21.74	2.17	29.58	7.8	3.776	0.10	18.70	10.87
4.03	21.75	2.27	29.48	7.7	3.815	0.11	18.60	10.88
4.72	21.58	2.45	29.13	7.6	3.858	0.12	18.34	10.79
5.66	20.88	2.73	28.15	7.3	3.873	0.14	17.71	10.44
6.65	20.09	3.04	27.04	7.0	3.888	0.16	17.00	10.04
7.38	19.55	3.26	26.29	6.7	3.900	0.18	16.51	9.77
8.37	19.02	3.51	25.51	6.5	3.931	0.19	16.00	9.51
9.09	18.53	3.71	24.82	6.3	3.949	0.21	15.55	9.27
9.84	18.00	3.92	24.08	6.1	3.959	0.23	15.08	9.00
10.60	17.56	4.11	23.45	5.9	3.979	0.25	14.67	8.78
11.08	17.34	4.22	23.12	5.8	4.000	0.26	14.45	8.67
11.59	17.19	4.35	22.83	5.6	4.044	0.27	14.24	8.59
12.07	16.94	4.49	22.45	5.5	4.074	0.28	13.98	8.47
12.56	16.62	4.58	22.04	5.4	4.068	0.29	13.73	8.31
13.31	16.32	4.73	21.59	5.3	4.096	0.30	13.43	8.16
14.04	15.62	4.92	20.69	5.1	4.077	0.33	12.88	7.81
14.54	15.27	5.06	20.21	4.9	4.091	0.35	12.57	7.63
15.04	14.82	5.19	19.63	4.8	4.081	0.37	12.22	7.41

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-WP
Lab ID:	R-2025-197-004-001		

Visual Description: Dark Brown Silty Sand (REMOLDED)

Stage No.	1
Test No.	2

PRESSURES (psi)

Cell Pressure (psi)	90.0
Back Pressure (psi)	70.0
Eff. Conf. Pressure (psi)	20.0
Pore Pressure Response (%)	95

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	30.83
Q	=	19.85

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	13.0
Final Change (ml)	11.0

Initial Dial Reading (mil)	328
Dial Reading After Saturation (mil)	374
Dial Reading After Consolidation (mil)	393

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
19.1	0.000	70.0
30.0	0.001	70.1
46.6	0.002	70.4
102.6	0.007	71.2
148.4	0.014	72.0
179.8	0.019	72.7
196.7	0.028	73.6
205.6	0.037	74.4
213.6	0.049	75.1
222.1	0.070	76.1
228.2	0.099	76.9
231.7	0.135	77.5
236.8	0.171	77.9
240.8	0.213	78.2
241.4	0.243	78.3
242.3	0.285	78.4
252.3	0.342	78.6
265.3	0.402	78.7
271.9	0.447	78.8
275.4	0.507	78.9
279.5	0.552	78.9
285.2	0.597	79.0
290.6	0.641	79.0
297.1	0.672	79.0
302.3	0.701	79.0
300.0	0.732	79.1
299.3	0.762	79.1
303.5	0.807	79.1
304.0	0.851	79.1
309.1	0.882	79.1
310.5	0.912	79.1

Tested By: DL Date: 10/22/25 Input Checked By: MPS Date: 10/28/25

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-WP
Lab ID:	R-2025-197-004-001		

Visual Description: Dark Brown Silty Sand (REMOLDED)

Effective Confining Pressure (psi)	20.0	*Stage No.*	1
		Test No	2

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	37.23
Length After Consolidation (in)	5.92
Area After Consolidation (in^2)	6.289

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	1.72	0.15	21.57	19.9	1.087	0.09	20.71	0.86
0.03	4.36	0.38	23.98	19.6	1.222	0.09	21.80	2.18
0.12	13.25	1.22	32.03	18.8	1.706	0.10	25.40	6.63
0.23	20.50	1.99	38.52	18.0	2.138	0.10	28.27	10.25
0.32	25.46	2.70	42.76	17.3	2.471	0.11	30.03	12.73
0.47	28.09	3.63	44.46	16.4	2.716	0.14	30.41	14.05
0.62	29.46	4.38	45.08	15.6	2.886	0.16	30.35	14.73
0.82	30.66	5.12	45.54	14.9	3.060	0.18	30.21	15.33
1.18	31.89	6.07	45.82	13.9	3.289	0.20	29.88	15.94
1.68	32.69	6.95	45.74	13.1	3.505	0.22	29.39	16.34
2.28	33.02	7.53	45.49	12.5	3.647	0.24	28.98	16.51
2.89	33.61	7.90	45.71	12.1	3.776	0.25	28.91	16.80
3.60	33.97	8.17	45.81	11.8	3.871	0.25	28.82	16.99
4.11	33.90	8.30	45.60	11.7	3.897	0.26	28.65	16.95
4.82	33.77	8.45	45.32	11.6	3.923	0.26	28.44	16.88
5.78	34.93	8.62	46.30	11.4	4.070	0.26	28.84	17.46
6.79	36.49	8.74	47.75	11.3	4.241	0.25	29.50	18.24
7.54	37.16	8.81	48.35	11.2	4.322	0.25	29.77	18.58
8.56	37.26	8.90	48.36	11.1	4.357	0.25	29.73	18.63
9.32	37.54	8.92	48.62	11.1	4.388	0.25	29.85	18.77
10.08	38.05	8.98	49.06	11.0	4.453	0.25	30.04	19.02
10.83	38.49	8.99	49.50	11.0	4.496	0.25	30.26	19.25
11.35	39.18	9.01	50.17	11.0	4.566	0.24	30.58	19.59
11.85	39.69	9.01	50.68	11.0	4.612	0.24	30.83	19.85
12.36	39.13	9.07	50.07	10.9	4.579	0.24	30.50	19.57
12.87	38.82	9.07	49.75	10.9	4.551	0.25	30.34	19.41
13.63	39.05	9.06	49.99	10.9	4.569	0.24	30.47	19.53
14.38	38.78	9.10	49.68	10.9	4.557	0.25	30.29	19.39
14.90	39.23	9.12	50.11	10.9	4.606	0.24	30.49	19.61
15.40	39.19	9.14	50.05	10.9	4.607	0.25	30.46	19.59

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-WP
Lab ID:	R-2025-197-004-001		

Visual Description: Dark Brown Silty Sand (REMOLDED)

Stage No.	1
Test No.	3

PRESSURES (psi)

Cell Pressure (psi)	110.0
Back Pressure (psi)	70.0
Eff. Conf. Pressure (psi)	40.0
Pore Pressure Response (%)	95

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	40.22
Q	=	25.29

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	16.2
Final Change (ml)	31.8

Initial Dial Reading (mil)	245
Dial Reading After Saturation (mil)	392
Dial Reading After Consolidation (mil)	435

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
18.4	0.000	70.0
21.8	0.001	70.0
26.9	0.002	70.1
87.7	0.008	71.8
122.9	0.014	74.0
150.9	0.020	76.2
184.3	0.028	79.2
209.2	0.036	81.8
232.0	0.049	84.5
254.7	0.069	88.4
277.2	0.099	91.4
293.4	0.135	93.3
302.4	0.171	94.3
302.5	0.214	94.8
304.6	0.243	95.0
312.6	0.285	95.1
327.2	0.343	95.1
337.2	0.402	95.1
337.5	0.448	95.1
335.8	0.507	95.1
341.0	0.553	95.0
350.9	0.598	95.0
364.4	0.643	95.0
361.6	0.673	95.0
357.0	0.704	95.0
354.0	0.733	95.0
353.7	0.763	95.0
360.9	0.807	94.9
369.9	0.853	94.9
375.8	0.884	94.9
378.0	0.913	94.9

Tested By: DL Date: 10/22/25 Input Checked By: MPS Date: 10/28/25

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-WP
Lab ID:	R-2025-197-004-001		

Visual Description: Dark Brown Silty Sand (REMOLDED)

Effective Confining Pressure (psi)	40.0	*Stage No.*	1
		Test No	3

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

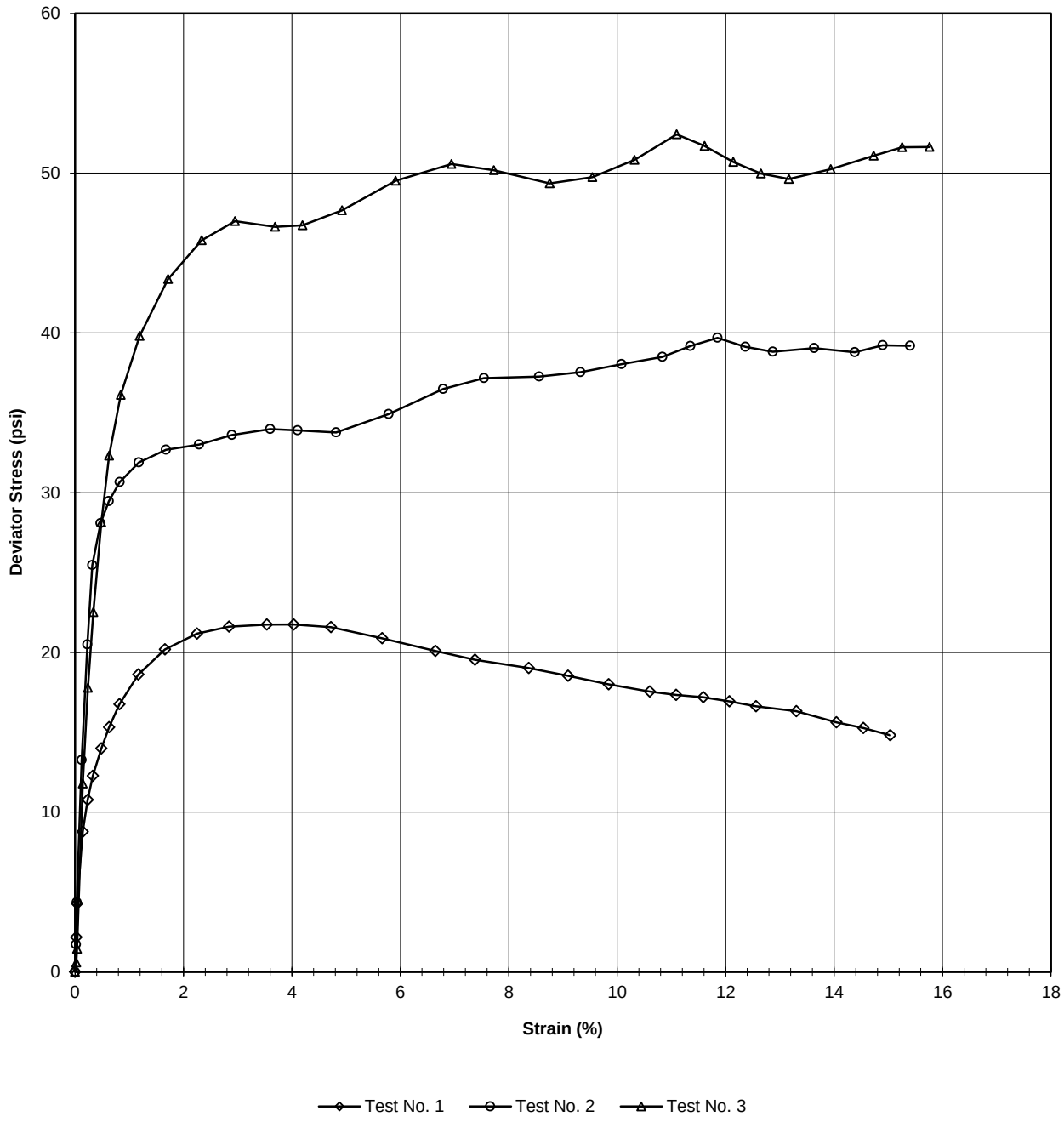
Volume After Consolidation (in^3)	33.99
Length After Consolidation (in)	5.79
Area After Consolidation (in^2)	5.867

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	0.59	0.01	40.59	40.0	1.015	0.01	40.29	0.30
0.04	1.45	0.06	41.38	39.9	1.036	0.05	40.66	0.72
0.14	11.80	1.75	50.04	38.2	1.308	0.16	44.15	5.90
0.24	17.77	3.98	53.80	36.0	1.493	0.24	44.91	8.89
0.34	22.52	6.16	56.37	33.8	1.665	0.29	45.10	11.26
0.48	28.14	9.19	58.96	30.8	1.913	0.34	44.88	14.07
0.63	32.32	11.77	60.55	28.2	2.145	0.38	44.39	16.16
0.84	36.11	14.52	61.59	25.5	2.417	0.42	43.53	18.06
1.19	39.80	18.38	61.42	21.6	2.841	0.49	41.52	19.90
1.71	43.37	21.39	61.98	18.6	3.330	0.52	40.29	21.68
2.33	45.79	23.25	62.54	16.7	3.734	0.53	39.64	22.90
2.95	46.99	24.27	62.72	15.7	3.988	0.54	39.22	23.50
3.69	46.64	24.80	61.84	15.2	4.068	0.56	38.52	23.32
4.19	46.74	24.97	61.77	15.0	4.110	0.56	38.40	23.37
4.92	47.68	25.09	62.59	14.9	4.198	0.55	38.75	23.84
5.91	49.52	25.11	64.41	14.9	4.326	0.53	39.65	24.76
6.94	50.57	25.06	65.51	14.9	4.386	0.52	40.22	25.29
7.73	50.19	25.07	65.12	14.9	4.362	0.53	40.02	25.09
8.76	49.37	25.06	64.31	14.9	4.303	0.53	39.63	24.68
9.54	49.75	25.02	64.73	15.0	4.321	0.53	39.85	24.87
10.32	50.83	24.99	65.84	15.0	4.387	0.52	40.42	25.42
11.10	52.43	24.98	67.45	15.0	4.490	0.50	41.24	26.21
11.61	51.71	25.00	66.71	15.0	4.447	0.51	40.86	25.86
12.14	50.71	25.00	65.71	15.0	4.380	0.52	40.36	25.36
12.65	49.97	24.97	65.00	15.0	4.325	0.53	40.02	24.99
13.16	49.63	24.95	64.67	15.0	4.298	0.53	39.86	24.81
13.94	50.24	24.91	65.33	15.1	4.331	0.52	40.21	25.12
14.73	51.09	24.93	66.16	15.1	4.390	0.51	40.62	25.55
15.25	51.63	24.94	66.69	15.1	4.427	0.51	40.88	25.81
15.76	51.64	24.91	66.74	15.1	4.422	0.51	40.91	25.82

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-WP
Lab ID:	R-2025-197-004-001		
Visual Description:	Dark Brown Silty Sand (REMOLDED)		



Tested By: DL Date: 10/22/25 Approved By: MPS Date: 10/28/25

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.		
Client Reference:	Housatonic 5A		
Project No.:	R-2025-197-004		
Lab ID:	R-2025-197-004-001	Specific Gravity (Measured)	2.6

Visual Description: Dark Brown Silty Sand (REMOLDED)

SAMPLE CONDITION SUMMARY

Boring No.:	N/A	N/A	N/A
Depth (ft):	N/A	N/A	N/A
Sample No.:	TS-WP	TS-WP	TS-WP
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.001	0.001	0.001
Back Pressure (psi)	70	70	70
Consolidation Time (days)	2	2	2
Moisture Content (%) (INITIAL)	11.1	11.1	11.1
Total Unit Weight (pcf)	112.3	112.3	112.3
Dry Unit Weight (pcf)	101.1	101.1	101.1
Moisture Content (%) (FINAL)	21.5	19.3	19.4
Initial State Void Ratio,e	0.606	0.606	0.606
Void Ratio at Shear, e	0.564	0.541	0.407





Tested By: DL Date: 10/22/25 Input Checked By: MPS Date: 10/28/25

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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PERMEABILITY TEST

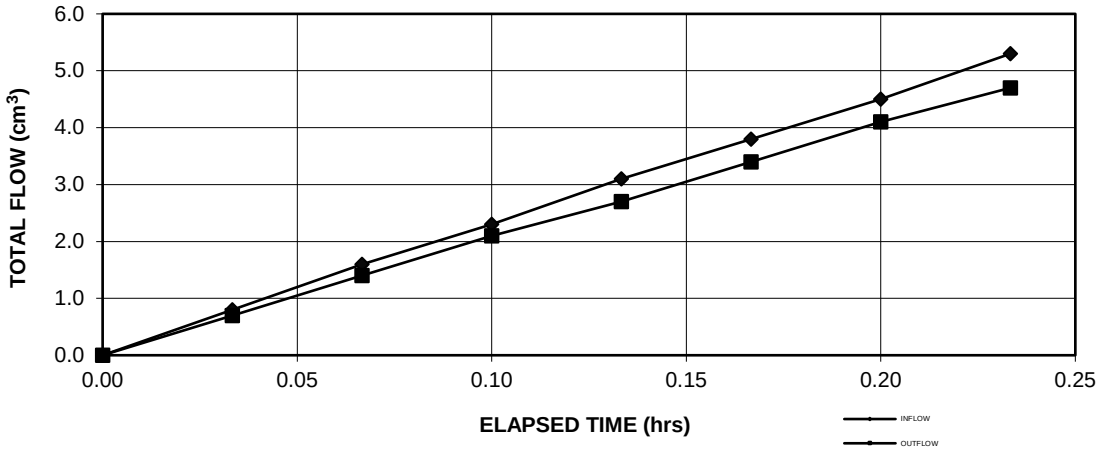
ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-S2
Lab ID No.:	R-2025-197-004-002	Avg. Effective Consol. Pressure (psi):	20

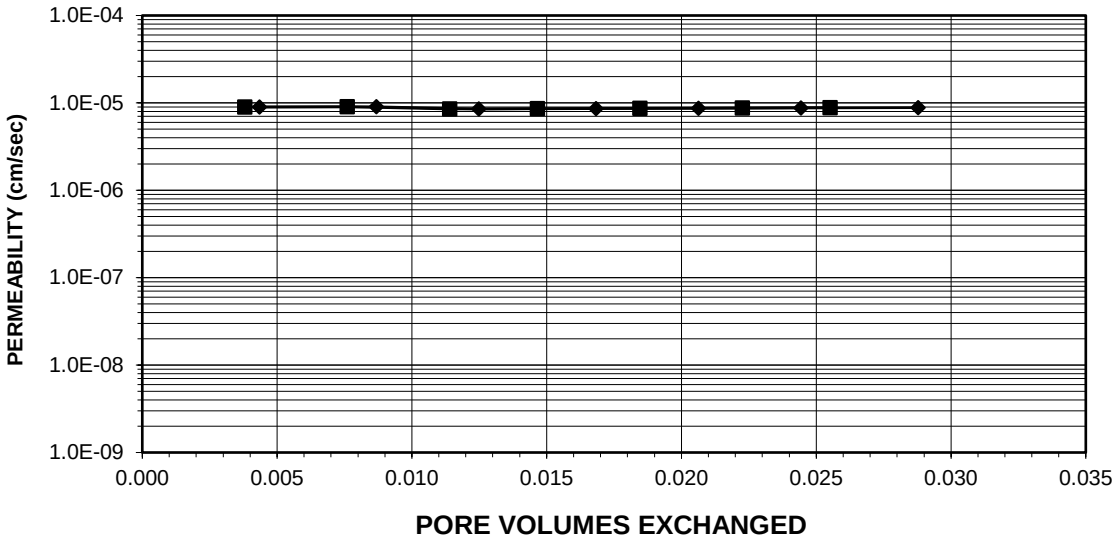
AVERAGE PERMEABILITY = 8.7E-06 cm/sec @ 20°C

AVERAGE PERMEABILITY = 8.7E-08 m/sec @ 20°C

TOTAL FLOW vs. ELAPSED TIME



PORE VOLUMES EXCHANGED vs. PERMEABILITY



Tested By: DL Date: 10/24/25 Checked By: AES Date: 10/28/25

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-S2
Lab ID No.:	R-2025-197-004-002	Avg. Effective Consol. Pressure (psi):	20

Specific Gravity:	2.67	Measured
Sample Condition:		Remolded

Visual Description: Dark Brown Silty Sand

Permeant Type: Deaired Tap Water

MOISTURE CONTENT:	BEFORE TEST	AFTER TEST
Tare Number	702	426
Weight of Tare & Wet Sample (g)	265.69	555.75
Weight of Tare & Dry Sample (g)	233.30	453.51
Weight of Tare (g)	91.55	99.44
Weight of Water (g)	32.39	102.24
Weight of Dry Sample (g)	141.75	354.07
Moisture Content (%)	**22.9**	**28.9**

SPECIMEN:	BEFORE TEST	AFTER TEST
Weight of Tube & Wet Sample (g)	2337.90	NA
Weight of Tube (g)	1624.18	NA
Weight of Wet Sample (g)	713.72	748.73
Length 1 (in)	3.995	3.961
Length 2 (in)	3.995	3.938
Length 3 (in)	3.995	3.942
Top Diameter (in)	2.872	2.785
Middle Diameter (in)	2.872	2.804
Bottom Diameter (in)	2.872	2.848
Average Length (in)	4.00	3.95
Average Area (in^2)	6.48	6.21
Sample Volume (cm^3)	424.11	401.78
Unit Wet Weight (g/cm^3)	1.68	1.86
Unit Wet Weight (pcf)	105.0	116.3
Unit Dry Weight (pcf)	85.5	90.3
Unit Dry Weight (g/cm^3)	1.37	1.45
Void Ratio, e	0.95	0.85
Porosity, n	0.49	0.46
Pore Volume (cm^3)	206.5	184.2
Total Weight of Sample After Test (g)		738.60

Tested By: DL Date: 10/24/25 Checked By: AES Date: 10/28/25

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-S2
Lab ID No.:	R-2025-197-004-002	Avg. Effective Consol. Pressure (psi):	20

Pressure Heads (Constant)	
Top Cap (psi)	69.0
Bottom Cap (psi)	71.0
Cell (psi)	90.0
Total Pressure Head (cm)	140.6
Hydraulic Gradient	14.02

Final Sample Dimensions	
Sample Length (cm), L	10.03
Sample Diameter (cm)	7.14
Sample Area (cm^2), A	40.08
Inflow Burette Area (cm^2), a-in	0.912
Outflow Burette Area (cm^2), a-out	0.912
B Parameter (%)	99

AVERAGE PERMEABILITY = 8.7E-06 cm/sec @ 20°C

AVERAGE PERMEABILITY = 8.7E-08 m/sec @ 20°C

DATE	TIME		ELAPSED TIME t	TOTAL INFLOW	TOTAL OUTFLOW	TOTAL HEAD h	FLOW (0 flow)	TEMP.	INCREMENTAL PERMEABILITY @ 20°C
(mm/dd/yy)	(hr)	(min)	(hr)	(cm^3)	(cm^3)	(cm)	(1 stop)	(°C)	(cm/sec)
10/27/25	17	21.0	0.000	0.0	0.0	165.2	0	22.6	NA
10/27/25	17	23.0	0.033	0.8	0.7	163.5	0	22.6	8.9E-06
10/27/25	17	25.0	0.067	1.6	1.4	161.9	0	22.6	9.0E-06
10/27/25	17	27.0	0.100	2.3	2.1	160.3	0	22.6	8.5E-06
10/27/25	17	29.0	0.133	3.1	2.7	158.8	0	22.6	8.6E-06
10/27/25	17	31.0	0.167	3.8	3.4	157.3	0	22.6	8.7E-06
10/27/25	17	33.0	0.200	4.5	4.1	155.7	0	22.6	8.8E-06
10/27/25	17	35.0	0.233	5.3	4.7	154.2	0	22.6	8.8E-06

Tested By: DL Date: 10/27/25 Checked By: AES Date: 10/28/25

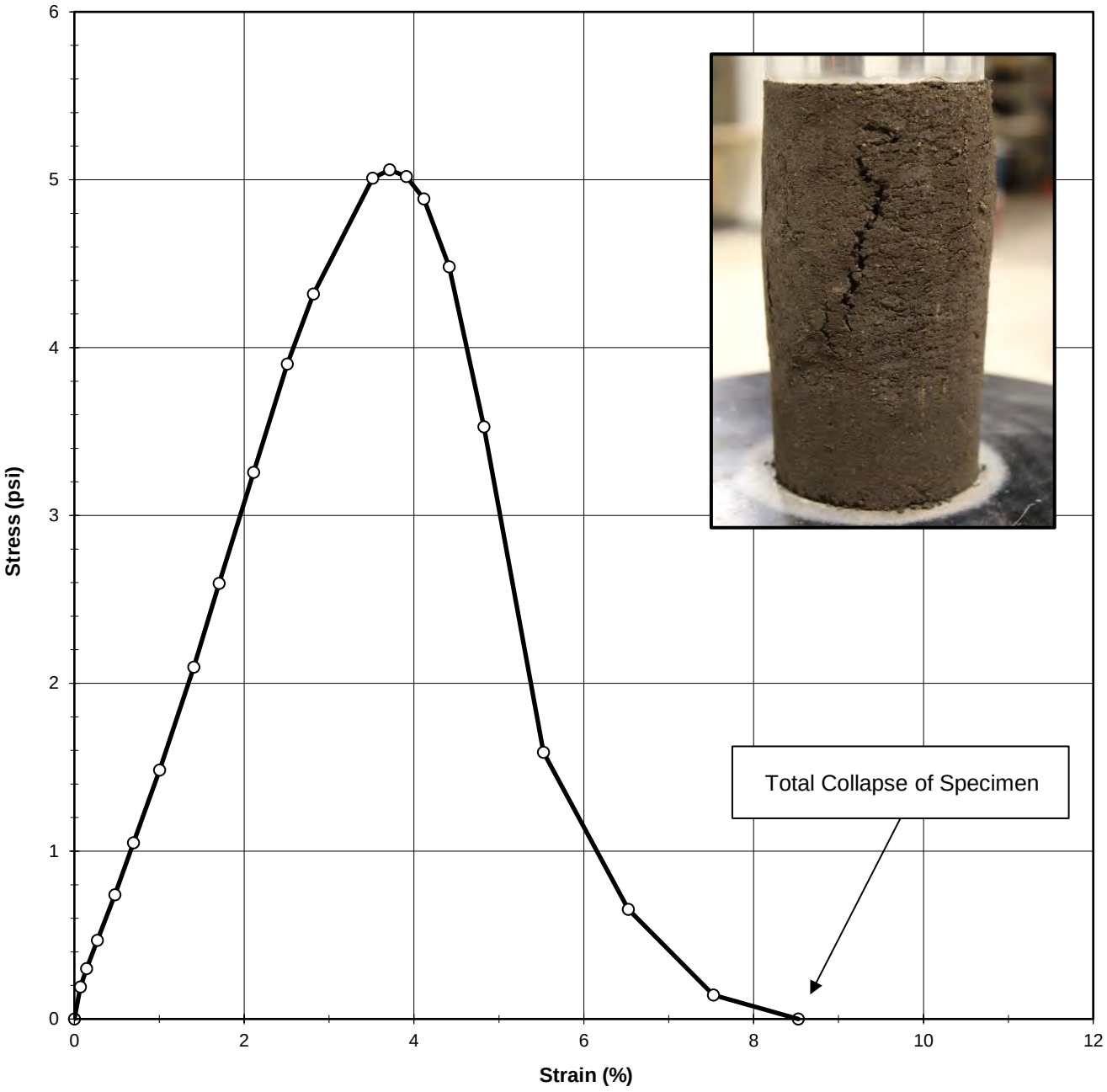
DCN: CT-22 DATE: 1/1/17 REVISION: 11

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-S2
Lab ID:	R-2025-197-004-002	Visual:	Dark Brown Silty Sand



Tested By	DL	Date	10/27/2025	Approved By	MPS	Date	10/28/2025

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-S2
Lab ID:	R-2025-197-004-002	Visual:	Dark Brown Silty Sand

INITIAL SAMPLE DIMENSIONS				WATER CONTENT AFTER TEST	
Length 1 (in):	5.984	Top Diameter (in):	2.873	Tare No.:	702
Length 2 (in):	5.984	Middle Diameter (in):	2.873	Weight of Tare & Wet Sample (g):	265.69
Length 3 (in):	5.984	Bottom Diameter (in):	2.873	Weight of Tare & Dry Sample (g):	233.30
Avg. Length (in):	**5.984**	**Avg. Diameter (in):**	**2.873**	Weight of Tare (g):	91.55
		Area (in^2):	**6.483**	Moisture Content (%):	22.85

UNIT WEIGHT			
Weight of Tube & Wet Sample (g):	2613.71	Sample Volume (cm^3):	635.7
Weight of Tube (g):	1542.73	Unit Wet Weight (g/cm^3):	1.68
Weight of Wet Sample (g):	1070.98	Unit Wet Weight (pcf):	105.13
Average Diameter (in):	2.87	Moisture Content (%):	22.85
Average Length (in):	5.98	Unit Dry Weight (pcf):	85.57
Average Length (cm):	15.20		

ELECTRONIC DEVICE DEFORMATION (in)	*LOAD (lb)*	*ELAPSED TIME (min)*	*STRAIN (%)*	*STRESS (psi)*
0.000	1.2	0.00	0.000	0.000
0.004	2.4	0.08	0.072	0.191
0.009	3.2	0.15	0.145	0.301
0.016	4.2	0.28	0.271	0.469
0.029	6.0	0.48	0.477	0.740
0.042	8.1	0.72	0.695	1.050
0.060	10.9	1.02	1.002	1.484
0.084	15.0	1.42	1.408	2.097
0.102	18.3	1.72	1.704	2.596
0.126	22.8	2.12	2.111	3.256
0.150	27.2	2.52	2.508	3.903
0.168	30.0	2.82	2.814	4.319
0.210	34.9	3.53	3.514	5.010
0.222	35.3	3.73	3.712	5.059
0.234	35.1	3.93	3.910	5.019
0.246	34.2	4.13	4.118	4.887
0.264	31.6	4.43	4.415	4.482
0.289	25.2	4.83	4.822	3.528
0.331	12.1	5.53	5.523	1.590
0.390	5.7	6.53	6.524	0.653
0.450	2.2	7.55	7.527	0.144
0.510	1.0	8.55	8.527	0.000

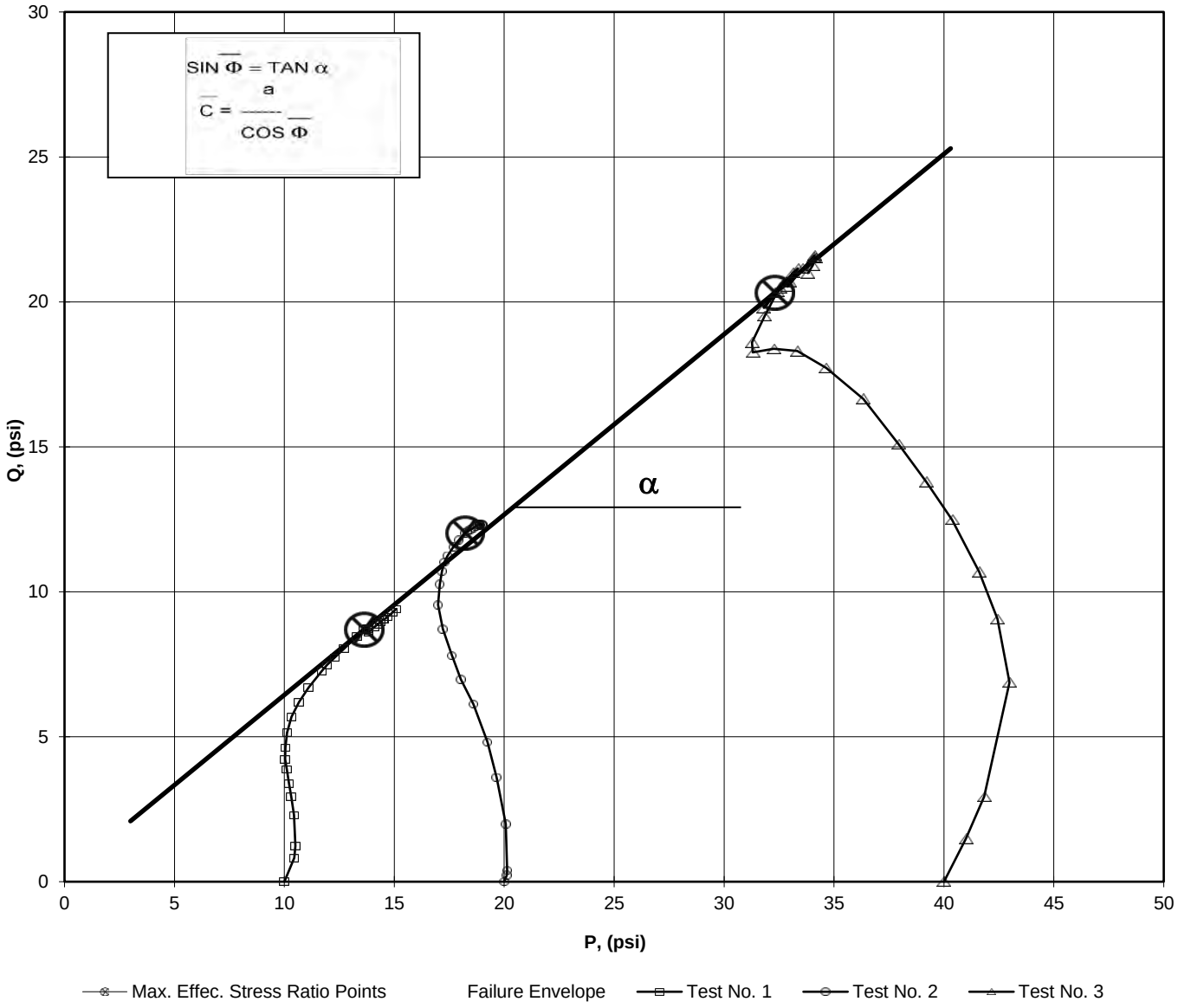
Tested By DL Date 10/27/2025 Input Checked By MPS Date 10/28/2025

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-S2
Lab ID:	R-2025-197-004-002		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	**0.00**	$\overline{C}$	=	**0.00**
α	=	**31.9**	$\overline{\Phi}$	=	**38.46**

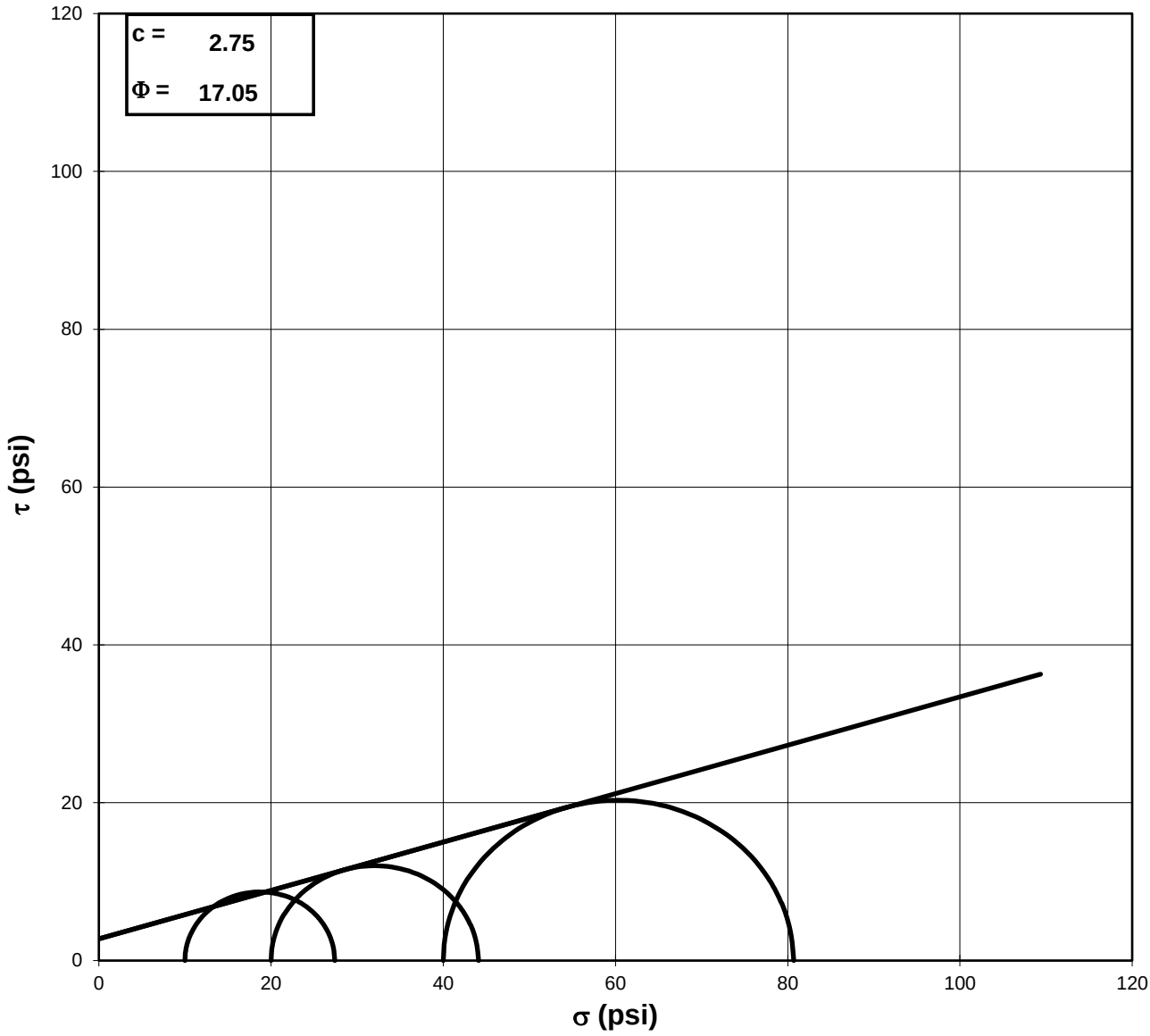
Tested By: DL Date: 10/24/25 Approved By: MPS Date: 10/30/25

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MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-S2
Lab ID:	R-2025-197-004-002		
Visual Description:	Dark Brown Silty Sand (REMOLDED)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: DL *Date:* 10/24/25 *Approved By:* MPS *Date:* 10/30/25

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-S2
Lab ID:	R-2025-197-004-002		

Visual Description: Dark Brown Silty Sand (REMOLDED)

Stage No.	1
Test No.	1

PRESSURES (psi)

Cell Pressure (psi)	80.0
Back Pressure (psi)	70.0
Eff. Conf. Pressure (psi)	10.0
Pore Pressure Response (%)	97

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	13.63
Q	=	8.70

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	0.4
Final Change (ml)	23.6
Initial Dial Reading (mil)	284
Dial Reading After Saturation (mil)	309
Dial Reading After Consolidation (mil)	400

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
18.4	0.000	70.0
28.7	0.001	70.4
33.9	0.003	70.7
47.2	0.008	71.8
55.3	0.015	72.6
61.0	0.021	73.2
67.4	0.030	73.8
71.8	0.039	74.2
77.1	0.050	74.6
83.8	0.071	75.0
91.0	0.100	75.4
98.1	0.134	75.5
105.1	0.169	75.6
113.2	0.210	75.6
116.3	0.240	75.5
120.4	0.281	75.4
125.5	0.337	75.3
132.5	0.396	75.2
136.6	0.441	75.1
138.2	0.500	74.9
138.5	0.543	74.9
138.5	0.587	74.8
142.0	0.632	74.7
144.2	0.660	74.6
146.0	0.690	74.6
148.0	0.720	74.5
148.6	0.748	74.5
151.2	0.793	74.4
154.6	0.837	74.4
157.1	0.867	74.3
159.4	0.896	74.3

Tested By: DL Date: 10/24/25 Input Checked By: MPS Date: 10/30/25

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-S2
Lab ID:	R-2025-197-004-002		

Visual Description: Dark Brown Silty Sand (REMOLDED)

Effective Confining Pressure (psi)	10.0	*Stage No.*	1
		Test No	1

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	36.87
Length After Consolidation (in)	5.87
Area After Consolidation (in^2)	6.283

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	1.65	0.38	11.28	9.6	1.172	0.23	10.45	0.83
0.05	2.47	0.73	11.74	9.3	1.266	0.30	10.51	1.23
0.14	4.59	1.85	12.74	8.2	1.563	0.42	10.44	2.29
0.25	5.86	2.62	13.24	7.4	1.794	0.46	10.31	2.93
0.35	6.76	3.17	13.60	6.8	1.989	0.48	10.22	3.38
0.51	7.77	3.77	14.00	6.2	2.248	0.50	10.11	3.89
0.66	8.45	4.19	14.26	5.8	2.455	0.51	10.04	4.23
0.85	9.26	4.59	14.68	5.4	2.711	0.51	10.05	4.63
1.21	10.28	5.02	15.26	5.0	3.065	0.50	10.12	5.14
1.70	11.37	5.36	16.01	4.6	3.450	0.49	10.33	5.69
2.28	12.40	5.54	16.86	4.5	3.778	0.46	10.66	6.20
2.89	13.41	5.60	17.81	4.4	4.045	0.43	11.11	6.71
3.59	14.55	5.56	18.99	4.4	4.279	0.39	11.71	7.27
4.08	14.95	5.53	19.41	4.5	4.345	0.38	11.94	7.47
4.79	15.47	5.44	20.03	4.6	4.394	0.36	12.29	7.73
5.74	16.08	5.31	20.76	4.7	4.431	0.34	12.72	8.04
6.76	16.94	5.17	21.76	4.8	4.507	0.31	13.30	8.47
7.51	17.40	5.07	22.33	4.9	4.530	0.30	13.63	8.70
8.52	17.45	4.95	22.51	5.1	4.453	0.29	13.78	8.73
9.26	17.35	4.85	22.50	5.1	4.369	0.29	13.82	8.68
10.01	17.21	4.77	22.44	5.2	4.293	0.29	13.84	8.61
10.76	17.56	4.69	22.87	5.3	4.307	0.28	14.09	8.78
11.26	17.77	4.64	23.13	5.4	4.318	0.27	14.24	8.89
11.76	17.92	4.59	23.33	5.4	4.315	0.26	14.37	8.96
12.27	18.10	4.55	23.56	5.5	4.319	0.26	14.50	9.05
12.75	18.08	4.51	23.57	5.5	4.290	0.26	14.53	9.04
13.51	18.28	4.44	23.85	5.6	4.287	0.25	14.71	9.14
14.27	18.59	4.37	24.22	5.6	4.299	0.24	14.93	9.29
14.77	18.82	4.32	24.49	5.7	4.315	0.24	15.08	9.41
15.28	19.02	4.28	24.74	5.7	4.327	0.23	15.23	9.51

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-S2
Lab ID:	R-2025-197-004-002		

Visual Description: Dark Brown Silty Sand (REMOLDED)

Stage No.	1
Test No.	2

PRESSURES (psi)

Cell Pressure (psi)	90.0
Back Pressure (psi)	70.0
Eff. Conf. Pressure (psi)	20.0
Pore Pressure Response (%)	98

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	18.21
Q	=	12.02

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	10.1
Final Change (ml)	37.9

Initial Dial Reading (mil)	378
Dial Reading After Saturation (mil)	372
Dial Reading After Consolidation (mil)	501

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
17.6	0.000	70.0
20.5	0.001	70.1
22.5	0.003	70.3
42.5	0.008	71.9
62.6	0.014	73.9
78.0	0.020	75.6
94.5	0.029	77.5
105.3	0.038	78.9
115.9	0.050	80.2
127.8	0.070	81.5
138.9	0.100	82.6
148.7	0.136	83.2
155.5	0.172	83.5
160.6	0.214	83.7
164.1	0.244	83.8
169.2	0.286	83.9
174.0	0.343	83.9
178.8	0.403	83.8
180.9	0.447	83.7
183.5	0.507	83.7
185.8	0.552	83.6
188.1	0.597	83.6
190.3	0.642	83.5
191.6	0.671	83.5
192.5	0.701	83.4
193.1	0.732	83.4
194.3	0.762	83.4
196.2	0.807	83.3
197.5	0.852	83.3
198.7	0.882	83.3
200.0	0.912	83.3

Tested By: DL Date: 10/24/25 Input Checked By: MPS Date: 10/30/25

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-S2
Lab ID:	R-2025-197-004-002		

Visual Description: Dark Brown Silty Sand (REMOLDED)

Effective Confining Pressure (psi)	20.0	*Stage No.*	1
		Test No	2

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	36.60
Length After Consolidation (in)	5.86
Area After Consolidation (in^2)	6.244

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	0.46	0.11	20.36	19.9	1.023	0.24	20.12	0.23
0.04	0.78	0.26	20.52	19.7	1.040	0.34	20.13	0.39
0.14	3.99	1.92	22.07	18.1	1.220	0.49	20.07	1.99
0.24	7.19	3.94	23.25	16.1	1.447	0.56	19.66	3.59
0.34	9.64	5.58	24.06	14.4	1.668	0.59	19.24	4.82
0.49	12.25	7.53	24.72	12.5	1.983	0.63	18.59	6.13
0.66	13.96	8.95	25.01	11.1	2.263	0.65	18.03	6.98
0.84	15.61	10.18	25.43	9.8	2.589	0.67	17.63	7.80
1.20	17.43	11.51	25.92	8.5	3.053	0.67	17.20	8.72
1.71	19.09	12.56	26.54	7.4	3.564	0.67	16.99	9.55
2.33	20.51	13.18	27.33	6.8	4.009	0.66	17.07	10.26
2.94	21.43	13.54	27.89	6.5	4.320	0.64	17.17	10.72
3.65	22.06	13.75	28.31	6.3	4.529	0.64	17.28	11.03
4.17	22.49	13.82	28.67	6.2	4.640	0.63	17.42	11.24
4.87	23.10	13.87	29.23	6.1	4.765	0.61	17.68	11.55
5.85	23.58	13.85	29.73	6.1	4.836	0.60	17.94	11.79
6.87	24.04	13.81	30.24	6.2	4.883	0.59	18.21	12.02
7.63	24.16	13.75	30.41	6.3	4.865	0.58	18.33	12.08
8.65	24.27	13.68	30.60	6.3	4.838	0.57	18.46	12.14
9.43	24.40	13.61	30.79	6.4	4.818	0.57	18.59	12.20
10.19	24.52	13.56	30.96	6.4	4.807	0.56	18.70	12.26
10.95	24.62	13.51	31.12	6.5	4.791	0.56	18.81	12.31
11.46	24.67	13.46	31.21	6.5	4.775	0.56	18.87	12.34
11.97	24.66	13.44	31.21	6.6	4.761	0.56	18.88	12.33
12.49	24.59	13.41	31.18	6.6	4.733	0.56	18.88	12.29
13.00	24.62	13.38	31.24	6.6	4.720	0.55	18.93	12.31
13.77	24.66	13.33	31.33	6.7	4.698	0.55	19.00	12.33
14.53	24.62	13.30	31.32	6.7	4.674	0.55	19.01	12.31
15.05	24.63	13.28	31.34	6.7	4.668	0.55	19.03	12.31
15.56	24.67	13.27	31.40	6.7	4.664	0.55	19.07	12.33

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-S2
Lab ID:	R-2025-197-004-002		

Visual Description: Dark Brown Silty Sand (REMOLDED)

Stage No.	1
Test No.	3

PRESSURES (psi)

Cell Pressure (psi)	110.0
Back Pressure (psi)	70.0
Eff. Conf. Pressure (psi)	40.0
Pore Pressure Response (%)	97

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	32.31
Q	=	20.32

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	11.0
Final Change (ml)	37.0

Initial Dial Reading (mil)	154
Dial Reading After Saturation (mil)	166
Dial Reading After Consolidation (mil)	302

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
18.9	0.000	69.9
37.3	0.001	70.5
55.4	0.002	71.1
104.5	0.007	73.9
131.9	0.014	76.6
152.2	0.020	79.1
174.9	0.028	82.1
191.6	0.037	84.6
208.3	0.049	87.2
228.6	0.070	90.3
243.2	0.099	93.1
252.0	0.135	95.0
254.4	0.171	96.1
254.6	0.213	96.9
260.4	0.243	97.3
274.1	0.286	97.7
287.9	0.343	97.9
290.3	0.402	98.0
285.7	0.447	98.0
298.0	0.508	98.0
307.4	0.553	97.9
312.1	0.598	97.8
308.1	0.643	97.7
307.5	0.672	97.6
318.1	0.703	97.6
326.3	0.733	97.5
327.2	0.763	97.5
329.5	0.808	97.3
328.5	0.853	97.2
326.6	0.883	97.2
329.4	0.913	97.1

Tested By: DL Date: 10/24/25 Input Checked By: MPS Date: 10/30/25

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-S2
Lab ID:	R-2025-197-004-002		

Visual Description: Dark Brown Silty Sand (REMOLDED)

Effective Confining Pressure (psi)	40.0	*Stage No.*	1
		Test No	3

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

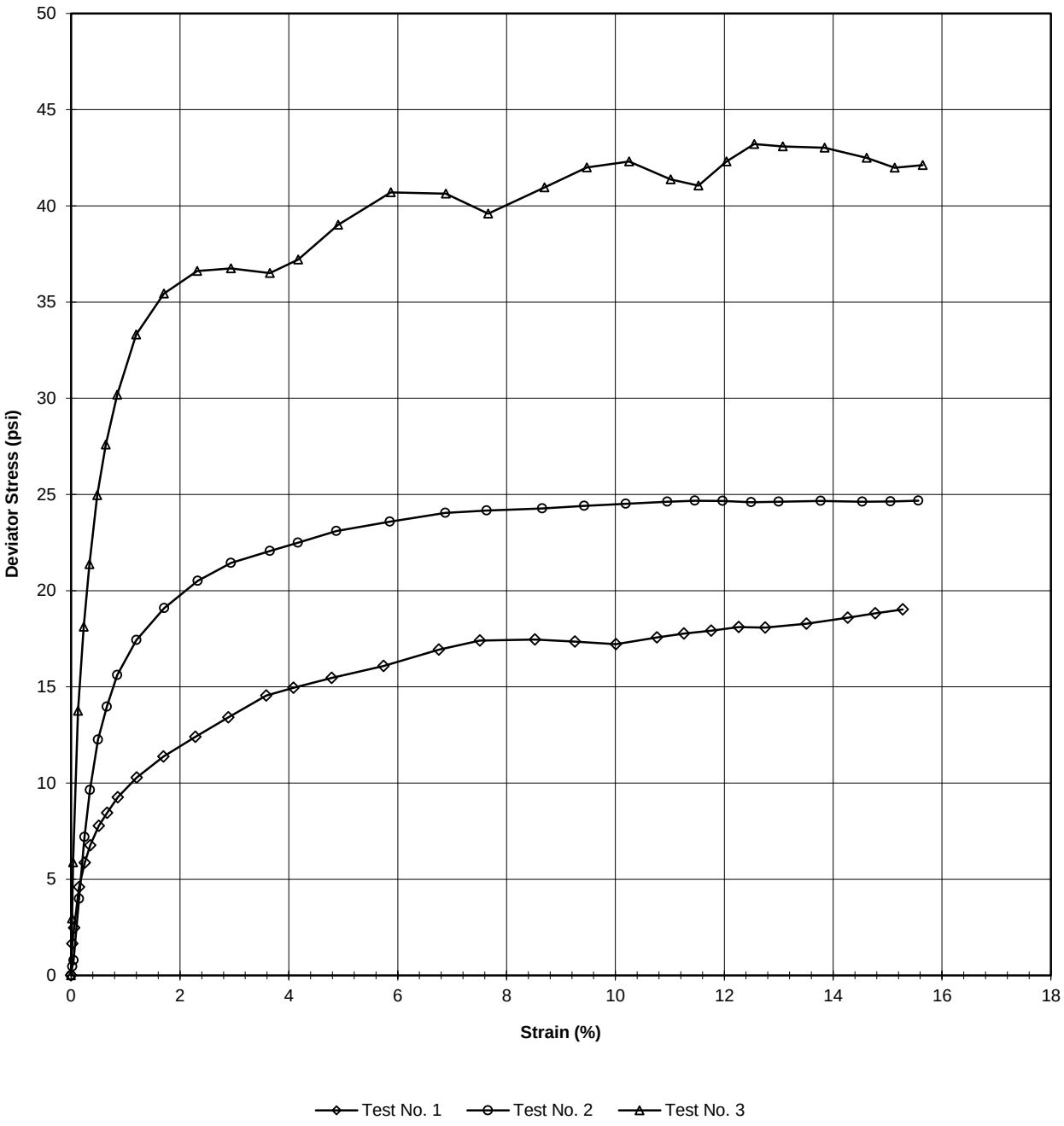
Volume After Consolidation (in^3)	36.30
Length After Consolidation (in)	5.84
Area After Consolidation (in^2)	6.220

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	2.96	0.48	42.48	39.5	1.075	0.17	41.00	1.48
0.04	5.87	1.10	44.77	38.9	1.151	0.19	41.84	2.94
0.13	13.74	3.89	49.85	36.1	1.381	0.29	42.98	6.87
0.23	18.12	6.62	51.50	33.4	1.543	0.38	42.44	9.06
0.34	21.37	9.08	52.29	30.9	1.691	0.44	41.61	10.68
0.48	24.96	12.12	52.84	27.9	1.895	0.50	40.36	12.48
0.64	27.59	14.60	52.99	25.4	2.086	0.55	39.20	13.79
0.85	30.18	17.16	53.03	22.8	2.321	0.59	37.93	15.09
1.19	33.31	20.32	53.00	19.7	2.692	0.63	36.34	16.66
1.70	35.44	23.08	52.36	16.9	3.094	0.67	34.64	17.72
2.32	36.61	24.98	51.63	15.0	3.437	0.70	33.33	18.31
2.94	36.75	26.11	50.64	13.9	3.647	0.73	32.26	18.38
3.65	36.51	26.95	49.56	13.1	3.797	0.76	31.31	18.26
4.17	37.21	27.33	49.87	12.7	3.937	0.76	31.27	18.60
4.90	39.02	27.67	51.35	12.3	4.163	0.73	31.84	19.51
5.87	40.70	27.93	52.77	12.1	4.372	0.71	32.42	20.35
6.89	40.63	28.01	52.62	12.0	4.389	0.71	32.31	20.32
7.66	39.60	27.99	51.61	12.0	4.298	0.73	31.81	19.80
8.70	40.96	27.96	53.01	12.0	4.402	0.70	32.52	20.48
9.48	41.99	27.87	54.12	12.1	4.462	0.68	33.13	21.00
10.25	42.30	27.79	54.51	12.2	4.465	0.68	33.36	21.15
11.01	41.38	27.69	53.68	12.3	4.362	0.69	32.99	20.69
11.52	41.05	27.63	53.42	12.4	4.319	0.69	32.89	20.52
12.04	42.30	27.57	54.73	12.4	4.403	0.67	33.58	21.15
12.55	43.21	27.49	55.72	12.5	4.454	0.66	34.12	21.61
13.08	43.08	27.45	55.63	12.5	4.433	0.66	34.09	21.54
13.84	43.02	27.33	55.68	12.7	4.396	0.66	34.17	21.51
14.61	42.50	27.22	55.28	12.8	4.325	0.66	34.03	21.25
15.13	41.98	27.17	54.81	12.8	4.273	0.67	33.82	20.99
15.65	42.11	27.10	55.01	12.9	4.265	0.66	33.95	21.06

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-004	Sample No.:	TS-S2
Lab ID:	R-2025-197-004-002		
Visual Description:	Dark Brown Silty Sand (REMOLDED)		



Tested By: DL Date: 10/24/25 Approved By: MPS Date: 10/30/25

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.		
Client Reference:	Housatonic 5A		
Project No.:	R-2025-197-004		
Lab ID:	R-2025-197-004-002	Specific Gravity (Measured)	2.67

Visual Description: Dark Brown Silty Sand (REMOLDED)

SAMPLE CONDITION SUMMARY

Boring No.:	N/A	N/A	N/A
Depth (ft):	N/A	N/A	N/A
Sample No.:	TS-S2	TS-S2	TS-S2
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.001	0.001	0.001
Back Pressure (psi)	70	70	70
Consolidation Time (days)	2	2	2
Moisture Content (%) (INITIAL)	22.9	22.9	22.9
Total Unit Weight (pcf)	105.1	105.2	105.2
Dry Unit Weight (pcf)	85.6	85.6	85.7
Moisture Content (%) (FINAL)	31.4	28.8	25.9
Initial State Void Ratio,e	0.947	0.947	0.946
Void Ratio at Shear, e	0.851	0.837	0.821





Tested By: DL Date: 10/24/25 Input Checked By: MPS Date: 10/30/25

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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February 16, 2026

Project No. R-2026-034-001

David Liles
Arcadis U.S., Inc.
4915 Prospectus Dr., Suite G
Durham, NC 27713

david.liles@arcadis.com

Transmittal
Laboratory Test Results
Housatonic 5A

Please find attached the laboratory test results for the above referenced project. The tests were outlined on the Project Verification Form that was transmitted to your firm prior to the testing. The testing was performed in general accordance with the methods listed on the enclosed data sheets. The test results are believed to be representative of the samples that were submitted for testing and are indicative only of the specimens which were evaluated. We have no direct knowledge of the origin of the samples and imply no position with regard to the nature of the test results, i.e. pass/fail and no claims as to the suitability of the material for its intended use.

The test data and all associated project information provided shall be held in strict confidence and disclosed to other parties only with authorization by our Client. The test data submitted herein is considered integral with this report and is not to be reproduced except in whole and only with the authorization of the Client and Geotechnics. The remaining sample materials for this project will be retained for a minimum of 90 days as directed by the Geotechnics' Quality Program.

We are pleased to provide these testing services. Should you have any questions or if we may be of further assistance, please contact our office.

Respectively submitted,
Geotechnics, Inc.

Michael P. Smith
Regional Manager

We understand that you have a choice in your laboratory services and we thank you for choosing Geotechnics.

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MOISTURE CONTENT

ASTM D 2216-19

Client:	Arcadis U.S., Inc.
Client Reference:	Housatonic 5A
Project No.:	R-2026-034-001

Lab ID:	001
Boring No.:	NA
Depth (ft):	NA
Sample No.:	TS-S2
Tare Number	48-A
Wt. of Tare & Wet Sample (g)	529.41
Wt. of Tare & Dry Sample (g)	465.17
Weight of Tare (g)	136.63
Weight of Water (g)	64.24
Weight of Dry Sample (g)	328.54
Water Content (%)	**19.6**

Notes :

Tested By *CRW* *Date* *2/6/26* *Checked By* *AES* *Date* *2/11/26*

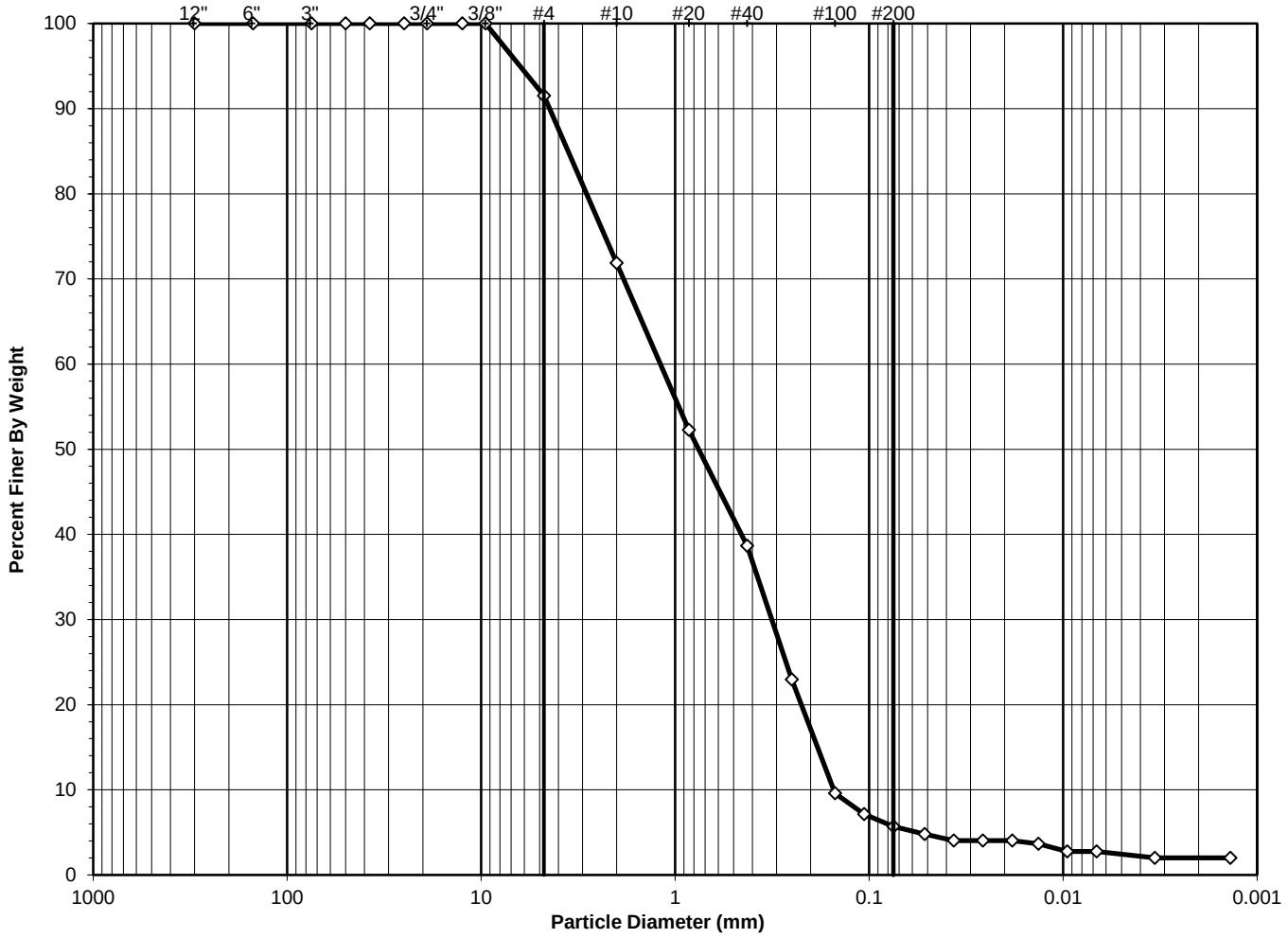
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S2
Lab ID:	R-2026-034-001-001	Soil Color:	Dark Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP-SM, TESTED

D60 = 1.19 D50 = 0.76

D30 = 0.32 CU = 7.82

USCS Classification:
POORLY GRADED SAND WITH SILT (NON-PLASTIC FINES)

D10 = 0.152

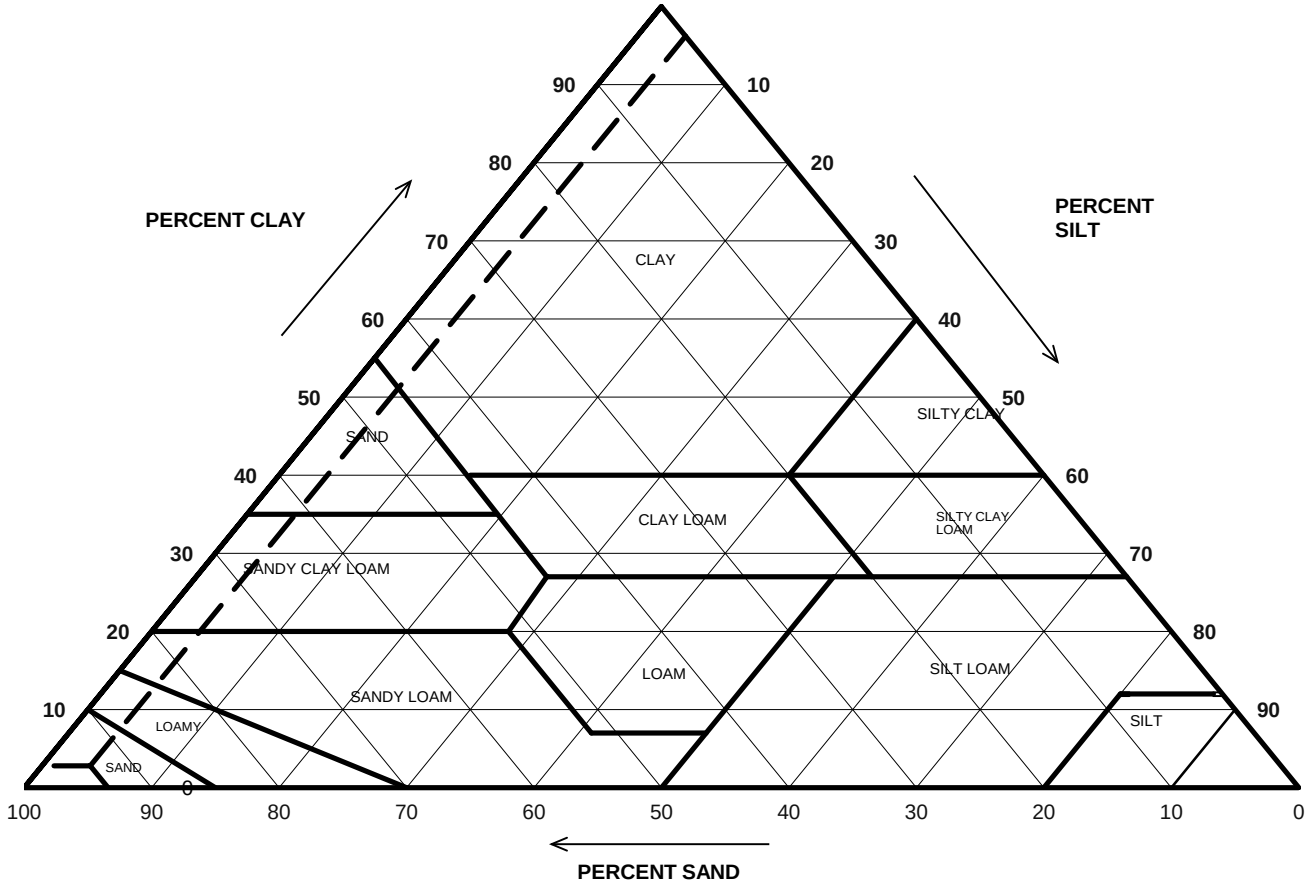
Tested By MFP Date 2/10/26 Checked By AES Date 2/11/26

DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S2
Lab ID:	R-2026-034-001-001	Soil Color:	Dark Brown



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**28.14**	
2	**71.86**	**Sand**	**67.13**	**93.42**
0.05	**4.73**	**Silt**	**2.72**	**3.79**
0.002	**2.01**	**Clay**	**2.01**	**2.80**

USDA Classification: SAND

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S2
Lab ID:	R-2026-034-001-001	Soil Color:	Dark Brown

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	48-A	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	529.41	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	465.17	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	136.63	Weight of Tare (g):	NA
Weight of Water (g):	64.24	Weight of Water (g):	NA
Weight of Dry Soil (g):	328.54	Weight of Dry Soil (g):	NA
Moisture Content (%):	**19.6**	**Moisture Content (%):**	**0.0**

Dry Weight of Sample (g):	NA	Total Dry Weight of Sample (g):	328.54
Tare No. (Sub-Specimen)	48-A	Wet Weight of +3/4" Sample (g):	0.00
Wt. of Tare & Wet Sub-Specimen (g):	529.41	Dry Weight of + 3/4" Sample (g):	0.00
Weight of Tare (g):	136.63	Dry Weight of - 3/4" Sample (g):	328.54
Sub-Specimen Wet Weight (g):	392.78	Dry Weight -3/4" +3/8" Sample (g):	0.00
Tare No. (-3/8" Sub-Specimen):	NA	Dry Weight of -3/8" Sample (g):	328.54
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	NA	J - Factor (% Finer than 3/4"):	NA
Weight of Tare (g):	NA	J - Factor (% Finer than 3/8"):	NA
Sub-Specimen -3/8" Wet Weight (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100**
6"	150	0.00		0.00	0.00	100.00	**100**
3"	75	0.00		0.00	0.00	100.00	**100**
2"	50	0.00	(*)	0.00	0.00	100.00	**100**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100**
1"	25	0.00		0.00	0.00	100.00	**100**
3/4"	19	0.00		0.00	0.00	100.00	**100**
1/2"	12.5	0.00	(**)	0.00	0.00	100.00	**100**
3/8"	9.5	0.00		0.00	0.00	100.00	**100**
#4	4.75	27.91		8.50	8.50	91.50	**92**
#10	2	64.53		19.64	28.14	71.86	**72**
#20	0.85	64.43	(**)	19.61	47.75	52.25	**52**
#40	0.425	44.67		13.60	61.34	38.66	**39**
#60	0.25	51.62		15.71	77.06	22.94	**23**
#100	0.15	43.87		13.35	90.41	9.59	**10**
#140	0.106	8.09		2.46	92.87	7.13	**7**
#200	0.075	4.67		1.42	94.29	5.71	**6**
Pan	-	18.75		5.71	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By MFP Date 2/10/26 Checked By AES Date 2/11/26

DCN: CT-S73T, DATE 2/25/22, REV. 1

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S2
Lab ID:	R-2026-034-001-001	Soil Color:	Dark Brown

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	7.8	22.0	4.80	15.2	0.0517	84.2	4.8
2	7.3	22.1	4.77	15.3	0.0366	71.0	4.0
4	7.3	22.1	4.77	15.3	0.0259	71.0	4.0
8	7.3	22.1	4.77	15.3	0.0183	71.0	4.0
15	7.0	22.1	4.77	15.3	0.0134	63.8	3.6
30	6.5	22.0	4.80	15.4	0.0095	48.5	2.8
60	6.5	22.0	4.80	15.4	0.0067	48.5	2.8
240	6.0	22.1	4.77	15.5	0.0034	35.2	2.0
1440	6.0	22.1	4.77	15.5	0.0014	35.2	2.0

Soil Specimen Data

Tare No.:	202	Percent Finer than # 200:	5.71
Wt. of Tare & Dry Material (g):	204.64		
Weight of Tare (g):	196.18	Specific Gravity:	2.70 Assumed
Weight of Deflocculant (g):	5.0		
Weight of Dry Material (g):	3.46		

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By CB Date 2/12/26 Checked By AES Date 2/16/26

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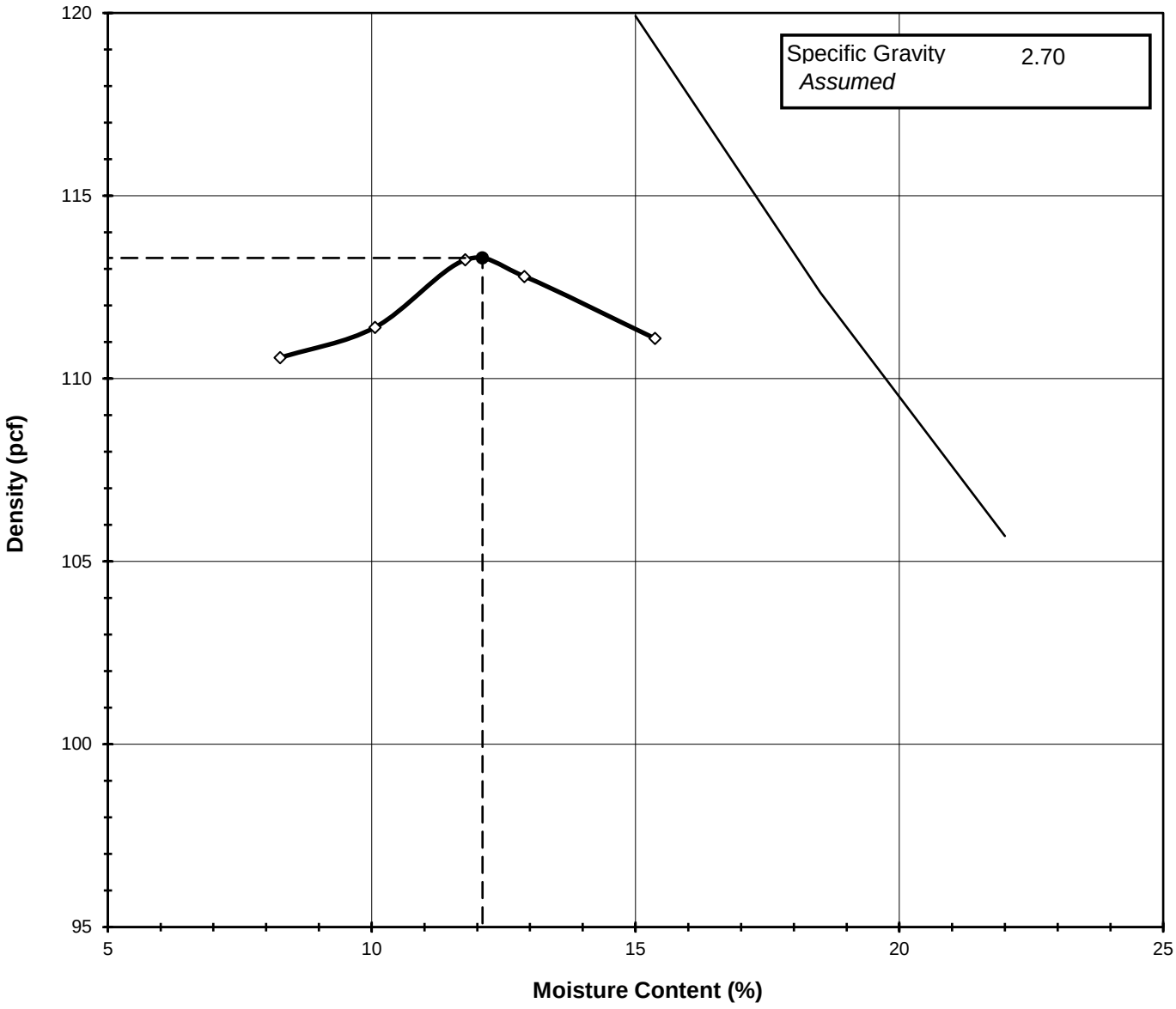
MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2026-034-001	Sample No.:	TS-S2
Lab ID:	R-2026-034-001-001	Test Method	**STANDARD**

Visual Description: Dark Brown Sand with Silt

Optimum Moisture Content (%): 12.1
Maximum Dry Density (pcf): 113.3



Tested By CRW *Date* 2/11/2026 *Checked By* AES *Date* 2/12/26

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MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2026-034-001	Sample No.:	TS-S2
Lab ID:	R-2026-034-001-001		

Visual Description: Dark Brown Sand with Silt

Total Weight of the Sample (g):	28400
As Received Water Content (%):	NA
Assumed Specific Gravity:	2.70
Percent Retained on 3/4":	NA
Percent Retained on 3/8":	NA
Percent Retained on #4:	NA
Oversize Material:	Not included
Procedure Used:	B

Test Type:	**STANDARD**
Rammer Weight (lb):	5.5
Rammer Drop (in):	12
Rammer Type:	MECHANICAL
Machine ID:	R174
Mold ID:	R607
Mold diameter:	4"
Weight of the Mold (g):	4228
Volume of the Mold (cm^3):	937

Mold / Specimen

Point No.	**1**	**2**	**3**	**4**	**5**
Weight of Mold & Wet Sample (g):	6025	6068	6128	6139	6152
Weight of Mold (g):	4228	4228	4228	4228	4228
Weight of Wet Sample (g):	1797	1840	1900	1911	1924
Mold Volume (cm^3):	937	937	937	937	937

Moisture Content / Density

Tare Number:	482	4-A	22-A	473	714
Weight of Tare & Wet Sample (g):	423.10	421.80	445.60	507.70	446.80
Weight of Tare & Dry Sample (g):	398.24	391.34	407.70	460.89	398.89
Weight of Tare (g):	97.50	88.60	85.80	97.90	87.20
Weight of Water (g):	24.86	30.46	37.90	46.81	47.91
Weight of Dry Sample (g):	300.74	302.74	321.90	362.99	311.69

Wet Density (g/cm^3):	1.92	1.96	2.03	2.04	2.05
Wet Density (pcf):	119.7	122.6	126.6	127.3	128.2
Moisture Content (%):	**8.3**	**10.1**	**11.8**	**12.9**	**15.4**
Dry Density (pcf):	**110.6**	**111.4**	**113.2**	**112.8**	**111.1**

Zero Air Voids

Moisture Content (%):	15.0	18.5	22.0
Dry Unit Weight (pcf):	119.9	112.4	105.7

Tested By CRW *Date* 2/11/26 *Checked By* AES *Date* 2/12/26

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PERMEABILITY TEST

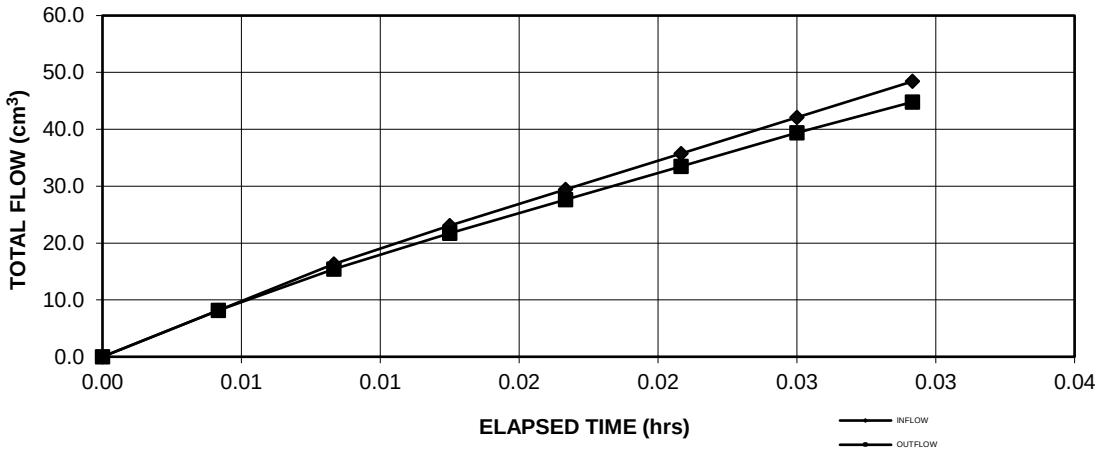
ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S1
Lab ID No.:	R-2026-034-001-002	Avg. Effective Consol. Pressure (psi):	20

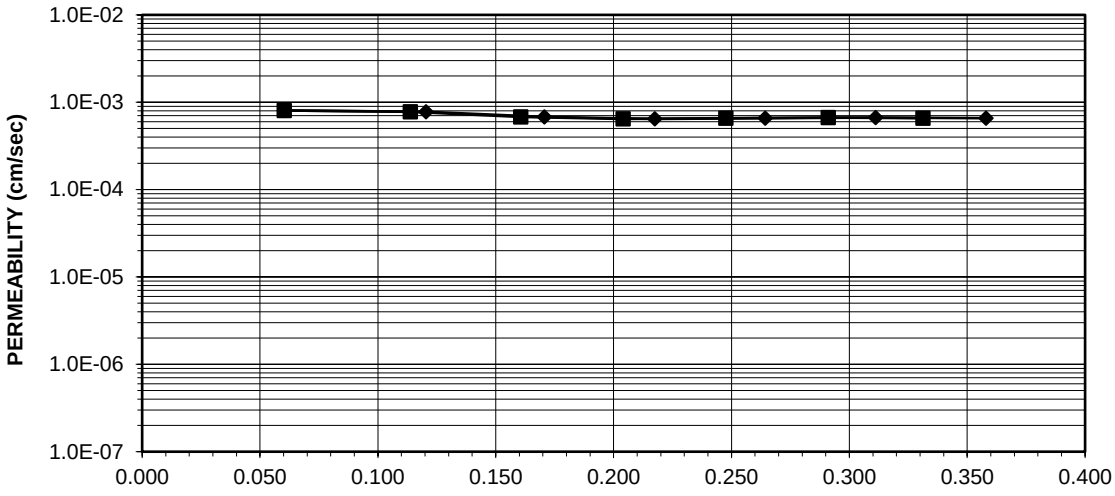
AVERAGE PERMEABILITY = 6.6E-04 cm/sec @ 20°C

AVERAGE PERMEABILITY = 6.6E-06 m/sec @ 20°C

TOTAL FLOW vs. ELAPSED TIME



PORE VOLUMES EXCHANGED vs. PERMEABILITY



Tested By: DL Date: 2/4/26 Checked By: AES Date: 2/5/26

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S1
Lab ID No.:	R-2026-034-001-002	Avg. Effective Consol. Pressure (psi):	20

Specific Gravity:	2.77	Measured
Sample Condition:		Remolded

Visual Description: Dark Brown Sand with Gravel

Permeant Type: Deaired Tap Water

MOISTURE CONTENT:	BEFORE TEST	AFTER TEST
Tare Number	428	15-A
Weight of Tare & Wet Sample (g)	434.65	375.00
Weight of Tare & Dry Sample (g)	407.08	339.96
Weight of Tare (g)	99.46	86.36
Weight of Water (g)	27.57	35.04
Weight of Dry Sample (g)	307.62	253.60
Moisture Content (%)	**9.0**	**13.8**

SPECIMEN:	BEFORE TEST	AFTER TEST
Weight of Tube & Wet Sample (g)	2484.35	NA
Weight of Tube (g)	1624.81	NA
Weight of Wet Sample (g)	859.54	897.84
Length 1 (in)	3.995	3.955
Length 2 (in)	3.995	3.944
Length 3 (in)	3.995	3.969
Top Diameter (in)	2.872	2.862
Middle Diameter (in)	2.872	2.875
Bottom Diameter (in)	2.872	2.880
Average Length (in)	4.00	3.96
Average Area (in^2)	6.48	6.48
Sample Volume (cm^3)	424.11	420.07
Unit Wet Weight (g/cm^3)	2.03	2.14
Unit Wet Weight (pcf)	126.5	133.4
Unit Dry Weight (pcf)	116.1	117.2
Unit Dry Weight (g/cm^3)	1.86	1.88
Void Ratio, e	0.49	0.48
Porosity, n	0.33	0.32
Pore Volume (cm^3)	139.3	135.3
Total Weight of Sample After Test (g)		900.74

Tested By: DL Date: 2/4/26 Checked By: AES Date: 2/5/26

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S1
Lab ID No.:	R-2026-034-001-002	Avg. Effective Consol. Pressure (psi):	20

Pressure Heads (Constant)	
Top Cap (psi)	79.0
Bottom Cap (psi)	81.0
Cell (psi)	100.0
Total Pressure Head (cm)	140.6
Hydraulic Gradient	13.99

Final Sample Dimensions	
Sample Length (cm), L	10.05
Sample Diameter (cm)	7.30
Sample Area (cm^2), A	41.80
Inflow Burette Area (cm^2), a-in	4.380
Outflow Burette Area (cm^2), a-out	4.380
B Parameter (%)	96

AVERAGE PERMEABILITY = 6.6E-04 cm/sec @ 20°C

AVERAGE PERMEABILITY = 6.6E-06 m/sec @ 20°C

DATE	TIME		ELAPSED TIME t	TOTAL INFLOW	TOTAL OUTFLOW	TOTAL HEAD h	FLOW (0 flow)	TEMP.	INCREMENTAL PERMEABILITY @ 20°C
(mm/dd/yy)	(hr)	(min)	(hr)	(cm^3)	(cm^3)	(cm)	(1 stop)	(°C)	(cm/sec)
2/4/2026	15	19	0.000	0.0	0.0	159.3	0	21.2	NA
2/4/2026	15	19	0.004	8.1	8.1	155.6	0	21.2	8.1E-04
2/4/2026	15	20	0.008	16.3	15.4	152.1	0	21.2	7.8E-04
2/4/2026	15	20	0.013	23.1	21.7	149.1	0	21.2	6.8E-04
2/4/2026	15	20	0.017	29.4	27.6	146.3	0	21.2	6.4E-04
2/4/2026	15	20	0.021	35.8	33.5	143.5	0	21.2	6.6E-04
2/4/2026	15	21	0.025	42.1	39.4	140.7	0	21.2	6.7E-04
2/4/2026	15	21	0.029	48.4	44.8	138.0	0	21.2	6.6E-04

Tested By: DL Date: 2/4/26 Checked By: AES Date: 2/5/26

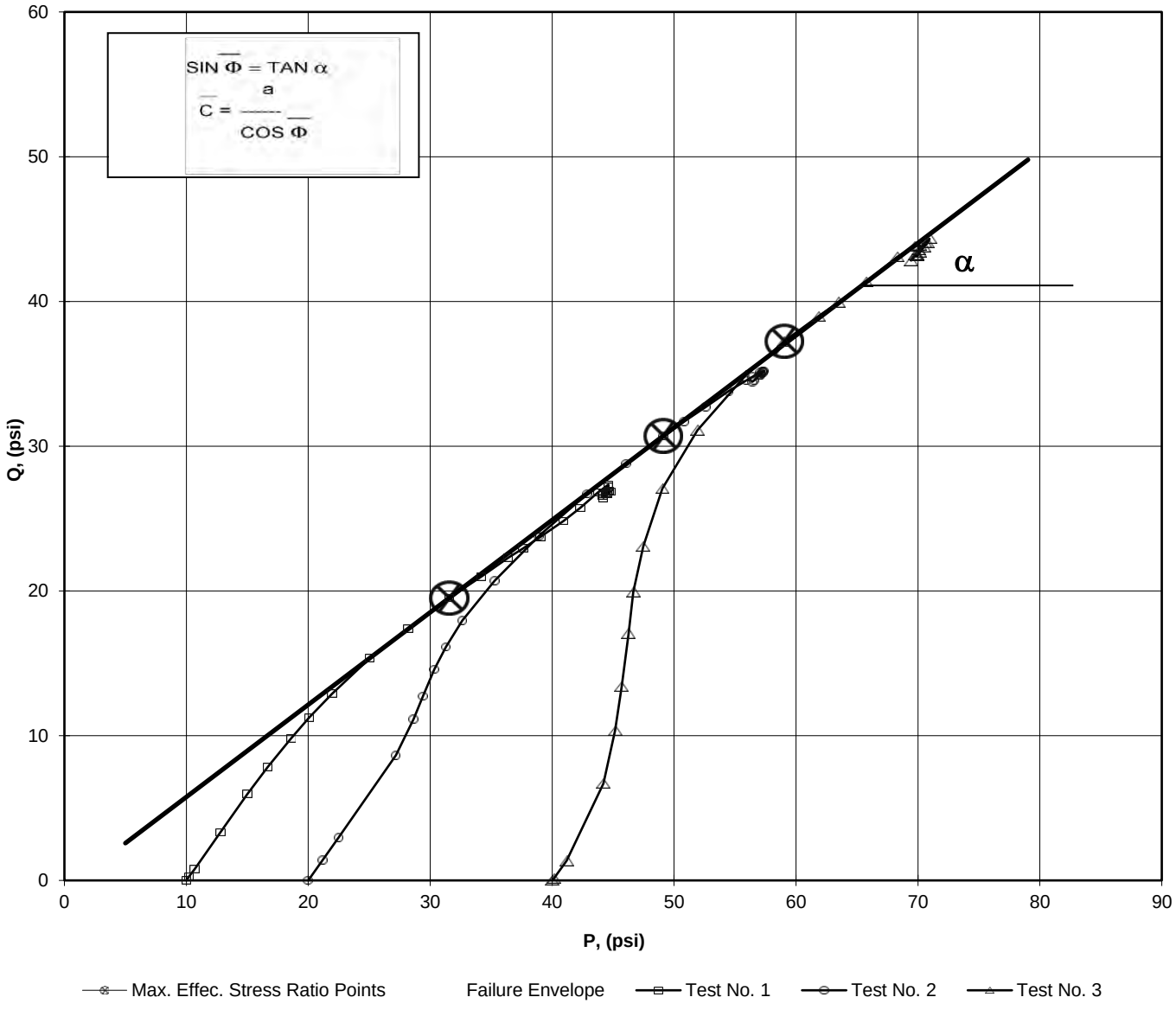
DCN: CT-22 DATE: 1/1/17 REVISION: 11

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S1
Lab ID:	R-2026-034-001-002		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	**0.00**	$\overline{C}$	=	**0.00**
α	=	**32.5**	$\overline{\Phi}$	=	**39.63**

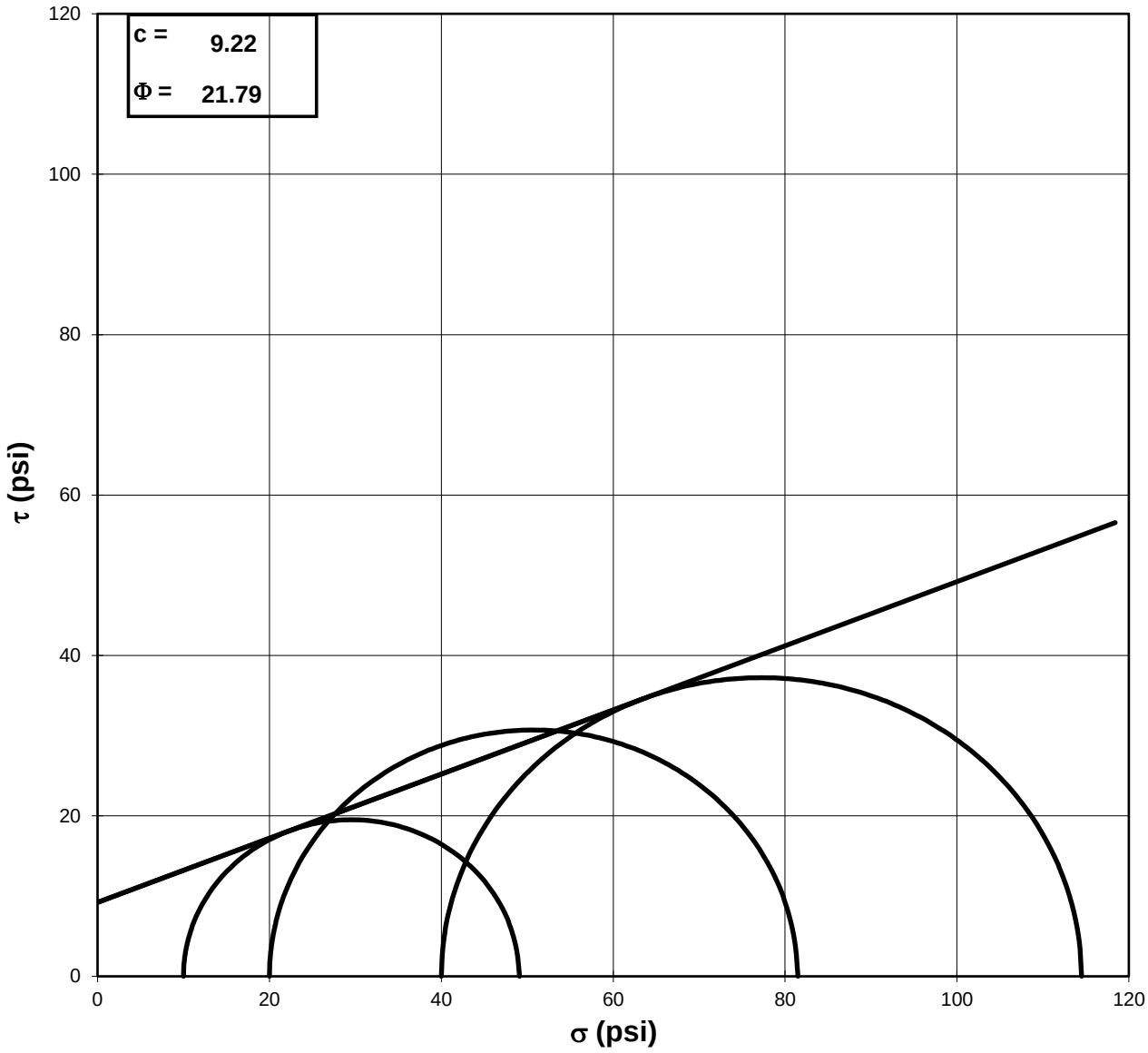
Tested By: DL Date: 2/3/26 Approved By: MPS Date: 2/7/26

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MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S1
Lab ID:	R-2026-034-001-002		
Visual Description:	Dark Brown Sand with Gravel (REMOLDED)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: DL *Date:* 2/3/26 *Approved By:* MPS *Date:* 2/7/26

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S1
Lab ID:	R-2026-034-001-002		

Visual Description: Dark Brown Sand with Gravel (REMOLDED)

Stage No.	1
Test No.	1

PRESSURES (psi)

Cell Pressure (psi)	90.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	10.0
Pore Pressure Response (%)	95

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	31.57
Q	=	19.52

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	19.6
Final Change (ml)	4.4
Initial Dial Reading (mil)	387
Dial Reading After Saturation (mil)	388
Dial Reading After Consolidation (mil)	391

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
17.0	0.000	80.0
20.7	0.001	80.1
27.2	0.003	80.1
59.9	0.009	80.5
94.3	0.014	81.0
118.4	0.019	81.2
144.3	0.028	81.2
163.0	0.036	81.2
184.6	0.048	80.9
217.1	0.068	80.3
244.9	0.098	79.2
274.1	0.132	78.0
295.3	0.167	76.8
314.5	0.209	75.9
324.6	0.238	75.3
337.7	0.279	74.7
355.8	0.335	73.9
371.8	0.394	73.4
389.4	0.438	73.1
401.1	0.497	72.7
402.3	0.541	72.6
398.5	0.585	72.5
400.0	0.630	72.5
404.4	0.659	72.3
406.8	0.688	72.3
411.1	0.717	72.3
412.4	0.746	72.2
416.0	0.790	72.1
416.3	0.834	72.2
415.0	0.863	72.2
417.7	0.892	72.3

Tested By: DL Date: 2/3/26 Input Checked By: MPS Date: 2/7/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S1
Lab ID:	R-2026-034-001-002		

Visual Description: Dark Brown Sand with Gravel (REMOLDED)

Effective Confining Pressure (psi)	10.0	*Stage No.*	1
		Test No	1

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	38.50
Length After Consolidation (in)	5.98
Area After Consolidation (in^2)	6.439

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	0.57	0.06	10.51	9.9	1.057	0.10	10.23	0.29
0.04	1.58	0.11	11.47	9.9	1.159	0.07	10.68	0.79
0.14	6.65	0.52	16.13	9.5	1.701	0.08	12.81	3.32
0.23	11.97	0.96	21.01	9.0	2.323	0.08	15.03	5.98
0.32	15.69	1.17	24.51	8.8	2.777	0.08	16.67	7.84
0.47	19.67	1.24	28.43	8.8	3.245	0.07	18.60	9.84
0.60	22.53	1.18	31.35	8.8	3.554	0.06	20.08	11.26
0.80	25.81	0.93	34.88	9.1	3.846	0.04	21.97	12.91
1.14	30.71	0.29	40.42	9.7	4.164	0.01	25.06	15.36
1.63	34.80	-0.79	45.59	10.8	4.226	-0.02	28.19	17.40
2.21	39.04	-2.05	51.09	12.0	4.240	-0.06	31.57	19.52
2.79	42.00	-3.19	55.19	13.2	4.185	-0.08	34.19	21.00
3.49	44.59	-4.11	58.70	14.1	4.160	-0.10	36.41	22.30
3.98	45.87	-4.69	60.56	14.7	4.122	-0.11	37.62	22.93
4.67	47.47	-5.31	62.79	15.3	4.100	-0.12	39.05	23.74
5.60	49.66	-6.11	65.77	16.1	4.082	-0.13	40.94	24.83
6.59	51.46	-6.57	68.02	16.6	4.106	-0.13	42.29	25.73
7.32	53.60	-6.94	70.54	16.9	4.163	-0.14	43.74	26.80
8.31	54.68	-7.28	71.97	17.3	4.164	-0.14	44.63	27.34
9.04	54.42	-7.40	71.83	17.4	4.127	-0.14	44.62	27.21
9.77	53.45	-7.48	70.93	17.5	4.058	-0.15	44.20	26.73
10.53	53.21	-7.55	70.75	17.5	4.032	-0.15	44.15	26.60
11.01	53.54	-7.65	71.19	17.7	4.033	-0.15	44.42	26.77
11.50	53.57	-7.74	71.31	17.7	4.021	-0.15	44.52	26.79
12.00	53.86	-7.71	71.57	17.7	4.041	-0.15	44.64	26.93
12.48	53.74	-7.78	71.53	17.8	4.022	-0.15	44.66	26.87
13.22	53.77	-7.91	71.68	17.9	4.002	-0.15	44.80	26.89
13.94	53.36	-7.85	71.21	17.8	3.990	-0.15	44.53	26.68
14.44	52.89	-7.75	70.64	17.8	3.979	-0.15	44.20	26.44
14.92	52.94	-7.74	70.69	17.7	3.984	-0.15	44.21	26.47

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S1
Lab ID:	R-2026-034-001-002		

Visual Description: Dark Brown Sand with Gravel (REMOLDED)

Stage No.	1
Test No.	2

PRESSURES (psi)

Cell Pressure (psi)	100.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	20.0
Pore Pressure Response (%)	95

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	49.12
Q	=	30.71

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	16.8
Final Change (ml)	7.2

Initial Dial Reading (mil)	196
Dial Reading After Saturation (mil)	211
Dial Reading After Consolidation (mil)	217

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
18.6	0.000	80.0
36.5	0.001	80.2
56.3	0.002	80.5
129.0	0.008	81.4
161.2	0.014	82.5
181.8	0.020	83.3
205.7	0.028	84.2
225.9	0.037	84.8
249.6	0.048	85.3
286.0	0.069	85.4
327.6	0.099	84.9
367.5	0.135	83.8
397.1	0.170	82.7
425.2	0.212	81.6
440.3	0.242	80.9
457.1	0.284	80.1
476.3	0.341	79.3
491.4	0.400	78.6
498.7	0.445	78.4
508.3	0.504	78.0
513.0	0.550	77.9
517.4	0.594	77.9
521.9	0.640	77.8
523.5	0.669	77.8
523.8	0.699	77.8
527.6	0.729	77.8
528.8	0.759	77.9
533.3	0.804	77.9
532.9	0.849	78.0
534.5	0.879	78.0
536.5	0.909	78.1

Tested By: DL Date: 2/3/26 Input Checked By: MPS Date: 2/7/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S1
Lab ID:	R-2026-034-001-002		

Visual Description: Dark Brown Sand with Gravel (REMOLDED)

Effective Confining Pressure (psi)	20.0	*Stage No.*	1
		Test No	2

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	38.06
Length After Consolidation (in)	5.96
Area After Consolidation (in^2)	6.383

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	2.81	0.22	22.58	19.8	1.142	0.08	21.18	1.40
0.04	5.91	0.46	25.45	19.5	1.303	0.08	22.49	2.96
0.13	17.27	1.45	35.83	18.6	1.931	0.09	27.19	8.64
0.23	22.30	2.51	39.78	17.5	2.275	0.12	28.64	11.15
0.33	25.48	3.33	42.15	16.7	2.529	0.14	29.41	12.74
0.47	29.18	4.25	44.93	15.8	2.852	0.15	30.34	14.59
0.62	32.28	4.85	47.43	15.2	3.130	0.16	31.29	16.14
0.81	35.90	5.32	50.58	14.7	3.445	0.16	32.63	17.95
1.15	41.41	5.41	56.00	14.6	3.838	0.14	35.30	20.70
1.66	47.62	4.88	62.73	15.1	4.150	0.11	38.92	23.81
2.26	53.42	3.84	69.58	16.2	4.306	0.08	42.87	26.71
2.86	57.60	2.73	74.87	17.3	4.335	0.05	46.07	28.80
3.56	61.43	1.60	79.83	18.4	4.338	0.03	49.12	30.71
4.06	63.38	0.89	82.50	19.1	4.316	0.01	50.80	31.69
4.75	65.44	0.11	85.32	19.9	4.290	0.00	52.61	32.72
5.71	67.61	-0.66	88.27	20.7	4.273	-0.01	54.46	33.81
6.71	69.11	-1.37	90.48	21.4	4.233	-0.02	55.93	34.55
7.46	69.61	-1.62	91.23	21.6	4.219	-0.02	56.43	34.80
8.46	70.23	-1.95	92.18	22.0	4.199	-0.03	57.07	35.11
9.22	70.32	-2.07	92.39	22.1	4.187	-0.03	57.23	35.16
9.96	70.36	-2.14	92.50	22.1	4.178	-0.03	57.32	35.18
10.73	70.40	-2.20	92.60	22.2	4.171	-0.03	57.40	35.20
11.22	70.23	-2.17	92.41	22.2	4.167	-0.03	57.29	35.12
11.73	69.87	-2.16	92.03	22.2	4.153	-0.03	57.09	34.94
12.22	70.00	-2.17	92.17	22.2	4.158	-0.03	57.17	35.00
12.73	69.76	-2.15	91.91	22.1	4.150	-0.03	57.03	34.88
13.48	69.77	-2.10	91.87	22.1	4.156	-0.03	56.99	34.88
14.24	69.11	-2.01	91.12	22.0	4.140	-0.03	56.56	34.55
14.74	68.91	-1.96	90.87	22.0	4.138	-0.03	56.42	34.46
15.24	68.78	-1.95	90.73	21.9	4.134	-0.03	56.34	34.39

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S1
Lab ID:	R-2026-034-001-002		

Visual Description: Dark Brown Sand with Gravel (REMOLDED)

Stage No.	1
Test No.	3

PRESSURES (psi)

Cell Pressure (psi)	120.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	40.0
Pore Pressure Response (%)	95

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	59.03
Q	=	37.23

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	12.9
Final Change (ml)	11.1

Initial Dial Reading (mil)	211
Dial Reading After Saturation (mil)	215
Dial Reading After Consolidation (mil)	238

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
23.3	0.000	80.0
25.1	0.001	80.0
40.7	0.002	80.2
109.0	0.007	82.5
155.6	0.013	85.2
194.8	0.019	87.7
242.1	0.027	90.8
279.6	0.036	93.3
320.5	0.048	95.6
373.0	0.069	98.0
427.4	0.099	99.2
479.0	0.135	99.0
512.8	0.170	98.2
539.4	0.212	97.2
554.8	0.241	96.5
577.9	0.284	95.6
606.6	0.341	94.8
623.0	0.401	94.1
628.8	0.446	93.7
631.3	0.505	93.5
643.4	0.550	93.5
652.2	0.595	93.4
653.3	0.640	93.3
653.4	0.671	93.3
651.4	0.701	93.2
651.5	0.731	93.2
654.7	0.761	93.2
661.5	0.805	93.3
666.6	0.851	93.4
665.0	0.880	93.4
661.8	0.911	93.4

Tested By: DL Date: 2/3/26 Input Checked By: MPS Date: 2/7/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S1
Lab ID:	R-2026-034-001-002		

Visual Description: Dark Brown Sand with Gravel (REMOLDED)

Effective Confining Pressure (psi)	40.0	*Stage No.*	1
		Test No	3

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

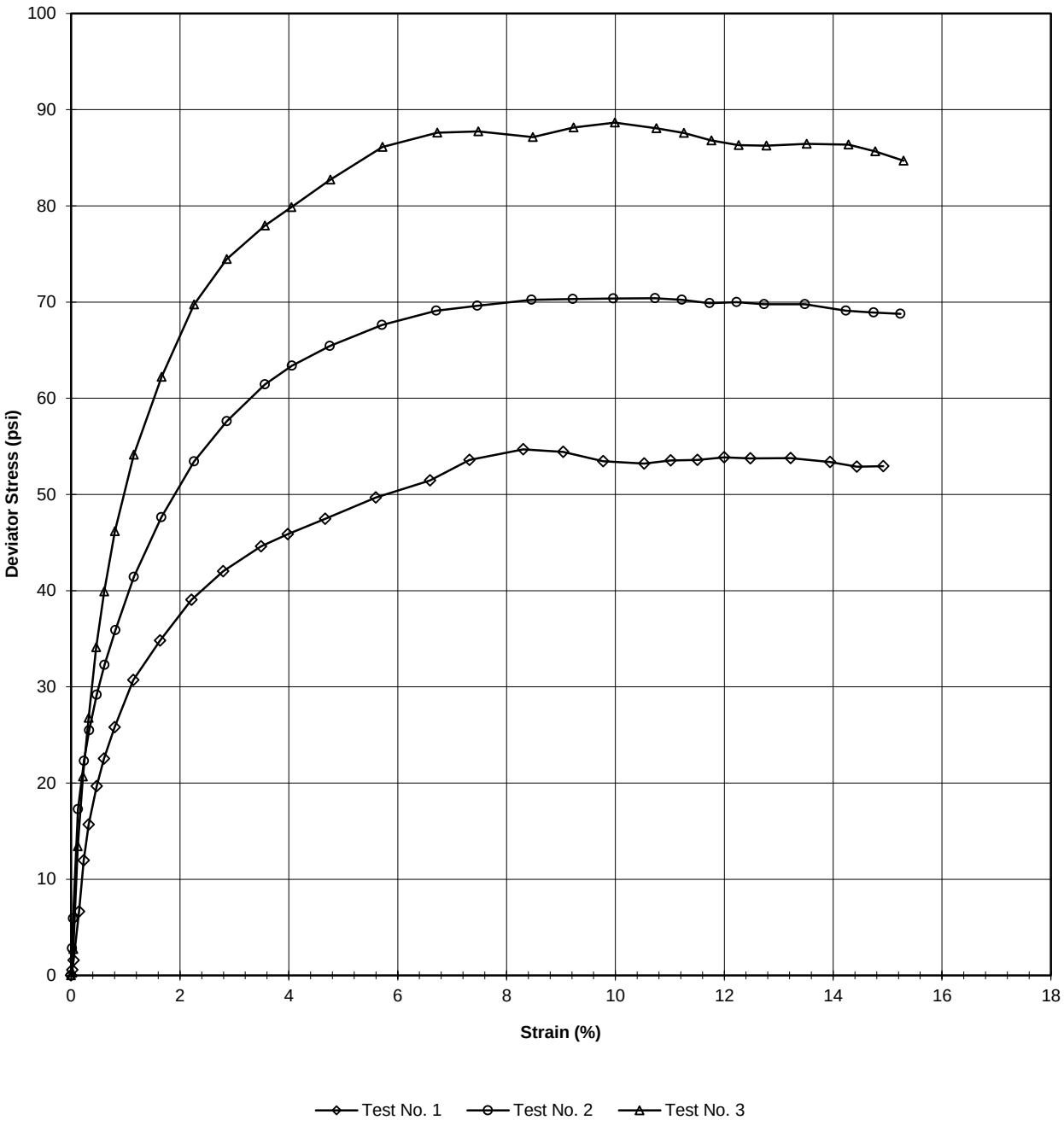
Volume After Consolidation (in^3)	38.04
Length After Consolidation (in)	5.96
Area After Consolidation (in^2)	6.385

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	0.28	0.00	40.28	40.0	1.007	0.00	40.14	0.14
0.04	2.74	0.18	42.56	39.8	1.069	0.07	41.19	1.37
0.12	13.40	2.50	50.90	37.5	1.357	0.20	44.20	6.70
0.22	20.67	5.18	55.49	34.8	1.594	0.26	45.15	10.34
0.32	26.77	7.67	59.10	32.3	1.828	0.30	45.71	13.39
0.46	34.10	10.79	63.31	29.2	2.168	0.33	46.26	17.05
0.61	39.90	13.29	66.61	26.7	2.494	0.35	46.66	19.95
0.80	46.17	15.60	70.57	24.4	2.892	0.36	47.48	23.08
1.15	54.13	18.02	76.11	22.0	3.463	0.35	49.05	27.07
1.66	62.23	19.20	83.03	20.8	3.992	0.32	51.91	31.11
2.26	69.76	19.03	90.72	21.0	4.327	0.29	55.85	34.88
2.86	74.47	18.21	96.26	21.8	4.417	0.26	59.03	37.23
3.56	77.94	17.15	100.79	22.8	4.412	0.23	61.82	38.97
4.05	79.87	16.46	103.41	23.5	4.393	0.22	63.48	39.94
4.76	82.72	15.62	107.10	24.4	4.392	0.20	65.74	41.36
5.72	86.13	14.76	111.37	25.2	4.413	0.18	68.30	43.07
6.73	87.61	14.09	113.52	25.9	4.381	0.17	69.72	43.80
7.48	87.74	13.73	114.01	26.3	4.340	0.16	70.14	43.87
8.48	87.14	13.52	113.63	26.5	4.290	0.16	70.06	43.57
9.23	88.15	13.47	114.68	26.5	4.323	0.16	70.60	44.08
9.99	88.66	13.38	115.28	26.6	4.330	0.16	70.95	44.33
10.75	88.05	13.26	114.80	26.7	4.292	0.16	70.77	44.03
11.26	87.57	13.28	114.29	26.7	4.277	0.16	70.51	43.79
11.76	86.80	13.25	113.56	26.8	4.245	0.16	70.16	43.40
12.27	86.32	13.23	113.09	26.8	4.224	0.16	69.93	43.16
12.77	86.25	13.23	113.02	26.8	4.222	0.16	69.90	43.13
13.51	86.44	13.30	113.14	26.7	4.238	0.16	69.92	43.22
14.28	86.36	13.38	112.98	26.6	4.244	0.16	69.80	43.18
14.77	85.66	13.38	112.27	26.6	4.218	0.16	69.44	42.83
15.29	84.70	13.44	111.27	26.6	4.189	0.17	68.92	42.35

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S1
Lab ID:	R-2026-034-001-002		
Visual Description:	Dark Brown Sand with Gravel (REMOLDED)		



Tested By: DL Date: 2/3/26 Approved By: MPS Date: 2/7/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.		
Client Reference:	Housatonic 5A		
Project No.:	R-2026-034-001		
Lab ID:	R-2026-034-001-002	Specific Gravity (Measured)	2.77

Visual Description: Dark Brown Sand with Gravel (REMOLDED)

SAMPLE CONDITION SUMMARY

Boring No.:	N/A	N/A	N/A
Depth (ft):	N/A	N/A	N/A
Sample No.:	TS-S1	TS-S1	TS-S1
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.001	0.001	0.001
Back Pressure (psi)	80	80	80
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	9.0	9.0	9.0
Total Unit Weight (pcf)	126.6	126.7	126.7
Dry Unit Weight (pcf)	116.2	116.2	116.3
Moisture Content (%) (FINAL)	12.6	13.3	13.5
Initial State Void Ratio,e	0.488	0.487	0.487
Void Ratio at Shear, e	0.477	0.460	0.458





Tested By: DL Date: 2/3/26 Input Checked By: MPS Date: 2/7/26

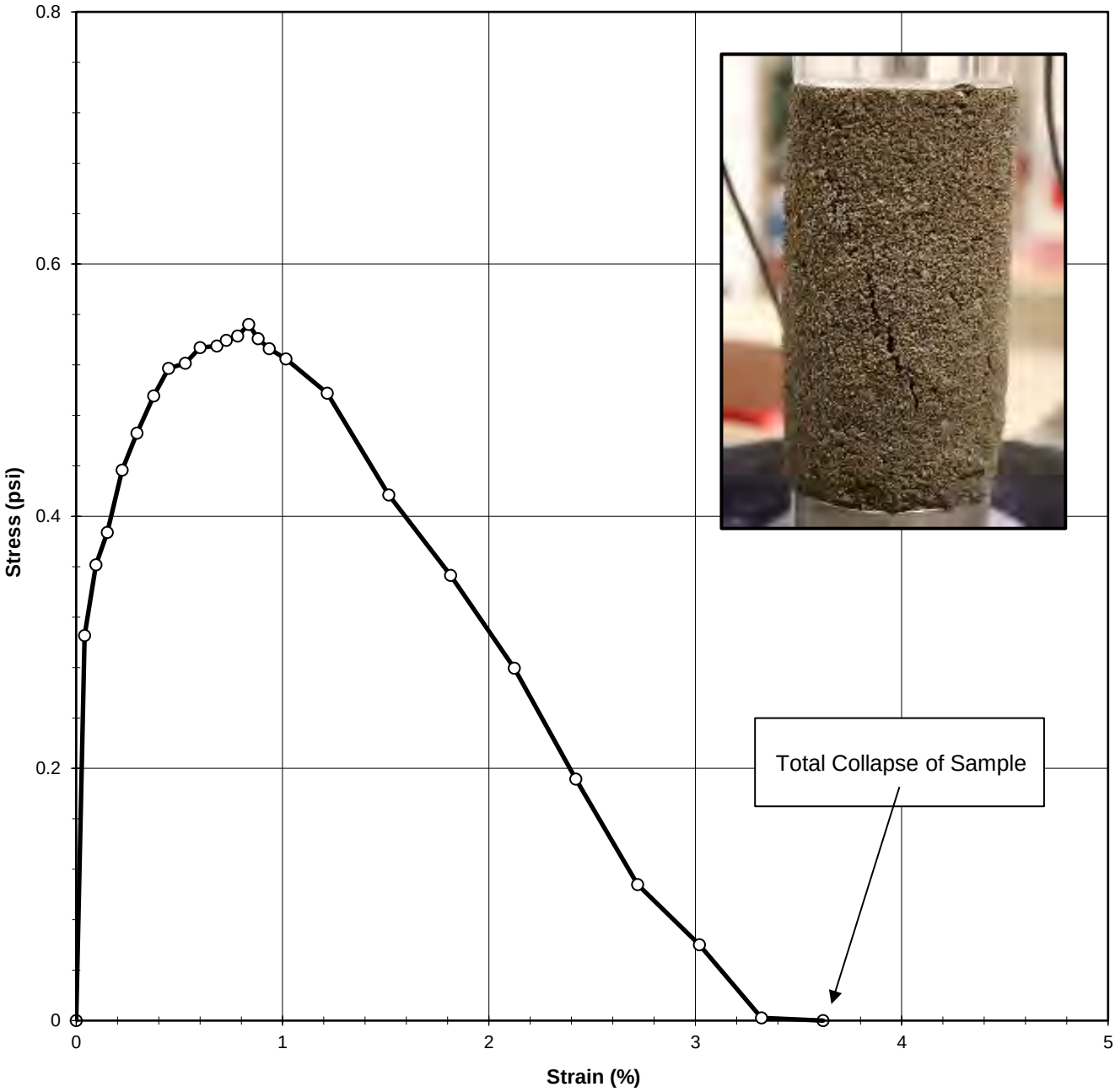
DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S1
Lab ID:	R-2026-034-001-002	Visual:	Dark Brown Sand with Gravel



Tested By	DL	Date	2/3/2026	Approved By	MPS	Date	2/5/2026

DCN: CT-S30 DATE: 11/09/09 REVISION: 4

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

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Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S1
Lab ID:	R-2026-034-001-002	Visual:	Dark Brown Sand with Gravel

INITIAL SAMPLE DIMENSIONS				WATER CONTENT AFTER TEST	
Length 1 (in):	5.984	Top Diameter (in):	2.873	Tare No.:	428
Length 2 (in):	5.984	Middle Diameter (in):	2.873	Weight of Tare & Wet Sample (g):	434.65
Length 3 (in):	5.984	Bottom Diameter (in):	2.873	Weight of Tare & Dry Sample (g):	407.08
Avg. Length (in):	**5.984**	**Avg. Diameter (in):**	**2.873**	Weight of Tare (g):	99.46
		Area (in^2):	**6.483**	Moisture Content (%):	8.96

UNIT WEIGHT			
Weight of Tube & Wet Sample (g):	2832.75	Sample Volume (cm^3):	635.7
Weight of Tube (g):	1542.73	Unit Wet Weight (g/cm^3):	2.03
Weight of Wet Sample (g):	1290.02	Unit Wet Weight (pcf):	126.63
Average Diameter (in):	2.87	Moisture Content (%):	8.96
Average Length (in):	5.98	Unit Dry Weight (pcf):	116.21
Average Length (cm):	15.20		

ELECTRONIC DEVICE DEFORMATION (in)	*LOAD (lb)*	*ELAPSED TIME (min)*	*STRAIN (%)*	*STRESS (psi)*
0.000	1.2	0.00	0.000	0.000
0.002	3.2	0.05	0.041	0.305
0.006	3.6	0.10	0.096	0.361
0.009	3.7	0.15	0.150	0.387
0.013	4.0	0.23	0.223	0.437
0.018	4.2	0.30	0.294	0.466
0.022	4.4	0.38	0.375	0.495
0.027	4.6	0.47	0.448	0.517
0.032	4.6	0.53	0.528	0.521
0.036	4.7	0.62	0.600	0.534
0.041	4.7	0.68	0.682	0.535
0.044	4.7	0.73	0.727	0.539
0.047	4.8	0.78	0.782	0.543
0.050	4.8	0.83	0.836	0.552
0.053	4.7	0.90	0.881	0.541
0.056	4.7	0.95	0.936	0.533
0.061	4.6	1.02	1.017	0.525
0.073	4.5	1.22	1.216	0.498
0.091	4.0	1.52	1.514	0.417
0.109	3.5	1.83	1.814	0.353
0.127	3.1	2.13	2.123	0.280
0.145	2.5	2.43	2.421	0.192
0.163	1.9	2.73	2.720	0.108
0.181	1.6	3.03	3.020	0.060
0.199	1.2	3.33	3.320	0.002
0.217	0.8	3.63	3.619	0.000

Tested By DL Date 2/3/2026 Input Checked By MPS Date 2/5/2026

DCN: CT-S30 DATE: 11/09/09 REVISION: 4

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PERMEABILITY TEST

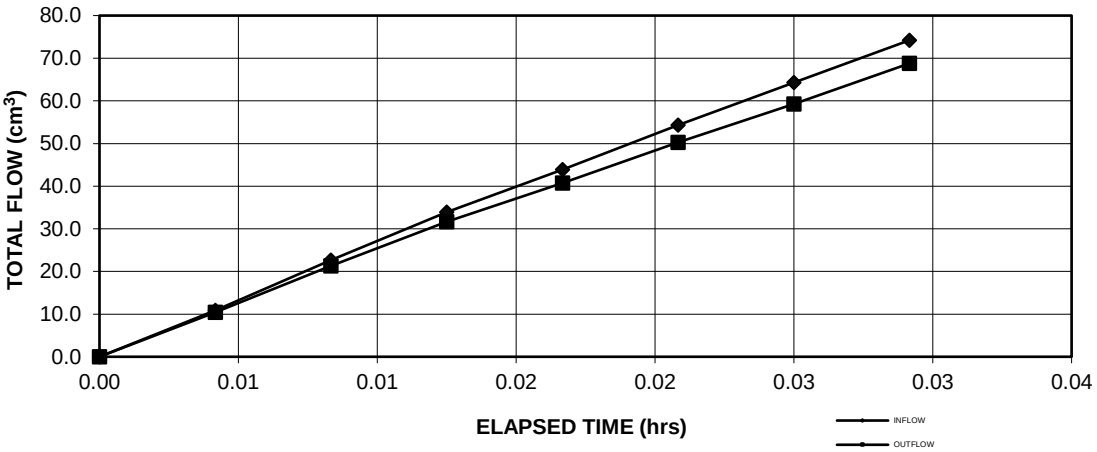
ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S4
Lab ID No.:	R-2026-034-001-003	Avg. Effective Consol. Pressure (psi):	20

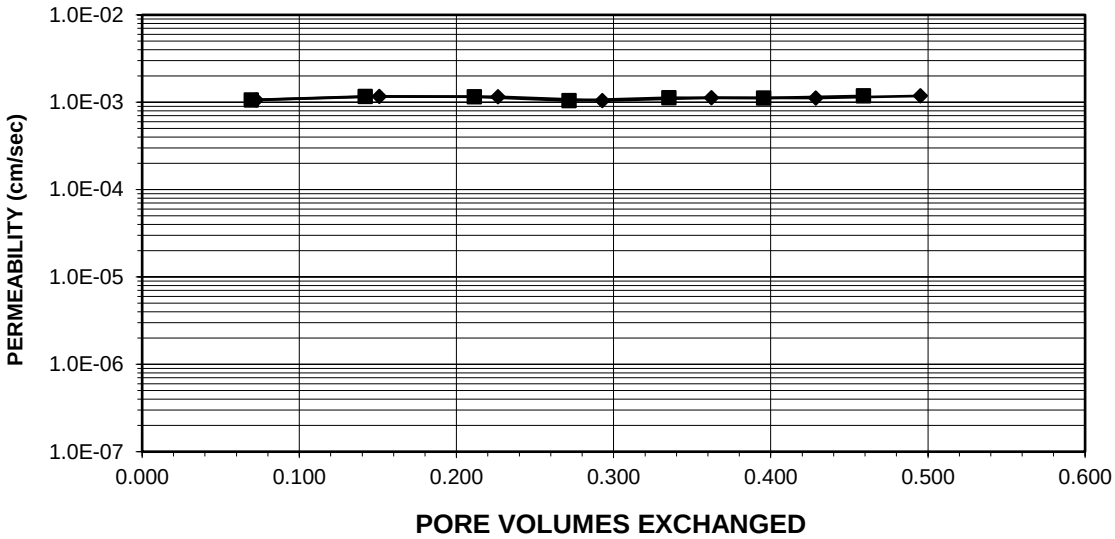
AVERAGE PERMEABILITY = 1.1E-03 cm/sec @ 20°C

AVERAGE PERMEABILITY = 1.1E-05 m/sec @ 20°C

TOTAL FLOW vs. ELAPSED TIME



PORE VOLUMES EXCHANGED vs. PERMEABILITY



Tested By: DL Date: 2/4/26 Checked By: AES Date: 2/5/26

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S4
Lab ID No.:	R-2026-034-001-003	Avg. Effective Consol. Pressure (psi):	20

Specific Gravity:	2.68	Measured
Sample Condition:		Remolded

Visual Description: Dark Brown Sand with Gravel

Permeant Type: Deaired Tap Water

MOISTURE CONTENT:	BEFORE TEST	AFTER TEST
Tare Number	428	709
Weight of Tare & Wet Sample (g)	379.22	363.03
Weight of Tare & Dry Sample (g)	359.27	319.80
Weight of Tare (g)	99.45	90.71
Weight of Water (g)	19.95	43.23
Weight of Dry Sample (g)	259.82	229.09
Moisture Content (%)	**7.7**	**18.9**

SPECIMEN:	BEFORE TEST	AFTER TEST
Weight of Tube & Wet Sample (g)	2396.52	NA
Weight of Tube (g)	1624.81	NA
Weight of Wet Sample (g)	771.71	851.92
Length 1 (in)	3.995	3.939
Length 2 (in)	3.995	3.955
Length 3 (in)	3.995	3.935
Top Diameter (in)	2.872	2.845
Middle Diameter (in)	2.872	2.880
Bottom Diameter (in)	2.872	2.878
Average Length (in)	4.00	3.94
Average Area (in^2)	6.48	6.46
Sample Volume (cm^3)	424.11	417.33
Unit Wet Weight (g/cm^3)	1.82	2.04
Unit Wet Weight (pcf)	113.6	127.4
Unit Dry Weight (pcf)	105.5	107.2
Unit Dry Weight (g/cm^3)	1.69	1.72
Void Ratio, e	0.59	0.56
Porosity, n	0.37	0.36
Pore Volume (cm^3)	156.7	149.9
Total Weight of Sample After Test (g)		855.14

Tested By: DL Date: 2/4/26 Checked By: AES Date: 2/5/26

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S4
Lab ID No.:	R-2026-034-001-003	Avg. Effective Consol. Pressure (psi):	20

Pressure Heads (Constant)	
Top Cap (psi)	79.0
Bottom Cap (psi)	81.0
Cell (psi)	100.0
Total Pressure Head (cm)	140.6
Hydraulic Gradient	14.04

Final Sample Dimensions	
Sample Length (cm), L	10.02
Sample Diameter (cm)	7.28
Sample Area (cm^2), A	41.67
Inflow Burette Area (cm^2), a-in	4.380
Outflow Burette Area (cm^2), a-out	4.380
B Parameter (%)	96

AVERAGE PERMEABILITY = 1.1E-03 cm/sec @ 20°C

AVERAGE PERMEABILITY = 1.1E-05 m/sec @ 20°C

DATE	TIME		ELAPSED TIME t	TOTAL INFLOW	TOTAL OUTFLOW	TOTAL HEAD h	FLOW (0 flow)	TEMP.	INCREMENTAL PERMEABILITY @ 20°C
(mm/dd/yy)	(hr)	(min)	(hr)	(cm^3)	(cm^3)	(cm)	(1 stop)	(°C)	(cm/sec)
2/4/2026	15	14	0.000	0.0	0.0	158.7	0	21.2	NA
2/4/2026	15	14	0.004	10.9	10.4	153.9	0	21.2	1.1E-03
2/4/2026	15	15	0.008	22.6	21.3	148.7	0	21.2	1.2E-03
2/4/2026	15	15	0.013	33.9	31.7	143.7	0	21.2	1.2E-03
2/4/2026	15	15	0.017	43.9	40.7	139.4	0	21.2	1.0E-03
2/4/2026	15	15	0.021	54.3	50.2	134.8	0	21.2	1.1E-03
2/4/2026	15	16	0.025	64.3	59.3	130.5	0	21.2	1.1E-03
2/4/2026	15	16	0.029	74.2	68.8	126.1	0	21.2	1.2E-03

Tested By: DL Date: 2/4/26 Checked By: AES Date: 2/5/26

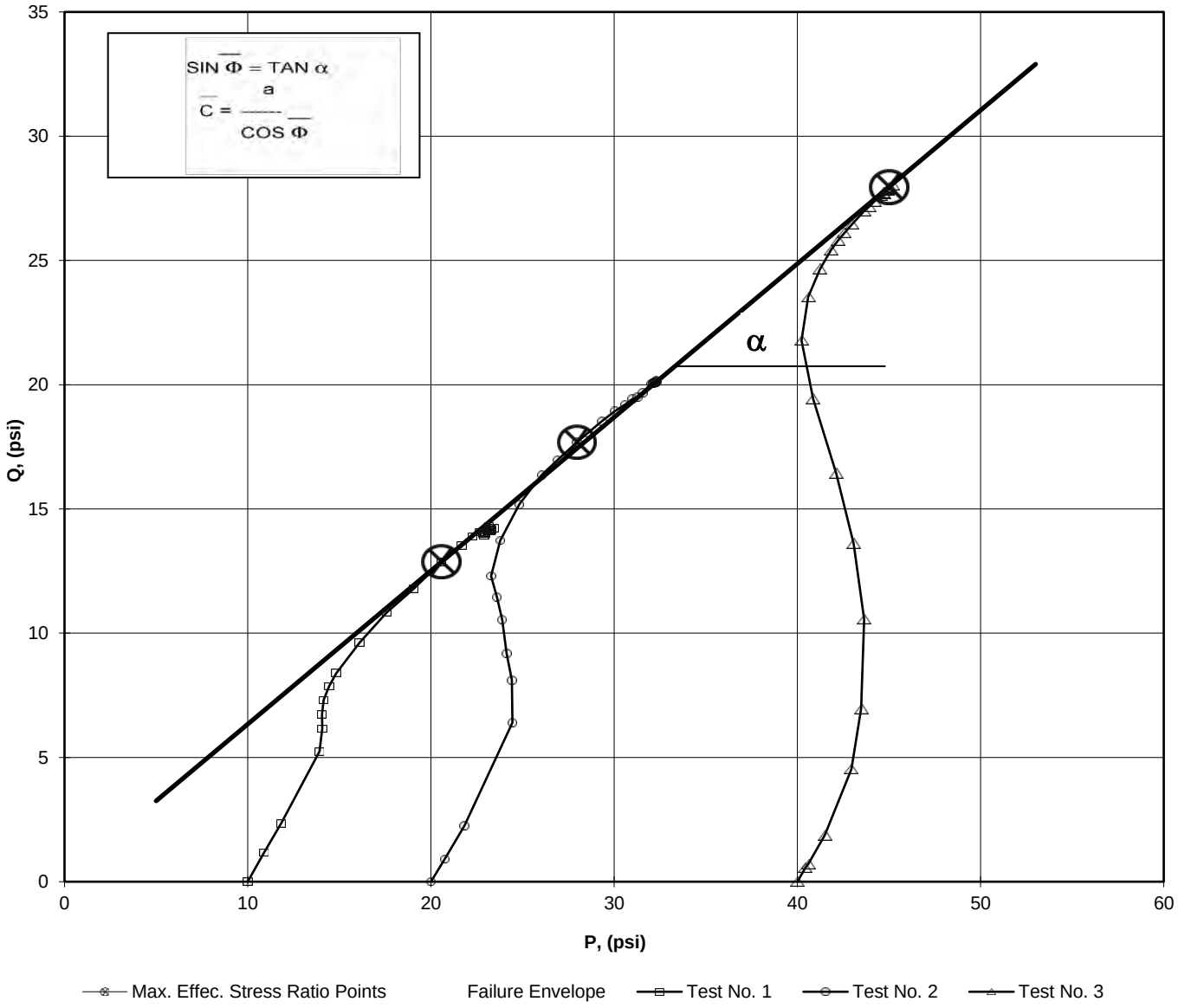
DCN: CT-22 DATE: 1/1/17 REVISION: 11

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S4
Lab ID:	R-2026-034-001-003		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	**0.00**	$\overline{C}$	=	**0.00**
α	=	**31.7**	$\overline{\Phi}$	=	**38.14**

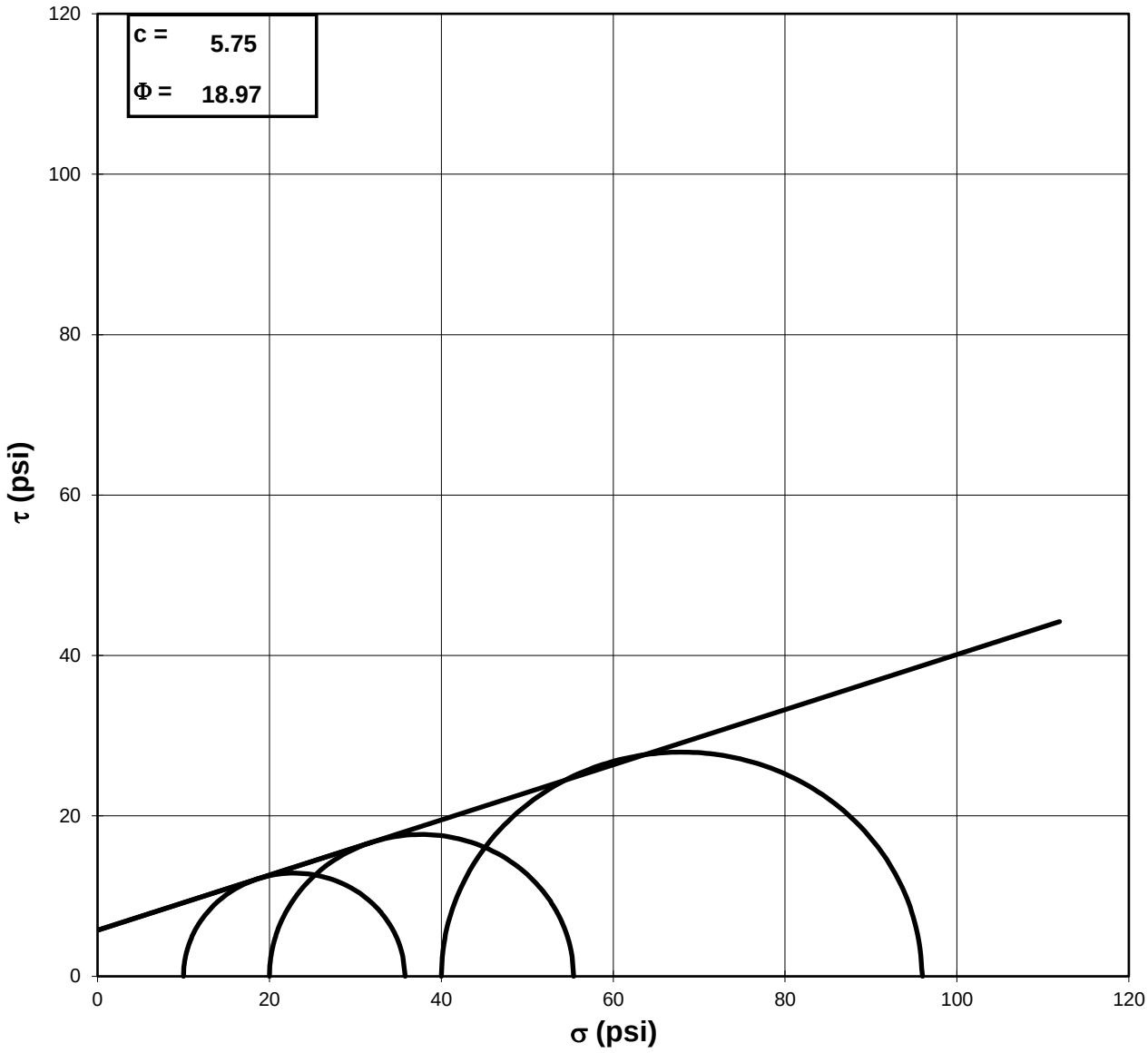
Tested By: DL Date: 2/2/26 Approved By: MPS Date: 2/5/26

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MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S4
Lab ID:	R-2026-034-001-003		
Visual Description:	Dark Brown Sand with Gravel (REMOLDED)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: DL *Date:* 2/2/26 *Approved By:* MPS *Date:* 2/5/26

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S4
Lab ID:	R-2026-034-001-003		

Visual Description: Dark Brown Sand with Gravel (REMOLDED)

Stage No.	1
Test No.	1

PRESSURES (psi)

Cell Pressure (psi)	90.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	10.0
Pore Pressure Response (%)	97

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	20.57
Q	=	12.87

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	13.4
Final Change (ml)	10.6

Initial Dial Reading (mil)	248
Dial Reading After Saturation (mil)	266
Dial Reading After Consolidation (mil)	272

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
19.4	0.000	80.0
34.3	0.001	80.3
49.2	0.002	80.5
86.0	0.008	81.3
97.9	0.014	82.1
105.1	0.019	82.7
112.6	0.029	83.2
120.0	0.037	83.4
126.9	0.048	83.6
142.9	0.070	83.5
159.2	0.099	83.2
172.4	0.135	82.7
187.4	0.169	82.3
197.4	0.210	81.9
203.1	0.240	81.6
206.7	0.281	81.4
211.9	0.337	81.1
211.4	0.396	81.0
212.8	0.440	80.9
216.2	0.499	80.8
216.9	0.543	80.9
216.4	0.587	81.0
221.2	0.631	81.0
222.5	0.661	81.0
221.2	0.690	81.2
221.4	0.719	81.2
223.2	0.749	81.1
223.2	0.793	81.0
228.4	0.837	80.9
229.7	0.866	81.0
226.8	0.895	80.9

Tested By: DL Date: 2/2/26 Input Checked By: MPS Date: 2/5/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S4
Lab ID:	R-2026-034-001-003		

Visual Description: Dark Brown Sand with Gravel (REMOLDED)

Effective Confining Pressure (psi)	10.0	*Stage No.*	1
		Test No	1

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	37.80
Length After Consolidation (in)	5.96
Area After Consolidation (in^2)	6.342

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.01	2.34	0.28	12.07	9.7	1.241	0.12	10.90	1.17
0.04	4.70	0.53	14.17	9.5	1.496	0.12	11.82	2.35
0.13	10.49	1.33	19.16	8.7	2.209	0.13	13.92	5.24
0.23	12.34	2.10	20.24	7.9	2.562	0.18	14.07	6.17
0.33	13.46	2.67	20.79	7.3	2.836	0.20	14.06	6.73
0.48	14.62	3.17	21.46	6.8	3.140	0.22	14.14	7.31
0.62	15.76	3.43	22.33	6.6	3.399	0.22	14.45	7.88
0.81	16.81	3.57	23.24	6.4	3.612	0.22	14.84	8.40
1.17	19.24	3.51	25.73	6.5	3.966	0.19	16.11	9.62
1.67	21.68	3.24	28.44	6.8	4.209	0.15	17.60	10.84
2.26	23.57	2.72	30.85	7.3	4.237	0.12	19.07	11.79
2.84	25.74	2.29	33.44	7.7	4.341	0.09	20.57	12.87
3.53	27.07	1.85	35.22	8.1	4.322	0.07	21.68	13.54
4.03	27.79	1.63	36.16	8.4	4.322	0.06	22.26	13.90
4.72	28.14	1.39	36.75	8.6	4.270	0.05	22.68	14.07
5.66	28.63	1.14	37.49	8.9	4.232	0.04	23.18	14.32
6.64	28.26	0.97	37.29	9.0	4.128	0.04	23.16	14.13
7.38	28.24	0.88	37.36	9.1	4.096	0.03	23.24	14.12
8.36	28.44	0.78	37.66	9.2	4.083	0.03	23.44	14.22
9.11	28.30	0.86	37.44	9.1	4.097	0.03	23.29	14.15
9.86	28.00	1.02	36.98	9.0	4.116	0.04	22.98	14.00
10.59	28.44	1.00	37.44	9.0	4.160	0.04	23.22	14.22
11.08	28.47	1.00	37.46	9.0	4.164	0.04	23.23	14.23
11.58	28.13	1.17	36.96	8.8	4.184	0.04	22.90	14.06
12.07	28.01	1.16	36.85	8.8	4.168	0.04	22.85	14.00
12.56	28.09	1.08	37.01	8.9	4.149	0.04	22.97	14.05
13.31	27.86	1.02	36.85	9.0	4.102	0.04	22.92	13.93
14.04	28.32	0.95	37.37	9.1	4.129	0.03	23.21	14.16
14.53	28.34	0.96	37.38	9.0	4.134	0.03	23.21	14.17
15.02	27.78	0.94	36.84	9.1	4.068	0.04	22.95	13.89

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S4
Lab ID:	R-2026-034-001-003		

Visual Description: Dark Brown Sand with Gravel (REMOLDED)

Stage No.	1
Test No.	2

PRESSURES (psi)

Cell Pressure (psi)	100.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	20.0
Pore Pressure Response (%)	98

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	27.97
Q	=	17.69

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	12.5
Final Change (ml)	11.5

Initial Dial Reading (mil)	208
Dial Reading After Saturation (mil)	211
Dial Reading After Consolidation (mil)	232

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
20.5	0.000	80.0
32.1	0.001	80.2
49.3	0.002	80.4
102.3	0.008	82.0
124.1	0.013	83.7
138.2	0.019	85.1
155.7	0.029	86.7
167.6	0.037	87.9
178.8	0.049	89.0
197.7	0.070	89.9
217.7	0.100	90.4
234.3	0.136	90.3
243.6	0.171	90.1
254.6	0.213	89.7
260.7	0.243	89.5
268.9	0.285	89.2
277.0	0.341	88.9
283.3	0.401	88.6
288.5	0.446	88.4
292.4	0.506	88.2
297.1	0.551	88.1
304.7	0.596	88.0
307.4	0.641	87.9
308.7	0.671	87.9
310.4	0.701	87.9
312.8	0.731	87.9
314.5	0.761	87.9
316.9	0.806	87.8
320.0	0.850	87.8
322.4	0.880	87.9
323.3	0.910	87.9

Tested By: DL Date: 2/2/26 Input Checked By: MPS Date: 2/5/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S4
Lab ID:	R-2026-034-001-003		

Visual Description: Dark Brown Sand with Gravel (REMOLDED)

Effective Confining Pressure (psi)	20.0	*Stage No.*	1
		Test No	2

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	38.03
Length After Consolidation (in)	5.96
Area After Consolidation (in^2)	6.381

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	1.83	0.16	21.67	19.8	1.092	0.09	20.75	0.91
0.04	4.51	0.43	24.08	19.6	1.231	0.10	21.82	2.26
0.13	12.81	1.96	30.86	18.0	1.710	0.16	24.45	6.41
0.23	16.21	3.69	32.51	16.3	1.994	0.23	24.41	8.10
0.32	18.38	5.06	33.32	14.9	2.231	0.28	24.13	9.19
0.48	21.10	6.66	34.44	13.3	2.581	0.32	23.89	10.55
0.63	22.91	7.85	35.05	12.1	2.886	0.35	23.60	11.45
0.82	24.61	9.01	35.59	11.0	3.240	0.37	23.29	12.30
1.17	27.45	9.95	37.51	10.1	3.731	0.37	23.78	13.73
1.68	30.39	10.36	40.02	9.6	4.154	0.35	24.83	15.19
2.27	32.75	10.32	42.43	9.7	4.384	0.32	26.06	16.38
2.87	33.96	10.06	43.89	9.9	4.417	0.30	26.91	16.98
3.57	35.37	9.71	45.66	10.3	4.439	0.28	27.97	17.69
4.07	36.11	9.48	46.63	10.5	4.434	0.27	28.57	18.05
4.78	37.08	9.21	47.87	10.8	4.435	0.25	29.33	18.54
5.73	37.89	8.89	49.00	11.1	4.411	0.24	30.06	18.95
6.73	38.41	8.60	49.81	11.4	4.370	0.23	30.60	19.20
7.49	38.86	8.43	50.43	11.6	4.359	0.22	31.00	19.43
8.49	38.99	8.21	50.78	11.8	4.307	0.21	31.28	19.50
9.24	39.35	8.11	51.24	11.9	4.310	0.21	31.56	19.67
10.00	40.09	8.03	52.06	12.0	4.348	0.20	32.02	20.04
10.75	40.13	7.95	52.19	12.1	4.329	0.20	32.12	20.07
11.26	40.08	7.92	52.16	12.1	4.318	0.20	32.12	20.04
11.76	40.09	7.91	52.18	12.1	4.316	0.20	32.14	20.05
12.26	40.20	7.90	52.30	12.1	4.321	0.20	32.20	20.10
12.76	40.20	7.88	52.32	12.1	4.317	0.20	32.22	20.10
13.52	40.17	7.81	52.36	12.2	4.296	0.20	32.28	20.09
14.26	40.25	7.80	52.45	12.2	4.299	0.20	32.33	20.13
14.76	40.33	7.87	52.46	12.1	4.323	0.20	32.30	20.16
15.27	40.21	7.92	52.29	12.1	4.328	0.20	32.19	20.11

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S4
Lab ID:	R-2026-034-001-003		

Visual Description: Dark Brown Sand with Gravel (REMOLDED)

Stage No.	1
Test No.	3

PRESSURES (psi)

Cell Pressure (psi)	120.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	40.0
Pore Pressure Response (%)	97

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	45.00
Q	=	27.96

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	10.8
Final Change (ml)	13.2

Initial Dial Reading (mil)	255
Dial Reading After Saturation (mil)	274
Dial Reading After Consolidation (mil)	357

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
20.2	0.000	80.0
27.4	0.001	80.1
29.2	0.003	80.1
44.2	0.008	80.4
78.3	0.014	81.6
109.6	0.019	83.5
156.0	0.028	86.9
195.3	0.036	90.5
232.2	0.048	94.3
271.7	0.069	98.6
303.5	0.099	101.5
328.2	0.135	102.9
345.0	0.171	103.4
357.5	0.213	103.6
364.5	0.243	103.6
371.2	0.285	103.5
379.6	0.342	103.5
390.7	0.401	103.3
396.1	0.446	103.3
403.5	0.506	103.2
409.9	0.551	103.0
414.9	0.596	103.0
421.6	0.641	103.0
423.0	0.671	102.9
422.3	0.702	103.0
426.6	0.732	102.9
429.6	0.762	102.9
433.6	0.806	102.9
437.9	0.851	102.9
442.0	0.881	102.8
440.7	0.911	102.9

Tested By: DL Date: 2/2/26 Input Checked By: MPS Date: 2/5/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S4
Lab ID:	R-2026-034-001-003		

Visual Description: Dark Brown Sand with Gravel (REMOLDED)

Effective Confining Pressure (psi)	40.0	*Stage No.*	1
		Test No	3

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

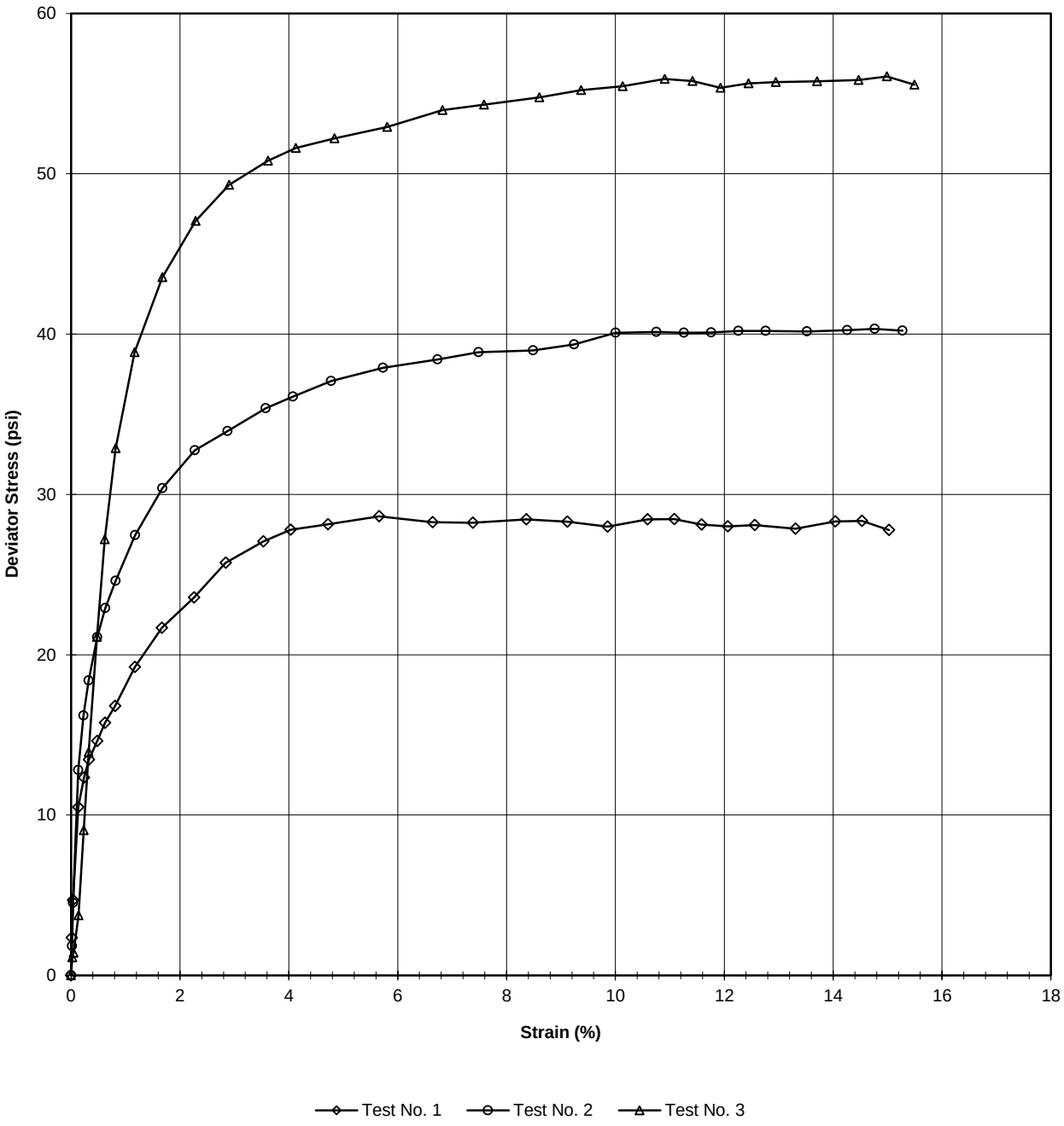
Volume After Consolidation (in^3)	37.62
Length After Consolidation (in)	5.88
Area After Consolidation (in^2)	6.395

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	1.12	0.12	41.00	39.9	1.028	0.11	40.44	0.56
0.04	1.40	0.11	41.29	39.9	1.035	0.08	40.59	0.70
0.14	3.74	0.37	43.37	39.6	1.094	0.10	41.50	1.87
0.23	9.05	1.57	47.48	38.4	1.236	0.18	42.96	4.53
0.32	13.93	3.49	50.44	36.5	1.381	0.26	43.48	6.96
0.48	21.12	6.91	54.21	33.1	1.638	0.34	43.65	10.56
0.62	27.20	10.54	56.67	29.5	1.923	0.40	43.07	13.60
0.82	32.88	14.33	58.55	25.7	2.281	0.45	42.11	16.44
1.16	38.86	18.57	60.29	21.4	2.813	0.49	40.86	19.43
1.68	43.56	21.54	62.01	18.5	3.360	0.51	40.23	21.78
2.29	47.06	22.94	64.11	17.1	3.758	0.50	40.59	23.53
2.90	49.31	23.42	65.89	16.6	3.974	0.49	41.24	24.66
3.62	50.82	23.59	67.24	16.4	4.097	0.48	41.82	25.41
4.13	51.61	23.58	68.04	16.4	4.142	0.47	42.23	25.81
4.84	52.22	23.54	68.67	16.5	4.173	0.46	42.57	26.11
5.81	52.92	23.47	69.46	16.5	4.201	0.46	43.00	26.46
6.82	53.97	23.34	70.63	16.7	4.240	0.45	43.64	26.99
7.59	54.32	23.26	71.05	16.7	4.245	0.44	43.90	27.16
8.60	54.77	23.18	71.59	16.8	4.256	0.44	44.20	27.38
9.37	55.21	23.05	72.17	17.0	4.257	0.43	44.56	27.61
10.13	55.46	23.04	72.41	17.0	4.270	0.43	44.69	27.73
10.90	55.92	22.95	72.96	17.0	4.280	0.42	45.00	27.96
11.41	55.79	22.94	72.85	17.1	4.271	0.42	44.95	27.90
11.93	55.37	22.96	72.41	17.0	4.250	0.43	44.72	27.68
12.45	55.64	22.91	72.73	17.1	4.255	0.42	44.91	27.82
12.95	55.72	22.95	72.77	17.1	4.268	0.42	44.91	27.86
13.71	55.77	22.92	72.86	17.1	4.265	0.42	44.97	27.89
14.47	55.85	22.86	73.00	17.1	4.258	0.42	45.07	27.93
14.99	56.07	22.84	73.23	17.2	4.268	0.42	45.19	28.04
15.49	55.56	22.86	72.70	17.1	4.242	0.42	44.92	27.78

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S4
Lab ID:	R-2026-034-001-003		
Visual Description:	Dark Brown Sand with Gravel (REMOLDED)		



Tested By: DL Date: 2/2/26 Approved By: MPS Date: 2/5/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.		
Client Reference:	Housatonic 5A		
Project No.:	R-2026-034-001		
Lab ID:	R-2026-034-001-003	Specific Gravity (Measured)	2.68

Visual Description: Dark Brown Sand with Gravel (REMOLDED)

SAMPLE CONDITION SUMMARY

Boring No.:	N/A	N/A	N/A
Depth (ft):	N/A	N/A	N/A
Sample No.:	TS-S4	TS-S4	TS-S4
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.001	0.001	0.001
Back Pressure (psi)	80	80	80
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	7.7	7.7	7.7
Total Unit Weight (pcf)	113.4	113.5	113.6
Dry Unit Weight (pcf)	105.3	105.4	105.5
Moisture Content (%) (FINAL)	17.0	17.2	16.8
Initial State Void Ratio,e	0.588	0.587	0.585
Void Ratio at Shear, e	0.548	0.556	0.538





Tested By: DL Date: 2/2/26 Input Checked By: MPS Date: 2/5/26

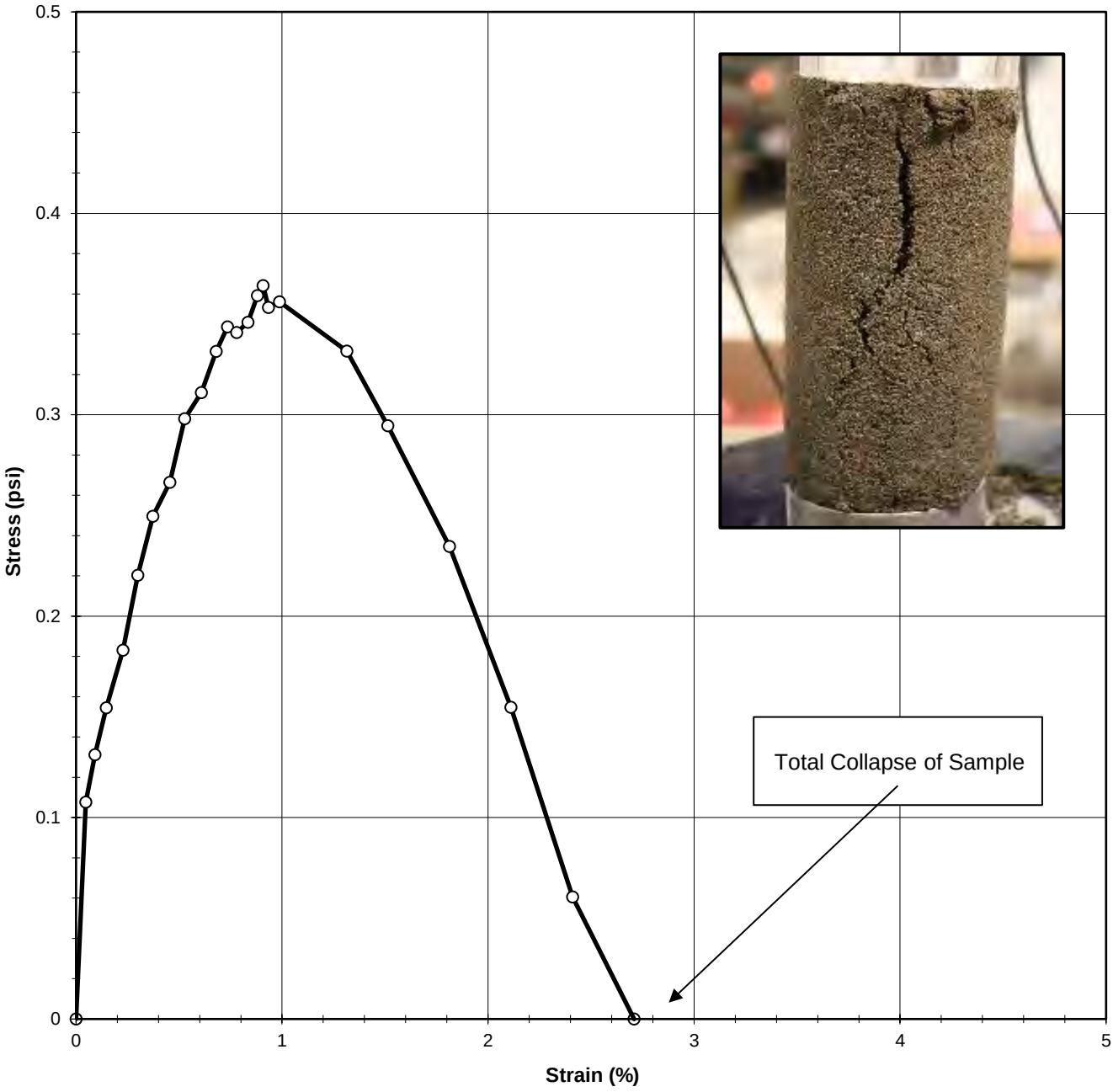
DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S4
Lab ID:	R-2026-034-001-003	Visual:	Dark Brown Sand with Gravel



Tested By	DL	Date	2/3/2026	Approved By	MPS	Date	2/5/2026

DCN: CT-S30 DATE: 11/09/09 REVISION: 4

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

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Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-001	Sample No.:	TS-S4
Lab ID:	R-2026-034-001-003	Visual:	Dark Brown Sand with Gravel

INITIAL SAMPLE DIMENSIONS				WATER CONTENT AFTER TEST	
Length 1 (in):	5.984	Top Diameter (in):	2.873	Tare No.:	428
Length 2 (in):	5.984	Middle Diameter (in):	2.873	Weight of Tare & Wet Sample (g):	379.22
Length 3 (in):	5.984	Bottom Diameter (in):	2.873	Weight of Tare & Dry Sample (g):	359.27
Avg. Length (in):	**5.984**	**Avg. Diameter (in):**	**2.873**	Weight of Tare (g):	99.45
		Area (in^2):	**6.483**	Moisture Content (%):	7.68

UNIT WEIGHT			
Weight of Tube & Wet Sample (g):	2700.01	Sample Volume (cm^3):	635.7
Weight of Tube (g):	1542.73	Unit Wet Weight (g/cm^3):	1.82
Weight of Wet Sample (g):	1157.28	Unit Wet Weight (pcf):	113.60
Average Diameter (in):	2.87	Moisture Content (%):	7.68
Average Length (in):	5.98	Unit Dry Weight (pcf):	105.50
Average Length (cm):	15.20		

ELECTRONIC DEVICE DEFORMATION (in)	*LOAD (lb)*	*ELAPSED TIME (min)*	*STRAIN (%)*	*STRESS (psi)*
0.000	1.6	0.00	0.000	0.000
0.003	2.3	0.05	0.047	0.108
0.006	2.4	0.10	0.092	0.131
0.009	2.6	0.15	0.146	0.154
0.014	2.7	0.23	0.227	0.183
0.018	3.0	0.32	0.300	0.220
0.022	3.2	0.38	0.373	0.250
0.027	3.3	0.47	0.455	0.266
0.032	3.5	0.53	0.527	0.298
0.036	3.6	0.62	0.609	0.311
0.041	3.7	0.68	0.681	0.331
0.044	3.8	0.75	0.735	0.344
0.047	3.8	0.80	0.780	0.341
0.050	3.8	0.85	0.835	0.346
0.053	3.9	0.90	0.880	0.359
0.054	3.9	0.92	0.908	0.364
0.056	3.9	0.95	0.934	0.353
0.059	3.9	1.00	0.988	0.356
0.079	3.7	1.32	1.314	0.332
0.091	3.5	1.52	1.514	0.295
0.108	3.1	1.82	1.813	0.235
0.126	2.6	2.12	2.111	0.155
0.144	2.0	2.42	2.410	0.061
0.162	1.1	2.73	2.709	0.000

Tested By DL Date 2/3/2026 Input Checked By MPS Date 2/5/2026

DCN: CT-S30 DATE: 11/09/09 REVISION: 4

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February 24, 2026

Project No. R-2026-034-002

David Liles
Arcadis U.S., Inc.
630 Plaza Drive Suite 200
Highlands Ranch, CO 80129

david.liles@arcadis.com

Transmittal
Laboratory Test Results
Housatonic 5A

Please find attached the laboratory test results for the above referenced project. The tests were outlined on the Project Verification Form that was transmitted to your firm prior to the testing. The testing was performed in general accordance with the methods listed on the enclosed data sheets. The test results are believed to be representative of the samples that were submitted for testing and are indicative only of the specimens which were evaluated. We have no direct knowledge of the origin of the samples and imply no position with regard to the nature of the test results, i.e. pass/fail and no claims as to the suitability of the material for its intended use.

The test data and all associated project information provided shall be held in strict confidence and disclosed to other parties only with authorization by our Client. The test data submitted herein is considered integral with this report and is not to be reproduced except in whole and only with the authorization of the Client and Geotechnics. The remaining sample materials for this project will be retained for a minimum of 90 days as directed by the Geotechnics' Quality Program.

We are pleased to provide these testing services. Should you have any questions or if we may be of further assistance, please contact our office.

Respectively submitted,

Michael P. Smith
Regional Manager

We understand that you have a choice in your laboratory services and we thank you for choosing Geotechnics.

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PERMEABILITY TEST

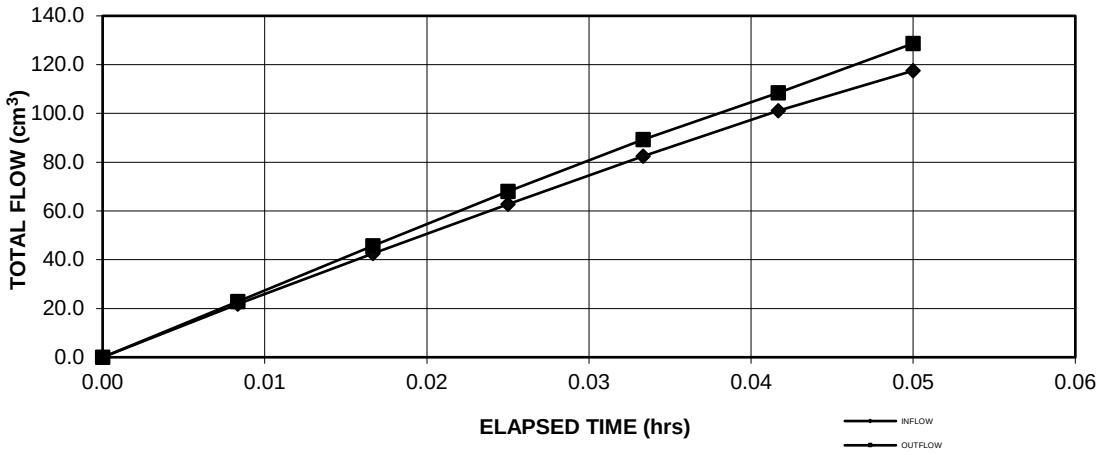
ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-002	Sample No.:	TS-S2
Lab ID No.:	R-2026-034-002-001	Avg. Effective Consol. Pressure (psi):	20

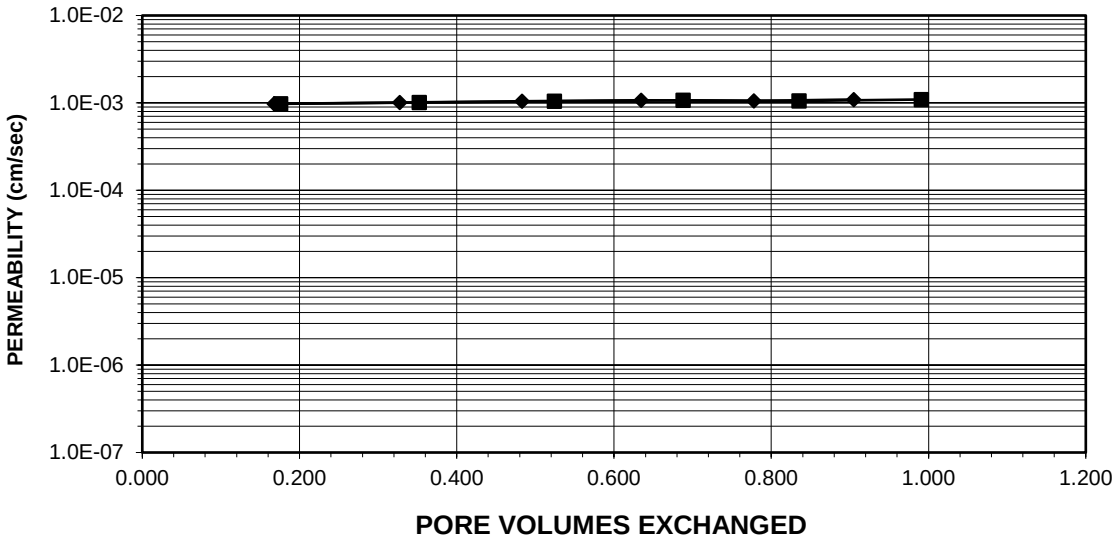
AVERAGE PERMEABILITY = 1.1E-03 cm/sec @ 20°C

AVERAGE PERMEABILITY = 1.1E-05 m/sec @ 20°C

TOTAL FLOW vs. ELAPSED TIME



PORE VOLUMES EXCHANGED vs. PERMEABILITY



Tested By: DL Date: 2/19/26 Checked By: AES Date: 2/24/26

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-002	Sample No.:	TS-S2
Lab ID No.:	R-2026-034-002-001	Avg. Effective Consol. Pressure (psi):	20

Specific Gravity:	2.67	Measured
Sample Condition:		Remolded

Visual Description: Dark Brown Sand with Silt

Permeant Type: Deaired Tap Water

MOISTURE CONTENT:	BEFORE TEST	AFTER TEST
Tare Number	1-A	487
Weight of Tare & Wet Sample (g)	318.99	361.09
Weight of Tare & Dry Sample (g)	294.85	317.08
Weight of Tare (g)	89.28	99.11
Weight of Water (g)	24.14	44.01
Weight of Dry Sample (g)	205.57	217.97
Moisture Content (%)	**11.7**	**20.2**

SPECIMEN:	BEFORE TEST	AFTER TEST
Weight of Tube & Wet Sample (g)	2399.02	NA
Weight of Tube (g)	1624.81	NA
Weight of Wet Sample (g)	774.21	832.74
Length 1 (in)	3.995	3.986
Length 2 (in)	3.995	3.985
Length 3 (in)	3.995	2.979
Top Diameter (in)	2.872	2.880
Middle Diameter (in)	2.872	2.876
Bottom Diameter (in)	2.872	2.881
Average Length (in)	4.00	3.65
Average Area (in^2)	6.48	6.51
Sample Volume (cm^3)	424.11	389.37
Unit Wet Weight (g/cm^3)	1.83	2.14
Unit Wet Weight (pcf)	114.0	133.5
Unit Dry Weight (pcf)	102.0	111.1
Unit Dry Weight (g/cm^3)	1.63	1.78
Void Ratio, e	0.63	0.50
Porosity, n	0.39	0.33
Pore Volume (cm^3)	164.6	129.9
Total Weight of Sample After Test (g)		838.36

Tested By: DL Date: 2/19/26 Checked By: AES Date: 2/24/26

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-002	Sample No.:	TS-S2
Lab ID No.:	R-2026-034-002-001	Avg. Effective Consol. Pressure (psi):	20

Pressure Heads (Constant)	
Top Cap (psi)	79.0
Bottom Cap (psi)	81.0
Cell (psi)	100.0
Total Pressure Head (cm)	140.6
Hydraulic Gradient	15.17

Final Sample Dimensions	
Sample Length (cm), L	9.27
Sample Diameter (cm)	7.31
Sample Area (cm^2), A	42.00
Inflow Burette Area (cm^2), a-in	4.744
Outflow Burette Area (cm^2), a-out	4.744
B Parameter (%)	97

AVERAGE PERMEABILITY = 1.1E-03 cm/sec @ 20°C

AVERAGE PERMEABILITY = 1.1E-05 m/sec @ 20°C

DATE	TIME		ELAPSED TIME t	TOTAL INFLOW	TOTAL OUTFLOW	TOTAL HEAD h	FLOW (0 flow)	TEMP.	INCREMENTAL PERMEABILITY @ 20°C
(mm/dd/yy)	(hr)	(min)	(hr)	(cm^3)	(cm^3)	(cm)	(1 stop)	(°C)	(cm/sec)
2/20/2026	16	16	0.000	0.0	0.0	167.2	0	21.5	NA
2/20/2026	16	17	0.008	21.8	22.9	157.8	0	21.5	9.8E-04
2/20/2026	16	17	0.017	42.5	45.7	148.6	0	21.5	1.0E-03
2/20/2026	16	18	0.025	62.7	68.1	139.6	0	21.5	1.0E-03
2/20/2026	16	18	0.033	82.4	89.3	131.0	0	21.5	1.1E-03
2/20/2026	16	19	0.042	101.0	108.5	123.0	0	21.5	1.1E-03
2/20/2026	16	19	0.050	117.5	128.7	115.3	0	21.5	1.1E-03

Tested By: DL Date: 2/20/26 Checked By: AES Date: 2/24/26

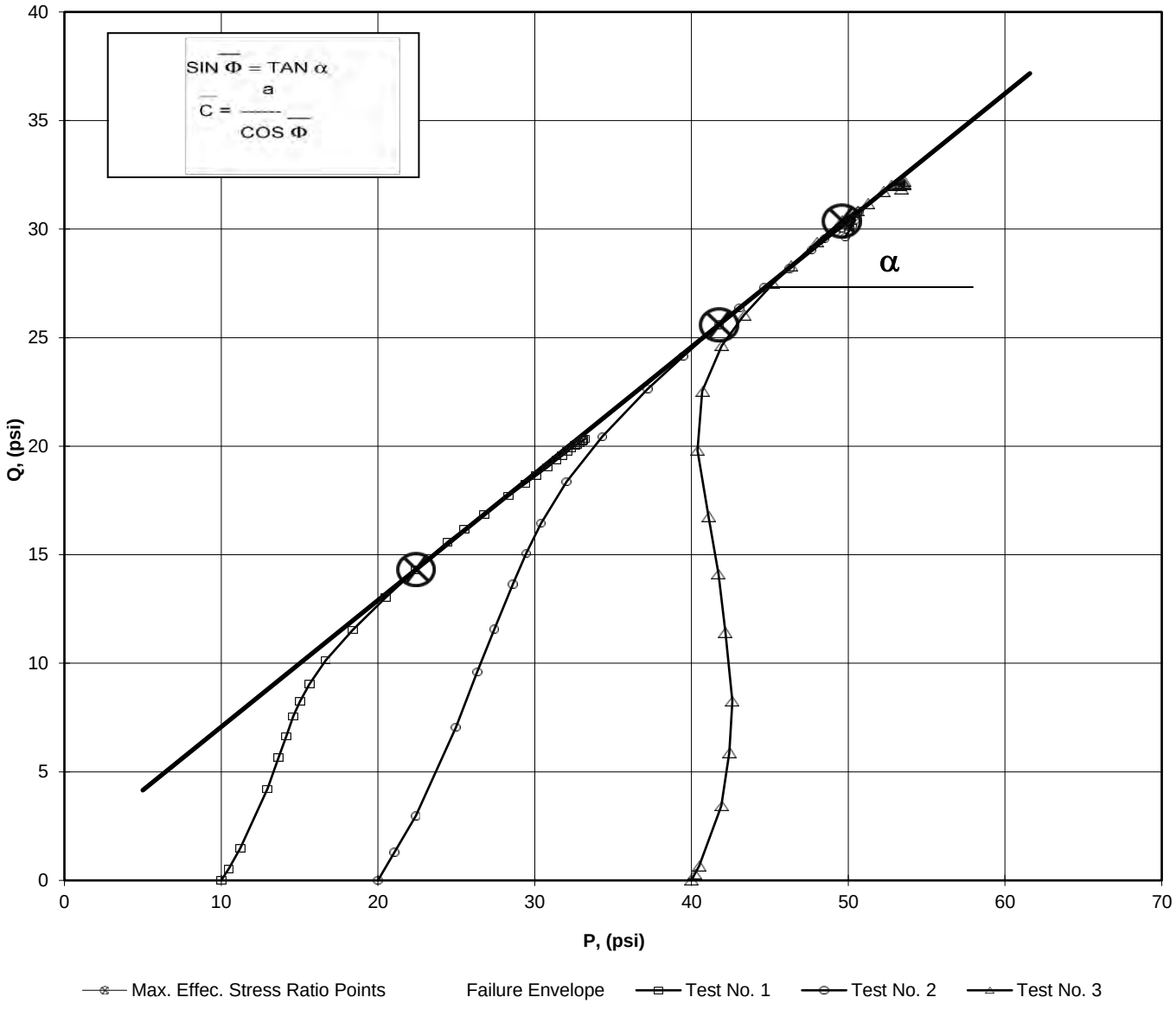
DCN: CT-22 DATE: 1/1/17 REVISION: 11

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-002	Sample No.:	TS-S2
Lab ID:	R-2026-034-002-001		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	**0.00**	$\overline{C}$	=	**0.00**
α	=	**30.3**	$\overline{\Phi}$	=	**35.69**

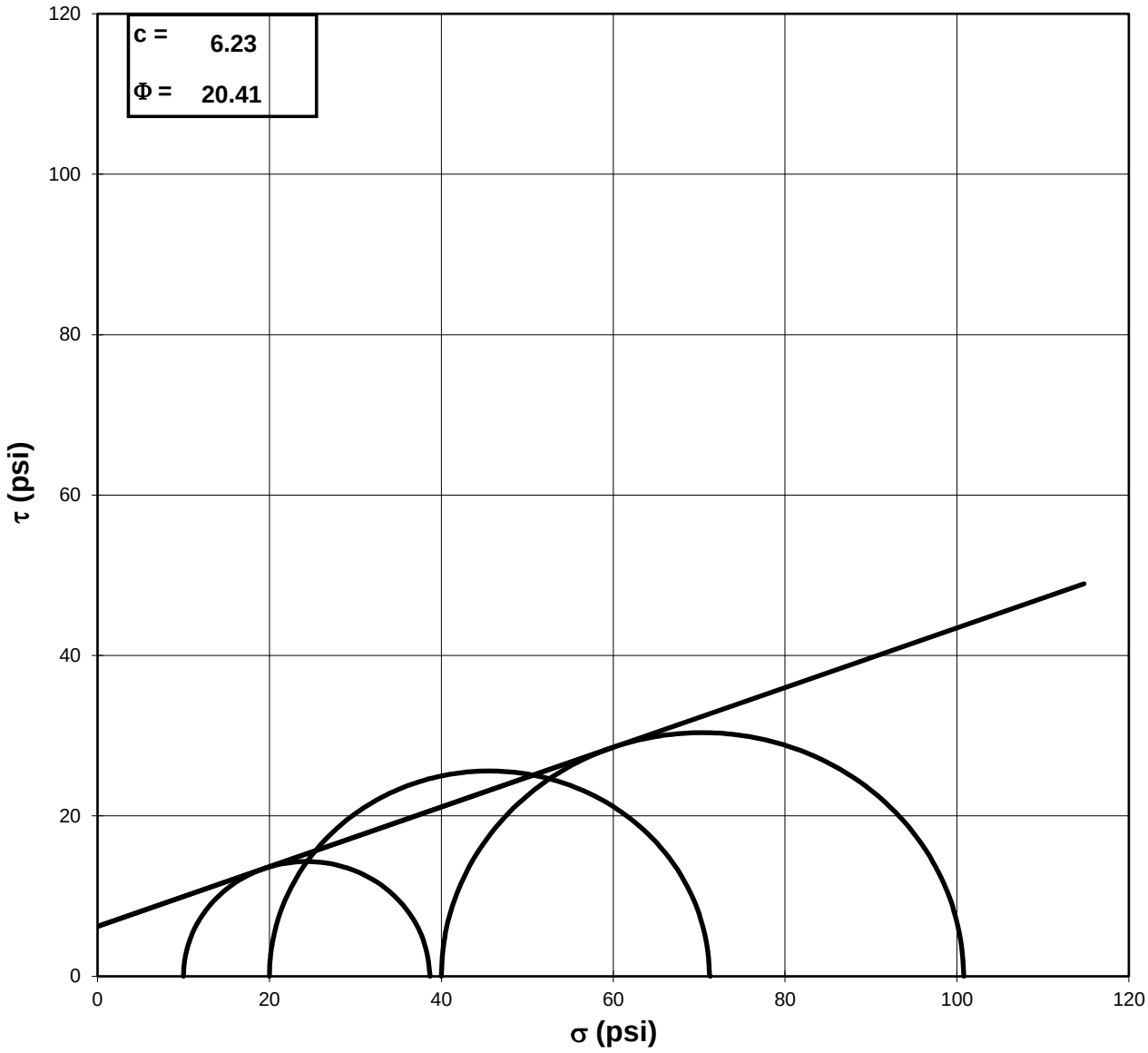
Tested By: DL Date: 2/19/26 Approved By: MPS Date: 2/24/26

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MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-002	Sample No.:	TS-S2
Lab ID:	R-2026-034-002-001		
Visual Description:	Dark Brown Sand with Silt (REMOLDED)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: DL *Date:* 2/19/26 *Approved By:* MPS *Date:* 2/24/26

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-002	Sample No.:	TS-S2
Lab ID:	R-2026-034-002-001		

Visual Description: Dark Brown Sand with Silt (REMOLDED)

Stage No.	1
Test No.	1

PRESSURES (psi)

Cell Pressure (psi)	90.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	10.0
Pore Pressure Response (%)	96

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	22.42
Q	=	14.32

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	20.6
Final Change (ml)	3.4
Initial Dial Reading (mil)	239
Dial Reading After Saturation (mil)	240
Dial Reading After Consolidation (mil)	253

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
19.4	0.000	80.0
26.4	0.001	80.1
38.7	0.003	80.3
74.0	0.008	81.3
92.7	0.014	82.0
105.5	0.020	82.5
117.6	0.029	83.0
126.9	0.038	83.2
137.3	0.049	83.4
152.2	0.070	83.5
171.0	0.100	83.1
191.6	0.136	82.5
209.9	0.172	81.9
228.3	0.213	81.1
237.4	0.243	80.7
248.1	0.285	80.1
262.2	0.341	79.4
272.6	0.401	78.9
280.1	0.446	78.6
288.0	0.506	78.2
294.9	0.551	78.0
300.2	0.595	77.8
305.3	0.640	77.7
309.2	0.670	77.6
312.8	0.700	77.5
315.1	0.729	77.4
318.0	0.760	77.3
321.7	0.805	77.2
324.9	0.849	77.2
327.7	0.879	77.1
331.1	0.909	77.1

Tested By: DL Date: 2/19/26 Input Checked By: MPS Date: 2/24/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-002	Sample No.:	TS-S2
Lab ID:	R-2026-034-002-001		

Visual Description: Dark Brown Sand with Silt (REMOLDED)

Effective Confining Pressure (psi)	10.0	*Stage No.*	1
		Test No	1

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	38.57
Length After Consolidation (in)	5.97
Area After Consolidation (in^2)	6.460

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.01	1.08	0.05	11.03	9.9	1.109	0.05	10.49	0.54
0.04	2.98	0.26	12.71	9.7	1.306	0.09	11.22	1.49
0.14	8.43	1.27	17.16	8.7	1.965	0.16	12.95	4.21
0.23	11.32	2.00	19.32	8.0	2.414	0.18	13.66	5.66
0.34	13.27	2.49	20.79	7.5	2.766	0.20	14.15	6.64
0.49	15.12	2.96	22.16	7.0	3.149	0.20	14.60	7.56
0.63	16.53	3.23	23.30	6.8	3.440	0.20	15.04	8.26
0.82	18.10	3.41	24.69	6.6	3.745	0.20	15.64	9.05
1.17	20.30	3.48	26.83	6.5	4.113	0.18	16.67	10.15
1.68	23.07	3.15	29.92	6.9	4.366	0.14	18.39	11.53
2.27	26.04	2.53	33.51	7.5	4.489	0.10	20.49	13.02
2.87	28.63	1.90	36.73	8.1	4.534	0.07	22.42	14.32
3.57	31.18	1.15	40.03	8.9	4.522	0.04	24.44	15.59
4.08	32.36	0.66	41.70	9.3	4.463	0.02	25.52	16.18
4.77	33.71	0.08	43.63	9.9	4.398	0.00	26.78	16.85
5.72	35.43	-0.61	46.05	10.6	4.339	-0.02	28.33	17.72
6.71	36.55	-1.13	47.68	11.1	4.285	-0.03	29.40	18.28
7.47	37.33	-1.45	48.78	11.4	4.260	-0.04	30.11	18.67
8.47	38.06	-1.79	49.85	11.8	4.228	-0.05	30.82	19.03
9.22	38.71	-2.03	50.74	12.0	4.219	-0.05	31.38	19.36
9.97	39.13	-2.19	51.33	12.2	4.209	-0.06	31.76	19.57
10.72	39.50	-2.35	51.85	12.3	4.200	-0.06	32.10	19.75
11.22	39.81	-2.42	52.24	12.4	4.205	-0.06	32.33	19.91
11.73	40.08	-2.52	52.61	12.5	4.201	-0.07	32.57	20.04
12.21	40.18	-2.60	52.78	12.6	4.189	-0.07	32.69	20.09
12.73	40.34	-2.67	53.01	12.7	4.183	-0.07	32.84	20.17
13.48	40.48	-2.78	53.26	12.8	4.168	-0.07	33.02	20.24
14.22	40.55	-2.83	53.38	12.8	4.160	-0.07	33.11	20.28
14.73	40.68	-2.88	53.56	12.9	4.159	-0.07	33.22	20.34
15.23	40.90	-2.91	53.81	12.9	4.168	-0.07	33.36	20.45

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-002	Sample No.:	TS-S2
Lab ID:	R-2026-034-002-001		

Visual Description: Dark Brown Sand with Silt (REMOLDED)

Stage No.	1
Test No.	2

PRESSURES (psi)

Cell Pressure (psi)	100.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	20.0
Pore Pressure Response (%)	96

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	41.76
Q	=	25.60

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	16.5
Final Change (ml)	7.5

Initial Dial Reading (mil)	290
Dial Reading After Saturation (mil)	292
Dial Reading After Consolidation (mil)	307

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
20.4	0.000	80.0
37.0	0.001	80.2
58.5	0.002	80.6
111.0	0.008	82.1
144.0	0.014	83.3
169.4	0.020	84.1
196.4	0.029	85.0
214.9	0.037	85.6
233.4	0.049	86.0
258.9	0.070	86.3
287.3	0.100	86.1
317.7	0.135	85.4
339.4	0.171	84.7
361.2	0.213	83.8
373.2	0.243	83.3
388.4	0.285	82.7
404.1	0.341	81.9
419.9	0.401	81.4
430.3	0.446	81.0
439.2	0.505	80.7
445.4	0.551	80.5
451.3	0.596	80.4
460.0	0.640	80.2
464.5	0.670	80.1
468.7	0.700	80.1
460.9	0.730	80.1
467.9	0.760	80.0
467.9	0.805	79.9
468.5	0.850	79.9
466.6	0.880	79.8
470.1	0.910	79.8

Tested By: DL Date: 2/19/26 Input Checked By: MPS Date: 2/24/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-002	Sample No.:	TS-S2
Lab ID:	R-2026-034-002-001		

Visual Description: Dark Brown Sand with Silt (REMOLDED)

Effective Confining Pressure (psi)	20.0	*Stage No.*	1
		Test No	2

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	38.30
Length After Consolidation (in)	5.97
Area After Consolidation (in^2)	6.418

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	2.59	0.24	22.35	19.8	1.131	0.10	21.05	1.30
0.04	5.93	0.56	25.37	19.4	1.305	0.10	22.41	2.97
0.13	14.10	2.08	32.02	17.9	1.786	0.15	24.97	7.05
0.24	19.21	3.27	35.94	16.7	2.148	0.18	26.33	9.61
0.33	23.15	4.15	39.00	15.9	2.460	0.19	27.43	11.57
0.48	27.29	5.03	42.26	15.0	2.823	0.19	28.62	13.65
0.62	30.12	5.59	44.52	14.4	3.091	0.19	29.46	15.06
0.81	32.92	6.05	46.87	14.0	3.359	0.19	30.41	16.46
1.17	36.73	6.33	50.40	13.7	3.687	0.18	32.04	18.36
1.67	40.89	6.13	54.77	13.9	3.948	0.16	34.32	20.45
2.27	45.28	5.43	59.84	14.6	4.109	0.13	37.20	22.64
2.86	48.29	4.66	63.63	15.3	4.149	0.10	39.48	24.15
3.57	51.20	3.84	67.36	16.2	4.169	0.08	41.76	25.60
4.07	52.74	3.31	69.44	16.7	4.160	0.07	43.06	26.37
4.77	54.62	2.66	71.95	17.3	4.150	0.05	44.64	27.31
5.72	56.37	1.94	74.43	18.1	4.121	0.04	46.25	28.19
6.72	58.07	1.38	76.69	18.6	4.119	0.02	47.65	29.04
7.47	59.10	1.04	78.06	19.0	4.117	0.02	48.51	29.55
8.47	59.74	0.68	79.06	19.3	4.091	0.01	49.19	29.87
9.23	60.11	0.49	79.62	19.5	4.082	0.01	49.56	30.06
9.98	60.44	0.35	80.09	19.6	4.076	0.01	49.87	30.22
10.73	61.15	0.23	80.92	19.8	4.093	0.00	50.34	30.57
11.23	61.43	0.15	81.29	19.9	4.094	0.00	50.57	30.72
11.73	61.66	0.13	81.53	19.9	4.103	0.00	50.70	30.83
12.24	60.24	0.06	80.18	19.9	4.021	0.00	50.06	30.12
12.74	60.84	0.00	80.85	20.0	4.042	0.00	50.42	30.42
13.49	60.33	-0.10	80.42	20.1	4.002	0.00	50.26	30.16
14.24	59.88	-0.14	80.01	20.1	3.973	0.00	50.08	29.94
14.75	59.27	-0.17	79.44	20.2	3.939	0.00	49.81	29.64
15.25	59.39	-0.17	79.56	20.2	3.944	0.00	49.87	29.69

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-002	Sample No.:	TS-S2
Lab ID:	R-2026-034-002-001		

Visual Description: Dark Brown Sand with Silt (REMOLDED)

Stage No.	1
Test No.	3

PRESSURES (psi)

Cell Pressure (psi)	120.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	40.0
Pore Pressure Response (%)	98

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	49.59
Q	=	30.38

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	9.0
Final Change (ml)	15.0

Initial Dial Reading (mil)	260
Dial Reading After Saturation (mil)	263
Dial Reading After Consolidation (mil)	265

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
23.1	0.000	80.0
26.8	0.001	80.1
31.6	0.003	80.2
66.6	0.008	81.5
97.8	0.014	83.5
128.0	0.020	85.7
168.3	0.028	89.3
202.7	0.037	92.4
236.8	0.049	95.7
276.6	0.069	99.4
313.1	0.100	101.9
342.1	0.135	102.7
362.2	0.171	102.7
383.6	0.213	102.3
396.2	0.243	101.9
413.8	0.285	101.4
430.8	0.342	100.8
441.3	0.403	100.2
449.3	0.447	99.9
461.9	0.507	99.5
469.5	0.552	99.3
473.7	0.597	99.0
477.8	0.643	98.8
480.4	0.673	98.7
481.7	0.703	98.7
485.9	0.733	98.7
489.8	0.763	98.6
492.1	0.808	98.5
496.0	0.854	98.5
495.9	0.884	98.5
498.1	0.915	98.4

Tested By: DL Date: 2/19/26 Input Checked By: MPS Date: 2/24/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-002	Sample No.:	TS-S2
Lab ID:	R-2026-034-002-001		

Visual Description: Dark Brown Sand with Silt (REMOLDED)

Effective Confining Pressure (psi)	40.0	*Stage No.*	1
		Test No	3

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

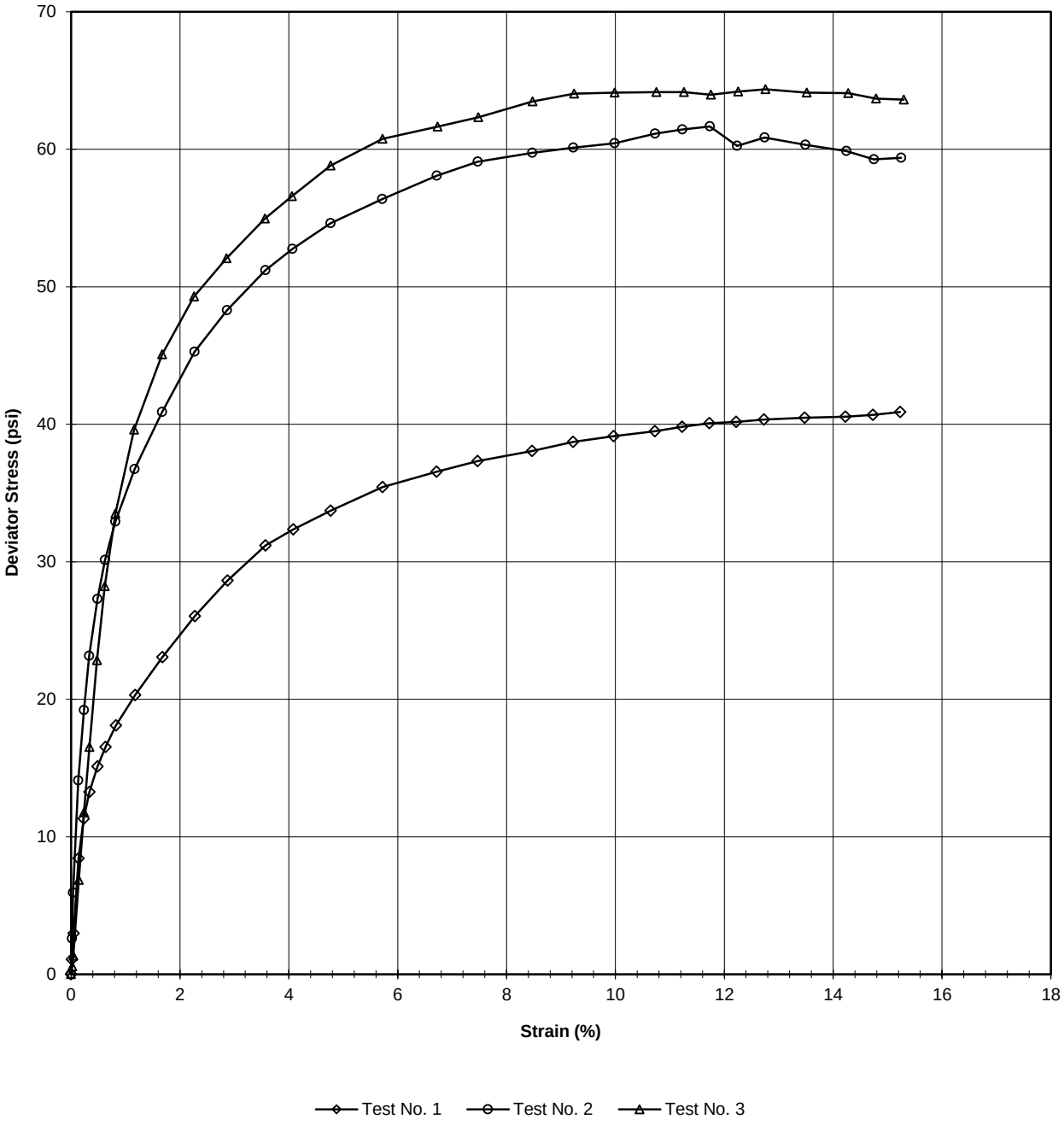
Volume After Consolidation (in^3)	37.82
Length After Consolidation (in)	5.98
Area After Consolidation (in^2)	6.325

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	0.58	0.08	40.50	39.9	1.014	0.14	40.21	0.29
0.04	1.34	0.19	41.15	39.8	1.034	0.14	40.48	0.67
0.14	6.86	1.52	45.34	38.5	1.178	0.23	41.91	3.43
0.24	11.77	3.48	48.29	36.5	1.322	0.30	42.41	5.89
0.34	16.52	5.66	50.86	34.3	1.481	0.35	42.60	8.26
0.47	22.84	9.25	53.59	30.7	1.743	0.41	42.17	11.42
0.62	28.22	12.38	55.83	27.6	2.022	0.45	41.73	14.11
0.81	33.50	15.66	57.84	24.3	2.376	0.48	41.09	16.75
1.16	39.61	19.42	60.19	20.6	2.925	0.50	40.38	19.81
1.67	45.08	21.86	63.22	18.1	3.485	0.49	40.68	22.54
2.26	49.29	22.71	66.58	17.3	3.850	0.47	41.94	24.64
2.86	52.07	22.69	69.38	17.3	4.009	0.44	43.34	26.04
3.56	54.95	22.29	72.66	17.7	4.103	0.41	45.18	27.48
4.06	56.58	21.94	74.64	18.1	4.133	0.40	46.35	28.29
4.77	58.81	21.39	77.42	18.6	4.160	0.37	48.02	29.41
5.72	60.76	20.79	79.97	19.2	4.164	0.35	49.59	30.38
6.73	61.65	20.23	81.42	19.8	4.119	0.33	50.59	30.83
7.48	62.33	19.92	82.41	20.1	4.104	0.33	51.25	31.17
8.48	63.48	19.53	83.96	20.5	4.101	0.31	52.21	31.74
9.24	64.04	19.27	84.78	20.7	4.089	0.31	52.75	32.02
9.98	64.11	19.00	85.11	21.0	4.053	0.30	53.05	32.06
10.75	64.16	18.85	85.31	21.2	4.033	0.30	53.23	32.08
11.26	64.15	18.74	85.41	21.3	4.017	0.30	53.33	32.07
11.75	63.97	18.70	85.27	21.3	4.003	0.30	53.29	31.99
12.25	64.19	18.65	85.54	21.3	4.007	0.30	53.44	32.10
12.76	64.36	18.60	85.76	21.4	4.008	0.29	53.58	32.18
13.52	64.13	18.50	85.62	21.5	3.983	0.29	53.56	32.06
14.28	64.09	18.47	85.61	21.5	3.977	0.29	53.57	32.04
14.79	63.69	18.46	85.23	21.5	3.957	0.30	53.39	31.85
15.30	63.61	18.45	85.16	21.6	3.951	0.30	53.35	31.80

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-002	Sample No.:	TS-S2
Lab ID:	R-2026-034-002-001		
Visual Description:	Dark Brown Sand with Silt (REMOLDED)		



Tested By: DL Date: 2/19/26 Approved By: MPS Date: 2/24/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.		
Client Reference:	Housatonic 5A		
Project No.:	R-2026-034-002		
Lab ID:	R-2026-034-002-001	Specific Gravity (Measured)	2.67

Visual Description: Dark Brown Sand with Silt (REMOLDED)

SAMPLE CONDITION SUMMARY

Boring No.:	N/A	N/A	N/A
Depth (ft):	N/A	N/A	N/A
Sample No.:	TS-S2	TS-S2	TS-S2
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.001	0.001	0.001
Back Pressure (psi)	80	80	80
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	11.7	11.7	11.7
Total Unit Weight (pcf)	113.9	114.0	114.0
Dry Unit Weight (pcf)	101.9	102.0	102.0
Moisture Content (%) (FINAL)	18.5	17.9	18.2
Initial State Void Ratio,e	0.635	0.634	0.633
Void Ratio at Shear, e	0.626	0.613	0.593





Tested By: DL Date: 2/19/26 Input Checked By: MPS Date: 2/24/26

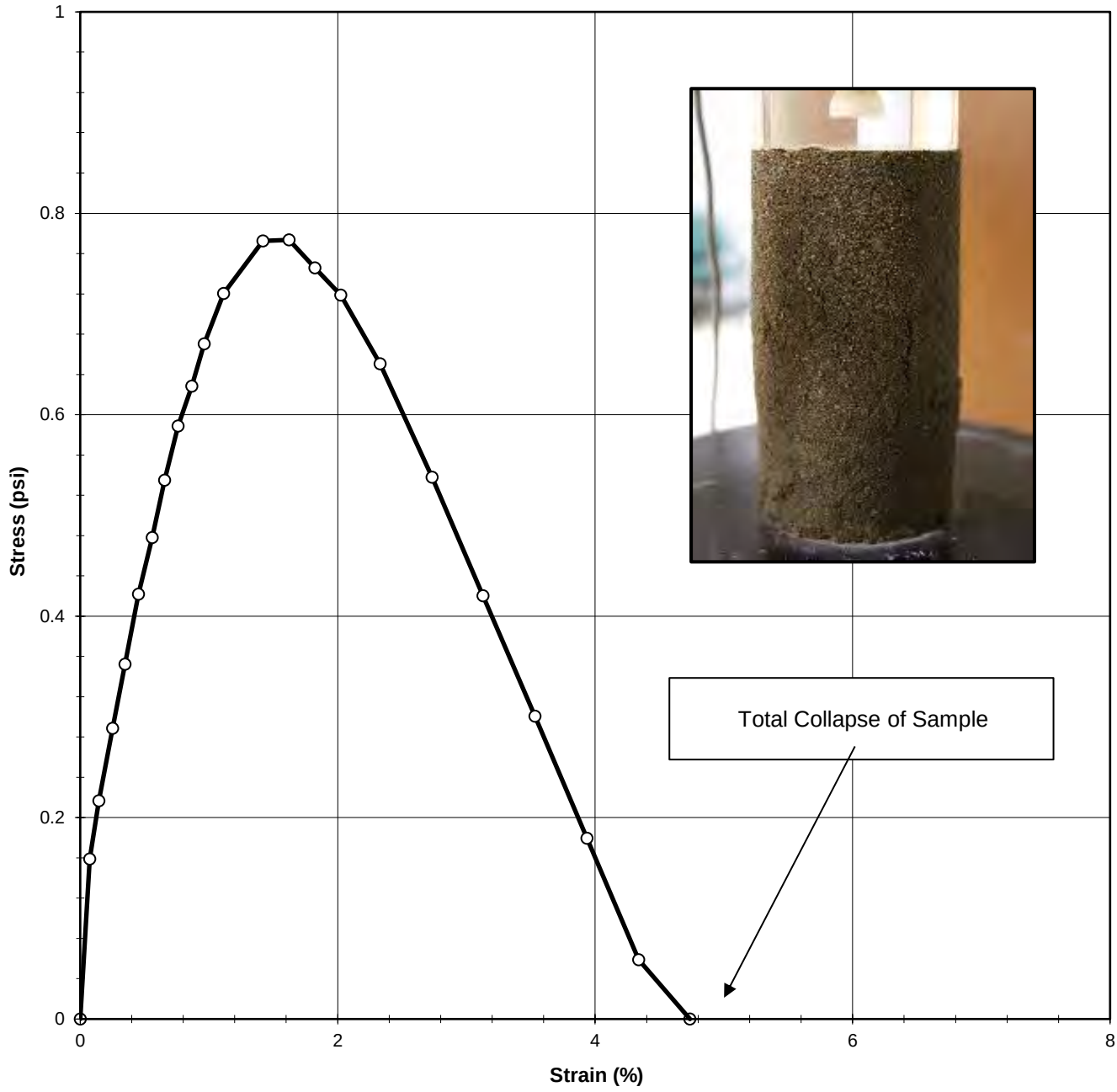
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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-002	Sample No.:	TS-S2
Lab ID:	R-2026-034-002-001	Visual:	Dark Brown Sand with Silt



Tested By	DL	Date	2/19/2026	Approved By	MPS	Date	2/24/2026

DCN: CT-S30 DATE: 11/09/09 REVISION: 4

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2026-034-002	Sample No.:	TS-S2
Lab ID:	R-2026-034-002-001	Visual:	Dark Brown Sand with Silt

INITIAL SAMPLE DIMENSIONS				WATER CONTENT AFTER TEST	
Length 1 (in):	5.984	Top Diameter (in):	2.873	Tare No.:	1-A
Length 2 (in):	5.984	Middle Diameter (in):	2.873	Weight of Tare & Wet Sample (g):	318.99
Length 3 (in):	5.984	Bottom Diameter (in):	2.873	Weight of Tare & Dry Sample (g):	294.85
Avg. Length (in):	**5.984**	**Avg. Diameter (in):**	**2.873**	Weight of Tare (g):	89.28
		Area (in^2):	**6.483**	Moisture Content (%):	11.74

UNIT WEIGHT			
Weight of Tube & Wet Sample (g):	2703.97	Sample Volume (cm^3):	635.7
Weight of Tube (g):	1542.73	Unit Wet Weight (g/cm^3):	1.83
Weight of Wet Sample (g):	1161.24	Unit Wet Weight (pcf):	113.99
Average Diameter (in):	2.87	Moisture Content (%):	11.74
Average Length (in):	5.98	Unit Dry Weight (pcf):	102.01
Average Length (cm):	15.20		

ELECTRONIC DEVICE DEFORMATION (in)	*LOAD (lb)*	*ELAPSED TIME (min)*	*STRAIN (%)*	*STRESS (psi)*
0.000	1.0	0.00	0.000	0.000
0.004	2.0	0.08	0.074	0.159
0.009	2.4	0.17	0.145	0.217
0.015	2.9	0.27	0.251	0.289
0.021	3.3	0.37	0.347	0.352
0.027	3.7	0.47	0.453	0.422
0.033	4.1	0.57	0.558	0.478
0.039	4.5	0.67	0.655	0.535
0.045	4.8	0.77	0.760	0.589
0.052	5.1	0.87	0.866	0.628
0.058	5.4	0.98	0.963	0.670
0.067	5.7	1.13	1.113	0.720
0.085	6.1	1.43	1.420	0.773
0.097	6.1	1.63	1.621	0.774
0.109	5.9	1.83	1.824	0.746
0.121	5.7	2.03	2.024	0.719
0.139	5.3	2.33	2.330	0.651
0.164	4.6	2.73	2.733	0.538
0.187	3.8	3.15	3.128	0.420
0.211	3.0	3.55	3.533	0.301
0.236	2.2	3.95	3.936	0.179
0.260	1.4	4.35	4.338	0.059
0.283	0.5	4.75	4.736	0.000

Tested By DL Date 2/19/2026 Input Checked By MPS Date 2/24/2026

DCN: CT-S30 DATE: 11/09/09 REVISION: 4

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Appendix A4
Sediment Stabilization Agent Specification Sheets

Safety Data Sheet

Quicklime

Revision date:
July 11, 2019

1. Identification

Product Name: Quicklime

Synonyms:

Agricultural Lime,
Cal 85,
Dryox,
Hi Cal Quicklime - Small Pebble,
Hi Cal Quicklime Fines,
Hi Cal Quicklime,
Hi Cal Steel Grade,
Hi Calcium Pulverized W/FLO Aid,
Hi Calcium Quicklime Water Grade,
Hot Lime,
Lime Fines,
Lime,
Mini Pebble,
Off Spec Production Lime,
PCC Grade-Large Rescreened,
PCC Grade-Small Rescreened,
PCC Lime Burning,
PCC,
Pulverized Lime with Flowaid,
Quicklime Fines,
Rice,
Stabilime 50-50,
Stabilime Blend 70-30,
Stabilime,
Steel Grade-Large Rescreened,
Steel Grade-Large,
Steel Grade-Small Rescreened,
Steel Grade-Small,
Thiosorbic Lime,
Water Grade-Small,

Recommended Uses: Water treatment, steel flux, caustic agent, pH adjustment, acid gas absorption, construction

Manufacturer: Carmeuse Lime & Stone

US Office
11 Stanwix Street, 21st Floor
Pittsburgh, PA 15222
Phone: (412) 995-5500
Fax: (412) 995-5594

Canadian Office
PO Box 190
Ingersoll, ON N5C 3K5
Phone: (519) 423-6283
Fax: (519) 423-6545

Emergency Contact: Infotrac: (800) 535-5053 (24 hrs a day, 7 days a week)

2. Hazards Identification

GHS classification

Physical Hazards

None

Health Hazards

Skin Irritation	Category 2
Eye Damage	Category 1
Carcinogenicity	Category 1A
Specific Target Organ Toxicity – Single Exposure	Category 3
Specific Target Organ Toxicity – Repeated Exposure	Category 1

GHS Label Elements: **Signal Word:** Danger

Hazard Statements:	Causes skin irritation. Causes serious eye damage. May cause respiratory irritation. May cause cancer through inhalation Causes damage to lungs through prolonged or repeated exposure by inhalation. Reacts violently with water, releasing heat which can ignite combustible materials.
Precautionary Statements:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep container tightly closed Do not breathe dust. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in well-ventilated area Wear protective gloves, clothing and eye protection Do not use water on material spills.
Pictograms:	

3. Composition

Chemical name	% by weight	CAS#
Calcium oxide	> 89	1305-78-8
Magnesium oxide	< 4	1309-48-4
Silica-crystalline quartz	0.1 - 2	14808-60-7

4. First Aid Measures

Eyes: Immediately flush eyes with generous amounts of water for at least 15 minutes. Pull back the eyelid to ensure that all lime dust has been washed out. Seek medical attention immediately. Do not rub eyes.

Skin: Wash exposed area with large amounts of water. Seek medical attention immediately.

Ingestion: Do not induce vomiting. Seek medical attention immediately. Never give anything by mouth unless instructed to do so by medical personnel.

Inhalation: Move victim to fresh air. Seek medical attention if necessary. If breathing has stopped, give artificial respiration

Most Important Symptoms: Irritation of skin, eyes, gastrointestinal tract or respiratory tract.

Immediate medical attention / special treatment? See first aid information above. Note to Physicians: Provide general supportive measures and treat symptomatically.

5. Fire Fighting Measures

Suitable (and unsuitable) fire extinguishing media:	Use dry chemical fire extinguisher. Do not use water or halogenated compounds, except that large amounts of water may be used to deluge small quantities of this product.
Specific hazards arising from the product	Inhalation, skin or eye contact, can result in serious injury. This product is not combustible or flammable. However, this product reacts violently with water, and can release heat sufficient to ignite combustible materials. This product is not considered to be an explosion hazard, although reaction with water or other incompatible materials may rupture containers. When this product is wet, it can be very slippery and can result in a slip hazard. Hazardous Combustion Products: None.
Special protective equipment and precautions for fire fighters	Wear full fire-fighting turn-out gear (full Bunker gear), and respiratory protection (SCBA) to prevent inhalation, skin or eye contact.

6. Accidental Release Measures

Personal precautions, protective equipment, emergency procedures:

Avoid inhalation, eye and skin contact. Avoid generating airborne dust. Wear appropriate protective clothing as described in section 8.

Methods and materials for containment and clean up:

Utilize cleanup methods that minimize generating dust: vacuum. Avoid dry sweeping. Do not use water on large spills, as this product reacts violently with water and releases heat. Residue on surfaces may be removed with copious amount of water or vinegar.

7. Handling & Storage

Safe Handling:	Avoid inhalation, skin and eye contact. Avoid generating airborne dust. An eye wash station should be readily available when this product is handled.
Safe Storage:	Keep in tightly closed containers. Protect containers from physical damage. Store in a cool, dry, and well-ventilated location. Do not store near incompatible materials (see Section 10 below). Keep away from moisture. Long-term storage in aluminum containers is not recommended, as calcium oxide may corrode aluminum over long periods of time

8. Exposure Controls/Personal Protection

Occupational Exposure Limits

	OSHA PEL (mg/m^3)	ACGIH TLV (mg/m^3)	Ont. Reg. 833 TWAEV (mg/m^3)
Calcium oxide	5	2	2
Magnesium oxide	15	10	10
Silica, *crystalline quartz, cristobalite and tridymite*	0.05 (respirable)	0.025 (respirable)	0.1

Engineering Controls: Use with adequate general or local exhaust ventilation and to maintain exposure below occupational exposure limits.

Individual Protection Measures (Personal Protective Equipment):

Specific Eye / Face Protection: Safety glasses with side shields. In windy conditions, or if work activity generates elevated airborne dust levels, dust proof or chemical goggles are recommended. Contact lenses should not be worn.

Specific Skin Protection: When there is a risk of skin contact, wear appropriate clothing and gloves to prevent contact.

Specific Respiratory Protection: If exposure limits are exceeded, an approved particulate respirator, or supplied air respirator, appropriate for the airborne concentrations, should be used. Selection and use of the respiratory protective equipment must be in accordance with applicable regulations and good industrial hygiene practices.

Other: An emergency eye wash fountain and shower are recommended.

9. Physical & Chemical Properties

Appearance: White or grayish white material

Odor: Odorless

Odor threshold: Not Applicable

pH at 25 degrees C: 12.45

Melting Point: 4658 °F (2570 °C)

Boiling Point and range: 5162 °F (2850 °C)

Flash Point: Not Applicable

Evaporation Rate: Not Applicable

Flammability: Not Applicable

Upper/lower flammability or explosive limits Not Applicable

Vapor pressure/density: Non Volatile

Relative density:	3.2 – 3.4
Solubility:	Neglible in water but reacts with water to produce $Ca(OH)_2$ and heat Soluble in acids, glycerin, and sugar solutions
Partition coefficient: n-octanol/water	Not applicable
Auto-ignition temperature:	Not Available
Decomposition temperature:	Not available
Viscosity:	Not Applicable

10. Stability & Reactivity

Reactivity: Reacts violently with water to form calcium hydroxide, releasing heat. Reacts with acids to form calcium salts, releasing heat. Reacts with carbon dioxide in air to form calcium carbonate. See also Incompatibility below.

Chemical stability: Stable under normal storage and handling conditions.

Possibility of Hazardous Reactions: See “reactivity” above.

Conditions to avoid: Vicinity of incompatible materials.

Incompatibility: This product should not be mixed or stored with the following materials, due to the potential for violent reaction and release of heat:

- water (unless in a controlled process)
- acids
- reactive fluoridated compounds
- reactive brominated compounds
- reactive powdered metals
- reactive phosphorous compounds
- aluminum powder
- organic acid anhydrides
- nitro-organic compounds
- interhalogenated compounds

Hazardous decomposition products: None

11. Toxicological Information

Likely routes of exposure & symptoms:

Eyes: Contact can cause severe irritation or burning of eyes, including permanent damage.

Skin: Contact can cause severe irritation or burning of skin, especially in the presence of moisture.

Ingestion: This product can cause severe irritation or burning of gastrointestinal tract if swallowed.

Inhalation: This product can cause severe irritation of the respiratory system.

Chronic health effects:	This product contains trace amounts of crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica can cause silicosis, as serious lung disease.
Respiratory or skin sensitization:	This material is not known to cause sensitization
Germ cell mutagenicity:	No data available.
Carcinogenicity:	This product is not listed as carcinogenic by OSHA, IARC, NTP, ACGIH, or the EU Directives. This product may contain trace amounts of crystalline silica quartz which is listed by IARC as “Carcinogenic to Humans” (Group 1) and “Known to be a Human Carcinogen" by NTP (National Toxicology Program).
Reproductive toxicity:	No Data Available.
Numerical Measures of Toxicity	Crystalline Silica: Oral (rat) LD_{50} > 22,500 mg/kg Calcium oxide: Oral (rat) LD_{50}: 3059 mg/kg

12. Ecological Information

Because of the elevated pH of this product, it might be expected to produce some ecotoxicity upon exposure to certain aquatic organisms and aquatic systems in high concentrations
This material shows no bioaccumulation effect or food chain concentration toxicity.

13. Disposal Considerations

Dispose of contents in accordance with federal, state, provincial and local regulations.

14. Transport Information

UN Number	UN1910
UN Proper shipping name	Calcium Oxide
Transport Hazard class(es)	When transported by air only: Hazard Class 8-Corrosive
Packing group	When transported by air only: Packing Group III
Environmental hazards	This material is alkaline and if released into water or moist soil will cause an increase in pH

Transport in bulk (according to Annex II of MARPOL 73/79 and the IBC

Code:	
Special precautions which a user needs to be aware of	When being transported by air, quicklime is classified in the Department of Transportation (DOT) regulations as a hazardous material. (49 CFR 172.101). For aircraft transport only, Calcium Oxide is classified as Hazard Class 8-Corrosive, UN1910, Packing Group III. For passenger aircraft, the maximum net quantity allowed per container is 25 kg. For cargo aircraft, the maximum net quantity allowed per container is 100 kg. For quantities greater than 25 kg up to and including 100 kg, the container shall be labeled with CARGO AIRCRAFT ONLY. Because express carriers (i.e., Federal Express, Airborne Express, and United Parcel Service) ship by air, quicklime presented to these carriers for shipment must be packaged, marked, and labeled in accordance with IATA requirements, and must be accompanied by the appropriate shipping documentation. Only personnel trained and certified under applicable DOT Hazardous Materials Regulations (contained in Title 49 of the Code of Federal Regulations) may prepare any quicklime product for air transport. Quicklime is not classified as a hazardous material by DOT when transported by means other than by air.

15. Regulatory Information

CERCLA Hazardous Substances	Not listed
SARA Toxic Chemical (40 CFR 372.65)	Not listed
SARA Section 302 Extremely Hazardous Substances (40 CFR 355)	Not listed
SARA 311/312	Not listed
SARA Section 313 Toxic Chemicals reporting requirements	None
Threshold planning quantity (TPQ)	Not listed
RCRA Hazardous Waste Classification (40 CFR 261)	Not Classified
EPA Toxic Substances Control Act (TSCA) Status	The components of this product are each listed on the TSCA Inventory List in the “active” status.
California Proposition 65	Airborne crystalline silica particulates of respirable size are known to the State of California to cause cancer.
NFPA ratings	Health: 3 Fire: 0 Reactivity: 2 ~~W~~
HMIS Ratings	Health: 3 Fire: 0 Reactivity: 2 Personal protection: E
OSHA Specifically regulated substance (29 CFR 1910)	Not listed
OSHA Air contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A)	Listed
MSHA	Not listed
Canada DSL	Listed
Canadian WHMIS Classification	D2A, Materials Causing other toxic effects. E, Corrosive Material



Canada CPR This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation of a Canada and this SDS contains all the required information.

16. Other Information

List of GHS Hazard Statements:

H315: Causes skin irritation
H318: Causes serious eye damage
H335: May cause respiratory irritation.
H350: May cause cancer through inhalation
H372: Causes damage to lungs through prolonged or repeated exposure by inhalation.

List of GHS Precautionary Statements:

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P233: Keep container tightly closed
P260: Do not breathe dust.
P264: Wash thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in well-ventilated area
P280: Wear protective gloves, clothing and eye protection

Abbreviations

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act	IARC	International Agency for Research on Cancer
NTP	National Toxicology Program		

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SAFETY DATA SHEET CALCIMENT® LKD

SECTION 1. IDENTIFICATION

Product Name	Calciment® LKD
Synonyms	Kiln Dust, Lime Kiln Dust, LKD, Envirolime
Recommended Uses	pH adjustment; soil conditioning; soil stabilization; solidification; and dewatering.
Distributor	**Mintek Resources** 3725 Pentagon Blvd. Suite 100 Beavercreek, OH 45431 Phone: 937-431-0218
Emergency Contact	**VelocityEHS: (800) 255-3924** (MIS8507735)

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Physical Hazards

None

Health Hazards

Skin Irritation	Category 2
Eye Damage	Category 1
Carcinogenicity	Category 1A
Specific Target Organ Toxicity – Single Exposure	Category 3
Specific Target Organ Toxicity – Repeated Exposure	Category 1

GHS Label Elements

Signal Word

Danger

Hazard Statements

Causes skin irritation.
Causes serious eye damage.
May cause respiratory irritation.
May cause cancer through inhalation.
Causes damage to lungs through prolonged or repeated exposure by inhalation.
May react violently with water, releasing heat which can ignite combustible materials.

Precautionary Statements

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep container tightly closed.
Do not breathe dust.
Wash thoroughly after handling.
Do not eat, drink, or smoke when using this product.
Use only outdoors or in well-ventilated area.
Wear protective gloves, clothing, and eye protection.
Do not use water on material spills.

Pictograms



SECTION 3. COMPOSITION

Chemical name	% by weight	CAS#
Calcium Carbonate	0-90	13117-65-3
Calcium Oxide	0-50	1305-788
Calcium Hydroxide	0-70	1305-62-0
Calcium Magnesium Carbonate	0-50	16389-88-1
Calcium Magnesium Oxide	0-50	37247-91-9
Magnesium Carbonate	0-5	546-93-0
Magnesium Oxide	0-5	1309-48-4
Silica-Crystalline Quartz	< 10	14808-60-7

SECTION 4. FIRST AID MEASURES

Eyes Immediately flush eyes with generous amounts of water for at least 15 minutes. Pullback the eyelid to ensure that all lime dust has been washed out. Seek medical attention immediately. Do not rub eyes.

Skin Wash exposed area with large amounts of water. Seek medical attention immediately.

Ingestion Do not induce vomiting. Seek medical attention immediately. Never give anything by mouth unless instructed to do so by medical personnel.

Inhalation Move victim to fresh air. Seek medical attention if necessary. If breathing has stopped, give artificial respiration

Most Important Symptoms: Irritation of skin, eyes, gastrointestinal tract, or respiratory tract.

Immediate Medical Attention /Special Treatment? See first aid information above. Note to Physicians: Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE FIGHTING MEASURES

Suitable (and Unsuitable) Fire Extinguishing Media: Use dry chemical fire extinguisher. Do not use water or halogenated compounds, except that large amounts of water may be used to deluge small quantities of this product.

Specific Hazards Arising from the Product Inhalation, skin, or eye contact can result in serious injury. This product is not combustible or flammable. However, this product may react violently with water, and can release heat sufficient to ignite combustible materials. This product is not considered to be an explosion hazard, although reaction with water or other incompatible materials may rupture containers. When this product is wet, it can be very slippery and can result in a slip hazard. Hazardous Combustion Products: None.

Special Protective Equipment and Precautions for Fire Fighters Wear full fire-fighting turn-out gear (full Bunker gear), and respiratory protection (SCBA) to prevent inhalation, skin, or eye contact.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, Emergency Procedures

Avoid inhalation, eye, and skin contact. Avoid generating airborne dust. Wear appropriate protective clothing as described in section 8.

Methods and Materials for Containment and Clean Up

Utilize cleanup methods that minimize generating dust: vacuum. Avoid dry sweeping. Do not use water on large spills, as this product may react with water and release heat. Residue on surfaces may be removed with copious amount of water or vinegar.

SECTION 7. HANDLING & STORAGE

Safe Handling

Avoid inhalation, skin, and eye contact. Avoid generating airborne dust. An eye wash station should be readily available when this product is handled.

Safe Storage

Keep in tightly closed containers. Protect containers from physical damage. Store in a dry and well-ventilated location. Do not store near incompatible materials (see Section 10 below). Keep away from moisture. Long-term storage in aluminum containers is not recommended, as calcium oxide may corrode aluminum over long periods of time.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

	OSHA PEL (mg/m^3)	ACGIH TLV (mg/m^3)	Ont. Reg. 833 TWAEV (mg/m^3)
Calcium Carbonate	15 5 (respirable)	10	10
Calcium Oxide	5	2	2
Calcium Hydroxide	15 (total) 5 (respirable)	5	5
Calcium Magnesium Carbonate	-	-	-
Calcium Magnesium Oxide	-	-	-
Magnesium Carbonate	15 (total) 5 (respirable)	10	10
Magnesium Oxide Silica - Crystalline Quartz	15 30 / (% silica +2) (total) 10 / (% silica +2) (respirable)	10 0.025 (respirable)	10 0.1

Engineering Controls

Use with adequate general or local exhaust ventilation and to maintain exposure below occupational exposure limits.

Individual Protection Measures (Personal Protective Equipment):

Specific Eye / Face Protection

Safety glasses with side shields. In windy conditions, or if work activity generates elevated airborne dust levels, dust proof or chemical goggles are recommended. Contact lenses should not be worn.

Specific Skin Protection

When there is a risk of skin contact, wear appropriate clothing and gloves to prevent contact.

Specific Respiratory Protection

If exposure limits are exceeded, an approved particulate respirator, or supplied air respirator, appropriate for the airborne concentrations, should be used. Selection and use of the respiratory protective equipment must be in accordance with applicable regulations and good industrial hygiene practices.

Other

An emergency eye wash fountain and shower are recommended.

SECTION 9. PHYSICAL & CHEMICAL PROPERTIES

Appearance	White or grayish white material
Odor	Odorless
Odor Threshold	Not Applicable
pH at 25°C	12.45
Melting Point	2570°F (1410°C)
Boiling Point and Range	2849°F (1565°C)
Flash Point	Not Applicable
Evaporation Rate	Not Applicable
Flammability	Not Applicable
Upper/Lower Flammability or Explosive Limits	Not Applicable
Vapor Pressure/Density	Non-Volatile
Relative Density	1.04 -1.40
Solubility	0.100- 0.125 g/100g - but reacts with water to produce $Ca(OH)_2$ and heat Soluble in acids, glycerin, and sugar solutions
Partition Coefficient: N-Octanol/Water	Not Applicable
Auto-Ignition Temperature	Not Available
Decomposition Temperature	Not Available
Viscosity	Not Applicable

SECTION 10. STABILITY & REACTIVITY

Reactivity	Reaction with water can release heat. Dangerous near organic materials may cause combustion. Reacts with carbon dioxide in air to form calcium carbonate. See incompatible materials list below.
Chemical Stability	Stable under normal storage and handling conditions.
Possibility of Hazardous Reactions	See reactivity section above.
Conditions to Avoid	Vicinity of incompatible materials.
Incompatibility	This product should not be mixed or stored with the following materials, due to the potential for strong reaction and release of heat: • water (unless in a controlled process) • acids • reactive fluoridated compounds • reactive brominated compounds • reactive powdered metals • reactive phosphorous compounds • aluminum powder • organic acid anhydrides • nitro-organic compounds • halogenated compounds
Hazardous Decomposition Products	None

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure & Symptoms:

Eyes	Contact can cause severe irritation or burning of eyes, including permanent damage.
Skin	Contact can cause severe irritation or burning of skin, especially in the presence of moisture.
Ingestion	This product can cause severe irritation or burning of gastrointestinal tract if swallowed.
Inhalation	This product can cause severe irritation of the respiratory system.
Chronic Health Effects	This product contains trace amounts of crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica can cause silicosis, as serious lung disease.
Respiratory or Skin Sensitization	This material is not known to cause sensitization
Germ Cell Mutagenicity	No data available.
Carcinogenicity	This product is not listed as carcinogenic by OSHA, IARC, NTP, ACGIH, or the EU Directives. This product may contain trace amounts of crystalline silica quartz which is listed by IARC as "Carcinogenic to Humans" (Group 1) and "Known to be a Human Carcinogen" by NTP (National Toxicology Program).
Reproductive Toxicity	No Data Available
Numerical Measures of Toxicity	Crystalline Silica: Oral (rat) LD_{50} > 22,500 mg/kg Calcium hydroxide: Oral (rad) LD_{50}: 7340 mg/kg Calcium oxide: Oral (rat) LD_{50}: 3059 mg/kg

SECTION 12. ECOLOGICAL INFORMATION

Because of the elevated pH of this product, it might be expected to produce some ecotoxicity upon exposure to certain aquatic organisms and aquatic systems in high concentrations.
This material shows no bioaccumulation effect or food chain concentration toxicity.

SECTION 13. DISPOSAL CONSIDERATIONS

Because of the elevated pH of this product, it might be expected to produce some ecotoxicity upon exposure to certain aquatic organisms and aquatic systems in high concentrations.
This material shows no bioaccumulation effect or food chain concentration toxicity.

SECTION 14. TRANSPORT INFORMATION

UN Number	UN1910
UN Proper Shipping Name	Calcium Oxide
Transport Hazard Class(es)	When transported by air only: Hazard Class 8-Corrosive
Packing Group	When transported by air only: Packing Group III
Environmental Hazards	This material is alkaline and if released into water or moist soil will cause an increase in pH

Transport in Bulk (According to Annex II of MARPOL 73/79 and the IBC Code:

Special Precautions Which a User Needs to be Aware of:	When being transported by air, calcium oxide is classified in the Department of Transportation (DOT) regulations as a hazardous material. (49 CFR 172.101). For aircraft transport only, Calcium Oxide is classified as Hazard Class 8-Corrosive, UN1910, Packing Group III. For passenger aircraft, the maximum net quantity allowed per container is 25 kg. For cargo aircraft, the maximum net quantity allowed per container is 100 kg. For quantities greater than 25 kg up to and including 100 kg, the container shall be labeled with CARGO AIRCRAFT ONLY. Because express carriers (i.e., Federal Express, Airborne Express, and United Parcel Service) ship by air, calcium oxide presented to these carriers for shipment must be packaged, marked, and labeled in accordance with IATA requirements, and must be accompanied by the appropriate shipping documentation. Only personnel trained and certified under applicable DOT Hazardous Materials Regulations (contained in Title 49 of the Code of Federal Regulations) may prepare any calcium oxide product for air transport. Calcium oxide is not classified as a hazardous material by DOT when transported by means other than by air.

SECTION 15. REGULATORY INFORMATION

CERCLA Hazardous Substances	Not Listed
SARA Toxic Chemical (40 CFR 372.65)	Not listed
SARA Section 302 Extremely Hazardous Substances (40 CFR 355)	Not listed
SARA 311/312	Not listed
SARA Section 313 Toxic Chemicals reporting requirements	None
Threshold planning quantity (TPQ)	Not listed
RCRA Hazardous Waste Classification (40 CFR 261)	Not Classified
EPA Toxic Substances Control Act (TSCA) Status	All of the components of this product are listed on the TSCA
California Proposition 65	Airborne crystalline silica particulates of respirable size are known to the State of California to cause cancer.
NFPA Ratings	Health: 3 Fire: 0 Reactivity: 2 ₩
HMIS Ratings	Health: 3 Fire: 0 Reactivity: 2 Personal protection: E
OSHA Specifically Regulated Substance (29 CFR 1910)	Not listed
OSHA Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A)	Listed
MSHA	Not listed
Canada DSL	Listed
Canadian WHMIS Classification	D2A, Materials Causing other toxic effects. E, Corrosive Material 
Canada CPR	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation of a Canada and this SDS contains all the required information.

SECTION 16. OTHER INFORMATION

List of GHS Hazard Statements	H315: Causes skin irritation. H318: Causes serious eye damage. H335: May cause respiratory irritation. H350: May cause cancer through inhalation. H372: Causes damage to lungs through prolonged or repeated exposure by inhalation.
List of GHS Precautionary Statements	P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P233: Keep container tightly closed. P260: Do not breathe dust. P264: Wash thoroughly after handling. P270: Do not eat, drink or smoke when using this product. P271: Use only outdoors or in well-ventilated area. P280: Wear protective gloves, clothing, and eye protection

Abbreviations

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	**RCRA**	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act	**IARC**	International Agency for Research on Cancer
NTP	National Toxicology Program		

The information contained herein is believed to be accurate and reliable as of the date hereof. However, Mintek Resources makes no representation, warranty or guarantee as to results or as to the information's accuracy, reliability, or completeness. Mintek Resources has no liability for any loss or damage that may result from use of the information. Each user is responsible to review this information, satisfy itself as to the information's suitability and completeness, and circulate the information to its employees, customers and other appropriate third parties.

Material Certification Report

Material: Portland Cement
Type: I-II

Test Period: 01-Apr-2025 to 30-Apr-2025
Date Issued: 08-May-2025

Certification

This cement meets the specifications of ASTM C150 and AASHTO M85 for Type I-II cement.

General Information

Supplier:	Holcim (US) Inc.	Source Location:	Ravena Plant Silo: C 1-16, B1-6
Address:	8700 West Bryn Mawr Ave Chicago, IL 60631		P.O. Box 3 Ravena, NY 12143
Contact:		Contact:	Scott Derhammer / (518) 756-5000

The following is based on average test data during the test period. The data is typical of product shipped from this source; individual shipments may vary.

Test Data on ASTM Standard Requirements

Chemical			Physical		
Item	**Limit [1]**	**Result**	**Item**	**Limit [1]**	**Result**
SiO_2 (%)	-	20.0	Air Content (%)	12 max	8
Al_2O_3 (%)	6.0 max	4.8	Blaine Fineness (m^2/kg)	260 min	383
Fe_2O_3 (%)	6.0 max	3.3			
CaO (%)	-	63.6	Compressive Strength MPa (psi)		
MgO (%)	6.0 max	2.9	3 day	10.0 (1450) min	27.7 (4020)
SO_3 (%) [2]	3.0 max	3.1	7 day	17.0 (2470) min	34.1 (4950)
Loss on Ignition (%) [5]	3.5 max	1.2	28 day (previous month's data)	-	43.9 (6370)
Insoluble Residue (%)	1.50 max	0.18			
$CaCO_3$ in Limestone (%)	40 min	91	Initial Vicat (minutes)	45-375	98
Total $CaCO_3$ + $MgCO_3$ in Limestone (%)	70 min	92			
Equivalent Alkalies (%)	-	0.60	Mortar Bar Expansion (%) (C1038)	0.020 max	0.008
Potential Phase Compositions [3]:					
C_3S (%)	-	59			
C_2S (%)	-	13			
C_3A (%)	8 max	7			
C_4AF (%)	-	10			
C_3S + 4.75C_3A (%)	-	93			

Test Data on ASTM Optional Requirements

Chemical			Physical		
Item	**Limit [1]**	**Result**	**Item**	**Limit [1]**	**Result**

Notes (*1-9)

1 - Dashes in the Limit / Result columns mean Not Applicable.
2 - It is permissible to exceed the specification limit provided that ASTM C1038 Mortar Bar Expansion does not exceed 0.020% at 14 days.
3 - Adjusted per Annex A1.6 of ASTM C150 and AASHTO M85.
5 - Limit = 3.0 when limestone is not an ingredient in the final cement product

Additional Data

Item	Limestone	Inorganic Processing Addition	Base Cement Phase Composition	Result
Amount (%)	1.0	-	C_3S (%)	60
SiO_2 (%)	4.9	-	C_2S (%)	13
Al_2O_3 (%)	1.3	-	C_3A (%)	7
Fe_2O_3 (%)	0.2	-	C_4AF (%)	10
CaO (%)	50.9	-		
SO_3 (%)	0.1	-		
MgO (%)	0.7	-		

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Scott Derhammer, Quality Manager

Heidelberg Materials

Mill Test Certificate Report

Type: EcoCem PLC-Type IL (10) - MS

Grind Number: Canakkale Lot 8

Test Period: 06/12/25 **to:** 06/12/25

Certification

Heidelberg Materials certifies that at time of shipment, the portland cement designated as Type IL manufactured at the Akcansa, Canakkale, Turkey plant conforms to the standard composition and physical requirements of the current Standard Specification for Portland Cement of ASTM C 595 and AASHTO M240 for Type IL. This certification carries no other express or implied warranties and Heidelberg Materials, is not responsible for improper use or workmanship of the described cement.

General Information

Supplier: Heidelberg Materials
Address: 120 Alpha Road Route 9W
Catskill, NY 12414
Telephone:

Source Location: Canakkale, Turkey

Contact: Sales Office

Test Data on ASTM "Standard" Requirements

Chemical Requirements (ASTM C-595)

Item	Limit	Results
SO_3	D	2.89
Loss on Ignition	10.0 Max	4.86
$CaCO_3$ in Limestone	40 min	92
Total $CaCO_3$, and $MgCO_3$, in Limestone	70 min	96
% Limestone	5-15%	8.3
Additional Data		
C_3A	A	5.71
Chlorides, %		0.02
Equivalent Alkalies		0.52

Notes:
A: No limit applicable
D: If SO3 exceeds 3.0%, C-1038 shall not be more than 0.020%.
MS: Meets optional requirements for moderate sulfate resistance.

Physical Requirements (ASTM C-595)

Item	Limit	Results
Fineness:		
% retained 45µm (No. 325)	A	0.80
Blaine Fineness (m^2/Kg)	260 min	421
Density: (g/cc)	A	
Vicat Setting Time:		
Initial Set (minutes)	45 min	130
Air Content (%)	12 max	7.8
Compressive Strengths Mpa:		
1-Day	A	19.93
3-Day	13.0 min	31.96
7-Day	20.0 min	37.08
28-Day	25.0 min	-
Compressive Strengths, PSI:		
1-Day	A	2890
3-Day	1890 min	4634
7-Day	2900 min	5377
28-Day	3620 min	
Mortar Bar Expansion, C-1038, %	Max 0.020	-

June 24, 2025
Date

Quality Control Manager:

Appendix A5
Sediment Stabilization Amendment Testing Results

Treatability Laboratory Results

Table A5-1
Sample TS-S1 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Eco-Cal											
10	2.50%	0	Yes	Fail	1.1	39.3	32.7	17%	21%	653.6	NA
	5%	0	Yes	Pass	1.1	40.5	33.8	17%	20%	629	NA
	7.50%	0.5	Yes	Pass	1.1	36.7	31.3	15%	18%	549.5	NA
Quick Lime											
10	2.50%	1	No	Pass	1.1	31.6	27.7	13%	15%	588.2	NA
	5%	0.25	No	Pass	1.1	28.9	26.1	10%	11%	732.9	NA
	7.50%	0.25	No	Pass	1.1	25.5	22.8	11%	12%	780.7	NA
Type IL Portland Cement											
10	2.50%	1	Yes	Pass	1.1	36.1	30.2	17%	20%	598.2	NA
	5%	2.25	Yes	Pass	1.1	42.4	37.6	12%	13%	635	NA
	7.50%	3.5	Yes	Pass	1.1	37.2	32.4	13%	15%	633.1	NA
Type II Portland Cement											
10	2.50%	0.75	Yes	Pass	1.1	37.2	31.9	15%	17%	568.9	NA
	5%	2	Yes	Pass	1.1	35.1	30.5	14%	16%	615.4	NA
	7.50%	>4.5	Yes	Pass	1.1	29.1	25.3	14%	16%	667.9	NA
Eco-Cal											
24	2.5% A	0.25	Yes	Pass	1.1	30.7	26.2	15%	18%	572.4	0.5
	2.5% B				1.1	52.2	45.9	12%	14%		
	5% A	0.25	Yes	Pass	1.1	33.7	29.1	14%	16%	543.5	1
	5% B				1.1	53	46.9	12%	13%		
	7.5% A	0.25	Yes	Pass	1.2	38.5	34.6	10%	12%	462.3	3.1
	7.5% B				1.1	47.9	43	10%	12%		

Table A5-1
Sample TS-S1 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Quick Lime											
24	2.5% A	0.25	No	Pass	1.1	37.1	33.5	10%	11%	517.8	1.6
	2.5% B				1.1	33.9	30.7	10%	11%		
	5% A	0.5	No	Pass	1.1	28.6	26	9%	10%	669.1	0.8
	5% B				1.1	36.6	34.2	7%	7%		
	7.5% A	0.25	No	Pass	1.1	32.3	30.1	7%	8%	724	-0.7
	7.5% B				1.1	27.3	25.3	8%	8%		
Type I Portland Cement											
24	2.5% A	>4.5	No	Pass	1.1	30.7	27.2	12%	13%	529.9	2.5
	2.5% B				1.1	37.3	32.9	12%	14%		
	5% A	>4.5	No	Pass	1.1	41.5	37.8	9%	10%	561.2	0.7
	5% B				1.1	33.8	31	9%	9%		
	7.5% A	>4.5	No	Pass	1.1	31	27.7	11%	12%	570.6	-1.3
	7.5% B				1.1	35	32.3	8%	9%		
Type II Portland Cement											
24	2.5% A	3.5	Yes	Pass	1.1	35.3	32.6	8%	9%	499.2	1.2
	2.5% B				1.1	35.4	33.1	7%	7%		
	5% A	>4.5	No	Pass	1.1	27.1	24	12%	14%	559	1.2
	5% B				1.1	30.3	26.6	13%	15%		
	7.5% A	>4.5	No	Pass	1.1	26.6	23.6	12%	13%	612.6	-0.3
	7.5% B				1.1	31.2	28.7	8%	9%		

Table A5-1
Sample TS-S1 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Eco-Cal											
48	2.5% A	0.25	Yes	Pass	0.9	33.4	28.9	14%	16%	510	1.3
	2.5% B				0.8	29.4	26.3	11%	12%		
	5% A	1	Yes	Pass	0.8	39.3	34.6	12%	14%	453.2	2
	5% B				1	50.8	45.6	10%	12%		
	7.5% A	1	Yes	Pass	1	38.3	34.6	10%	11%	383.2	2.3
	7.5% B				1	40.5	36.8	9%	10%		
Quick Lime											
48	2.5% A	0.75	No	Pass	0.9	32.6	29.8	9%	10%	452.5	2.2
	2.5% B				0.8	32.2	29.7	8%	9%		
	5% A	2.5	No	Pass	1.1	31.1	28.6	8%	9%	612.4	0.5
	5% B				1	27.2	24.4	11%	12%		
	7.5% A	1.25	No	Pass	0.9	27.1	25.5	6%	7%	664.3	1.3
	7.5% B				1	33.2	30.9	7%	8%		
Type IL Portland Cement											
48	2.5% A	>4.5	No	Pass	1.1	33.2	29.3	12%	14%	467.1	5.8
	2.5% B				0.8	25.7	23.4	9%	10%		
	5% A	>4.5	No	Pass	2.1	43.1	38.5	11%	13%	471.6	0.5
	5% B				2.1	50.2	45.5	10%	11%		
	7.5% A	>4.5	No	Pass	2.1	47.1	42.7	10%	11%	449.1	0.1
	7.5% B				2.1	78.5	70.9	10%	11%		

Table A5-1
Sample TS-S1 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Type II Portland Cement											
48	2.5% A	>4.5	No	Pass	2.1	48	43.6	10%	11%	381.1	1.3
	2.5% B				2.1	73	66.3	9%	10%		
	5% A	>4.5	No	Pass	2.1	50.1	45.9	9%	10%	462.2	0.1
	5% B				2.1	50.8	46.1	10%	11%		
	7.5% A	>4.5	No	Pass	2.1	46	41.1	11%	13%	514.8	0.3
	7.5% B				2.1	55.7	50.5	10%	11%		
Eco-Cal											
72	2.5% A	0.5	Yes	Pass	2.1	66.2	58.3	12%	14%	358	1.4
	2.5% B				2.1	88.6	78.1	12%	14%		
	5% A	0.5	Yes	Pass	2.1	99.3	89.5	10%	11%	264.1	1.9
	5% B				2.1	92.1	81.7	12%	13%		
	7.5% A	0.75	No	Pass	2.1	78.5	71	10%	11%	209.8	1.6
	7.5% B				2.1	97.5	90.9	7%	7%		
Quick Lime											
72	2.5% A	0.5	No	Pass	2.1	62.1	57.5	8%	8%	324.5	4.5
	2.5% B				2.1	65.6	61.1	7%	8%		
	5% A	1	No	Pass	2.1	66.1	61.8	7%	7%	484.7	0.5
	5% B				2.1	65.3	59.9	9%	9%		
	7.5% A	0.5	No	Pass	2.1	59.3	55.5	7%	7%	547.9	0.5
	7.5% B				2.1	60.8	56.5	7%	8%		

Table A5-1
Sample TS-S1 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Type IL Portland Cement											
72	2.5% A	>4.5	No	Pass	2.1	62.8	57.5	9%	10%	330.4	1.8
	2.5% B				2.1	76.3	67.1	12%	14%		
	5% A	>4.5	No	Pass	2.1	59.4	53.5	10%	11%	342.3	0.5
	5% B				2.1	73.6	66.3	10%	11%		
	7.5% A	>4.5	No	Pass	2.1	62.1	55.8	11%	12%	330.8	0.6
	7.5% B				2.1	59.8	53.5	11%	12%		
Type II Portland Cement											
72	2.5% A	>4.5	No	Pass	2.1	54.7	49.7	10%	11%	225	35.8
	2.5% B				2	69.7	64.7	7%	8%		
	5% A	>4.5	No	Pass	2.1	57.9	52.3	10%	11%	336.3	0.6
	5% B				2.1	71.6	63.4	12%	13%		
	7.5% A	>4.5	No	Pass	2.1	73.8	67.9	8%	9%	380.2	0.1
	7.5% B				2.1	64.9	58.9	10%	11%		

Note:
1. Various stabilization reagents evaluated at various dose rates to gauge the ability for these sediments to gain strength. Each sample mix tested for strength gain with pocket penetrometer and sample wetness by noting the presence of standing water, performing paint filter tests, and measuring sample moisture. Ambient loss of moisture or other change in mix mass evaluated by weighing the mixtures. Each test completed after 10, 24, 48, and 72 hours of curing.

Table A5-2
Sample TS-S2 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Eco-Cal											
10	2.50%	0	No	Pass	2	88	73	17%	21%	646	3.7
	5%	0	No	Pass	2	98	82	17%	20%	692	3.3
	7.50%	0	Yes	Pass	2	111	90	19%	24%	710	4.2
Quick Lime											
10	2.50%	0	No	Pass	2	90	75	17%	21%	678	3.6
	5%	0.25	No	Pass	2	78	66	16%	19%	787	5.5
	7.50%	0.25	No	Pass	2	63	54	15%	17%	827	10.1
Type II Portland Cement											
10	2.50%	1.125	No	Pass	2	78	65	17%	21%	699	3.3
	5%	1.375	No	Pass	2	75	63	16%	20%	736	4.0
	7.50%	2.75	No	Pass	2	74	63	15%	18%	734	6.7
Type IL Portland Cement											
10	2.50%	0.75	No	Pass	2	74	61	18%	22%	709	3.8
	5%	1	No	Pass	2	94	78	17%	21%	717	5.4
	7.50%	2.25	No	Pass	2	74	62	17%	20%	702	5.8
Eco-Cal											
24	2.50%	0.75	Yes	Pass	2	89	75	16%	19%	556	3.0
	5%	0.25	Yes	Pass	2	77	63	19%	23%	615	2.0
	7.50%	0.5	Yes	Pass	2	106	89	16%	20%	602	4.0
Quick Lime											
24	2.50%	0.5	No	Pass	2	97	81	17%	20%	581	2.0
	5%	0.625	No	Pass	2	75	64	15%	18%	708	6.0
	7.50%	0.5	No	Pass	2	62	54	13%	15%	767	0.0

Table A5-2
Sample TS-S2 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Type II Portland Cement											
24	2.50%	3.75	No	Pass	2	59	49	18%	21%	640	2.0
	5%	>4.5	No	Pass	2	65	56	14%	17%	670	3.0
	7.50%	>4.5	No	Pass	2	67	57	15%	18%	667	2.0
Type IL Portland Cement											
24	2.50%	3.5	No	Pass	2	65	55	16%	19%	642	4.0
	5%	>4.5	No	Pass	2	66	55	17%	21%	651	2.0
	7.50%	>4.5	No	Pass	2	58	49	16%	19%	645	1.0
Eco-Cal											
48	2.50%	0.75	No	Pass	2	66	55	17%	21%	488	4.0
	5%	0.5	No	Pass	2	74	62	17%	20%	540	3.0
	7.50%	0.5	Yes	Pass	2	79	66	17%	20%	521	4.0
Quick Lime											
48	2.50%	0.5	No	Pass	2	89	73	18%	23%	422	72
	5%	0.25	No	Pass	2	74	63	15%	18%	563	73
	7.50%	0.5	No	Pass	2	57	50	13%	15%	709	3.0
Type II Portland Cement											
48	2.50%	3.25	No	Pass	2	79	65	18%	22%	560	3.0
	5%	>4.5	No	Pass	2	71	60	16%	19%	598	3.0
	7.50%	>4.5	No	Pass	2	58	50	14%	17%	610	1.0
Type IL Portland Cement											
48	2.50%	3	No	Pass	2	75	63	16%	20%	565	4.0
	5%	4.25	No	Pass	2	72	60	17%	21%	579	2.0
	7.50%	>4.5	No	Pass	2	78	66	16%	19%	568	1.0

Table A5-2
Sample TS-S2 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Eco-Cal											
72	2.50%	0.75	No	Pass	2	111	93	17%	20%	378	1.0
	5%	1	No	Pass	2	124	103	17%	21%	415	3.0
	7.50%	1.25	Yes	Pass	2	110	92	17%	20%	413	0.0
Quick Lime											
72	2.50%	0.5	No	Pass	2	98	83	16%	19%	324	2.0
	5%	0.5	No	Pass	2	87	73	16%	20%	476	2.0
	7.50%	0.25	No	Pass	2	78	69	12%	13%	632	1.0
Type II Portland Cement											
72	2.50%	3.75	No	Pass	2	105	88	17%	20%	455	2.0
	5%	>4.5	No	Pass	2	106	91	14%	17%	494	0.0
	7.50%	>4.5	No	Pass	2	81	69	15%	18%	530	1.0
Type IL Portland Cement											
72	2.50%	3.75	No	Pass	2	97	82	16%	19%	467	3.0
	5%	>4.5	No	Pass	2	87	73	16%	20%	492	2.0
	7.50%	>4.5	No	Pass	2	86	72	17%	20%	482	2.0

Note:
1. Various stabilization reagents evaluated at various dose rates to gauge the ability for these sediments to gain strength. Each sample mix tested for strength gain with pocket penetrometer and sample wetness by noting the presence of standing water, performing paint filter tests, and measuring sample moisture. Ambient loss of moisture or other change in mix mass evaluated by weighing the mixtures. Each test completed after 10, 24, 48, and 72 hours of curing.

Table A5-3
Sample TS-S3 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Paint Filter	Standing Water	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Eco-Cal											
10	2.50%	0	Fail	Yes	1.104	29.207	22.4	24%	32%	626.3	NA
	5%	0	Fail	Yes	1.091	28.515	22	24%	31%	662	NA
	7.50%	0	Fail	Yes	1.1	28.921	22.4	23%	31%	690	NA
Quick Lime											
10	2.50%	0	Fail	Yes	1.1	26.4	20.9	22%	28%	644.4	NA
	5%	0	Fail	Yes	1.1	28.7	22.9	21%	27%	683.1	NA
	7.50%	0.75	Pass	No	1.1	18.7	15.6	18%	21%	681.1	NA
Type IL Portland Cement											
10	2.50%	0.25	Yes	Pass	2.1	127.8	99.7	22%	29%	626.5	NA
	5%	0.25	Yes	Pass	2.1	135.7	107.6	21%	27%	640.6	NA
	7.50%	0.25	Yes	Pass	2.2	130.6	102.8	22%	28%	662.5	NA
Type II Portland Cement											
10	2.50%	0	Pass	Yes	1.1	30.3	22.7	26%	35%	649.3	NA
	5%	0	Pass	Yes	1.1	39.1	29.9	24%	32%	661.1	NA
	7.50%	0.25	Pass	Yes	1.1	35.9	28.5	21%	27%	696.8	NA
Eco-Cal											
24	2.50%	0	Fail	Yes	1.1	37.7	30	21%	27%	587.1	2.6
	5%	0	Pass	Yes	1.1	37.4	30.1	20%	25%	594.7	31
	7.50%	0	Pass	Yes	1.1	38.9	31.4	20%	25%	649.1	3.1

Table A5-3
Sample TS-S3 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Paint Filter	Standing Water	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Quick Lime											
24	2.50%	0	Pass	Yes	1.1	36	29.1	20%	25%	608.1	1.4
	5%	0	Pass	Yes	1.1	36.5	30.4	17%	21%	640	7.7
	7.50%	1.25	Pass	No	1.1	23	19.3	17%	20%	657	2.2
Type IL Portland Cement											
24	2.50%	1.25	Yes	Pass	2.1	108	85.1	22%	28%	516.9	3.7
	5%	4	Yes	Pass	2.1	86.4	69	21%	26%	553	3.3
	7.50%	4.5	Yes	Pass	2.1	83.4	66.4	21%	26%	577.7	3.5
Type II Portland Cement											
24	2.50%	0.25	Pass	Yes	1.1	30.4	24.2	21%	27%	618.9	1.1
	5%	0.5	Pass	Yes	1.1	27.2	22.3	19%	23%	631.7	3.3
	7.50%	2.5	Pass	Yes	1.1	31.1	25.4	19%	23%	666.1	0.7
Eco-Cal											
48	2.50%	0	Pass	Yes	1.1	40.6	32.1	22%	27%	544.8	2.8
	5%	0	Pass	Yes	1.1	35.9	28.8	20%	26%	559.1	0.8
	7.50%	0	Pass	Yes	1.2	40.2	32.4	20%	25%	608.7	1.4
Quick Lime											
48	2.50%	0	Pass	No	1.1	28.6	23.5	19%	23%	563.6	17
	5%	0.25	Pass	No	1.1	31.5	25.9	18%	23%	608.2	1.4
	7.50%	1.75	Pass	No	1.1	21.6	18.2	17%	20%	635.6	0.9

Table A5-3
Sample TS-S3 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Paint Filter	Standing Water	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Type IL Portland Cement											
48	2.50%	1.5	Yes	Pass	2.1	81.6	64.6	21%	27%	436.2	1.2
	5%	4.5	No	Pass	2.1	81.9	65.3	21%	26%	472.6	0.6
	7.50%	4.5	No	Pass	2.1	75.7	60.3	21%	26%	503.5	0.6
Type II Portland Cement											
48	2.50%	0	Pass	No	1.1	30.2	23.9	22%	28%	588.7	1.1
	5%	1	Pass	No	2.5	35.3	28.6	20%	26%	605.4	-6.5
	7.50%	3.5	Pass	No	2.5	31.8	26.2	19%	24%	636.4	0.4
Eco-Cal											
72	2.50%	0	Pass	Yes	1	31.6	24.9	22%	28%	512.4	1.8
	5%	0	Pass	Yes	1	32.7	26	21%	27%	525.4	2
	7.50%	0	Pass	Yes	1.2	31.1	25	20%	26%	578.4	0.4
Quick Lime											
72	2.50%	0	Pass	No	0.9	27	22.5	17%	21%	473.3	64.2
	5%	0.25	Pass	No	1.5	34.4	28.6	18%	21%	549.6	25.7
	7.50%	1	Pass	No	0.9	18.8	15.7	17%	21%	619	-1.3
Type IL Portland Cement											
72	2.50%	2.5	Yes	Pass	2.1	98.3	77.7	21%	27%	337.7	2.3
	5%	4.5	No	Pass	2.1	88.7	71.2	20%	25%	379.3	6.7
	7.50%	4.5	No	Pass	2.1	74.3	59.4	21%	26%	428.6	2.7

Table A5-3
Sample TS-S3 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Paint Filter	Standing Water	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Type II Portland Cement											
72	2.50%	0.75	Pass	No	1	21	17	20%	25%	558.3	10.4
	5%	2	Pass	No	1	22.8	18.6	19%	24%	553	30.6
	7.50%	4	Pass	No	0.8	18.4	15	19%	24%	618	0.8

Note:
1. Various stabilization reagents evaluated at various dose rates to gauge the ability for these sediments to gain strength. Each sample mix tested for strength gain with pocket penetrometer and sample wetness by noting the presence of standing water, performing paint filter tests, and measuring sample moisture. Ambient loss of moisture or other change in mix mass evaluated by weighing the mixtures. Each test completed after 10, 24, 48, and 72 hours of curing.

Table A5-4
Sample TS-S4 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Eco-Cal											
10	2.50%	0.25	Yes	Pass	2.1	103.9	85.1	18%	23%	516.4	1.8
	5%	0.25	Yes	Fail	2.1	108.2	89.9	17%	21%	667.8	23.2
	7.50%	0.25	Yes	Fail	2.1	112.4	93.2	17%	21%	636.3	3.1
Quick Lime											
10	2.50%	0.25	Yes	Pass	2.1	113.8	96.2	16%	19%	580.9	1.7
	5%	1.25	No	Pass	2.1	110.5	94.7	15%	17%	628.3	6.7
	7.50%	0.5	No	Pass	2	84	72.4	14%	16%	725.8	2.3
Type II Portland Cement											
10	2.50%	0.75	Yes	Pass	2	119.8	98	19%	23%	564.5	2.3
	5%	1	Yes	Pass	2.1	114.7	96.6	16%	19%	606.2	3.4
	7.50%	1.5	Yes	Pass	2.1	102.5	84.6	18%	22%	663.6	2.2
Type IL Portland Cement											
10	2.50%	1.5	No	Pass	2.2	92.6	77.6	17%	20%	606.2	NA
	5%	1.75	Yes	Pass	2.2	97.6	83.5	15%	17%	682.7	NA
	7.50%	3	No	Pass	2.2	108.4	94.5	13%	15%	689.5	NA
Eco-Cal											
24	2.50%	0.25	Yes	Pass	2.1	79.7	67.2	16%	19%	436.3	2.5
	5%	0.25	Yes	Pass	2.1	82	69.6	16%	18%	584.9	3
	7.50%	0.25	Yes	Pass	2.1	113.6	96	16%	19%	522.7	2.1
Quick Lime											
24	2.50%	0	Yes	Pass	2.1	90.8	75.6	17%	21%	488.3	3.9
	5%	1.75	No	Pass	2.1	74.5	65.1	13%	15%	555.3	0.6
	7.50%	0.75	No	Pass	2.1	72.9	63.5	13%	15%	652.2	2.8

Table A5-4
Sample TS-S4 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Type II Portland Cement											
24	2.50%	1.25	Yes	Pass	2.1	87.1	72	18%	22%	476.8	2.7
	5%	4.5	No	Pass	2.1	68.8	58.1	16%	19%	538.7	0.8
	7.50%	>4.5	No	Pass	2.1	100.4	85.7	15%	18%	565	0.3
Type IL Portland Cement											
24	2.50%	4	No	Pass	2.1	97.3	81.5	17%	20%	509.1	-127.5
	5%	4.5	No	Pass	2.1	72.4	61.7	15%	18%	609.2	-140.8
	7.50%	4.5	No	Pass	2.1	71.1	62.3	13%	15%	619.2	-123.2
Eco-Cal											
48	2.50%	1.75	Yes	Pass	2	96	81	16%	19%	339	3.3
	5%	1.75	Yes	Pass	2	103	88	15%	17%	480	3.9
	7.50%	0.8	Yes	Pass	2	93	77	18%	21%	428.3	3.4
Quick Lime											
48	2.50%	1.12	No	Pass	2	81	69	15%	18%	395	14.3
	5%	3.87	No	Pass	2	96	82	15%	18%	455	6.3
	7.50%	3.5	No	Pass	2	76	65	15%	17%	574	4.2
Type II Portland Cement											
48	2.50%	2.75	No	Pass	2	100	82	18%	23%	375	3.8
	5%	4.5	No	Pass	2	71	61	14%	17%	465	4.7
	7.50%	4.5	No	Pass	2	77	65	16%	19%	487	3
Type IL Portland Cement											
48	2.50%	4.25	No	Pass	2.1	88.3	76.6	14%	16%	421.4	-132.6
	5%	4.5	No	Pass	2	80.1	68.7	15%	17%	530.6	-143.7
	7.50%	4.5	No	Pass	2.1	77.8	67.7	13%	15%	543.3	-132

Table A5-4
Sample TS-S4 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Eco-Cal											
72	2.50%	0.5	Yes	Pass	2.1	95.6	80.3	16%	20%	244.7	0.8
	5%	1	Yes	Pass	2.1	91.9	76	18%	22%	388.8	1.4
	7.50%	0.75	Yes	Pass	2.1	97.4	81.6	17%	20%	332	1
Quick Lime											
72	2.50%	0.5	No	Pass	2.1	81.5	70	14%	17%	310.6	5
	5%	1.25	No	Pass	2.1	91.9	79.2	14%	16%	366.1	-0.9
	7.50%	1.25	No	Pass	2.1	59.5	51.1	15%	17%	517.2	-0.6
Type II Portland Cement											
72	2.50%	1.75	Yes	Pass	2.1	92.9	79.5	15%	17%	282.9	1.3
	5%	4	No	Pass	2	75.7	65.9	13%	15%	389.9	1.4
	7.50%	>4.5	No	Pass	2.1	72.6	61.5	16%	19%	417.7	-1.2
Type IL Portland Cement											
72	2.50%	4.5	No	Pass	2.1	94.4	82.1	13%	15%	326.7	-136.1
	5%	4.5	No	Pass	2.1	78.9	68.1	14%	16%	452.3	-139.2
	7.50%	4.5	No	Pass	2.1	76.3	67	13%	14%	468.3	-124.8

Note:
1. Various stabilization reagents evaluated at various dose rates to gauge the ability for these sediments to gain strength. Each sample mix tested for strength gain with pocket penetrometer and sample wetness by noting the presence of standing water, performing paint filter tests, and measuring sample moisture. Ambient loss of moisture or other change in mix mass evaluated by weighing the mixtures. Each test completed after 10, 24, 48, and 72 hours of curing.

Table A5-5
Sample TS-BW5 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Eco-Cal											
10	2.50%	0	Yes	Pass	2	103.6	42.5	60%	151%	761.5	4.5
	5%	0	Yes	Pass	2	75.1	32.3	59%	141%	777.5	4.3
	7.50%	0	Yes	Pass	2	85.7	36.2	59%	145%	779.3	2
Quick Lime											
10	2.50%	0	No	Pass	2.1	76.8	33.1	59%	141%	765.1	1.8
	5%	0	No	Pass	2	92.7	41.9	56%	127%	753.4	2.8
	7.50%	0	No	Pass	2.1	71.5	34	54%	118%	814.6	3.8
Type II Portland Cement											
10	2.50%	0	Yes	Pass	2	77	31.8	60%	152%	776.3	1.7
	5%	0	No	Pass	2.1	77.6	33.2	59%	143%	789.2	1.8
	7.50%	0	No	Pass	2.1	73.1	33.5	56%	126%	820.3	-17
	10.00%	0	No	Pass	2.1	80.5	37.5	55%	121%	857.2	4.6
	12.50%	0	No	Pass	2.1	101.9	47.6	54%	119%	832.9	6.1
Type IL Portland Cement											
10	2.50%	0	Yes	Pass	2.2	72.5	30.7	59%	147%	783	2.7
	5%	0	Yes	Pass	2.1	74.4	32.5	58%	138%	803.6	1
	7.50%	0	No	Pass	2.1	66.8	30.8	56%	125%	838	3.3
	10.00%	0	No	Pass	2.1	83.1	38.3	55%	124%	774.5	75.3
	12.50%	0	No	Pass	2.1	83.4	39.5	54%	117%	796.9	73.3
Eco-Cal											
24	2.50%	0	Yes	Pass	2.1	91.4	38.3	59%	147%	668	4.2
	5%	0	Yes	Pass	2.1	74.6	32.2	58%	141%	698	7
	7.50%	0	Yes	Pass	2.1	96.7	41.4	58%	141%	678	6.7

Table A5-5
Sample TS-BW5 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Quick Lime											
24	2.50%	0	No	Pass	2.1	73.4	31.8	58%	140%	691	2.8
	5%	0	No	Pass	2.1	83.8	38	56%	128%	668	3.7
	7.50%	0	No	Pass	2.1	98.8	46.7	54%	117%	714	3.9
Type II Portland Cement											
24	2.50%	0	No	Pass	2.1	92.7	39.5	59%	142%	682	3.7
	5%	0.25	No	Pass	2.1	78.3	35	57%	132%	710	3
	7.50%	0.25	No	Pass	2.1	75.9	34.8	56%	126%	740	6.5
	10.00%	0	No	Pass	2.1	73.8	35.8	53%	113%	762.5	23
	12.50%	0	No	Pass	2	71.3	33.7	54%	119%	783	-19.4
Type IL Portland Cement											
24	2.50%	0	No	Pass	2.1	70	29.9	59%	144%	710	5.1
	5%	0.25	No	Pass	2.1	62.7	29.8	54%	119%	734	9
	7.50%	0.25	No	Pass	2.1	67.5	31.1	56%	126%	770	2.6
	10.00%	0	No	Pass	2.1	71.5	33.5	55%	121%	775.3	-70.2
	12.50%	0.25	No	Pass	2.1	61.6	30	53%	113%	806.5	-69.1
Eco-Cal											
48	2.50%	0	Yes	Pass	1.4	41.4	17.5	60%	148%	626.7	1.3
	5%	0	Yes	Pass	1.4	47.4	20.2	59%	145%	641.5	10.5
	7.50%	0	Yes	Pass	1.5	54.2	23.8	58%	136%	617	8.3
Quick Lime											
48	2.50%	0	No	Pass	1.5	45.5	20.2	58%	135%	645.3	1.7
	5%	0	Yes	Pass	1.4	55.4	25.3	56%	126%	609.5	4.5
	7.50%	0	No	Pass	1.4	46	22.1	54%	115%	674	-4.6

Table A5-5
Sample TS-BW5 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Type II Portland Cement											
48	2.50%	0	No	Pass	1.5	49.4	21.2	59%	143%	634.9	-0.8
	5%	0.5	No	Pass	1.5	32.6	15	57%	130%	677.4	1.5
	7.50%	0.5	No	Pass	1.4	33.4	15.8	55%	122%	711.8	-3.8
	10.00%	0.25	No	Pass	2.1	69.9	33.5	54%	116%	693.9	0.8
	12.50%	0.5	No	Pass	2.1	61.8	29.03	55%	122%	721.3	2
Type IL Portland Cement											
48	2.50%	0	No	Pass	1.5	37.2	16.3	59%	141%	674.5	-0.2
	5%	0.5	No	Pass	1.5	35.9	16.4	57%	131%	699.6	0
	7.50%	0.5	No	Pass	1.5	29.1	13.9	55%	123%	736.2	6.2
	10.00%	0.5	No	Pass	2.1	53.1	25.03	55%	122%	721.9	2.4
	12.50%	0.75	No	Pass	2.1	51	24.76	54%	116%	756.5	1.1
Eco-Cal											
72	2.50%	0	Yes	Pass	1.5	42.1	17.9	60%	148%	583.1	3
	5%	0	Yes	Pass	1.5	45.3	19.6	59%	142%	596.7	1
	7.50%	0	Yes	Pass	1.5	46.3	19.9	59%	143%	569.8	2.4
Quick Lime											
72	2.50%	0	Yes	Pass	1.5	40.3	17.7	58%	140%	603.4	3.1
	5%	0	Yes	Pass	1.5	42.1	19.1	57%	131%	567.9	1
	7.50%	0	No	Pass	1.5	38.1	18.1	55%	120%	636.6	0.8

Table A5-5
Sample TS-BW5 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Type II Portland Cement											
72	2.50%	0	No	Pass	1.5	41.6	18.2	58%	140%	594.5	0.3
	5%	0	No	Pass	1.5	31.7	14.4	57%	134%	646.5	0.7
	7.50%	0.5	No	Pass	1.5	35	16.4	56%	125%	677.3	1
	10.00%	0.5	No	Pass	2.07	71.69	35.3	52%	110%	617.5	6.78
	12.50%	1	No	Pass	2.1	76.25	35	56%	125%	644	3.15
Type IL Portland Cement											
72	2.50%	0	No	Pass	1.5	46.9	20.1	59%	144%	628.3	0.8
	5%	0	No	Pass	1.4	35.8	16.1	57%	134%	664.4	0.8
	7.50%	0.5	No	Pass	1.4	40.1	18.5	56%	126%	697.3	0.2
	10.00%	0.5	No	Pass	2.1	70.82	33	55%	122%	652.2	0.98
	12.50%	1	No	Pass	2.07	70.51	34	53%	114%	686.4	1.66

Note:
1. Various stabilization reagents evaluated at various dose rates to gauge the ability for these sediments to gain strength. Each sample mix tested for strength gain with pocket penetrometer and sample wetness by noting the presence of standing water, performing paint filter tests, and measuring sample moisture. Ambient loss of moisture or other change in mix mass evaluated by weighing the mixtures. Each test completed after 10, 24, 48, and 72 hours of curing.

Table A5-6
TS-BW5 Day 7 Pocket Penetrometer

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Day 7 Pocket Pen	Tested 09/22/2025
Housatonic 5A ISS ID: TS BW5	
Reagent/Dose	Pocket Pen (tsf)
Type II Portland Cement	
10.00%	0.75
12.5%	1.5
Type IL Portland Cement	
10.00%	0.75
12.50%	1.5

Table A5-7
Sample TS-BW5 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Eco-Cal											
10	2.50%	0	Yes	Pass	2.1	108.1	59.9	45%	83%	706.1	10.1
	5%	0	Yes	Pass	2.1	127.2	73.8	43%	74%	706.4	9.6
	7.50%	0	Yes	Pass	2.1	105.5	61.9	42%	73%	768.3	6.3
Quick Lime											
10	2.50%	0	Yes	Pass	2.1	99	58.8	41%	71%	703.9	9.2
	5%	0	No	Pass	2.1	101.9	64.8	37%	59%	730.6	3.6
	7.50%	0	No	Pass	2.1	98.1	59.7	40%	67%	753.3	6.4
Type II Portland Cement											
10	2.50%	0	Yes	Pass	2.1	100.1	57.1	44%	78%	731.8	4.8
	5%	0	Yes	Pass	2.1	104.2	59.5	44%	78%	738.1	1.7
	7.50%	0	Yes	Pass	2.1	106	62.3	42%	73%	758.8	3.4
	10%%	0	Yes	Pass	2.1	88.1	51.4	43%	74%	807.9	2.5
Type IL Portland Cement											
10	2.50%	0	Yes	Pass	2.1	113.9	66.2	43%	74%	701.4	2.5
	5%	0	Yes	Pass	2.1	106	62.6	42%	72%	741.1	2.4
	7.50%	0	Yes	Pass	2.1	88.6	52.3	42%	72%	780	2.4
	10%%	0.5	Yes	Pass	2.1	78.5	48.3	40%	65%	810.5	2.5
Eco-Cal											
24	2.50%	0	Yes	Failed	2.1	92.5	52.7	44%	79%	605.4	10.3
	5%	0	Yes	Pass	2.1	89.7	54.2	41%	68%	611	7.8
	7.50%	0	Yes	Pass	2.1	88.6	54.7	39%	64%	677.7	4.1

Table A5-7
Sample TS-BW5 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Quick Lime											
24	2.50%	0	Yes	Pass	2.1	84.6	49.4	43%	74%	613	8.4
	5%	0	Yes	Pass	2.1	78.8	48	40%	67%	646.9	7
	7.50%	0	Yes	Pass	2.1	96.7	58.7	40%	67%	650.4	8.3
Type II Portland Cement											
24	2.50%	0	Yes	Pass	2.1	84.8	46.7	46%	85%	645.8	3.3
	5%	0.25	No	Pass	2.1	75.4	44.6	42%	72%	663.7	1.1
	7.50%	0.5	No	Pass	2.1	69.5	40.4	43%	76%	688.5	2.9
	10.00%	0.25	No	Pass	2.1	85.2	49.6	43%	75%	721	3.8
Type IL Portland Cement											
24	2.50%	0	No	Pass	2.1	96.3	55.3	44%	77%	604.8	2.4
	5%	0.5	No	Pass	2.2	63.4	39.5	39%	64%	677.1	2.8
	7.50%	0.75	No	Pass	2.1	68.7	41.1	41%	71%	713.4	0
	10.00%	1	No	Pass	2.1	62.1	38.3	40%	66%	748.7	1.8
Eco-Cal											
48	2.50%	0	Yes	Pass	2.1	106.9	63.3	42%	71%	494.9	5.7
	5%	0	Yes	Pass	2.1	128.8	79	39%	65%	478.6	5.7
	7.50%	0	Yes	Pass	2.1	130.2	79.9	39%	65%	545.8	3.8
Quick Lime											
48	2.50%	0	Yes	Pass	2.2	96.9	56.6	43%	74%	511.5	6.8
	5%	0	Yes	Pass	2.1	87.2	51.5	42%	72%	555.7	6.1
	7.50%	0	Yes	Pass	2.1	116.4	71.8	39%	64%	533.3	2.8

Table A5-7
Sample TS-BW5 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Type II Portland Cement											
48	2.50%	0	Yes	Pass	2.2	85.9	47.3	46%	86%	558.8	3.3
	5%	0.5	No	Pass	2.1	87.5	51	43%	75%	575.8	2.5
	7.50%	1	No	Pass	2.1	76.1	44.7	42%	74%	612.2	2.3
	10.00%	1.75	No	Pass	2.1	61.9	36.6	42%	73%	657.3	3.9
Type IL Portland Cement											
48	2.50%	0	Yes	Pass	2.1	90.1	52.9	42%	73%	513.6	3.2
	5%	1.5	No	Pass	2.1	83.8	49.4	42%	73%	593	2.4
	7.50%	1	No	Pass	2.1	67.4	41.6	40%	65%	643.2	4.9
	10.00%	1.5	No	Pass	2.1	59.8	36.4	41%	68%	689.2	1.8
Eco-Cal											
72	2.50%	0	Yes	Pass	2.1	95.9	53.6	45%	82%	392.2	8.9
	5%	0	Yes	Pass	2.1	95.1	59.6	38%	62%	379.7	5.9
	7.50%	0	Yes	Pass	2.1	77.5	46.3	41%	71%	464.4	6
Quick Lime											
72	2.50%	0	Yes	Pass	2.1	119.3	70.1	42%	72%	387.7	6.6
	5%	0	Yes	Pass	2.1	114.2	70.6	39%	64%	436.6	7
	7.50%	0	Yes	Pass	2	114.1	70.9	39%	63%	417.6	3.6
Type II Portland Cement											
72	2.50%	0	Yes	Pass	2.1	108.6	65.2	41%	69%	442	10.3
	5%	0.5	No	Pass	2.1	102.9	58.6	44%	78%	472.2	2.8
	7.50%	0.75	No	Pass	2.1	104.8	62.1	42%	71%	501	8.5
	10.00%	2	No	Pass	2.1	84.2	51.4	40%	67%	573.6	1.6

Table A5-7
Sample TS-BW5 In-Lab Results

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Hours Curing	Reagent/ Dose	Pocket Pen (tsf)	Standing Water	Paint Filter	Pan Tare (g)	Pan + Wet (g)	Pan +Dry (g)	Gravimetric Moisture	Geotechnical Moisture	Post Test Mass with Container+Lid (g)	Loss in Mass (g)
Type IL Portland Cement											
72	2.50%	0	Yes	Pass	2.1	106.4	61.2	43%	76%	407	2.3
	5%	1	No	Pass	2.1	95.8	57.8	41%	68%	496.3	3
	7.50%	1	No	Pass	2.1	111.3	68.3	39%	65%	532.1	1.9
	10.00%	2.5	No	Pass	2.1	109.6	67.3	39%	65%	579.9	1.8

Note:
1. Various stabilization reagents evaluated at various dose rates to gauge the ability for these sediments to gain strength. Each sample mix tested for strength gain with pocket penetrometer and sample wetness by noting the presence of standing water, performing paint filter tests, and measuring sample moisture. Ambient loss of moisture or other change in mix mass evaluated by weighing the mixtures. Each test completed after 10, 24, 48, and 72 hours of curing.

Table A5-8
TS-WP Day 7 Pocket Penetrometer

A5: Sediment Dewatering Treatability Study Sediment Stabilization Amendment Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Day 7 Pocket Pen	Tested 09/16/2025
Housatonic 5A ISS ID: TS WP	
Reagent/Dose	Pocket Pen (tsf)
Type II Portland Cement	
2.50%	0
5%	0.75
7.50%	1.5
10.00%	2.75
Type IL Portland Cement	
2.50%	0
5%	1.25
7.50%	1.75
10.00%	2.75

Geotechnical Reports

January 21, 2026

Project No. R-2025-197-006

David Liles
Arcadis U.S., Inc.
4915 Prospectus Dr., Suite G
Durham, NC 27713

david.liles@arcadis.com

Transmittal
Laboratory Test Results
Housatonic 5A

Please find attached the laboratory test results for the above referenced project. The tests were outlined on the Project Verification Form that was transmitted to your firm prior to the testing. The testing was performed in general accordance with the methods listed on the enclosed data sheets. The test results are believed to be representative of the samples that were submitted for testing and are indicative only of the specimens which were evaluated. We have no direct knowledge of the origin of the samples and imply no position with regard to the nature of the test results, i.e. pass/fail and no claims as to the suitability of the material for its intended use.

The test data and all associated project information provided shall be held in strict confidence and disclosed to other parties only with authorization by our Client. The test data submitted herein is considered integral with this report and is not to be reproduced except in whole and only with the authorization of the Client and Geotechnics. The remaining sample materials for this project will be retained for a minimum of 90 days as directed by the Geotechnics' Quality Program.

We are pleased to provide these testing services. Should you have any questions or if we may be of further assistance, please contact our office.

Respectively submitted,
Geotechnics, Inc.

Michael P. Smith
Regional Manager

We understand that you have a choice in your laboratory services and we thank you for choosing Geotechnics.

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PERMEABILITY TEST

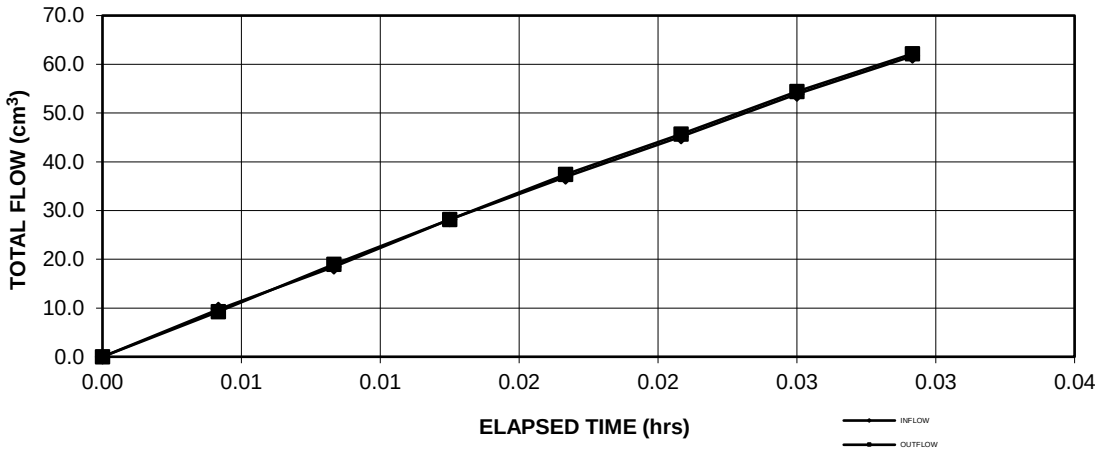
ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S1 ISS
Lab ID No.:	R-2025-197-006-001	Avg. Effective Consol. Pressure (psi):	20

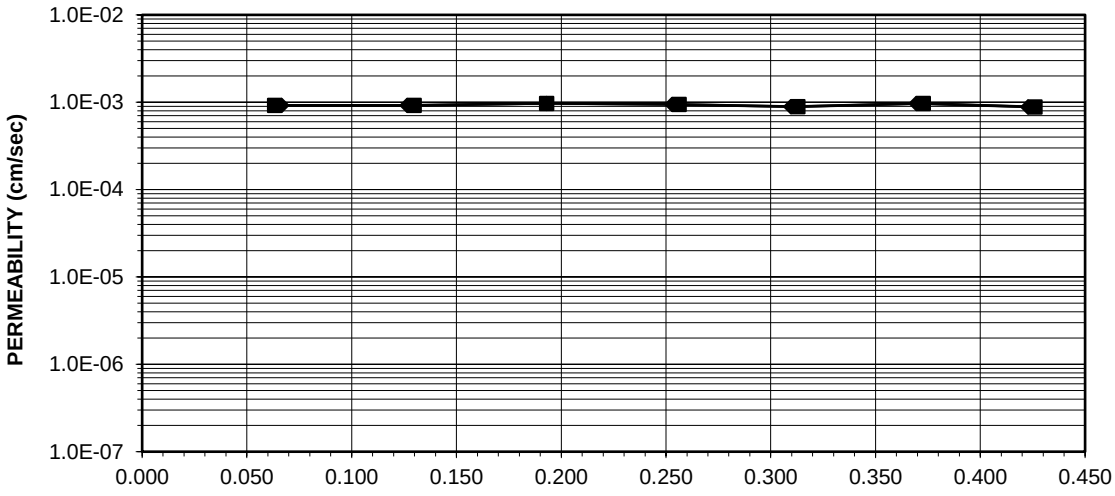
AVERAGE PERMEABILITY = 9.2E-04 cm/sec @ 20°C

AVERAGE PERMEABILITY = 9.2E-06 m/sec @ 20°C

TOTAL FLOW vs. ELAPSED TIME



PORE VOLUMES EXCHANGED vs. PERMEABILITY



Tested By: DL Date: 1/12/26 Checked By: AES Date: 1/19/26

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S1 ISS
Lab ID No.:	R-2025-197-006-001	Avg. Effective Consol. Pressure (psi):	20

Specific Gravity:	2.77	Measured
Sample Condition:		Remolded

Visual Description: Gray Gravel with Sand

Permeant Type: Deaired Tap Water

MOISTURE CONTENT:	BEFORE TEST	AFTER TEST
Tare Number	2-A	473
Weight of Tare & Wet Sample (g)	361.19	685.87
Weight of Tare & Dry Sample (g)	337.24	599.51
Weight of Tare (g)	90.77	97.69
Weight of Water (g)	23.95	86.36
Weight of Dry Sample (g)	246.47	501.82
Moisture Content (%)	**9.7**	**17.2**

SPECIMEN:	BEFORE TEST	AFTER TEST
Weight of Tube & Wet Sample (g)	2468.10	NA
Weight of Tube (g)	1624.18	NA
Weight of Wet Sample (g)	843.92	901.55
Length 1 (in)	3.995	3.982
Length 2 (in)	3.995	3.995
Length 3 (in)	3.995	3.989
Top Diameter (in)	2.872	2.880
Middle Diameter (in)	2.872	2.868
Bottom Diameter (in)	2.872	2.870
Average Length (in)	4.00	3.99
Average Area (in^2)	6.48	6.48
Sample Volume (cm^3)	424.11	423.63
Unit Wet Weight (g/cm^3)	1.99	2.13
Unit Wet Weight (pcf)	124.2	132.8
Unit Dry Weight (pcf)	113.2	113.3
Unit Dry Weight (g/cm^3)	1.81	1.82
Void Ratio, e	0.53	0.53
Porosity, n	0.35	0.34
Pore Volume (cm^3)	146.4	146.0
Total Weight of Sample After Test (g)		900.12

Tested By: DL Date: 1/12/26 Checked By: AES Date: 1/19/26

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S1 ISS
Lab ID No.:	R-2025-197-006-001	Avg. Effective Consol. Pressure (psi):	20

Pressure Heads (Constant)	
Top Cap (psi)	79.0
Bottom Cap (psi)	81.0
Cell (psi)	100.0
Total Pressure Head (cm)	140.6
Hydraulic Gradient	13.88

Final Sample Dimensions	
Sample Length (cm), L	10.13
Sample Diameter (cm)	7.30
Sample Area (cm^2), A	41.81
Inflow Burette Area (cm^2), a-in	4.519
Outflow Burette Area (cm^2), a-out	4.519
B Parameter (%)	99

AVERAGE PERMEABILITY = 9.2E-04 cm/sec @ 20°C

AVERAGE PERMEABILITY = 9.2E-06 m/sec @ 20°C

DATE	TIME		ELAPSED TIME t	TOTAL INFLOW	TOTAL OUTFLOW	TOTAL HEAD h	FLOW (0 flow)	TEMP.	INCREMENTAL PERMEABILITY @ 20°C
(mm/dd/yy)	(hr)	(min)	(hr)	(cm^3)	(cm^3)	(cm)	(1 stop)	(°C)	(cm/sec)
1/12/2026	16	14.0	0.000	0.0	0.0	164.9	0	20.8	NA
1/12/2026	16	14.3	0.004	9.7	9.2	160.7	0	20.8	9.2E-04
1/12/2026	16	14.5	0.008	18.5	18.9	156.6	0	20.8	9.2E-04
1/12/2026	16	14.8	0.012	28.2	28.2	152.4	0	20.8	9.7E-04
1/12/2026	16	15.0	0.017	36.9	37.4	148.5	0	20.8	9.5E-04
1/12/2026	16	15.3	0.021	45.2	45.7	144.8	0	20.8	8.9E-04
1/12/2026	16	15.5	0.025	53.9	54.4	140.9	0	20.8	9.7E-04
1/12/2026	16	15.8	0.029	61.7	62.2	137.5	0	20.8	8.8E-04

Tested By: DL Date: 1/12/26 Checked By: AES Date: 1/19/26

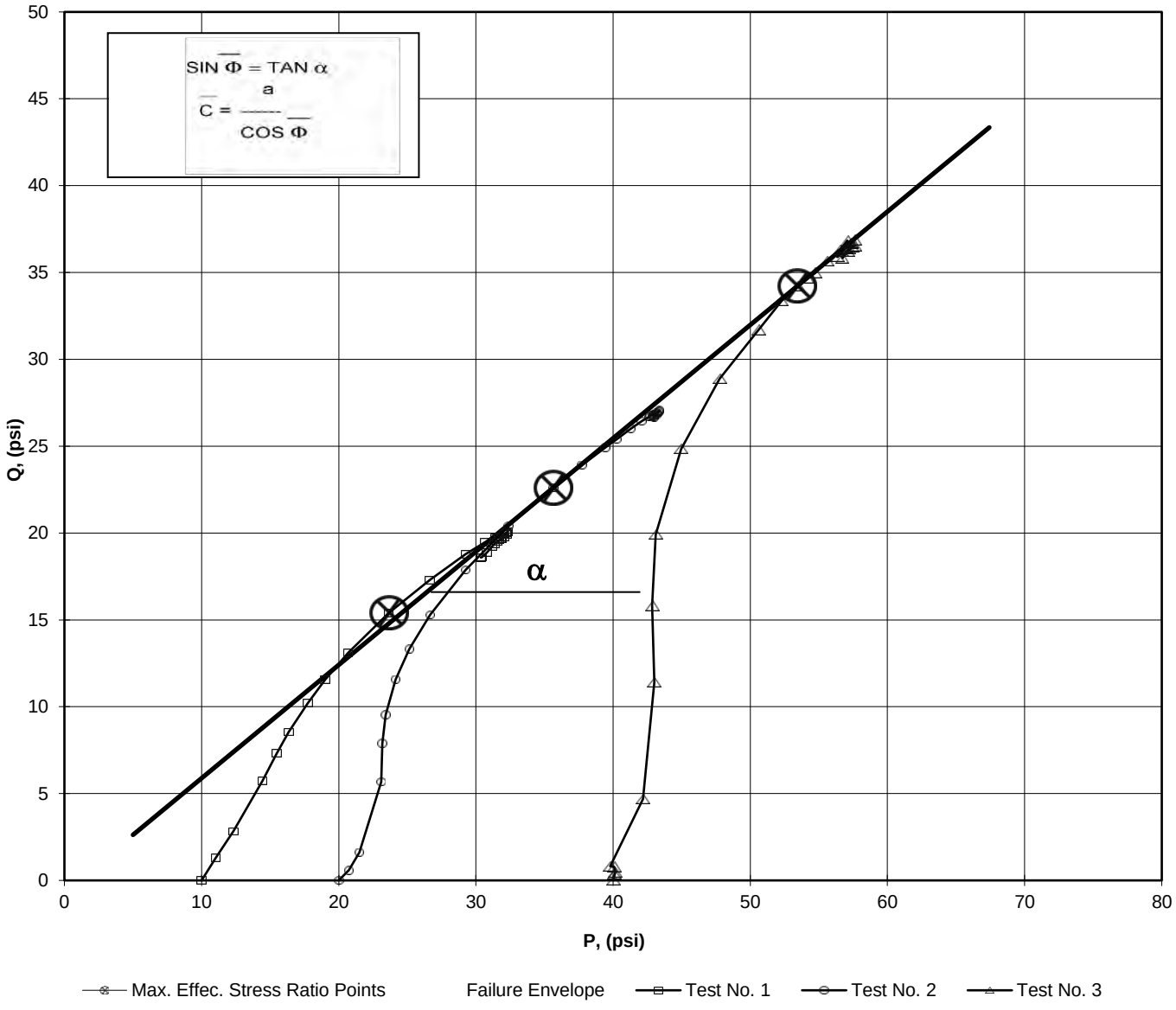
DCN: CT-22 DATE: 1/1/17 REVISION: 11

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S1 ISS
Lab ID:	R-2025-197-006-001		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	**0.00**	$\overline{C}$	=	**0.00**
α	=	**33.1**	$\overline{\Phi}$	=	**40.73**

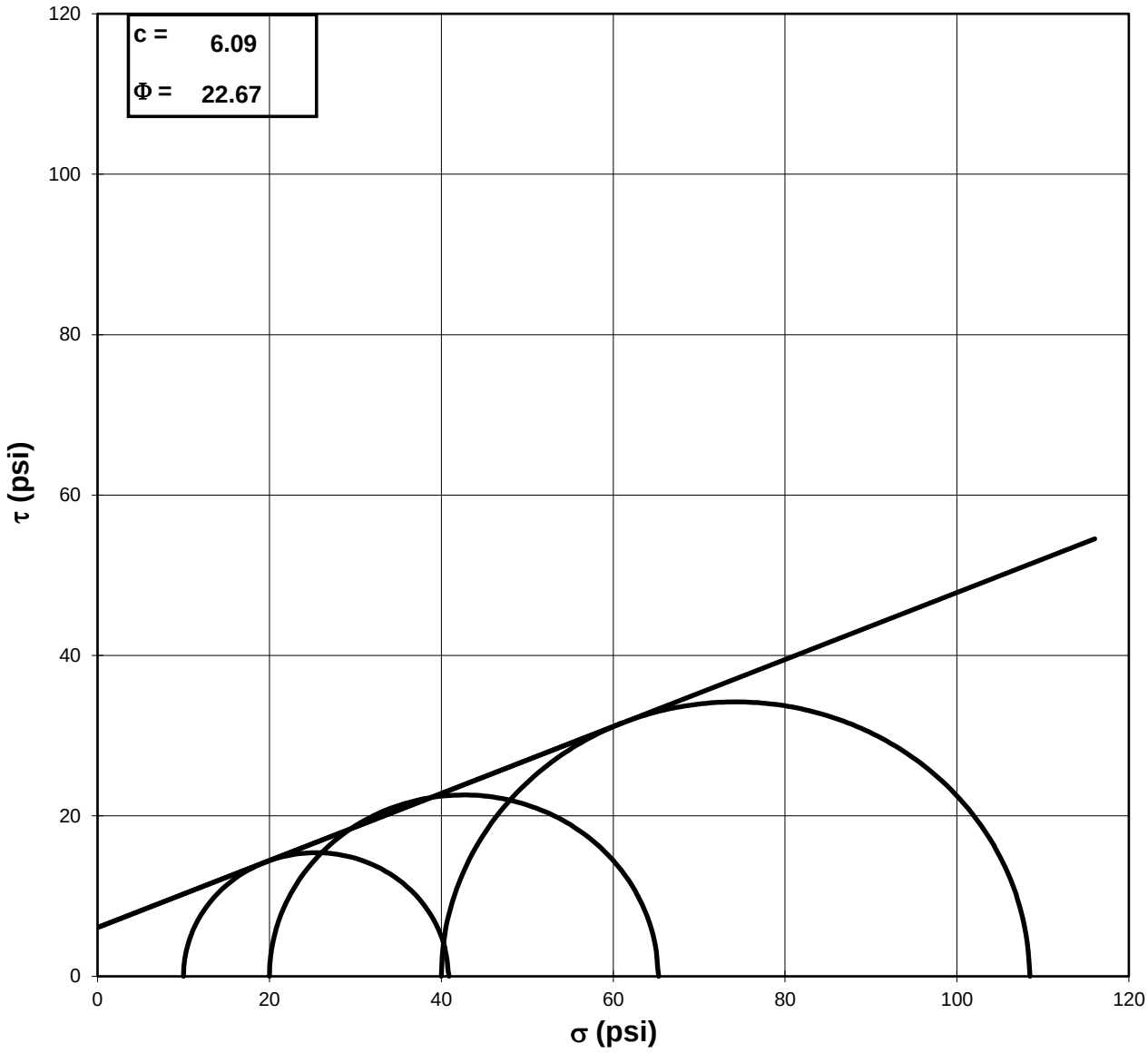
Tested By: DL Date: 1/9/26 Approved By: MPS Date: 1/19/26

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MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S1 ISS
Lab ID:	R-2025-197-006-001		
Visual Description:	Gray Gravel with Sand (REMOLDED)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: DL *Date:* 1/9/26 *Approved By:* MPS *Date:* 1/19/26

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S1 ISS
Lab ID:	R-2025-197-006-001		

Visual Description: Gray Gravel with Sand (REMOLDED)

Stage No.	1
Test No.	1

PRESSURES (psi)

Cell Pressure (psi)	90.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	10.0
Pore Pressure Response (%)	99

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	23.66
Q	=	15.41

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	17.5
Final Change (ml)	6.5
Initial Dial Reading (mil)	238
Dial Reading After Saturation (mil)	237
Dial Reading After Consolidation (mil)	247

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
17.7	0.000	80.0
34.6	0.001	80.3
54.1	0.003	80.5
91.6	0.008	81.3
112.1	0.014	81.8
128.0	0.019	82.2
149.6	0.028	82.5
167.1	0.037	82.6
187.5	0.048	82.4
218.1	0.068	81.7
243.9	0.097	80.7
264.8	0.133	79.5
275.3	0.168	78.8
280.5	0.209	78.3
282.8	0.238	78.1
286.8	0.279	77.9
290.6	0.336	77.8
294.4	0.395	77.8
295.5	0.439	77.7
297.3	0.497	77.7
297.4	0.542	77.7
298.1	0.586	77.8
300.4	0.630	77.8
301.0	0.659	77.9
301.1	0.688	77.9
301.0	0.718	78.0
300.5	0.747	78.0
297.4	0.792	78.1
295.8	0.836	78.2
297.1	0.865	78.2
297.5	0.895	78.3

Tested By: DL Date: 1/9/26 Input Checked By: MPS Date: 1/19/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S1 ISS
Lab ID:	R-2025-197-006-001		

Visual Description: Gray Gravel with Sand (REMOLDED)

Effective Confining Pressure (psi)	10.0	*Stage No.*	1
		Test No	1

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	38.42
Length After Consolidation (in)	5.98
Area After Consolidation (in^2)	6.429

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	2.63	0.26	12.37	9.7	1.270	0.10	11.05	1.32
0.04	5.66	0.50	15.16	9.5	1.596	0.09	12.33	2.83
0.13	11.49	1.29	20.19	8.7	2.319	0.11	14.45	5.74
0.23	14.65	1.83	22.82	8.2	2.793	0.13	15.49	7.32
0.32	17.10	2.20	24.90	7.8	3.191	0.13	16.35	8.55
0.47	20.43	2.46	27.97	7.5	3.707	0.12	17.76	10.21
0.61	23.11	2.55	30.55	7.4	4.103	0.11	19.00	11.55
0.80	26.20	2.43	33.78	7.6	4.460	0.09	20.68	13.10
1.14	30.82	1.74	39.07	8.3	4.733	0.06	23.66	15.41
1.63	34.62	0.66	43.96	9.3	4.705	0.02	26.65	17.31
2.22	37.58	-0.46	48.04	10.5	4.594	-0.01	29.25	18.79
2.81	38.94	-1.19	50.13	11.2	4.481	-0.03	30.66	19.47
3.50	39.45	-1.68	51.13	11.7	4.377	-0.04	31.40	19.72
3.98	39.59	-1.89	51.49	11.9	4.329	-0.05	31.69	19.80
4.68	39.90	-2.09	51.99	12.1	4.300	-0.05	32.04	19.95
5.62	40.07	-2.19	52.26	12.2	4.286	-0.06	32.23	20.03
6.61	40.19	-2.25	52.44	12.2	4.282	-0.06	32.34	20.10
7.34	40.04	-2.27	52.31	12.3	4.263	-0.06	32.29	20.02
8.32	39.88	-2.34	52.21	12.3	4.232	-0.06	32.27	19.94
9.06	39.56	-2.30	51.85	12.3	4.217	-0.06	32.08	19.78
9.81	39.34	-2.22	51.56	12.2	4.220	-0.06	31.89	19.67
10.54	39.34	-2.16	51.50	12.2	4.236	-0.06	31.83	19.67
11.03	39.21	-2.10	51.31	12.1	4.239	-0.05	31.71	19.60
11.52	39.01	-2.05	51.06	12.1	4.236	-0.05	31.56	19.50
12.01	38.78	-2.00	50.78	12.0	4.232	-0.05	31.39	19.39
12.51	38.48	-1.97	50.45	12.0	4.215	-0.05	31.21	19.24
13.25	37.74	-1.94	49.68	11.9	4.162	-0.05	30.81	18.87
13.99	37.21	-1.83	49.04	11.8	4.145	-0.05	30.44	18.60
14.48	37.17	-1.78	48.95	11.8	4.156	-0.05	30.36	18.59
14.98	37.00	-1.75	48.75	11.7	4.150	-0.05	30.25	18.50

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S1 ISS
Lab ID:	R-2025-197-006-001		

Visual Description: Gray Gravel with Sand (REMOLDED)

Stage No.	1
Test No.	2

PRESSURES (psi)

Cell Pressure (psi)	100.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	20.0
Pore Pressure Response (%)	98

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	35.64
Q	=	22.61

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	16.1
Final Change (ml)	7.9

Initial Dial Reading (mil)	239
Dial Reading After Saturation (mil)	244
Dial Reading After Consolidation (mil)	254

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
19.0	0.000	80.0
26.6	0.001	79.9
39.6	0.003	80.1
91.7	0.008	82.6
120.2	0.013	84.7
141.4	0.019	86.1
167.8	0.027	87.4
190.8	0.035	88.2
216.4	0.046	88.6
250.4	0.064	88.6
284.4	0.093	88.0
314.7	0.125	87.0
333.6	0.158	86.2
349.2	0.196	85.5
356.8	0.224	85.1
367.4	0.262	84.7
376.5	0.314	84.4
383.2	0.369	84.1
387.0	0.411	84.1
391.8	0.466	83.9
393.6	0.507	83.9
398.6	0.549	83.8
403.4	0.590	83.7
404.9	0.619	83.6
406.1	0.646	83.6
407.0	0.673	83.7
408.1	0.701	83.7
409.0	0.742	83.7
412.7	0.784	83.7
415.8	0.811	83.7
414.5	0.839	83.9

Tested By: DL Date: 1/9/26 Input Checked By: MPS Date: 1/19/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S1 ISS
Lab ID:	R-2025-197-006-001		

Visual Description: Gray Gravel with Sand (REMOLDED)

Effective Confining Pressure (psi)	20.0	*Stage No.*	1
		Test No	2

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	38.21
Length After Consolidation (in)	5.97
Area After Consolidation (in^2)	6.402

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	1.19	-0.14	21.33	20.1	1.059	-0.12	20.74	0.59
0.04	3.22	0.10	23.12	19.9	1.162	0.03	21.51	1.61
0.13	11.34	2.58	28.76	17.4	1.651	0.23	23.09	5.67
0.22	15.77	4.70	31.07	15.3	2.031	0.30	23.18	7.88
0.31	19.06	6.11	32.96	13.9	2.372	0.33	23.42	9.53
0.45	23.14	7.42	35.72	12.6	2.839	0.33	24.15	11.57
0.59	26.69	8.18	38.50	11.8	3.258	0.31	25.16	13.34
0.77	30.60	8.63	41.98	11.4	3.691	0.29	26.67	15.30
1.08	35.76	8.62	47.13	11.4	4.143	0.25	29.25	17.88
1.55	40.82	8.01	52.81	12.0	4.403	0.20	32.40	20.41
2.10	45.22	6.97	58.25	13.0	4.472	0.16	35.64	22.61
2.65	47.84	6.17	61.67	13.8	4.460	0.13	37.75	23.92
3.29	49.88	5.47	64.40	14.5	4.434	0.11	39.47	24.94
3.75	50.78	5.13	65.65	14.9	4.415	0.10	40.26	25.39
4.39	52.03	4.71	67.32	15.3	4.402	0.09	41.31	26.01
5.27	52.91	4.36	68.55	15.6	4.382	0.08	42.10	26.45
6.19	53.38	4.07	69.31	15.9	4.350	0.08	42.62	26.69
6.89	53.53	4.06	69.47	15.9	4.358	0.08	42.71	26.76
7.81	53.69	3.92	69.76	16.1	4.339	0.07	42.92	26.84
8.50	53.54	3.86	69.68	16.1	4.318	0.07	42.91	26.77
9.20	53.85	3.76	70.09	16.2	4.316	0.07	43.16	26.92
9.89	54.11	3.67	70.44	16.3	4.314	0.07	43.39	27.06
10.36	54.03	3.64	70.39	16.4	4.304	0.07	43.37	27.02
10.82	53.92	3.64	70.28	16.4	4.297	0.07	43.32	26.96
11.28	53.78	3.66	70.11	16.3	4.292	0.07	43.22	26.89
11.74	53.65	3.66	69.99	16.3	4.283	0.07	43.17	26.82
12.43	53.35	3.68	69.67	16.3	4.268	0.07	43.00	26.67
13.13	53.42	3.73	69.69	16.3	4.283	0.07	42.98	26.71
13.59	53.56	3.73	69.82	16.3	4.292	0.07	43.05	26.78
14.05	53.11	3.86	69.25	16.1	4.290	0.07	42.69	26.55

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S1 ISS
Lab ID:	R-2025-197-006-001		

Visual Description: Gray Gravel with Sand (REMOLDED)

Stage No.	1
Test No.	3

PRESSURES (psi)

Cell Pressure (psi)	120.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	40.0
Pore Pressure Response (%)	99

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	53.43
Q	=	34.22

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	6.2
Final Change (ml)	17.8

Initial Dial Reading (mil)	238
Dial Reading After Saturation (mil)	241
Dial Reading After Consolidation (mil)	276

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
18.5	0.000	80.0
23.0	0.001	80.2
24.5	0.003	80.3
28.4	0.009	80.7
28.8	0.015	81.0
78.1	0.020	82.5
163.7	0.029	88.4
220.1	0.037	93.0
272.8	0.048	96.8
336.7	0.069	99.9
390.5	0.099	101.1
429.4	0.135	101.1
453.5	0.170	101.1
467.8	0.212	100.8
476.4	0.242	100.5
483.7	0.284	100.3
497.5	0.341	100.1
511.5	0.402	99.8
522.8	0.446	99.7
519.9	0.505	99.5
519.6	0.551	99.6
531.4	0.596	99.5
539.6	0.641	99.4
545.1	0.671	99.3
544.9	0.702	99.3
543.8	0.731	99.2
538.8	0.761	99.1
549.0	0.806	99.1
557.4	0.851	99.0
561.6	0.881	98.9
564.0	0.911	98.9

Tested By: DL Date: 1/9/26 Input Checked By: MPS Date: 1/19/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S1 ISS
Lab ID:	R-2025-197-006-001		

Visual Description: Gray Gravel with Sand (REMOLDED)

Effective Confining Pressure (psi)	40.0	*Stage No.*	1
		Test No	3

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

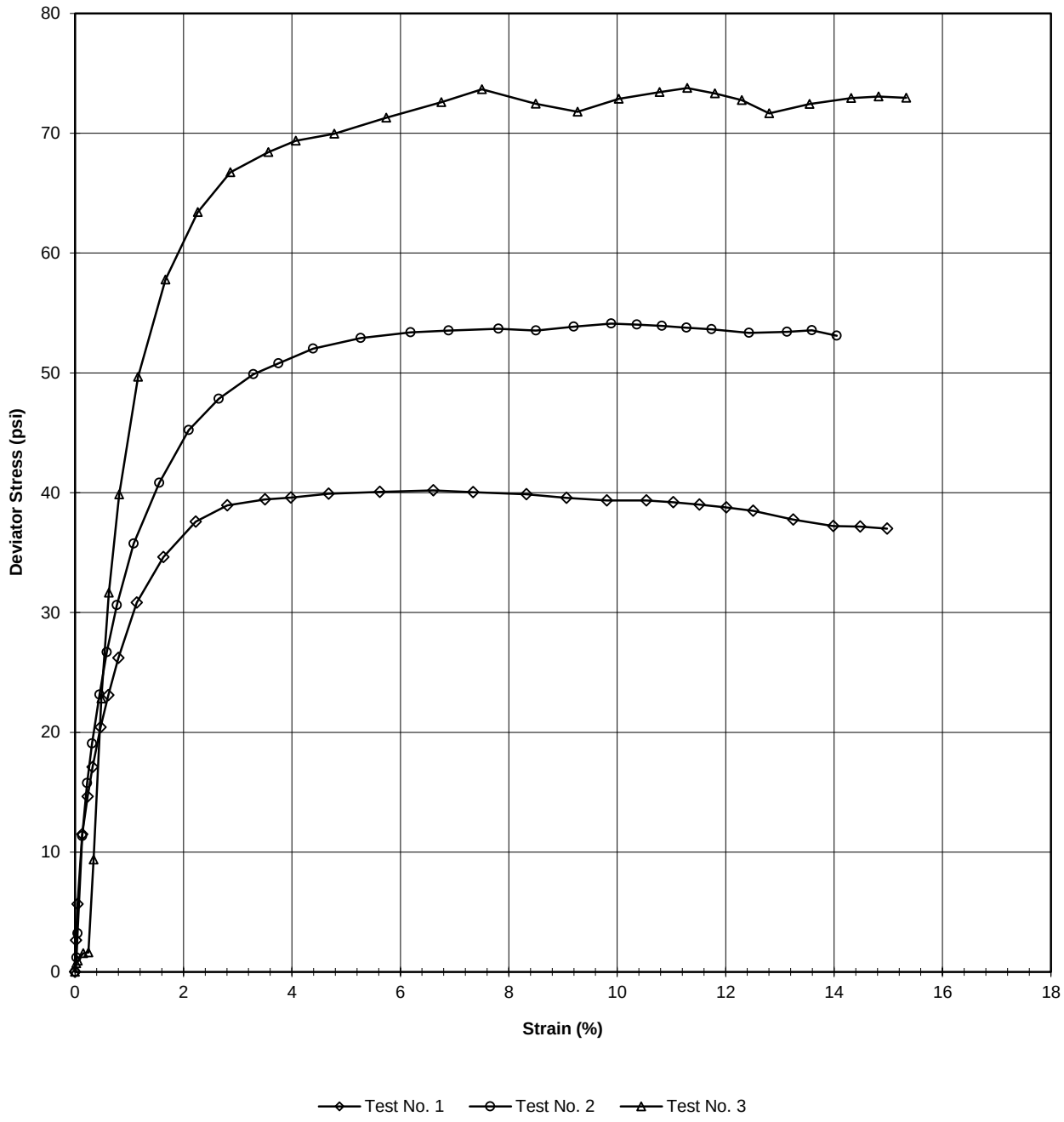
Volume After Consolidation (in^3)	37.65
Length After Consolidation (in)	5.95
Area After Consolidation (in^2)	6.332

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	0.71	0.23	40.48	39.8	1.018	0.32	40.13	0.35
0.05	0.94	0.32	40.62	39.7	1.024	0.34	40.15	0.47
0.15	1.56	0.69	40.87	39.3	1.040	0.45	40.09	0.78
0.25	1.63	1.02	40.60	39.0	1.042	0.64	39.79	0.81
0.34	9.37	2.51	46.86	37.5	1.250	0.27	42.18	4.69
0.48	22.82	8.40	54.42	31.6	1.722	0.37	43.01	11.41
0.62	31.64	12.98	58.66	27.0	2.171	0.41	42.84	15.82
0.81	39.84	16.81	63.03	23.2	2.718	0.43	43.11	19.92
1.16	49.67	19.87	69.80	20.1	3.467	0.40	44.96	24.83
1.67	57.77	21.12	76.66	18.9	4.060	0.37	47.77	28.89
2.26	63.42	21.09	82.33	18.9	4.354	0.34	50.62	31.71
2.86	66.74	21.08	85.66	18.9	4.527	0.32	52.29	33.37
3.57	68.43	20.79	87.64	19.2	4.563	0.31	53.43	34.22
4.07	69.36	20.52	88.84	19.5	4.561	0.30	54.16	34.68
4.78	69.95	20.25	89.70	19.7	4.542	0.29	54.72	34.97
5.74	71.30	20.08	91.22	19.9	4.579	0.28	55.57	35.65
6.75	72.60	19.78	92.81	20.2	4.591	0.28	56.52	36.30
7.51	73.67	19.74	93.93	20.3	4.636	0.27	57.09	36.83
8.50	72.45	19.55	92.91	20.5	4.542	0.27	56.68	36.23
9.27	71.80	19.56	92.24	20.4	4.513	0.28	56.34	35.90
10.03	72.88	19.45	93.42	20.5	4.547	0.27	56.98	36.44
10.78	73.43	19.36	94.07	20.6	4.557	0.27	57.36	36.71
11.29	73.77	19.30	94.48	20.7	4.564	0.26	57.59	36.89
11.80	73.32	19.31	94.02	20.7	4.543	0.27	57.36	36.66
12.30	72.76	19.18	93.58	20.8	4.495	0.27	57.20	36.38
12.80	71.66	19.12	92.54	20.9	4.432	0.27	56.71	35.83
13.55	72.43	19.11	93.32	20.9	4.467	0.27	57.11	36.22
14.31	72.93	19.01	93.92	21.0	4.474	0.26	57.46	36.47
14.82	73.06	18.91	94.15	21.1	4.464	0.26	57.62	36.53
15.33	72.95	18.89	94.06	21.1	4.455	0.26	57.59	36.47

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S1 ISS
Lab ID:	R-2025-197-006-001		
Visual Description:	Gray Gravel with Sand (REMOLDED)		



Tested By: DL Date: 1/9/26 Approved By: MPS Date: 1/19/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.		
Client Reference:	Housatonic 5A		
Project No.:	R-2025-197-006		
Lab ID:	R-2025-197-006-001	Specific Gravity (Measured)	2.77

Visual Description: Gray Gravel with Sand (REMOLDED)

SAMPLE CONDITION SUMMARY

Boring No.:	N/A	N/A	N/A
Depth (ft):	N/A	N/A	N/A
Sample No.:	TS-S1 ISS	TS-S1 ISS	TS-S1 ISS
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.001	0.001	0.001
Back Pressure (psi)	80	80	80
Consolidation Time (days)	2	2	2
Moisture Content (%) (INITIAL)	9.7	9.7	9.7
Total Unit Weight (pcf)	124.1	124.1	124.1
Dry Unit Weight (pcf)	113.1	113.1	113.1
Moisture Content (%) (FINAL)	17.8	17.4	16.9
Initial State Void Ratio,e	0.529	0.529	0.528
Void Ratio at Shear, e	0.514	0.506	0.483





Tested By: DL Date: 1/9/26 Input Checked By: MPS Date: 1/19/26

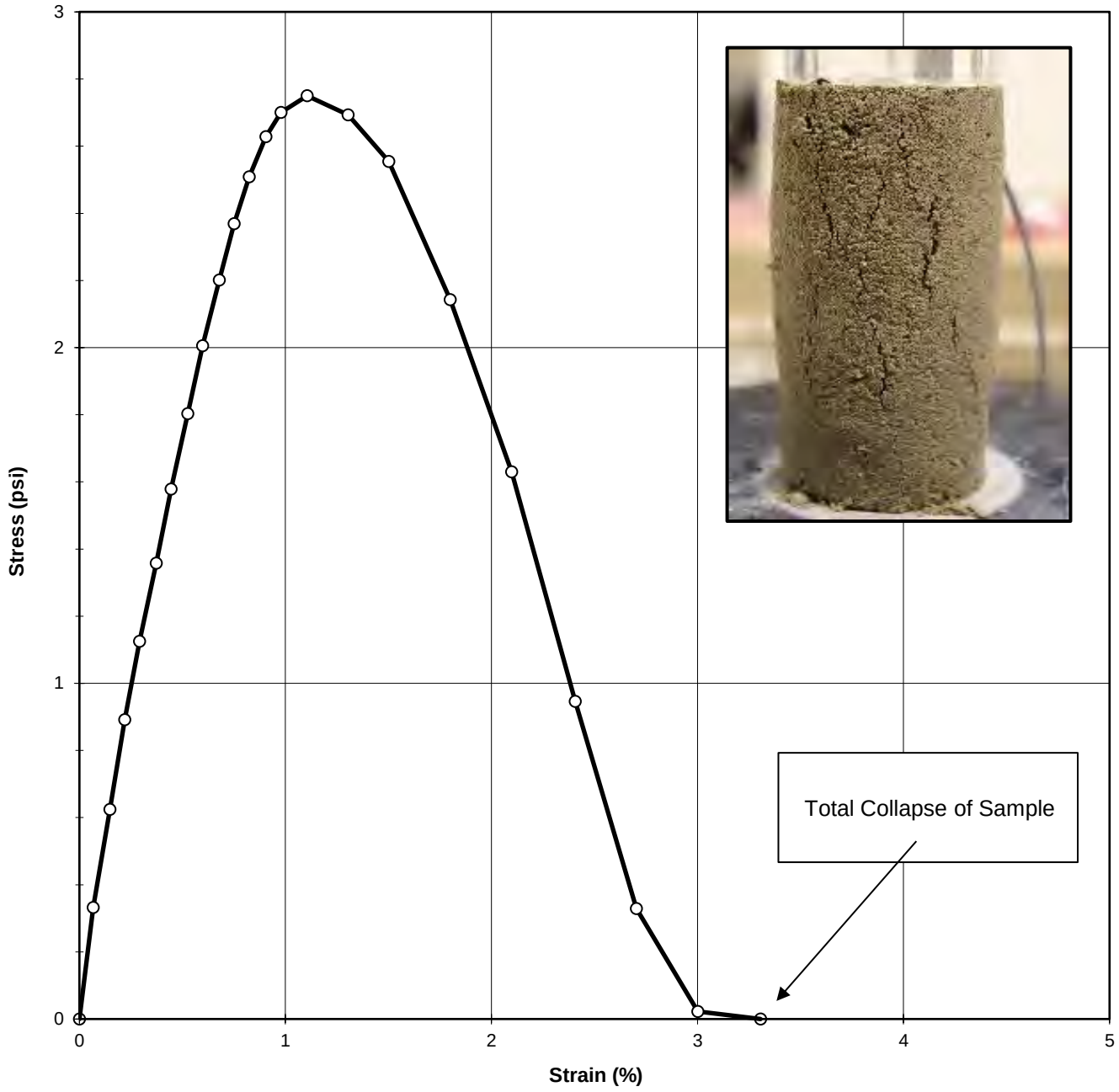
DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-006	Sample No.:	TS-S1 ISS
Lab ID:	R-2025-197-006-001	Visual:	Gray Gravel with Sand



Tested By	DL	Date	1/17/2026	Approved By	MPS	Date	1/19/2026

DCN: CT-S30 DATE: 11/09/09 REVISION: 4

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-006	Sample No.:	TS-S1 ISS
Lab ID:	R-2025-197-006-001	Visual:	Gray Gravel with Sand

INITIAL SAMPLE DIMENSIONS				WATER CONTENT AFTER TEST	
Length 1 (in):	5.984	Top Diameter (in):	2.873	Tare No.:	2-A
Length 2 (in):	5.984	Middle Diameter (in):	2.873	Weight of Tare & Wet Sample (g):	361.19
Length 3 (in):	5.984	Bottom Diameter (in):	2.873	Weight of Tare & Dry Sample (g):	337.24
Avg. Length (in):	**5.984**	**Avg. Diameter (in):**	**2.873**	Weight of Tare (g):	90.77
		Area (in^2):	**6.483**	Moisture Content (%):	9.72

UNIT WEIGHT			
Weight of Tube & Wet Sample (g):	2806.84	Sample Volume (cm^3):	635.7
Weight of Tube (g):	1542.73	Unit Wet Weight (g/cm^3):	1.99
Weight of Wet Sample (g):	1264.11	Unit Wet Weight (pcf):	124.08
Average Diameter (in):	2.87	Moisture Content (%):	9.72
Average Length (in):	5.98	Unit Dry Weight (pcf):	113.09
Average Length (cm):	15.20		

ELECTRONIC DEVICE DEFORMATION (in)	*LOAD (lb)*	*ELAPSED TIME (min)*	*STRAIN (%)*	*STRESS (psi)*
0.000	1.3	0.00	0.000	0.000
0.004	3.5	0.08	0.067	0.332
0.009	5.4	0.15	0.148	0.624
0.013	7.1	0.23	0.221	0.891
0.018	8.7	0.30	0.292	1.125
0.022	10.2	0.38	0.373	1.358
0.027	11.6	0.45	0.445	1.578
0.031	13.1	0.53	0.526	1.803
0.036	14.4	0.60	0.598	2.005
0.041	15.7	0.68	0.679	2.201
0.045	16.8	0.77	0.751	2.369
0.049	17.7	0.83	0.824	2.509
0.054	18.5	0.92	0.905	2.629
0.059	19.0	0.98	0.978	2.700
0.066	19.4	1.12	1.105	2.750
0.078	19.0	1.32	1.304	2.694
0.090	18.2	1.52	1.502	2.555
0.108	15.5	1.82	1.799	2.143
0.126	12.1	2.12	2.098	1.630
0.144	7.6	2.42	2.407	0.947
0.162	3.5	2.72	2.703	0.329
0.180	1.5	3.02	3.001	0.023
0.198	0.5	3.32	3.306	0.000

Tested By DL Date 1/17/2026 Input Checked By MPS Date 1/19/2026

DCN: CT-S30 DATE: 11/09/09 REVISION: 4

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PERMEABILITY TEST

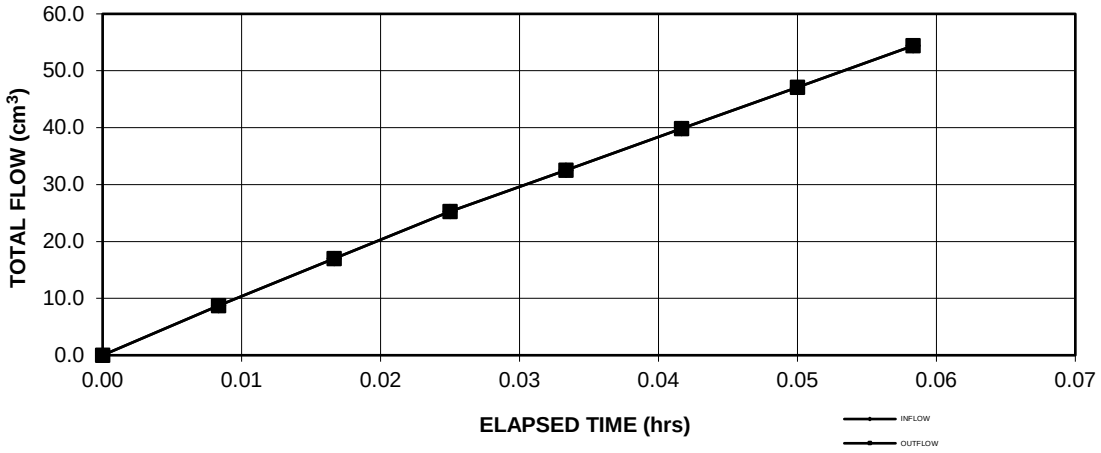
ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S2 ISS
Lab ID No.:	R-2025-197-006-002	Avg. Effective Consol. Pressure (psi):	20

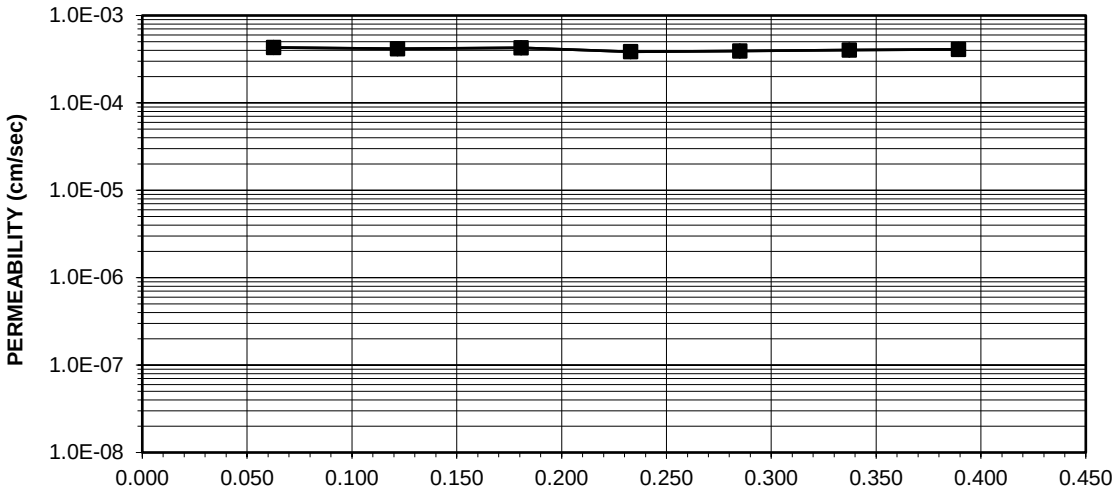
AVERAGE PERMEABILITY = 4.0E-04 cm/sec @ 20°C

AVERAGE PERMEABILITY = 4.0E-06 m/sec @ 20°C

TOTAL FLOW vs. ELAPSED TIME



PORE VOLUMES EXCHANGED vs. PERMEABILITY



Tested By: DL Date: 1/14/26 Checked By: AES Date: 1/16/26

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S2 ISS
Lab ID No.:	R-2025-197-006-002	Avg. Effective Consol. Pressure (psi):	20

Specific Gravity:	2.67	Measured
Sample Condition:		Remolded

Visual Description: Gray Brown Sand with Silt

Permeant Type: Deaired Tap Water

MOISTURE CONTENT:	BEFORE TEST	AFTER TEST
Tare Number	439	7-A
Weight of Tare & Wet Sample (g)	429.40	482.29
Weight of Tare & Dry Sample (g)	393.40	416.41
Weight of Tare (g)	99.00	86.77
Weight of Water (g)	36.00	65.88
Weight of Dry Sample (g)	294.40	329.64
Moisture Content (%)	**12.2**	**20.0**

SPECIMEN:	BEFORE TEST	AFTER TEST
Weight of Tube & Wet Sample (g)	2408.84	NA
Weight of Tube (g)	1624.18	NA
Weight of Wet Sample (g)	784.66	838.90
Length 1 (in)	3.995	3.849
Length 2 (in)	3.995	3.875
Length 3 (in)	3.995	3.850
Top Diameter (in)	2.872	2.841
Middle Diameter (in)	2.872	2.830
Bottom Diameter (in)	2.872	2.861
Average Length (in)	4.00	3.86
Average Area (in^2)	6.48	6.35
Sample Volume (cm^3)	424.11	401.62
Unit Wet Weight (g/cm^3)	1.85	2.09
Unit Wet Weight (pcf)	115.5	130.4
Unit Dry Weight (pcf)	102.9	108.7
Unit Dry Weight (g/cm^3)	1.65	1.74
Void Ratio, e	0.62	0.53
Porosity, n	0.38	0.35
Pore Volume (cm^3)	162.2	139.8
Total Weight of Sample After Test (g)		828.07

Tested By: DL Date: 1/14/26 Checked By: AES Date: 1/16/26

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S2 ISS
Lab ID No.:	R-2025-197-006-002	Avg. Effective Consol. Pressure (psi):	20

Pressure Heads (Constant)	
Top Cap (psi)	79.0
Bottom Cap (psi)	81.0
Cell (psi)	100.0
Total Pressure Head (cm)	140.6
Hydraulic Gradient	14.35

Final Sample Dimensions	
Sample Length (cm), L	9.80
Sample Diameter (cm)	7.22
Sample Area (cm^2), A	40.98
Inflow Burette Area (cm^2), a-in	4.519
Outflow Burette Area (cm^2), a-out	4.519
B Parameter (%)	98

AVERAGE PERMEABILITY = 4.0E-04 cm/sec @ 20°C

AVERAGE PERMEABILITY = 4.0E-06 m/sec @ 20°C

DATE	TIME		ELAPSED TIME t	TOTAL INFLOW	TOTAL OUTFLOW	TOTAL HEAD h	FLOW (0 flow)	TEMP.	INCREMENTAL PERMEABILITY @ 20°C
(mm/dd/yy)	(hr)	(min)	(hr)	(cm^3)	(cm^3)	(cm)	(1 stop)	(°C)	(cm/sec)
1/15/26	15	5.0	0.000	0.0	0.0	164.1	0	19.9	NA
1/15/26	15	5.5	0.008	8.7	8.7	160.3	0	19.9	4.3E-04
1/15/26	15	6.0	0.017	17.0	17.0	156.6	0	19.9	4.2E-04
1/15/26	15	6.5	0.025	25.3	25.3	153.0	0	19.9	4.3E-04
1/15/26	15	7.0	0.033	32.5	32.5	149.7	0	19.9	3.8E-04
1/15/26	15	7.5	0.042	39.8	39.8	146.5	0	19.9	3.9E-04
1/15/26	15	8.0	0.050	47.1	47.1	143.3	0	19.9	4.0E-04
1/15/26	15	8.5	0.058	54.4	54.4	140.1	0	19.9	4.1E-04

Tested By: DL Date: 1/14/26 Checked By: AES Date: 1/16/26

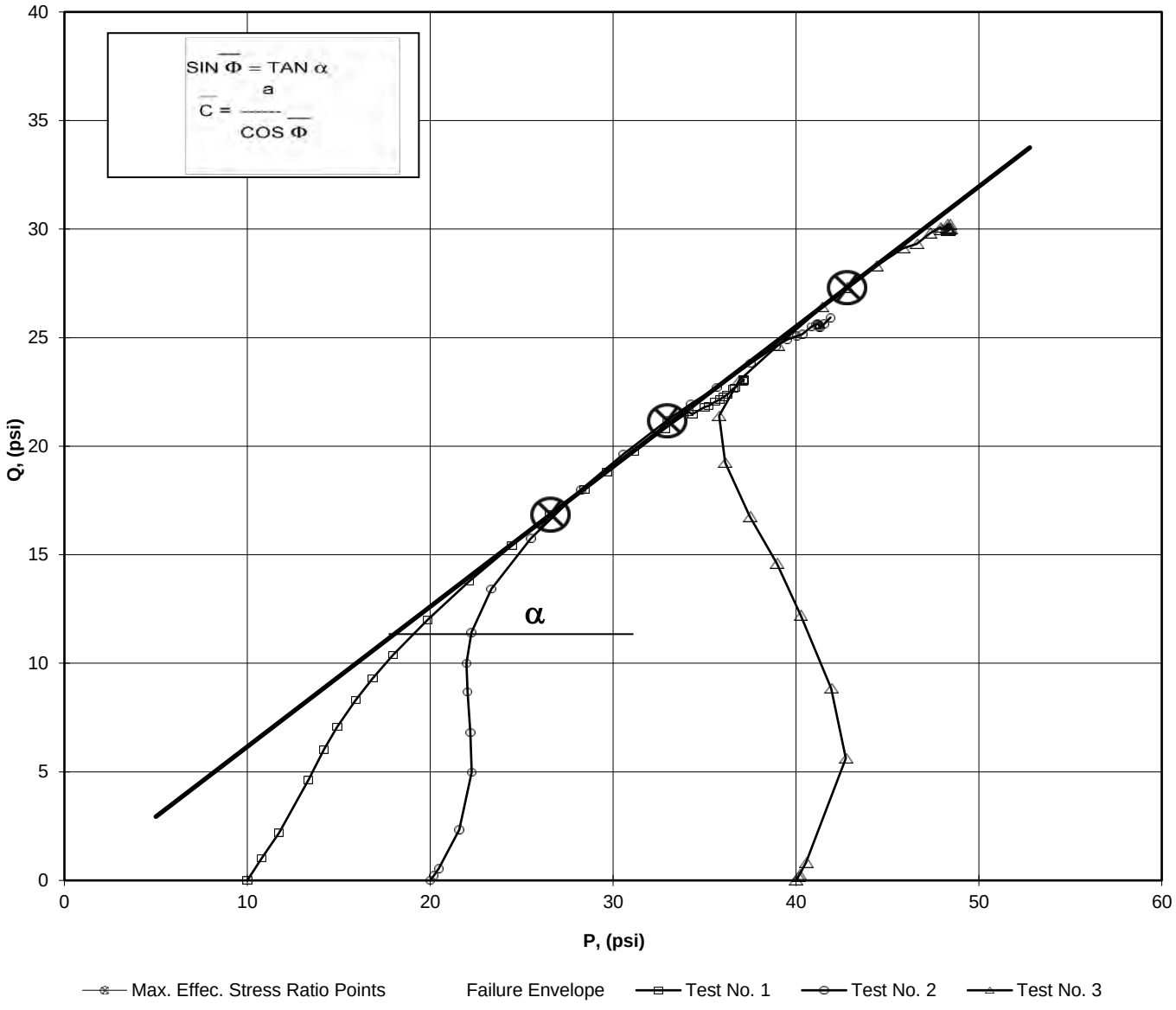
DCN: CT-22 DATE: 1/1/17 REVISION: 11

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S2 ISS
Lab ID:	R-2025-197-006-002		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	**0.00**	$\overline{C}$	=	**0.00**
α	=	**32.8**	$\overline{\Phi}$	=	**40.16**

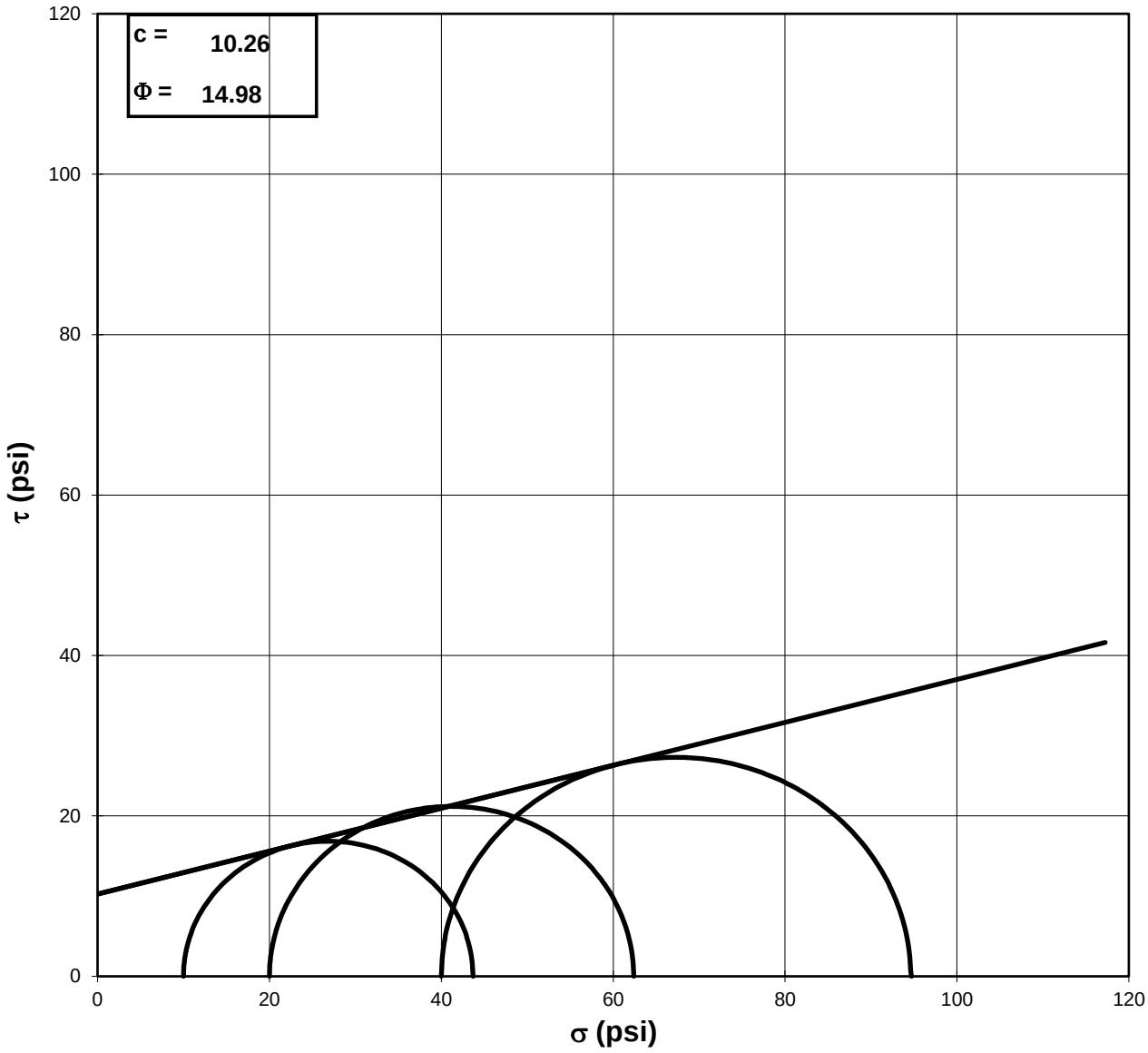
Tested By: DL Date: 1/14/26 Approved By: MPS Date: 1/19/26

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MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S2 ISS
Lab ID:	R-2025-197-006-002		
Visual Description:	Gray Brown Sand with Silt (REMOLDED)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: DL *Date:* 1/14/26 *Approved By:* MPS *Date:* 1/19/26

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S2 ISS
Lab ID:	R-2025-197-006-002		

Visual Description: Gray Brown Sand with Silt (REMOLDED)

Stage No.	1
Test No.	1

PRESSURES (psi)

Cell Pressure (psi)	90.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	10.0
Pore Pressure Response (%)	97

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	26.57
Q	=	16.85

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	14.4
Final Change (ml)	9.6
Initial Dial Reading (mil)	256
Dial Reading After Saturation (mil)	270
Dial Reading After Consolidation (mil)	272

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
18.7	0.000	80.0
31.6	0.001	80.2
46.5	0.003	80.5
77.6	0.008	81.3
95.5	0.014	81.8
108.8	0.019	82.1
124.9	0.028	82.4
137.8	0.037	82.5
151.8	0.048	82.4
173.0	0.068	82.1
196.8	0.098	81.7
219.4	0.133	81.0
239.1	0.168	80.3
256.1	0.209	79.6
267.6	0.238	79.1
282.0	0.280	78.6
299.0	0.336	78.0
312.4	0.394	77.5
313.3	0.439	77.1
321.2	0.498	76.8
324.3	0.541	76.6
329.4	0.585	76.5
333.4	0.630	76.3
336.9	0.658	76.2
340.1	0.688	76.1
345.9	0.717	76.1
348.6	0.747	76.0
356.8	0.791	75.9
359.1	0.836	75.9
360.3	0.864	75.9
363.0	0.894	75.8

Tested By: DL Date: 1/14/26 Input Checked By: MPS Date: 1/19/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S2 ISS
Lab ID:	R-2025-197-006-002		

Visual Description: Gray Brown Sand with Silt (REMOLDED)
0

Effective Confining Pressure (psi)	10.0	*Stage No.*	1
		Test No	1

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	37.93
Length After Consolidation (in)	5.97
Area After Consolidation (in^2)	6.356

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	2.03	0.23	11.80	9.8	1.208	0.12	10.78	1.01
0.04	4.38	0.45	13.93	9.5	1.459	0.11	11.74	2.19
0.13	9.26	1.29	17.97	8.7	2.064	0.14	13.34	4.63
0.23	12.05	1.83	20.22	8.2	2.475	0.16	14.20	6.03
0.32	14.14	2.15	21.99	7.9	2.800	0.16	14.92	7.07
0.46	16.63	2.39	24.24	7.6	3.185	0.15	15.93	8.31
0.62	18.62	2.45	26.16	7.5	3.467	0.14	16.86	9.31
0.80	20.77	2.42	28.35	7.6	3.740	0.12	17.97	10.39
1.14	24.00	2.14	31.86	7.9	4.052	0.09	19.86	12.00
1.64	27.57	1.65	35.91	8.3	4.302	0.06	22.13	13.78
2.23	30.88	0.96	39.92	9.0	4.416	0.03	24.48	15.44
2.82	33.69	0.28	43.42	9.7	4.465	0.01	26.57	16.85
3.51	36.03	-0.42	46.45	10.4	4.458	-0.01	28.44	18.02
4.00	37.60	-0.86	48.46	10.9	4.461	-0.02	29.66	18.80
4.69	39.49	-1.41	50.90	11.4	4.459	-0.04	31.16	19.74
5.63	41.62	-2.02	53.64	12.0	4.461	-0.05	32.83	20.81
6.61	43.15	-2.54	55.69	12.5	4.441	-0.06	34.12	21.58
7.35	42.95	-2.87	55.82	12.9	4.338	-0.07	34.34	21.47
8.34	43.63	-3.20	56.82	13.2	4.306	-0.08	35.01	21.81
9.07	43.72	-3.37	57.10	13.4	4.269	-0.08	35.23	21.86
9.80	44.09	-3.54	57.63	13.5	4.256	-0.08	35.59	22.05
10.55	44.29	-3.69	57.98	13.7	4.235	-0.09	35.84	22.15
11.03	44.53	-3.78	58.31	13.8	4.233	-0.09	36.04	22.27
11.53	44.74	-3.86	58.60	13.9	4.228	-0.09	36.23	22.37
12.02	45.29	-3.92	59.21	13.9	4.253	-0.09	36.56	22.64
12.52	45.40	-3.96	59.37	14.0	4.251	-0.09	36.67	22.70
13.26	46.14	-4.07	60.21	14.1	4.280	-0.09	37.14	23.07
14.00	46.05	-4.11	60.16	14.1	4.264	-0.09	37.14	23.03
14.48	45.96	-4.14	60.09	14.1	4.251	-0.09	37.11	22.98
14.98	46.06	-4.18	60.24	14.2	4.249	-0.09	37.21	23.03

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S2 ISS
Lab ID:	R-2025-197-006-002		

Visual Description: Gray Brown Sand with Silt (REMOLDED)

Stage No.	1
Test No.	2

PRESSURES (psi)

Cell Pressure (psi)	100.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	20.0
Pore Pressure Response (%)	98

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	32.95
Q	=	21.19

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	12.8
Final Change (ml)	11.2

Initial Dial Reading (mil)	264
Dial Reading After Saturation (mil)	284
Dial Reading After Consolidation (mil)	291

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
18.4	0.000	80.0
21.1	0.001	80.0
25.3	0.003	80.1
48.0	0.008	80.7
81.7	0.014	82.7
105.0	0.020	84.6
128.9	0.028	86.6
145.9	0.038	88.0
164.1	0.049	89.2
190.3	0.070	90.1
221.3	0.100	90.2
251.6	0.135	89.8
274.4	0.171	89.1
296.6	0.213	88.2
308.2	0.243	87.7
320.4	0.285	87.0
338.4	0.342	86.3
352.4	0.402	85.7
359.5	0.447	85.4
365.3	0.507	85.0
369.5	0.552	84.8
377.2	0.597	84.7
381.7	0.642	84.5
384.1	0.672	84.4
385.7	0.702	84.4
387.7	0.732	84.3
388.9	0.762	84.2
391.4	0.807	84.2
397.2	0.852	84.1
403.7	0.881	84.0
404.5	0.912	84.0

Tested By: DL Date: 1/14/26 Input Checked By: MPS Date: 1/19/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S2 ISS
Lab ID:	R-2025-197-006-002		

Visual Description: Gray Brown Sand with Silt (REMOLDED)

Effective Confining Pressure (psi)	20.0	*Stage No.*	1
		Test No	2

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	37.72
Length After Consolidation (in)	5.96
Area After Consolidation (in^2)	6.332

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	0.43	0.02	20.41	20.0	1.022	0.05	20.20	0.22
0.04	1.10	0.07	21.02	19.9	1.055	0.07	20.48	0.55
0.14	4.68	0.75	23.93	19.3	1.243	0.16	21.59	2.34
0.23	9.97	2.71	27.26	17.3	1.577	0.28	22.27	4.99
0.33	13.63	4.63	29.01	15.4	1.887	0.35	22.19	6.82
0.48	17.38	6.65	30.73	13.4	2.301	0.39	22.04	8.69
0.63	20.02	8.03	32.00	12.0	2.672	0.41	21.99	10.01
0.82	22.83	9.17	33.67	10.8	3.107	0.41	22.25	11.42
1.17	26.84	10.08	36.76	9.9	3.706	0.38	23.34	13.42
1.68	31.51	10.25	41.26	9.8	4.230	0.33	25.51	15.75
2.27	35.99	9.75	46.24	10.2	4.512	0.28	28.25	18.00
2.88	39.28	9.06	50.22	10.9	4.590	0.24	30.58	19.64
3.58	42.37	8.24	54.14	11.8	4.602	0.20	32.95	21.19
4.08	43.90	7.69	56.20	12.3	4.567	0.18	34.26	21.95
4.78	45.43	7.03	58.40	13.0	4.502	0.16	35.68	22.71
5.73	47.64	6.29	61.35	13.7	4.474	0.13	37.53	23.82
6.75	49.19	5.72	63.48	14.3	4.444	0.12	38.88	24.60
7.51	49.83	5.38	64.44	14.6	4.409	0.11	39.53	24.91
8.51	50.13	5.01	65.12	15.0	4.343	0.10	40.06	25.06
9.26	50.32	4.81	65.51	15.2	4.312	0.10	40.35	25.16
10.02	50.99	4.66	66.34	15.3	4.323	0.09	40.84	25.50
10.77	51.20	4.49	66.71	15.5	4.301	0.09	41.11	25.60
11.28	51.25	4.43	66.82	15.6	4.291	0.09	41.20	25.63
11.78	51.18	4.35	66.83	15.6	4.271	0.09	41.24	25.59
12.28	51.16	4.30	66.85	15.7	4.259	0.09	41.28	25.58
12.79	51.04	4.25	66.79	15.8	4.240	0.08	41.27	25.52
13.54	50.94	4.17	66.76	15.8	4.219	0.08	41.29	25.47
14.30	51.27	4.10	67.18	15.9	4.224	0.08	41.54	25.64
14.80	51.86	4.04	67.81	16.0	4.250	0.08	41.89	25.93
15.30	51.65	4.03	67.61	16.0	4.235	0.08	41.79	25.82

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S2 ISS
Lab ID:	R-2025-197-006-002		

Visual Description: Gray Brown Sand with Silt (REMOLDED)

Stage No.	1
Test No.	3

PRESSURES (psi)

Cell Pressure (psi)	120.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	40.0
Pore Pressure Response (%)	98

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	42.78
Q	=	27.30

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	12.0
Final Change (ml)	12.0

Initial Dial Reading (mil)	289
Dial Reading After Saturation (mil)	311
Dial Reading After Consolidation (mil)	346

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
22.1	0.000	80.0
24.2	0.001	80.0
25.3	0.003	80.1
32.5	0.009	80.3
93.6	0.014	82.9
134.9	0.020	86.9
177.9	0.028	92.0
208.6	0.037	95.6
236.8	0.048	99.3
269.4	0.069	103.1
298.5	0.098	105.6
321.1	0.135	106.1
344.2	0.170	105.6
369.9	0.212	105.0
383.6	0.242	104.5
399.6	0.284	103.9
414.3	0.341	103.3
421.4	0.401	102.7
431.5	0.446	102.5
439.8	0.506	102.2
441.9	0.551	102.0
448.5	0.596	101.9
450.0	0.640	101.8
454.8	0.670	101.8
454.4	0.701	101.7
457.1	0.731	101.7
458.8	0.761	101.6
462.7	0.806	101.6
467.2	0.851	101.6
468.3	0.880	101.6
468.9	0.910	101.6

Tested By: DL Date: 1/14/26 Input Checked By: MPS Date: 1/19/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S2 ISS
Lab ID:	R-2025-197-006-002		

Visual Description: Gray Brown Sand with Silt (REMOLDED)

Effective Confining Pressure (psi)	40.0	*Stage No.*	1
		Test No	3

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

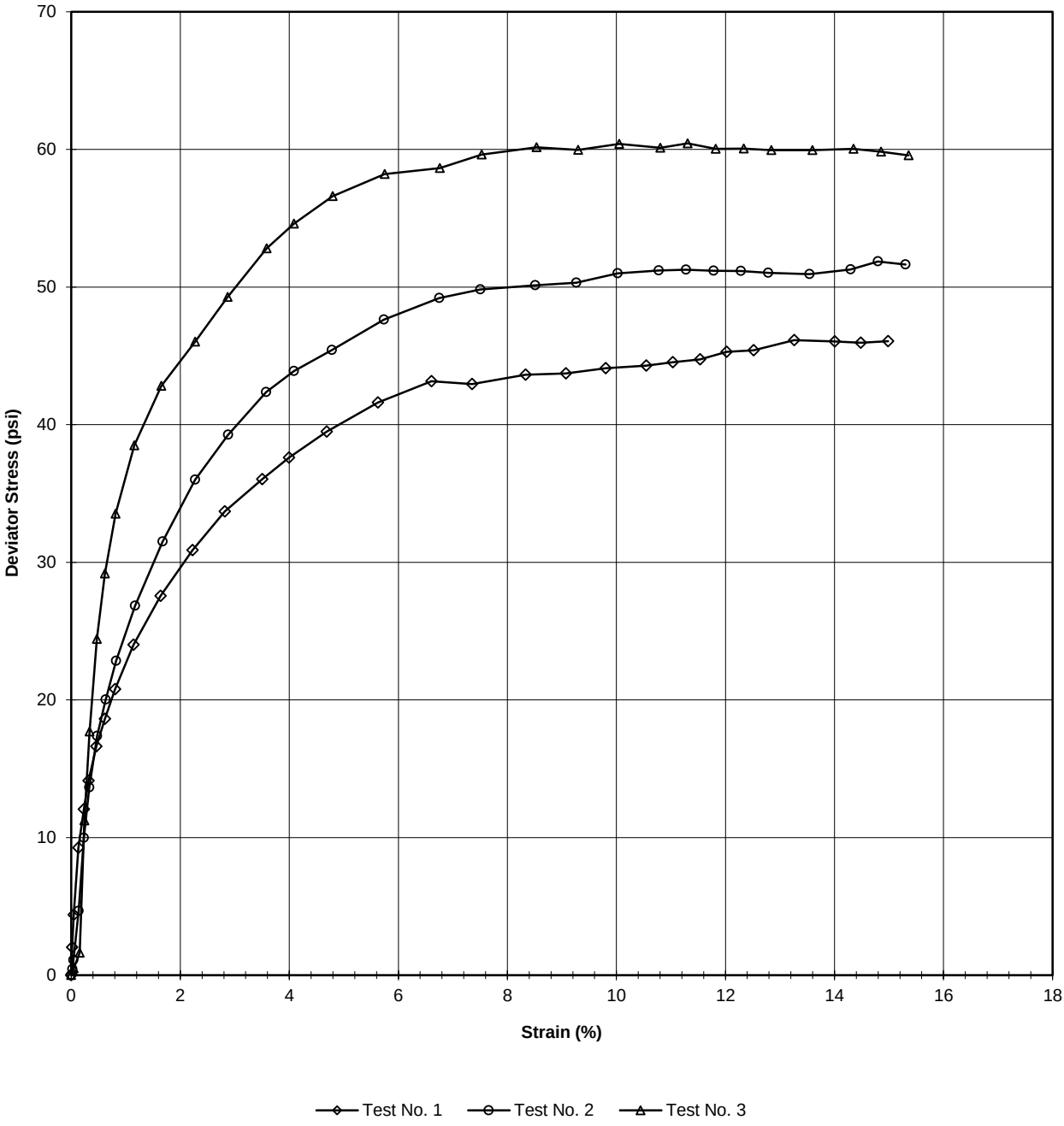
Volume After Consolidation (in^3)	37.63
Length After Consolidation (in)	5.93
Area After Consolidation (in^2)	6.349

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	0.33	0.04	40.29	40.0	1.008	0.14	40.12	0.17
0.04	0.50	0.07	40.44	39.9	1.013	0.14	40.18	0.25
0.15	1.63	0.28	41.35	39.7	1.041	0.17	40.54	0.82
0.24	11.24	2.90	48.34	37.1	1.303	0.26	42.72	5.62
0.34	17.70	6.93	50.77	33.1	1.535	0.40	41.92	8.85
0.47	24.43	11.95	52.48	28.0	1.871	0.50	40.26	12.21
0.62	29.19	15.64	53.55	24.4	2.198	0.55	38.95	14.60
0.81	33.53	19.29	54.24	20.7	2.619	0.59	37.47	16.77
1.16	38.50	23.12	55.38	16.9	3.280	0.61	36.13	19.25
1.65	42.81	25.61	57.20	14.4	3.974	0.61	35.80	21.40
2.27	46.02	26.12	59.90	13.9	4.317	0.58	36.89	23.01
2.87	49.28	25.64	63.63	14.4	4.433	0.53	38.99	24.64
3.58	52.81	24.97	67.84	15.0	4.515	0.48	41.43	26.41
4.08	54.61	24.52	70.09	15.5	4.528	0.46	42.78	27.30
4.80	56.60	23.90	72.70	16.1	4.517	0.43	44.40	28.30
5.75	58.21	23.27	74.95	16.7	4.479	0.41	45.84	29.11
6.76	58.64	22.73	75.92	17.3	4.395	0.40	46.59	29.32
7.53	59.62	22.47	77.15	17.5	4.401	0.38	47.34	29.81
8.53	60.16	22.19	77.98	17.8	4.378	0.38	47.89	30.08
9.30	59.96	22.01	77.95	18.0	4.334	0.37	47.97	29.98
10.05	60.40	21.92	78.48	18.1	4.342	0.37	48.28	30.20
10.81	60.11	21.80	78.31	18.2	4.303	0.37	48.26	30.06
11.31	60.44	21.81	78.63	18.2	4.323	0.37	48.41	30.22
11.82	60.03	21.71	78.33	18.3	4.282	0.37	48.31	30.02
12.34	60.06	21.66	78.40	18.3	4.276	0.37	48.37	30.03
12.84	59.95	21.64	78.31	18.4	4.264	0.37	48.34	29.97
13.60	59.95	21.61	78.34	18.4	4.261	0.37	48.36	29.98
14.35	60.04	21.57	78.47	18.4	4.257	0.37	48.45	30.02
14.85	59.84	21.62	78.22	18.4	4.255	0.37	48.30	29.92
15.36	59.56	21.62	77.94	18.4	4.240	0.37	48.16	29.78

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S2 ISS
Lab ID:	R-2025-197-006-002		
Visual Description:	Gray Brown Sand with Silt (REMOLDED)		



Tested By: DL Date: 1/14/26 Approved By: MPS Date: 1/19/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.		
Client Reference:	Housatonic 5A		
Project No.:	R-2025-197-006		
Lab ID:	R-2025-197-006-002	Specific Gravity (Measured)	2.67

Visual Description: Gray Brown Sand with Silt (REMOLDED)

SAMPLE CONDITION SUMMARY

Boring No.:	N/A	N/A	N/A
Depth (ft):	N/A	N/A	N/A
Sample No.:	TS-S2 ISS	TS-S2 ISS	TS-S2 ISS
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.001	0.001	0.001
Back Pressure (psi)	80	80	80
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	12.2	12.2	12.2
Total Unit Weight (pcf)	115.2	115.2	115.3
Dry Unit Weight (pcf)	102.7	102.7	102.7
Moisture Content (%) (FINAL)	19.3	19.7	20.3
Initial State Void Ratio,e	0.623	0.623	0.623
Void Ratio at Shear, e	0.588	0.579	0.575





Tested By: DL Date: 1/14/26 Input Checked By: MPS Date: 1/19/26

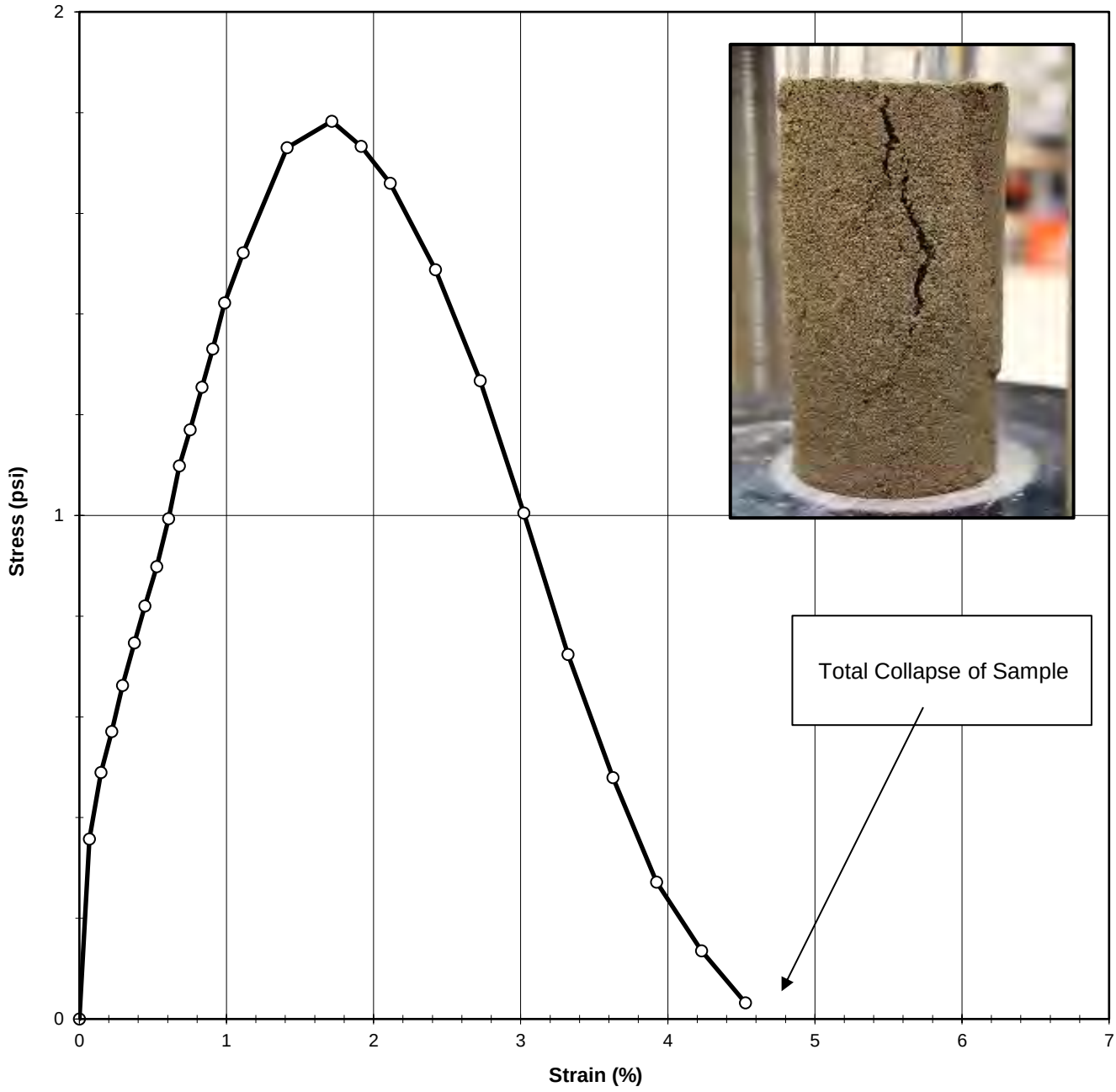
DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-006	Sample No.:	TS-S2 ISS
Lab ID:	R-2025-197-006-002	Visual:	Gray Brown Sand with Silt



Tested By	DL	Date	1/17/2026	Approved By	MPS	Date	1/19/2026

DCN: CT-S30 DATE: 11/09/09 REVISION: 4

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-006	Sample No.:	TS-S2 ISS
Lab ID:	R-2025-197-006-002	Visual:	Gray Brown Sand with Silt

INITIAL SAMPLE DIMENSIONS				WATER CONTENT AFTER TEST	
Length 1 (in):	5.984	Top Diameter (in):	2.873	Tare No.:	439
Length 2 (in):	5.984	Middle Diameter (in):	2.873	Weight of Tare & Wet Sample (g):	429.40
Length 3 (in):	5.984	Bottom Diameter (in):	2.873	Weight of Tare & Dry Sample (g):	393.40
Avg. Length (in):	**5.984**	**Avg. Diameter (in):**	**2.873**	Weight of Tare (g):	99.00
		Area (in^2):	**6.483**	Moisture Content (%):	12.23

UNIT WEIGHT			
Weight of Tube & Wet Sample (g):	2716.86	Sample Volume (cm^3):	635.7
Weight of Tube (g):	1542.73	Unit Wet Weight (g/cm^3):	1.85
Weight of Wet Sample (g):	1174.13	Unit Wet Weight (pcf):	115.25
Average Diameter (in):	2.87	Moisture Content (%):	12.23
Average Length (in):	5.98	Unit Dry Weight (pcf):	102.69
Average Length (cm):	15.20		

ELECTRONIC DEVICE DEFORMATION (in)	*LOAD (lb)*	*ELAPSED TIME (min)*	*STRAIN (%)*	*STRESS (psi)*
0.000	0.3	0.00	0.000	0.000
0.004	2.6	0.08	0.067	0.357
0.009	3.5	0.17	0.148	0.489
0.013	4.0	0.23	0.220	0.571
0.018	4.6	0.32	0.293	0.663
0.022	5.2	0.38	0.373	0.747
0.027	5.7	0.47	0.446	0.820
0.032	6.2	0.55	0.527	0.898
0.036	6.8	0.62	0.607	0.994
0.041	7.5	0.70	0.680	1.098
0.045	8.0	0.77	0.752	1.170
0.050	8.5	0.85	0.834	1.255
0.054	9.0	0.92	0.906	1.331
0.059	9.6	1.00	0.988	1.422
0.067	10.3	1.13	1.114	1.521
0.084	11.7	1.43	1.412	1.730
0.103	12.1	1.73	1.716	1.783
0.115	11.8	1.93	1.915	1.733
0.126	11.3	2.13	2.113	1.660
0.145	10.2	2.43	2.420	1.488
0.163	8.8	2.73	2.724	1.267
0.181	7.0	3.03	3.022	1.005
0.199	5.2	3.33	3.321	0.724
0.217	3.6	3.65	3.628	0.480
0.235	2.2	3.95	3.923	0.272
0.253	1.2	4.25	4.230	0.135
0.271	0.5	4.55	4.528	0.032

Tested By DL Date 1/17/2026 Input Checked By MPS Date 1/19/2026

DCN: CT-S30 DATE: 11/09/09 REVISION: 4

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PERMEABILITY TEST

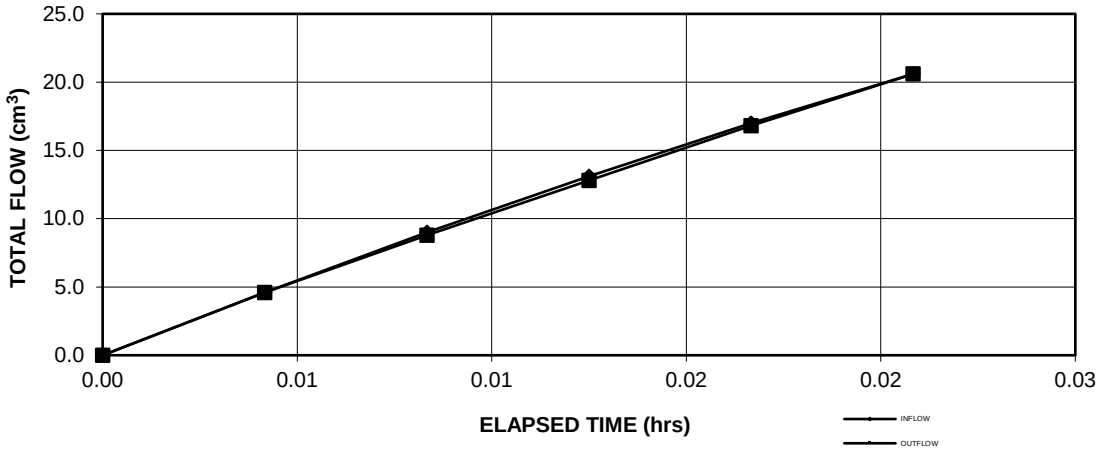
ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S3 ISS
Lab ID No.:	R-2025-197-006-003	Avg. Effective Consol. Pressure (psi):	20

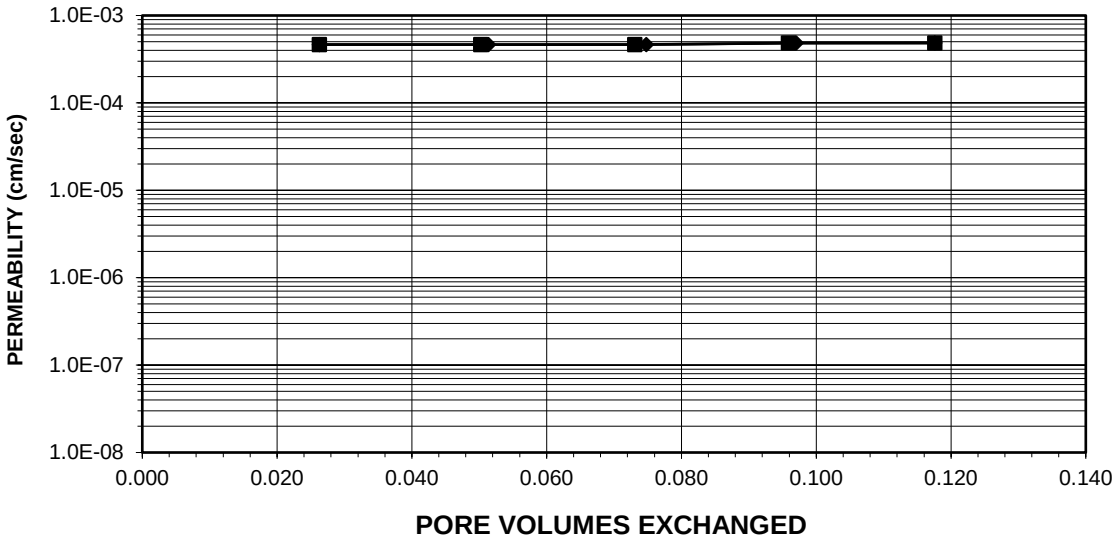
AVERAGE PERMEABILITY = 4.7E-04 cm/sec @ 20°C

AVERAGE PERMEABILITY = 4.7E-06 m/sec @ 20°C

TOTAL FLOW vs. ELAPSED TIME



PORE VOLUMES EXCHANGED vs. PERMEABILITY



Tested By: DL Date: 1/15/26 Checked By: AES Date: 1/19/26

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S3 ISS
Lab ID No.:	R-2025-197-006-003	Avg. Effective Consol. Pressure (psi):	20

Specific Gravity:	2.72	Measured
Sample Condition:		Remolded

Visual Description: Brown Sand with Silt

Permeant Type: Deaired Tap Water

MOISTURE CONTENT:	BEFORE TEST	AFTER TEST
Tare Number	473	432
Weight of Tare & Wet Sample (g)	386.50	612.09
Weight of Tare & Dry Sample (g)	344.48	501.61
Weight of Tare (g)	97.82	99.00
Weight of Water (g)	42.02	110.48
Weight of Dry Sample (g)	246.66	402.61
Moisture Content (%)	**17.0**	**27.4**

SPECIMEN:	BEFORE TEST	AFTER TEST
Weight of Tube & Wet Sample (g)	2361.87	NA
Weight of Tube (g)	1624.18	NA
Weight of Wet Sample (g)	737.69	803.28
Length 1 (in)	3.995	3.897
Length 2 (in)	3.995	3.909
Length 3 (in)	3.995	3.924
Top Diameter (in)	2.872	2.845
Middle Diameter (in)	2.872	2.827
Bottom Diameter (in)	2.872	2.859
Average Length (in)	4.00	3.91
Average Area (in^2)	6.48	6.35
Sample Volume (cm^3)	424.11	406.94
Unit Wet Weight (g/cm^3)	1.74	1.97
Unit Wet Weight (pcf)	108.6	123.2
Unit Dry Weight (pcf)	92.8	96.7
Unit Dry Weight (g/cm^3)	1.49	1.55
Void Ratio, e	0.83	0.76
Porosity, n	0.45	0.43
Pore Volume (cm^3)	192.4	175.2
Total Weight of Sample After Test (g)		802.43

Tested By: DL Date: 1/15/26 Checked By: AES Date: 1/19/26

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S3 ISS
Lab ID No.:	R-2025-197-006-003	Avg. Effective Consol. Pressure (psi):	20

Pressure Heads (Constant)	
Top Cap (psi)	79.0
Bottom Cap (psi)	81.0
Cell (psi)	100.0
Total Pressure Head (cm)	140.6
Hydraulic Gradient	14.16

Final Sample Dimensions	
Sample Length (cm), L	9.93
Sample Diameter (cm)	7.22
Sample Area (cm^2), A	40.97
Inflow Burette Area (cm^2), a-in	0.921
Outflow Burette Area (cm^2), a-out	0.921
B Parameter (%)	96

AVERAGE PERMEABILITY = 4.7E-04 cm/sec @ 20°C

AVERAGE PERMEABILITY = 4.7E-06 m/sec @ 20°C

DATE	TIME		ELAPSED TIME t	TOTAL INFLOW	TOTAL OUTFLOW	TOTAL HEAD h	FLOW (0 flow)	TEMP.	INCREMENTAL PERMEABILITY @ 20°C
(mm/dd/yy)	(hr)	(min)	(hr)	(cm^3)	(cm^3)	(cm)	(1 stop)	(°C)	(cm/sec)
1/17/26	20	15.0	0.000	0.0	0.0	163.1	0	19.9	NA
1/17/26	20	15.3	0.004	4.6	4.6	153.2	0	19.9	4.7E-04
1/17/26	20	15.5	0.008	9.0	8.8	143.9	0	19.9	4.6E-04
1/17/26	20	15.8	0.012	13.1	12.8	135.2	0	19.9	4.7E-04
1/17/26	20	16.0	0.017	17.0	16.8	126.7	0	19.9	4.8E-04
1/17/26	20	16.3	0.021	20.6	20.6	118.8	0	19.9	4.8E-04

Tested By: DL Date: 1/17/26 Checked By: AES Date: 1/19/26

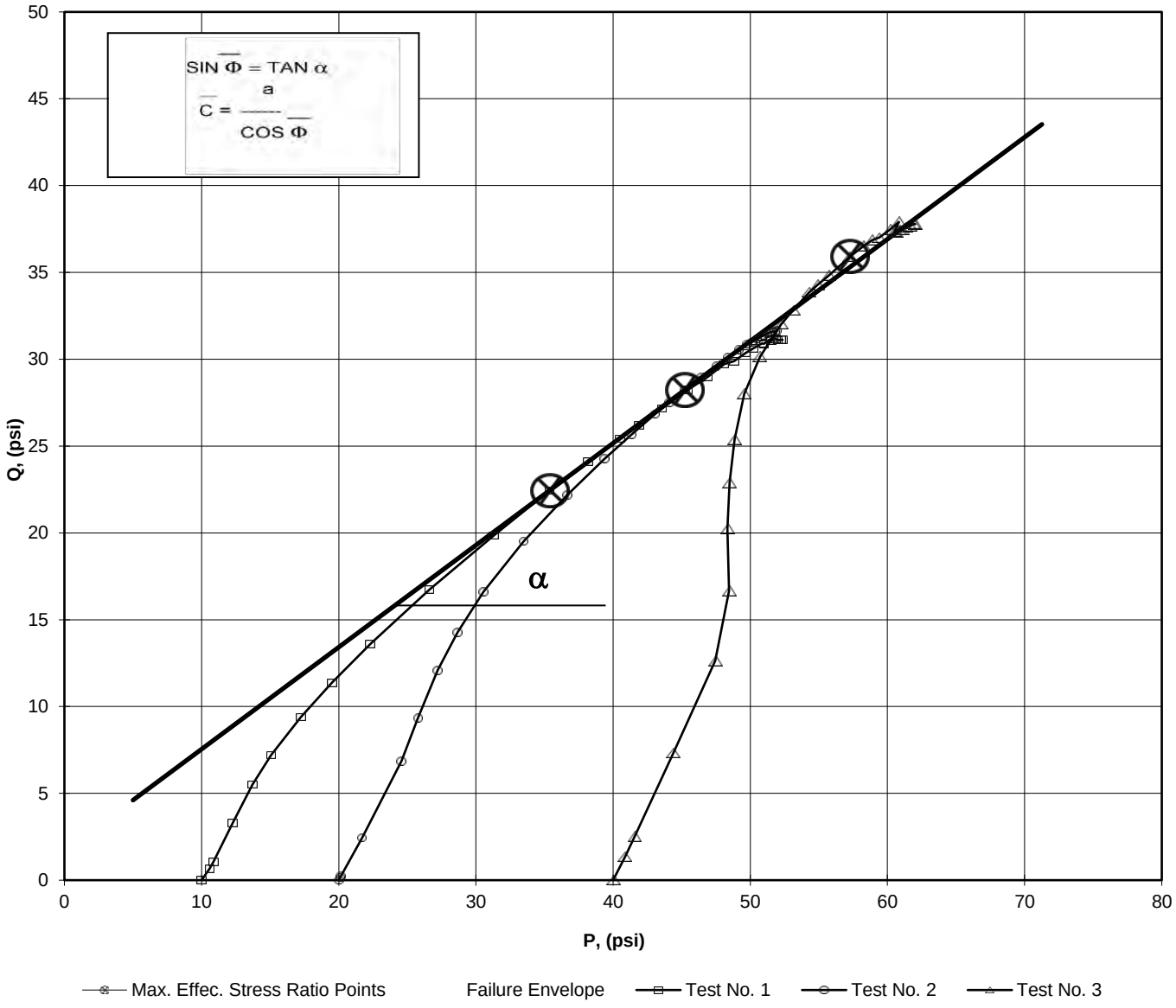
DCN: CT-22 DATE: 1/1/17 REVISION: 11

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-006-003		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	**0.00**	$\overline{C}$	=	**0.00**
α	=	**30.4**	$\overline{\Phi}$	=	**35.97**

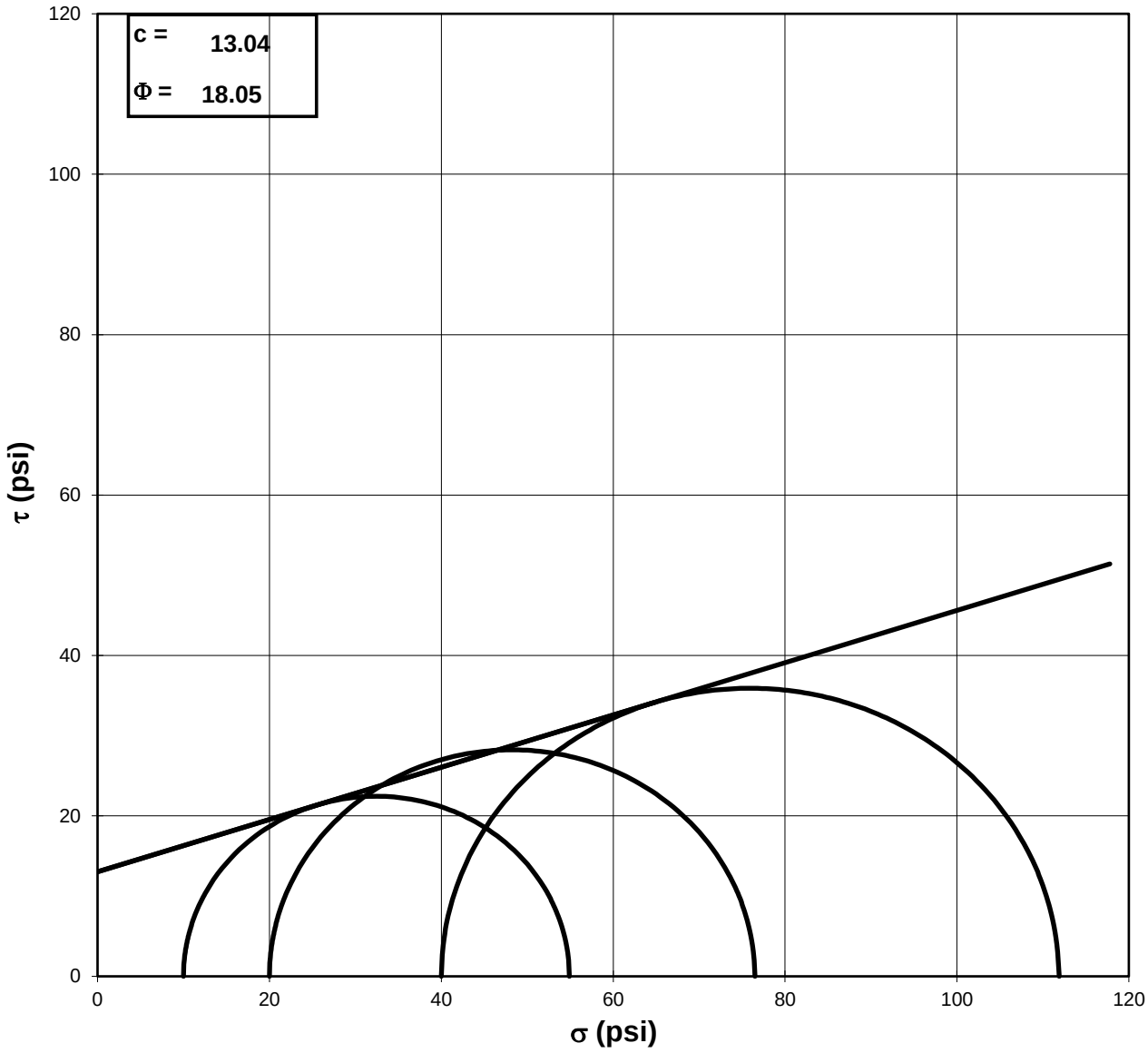
Tested By: DL Date: 1/15/26 Approved By: MPS Date: 1/19/26

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MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-006-003		
Visual Description:	Brown Sand with Silt (REMOLDED)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: DL *Date:* 1/15/26 *Approved By:* MPS *Date:* 1/19/26

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-006-003		

Visual Description: Brown Sand with Silt (REMOLDED)

Stage No.	1
Test No.	1

PRESSURES (psi)

Cell Pressure (psi)	90.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	10.0
Pore Pressure Response (%)	95

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	35.37
Q	=	22.45

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	15.2
Final Change (ml)	8.8
Initial Dial Reading (mil)	262
Dial Reading After Saturation (mil)	279
Dial Reading After Consolidation (mil)	288

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
17.3	0.000	80.0
25.9	0.001	80.1
30.9	0.003	80.2
59.6	0.008	81.0
87.7	0.014	81.8
109.3	0.020	82.1
137.5	0.029	82.1
163.1	0.038	81.9
192.0	0.049	81.3
232.8	0.070	80.1
274.3	0.098	78.6
309.6	0.133	77.1
333.4	0.169	75.9
352.8	0.209	74.9
365.0	0.239	74.3
380.1	0.280	73.6
398.4	0.335	72.8
412.7	0.394	72.1
425.7	0.439	71.6
432.6	0.497	71.1
442.4	0.541	70.7
449.8	0.585	70.4
457.4	0.629	70.1
459.4	0.659	69.9
465.6	0.688	69.7
466.9	0.717	69.5
471.3	0.747	69.3
473.8	0.790	69.1
478.0	0.835	68.9
480.7	0.864	68.8
481.1	0.894	68.7

Tested By: DL Date: 1/15/26 Input Checked By: MPS Date: 1/19/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-006-003		

Visual Description: Brown Sand with Silt (REMOLDED)

Effective Confining Pressure (psi)	10.0	*Stage No.*	1
		Test No	1

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	37.93
Length After Consolidation (in)	5.96
Area After Consolidation (in^2)	6.365

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	1.35	0.09	11.26	9.9	1.137	0.07	10.59	0.68
0.05	2.13	0.19	11.94	9.8	1.217	0.09	10.87	1.06
0.14	6.63	1.04	15.59	9.0	1.740	0.16	12.28	3.31
0.23	11.03	1.80	19.23	8.2	2.345	0.17	13.71	5.52
0.34	14.40	2.14	22.26	7.9	2.833	0.16	15.06	7.20
0.48	18.80	2.15	26.65	7.9	3.394	0.12	17.25	9.40
0.63	22.75	1.86	30.89	8.1	3.795	0.09	19.51	11.38
0.82	27.21	1.29	35.92	8.7	4.124	0.05	22.31	13.60
1.17	33.46	0.12	43.34	9.9	4.385	0.00	26.61	16.73
1.65	39.71	-1.44	51.15	11.4	4.470	-0.04	31.30	19.85
2.24	44.89	-2.92	57.82	12.9	4.474	-0.07	35.37	22.45
2.84	48.25	-4.07	62.32	14.1	4.430	-0.09	38.19	24.13
3.52	50.85	-5.08	65.94	15.1	4.372	-0.11	40.51	25.43
4.01	52.43	-5.69	68.12	15.7	4.341	-0.11	41.91	26.21
4.70	54.32	-6.41	70.73	16.4	4.309	-0.12	43.57	27.16
5.63	56.50	-7.21	73.71	17.2	4.282	-0.13	45.46	28.25
6.62	58.00	-7.92	75.92	17.9	4.236	-0.14	46.92	29.00
7.36	59.43	-8.38	77.81	18.4	4.232	-0.15	48.10	29.71
8.35	59.79	-8.93	78.72	18.9	4.159	-0.16	48.82	29.90
9.09	60.70	-9.29	80.00	19.3	4.146	-0.16	49.65	30.35
9.82	61.27	-9.61	80.88	19.6	4.125	-0.17	50.24	30.63
10.56	61.83	-9.92	81.75	19.9	4.104	-0.17	50.83	30.91
11.06	61.77	-10.11	81.88	20.1	4.072	-0.17	50.99	30.89
11.55	62.29	-10.30	82.58	20.3	4.068	-0.17	51.44	31.14
12.03	62.13	-10.47	82.60	20.5	4.036	-0.18	51.53	31.07
12.54	62.37	-10.66	83.03	20.7	4.019	-0.18	51.84	31.18
13.27	62.20	-10.91	83.11	20.9	3.975	-0.18	52.01	31.10
14.01	62.24	-11.10	83.34	21.1	3.950	-0.19	52.22	31.12
14.51	62.23	-11.24	83.47	21.2	3.930	-0.19	52.36	31.12
15.00	61.92	-11.33	83.25	21.3	3.903	-0.19	52.29	30.96

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-006-003		

Visual Description: Brown Sand with Silt (REMOLDED)

Stage No.	1
Test No.	2

PRESSURES (psi)

Cell Pressure (psi)	100.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	20.0
Pore Pressure Response (%)	95

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	45.23
Q	=	28.24

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	14.6
Final Change (ml)	9.4

Initial Dial Reading (mil)	126
Dial Reading After Saturation (mil)	131
Dial Reading After Consolidation (mil)	156

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
19.0	0.000	80.0
21.0	0.001	80.1
21.9	0.002	80.1
50.3	0.008	80.7
107.0	0.014	82.3
139.1	0.019	83.6
174.6	0.028	84.9
203.0	0.037	85.6
233.6	0.049	86.1
271.9	0.070	86.0
308.1	0.099	85.5
336.9	0.135	84.9
357.6	0.171	84.3
375.5	0.213	83.8
386.4	0.243	83.4
398.7	0.284	83.0
412.2	0.341	82.5
425.7	0.402	82.1
435.8	0.447	81.8
446.7	0.507	81.4
454.7	0.551	81.1
459.7	0.596	80.9
466.4	0.641	80.7
470.6	0.671	80.5
474.3	0.701	80.4
478.6	0.731	80.3
482.3	0.760	80.1
486.6	0.806	80.0
491.3	0.851	79.8
494.8	0.881	79.7
497.2	0.911	79.6

Tested By: DL Date: 1/15/26 Input Checked By: MPS Date: 1/19/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-006-003		

Visual Description: Brown Sand with Silt (REMOLDED)

Effective Confining Pressure (psi)	20.0	*Stage No.*	1
		Test No	2

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	38.12
Length After Consolidation (in)	5.95
Area After Consolidation (in^2)	6.403

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.01	0.31	0.05	20.26	19.9	1.016	0.17	20.11	0.16
0.04	0.44	0.07	20.37	19.9	1.022	0.16	20.15	0.22
0.14	4.88	0.74	24.14	19.3	1.253	0.16	21.70	2.44
0.23	13.71	2.29	31.42	17.7	1.774	0.18	24.56	6.85
0.32	18.69	3.57	35.12	16.4	2.138	0.20	25.77	9.35
0.47	24.18	4.88	39.30	15.1	2.599	0.21	27.21	12.09
0.62	28.56	5.62	42.93	14.4	2.986	0.21	28.66	14.28
0.82	33.24	6.05	47.19	13.9	3.383	0.19	30.57	16.62
1.17	39.03	6.03	53.00	14.0	3.794	0.16	33.48	19.51
1.66	44.40	5.52	58.88	14.5	4.065	0.13	36.68	22.20
2.26	48.52	4.88	63.64	15.1	4.208	0.11	39.38	24.26
2.87	51.36	4.30	67.06	15.7	4.271	0.09	41.38	25.68
3.57	53.69	3.77	69.91	16.2	4.309	0.07	43.07	26.84
4.08	55.03	3.42	71.61	16.6	4.320	0.07	44.09	27.52
4.77	56.47	3.01	73.46	17.0	4.324	0.06	45.23	28.24
5.73	57.89	2.52	75.38	17.5	4.311	0.05	46.43	28.95
6.75	59.23	2.07	77.16	17.9	4.303	0.04	47.55	29.61
7.50	60.21	1.75	78.46	18.2	4.299	0.03	48.35	30.10
8.51	61.12	1.38	79.74	18.6	4.282	0.02	49.18	30.56
9.26	61.75	1.11	80.64	18.9	4.268	0.02	49.77	30.87
10.01	61.93	0.88	81.05	19.1	4.240	0.02	50.08	30.97
10.77	62.34	0.67	81.67	19.3	4.225	0.01	50.50	31.17
11.28	62.57	0.52	82.05	19.5	4.212	0.01	50.77	31.28
11.78	62.73	0.40	82.33	19.6	4.200	0.01	50.97	31.36
12.28	62.96	0.25	82.71	19.7	4.188	0.00	51.23	31.48
12.77	63.12	0.13	82.99	19.9	4.176	0.00	51.43	31.56
13.53	63.14	-0.04	83.18	20.0	4.151	0.00	51.61	31.57
14.30	63.21	-0.20	83.41	20.2	4.130	0.00	51.80	31.60
14.80	63.31	-0.31	83.62	20.3	4.117	-0.01	51.97	31.65
15.30	63.25	-0.39	83.65	20.4	4.102	-0.01	52.02	31.63

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-006-003		

Visual Description: Brown Sand with Silt (REMOLDED)

Stage No.	1
Test No.	3

PRESSURES (psi)

Cell Pressure (psi)	120.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	40.0
Pore Pressure Response (%)	95

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	57.26
Q	=	35.91

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	12.7
Final Change (ml)	11.3

Initial Dial Reading (mil)	258
Dial Reading After Saturation (mil)	282
Dial Reading After Consolidation (mil)	316

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
25.7	0.000	80.0
42.8	0.001	80.5
57.7	0.002	80.9
119.0	0.007	82.9
186.6	0.013	85.2
238.1	0.018	88.2
283.9	0.027	91.9
318.4	0.036	94.4
350.8	0.047	96.5
385.5	0.068	98.4
415.0	0.098	99.4
441.7	0.134	99.8
455.0	0.170	99.7
471.6	0.211	99.5
479.6	0.241	99.4
490.4	0.283	99.1
509.7	0.340	98.7
523.2	0.401	98.3
532.0	0.445	98.0
539.7	0.505	97.6
550.5	0.550	97.3
561.0	0.595	97.1
557.4	0.640	96.8
560.1	0.670	96.7
565.0	0.699	96.5
568.0	0.729	96.4
573.3	0.760	96.3
579.5	0.805	96.0
586.1	0.850	95.9
589.4	0.881	95.8
591.2	0.910	95.6

Tested By: DL Date: 1/15/26 Input Checked By: MPS Date: 1/19/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-006-003		

Visual Description: Brown Sand with Silt (REMOLDED)

Effective Confining Pressure (psi)	40.0	*Stage No.*	1
		Test No	3

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

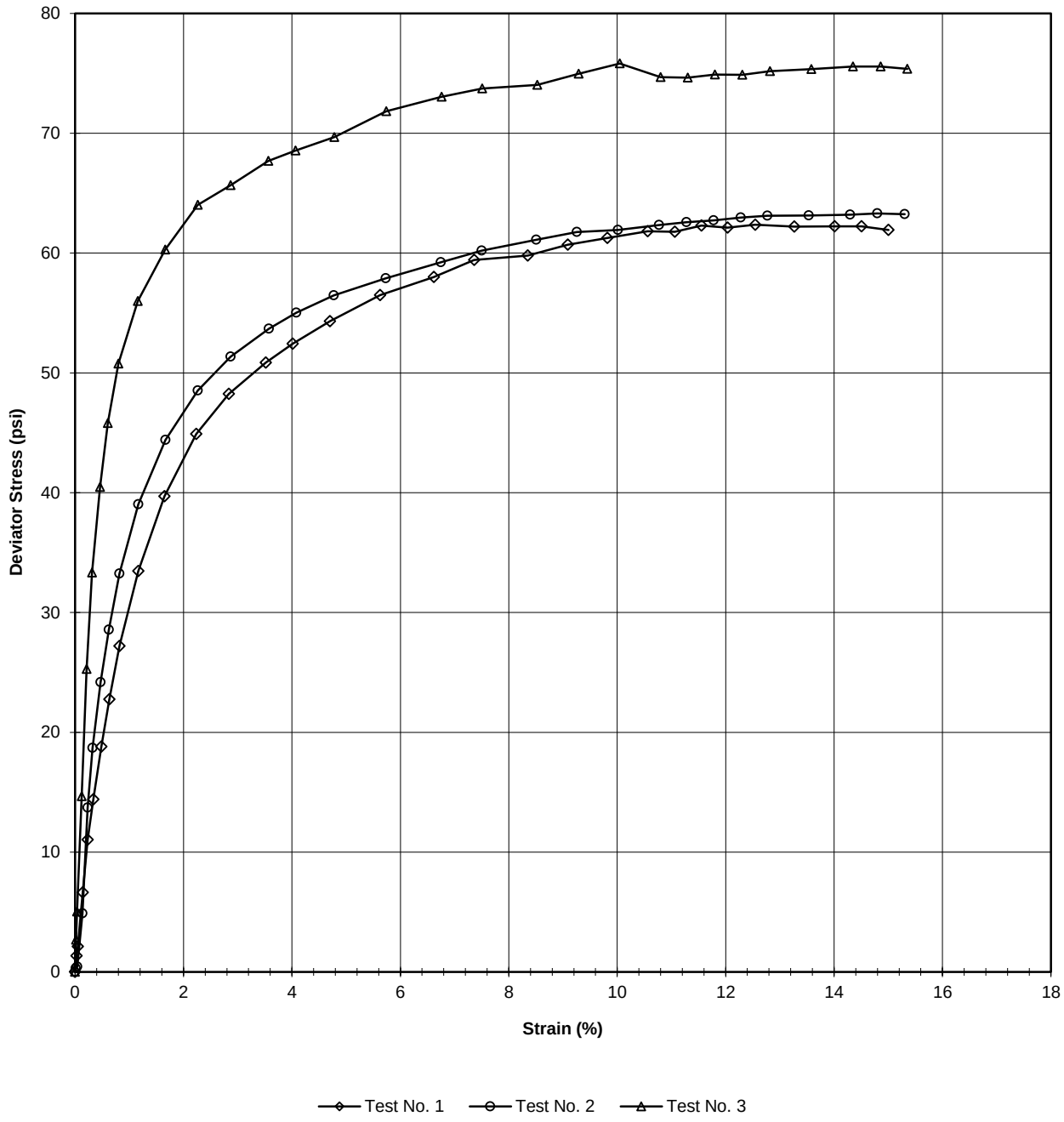
Volume After Consolidation (in^3)	37.64
Length After Consolidation (in)	5.93
Area After Consolidation (in^2)	6.351

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	2.68	0.47	42.22	39.5	1.068	0.18	40.88	1.34
0.04	5.04	0.94	44.10	39.1	1.129	0.20	41.58	2.52
0.12	14.66	2.93	51.73	37.1	1.396	0.21	44.40	7.33
0.21	25.28	5.20	60.07	34.8	1.726	0.22	47.44	12.64
0.31	33.33	8.22	65.11	31.8	2.049	0.26	48.45	16.67
0.46	40.47	11.91	68.56	28.1	2.441	0.31	48.32	20.23
0.60	45.80	14.42	71.38	25.6	2.790	0.33	48.48	22.90
0.80	50.77	16.53	74.23	23.5	3.164	0.34	48.85	25.38
1.15	56.00	18.44	77.56	21.6	3.597	0.35	49.56	28.00
1.66	60.28	19.44	80.84	20.6	3.932	0.34	50.70	30.14
2.26	64.02	19.76	84.26	20.2	4.163	0.32	52.25	32.01
2.87	65.65	19.72	85.93	20.3	4.237	0.32	53.11	32.83
3.56	67.70	19.55	88.15	20.5	4.310	0.30	54.30	33.85
4.06	68.56	19.38	89.18	20.6	4.325	0.30	54.90	34.28
4.78	69.67	19.07	90.60	20.9	4.329	0.29	55.76	34.84
5.74	71.83	18.65	93.18	21.3	4.364	0.27	57.26	35.91
6.76	73.04	18.26	94.78	21.7	4.360	0.26	58.26	36.52
7.51	73.73	17.97	95.76	22.0	4.346	0.26	58.90	36.87
8.52	74.03	17.61	96.42	22.4	4.306	0.25	59.40	37.01
9.29	74.96	17.29	97.67	22.7	4.300	0.24	60.19	37.48
10.05	75.82	17.08	98.74	22.9	4.308	0.24	60.83	37.91
10.80	74.68	16.83	97.85	23.2	4.223	0.24	60.51	37.34
11.30	74.63	16.69	97.95	23.3	4.202	0.24	60.63	37.32
11.80	74.90	16.52	98.37	23.5	4.190	0.23	60.93	37.45
12.31	74.88	16.38	98.50	23.6	4.170	0.23	61.06	37.44
12.82	75.17	16.26	98.92	23.7	4.166	0.23	61.33	37.59
13.58	75.36	16.04	99.32	24.0	4.145	0.22	61.64	37.68
14.35	75.57	15.86	99.71	24.1	4.130	0.22	61.93	37.79
14.86	75.56	15.76	99.80	24.2	4.117	0.22	62.02	37.78
15.35	75.37	15.64	99.73	24.4	4.094	0.22	62.05	37.69

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-006-003		
Visual Description:	Brown Sand with Silt (REMOLDED)		



Tested By: DL Date: 1/15/26 Approved By: MPS Date: 1/19/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.		
Client Reference:	Housatonic 5A		
Project No.:	R-2025-197-006		
Lab ID:	R-2025-197-006-003	Specific Gravity (Measured)	2.72

Visual Description: Brown Sand with Silt (REMOLDED)

SAMPLE CONDITION SUMMARY

Boring No.:	N/A	N/A	N/A
Depth (ft):	N/A	N/A	N/A
Sample No.:	TS-S3 ISS	TS-S3 ISS	TS-S3 ISS
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.001	0.001	0.001
Back Pressure (psi)	80	80	80
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	17.0	17.0	17.0
Total Unit Weight (pcf)	108.6	108.6	108.6
Dry Unit Weight (pcf)	92.8	92.8	92.8
Moisture Content (%) (FINAL)	27.1	28.3	27.5
Initial State Void Ratio,e	0.830	0.830	0.829
Void Ratio at Shear, e	0.789	0.798	0.775





Tested By: DL Date: 1/15/26 Input Checked By: MPS Date: 1/19/26

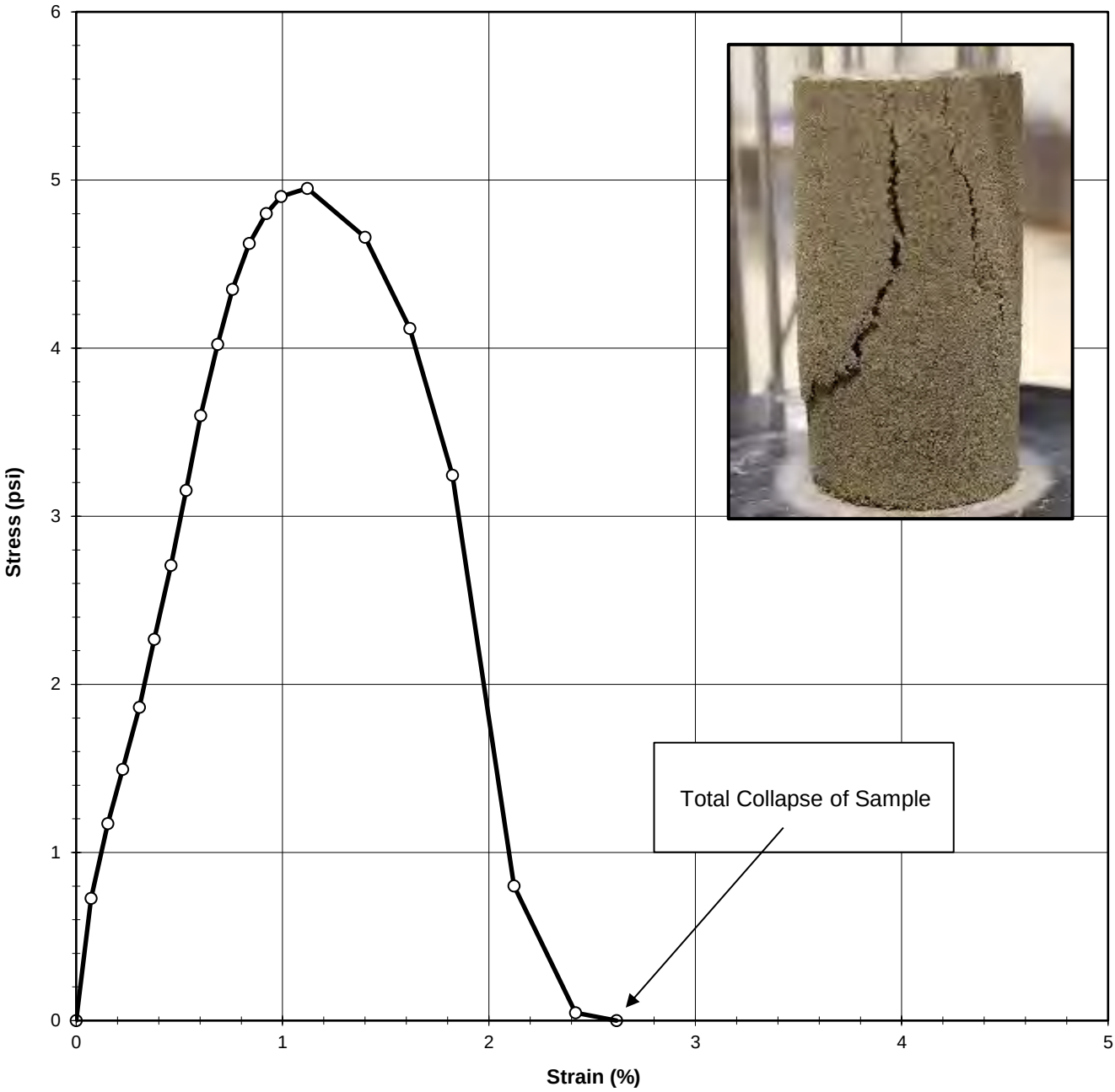
DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-006	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-006-003	Visual:	Brown Gray Sand with Silt



Tested By	DL	Date	1/17/2026	Approved By	MPS	Date	1/19/2026

DCN: CT-S30 DATE: 11/09/09 REVISION: 4

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-006	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-006-003	Visual:	Brown Gray Sand with Silt

INITIAL SAMPLE DIMENSIONS				WATER CONTENT AFTER TEST	
Length 1 (in):	5.984	Top Diameter (in):	2.873	Tare No.:	473
Length 2 (in):	5.984	Middle Diameter (in):	2.873	Weight of Tare & Wet Sample (g):	386.50
Length 3 (in):	5.984	Bottom Diameter (in):	2.873	Weight of Tare & Dry Sample (g):	344.48
Avg. Length (in):	**5.984**	**Avg. Diameter (in):**	**2.873**	Weight of Tare (g):	97.82
		Area (in^2):	**6.483**	Moisture Content (%):	17.04

UNIT WEIGHT			
Weight of Tube & Wet Sample (g):	2648.52	Sample Volume (cm^3):	635.7
Weight of Tube (g):	1542.73	Unit Wet Weight (g/cm^3):	1.74
Weight of Wet Sample (g):	1105.79	Unit Wet Weight (pcf):	108.54
Average Diameter (in):	2.87	Moisture Content (%):	17.04
Average Length (in):	5.98	Unit Dry Weight (pcf):	92.74
Average Length (cm):	15.20		

ELECTRONIC DEVICE DEFORMATION (in)	*LOAD (lb)*	*ELAPSED TIME (min)*	*STRAIN (%)*	*STRESS (psi)*
0.000	0.5	0.00	0.000	0.000
0.004	5.2	0.07	0.072	0.727
0.009	8.1	0.15	0.153	1.172
0.013	10.2	0.23	0.225	1.494
0.018	12.6	0.30	0.306	1.864
0.023	15.2	0.38	0.379	2.269
0.027	18.1	0.47	0.460	2.707
0.032	21.0	0.53	0.532	3.154
0.036	23.9	0.62	0.604	3.599
0.041	26.7	0.68	0.685	4.022
0.045	28.9	0.77	0.758	4.349
0.050	30.7	0.85	0.839	4.623
0.055	31.9	0.92	0.921	4.801
0.059	32.6	1.00	0.993	4.902
0.067	32.9	1.12	1.120	4.951
0.084	31.1	1.42	1.400	4.659
0.097	27.6	1.63	1.616	4.118
0.109	21.9	1.83	1.823	3.244
0.127	5.8	2.13	2.121	0.801
0.145	0.8	2.43	2.420	0.047
0.157	0.2	2.63	2.618	0.000

Tested By DL Date 1/17/2026 Input Checked By MPS Date 1/19/2026

DCN: CT-S30 DATE: 11/09/09 REVISION: 4

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PERMEABILITY TEST

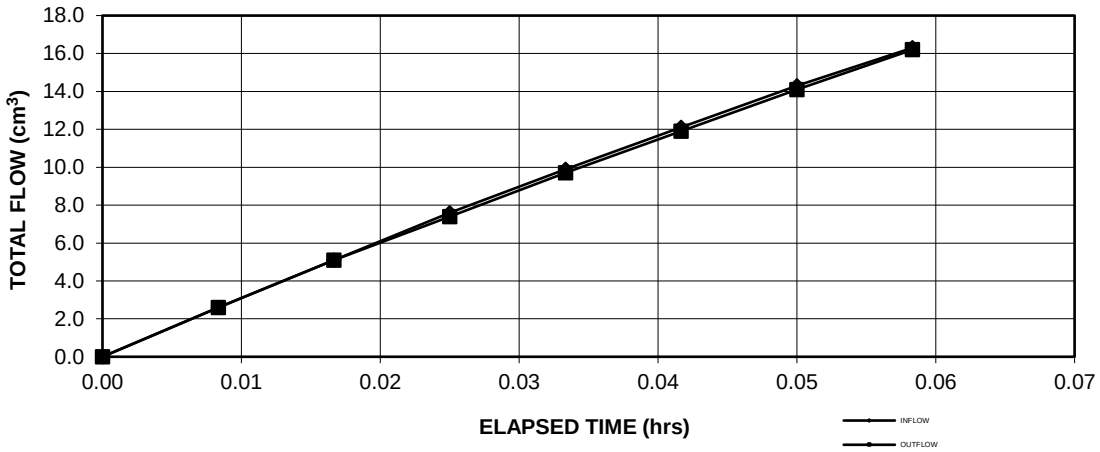
ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S4 ISS
Lab ID No.:	R-2025-197-006-004	Avg. Effective Consol. Pressure (psi):	20

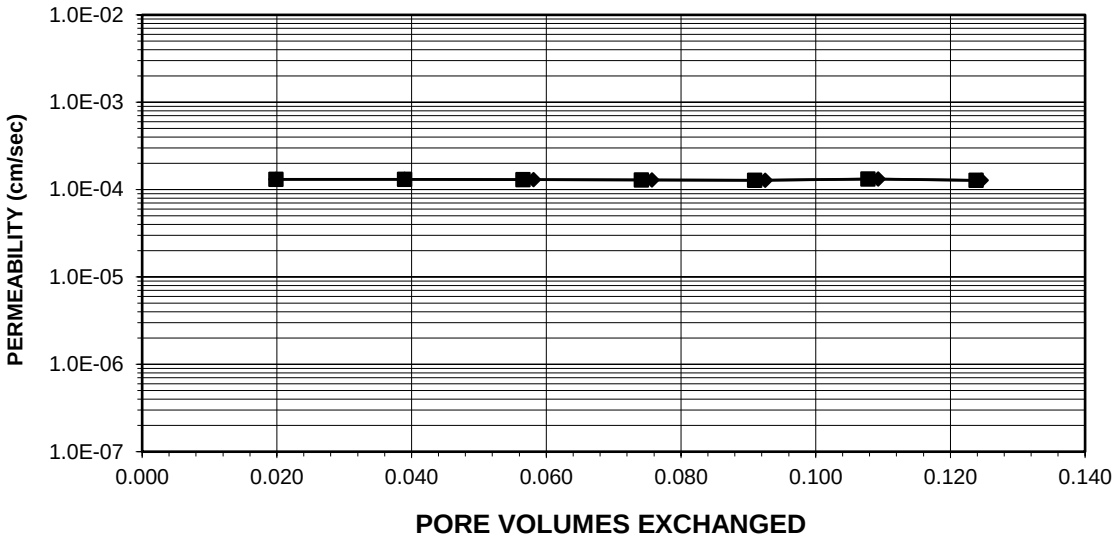
AVERAGE PERMEABILITY = 1.3E-04 cm/sec @ 20°C

AVERAGE PERMEABILITY = 1.3E-06 m/sec @ 20°C

TOTAL FLOW vs. ELAPSED TIME



PORE VOLUMES EXCHANGED vs. PERMEABILITY



Tested By: DL Date: 1/14/26 Checked By: AES Date: 1/19/26

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S4 ISS
Lab ID No.:	R-2025-197-006-004	Avg. Effective Consol. Pressure (psi):	20

Specific Gravity:	2.68	Measured
Sample Condition:		Remolded

Visual Description: Gray Brown Sand with Silt and Gravel

Permeant Type: Deaired Tap Water

MOISTURE CONTENT:	BEFORE TEST	AFTER TEST
Tare Number	21-A	21-A
Weight of Tare & Wet Sample (g)	342.07	612.68
Weight of Tare & Dry Sample (g)	319.44	535.60
Weight of Tare (g)	91.54	91.52
Weight of Water (g)	22.63	77.08
Weight of Dry Sample (g)	227.90	444.08
Moisture Content (%)	**9.9**	**17.4**

SPECIMEN:	BEFORE TEST	AFTER TEST
Weight of Tube & Wet Sample (g)	2430.10	NA
Weight of Tube (g)	1624.18	NA
Weight of Wet Sample (g)	805.92	860.37
Length 1 (in)	3.995	3.948
Length 2 (in)	3.995	3.925
Length 3 (in)	3.995	3.952
Top Diameter (in)	2.872	2.825
Middle Diameter (in)	2.872	2.803
Bottom Diameter (in)	2.872	2.842
Average Length (in)	4.00	3.94
Average Area (in^2)	6.48	6.26
Sample Volume (cm^3)	424.11	404.39
Unit Wet Weight (g/cm^3)	1.90	2.13
Unit Wet Weight (pcf)	118.6	132.8
Unit Dry Weight (pcf)	107.9	113.2
Unit Dry Weight (g/cm^3)	1.73	1.81
Void Ratio, e	0.55	0.48
Porosity, n	0.35	0.32
Pore Volume (cm^3)	150.6	130.8
Total Weight of Sample After Test (g)		842.53

Tested By: DL Date: 1/14/26 Checked By: AES Date: 1/19/26

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S4 ISS
Lab ID No.:	R-2025-197-006-004	Avg. Effective Consol. Pressure (psi):	20

Pressure Heads (Constant)	
Top Cap (psi)	79.0
Bottom Cap (psi)	81.0
Cell (psi)	100.0
Total Pressure Head (cm)	140.6
Hydraulic Gradient	14.04

Final Sample Dimensions	
Sample Length (cm), L	10.01
Sample Diameter (cm)	7.17
Sample Area (cm^2), A	40.39
Inflow Burette Area (cm^2), a-in	0.921
Outflow Burette Area (cm^2), a-out	0.921
B Parameter (%)	97

AVERAGE PERMEABILITY = 1.3E-04 cm/sec @ 20°C

AVERAGE PERMEABILITY = 1.3E-06 m/sec @ 20°C

DATE	TIME		ELAPSED TIME t	TOTAL INFLOW	TOTAL OUTFLOW	TOTAL HEAD h	FLOW (0 flow)	TEMP.	INCREMENTAL PERMEABILITY @ 20°C
(mm/dd/yy)	(hr)	(min)	(hr)	(cm^3)	(cm^3)	(cm)	(1 stop)	(°C)	(cm/sec)
1/14/2026	16	0.0	0.000	0.0	0.0	163.9	0	20.1	NA
1/14/2026	16	0.5	0.008	2.6	2.6	158.3	0	20.1	1.3E-04
1/14/2026	16	1.0	0.017	5.1	5.1	153.0	0	20.1	1.3E-04
1/14/2026	16	1.5	0.025	7.6	7.4	147.8	0	20.1	1.3E-04
1/14/2026	16	2.0	0.033	9.9	9.7	142.9	0	20.1	1.3E-04
1/14/2026	16	2.5	0.042	12.1	11.9	138.1	0	20.1	1.3E-04
1/14/2026	16	3.0	0.050	14.3	14.1	133.4	0	20.1	1.3E-04
1/14/2026	16	3.5	0.058	16.3	16.2	129.0	0	20.1	1.3E-04

Tested By: DL Date: 1/14/26 Checked By: AES Date: 1/19/26

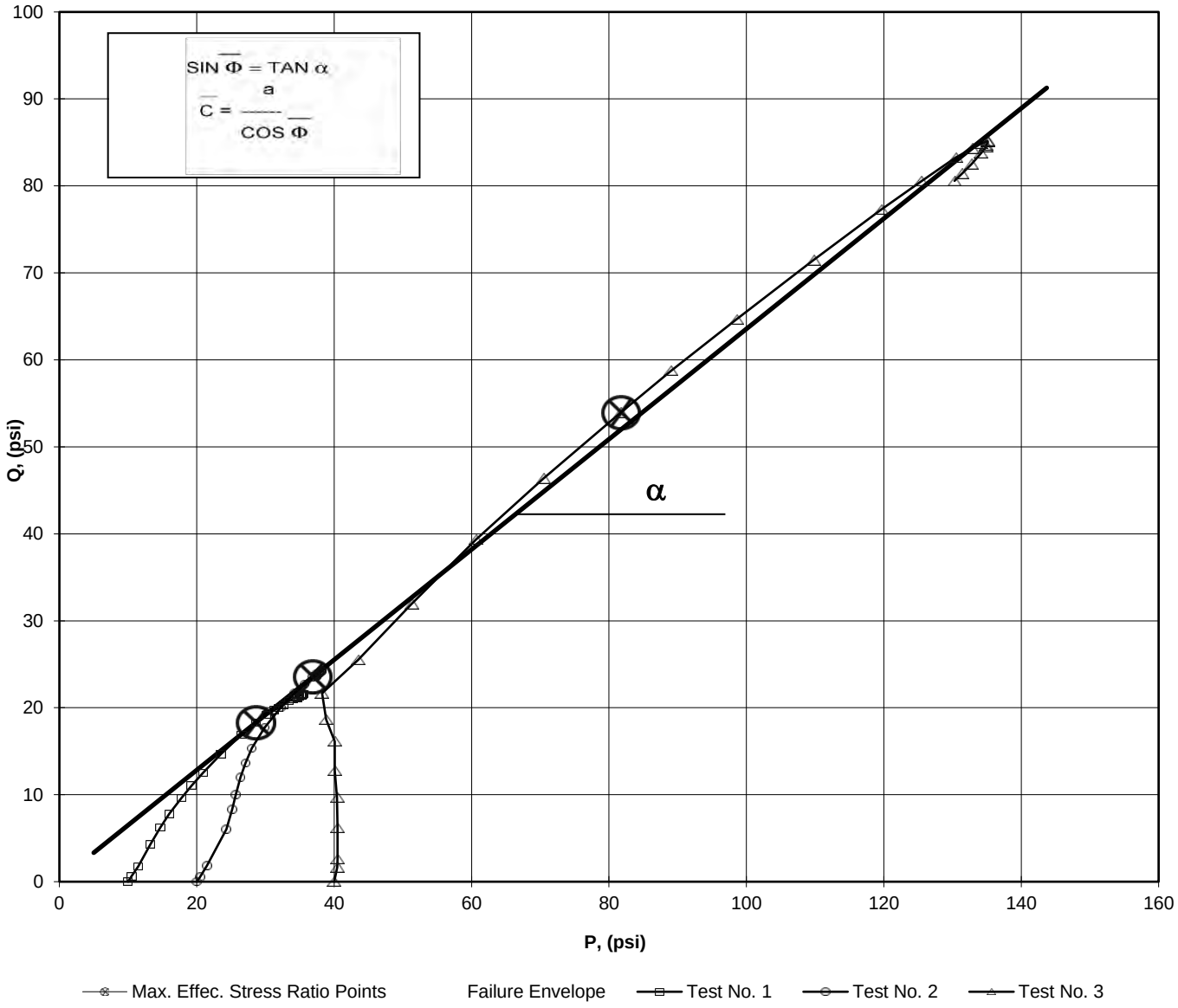
DCN: CT-22 DATE: 1/1/17 REVISION: 11

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S4 ISS
Lab ID:	R-2025-197-006-004		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	**0.00**	$\overline{C}$	=	**0.00**
α	=	**32.4**	$\overline{\Phi}$	=	**39.35**

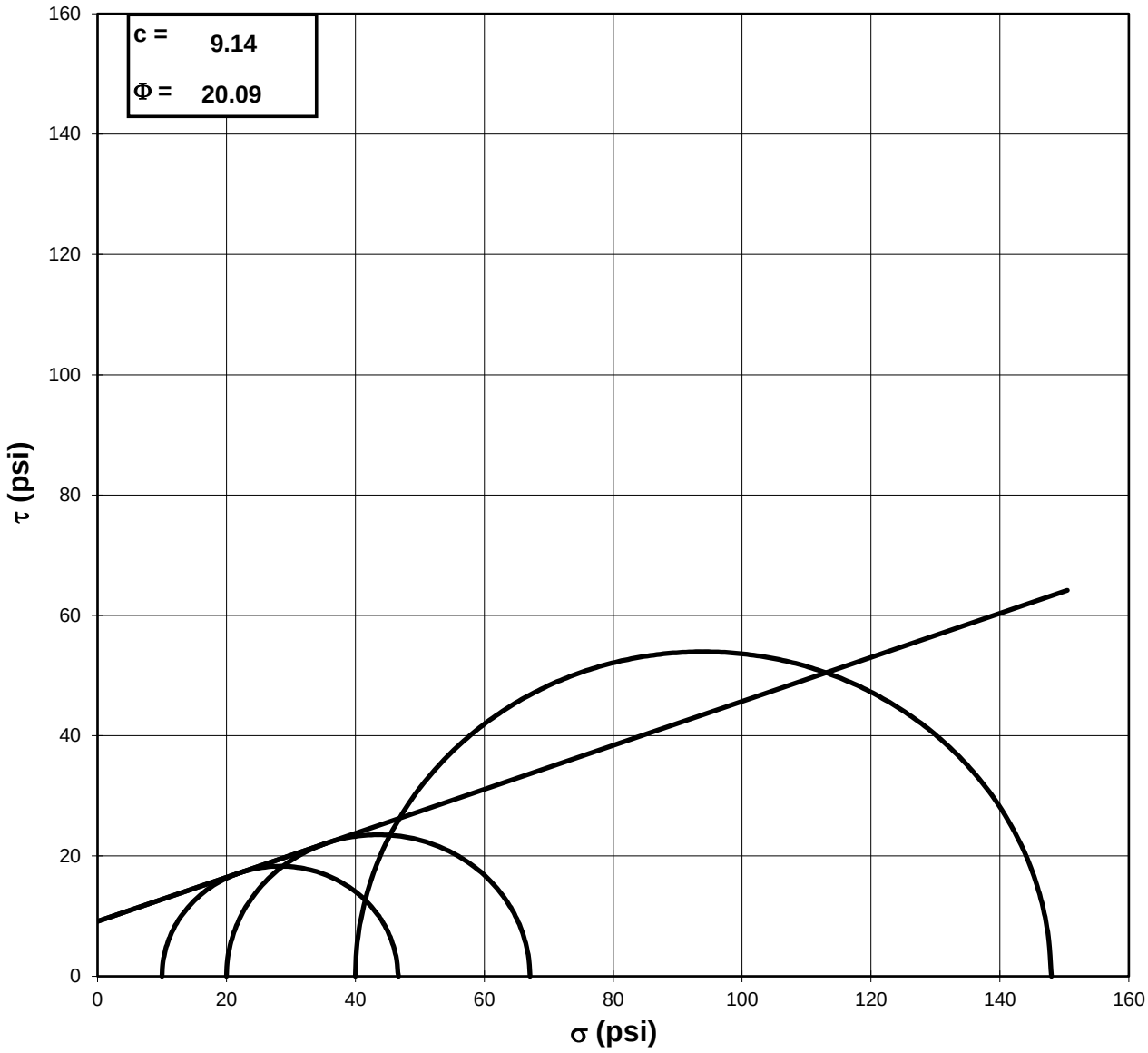
Tested By: DL Date: 1/12/26 Approved By: MPS Date: 1/19/26

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MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S4 ISS
Lab ID:	R-2025-197-006-004		
Visual Description:	Gray Brown Sand with Silt and Gravel (REMOLDED)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: DL *Date:* 1/12/26 *Approved By:* MPS *Date:* 1/19/26

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S4 ISS
Lab ID:	R-2025-197-006-004		

Visual Description: Gray Brown Sand with Silt and Gravel (REMOLDED)

Stage No.	1
Test No.	1

PRESSURES (psi)

Cell Pressure (psi)	90.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	10.0
Pore Pressure Response (%)	96

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	28.62
Q	=	18.31

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	17.5
Final Change (ml)	6.5
Initial Dial Reading (mil)	112
Dial Reading After Saturation (mil)	155
Dial Reading After Consolidation (mil)	162

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
18.6	0.000	80.0
26.5	0.002	80.1
40.7	0.003	80.3
73.1	0.009	81.1
98.0	0.014	81.6
117.7	0.020	81.8
140.8	0.028	81.9
159.4	0.037	81.8
178.4	0.050	81.6
206.8	0.070	81.1
236.5	0.099	80.4
255.7	0.134	79.7
268.4	0.169	79.0
277.3	0.211	78.4
282.3	0.240	78.1
289.1	0.281	77.7
297.6	0.337	77.4
304.4	0.395	77.0
308.1	0.440	76.9
316.1	0.499	76.8
315.1	0.543	76.6
316.3	0.587	76.6
318.4	0.631	76.5
322.0	0.660	76.4
327.1	0.690	76.3
327.9	0.719	76.3
329.7	0.749	76.2
331.8	0.793	76.2
336.3	0.837	76.1
336.9	0.866	76.1
337.8	0.896	76.1

Tested By: DL Date: 1/12/26 Input Checked By: MPS Date: 1/19/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S4 ISS
Lab ID:	R-2025-197-006-004		

Visual Description: Gray Brown Sand with Silt and Gravel (REMOLDED)

Effective Confining Pressure (psi)	10.0	*Stage No.*	1
		Test No	1

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	37.56
Length After Consolidation (in)	5.93
Area After Consolidation (in^2)	6.330

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.03	1.25	0.11	11.14	9.9	1.126	0.09	10.52	0.62
0.05	3.49	0.26	13.23	9.7	1.359	0.08	11.48	1.75
0.15	8.61	1.07	17.54	8.9	1.963	0.13	13.24	4.30
0.24	12.52	1.57	20.95	8.4	2.486	0.13	14.69	6.26
0.34	15.61	1.79	23.82	8.2	2.903	0.12	16.01	7.81
0.48	19.22	1.85	27.37	8.1	3.359	0.10	17.76	9.61
0.63	22.11	1.78	30.33	8.2	3.689	0.08	19.28	11.05
0.84	25.04	1.60	33.44	8.4	3.981	0.07	20.92	12.52
1.18	29.38	1.13	38.25	8.9	4.315	0.04	23.56	14.69
1.67	33.86	0.41	43.44	9.6	4.531	0.01	26.52	16.93
2.27	36.61	-0.32	46.93	10.3	4.549	-0.01	28.62	18.31
2.86	38.34	-0.95	49.29	11.0	4.501	-0.03	30.12	19.17
3.55	39.43	-1.59	51.01	11.6	4.403	-0.04	31.30	19.71
4.04	39.99	-1.92	51.91	11.9	4.355	-0.05	31.91	19.99
4.74	40.71	-2.31	53.02	12.3	4.307	-0.06	32.66	20.36
5.68	41.58	-2.63	54.21	12.6	4.293	-0.07	33.42	20.79
6.66	42.15	-2.97	55.11	13.0	4.251	-0.07	34.04	21.07
7.41	42.36	-3.12	55.48	13.1	4.228	-0.08	34.30	21.18
8.40	43.05	-3.25	56.30	13.2	4.250	-0.08	34.77	21.53
9.16	42.57	-3.36	55.92	13.4	4.187	-0.08	34.64	21.28
9.89	42.39	-3.45	55.84	13.4	4.152	-0.08	34.64	21.19
10.63	42.34	-3.52	55.86	13.5	4.132	-0.09	34.69	21.17
11.12	42.61	-3.63	56.24	13.6	4.127	-0.09	34.93	21.31
11.62	43.08	-3.70	56.78	13.7	4.144	-0.09	35.24	21.54
12.12	42.96	-3.71	56.67	13.7	4.133	-0.09	35.19	21.48
12.62	42.96	-3.76	56.72	13.8	4.121	-0.09	35.24	21.48
13.36	42.87	-3.81	56.68	13.8	4.106	-0.09	35.24	21.44
14.10	43.12	-3.90	57.02	13.9	4.102	-0.09	35.46	21.56
14.60	42.95	-3.90	56.85	13.9	4.089	-0.09	35.38	21.47
15.10	42.83	-3.91	56.73	13.9	4.079	-0.10	35.32	21.41

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S4 ISS
Lab ID:	R-2025-197-006-004		

Visual Description: Gray Brown Sand with Silt and Gravel (REMOLDED)

Stage No.	1
Test No.	2

PRESSURES (psi)

Cell Pressure (psi)	100.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	20.0
Pore Pressure Response (%)	96

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	36.87
Q	=	23.54

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	14.5
Final Change (ml)	9.5

Initial Dial Reading (mil)	160
Dial Reading After Saturation (mil)	179
Dial Reading After Consolidation (mil)	198

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
18.6	0.000	80.0
25.6	0.001	80.1
42.2	0.003	80.4
95.2	0.008	81.7
124.8	0.014	83.2
146.6	0.020	84.4
172.4	0.029	85.7
193.4	0.037	86.6
215.7	0.049	87.3
246.7	0.070	87.8
277.7	0.100	87.8
300.9	0.136	87.4
316.4	0.172	87.0
329.4	0.214	86.7
335.5	0.244	86.4
340.9	0.285	86.3
346.8	0.342	86.1
349.6	0.403	86.1
352.8	0.448	86.1
355.8	0.508	86.0
356.5	0.553	86.1
358.0	0.597	86.2
362.1	0.642	86.2
363.6	0.673	86.2
363.6	0.703	86.3
363.8	0.733	86.2
364.5	0.762	86.3
367.4	0.807	86.2
370.9	0.852	86.2
372.2	0.882	86.2
374.2	0.912	86.2

Tested By: DL Date: 1/12/26 Input Checked By: MPS Date: 1/19/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S4 ISS
Lab ID:	R-2025-197-006-004		

Visual Description: Gray Brown Sand with Silt and Gravel (REMOLDED)

Effective Confining Pressure (psi)	20.0	*Stage No.*	1
		Test No	2

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	37.84
Length After Consolidation (in)	5.95
Area After Consolidation (in^2)	6.365

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	1.10	0.09	21.01	19.9	1.055	0.08	20.46	0.55
0.05	3.71	0.38	23.33	19.6	1.189	0.11	21.48	1.86
0.14	12.02	1.72	30.30	18.3	1.658	0.15	24.29	6.01
0.24	16.64	3.15	33.49	16.8	1.988	0.20	25.17	8.32
0.33	20.04	4.36	35.68	15.6	2.282	0.23	25.66	10.02
0.48	24.05	5.67	38.39	14.3	2.678	0.25	26.36	12.03
0.63	27.30	6.55	40.75	13.4	3.030	0.25	27.10	13.65
0.83	30.72	7.32	43.39	12.7	3.423	0.25	28.04	15.36
1.18	35.42	7.83	47.59	12.2	3.911	0.23	29.88	17.71
1.68	40.02	7.80	52.22	12.2	4.280	0.20	32.21	20.01
2.28	43.35	7.43	55.92	12.6	4.447	0.18	34.25	21.67
2.89	45.44	7.03	58.41	13.0	4.504	0.16	35.69	22.72
3.59	47.07	6.66	60.41	13.3	4.530	0.15	36.87	23.54
4.10	47.75	6.44	61.31	13.6	4.523	0.14	37.43	23.88
4.80	48.21	6.29	61.92	13.7	4.515	0.14	37.82	24.10
5.76	48.60	6.14	62.46	13.9	4.506	0.13	38.16	24.30
6.78	48.48	6.12	62.36	13.9	4.492	0.13	38.12	24.24
7.53	48.56	6.10	62.46	13.9	4.494	0.13	38.18	24.28
8.54	48.45	6.03	62.42	14.0	4.469	0.13	38.19	24.23
9.29	48.16	6.12	62.04	13.9	4.469	0.13	37.96	24.08
10.05	47.97	6.19	61.78	13.8	4.473	0.13	37.80	23.99
10.81	48.14	6.21	61.93	13.8	4.492	0.13	37.86	24.07
11.32	48.07	6.19	61.87	13.8	4.482	0.13	37.84	24.03
11.82	47.80	6.27	61.53	13.7	4.481	0.14	37.63	23.90
12.32	47.55	6.24	61.31	13.8	4.456	0.14	37.53	23.77
12.82	47.39	6.26	61.13	13.7	4.448	0.14	37.43	23.69
13.57	47.36	6.23	61.13	13.8	4.440	0.14	37.45	23.68
14.33	47.41	6.23	61.18	13.8	4.444	0.14	37.47	23.71
14.84	47.32	6.23	61.09	13.8	4.436	0.14	37.43	23.66
15.35	47.30	6.22	61.08	13.8	4.434	0.14	37.43	23.65

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S4 ISS
Lab ID:	R-2025-197-006-004		

Visual Description: Gray Brown Sand with Silt and Gravel (REMOLDED)

Stage No.	1
Test No.	3

PRESSURES (psi)

Cell Pressure (psi)	120.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	40.0
Pore Pressure Response (%)	96

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	81.71
Q	=	53.96

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	11.2
Final Change (ml)	12.8

Initial Dial Reading (mil)	348
Dial Reading After Saturation (mil)	358
Dial Reading After Consolidation (mil)	480

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
18.6	0.000	80.0
39.9	0.001	81.2
52.5	0.003	82.1
98.5	0.008	85.7
143.9	0.014	89.3
184.4	0.019	92.7
227.9	0.028	96.0
261.2	0.036	99.8
301.0	0.048	103.4
351.9	0.069	102.0
438.4	0.098	100.7
539.1	0.134	98.7
635.8	0.169	95.9
742.0	0.211	92.2
810.3	0.241	89.7
896.4	0.282	86.1
998.7	0.338	81.7
1089.8	0.397	77.7
1144.8	0.442	75.1
1195.5	0.502	72.8
1220.2	0.547	71.5
1238.3	0.591	70.7
1253.7	0.636	70.1
1259.0	0.666	69.9
1260.4	0.697	69.7
1264.5	0.726	69.6
1261.6	0.756	69.6
1253.9	0.802	69.7
1248.9	0.847	70.0
1243.3	0.876	70.3
1243.6	0.906	70.4

Tested By: DL Date: 1/12/26 Input Checked By: MPS Date: 1/19/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S4 ISS
Lab ID:	R-2025-197-006-004		

Visual Description: Gray Brown Sand with Silt and Gravel (REMOLDED)

Effective Confining Pressure (psi)	40.0	*Stage No.*	1
		Test No	3

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

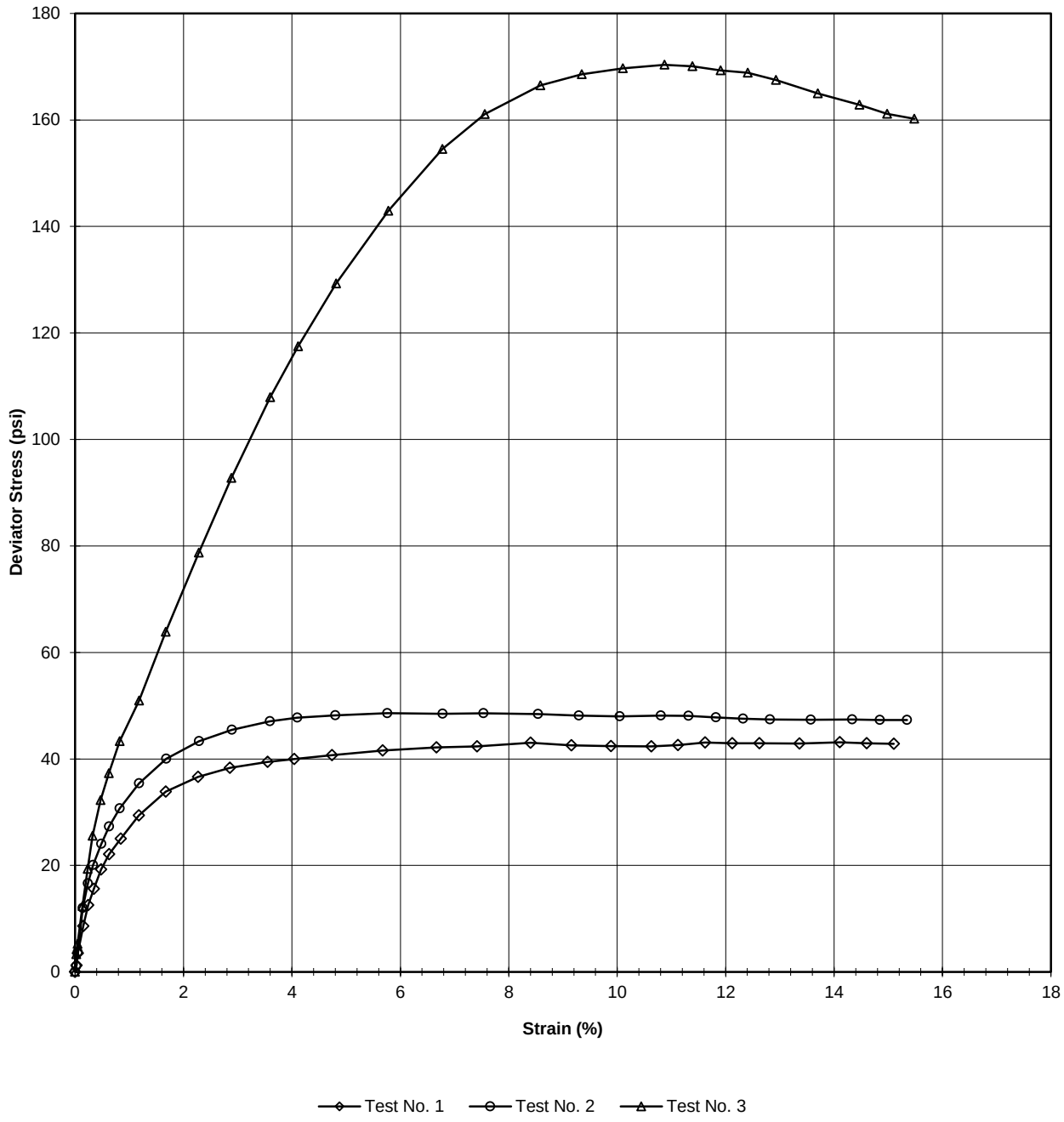
Volume After Consolidation (in^3)	37.82
Length After Consolidation (in)	5.85
Area After Consolidation (in^2)	6.462

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	3.30	1.23	42.08	38.8	1.085	0.39	40.43	1.65
0.05	5.25	2.13	43.12	37.9	1.139	0.42	40.49	2.63
0.14	12.35	5.70	46.65	34.3	1.360	0.48	40.48	6.18
0.23	19.35	9.28	50.07	30.7	1.630	0.50	40.40	9.68
0.32	25.58	12.71	52.87	27.3	1.937	0.52	40.08	12.79
0.47	32.23	16.04	56.19	24.0	2.345	0.52	40.08	16.12
0.62	37.31	19.83	57.48	20.2	2.850	0.55	38.82	18.66
0.82	43.35	23.43	59.91	16.6	3.617	0.56	38.24	21.67
1.18	50.97	22.00	68.97	18.0	3.832	0.45	43.49	25.49
1.67	63.88	20.70	83.18	19.3	4.309	0.34	51.24	31.94
2.28	78.72	18.70	100.02	21.3	4.695	0.25	60.66	39.36
2.88	92.76	15.91	116.85	24.1	4.850	0.18	70.47	46.38
3.60	107.91	12.25	135.67	27.8	4.888	0.12	81.71	53.96
4.11	117.48	9.68	147.80	30.3	4.875	0.09	89.06	58.74
4.81	129.30	6.10	163.20	33.9	4.814	0.05	98.55	64.65
5.78	142.91	1.71	181.20	38.3	4.732	0.01	109.75	71.45
6.78	154.53	-2.33	196.87	42.3	4.650	-0.02	119.60	77.27
7.56	161.10	-4.93	206.04	44.9	4.585	-0.03	125.49	80.55
8.58	166.49	-7.22	213.71	47.2	4.526	-0.05	130.46	83.25
9.34	168.58	-8.53	217.11	48.5	4.473	-0.05	132.82	84.29
10.10	169.68	-9.34	219.02	49.3	4.439	-0.06	134.18	84.84
10.87	170.35	-9.91	220.26	49.9	4.413	-0.06	135.09	85.17
11.39	170.09	-10.10	220.19	50.1	4.395	-0.06	135.15	85.05
11.91	169.29	-10.26	219.54	50.3	4.368	-0.06	134.90	84.64
12.41	168.87	-10.41	219.28	50.4	4.350	-0.06	134.84	84.44
12.93	167.49	-10.40	217.88	50.4	4.323	-0.06	134.14	83.74
13.70	164.97	-10.25	215.23	50.3	4.283	-0.06	132.74	82.49
14.47	162.85	-9.97	212.82	50.0	4.259	-0.06	131.39	81.43
14.98	161.14	-9.73	210.87	49.7	4.240	-0.06	130.30	80.57
15.48	160.22	-9.62	209.84	49.6	4.229	-0.06	129.73	80.11

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-S4 ISS
Lab ID:	R-2025-197-006-004		
Visual Description:	Gray Brown Sand with Silt and Gravel (REMOLDED)		



Tested By: DL Date: 1/12/26 Approved By: MPS Date: 1/19/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.		
Client Reference:	Housatonic 5A		
Project No.:	R-2025-197-006		
Lab ID:	R-2025-197-006-004	Specific Gravity (Measured)	2.68

Visual Description: Gray Brown Sand with Silt and Gravel (REMOLDED)

SAMPLE CONDITION SUMMARY

Boring No.:	N/A	N/A	N/A
Depth (ft):	N/A	N/A	N/A
Sample No.:	TS-S4 ISS	TS-S4 ISS	TS-S4 ISS
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.001	0.001	0.001
Back Pressure (psi)	80	80	80
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	9.9	9.9	9.9
Total Unit Weight (pcf)	118.6	118.7	118.7
Dry Unit Weight (pcf)	107.9	107.9	107.9
Moisture Content (%) (FINAL)	17.3	17.4	15.1
Initial State Void Ratio,e	0.550	0.550	0.550
Void Ratio at Shear, e	0.501	0.512	0.511





Tested By: DL Date: 1/12/26 Input Checked By: MPS Date: 1/19/26

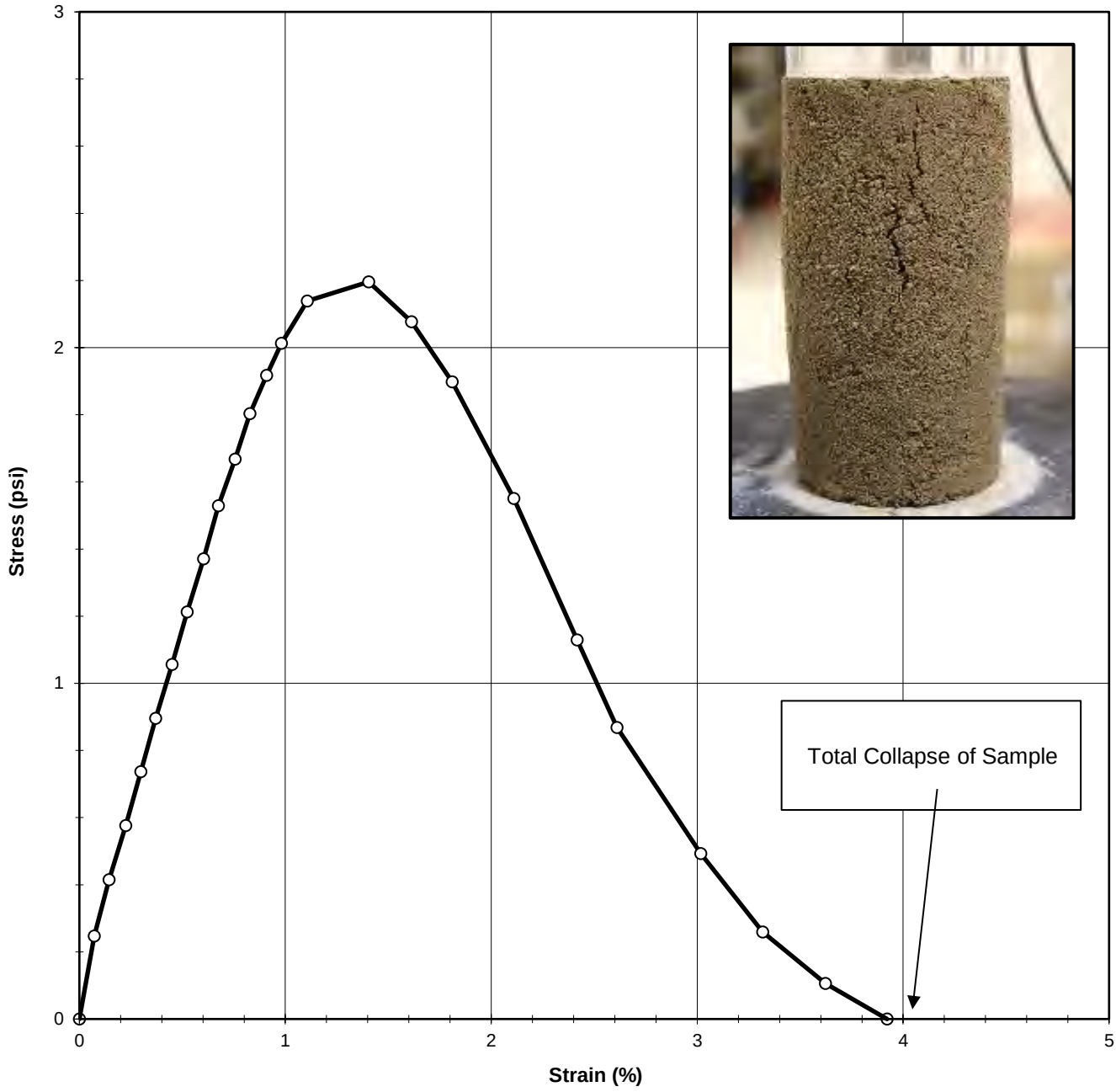
DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-006	Sample No.:	TS-S4 ISS
Lab ID:	R-2025-197-006-004	Visual:	Gray Brown Silt with Sand



Tested By	DL	Date	1/17/2026	Approved By	MPS	Date	1/19/2026

DCN: CT-S30 DATE: 11/09/09 REVISION: 4

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-006	Sample No.:	TS-S4 ISS
Lab ID:	R-2025-197-006-004	Visual:	Gray Brown Silt with Sand

INITIAL SAMPLE DIMENSIONS				WATER CONTENT AFTER TEST	
Length 1 (in):	5.984	Top Diameter (in):	2.873	Tare No.:	21-A
Length 2 (in):	5.984	Middle Diameter (in):	2.873	Weight of Tare & Wet Sample (g):	342.07
Length 3 (in):	5.984	Bottom Diameter (in):	2.873	Weight of Tare & Dry Sample (g):	319.44
Avg. Length (in):	**5.984**	**Avg. Diameter (in):**	**2.873**	Weight of Tare (g):	91.54
		Area (in^2):	**6.483**	Moisture Content (%):	9.93

UNIT WEIGHT			
Weight of Tube & Wet Sample (g):	2750.75	Sample Volume (cm^3):	635.7
Weight of Tube (g):	1542.73	Unit Wet Weight (g/cm^3):	1.90
Weight of Wet Sample (g):	1208.02	Unit Wet Weight (pcf):	118.58
Average Diameter (in):	2.87	Moisture Content (%):	9.93
Average Length (in):	5.98	Unit Dry Weight (pcf):	107.87
Average Length (cm):	15.20		

ELECTRONIC DEVICE DEFORMATION (in)	*LOAD (lb)*	*ELAPSED TIME (min)*	*STRAIN (%)*	*STRESS (psi)*
0.000	0.3	0.00	0.000	0.000
0.004	1.9	0.08	0.072	0.247
0.009	3.0	0.15	0.144	0.415
0.013	4.1	0.23	0.225	0.576
0.018	5.1	0.30	0.298	0.737
0.022	6.1	0.38	0.370	0.896
0.027	7.2	0.47	0.451	1.056
0.031	8.2	0.53	0.523	1.212
0.036	9.3	0.62	0.603	1.371
0.040	10.3	0.68	0.675	1.528
0.045	11.2	0.77	0.757	1.668
0.050	12.1	0.83	0.828	1.803
0.054	12.9	0.92	0.909	1.918
0.059	13.5	0.98	0.981	2.013
0.066	14.3	1.12	1.107	2.139
0.084	14.8	1.42	1.405	2.196
0.096	14.0	1.62	1.612	2.077
0.108	12.9	1.82	1.810	1.898
0.126	10.6	2.12	2.109	1.551
0.145	7.8	2.42	2.416	1.129
0.156	6.1	2.62	2.610	0.869
0.181	3.6	3.03	3.017	0.493
0.199	2.1	3.33	3.318	0.259
0.217	1.0	3.63	3.623	0.106
0.235	0.3	3.93	3.922	0.000

Tested By DL Date 1/17/2026 Input Checked By MPS Date 1/19/2026

DCN: CT-S30 DATE: 11/09/09 REVISION: 4

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PERMEABILITY TEST

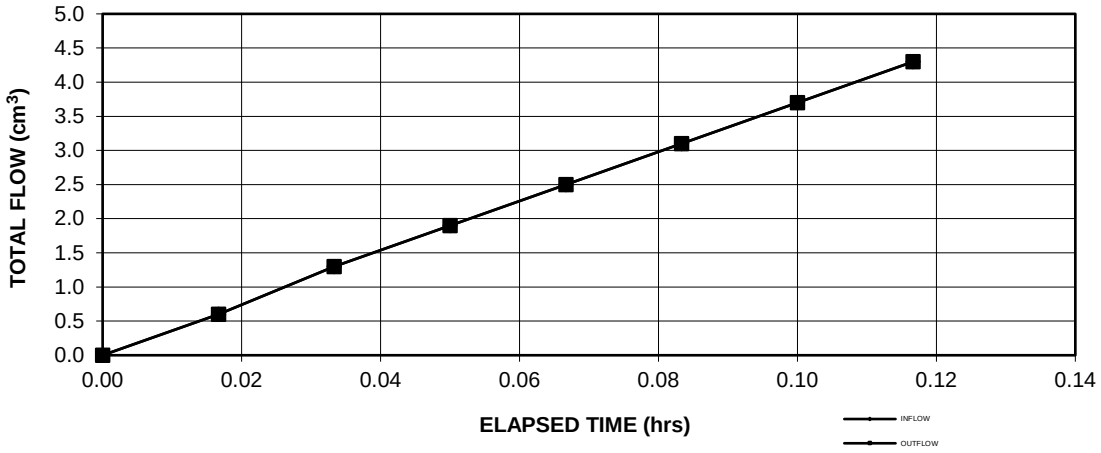
ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-WP ISS
Lab ID No.:	R-2025-197-006-005	Avg. Effective Consol. Pressure (psi):	20

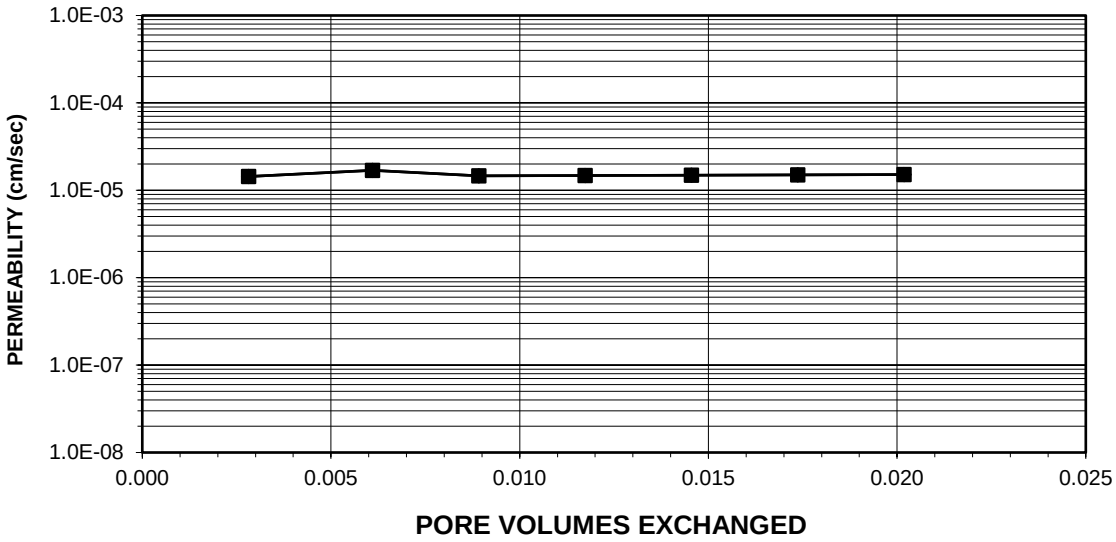
AVERAGE PERMEABILITY = 1.5E-05 cm/sec @ 20°C

AVERAGE PERMEABILITY = 1.5E-07 m/sec @ 20°C

TOTAL FLOW vs. ELAPSED TIME



PORE VOLUMES EXCHANGED vs. PERMEABILITY



Tested By: DL Date: 1/16/26 Checked By: AES Date: 1/19/26

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-WP ISS
Lab ID No.:	R-2025-197-006-005	Avg. Effective Consol. Pressure (psi):	20

Specific Gravity:	2.60	Measured
Sample Condition:		Remolded

Visual Description: Brown Silty Sand with Gravel

Permeant Type: Deaired Tap Water

MOISTURE CONTENT:	BEFORE TEST	AFTER TEST
Tare Number	7-A	439
Weight of Tare & Wet Sample (g)	385.45	581.91
Weight of Tare & Dry Sample (g)	311.54	448.41
Weight of Tare (g)	86.76	99.03
Weight of Water (g)	73.91	133.50
Weight of Dry Sample (g)	224.78	349.38
Moisture Content (%)	**32.9**	**38.2**

SPECIMEN:	BEFORE TEST	AFTER TEST
Weight of Tube & Wet Sample (g)	2303.95	NA
Weight of Tube (g)	1624.18	NA
Weight of Wet Sample (g)	679.77	707.03
Length 1 (in)	3.995	3.868
Length 2 (in)	3.995	3.881
Length 3 (in)	3.995	3.894
Top Diameter (in)	2.872	2.870
Middle Diameter (in)	2.872	2.853
Bottom Diameter (in)	2.872	2.870
Average Length (in)	4.00	3.88
Average Area (in^2)	6.48	6.44
Sample Volume (cm^3)	424.11	409.81
Unit Wet Weight (g/cm^3)	1.60	1.73
Unit Wet Weight (pcf)	100.1	107.7
Unit Dry Weight (pcf)	75.3	77.9
Unit Dry Weight (g/cm^3)	1.21	1.25
Void Ratio, e	1.16	1.08
Porosity, n	0.54	0.52
Pore Volume (cm^3)	227.4	213.1
Total Weight of Sample After Test (g)		709.76

Tested By: DL Date: 1/16/26 Checked By: AES Date: 1/19/26

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-WP ISS
Lab ID No.:	R-2025-197-006-005	Avg. Effective Consol. Pressure (psi):	20

Pressure Heads (Constant)	
Top Cap (psi)	79.0
Bottom Cap (psi)	81.0
Cell (psi)	100.0
Total Pressure Head (cm)	140.6
Hydraulic Gradient	14.26

Final Sample Dimensions	
Sample Length (cm), L	9.86
Sample Diameter (cm)	7.28
Sample Area (cm^2), A	41.57
Inflow Burette Area (cm^2), a-in	0.921
Outflow Burette Area (cm^2), a-out	0.921
B Parameter (%)	95

AVERAGE PERMEABILITY = 1.5E-05 cm/sec @ 20°C

AVERAGE PERMEABILITY = 1.5E-07 m/sec @ 20°C

DATE	TIME		ELAPSED TIME t	TOTAL INFLOW	TOTAL OUTFLOW	TOTAL HEAD h	FLOW (0 flow)	TEMP.	INCREMENTAL PERMEABILITY @ 20°C
(mm/dd/yy)	(hr)	(min)	(hr)	(cm^3)	(cm^3)	(cm)	(1 stop)	(°C)	(cm/sec)
1/17/26	20	4.0	0.000	0.0	0.0	164.3	0	19.9	NA
1/17/26	20	5.0	0.017	0.6	0.6	163.0	0	19.9	1.4E-05
1/17/26	20	6.0	0.033	1.3	1.3	161.5	0	19.9	1.7E-05
1/17/26	20	7.0	0.050	1.9	1.9	160.2	0	19.9	1.5E-05
1/17/26	20	8.0	0.067	2.5	2.5	158.9	0	19.9	1.5E-05
1/17/26	20	9.0	0.083	3.1	3.1	157.6	0	19.9	1.5E-05
1/17/26	20	10.0	0.100	3.7	3.7	156.3	0	19.9	1.5E-05
1/17/26	20	11.0	0.117	4.3	4.3	155.0	0	19.9	1.5E-05

Tested By: DL Date: 1/17/26 Checked By: AES Date: 1/19/26

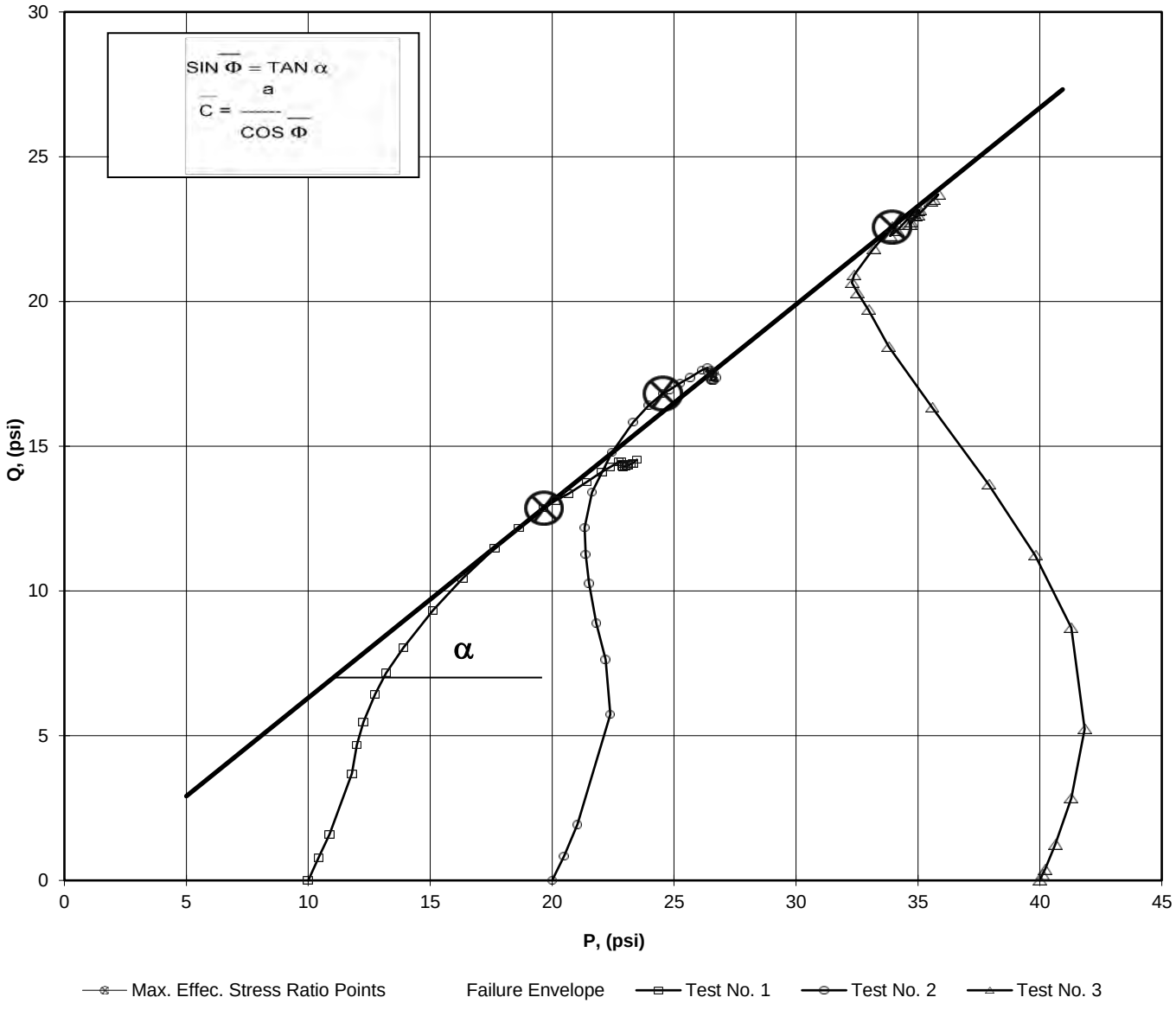
DCN: CT-22 DATE: 1/1/17 REVISION: 11

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-WP ISS
Lab ID:	R-2025-197-006-005		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	**0.00**	$\overline{C}$	=	**0.00**
α	=	**34.2**	$\overline{\Phi}$	=	**42.79**

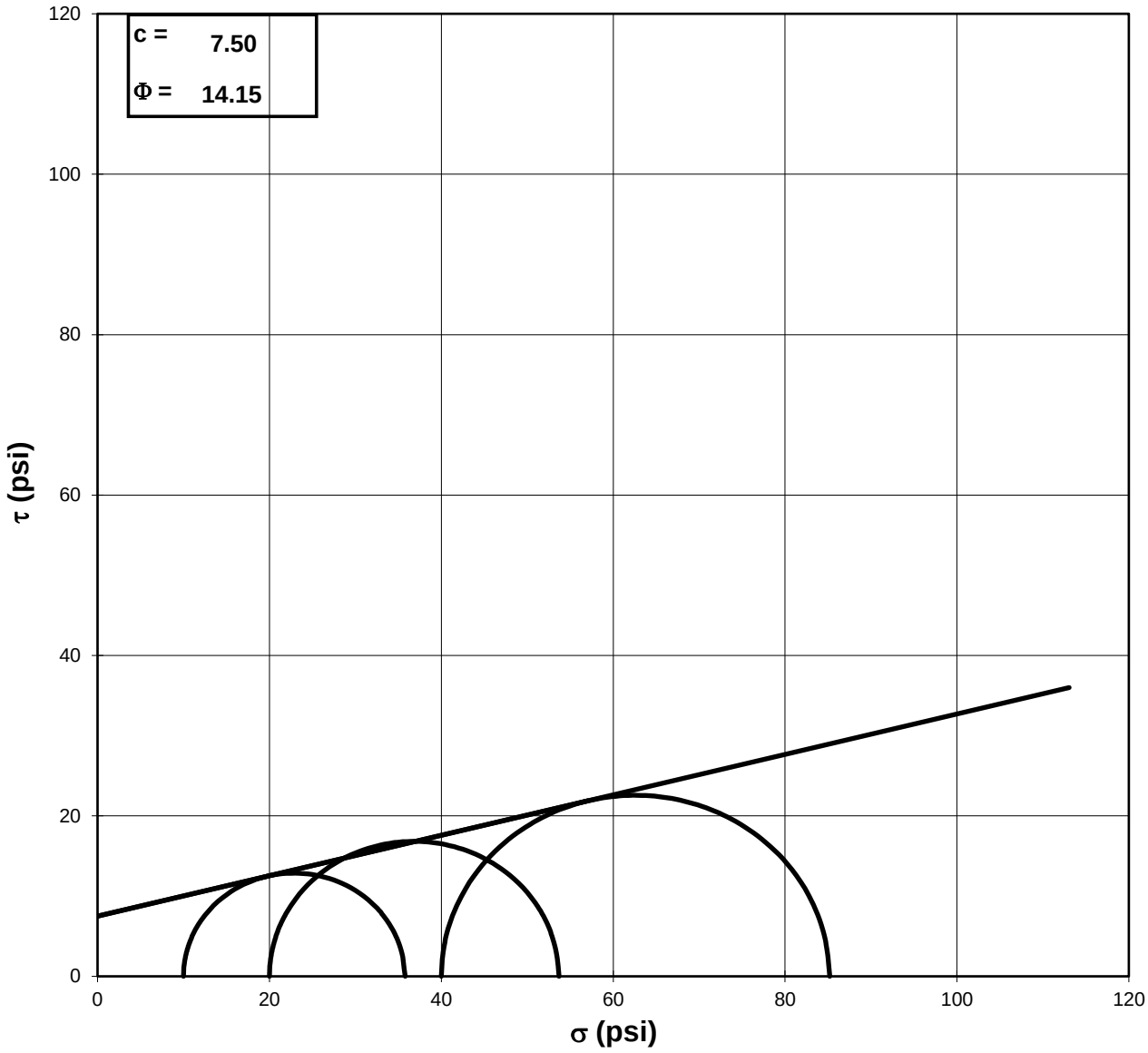
Tested By: DL Date: 1/16/26 Approved By: MPS Date: 1/20/26

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MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-WP ISS
Lab ID:	R-2025-197-006-005		
Visual Description:	Brown Silty Sand with Gravel (REMOLDED)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: DL *Date:* 1/16/26 *Approved By:* MPS *Date:* 1/20/26

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-WP ISS
Lab ID:	R-2025-197-006-005		

Visual Description: Brown Silty Sand with Gravel (REMOLDED)

Stage No.	1
Test No.	1

PRESSURES (psi)

Cell Pressure (psi)	90.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	10.0
Pore Pressure Response (%)	96

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	19.65
Q	=	12.86

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	10.1
Final Change (ml)	13.9
Initial Dial Reading (mil)	314
Dial Reading After Saturation (mil)	332
Dial Reading After Consolidation (mil)	372

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
19.4	0.000	80.0
29.4	0.001	80.4
39.5	0.003	80.7
66.2	0.008	81.9
79.0	0.014	82.7
89.1	0.020	83.2
101.4	0.029	83.7
110.9	0.037	84.0
122.4	0.048	84.1
139.2	0.068	84.2
154.0	0.098	84.1
168.3	0.133	83.8
178.4	0.169	83.5
188.6	0.210	83.2
192.9	0.239	83.0
197.3	0.280	82.7
204.6	0.336	82.4
211.2	0.395	82.1
215.1	0.439	81.9
219.7	0.498	81.7
221.4	0.542	81.6
222.1	0.586	81.5
222.4	0.630	81.4
223.2	0.660	81.4
225.0	0.689	81.3
226.4	0.718	81.3
227.6	0.748	81.2
230.0	0.792	81.2
232.4	0.836	81.1
235.3	0.865	81.1
237.6	0.895	81.0

Tested By: DL Date: 1/16/26 Input Checked By: MPS Date: 1/20/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-WP ISS
Lab ID:	R-2025-197-006-005		

Visual Description: Brown Silty Sand with Gravel (REMOLDED)

Effective Confining Pressure (psi)	10.0	*Stage No.*	1
		Test No	1

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	37.59
Length After Consolidation (in)	5.93
Area After Consolidation (in^2)	6.344

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	1.58	0.36	11.22	9.6	1.164	0.24	10.43	0.79
0.04	3.18	0.72	12.46	9.3	1.343	0.24	10.87	1.59
0.14	7.38	1.90	15.48	8.1	1.910	0.27	11.79	3.69
0.24	9.38	2.69	16.68	7.3	2.283	0.30	12.00	4.69
0.33	10.96	3.21	17.75	6.8	2.615	0.31	12.27	5.48
0.48	12.88	3.70	19.18	6.3	3.044	0.30	12.74	6.44
0.63	14.33	3.97	20.37	6.0	3.376	0.29	13.20	7.17
0.82	16.11	4.14	21.96	5.9	3.749	0.27	13.91	8.05
1.15	18.67	4.22	24.45	5.8	4.228	0.24	15.12	9.33
1.65	20.88	4.10	26.78	5.9	4.538	0.20	16.34	10.44
2.25	22.94	3.83	29.11	6.2	4.721	0.17	17.64	11.47
2.84	24.35	3.54	30.81	6.5	4.772	0.15	18.63	12.18
3.55	25.73	3.21	32.51	6.8	4.791	0.13	19.65	12.86
4.03	26.26	2.98	33.28	7.0	4.741	0.12	20.15	13.13
4.72	26.73	2.68	34.05	7.3	4.652	0.10	20.68	13.36
5.68	27.54	2.35	35.19	7.6	4.600	0.09	21.42	13.77
6.67	28.23	2.08	36.15	7.9	4.563	0.08	22.04	14.11
7.41	28.57	1.90	36.67	8.1	4.526	0.07	22.39	14.28
8.40	28.93	1.73	37.21	8.3	4.497	0.06	22.74	14.47
9.15	28.93	1.62	37.31	8.4	4.451	0.06	22.85	14.46
9.89	28.80	1.50	37.30	8.5	4.387	0.05	22.90	14.40
10.63	28.61	1.43	37.18	8.6	4.337	0.05	22.88	14.30
11.13	28.56	1.37	37.19	8.6	4.309	0.05	22.91	14.28
11.62	28.65	1.32	37.32	8.7	4.301	0.05	23.00	14.32
12.11	28.68	1.28	37.41	8.7	4.288	0.05	23.07	14.34
12.61	28.68	1.23	37.45	8.8	4.268	0.04	23.11	14.34
13.36	28.77	1.16	37.61	8.8	4.254	0.04	23.23	14.39
14.11	28.84	1.10	37.74	8.9	4.241	0.04	23.32	14.42
14.60	29.07	1.06	38.01	8.9	4.251	0.04	23.48	14.53
15.10	29.21	1.03	38.17	9.0	4.258	0.04	23.57	14.60

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-WP ISS
Lab ID:	R-2025-197-006-005		

Visual Description: Brown Silty Sand with Gravel (REMOLDED)

Stage No.	1
Test No.	2

PRESSURES (psi)

Cell Pressure (psi)	100.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	20.0
Pore Pressure Response (%)	96

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	24.55
Q	=	16.82

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	3.6
Final Change (ml)	20.4

Initial Dial Reading (mil)	340
Dial Reading After Saturation (mil)	360
Dial Reading After Consolidation (mil)	426

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
18.6	0.000	80.0
29.2	0.001	80.4
42.9	0.002	80.9
91.0	0.008	83.3
114.9	0.014	85.4
131.0	0.019	87.1
148.6	0.029	88.7
161.4	0.037	89.9
173.5	0.049	90.9
189.7	0.071	91.8
208.2	0.100	92.3
222.8	0.136	92.5
231.7	0.172	92.4
238.6	0.213	92.3
241.3	0.243	92.1
246.1	0.285	91.9
251.1	0.342	91.7
257.0	0.402	91.5
260.1	0.446	91.3
260.8	0.506	91.2
263.4	0.551	91.1
264.6	0.596	91.0
266.3	0.641	91.0
268.0	0.670	90.9
267.4	0.701	90.8
267.6	0.731	90.8
268.7	0.761	90.8
270.6	0.806	90.7
272.9	0.851	90.6
275.8	0.881	90.6
276.2	0.910	90.6

Tested By: DL Date: 1/16/26 Input Checked By: MPS Date: 1/20/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-WP ISS
Lab ID:	R-2025-197-006-005		

Visual Description: Brown Silty Sand with Gravel (REMOLDED)

Effective Confining Pressure (psi)	20.0	*Stage No.*	1
		Test No	2

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	37.16
Length After Consolidation (in)	5.90
Area After Consolidation (in^2)	6.300

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	1.68	0.35	21.33	19.6	1.086	0.22	20.49	0.84
0.04	3.86	0.89	22.96	19.1	1.202	0.24	21.04	1.93
0.13	11.47	3.34	28.13	16.7	1.688	0.30	22.39	5.73
0.23	15.25	5.43	29.82	14.6	2.047	0.37	22.20	7.62
0.33	17.78	7.08	30.69	12.9	2.376	0.42	21.81	8.89
0.49	20.53	8.75	31.78	11.3	2.824	0.44	21.52	10.26
0.63	22.52	9.88	32.63	10.1	3.226	0.46	21.37	11.26
0.83	24.37	10.85	33.52	9.1	3.664	0.46	21.33	12.19
1.20	26.83	11.78	35.04	8.2	4.264	0.46	21.63	13.41
1.69	29.58	12.34	37.24	7.7	4.859	0.43	22.45	14.79
2.30	31.67	12.50	39.16	7.5	5.224	0.41	23.33	15.83
2.91	32.83	12.45	40.38	7.6	5.348	0.40	23.96	16.41
3.61	33.65	12.28	41.37	7.7	5.357	0.38	24.55	16.82
4.12	33.88	12.14	41.75	7.9	5.310	0.37	24.80	16.94
4.83	34.36	11.93	42.43	8.1	5.259	0.36	25.25	17.18
5.79	34.76	11.71	43.05	8.3	5.193	0.35	25.67	17.38
6.81	35.25	11.48	43.77	8.5	5.139	0.34	26.14	17.63
7.57	35.42	11.34	44.08	8.7	5.089	0.33	26.37	17.71
8.58	35.14	11.19	43.95	8.8	4.989	0.33	26.38	17.57
9.34	35.21	11.09	44.12	8.9	4.953	0.33	26.52	17.61
10.11	35.10	11.01	44.09	9.0	4.904	0.33	26.54	17.55
10.86	35.03	10.96	44.07	9.0	4.875	0.33	26.56	17.52
11.36	35.09	10.91	44.17	9.1	4.862	0.32	26.63	17.54
11.88	34.79	10.84	43.95	9.2	4.798	0.32	26.55	17.39
12.39	34.62	10.79	43.82	9.2	4.760	0.32	26.51	17.31
12.90	34.57	10.75	43.82	9.2	4.738	0.32	26.54	17.29
13.66	34.52	10.69	43.84	9.3	4.707	0.32	26.58	17.26
14.42	34.54	10.64	43.90	9.4	4.690	0.32	26.63	17.27
14.93	34.73	10.63	44.10	9.4	4.705	0.32	26.74	17.36
15.44	34.57	10.62	43.95	9.4	4.686	0.32	26.66	17.29

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-WP ISS
Lab ID:	R-2025-197-006-005		

Visual Description: Brown Silty Sand with Gravel (REMOLDED)

Stage No.	1
Test No.	3

PRESSURES (psi)

Cell Pressure (psi)	120.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	40.0
Pore Pressure Response (%)	96

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	33.94
Q	=	22.57

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	10.5
Final Change (ml)	37.5

Initial Dial Reading (mil)	270
Dial Reading After Saturation (mil)	292
Dial Reading After Consolidation (mil)	430

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
23.7	0.000	80.0
26.1	0.002	80.1
28.5	0.003	80.2
39.2	0.009	80.6
59.0	0.014	81.5
88.7	0.020	83.4
132.4	0.028	87.4
163.8	0.037	91.4
194.7	0.049	95.8
228.6	0.069	100.8
256.1	0.099	104.6
273.9	0.135	106.8
282.8	0.171	107.8
289.3	0.214	108.4
294.2	0.244	108.5
308.0	0.285	108.6
320.8	0.342	108.6
325.3	0.402	108.5
322.5	0.448	108.4
328.2	0.507	108.3
339.3	0.552	108.2
343.2	0.597	108.1
346.2	0.642	108.1
345.1	0.672	108.1
343.9	0.703	108.0
344.9	0.732	108.0
351.2	0.762	108.0
361.0	0.807	107.9
367.6	0.852	107.9
367.0	0.882	107.9
363.1	0.912	107.9

Tested By: DL Date: 1/16/26 Input Checked By: MPS Date: 1/20/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-WP ISS
Lab ID:	R-2025-197-006-005		

Visual Description: Brown Silty Sand with Gravel (REMOLDED)

Effective Confining Pressure (psi)	40.0	*Stage No.*	1
		Test No	3

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

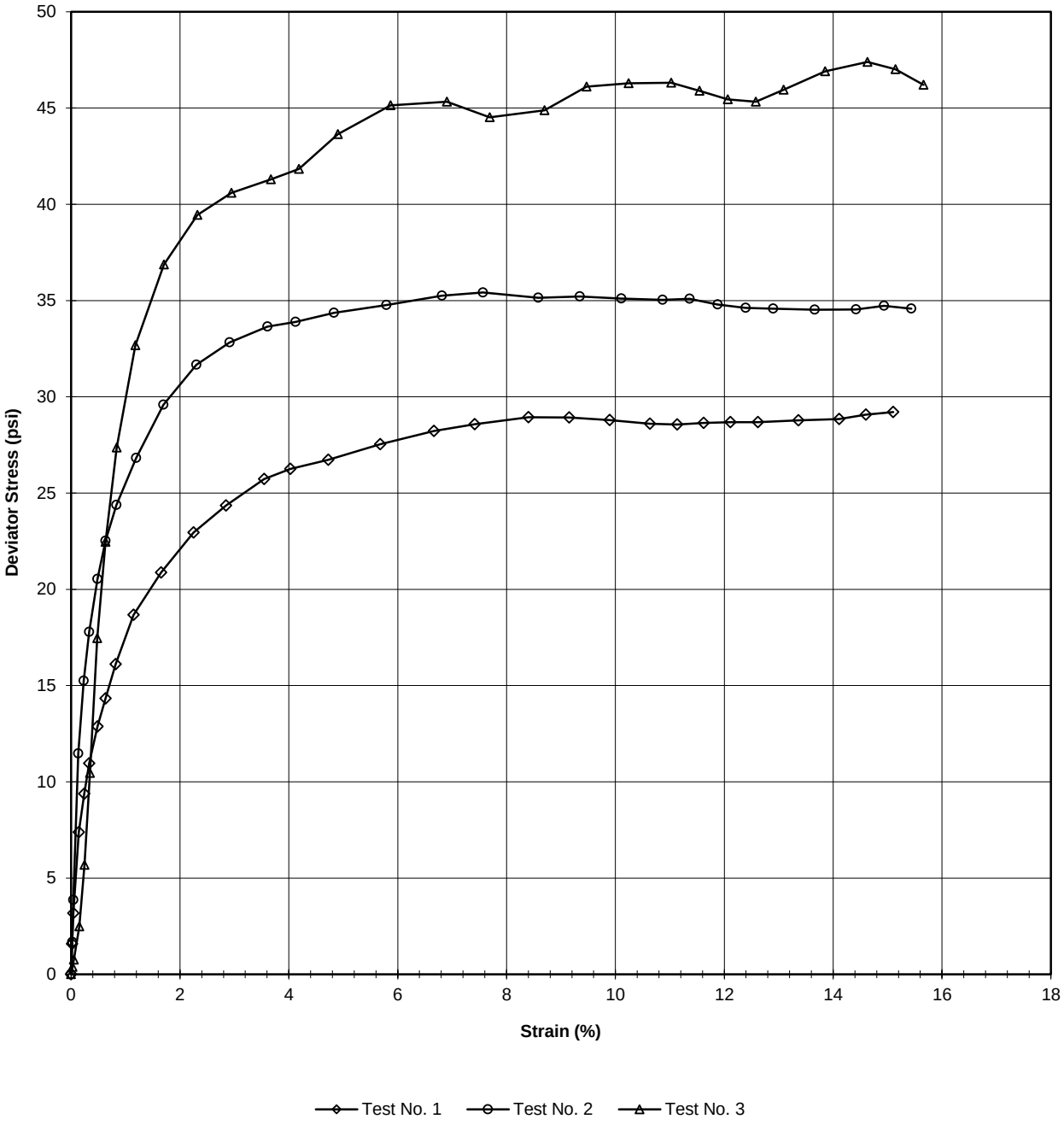
Volume After Consolidation (in^3)	36.08
Length After Consolidation (in)	5.82
Area After Consolidation (in^2)	6.194

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.03	0.38	0.09	40.29	39.9	1.010	0.25	40.10	0.19
0.05	0.76	0.17	40.59	39.8	1.019	0.23	40.21	0.38
0.15	2.49	0.61	41.87	39.4	1.063	0.26	40.63	1.24
0.25	5.68	1.55	44.13	38.5	1.148	0.28	41.29	2.84
0.34	10.45	3.39	47.06	36.6	1.286	0.34	41.84	5.23
0.48	17.46	7.44	50.03	32.6	1.536	0.44	41.30	8.73
0.63	22.47	11.43	51.04	28.6	1.786	0.53	39.80	11.23
0.84	27.37	15.78	51.58	24.2	2.130	0.60	37.90	13.68
1.18	32.68	20.76	51.92	19.2	2.698	0.66	35.58	16.34
1.71	36.88	24.63	52.25	15.4	3.399	0.70	33.81	18.44
2.32	39.44	26.75	52.69	13.2	3.978	0.71	32.97	19.72
2.94	40.60	27.76	52.83	12.2	4.318	0.71	32.53	20.30
3.67	41.30	28.36	52.94	11.6	4.548	0.72	32.29	20.65
4.18	41.83	28.54	53.30	11.5	4.649	0.71	32.38	20.92
4.90	43.64	28.64	55.00	11.4	4.843	0.68	33.18	21.82
5.87	45.14	28.63	56.50	11.4	4.971	0.66	33.94	22.57
6.90	45.33	28.53	56.80	11.5	4.950	0.66	34.14	22.66
7.69	44.52	28.41	56.12	11.6	4.841	0.66	33.85	22.26
8.70	44.88	28.30	56.57	11.7	4.837	0.66	34.14	22.44
9.47	46.11	28.24	57.87	11.8	4.921	0.64	34.82	23.06
10.24	46.29	28.13	58.16	11.9	4.901	0.63	35.01	23.15
11.03	46.31	28.09	58.22	11.9	4.889	0.63	35.06	23.15
11.54	45.90	28.07	57.83	11.9	4.846	0.64	34.88	22.95
12.06	45.45	28.03	57.43	12.0	4.797	0.64	34.70	22.73
12.58	45.32	28.00	57.32	12.0	4.778	0.64	34.66	22.66
13.09	45.95	27.98	57.97	12.0	4.822	0.63	34.99	22.97
13.85	46.90	27.91	58.99	12.1	4.881	0.62	35.54	23.45
14.63	47.40	27.86	59.53	12.1	4.905	0.61	35.83	23.70
15.14	47.02	27.86	59.16	12.1	4.874	0.62	35.65	23.51
15.66	46.21	27.85	58.35	12.1	4.804	0.63	35.25	23.10

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-WP ISS
Lab ID:	R-2025-197-006-005		
Visual Description:	Brown Silty Sand with Gravel (REMOLDED)		



Tested By: DL Date: 1/16/26 Approved By: MPS Date: 1/20/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.		
Client Reference:	Housatonic 5A		
Project No.:	R-2025-197-006		
Lab ID:	R-2025-197-006-005	Specific Gravity (Measured)	2.60

Visual Description: Brown Silty Sand with Gravel (REMOLDED)

SAMPLE CONDITION SUMMARY

Boring No.:	N/A	N/A	N/A
Depth (ft):	N/A	N/A	N/A
Sample No.:	TS-WP ISS	TS-WP ISS	TS-WP ISS
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.001	0.001	0.001
Back Pressure (psi)	80	80	80
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	32.9	32.9	32.9
Total Unit Weight (pcf)	99.7	99.8	99.8
Dry Unit Weight (pcf)	75.0	75.1	75.1
Moisture Content (%) (FINAL)	39.5	38.4	37.5
Initial State Void Ratio,e	1.163	1.161	1.161
Void Ratio at Shear, e	1.097	1.070	1.010





Tested By: DL Date: 1/16/26 Input Checked By: MPS Date: 1/20/26

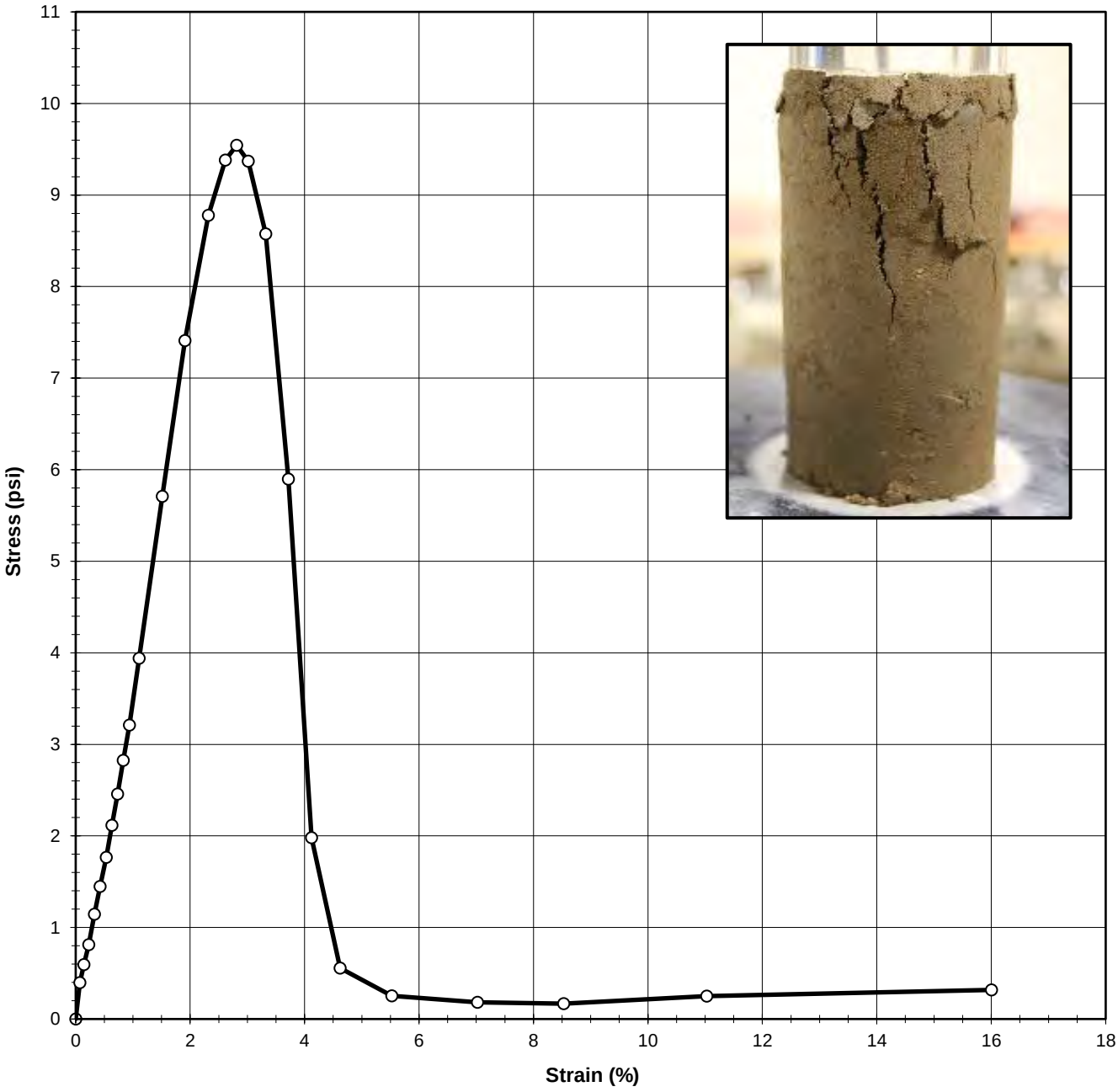
DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-006	Sample No.:	TS-WP ISS
Lab ID:	R-2025-197-006-005	Visual:	Brown Silty Sand



Tested By	DL	Date	1/17/2026	Approved By	MPS	Date	1/19/2026

DCN: CT-S30 DATE: 11/09/09 REVISION: 4

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

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Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-006	Sample No.:	TS-WP ISS
Lab ID:	R-2025-197-006-005	Visual:	Brown Silty Sand

INITIAL SAMPLE DIMENSIONS				WATER CONTENT AFTER TEST	
Length 1 (in):	5.984	Top Diameter (in):	2.873	Tare No.:	7-A
Length 2 (in):	5.984	Middle Diameter (in):	2.873	Weight of Tare & Wet Sample (g):	385.45
Length 3 (in):	5.984	Bottom Diameter (in):	2.873	Weight of Tare & Dry Sample (g):	311.54
Avg. Length (in):	**5.984**	**Avg. Diameter (in):**	**2.873**	Weight of Tare (g):	86.76
		Area (in^2):	**6.483**	Moisture Content (%):	32.88

UNIT WEIGHT			
Weight of Tube & Wet Sample (g):	2558.72	Sample Volume (cm^3):	635.7
Weight of Tube (g):	1542.73	Unit Wet Weight (g/cm^3):	1.60
Weight of Wet Sample (g):	1015.99	Unit Wet Weight (pcf):	99.73
Average Diameter (in):	2.87	Moisture Content (%):	32.88
Average Length (in):	5.98	Unit Dry Weight (pcf):	75.05
Average Length (cm):	15.20		

ELECTRONIC DEVICE DEFORMATION (in)	*LOAD (lb)*	*ELAPSED TIME (min)*	*STRAIN (%)*	*STRESS (psi)*
0.000	0.6	0.00	0.000	0.000
0.004	3.2	0.07	0.073	0.397
0.009	4.5	0.15	0.145	0.594
0.014	5.9	0.22	0.227	0.813
0.020	8.1	0.33	0.328	1.144
0.025	10.1	0.43	0.426	1.448
0.032	12.1	0.53	0.534	1.764
0.038	14.4	0.63	0.633	2.116
0.044	16.7	0.73	0.732	2.457
0.050	19.1	0.83	0.830	2.825
0.056	21.6	0.93	0.938	3.209
0.066	26.5	1.12	1.109	3.939
0.091	38.2	1.52	1.516	5.708
0.114	49.6	1.92	1.910	7.408
0.139	58.9	2.32	2.318	8.778
0.157	63.1	2.62	2.616	9.382
0.168	64.3	2.82	2.815	9.543
0.180	63.3	3.02	3.014	9.370
0.199	58.1	3.32	3.321	8.575
0.222	40.3	3.72	3.716	5.896
0.247	14.0	4.12	4.121	1.979
0.276	4.4	4.62	4.620	0.556
0.330	2.4	5.52	5.522	0.253
0.420	1.9	7.03	7.021	0.184
0.510	1.8	8.53	8.527	0.167
0.660	2.5	11.03	11.028	0.250
0.958	3.1	16.02	16.002	0.319

Tested By DL Date 1/17/2026 Input Checked By MPS Date 1/19/2026

DCN: CT-S30 DATE: 11/09/09 REVISION: 4

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PERMEABILITY TEST

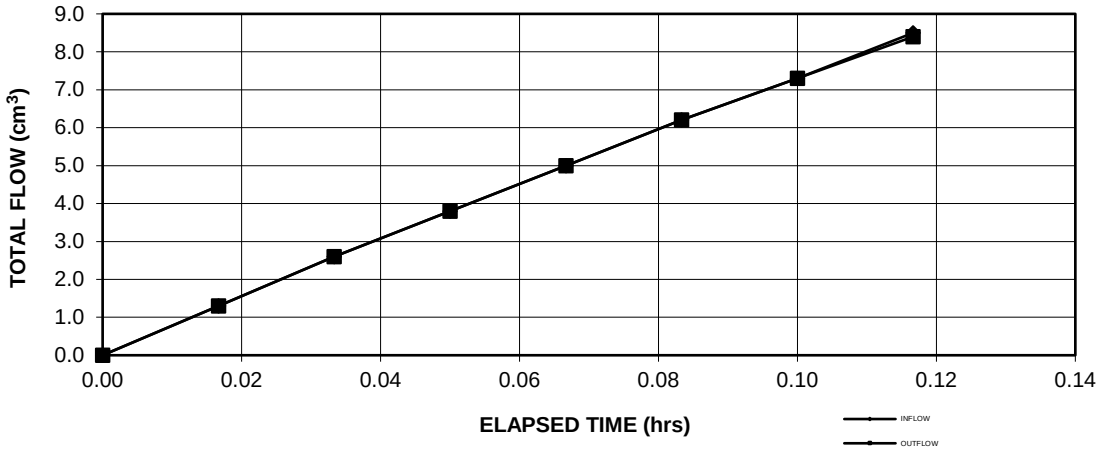
ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-BW5 ISS
Lab ID No.:	R-2025-197-006-006	Avg. Effective Consol. Pressure (psi):	20

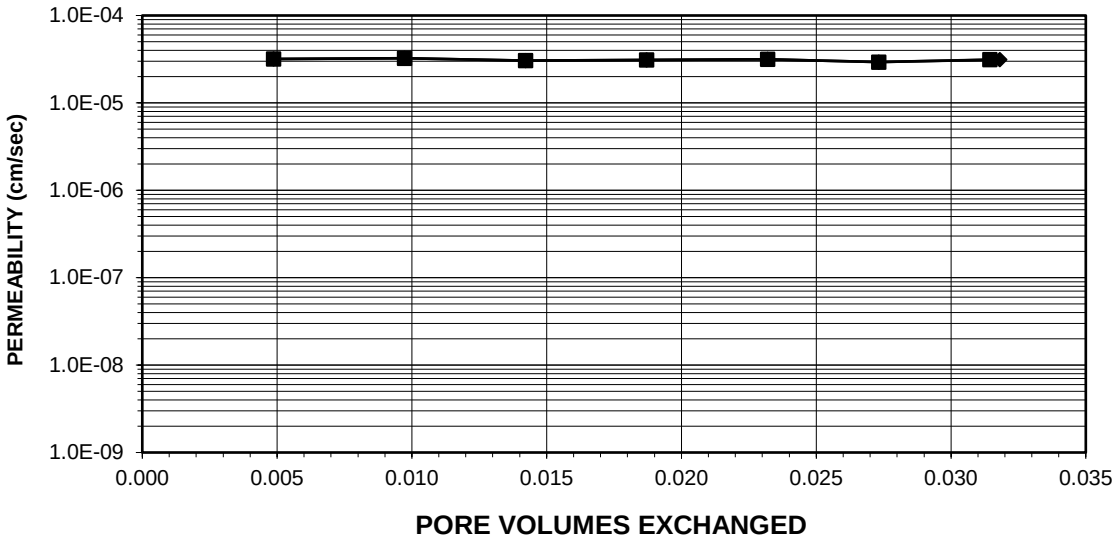
AVERAGE PERMEABILITY = 3.1E-05 cm/sec @ 20°C

AVERAGE PERMEABILITY = 3.1E-07 m/sec @ 20°C

TOTAL FLOW vs. ELAPSED TIME



PORE VOLUMES EXCHANGED vs. PERMEABILITY



Tested By: DL Date: 1/17/26 Checked By: AES Date: 1/19/26

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-BW5 ISS
Lab ID No.:	R-2025-197-006-006	Avg. Effective Consol. Pressure (psi):	20

Specific Gravity:	2.51	Measured
Sample Condition:		Remolded

Visual Description: Gray Brown Sandy Elastic Silt

Permeant Type: Deaired Tap Water

MOISTURE CONTENT:	BEFORE TEST	AFTER TEST
Tare Number	9-A	714
Weight of Tare & Wet Sample (g)	356.28	477.71
Weight of Tare & Dry Sample (g)	258.22	314.03
Weight of Tare (g)	90.56	87.10
Weight of Water (g)	98.06	163.68
Weight of Dry Sample (g)	167.66	226.93
Moisture Content (%)	**58.5**	**72.1**

SPECIMEN:	BEFORE TEST	AFTER TEST
Weight of Tube & Wet Sample (g)	2190.36	NA
Weight of Tube (g)	1624.18	NA
Weight of Wet Sample (g)	566.18	614.91
Length 1 (in)	3.995	3.903
Length 2 (in)	3.995	3.901
Length 3 (in)	3.995	3.899
Top Diameter (in)	2.872	2.861
Middle Diameter (in)	2.872	2.847
Bottom Diameter (in)	2.872	2.860
Average Length (in)	4.00	3.90
Average Area (in^2)	6.48	6.41
Sample Volume (cm^3)	424.11	409.53
Unit Wet Weight (g/cm^3)	1.33	1.50
Unit Wet Weight (pcf)	83.3	93.7
Unit Dry Weight (pcf)	52.6	54.5
Unit Dry Weight (g/cm^3)	0.84	0.87
Void Ratio, e	1.98	1.88
Porosity, n	0.66	0.65
Pore Volume (cm^3)	281.8	267.2
Total Weight of Sample After Test (g)		615.03

Tested By: DL Date: 1/17/26 Checked By: AES Date: 1/19/26

DCN: CT-22 DATE: 1/1/17 REVISION: 11

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PERMEABILITY TEST

ASTM D 5084-16a Method C

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Project:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-BW5 ISS
Lab ID No.:	R-2025-197-006-006	Avg. Effective Consol. Pressure (psi):	20

Pressure Heads (Constant)	
Top Cap (psi)	79.0
Bottom Cap (psi)	81.0
Cell (psi)	100.0
Total Pressure Head (cm)	140.6
Hydraulic Gradient	14.19

Final Sample Dimensions	
Sample Length (cm), L	9.91
Sample Diameter (cm)	7.25
Sample Area (cm^2), A	41.33
Inflow Burette Area (cm^2), a-in	0.921
Outflow Burette Area (cm^2), a-out	0.921
B Parameter (%)	96

AVERAGE PERMEABILITY = 3.1E-05 cm/sec @ 20°C

AVERAGE PERMEABILITY = 3.1E-07 m/sec @ 20°C

DATE	TIME		ELAPSED TIME t	TOTAL INFLOW	TOTAL OUTFLOW	TOTAL HEAD h	FLOW (0 flow)	TEMP.	INCREMENTAL PERMEABILITY @ 20°C
(mm/dd/yy)	(hr)	(min)	(hr)	(cm^3)	(cm^3)	(cm)	(1 stop)	(°C)	(cm/sec)
1/19/26	17	41.0	0.000	0.0	0.0	163.5	0	19.8	NA
1/19/26	17	42.0	0.017	1.3	1.3	160.7	0	19.8	3.2E-05
1/19/26	17	43.0	0.033	2.6	2.6	157.9	0	19.8	3.2E-05
1/19/26	17	44.0	0.050	3.8	3.8	155.3	0	19.8	3.0E-05
1/19/26	17	45.0	0.067	5.0	5.0	152.8	0	19.8	3.1E-05
1/19/26	17	46.0	0.083	6.2	6.2	150.2	0	19.8	3.1E-05
1/19/26	17	47.0	0.100	7.3	7.3	147.8	0	19.8	2.9E-05
1/19/26	17	48.0	0.117	8.5	8.4	145.3	0	19.8	3.1E-05

Tested By: DL Date: 1/19/26 Checked By: AES Date: 1/19/26

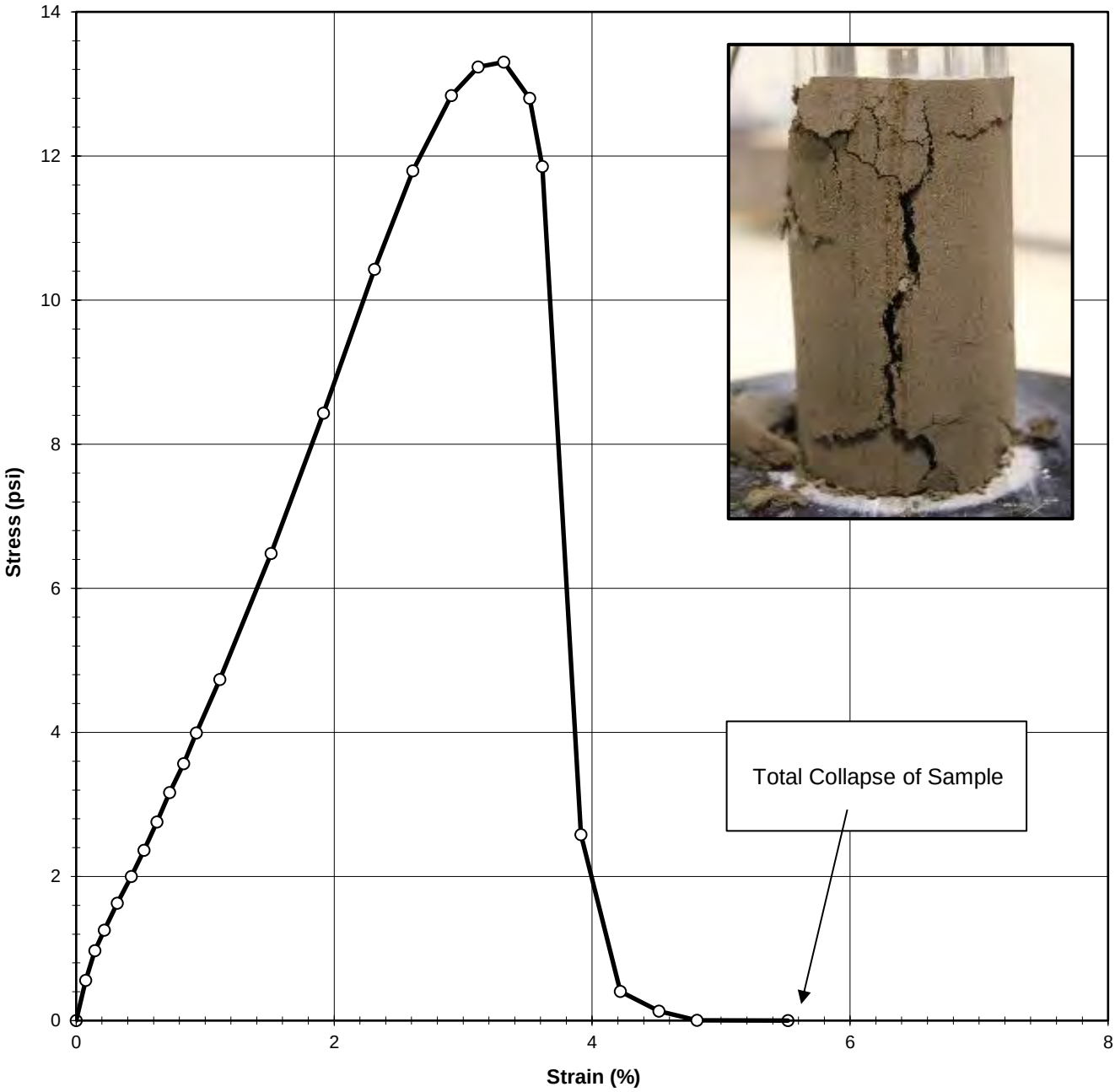
DCN: CT-22 DATE: 1/1/17 REVISION: 11

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-006	Sample No.:	TS-BW5 ISS
Lab ID:	R-2025-197-006-006	Visual:	Gray Brown Sandy Elastic Silt



Tested By	DL	Date	1/17/2026	Approved By	MPS	Date	1/19/2026

DCN: CT-S30 DATE: 11/09/09 REVISION: 4

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UNCONFINED COMPRESSIVE STRENGTH

ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

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Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-006	Sample No.:	TS-BW5 ISS
Lab ID:	R-2025-197-006-006	Visual:	Gray Brown Sandy Elastic Silt

INITIAL SAMPLE DIMENSIONS			
Length 1 (in):	5.984	Top Diameter (in):	2.873
Length 2 (in):	5.984	Middle Diameter (in):	2.873
Length 3 (in):	5.984	Bottom Diameter (in):	2.873
Avg. Length (in):	**5.984**	**Avg. Diameter (in):**	**2.873**
		Area (in^2):	**6.483**

WATER CONTENT AFTER TEST	
Tare No.:	9-A
Weight of Tare & Wet Sample (g):	356.28
Weight of Tare & Dry Sample (g):	258.22
Weight of Tare (g):	90.56
Moisture Content (%):	58.49

UNIT WEIGHT			
Weight of Tube & Wet Sample (g):	2390.74	Sample Volume (cm^3):	635.7
Weight of Tube (g):	1542.73	Unit Wet Weight (g/cm^3):	1.33
Weight of Wet Sample (g):	848.01	Unit Wet Weight (pcf):	83.24
Average Diameter (in):	2.87	Moisture Content (%):	58.49
Average Length (in):	5.98	Unit Dry Weight (pcf):	52.52
Average Length (cm):	15.20		

ELECTRONIC DEVICE DEFORMATION (in)	*LOAD (lb)*	*ELAPSED TIME (min)*	*STRAIN (%)*	*STRESS (psi)*
0.000	0.8	0.00	0.000	0.000
0.004	4.4	0.07	0.074	0.557
0.009	7.1	0.15	0.146	0.969
0.013	8.9	0.22	0.219	1.256
0.019	11.4	0.32	0.319	1.628
0.026	13.8	0.42	0.427	2.000
0.031	16.2	0.53	0.526	2.365
0.037	18.7	0.63	0.626	2.757
0.043	21.4	0.73	0.725	3.163
0.050	24.1	0.83	0.833	3.567
0.056	26.9	0.93	0.932	3.994
0.067	31.8	1.12	1.113	4.733
0.090	43.4	1.52	1.511	6.483
0.115	56.5	1.92	1.917	8.432
0.138	69.9	2.32	2.313	10.425
0.156	79.3	2.62	2.611	11.793
0.174	86.5	2.92	2.909	12.839
0.187	89.3	3.12	3.117	13.234
0.198	90.0	3.32	3.316	13.304
0.210	86.8	3.52	3.515	12.803
0.216	80.5	3.62	3.614	11.854
0.234	18.2	3.92	3.913	2.580
0.252	3.5	4.22	4.218	0.406
0.270	1.6	4.52	4.517	0.130
0.288	0.8	4.82	4.813	0.005
0.330	0.2	5.52	5.518	0.000

Tested By DL Date 1/17/2026 Input Checked By MPS Date 1/19/2026

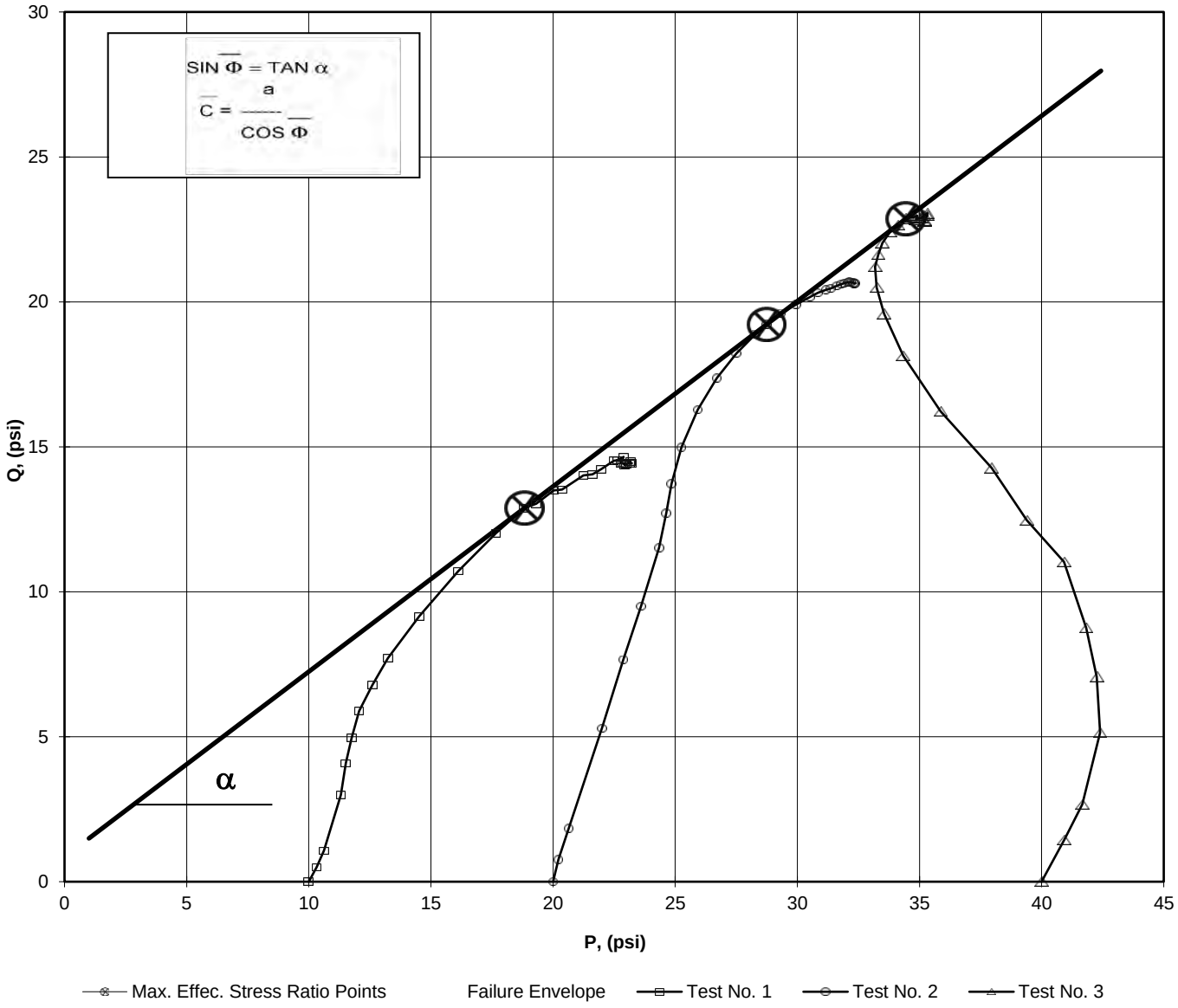
DCN: CT-S30 DATE: 11/09/09 REVISION: 4

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-BW5 ISS
Lab ID:	R-2025-197-006-006		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	**0.00**	$\overline{C}$	=	**0.00**
α	=	**32.6**	$\overline{\Phi}$	=	**39.72**

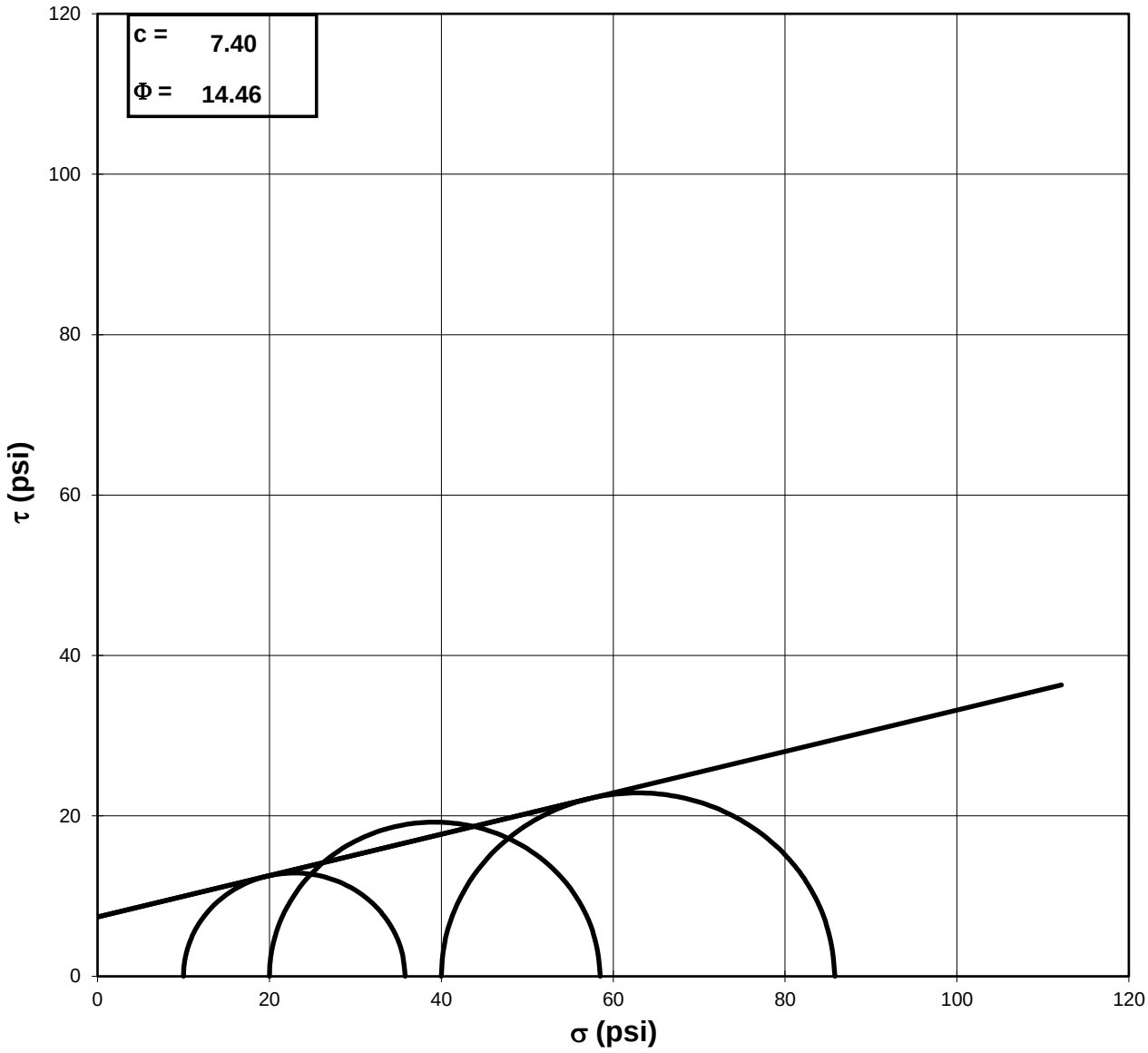
Tested By: DL Date: 1/17/26 Approved By: MPS Date: 1/21/26

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MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-BW5 ISS
Lab ID:	R-2025-197-006-006		
Visual Description:	Gray Brown Sandy Elastic Silt (REMOLDED)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: DL *Date:* 1/17/26 *Approved By:* MPS *Date:* 1/21/26

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-BW5 ISS
Lab ID:	R-2025-197-006-006		

Visual Description: Gray Brown Sandy Elastic Silt (REMOLDED)

Stage No.	1
Test No.	1

PRESSURES (psi)

Cell Pressure (psi)	90.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	10.0
Pore Pressure Response (%)	95

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	18.82
Q	=	12.88

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	9.1
Final Change (ml)	14.9
Initial Dial Reading (mil)	213
Dial Reading After Saturation (mil)	233
Dial Reading After Consolidation (mil)	292

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
17.1	0.000	80.0
23.5	0.001	80.2
30.6	0.003	80.4
55.1	0.008	81.7
69.2	0.014	82.6
80.3	0.020	83.2
92.2	0.030	83.8
103.9	0.038	84.2
115.8	0.050	84.5
134.8	0.071	84.6
155.5	0.100	84.6
173.3	0.135	84.4
185.5	0.170	84.1
188.8	0.211	83.7
195.8	0.240	83.5
197.5	0.281	83.2
205.8	0.337	82.8
208.4	0.396	82.4
212.4	0.440	82.3
218.5	0.499	82.0
220.5	0.543	81.9
223.7	0.587	81.8
222.4	0.631	81.7
223.4	0.661	81.6
224.6	0.691	81.5
225.0	0.720	81.5
226.5	0.749	81.4
229.6	0.793	81.3
230.5	0.836	81.3
231.9	0.867	81.2
231.9	0.896	81.2

Tested By: DL Date: 1/17/26 Input Checked By: MPS Date: 1/21/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-BW5 ISS
Lab ID:	R-2025-197-006-006		

Visual Description: Gray Brown Sandy Elastic Silt (REMOLDED)

Effective Confining Pressure (psi)	10.0	*Stage No.*	1
		Test No	1

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	37.49
Length After Consolidation (in)	5.91
Area After Consolidation (in^2)	6.350

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	1.01	0.18	10.83	9.8	1.103	0.19	10.33	0.51
0.05	2.13	0.45	11.68	9.6	1.223	0.22	10.62	1.07
0.14	5.98	1.68	14.30	8.3	1.719	0.30	11.31	2.99
0.24	8.19	2.57	15.61	7.4	2.103	0.33	11.52	4.09
0.34	9.92	3.20	16.72	6.8	2.458	0.34	11.76	4.96
0.50	11.77	3.82	17.95	6.2	2.904	0.34	12.07	5.88
0.65	13.58	4.18	19.40	5.8	3.335	0.32	12.61	6.79
0.84	15.42	4.47	20.95	5.5	3.787	0.30	13.24	7.71
1.20	18.33	4.64	23.69	5.4	4.417	0.27	14.53	9.16
1.69	21.44	4.59	26.85	5.4	4.964	0.23	16.13	10.72
2.28	24.05	4.36	29.69	5.6	5.260	0.19	17.67	12.02
2.88	25.76	4.06	31.70	5.9	5.338	0.17	18.82	12.88
3.57	26.09	3.73	32.35	6.3	5.163	0.15	19.31	13.04
4.07	27.00	3.47	33.52	6.5	5.136	0.14	20.03	13.50
4.77	27.05	3.16	33.89	6.8	4.958	0.12	20.36	13.53
5.71	28.02	2.77	35.25	7.2	4.877	0.10	21.24	14.01
6.71	28.11	2.44	35.67	7.6	4.718	0.09	21.62	14.06
7.45	28.46	2.25	36.21	7.7	4.674	0.08	21.98	14.23
8.46	29.04	2.03	37.01	8.0	4.642	0.07	22.49	14.52
9.20	29.09	1.90	37.19	8.1	4.589	0.07	22.65	14.54
9.95	29.31	1.76	37.54	8.2	4.558	0.06	22.89	14.65
10.69	28.88	1.65	37.22	8.3	4.460	0.06	22.79	14.44
11.19	28.85	1.58	37.28	8.4	4.426	0.06	22.85	14.43
11.69	28.87	1.51	37.36	8.5	4.399	0.05	22.93	14.43
12.19	28.75	1.45	37.30	8.5	4.364	0.05	22.92	14.38
12.68	28.80	1.40	37.39	8.6	4.349	0.05	23.00	14.40
13.43	28.98	1.32	37.65	8.7	4.339	0.05	23.17	14.49
14.16	28.85	1.26	37.59	8.7	4.301	0.05	23.16	14.42
14.68	28.86	1.21	37.66	8.8	4.283	0.04	23.23	14.43
15.17	28.69	1.16	37.53	8.8	4.248	0.04	23.18	14.35

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-BW5 ISS
Lab ID:	R-2025-197-006-006		

Visual Description: Gray Brown Sandy Elastic Silt (REMOLDED)

Stage No.	1
Test No.	2

PRESSURES (psi)

Cell Pressure (psi)	100.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	20.0
Pore Pressure Response (%)	95

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	28.74
Q	=	19.22

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	0.6
Final Change (ml)	23.4
Initial Dial Reading (mil)	336
Dial Reading After Saturation (mil)	350
Dial Reading After Consolidation (mil)	431

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
20.1	0.000	80.0
29.7	0.001	80.5
43.2	0.002	81.2
86.9	0.007	83.3
116.8	0.013	84.8
140.1	0.019	85.9
165.9	0.028	87.2
181.2	0.037	88.1
194.4	0.048	88.9
211.2	0.069	89.7
228.8	0.099	90.4
244.2	0.135	90.7
256.4	0.170	90.7
267.0	0.212	90.6
272.6	0.242	90.5
279.5	0.284	90.3
286.4	0.341	90.0
292.7	0.401	89.6
296.9	0.445	89.5
301.5	0.506	89.2
304.4	0.551	89.1
308.1	0.596	88.9
311.3	0.640	88.8
313.5	0.671	88.7
315.6	0.700	88.6
317.5	0.730	88.6
319.1	0.760	88.5
321.7	0.805	88.4
323.8	0.850	88.3
325.8	0.880	88.3
327.2	0.910	88.2

Tested By: DL Date: 1/17/26 Input Checked By: MPS Date: 1/21/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-BW5 ISS
Lab ID:	R-2025-197-006-006		

Visual Description: Gray Brown Sandy Elastic Silt (REMOLDED)

Effective Confining Pressure (psi)	20.0	*Stage No.*	1
		Test No	2

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

Volume After Consolidation (in^3)	37.09
Length After Consolidation (in)	5.89
Area After Consolidation (in^2)	6.299

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.01	1.53	0.54	20.99	19.5	1.079	0.37	20.22	0.77
0.04	3.68	1.20	22.48	18.8	1.196	0.34	20.64	1.84
0.13	10.60	3.30	27.30	16.7	1.634	0.33	22.00	5.30
0.22	15.32	4.78	30.54	15.2	2.007	0.33	22.88	7.66
0.32	19.00	5.90	33.10	14.1	2.348	0.33	23.60	9.50
0.47	23.04	7.19	35.85	12.8	2.799	0.33	24.33	11.52
0.62	25.42	8.08	37.34	11.9	3.132	0.33	24.63	12.71
0.82	27.45	8.87	38.58	11.1	3.468	0.34	24.85	13.73
1.17	29.98	9.73	40.25	10.3	3.920	0.34	25.26	14.99
1.69	32.59	10.36	42.22	9.6	4.381	0.33	25.93	16.29
2.29	34.77	10.67	44.10	9.3	4.726	0.32	26.72	17.38
2.89	36.44	10.71	45.72	9.3	4.923	0.31	27.51	18.22
3.61	37.79	10.61	47.17	9.4	5.024	0.30	28.28	18.89
4.12	38.45	10.48	47.97	9.5	5.038	0.29	28.74	19.22
4.82	39.21	10.27	48.94	9.7	5.030	0.28	29.33	19.60
5.79	39.83	9.96	49.87	10.0	4.967	0.26	29.96	19.91
6.80	40.33	9.65	50.68	10.4	4.897	0.25	30.52	20.17
7.56	40.62	9.47	51.15	10.5	4.858	0.25	30.84	20.31
8.59	40.84	9.24	51.60	10.8	4.795	0.24	31.18	20.42
9.36	40.92	9.09	51.84	10.9	4.750	0.23	31.38	20.46
10.11	41.11	8.94	52.17	11.1	4.716	0.23	31.62	20.55
10.87	41.21	8.81	52.40	11.2	4.684	0.23	31.80	20.61
11.39	41.29	8.72	52.56	11.3	4.661	0.22	31.92	20.64
11.89	41.34	8.62	52.72	11.4	4.634	0.22	32.05	20.67
12.40	41.37	8.55	52.82	11.4	4.613	0.22	32.13	20.68
12.90	41.35	8.47	52.88	11.5	4.587	0.22	32.20	20.68
13.67	41.34	8.37	52.97	11.6	4.556	0.21	32.30	20.67
14.44	41.25	8.30	52.95	11.7	4.527	0.21	32.32	20.63
14.94	41.29	8.26	53.03	11.7	4.516	0.21	32.39	20.64
15.46	41.23	8.21	53.02	11.8	4.496	0.21	32.41	20.61

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-BW5 ISS
Lab ID:	R-2025-197-006-006		

Visual Description: Gray Brown Sandy Elastic Silt (REMOLDED)

Stage No.	1
Test No.	3

PRESSURES (psi)

Cell Pressure (psi)	120.0
Back Pressure (psi)	80.0
Eff. Conf. Pressure (psi)	40.0
Pore Pressure Response (%)	95

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	34.43
Q	=	22.87

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.984	Diameter 1:	2.873
Length 2:	5.984	Diameter 2:	2.873
Length 3:	5.984	Diameter 3:	2.873
Avg. Length:	5.984	*Avg. Diam.:*	2.873

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	9.0
Final Change (ml)	39.0

Initial Dial Reading (mil)	392
Dial Reading After Saturation (mil)	406
Dial Reading After Consolidation (mil)	521

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
18.6	0.000	80.0
36.4	0.001	80.5
51.5	0.003	81.0
82.1	0.008	82.7
106.0	0.013	84.8
127.1	0.019	86.9
155.3	0.028	90.1
173.4	0.037	93.1
196.2	0.048	96.3
221.2	0.069	100.4
246.4	0.098	103.8
266.1	0.134	106.0
279.2	0.171	107.2
290.3	0.213	108.0
297.2	0.243	108.3
304.5	0.285	108.6
312.3	0.341	108.6
318.6	0.401	108.5
324.2	0.447	108.4
328.3	0.507	108.3
330.9	0.551	108.2
334.3	0.596	108.1
335.3	0.641	108.0
337.6	0.671	107.9
339.6	0.701	107.8
342.6	0.732	107.8
345.8	0.762	107.7
347.6	0.807	107.7
347.9	0.851	107.6
349.3	0.881	107.5
353.2	0.911	107.5

Tested By: DL Date: 1/17/26 Input Checked By: MPS Date: 1/21/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-BW5 ISS
Lab ID:	R-2025-197-006-006		

Visual Description: Gray Brown Sandy Elastic Silt (REMOLDED)

Effective Confining Pressure (psi)	40.0	*Stage No.*	1
		Test No	3

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	38.79

VOLUME CHANGE

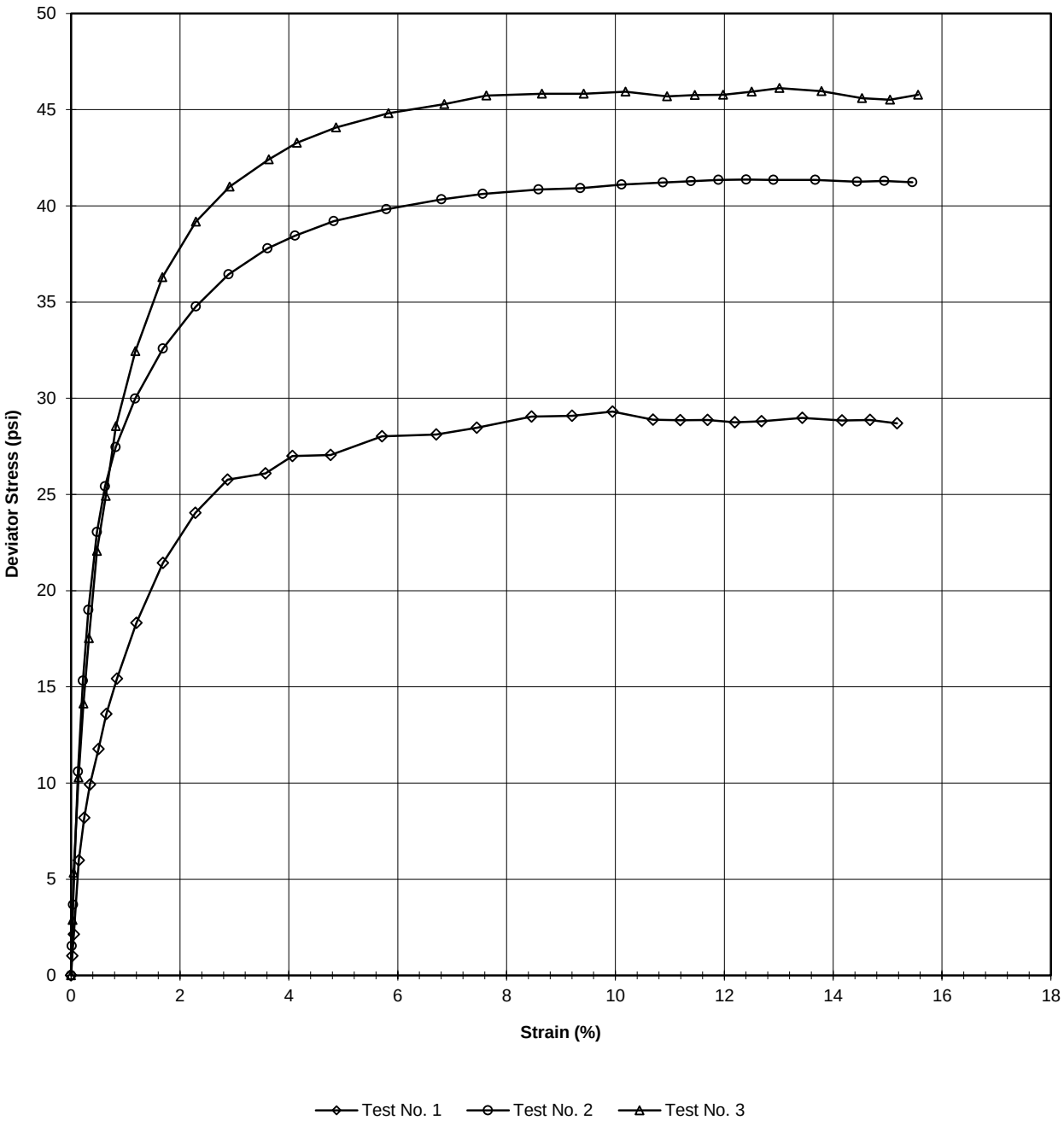
Volume After Consolidation (in^3)	36.14
Length After Consolidation (in)	5.86
Area After Consolidation (in^2)	6.173

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	2.88	0.51	42.37	39.5	1.073	0.19	40.93	1.44
0.04	5.34	1.00	44.33	39.0	1.137	0.20	41.66	2.67
0.14	10.28	2.75	47.53	37.3	1.276	0.28	42.39	5.14
0.23	14.13	4.81	49.32	35.2	1.402	0.36	42.26	7.06
0.33	17.52	6.94	50.58	33.1	1.530	0.42	41.82	8.76
0.48	22.05	10.11	51.95	29.9	1.738	0.48	40.92	11.03
0.63	24.92	13.07	51.85	26.9	1.925	0.55	39.39	12.46
0.82	28.55	16.32	52.22	23.7	2.206	0.60	37.95	14.27
1.18	32.45	20.36	52.09	19.6	2.652	0.66	35.87	16.22
1.68	36.29	23.81	52.48	16.2	3.242	0.69	34.33	18.15
2.29	39.18	26.04	53.14	14.0	3.806	0.70	33.55	19.59
2.91	41.00	27.25	53.75	12.8	4.215	0.70	33.25	20.50
3.63	42.42	28.03	54.39	12.0	4.543	0.70	33.18	21.21
4.15	43.27	28.32	54.95	11.7	4.706	0.69	33.31	21.64
4.87	44.07	28.55	55.52	11.4	4.849	0.68	33.48	22.03
5.83	44.82	28.62	56.20	11.4	4.937	0.67	33.79	22.41
6.85	45.28	28.53	56.75	11.5	4.949	0.66	34.11	22.64
7.63	45.74	28.44	57.30	11.6	4.956	0.65	34.43	22.87
8.65	45.83	28.28	57.55	11.7	4.911	0.65	34.64	22.92
9.42	45.83	28.18	57.65	11.8	4.878	0.65	34.73	22.92
10.19	45.94	28.07	57.87	11.9	4.852	0.64	34.90	22.97
10.95	45.69	27.98	57.71	12.0	4.801	0.64	34.86	22.84
11.46	45.77	27.89	57.88	12.1	4.778	0.64	35.00	22.88
11.98	45.78	27.82	57.96	12.2	4.758	0.64	35.07	22.89
12.50	45.93	27.80	58.14	12.2	4.764	0.64	35.17	22.97
13.01	46.12	27.74	58.38	12.3	4.763	0.63	35.32	23.06
13.79	45.96	27.65	58.31	12.3	4.723	0.63	35.33	22.98
14.53	45.60	27.60	58.00	12.4	4.676	0.64	35.20	22.80
15.04	45.52	27.54	57.98	12.5	4.652	0.64	35.22	22.76
15.56	45.78	27.52	58.26	12.5	4.669	0.63	35.37	22.89

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-006	Sample No.:	TS-BW5 ISS
Lab ID:	R-2025-197-006-006		
Visual Description:	Gray Brown Sandy Elastic Silt (REMOLDED)		



Tested By: DL Date: 1/17/26 Approved By: MPS Date: 1/21/26

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Arcadis U.S., Inc.		
Client Reference:	Housatonic 5A		
Project No.:	R-2025-197-006		
Lab ID:	R-2025-197-006-006	Specific Gravity (Measured)	2.51

Visual Description: Gray Brown Sandy Elastic Silt (REMOLDED)

SAMPLE CONDITION SUMMARY

Boring No.:	N/A	N/A	N/A
Depth (ft):	N/A	N/A	N/A
Sample No.:	TS-BW5 ISS	TS-BW5 ISS	TS-BW5 ISS
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.001	0.001	0.001
Back Pressure (psi)	80	80	80
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	58.5	58.5	58.5
Total Unit Weight (pcf)	83.1	83.1	83.1
Dry Unit Weight (pcf)	52.4	52.4	52.4
Moisture Content (%) (FINAL)	73.0	70.6	70.1
Initial State Void Ratio,e	1.990	1.989	1.988
Void Ratio at Shear, e	1.890	1.858	1.784





Tested By: DL Date: 1/17/26 Input Checked By: MPS Date: 1/21/26

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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December 16, 2025

Project No. R-2025-197-005

David Liles
Arcadis U.S., Inc.
4915 Prospectus Dr., Suite G
Durham, NC 27713

david.liles@arcadis.com

Transmittal
Laboratory Test Results
Housatonic 5A

Please find attached the laboratory test results for the above referenced project. The tests were outlined on the Project Verification Form that was transmitted to your firm prior to the testing. The testing was performed in general accordance with the methods listed on the enclosed data sheets. The test results are believed to be representative of the samples that were submitted for testing and are indicative only of the specimens which were evaluated. We have no direct knowledge of the origin of the samples and imply no position with regard to the nature of the test results, i.e. pass/fail and no claims as to the suitability of the material for its intended use.

The test data and all associated project information provided shall be held in strict confidence and disclosed to other parties only with authorization by our Client. The test data submitted herein is considered integral with this report and is not to be reproduced except in whole and only with the authorization of the Client and Geotechnics. The remaining sample materials for this project will be retained for a minimum of 90 days as directed by the Geotechnics' Quality Program.

We are pleased to provide these testing services. Should you have any questions or if we may be of further assistance, please contact our office.

Respectively submitted,
Geotechnics, Inc.

Michael P. Smith
Regional Manager

We understand that you have a choice in your laboratory services and we thank you for choosing Geotechnics.

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MOISTURE CONTENT

ASTM D 2216-19

Client: Arcadis U.S., Inc.
Client Reference: Housatonic 5A
Project No.: R-2025-197-005

Lab ID:	001	002	003	004	005
Boring No.:	NA	NA	NA	NA	NA
Depth (ft):	NA	NA	NA	NA	NA
Sample No.:	TS-S1 ISS	TS-S2 ISS	TS-S3 ISS	TS-S4 ISS	TS-WP ISS
Tare Number	44-A	45-A	403	415	418
Wt. of Tare & Wet Sample (g)	668.05	494.93	510.60	588.84	537.91
Wt. of Tare & Dry Sample (g)	620.25	437.66	441.51	526.22	375.83
Weight of Tare (g)	128.27	130.51	142.37	141.78	138.29
Weight of Water (g)	47.80	57.27	69.09	62.62	162.08
Weight of Dry Sample (g)	491.98	307.15	299.14	384.44	237.54
Water Content (%)	**9.7**	**18.6**	**23.1**	**16.3**	**68.2**

Lab ID	006
Boring No.	NA
Depth (ft)	NA
Sample No.	TS-BW5 ISS
Tare Number	745
Wt. of Tare & Wet Sample (g)	518.49
Wt. of Tare & Dry Sample (g)	324.61
Weight of Tare (g)	141.79
Weight of Water (g)	193.88
Weight of Dry Sample (g)	182.82
Water Content (%)	**106.0**

Notes :

Tested By *CRW* *Date* *11/21/25* *Checked By* *AES* *Date* *11/24/25*

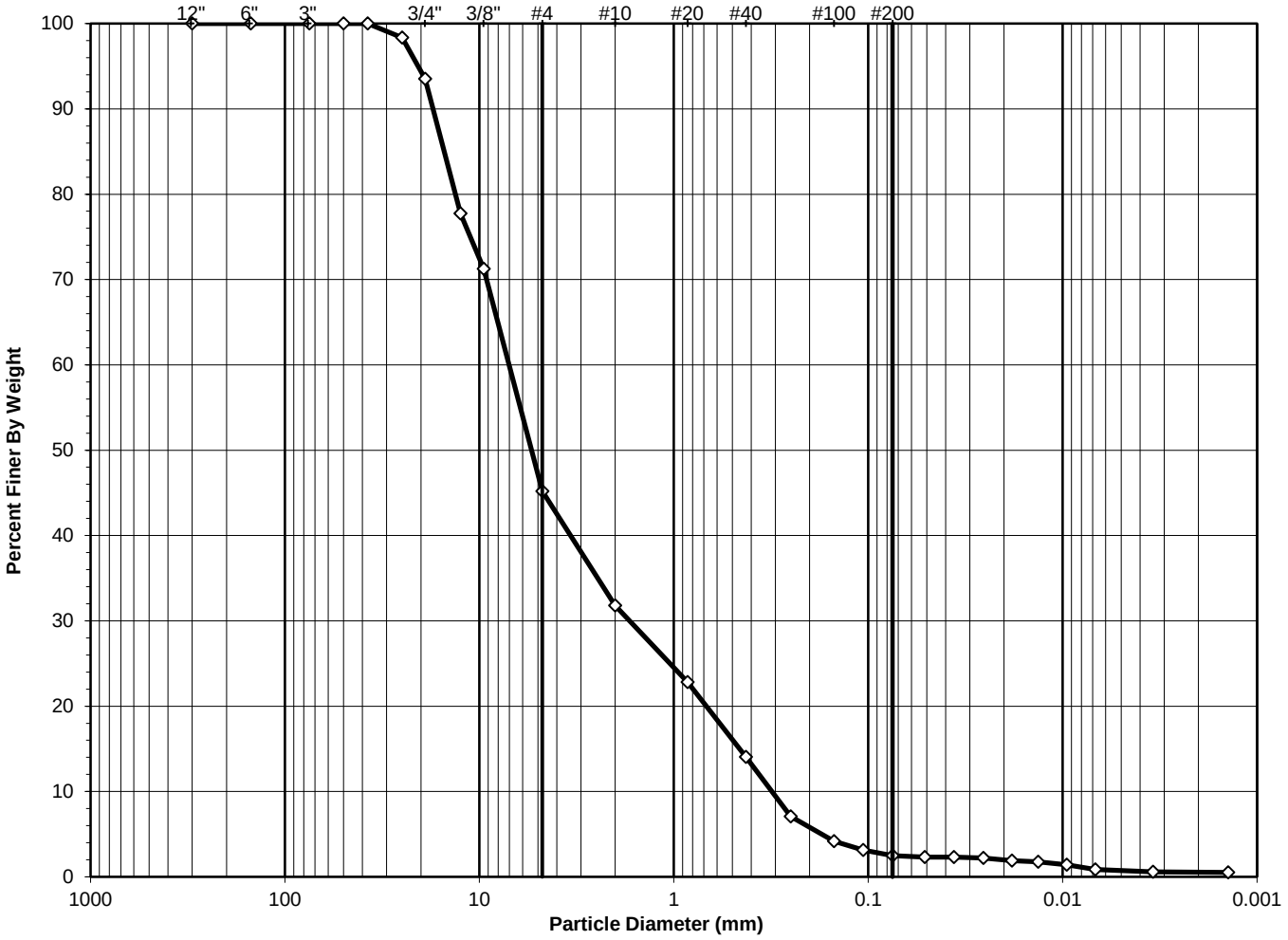
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-S1 ISS
Lab ID:	R-2025-197-005-001	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
GW, TESTED

D60 = 7.04 D50 = 5.40

D30 = 1.68 CU = 22.54

USCS Classification:
WELL-GRADED GRAVEL WITH SAND
(NON-PLASTIC FINES)

D10 = 0.312

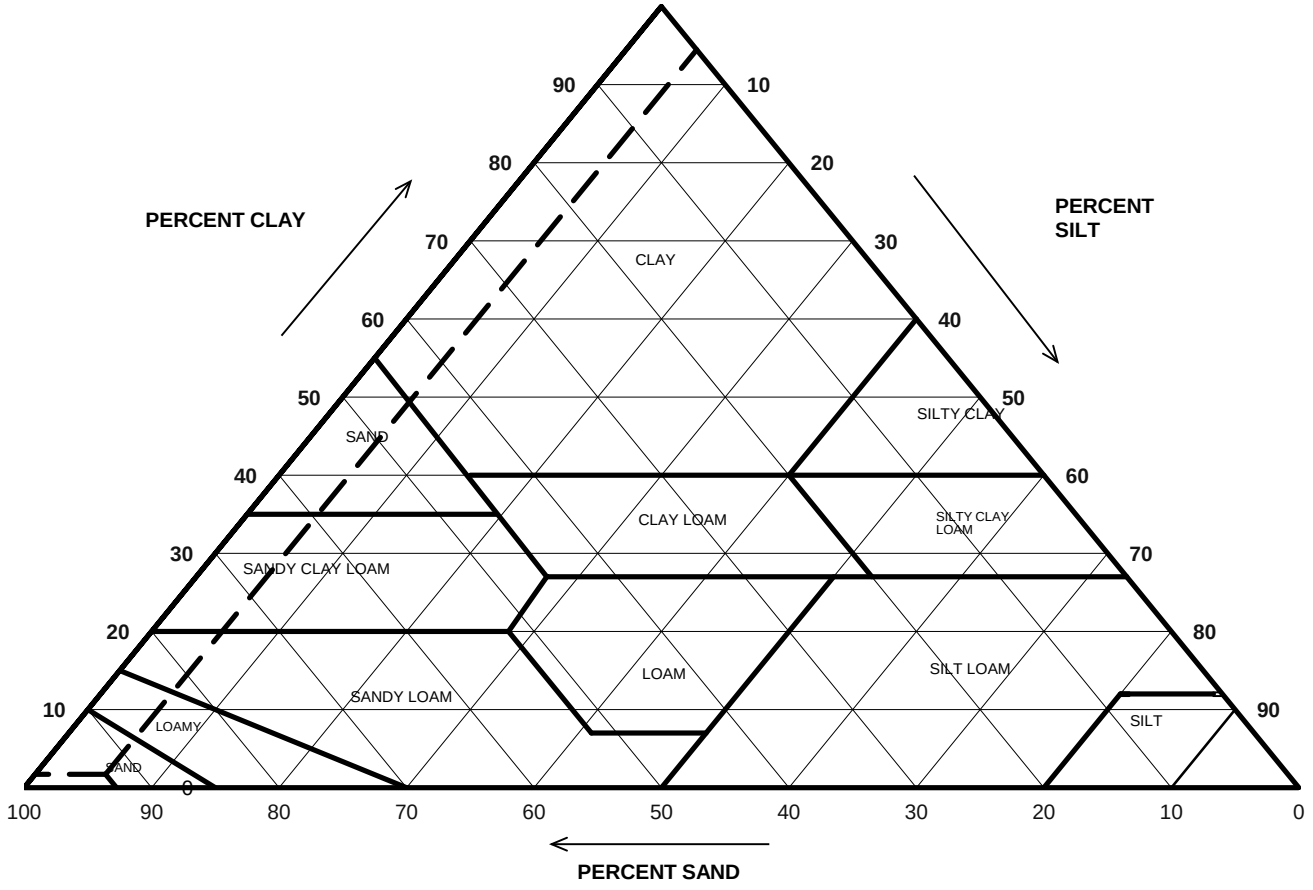
Tested By MFP Date 11/25/25 Checked By AES Date 11/26/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-S1 ISS
Lab ID:	R-2025-197-005-001	Soil Color:	Gray



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**68.19**	
2	**31.81**	**Sand**	**29.50**	**92.75**
0.05	**2.30**	**Silt**	**1.76**	**5.53**
0.002	**0.55**	**Clay**	**0.55**	**1.71**

USDA Classification: SAND

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-S1 ISS
Lab ID:	R-2025-197-005-001	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	44-A	Tare No.:	AGG-2
Wt. of Tare & Wet Sample (g):	668.05	Weight of Tare & Wet Sample (g):	3528.90
Wt. of Tare & Dry Sample (g):	620.25	Weight of Tare & Dry Sample (g):	3402.00
Weight of Tare (g):	128.27	Weight of Tare (g):	928.80
Weight of Water (g):	47.80	Weight of Water (g):	126.90
Weight of Dry Soil (g):	491.98	Weight of Dry Soil (g):	2473.20
Moisture Content (%):	**9.7**	**Moisture Content (%):**	**5.1**
Wet Weight of -3/4" Sample (g):	31048.30	Total Dry Weight of Sample (g):	30255.57
Tare No. -3/4" Sub-Specimen (g):	8	Wet Weight of +3/4" Sample (g):	2057.14
Wt. of Tare & Wet -3/4" Sub-Specimen (g):	2734.78	Dry Weight of + 3/4" Sample (g):	1956.74
Weight of Tare (g):	312.46	Dry Weight of - 3/4" Sample (g):	28298.83
Sub-Specimen 3/4" Wet Weight (g):	2422.32	Dry Weight -3/4" +3/8" Sample (g):	6741.67
Tare No. (-3/8" Sub-Specimen):	406	Dry Weight of -3/8" Sample (g):	21557.16
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	648.40	J - Factor (% Finer than 3/4"):	93.5%
Weight of Tare (g):	140.13	J - Factor (% Finer than 3/8"):	71.3%
Sub-Specimen -3/8" Wet Weight (g):	508.27		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100**
6"	150	0.00		0.00	0.00	100.00	**100**
3"	75	0.00		0.00	0.00	100.00	**100**
2"	50	0.00	(*)	0.00	0.00	100.00	**100**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100**
1"	25	528.12		1.66	1.66	98.34	**98**
3/4"	19	1529.02		4.81	6.47	93.53	**94**
1/2"	12.5	372.97	(**)	16.89	16.89	83.11	**78**
3/8"	9.5	153.00		6.93	23.82	76.18	**71**
#4	4.75	169.41		36.57	36.57	63.43	**45**
#10	2	87.03		18.79	55.36	44.64	**32**
#20	0.85	58.56	(**)	12.64	68.00	32.00	**23**
#40	0.425	56.91		12.28	80.28	19.72	**14**
#60	0.25	45.40		9.80	90.08	9.92	**7**
#100	0.15	18.91		4.08	94.16	5.84	**4**
#140	0.106	6.67		1.44	95.60	4.40	**3**
#200	0.075	4.20		0.91	96.51	3.49	**2**
Pan	-	16.17		3.49	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By MFP Date 11/25/25 Checked By AES Date 11/26/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-S1 ISS
Lab ID:	R-2025-197-005-001	Soil Color:	Gray

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	12.5	20.3	5.40	14.3	0.0513	92.7	2.3
2	12.5	20.3	5.40	14.3	0.0363	92.7	2.3
4	12.0	20.9	5.19	14.4	0.0255	88.8	2.2
8	11.3	20.4	5.36	14.6	0.0182	76.8	1.9
15	10.8	20.4	5.36	14.7	0.0134	70.3	1.7
30	9.8	20.4	5.36	14.8	0.0095	57.2	1.4
60	8.0	20.4	5.36	15.2	0.0068	34.4	0.9
240	7.3	20.2	5.43	15.3	0.0034	23.7	0.6
1440	7.3	19.5	5.66	15.3	0.0014	20.8	0.5

Soil Specimen Data

Tare No.:	201	Percent Finer than # 200:	2.49
Wt. of Tare & Dry Material (g):	182.12		
Weight of Tare (g):	169.54	Specific Gravity:	2.70 Assumed
Weight of Deflocculant (g):	5.0		
Weight of Dry Material (g):	7.58		

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By CB Date 12/2/25 Checked By AES Date 12/12/25

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ATTERBERG LIMITS

ASTM D 4318-17

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-005	Sample No.:	TS-S1 ISS
Lab ID:	R-2025-197-005-001	Color:	Gray
			(MInus No. 40 sieve material)

As Received
Water Content

Tare Number	44-A
Wt. of Tare & Wet Sample (g)	668.05
Wt. of Tare & Dry Sample (g)	620.25
Weight of Tare (g)	128.27
Weight of Water (g)	47.80
Weight of Dry Sample (g)	491.98
Water Content (%)	**9.7**

NON - PLASTIC MATERIAL

Tested By *SM* *Date* *12/3/25* *Checked By* *AES* *Date* *12/3/25*

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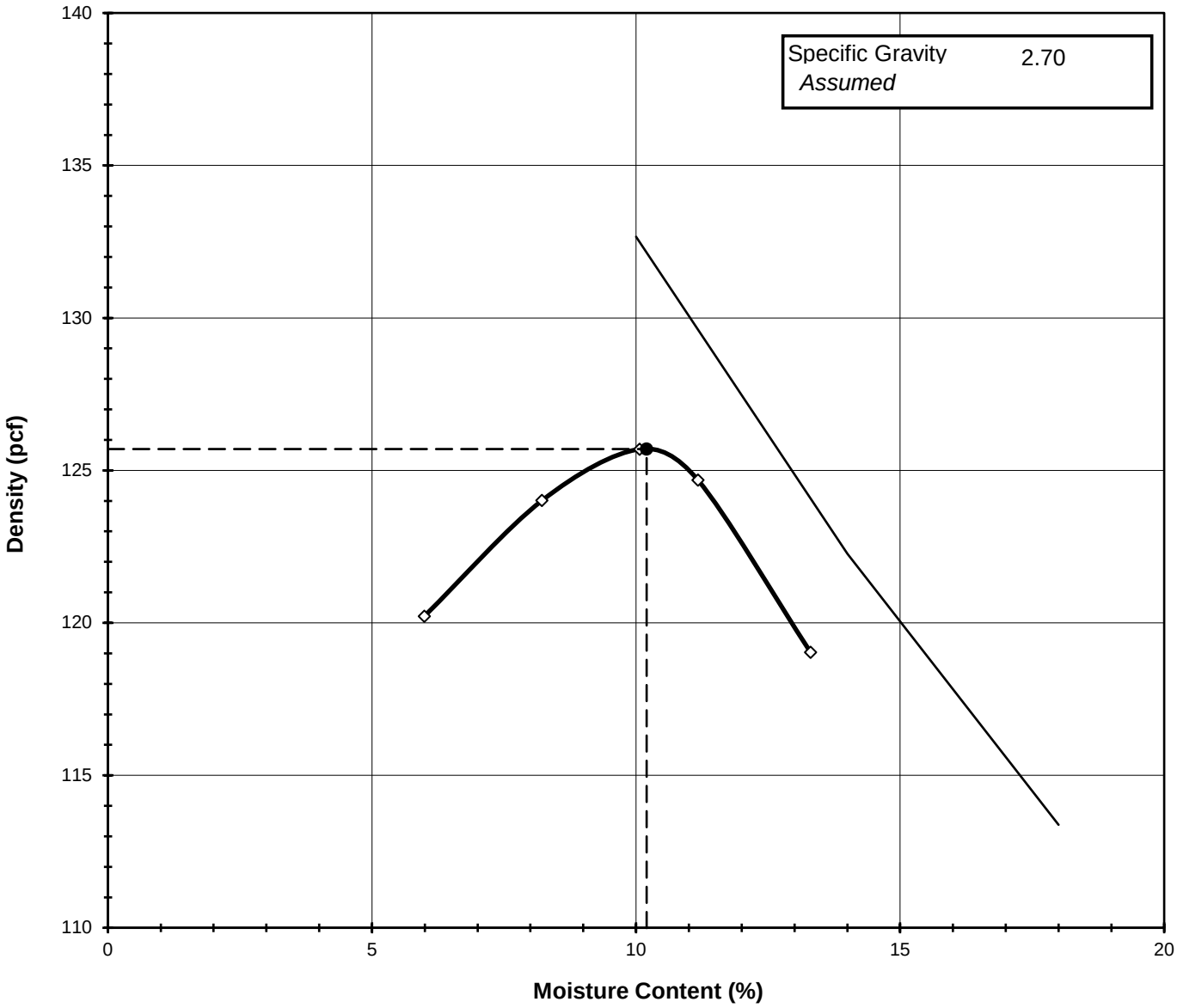
MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-005	Sample No.:	TS-S1 ISS
Lab ID:	R-2025-197-005-001	Test Method	**STANDARD**

Visual Description: Gray Gravel with Sand

Optimum Moisture Content (%): 10.2
Maximum Dry Density (pcf): 125.7



Tested By *MFP* *Date* *12/3/25* *Checked By* *AES* *Date* 12/4/25

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MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-005	Sample No.:	TS-S1 ISS
Lab ID:	R-2025-197-005-001		

Visual Description: Gray Gravel with Sand

Total Weight of the Sample (g):	33650
As Received Water Content (%):	NA
Assumed Specific Gravity:	2.70
Percent Retained on 3/4":	NA
Percent Retained on 3/8":	NA
Percent Retained on #4:	NA
Oversize Material:	Not included
Procedure Used:	C

Test Type:	**STANDARD**
Rammer Weight (lb):	5.5
Rammer Drop (in):	12
Rammer Type:	MECHANICAL
Machine ID:	R174
Mold ID:	R608
Mold diameter:	6"
Weight of the Mold (g):	5520
Volume of the Mold (cm^3):	2115

Mold / Specimen

Point No.	**1**	**2**	**3**	**4**	**5**
Weight of Mold & Wet Sample (g):	9839	10070	10210	10219	10092
Weight of Mold (g):	5520	5520	5520	5520	5520
Weight of Wet Sample (g):	4319	4549	4690	4699	4572
Mold Volume (cm^3):	2115	2115	2115	2115	2115

Moisture Content / Density

Tare Number:	473	723	445	435	9-A
Weight of Tare & Wet Sample (g):	677.10	566.10	570.50	547.20	811.00
Weight of Tare & Dry Sample (g):	644.37	529.95	527.37	502.10	726.43
Weight of Tare (g):	97.80	90.10	99.00	98.40	90.80
Weight of Water (g):	32.73	36.15	43.13	45.10	84.57
Weight of Dry Sample (g):	546.57	439.85	428.37	403.70	635.63

Wet Density (g/cm^3):	2.04	2.15	2.22	2.22	2.16
Wet Density (pcf):	127.4	134.2	138.4	138.6	134.9
Moisture Content (%):	**6.0**	**8.2**	**10.1**	**11.2**	**13.3**
Dry Density (pcf):	**120.2**	**124.0**	**125.7**	**124.7**	**119.0**

Zero Air Voids

Moisture Content (%):	10.0	14.0	18.0
Dry Unit Weight (pcf):	132.7	122.3	113.4

Tested By MFP *Date* 12/3/25 *Checked By* AES *Date* 12/4/25

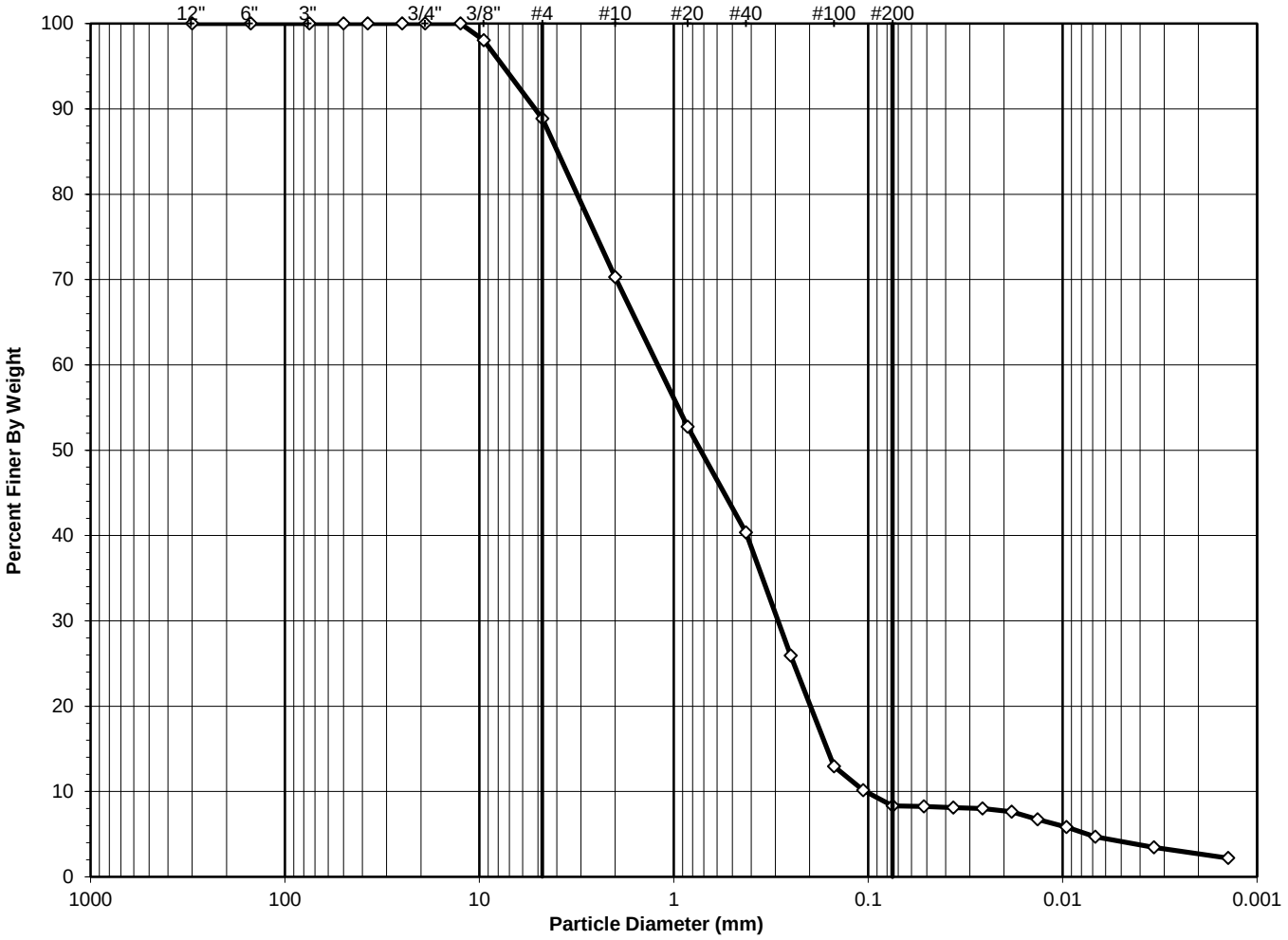
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-S2 ISS
Lab ID:	R-2025-197-005-002	Soil Color:	Gray Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP-SM, TESTED

D60 = 1.21 D50 = 0.73

D30 = 0.29 CU = 11.76

USCS Classification:
POORLY GRADED SAND WITH SILT (NON-PLASTIC FINES)

D10 = 0.103

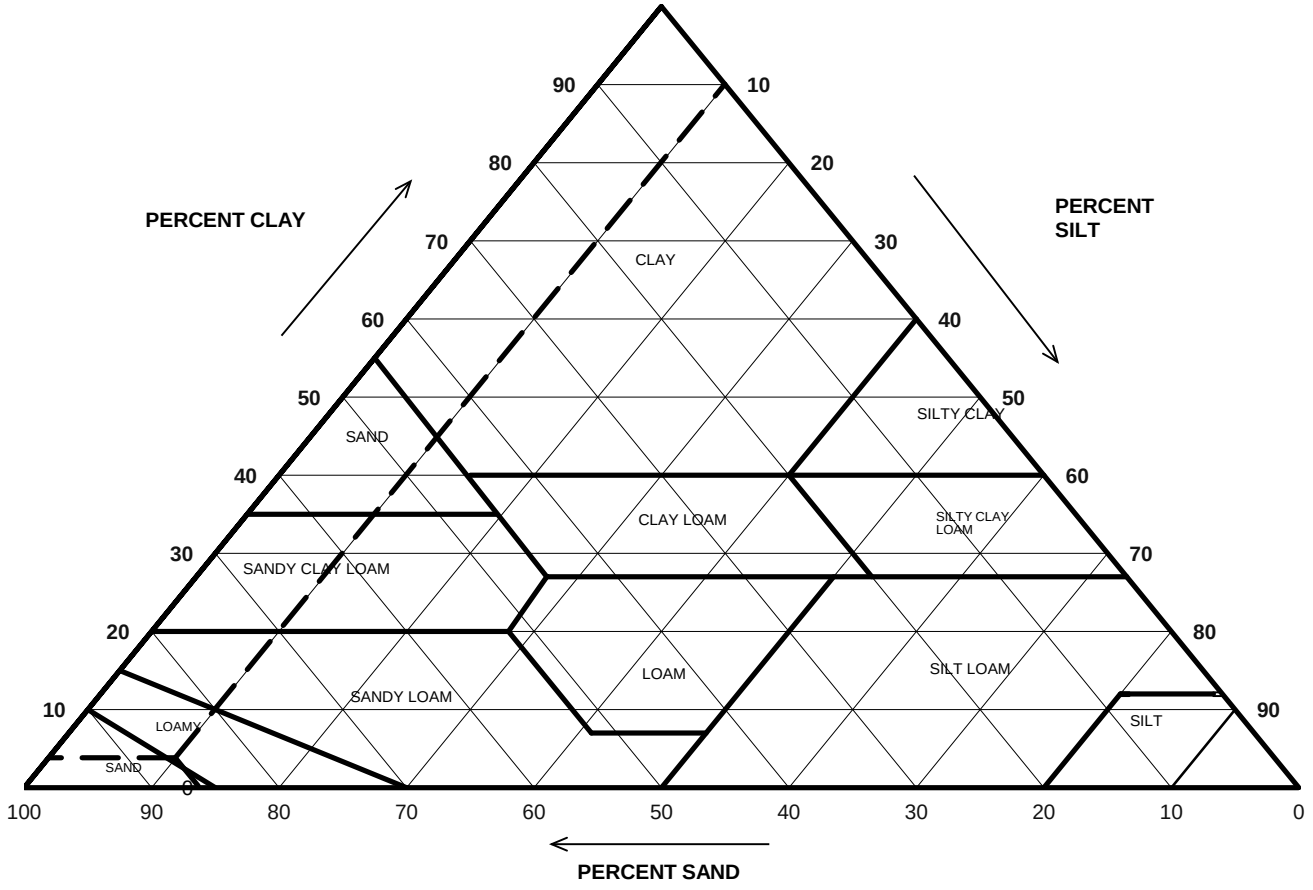
Tested By MFP Date 12/1/25 Checked By AES Date 12/2/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-S2 ISS
Lab ID:	R-2025-197-005-002	Soil Color:	Gray Brown



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**29.71**	
2	**70.29**	**Sand**	**60.61**	**86.23**
0.05	**9.68**	**Silt**	**6.99**	**9.94**
0.002	**2.69**	**Clay**	**2.69**	**3.83**

USDA Classification: LOAMY SAND

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-S2 ISS
Lab ID:	R-2025-197-005-002	Soil Color:	Gray Brown

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	45-A	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	494.93	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	437.66	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	130.51	Weight of Tare (g):	NA
Weight of Water (g):	57.27	Weight of Water (g):	NA
Weight of Dry Soil (g):	307.15	Weight of Dry Soil (g):	NA
Moisture Content (%):	**18.6**	**Moisture Content (%):**	**0.0**

Dry Weight of Sample (g):	NA	Total Dry Weight of Sample (g):	307.15
Tare No. (Sub-Specimen)	45-A	Wet Weight of +3/4" Sample (g):	0.00
Wt. of Tare & Wet Sub-Specimen (g):	494.93	Dry Weight of + 3/4" Sample (g):	0.00
Weight of Tare (g):	130.51	Dry Weight of - 3/4" Sample (g):	307.15
Sub-Specimen Wet Weight (g):	364.42	Dry Weight -3/4" +3/8" Sample (g):	5.99
Tare No. (-3/8" Sub-Specimen):	NA	Dry Weight of -3/8" Sample (g):	301.16
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	NA	J - Factor (% Finer than 3/4"):	NA
Weight of Tare (g):	NA	J - Factor (% Finer than 3/8"):	NA
Sub-Specimen -3/8" Wet Weight (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100**
6"	150	0.00		0.00	0.00	100.00	**100**
3"	75	0.00		0.00	0.00	100.00	**100**
2"	50	0.00	(*)	0.00	0.00	100.00	**100**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100**
1"	25	0.00		0.00	0.00	100.00	**100**
3/4"	19	0.00		0.00	0.00	100.00	**100**
1/2"	12.5	0.00	(**)	0.00	0.00	100.00	**100**
3/8"	9.5	5.99		1.95	1.95	98.05	**98**
#4	4.75	28.19		9.18	11.13	88.87	**89**
#10	2	57.07		18.58	29.71	70.29	**70**
#20	0.85	53.88	(**)	17.54	47.25	52.75	**53**
#40	0.425	38.12		12.41	59.66	40.34	**40**
#60	0.25	44.25		14.41	74.07	25.93	**26**
#100	0.15	39.87		12.98	87.05	12.95	**13**
#140	0.106	8.59		2.80	89.85	10.15	**10**
#200	0.075	5.64		1.84	91.68	8.32	**8**
Pan	-	25.55		8.32	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By MFP Date 12/1/25 Checked By AES Date 12/2/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-S2 ISS
Lab ID:	R-2025-197-005-002	Soil Color:	Gray Brown

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	12.5	19.7	5.59	14.3	0.0517	99.0	8.2
2	12.4	19.7	5.59	14.4	0.0365	97.5	8.1
4	12.3	19.7	5.59	14.4	0.0259	96.1	8.0
8	12.0	19.7	5.59	14.4	0.0183	91.8	7.6
15	11.3	19.7	5.59	14.6	0.0134	81.0	6.7
30	10.5	19.7	5.59	14.7	0.0095	70.3	5.8
60	9.5	19.8	5.56	14.9	0.0068	56.4	4.7
240	8.3	20.4	5.36	15.1	0.0034	41.4	3.4
1440	7.5	19.5	5.66	15.2	0.0014	26.4	2.2

Soil Specimen Data

Tare No.:	203	Percent Finer than # 200:	8.32
Wt. of Tare & Dry Material (g):	182.15		
Weight of Tare (g):	170.25	Specific Gravity:	2.70 Assumed
Weight of Deflocculant (g):	5.0		
Weight of Dry Material (g):	6.90		

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By CB Date 12/4/25 Checked By AES Date 12/12/25

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ATTERBERG LIMITS

ASTM D 4318-17

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-005	Sample No.:	TS-S2 ISS
Lab ID:	R-2025-197-005-002	Color:	Gray Brown
			(MInus No. 40 sieve material)

As Received
Water Content

Tare Number	45-A
Wt. of Tare & Wet Sample (g)	494.93
Wt. of Tare & Dry Sample (g)	437.66
Weight of Tare (g)	130.51
Weight of Water (g)	57.27
Weight of Dry Sample (g)	307.15
Water Content (%)	**18.6**

NON - PLASTIC MATERIAL

Tested By *SM* *Date* *12/3/25* *Checked By* *AES* *Date* *12/3/25*

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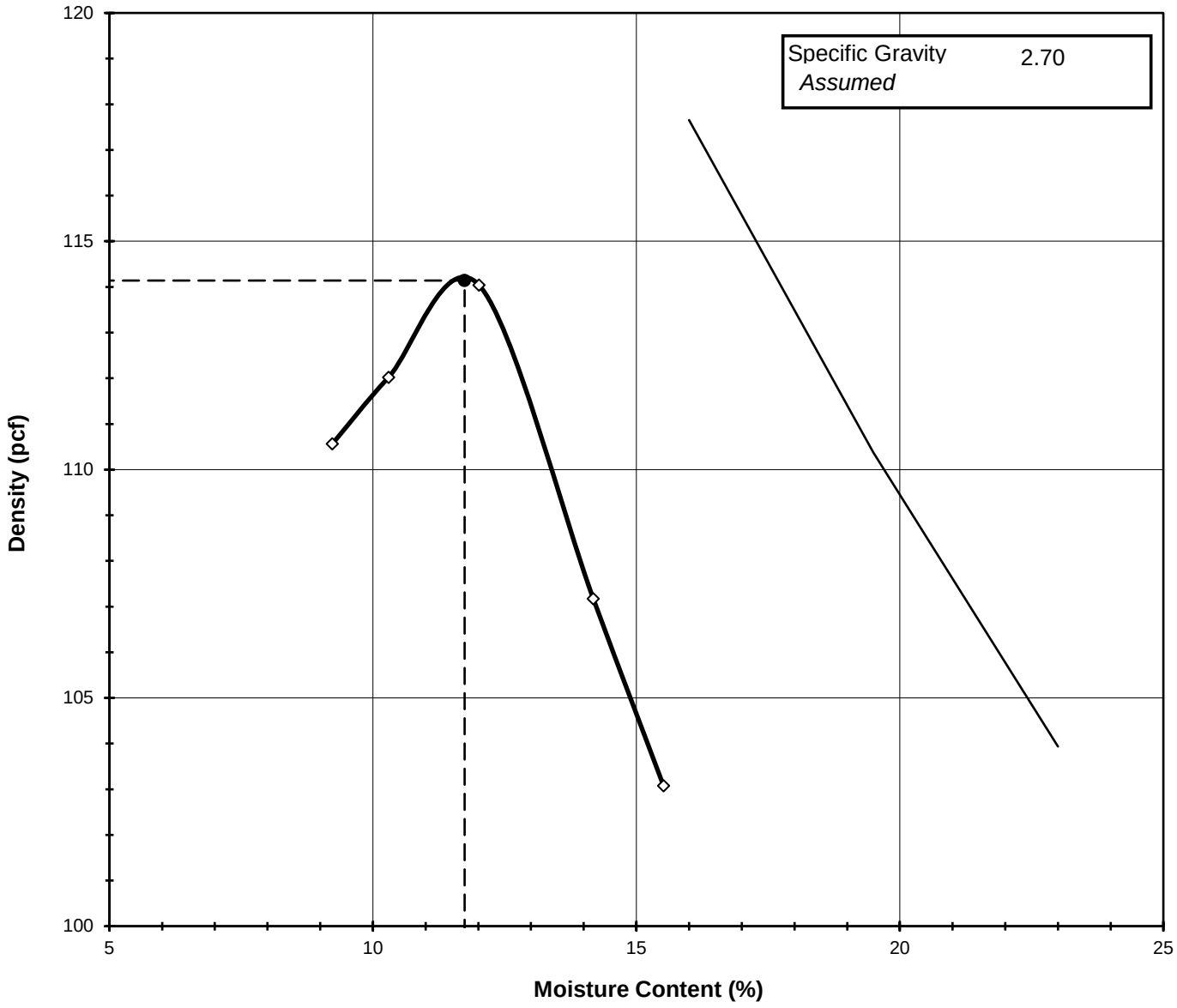
MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-005	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-005-002	Test Method	**STANDARD**

Visual Description: Gray Brown Sand with Silt

Optimum Moisture Content (%): 11.7
Maximum Dry Density (pcf): 114.1



Tested By CRW *Date* 12/8/25 *Checked By* AES *Date* 12/10/25

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MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-005	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-005-002		

Visual Description: Gray Brown Sand with Silt

Total Weight of the Sample (g):	34350
As Received Water Content (%):	NA
Assumed Specific Gravity:	2.70
Percent Retained on 3/4":	NA
Percent Retained on 3/8":	NA
Percent Retained on #4:	NA
Oversize Material:	Not included
Procedure Used:	B

Test Type:	**STANDARD**
Rammer Weight (lb):	5.5
Rammer Drop (in):	12
Rammer Type:	MECHANICAL
Machine ID:	R174
Mold ID:	R607
Mold diameter:	4"
Weight of the Mold (g):	4230
Volume of the Mold (cm^3):	937

Mold / Specimen

Point No.	**1**	**2**	**3**	**4**	**5**
Weight of Mold & Wet Sample (g):	6043	6085	6148	6067	6017
Weight of Mold (g):	4230	4230	4230	4230	4230
Weight of Wet Sample (g):	1813	1854	1917	1837	1787
Mold Volume (cm^3):	937	937	937	937	937

Moisture Content / Density

Tare Number:	721	493	14-A	12-A	447
Weight of Tare & Wet Sample (g):	446.40	491.20	511.80	585.40	671.40
Weight of Tare & Dry Sample (g):	416.29	454.49	466.27	523.58	594.49
Weight of Tare (g):	90.10	97.90	87.20	87.70	98.80
Weight of Water (g):	30.11	36.71	45.53	61.82	76.91
Weight of Dry Sample (g):	326.19	356.59	379.07	435.88	495.69

Wet Density (g/cm^3):	1.94	1.98	2.05	1.96	1.91
Wet Density (pcf):	120.8	123.5	127.7	122.4	119.1
Moisture Content (%):	**9.2**	**10.3**	**12.0**	**14.2**	**15.5**
Dry Density (pcf):	**110.6**	**112.0**	**114.0**	**107.2**	**103.1**

Zero Air Voids

Moisture Content (%):	16.0	19.5	23.0
Dry Unit Weight (pcf):	117.7	110.4	103.9

Tested By CRW *Date* 12/8/25 *Checked By* AES *Date* 12/10/25

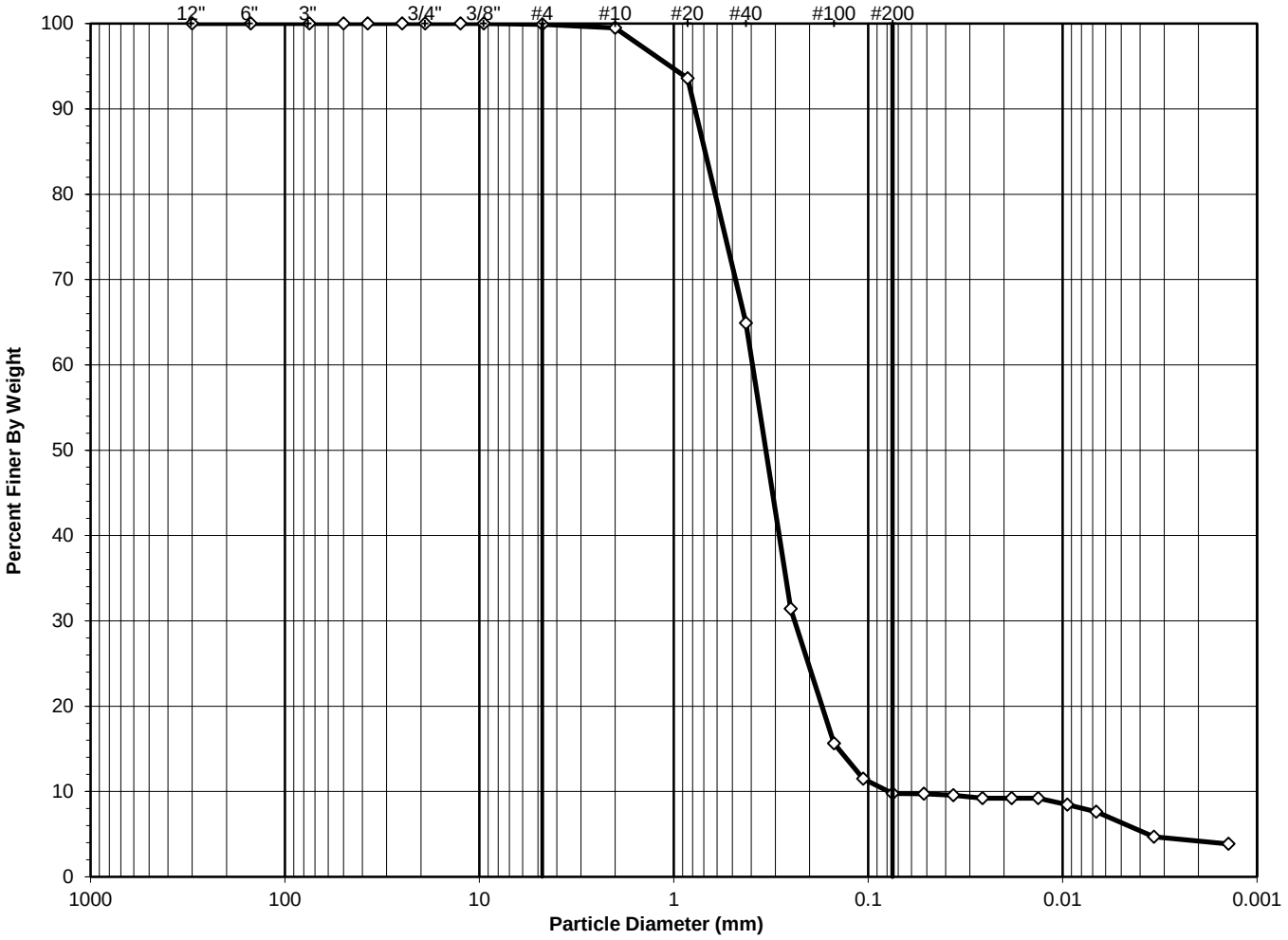
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-005-003	Soil Color:	Brown Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP-SM, TESTED

USCS Classification:
POORLY GRADED SAND WITH SILT

D60 = 0.39 D50 = 0.34

D30 = 0.24 CU = 5.00

D10 = 0.079

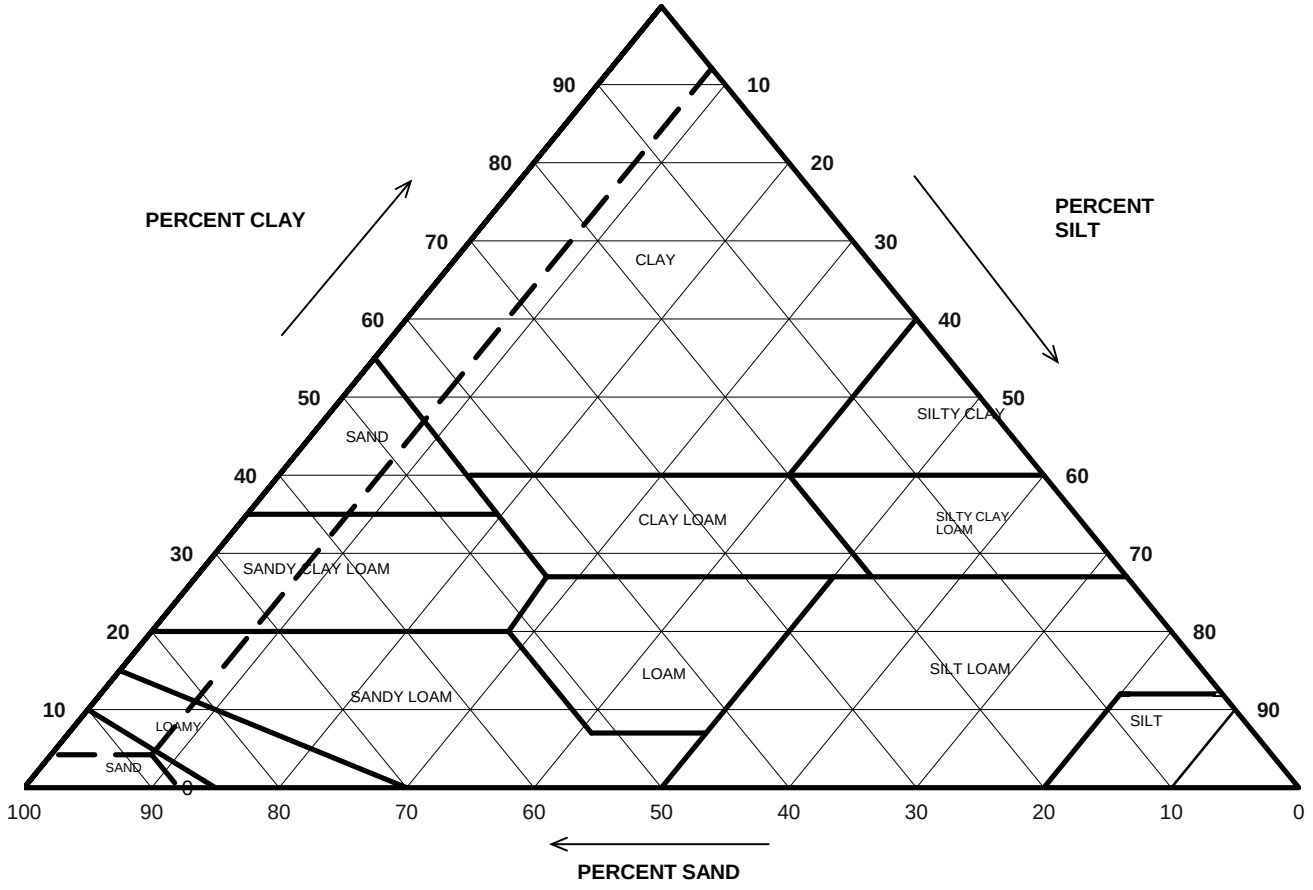
Tested By MFP Date 12/1/25 Checked By AES Date 12/2/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-005-003	Soil Color:	Brown Gray



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**0.51**	
2	**99.49**	**Sand**	**87.44**	**87.88**
0.05	**12.06**	**Silt**	**7.86**	**7.90**
0.002	**4.19**	**Clay**	**4.19**	**4.22**

USDA Classification: SAND

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-005-003	Soil Color:	Brown Gray

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	403	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	510.60	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	441.51	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	142.37	Weight of Tare (g):	NA
Weight of Water (g):	69.09	Weight of Water (g):	NA
Weight of Dry Soil (g):	299.14	Weight of Dry Soil (g):	NA
Moisture Content (%):	**23.1**	**Moisture Content (%):**	**0.0**

Dry Weight of Sample (g):	NA	Total Dry Weight of Sample (g):	299.14
Tare No. (Sub-Specimen)	403	Wet Weight of +3/4" Sample (g):	0.00
Wt. of Tare & Wet Sub-Specimen (g):	510.60	Dry Weight of + 3/4" Sample (g):	0.00
Weight of Tare (g):	142.37	Dry Weight of - 3/4" Sample (g):	299.14
Sub-Specimen Wet Weight (g):	368.23	Dry Weight -3/4" +3/8" Sample (g):	0.00
Tare No. (-3/8" Sub-Specimen):	NA	Dry Weight of -3/8" Sample (g):	299.14
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	NA	J - Factor (% Finer than 3/4"):	NA
Weight of Tare (g):	NA	J - Factor (% Finer than 3/8"):	NA
Sub-Specimen -3/8" Wet Weight (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100.0**
6"	150	0.00		0.00	0.00	100.00	**100.0**
3"	75	0.00		0.00	0.00	100.00	**100.0**
2"	50	0.00	(*)	0.00	0.00	100.00	**100.0**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100.0**
1"	25	0.00		0.00	0.00	100.00	**100.0**
3/4"	19	0.00		0.00	0.00	100.00	**100.0**
1/2"	12.5	0.00	(**)	0.00	0.00	100.00	**100.0**
3/8"	9.5	0.00		0.00	0.00	100.00	**100.0**
#4	4.75	0.28		0.09	0.09	99.91	**99.9**
#10	2	1.24		0.41	0.51	99.49	**99.5**
#20	0.85	17.62	(**)	5.89	6.40	93.60	**93.6**
#40	0.425	85.86		28.70	35.10	64.90	**64.9**
#60	0.25	100.14		33.48	68.58	31.42	**31.4**
#100	0.15	47.21		15.78	84.36	15.64	**15.6**
#140	0.106	12.42		4.15	88.51	11.49	**11.5**
#200	0.075	5.17		1.73	90.24	9.76	**9.8**
Pan	-	29.20		9.76	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By MFP Date 12/1/25 Checked By AES Date 12/2/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-005-003	Soil Color:	Brown Gray

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	11.3	20.3	5.40	14.6	0.0517	99.6	9.7
2	11.2	20.3	5.40	14.6	0.0366	97.9	9.6
4	11.0	20.3	5.40	14.6	0.0259	94.6	9.2
8	11.0	20.3	5.40	14.6	0.0183	94.6	9.2
15	11.0	20.3	5.40	14.6	0.0134	94.6	9.2
30	10.5	20.4	5.36	14.7	0.0095	86.7	8.5
60	10.0	20.4	5.36	14.8	0.0067	78.3	7.6
240	8.3	20.3	5.40	15.1	0.0034	48.2	4.7
1440	8.0	19.5	5.66	15.2	0.0014	39.5	3.9

Soil Specimen Data

Tare No.:	202	Percent Finer than # 200:	9.76
Wt. of Tare & Dry Material (g):	207.14		
Weight of Tare (g):	196.28	Specific Gravity:	2.70 Assumed
Weight of Deflocculant (g):	5.0		
Weight of Dry Material (g):	5.86		

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By CB Date 12/2/25 Checked By AES Date 12/8/25

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ATTERBERG LIMITS

ASTM D 4318-17

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-005	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-005-003	Soil Description:	BROWN GRAY SILT

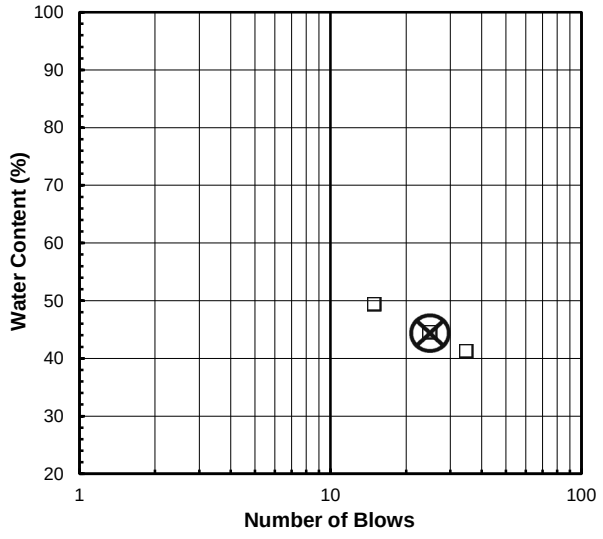
Note: The* USCS symbol used with this test refers only to the minus No. 40 *sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description. (Minus #40 sieve material, Air dried)

As Received Moisture Content		Liquid Limit Test			
ASTM D2216-19		1	2	3	M
Tare Number:	403	A-B	T	B3	U
Wt. of Tare & Wet Sample (g):	510.60	29.78	35.17	28.98	L
Wt. of Tare & Dry Sample (g):	442.52	25.61	28.99	24.60	T
Weight of Tare (g):	142.67	15.46	15.07	15.72	I
Weight of Water (g):	68.1	4.2	6.2	4.4	P
Weight of Dry Sample (g):	299.9	10.2	13.9	8.9	O
Was As Received MC Preserved:	**Yes**				I
Moisture Content (%):	**22.7**	**41.1**	**44.4**	**49.3**	N
Number of Blows:		**35**	**25**	**15**	T

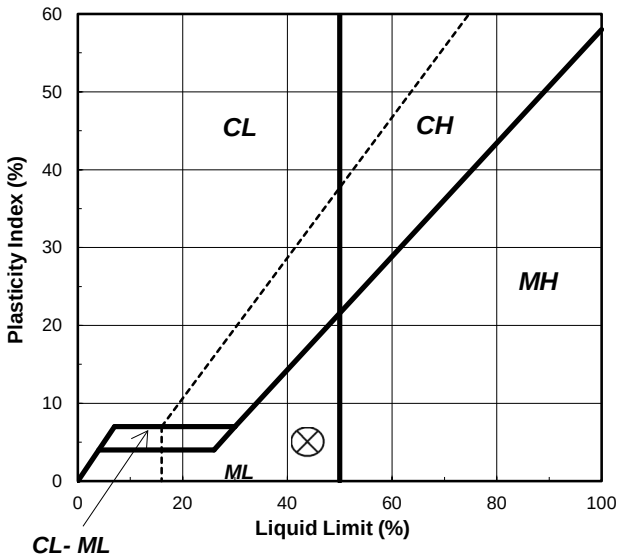
Plastic Limit Test	1	2	Range
Tare Number:	11	21	
Wt. of Tare & Wet Sample (g):	27.10	27.84	
Wt. of Tare & Dry Sample (g):	21.48	22.00	
Weight of Tare (g):	7.04	7.04	
Weight of Water (g):	5.6	5.8	
Weight of Dry Sample (g):	14.4	15.0	
Moisture Content (%):	**38.9**	**39.0**	**-0.1**
Note: The acceptable range of the two Moisture Contents is ±			0.84

Test Results	
Liquid Limit (%):	**44**
Plastic Limit (%):	**39**
Plasticity Index (%):	**5**
USCS Symbol:	**ML**

Flow Curve



Plasticity Chart



Tested By SM *Date* 12/3/25 *Checked By* AES *Date* 12/8/25

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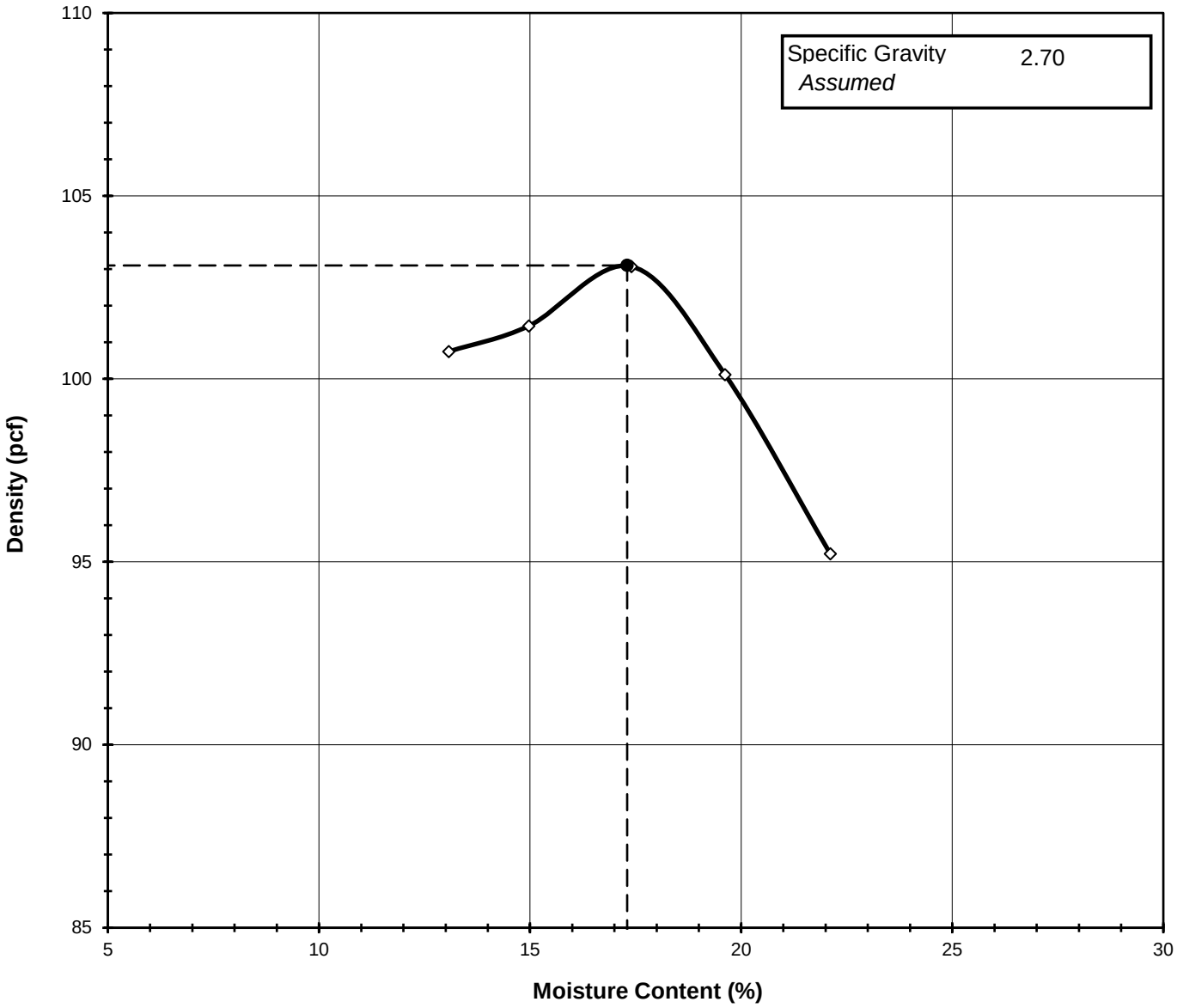
MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-005	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-005-003	Test Method	**STANDARD**

Visual Description: Brown Gray Poorly Graded Sand with Silt

Optimum Moisture Content (%): 17.3
Maximum Dry Density (pcf): 103.1



Tested By CRW *Date* 11/24/25 *Checked By* AES *Date* 11/26/25

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MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-005	Sample No.:	TS-S3 ISS
Lab ID:	R-2025-197-005-003		

Visual Description: Brown Gray Poorly Graded Sand with Silt

Total Weight of the Sample (g):	33850
As Received Water Content (%):	NA
Assumed Specific Gravity:	2.70
Percent Retained on 3/4":	NA
Percent Retained on 3/8":	NA
Percent Retained on #4:	NA
Oversize Material:	Not included
Procedure Used:	B

Test Type:	**STANDARD**
Rammer Weight (lb):	5.5
Rammer Drop (in):	12
Rammer Type:	MECHANICAL
Machine ID:	R174
Mold ID:	R607
Mold diameter:	4"
Weight of the Mold (g):	4231
Volume of the Mold (cm^3):	937

Mold / Specimen

Point No.	**1**	**2**	**3**	**4**	**5**
Weight of Mold & Wet Sample (g):	5940	5981	6047	6028	5976
Weight of Mold (g):	4231	4231	4231	4231	4231
Weight of Wet Sample (g):	1710	1751	1816	1798	1745
Mold Volume (cm^3):	937	937	937	937	937

Moisture Content / Density

Tare Number:	20-A	722	431	428	433
Weight of Tare & Wet Sample (g):	428.10	396.60	382.80	505.80	503.30
Weight of Tare & Dry Sample (g):	389.21	356.60	340.70	439.16	430.34
Weight of Tare (g):	91.80	89.40	98.80	99.50	100.40
Weight of Water (g):	38.89	40.00	42.10	66.64	72.96
Weight of Dry Sample (g):	297.41	267.20	241.90	339.66	329.94

Wet Density (g/cm^3):	1.83	1.87	1.94	1.92	1.86
Wet Density (pcf):	113.9	116.6	121.0	119.8	116.3
Moisture Content (%):	**13.1**	**15.0**	**17.4**	**19.6**	**22.1**
Dry Density (pcf):	**100.7**	**101.4**	**103.1**	**100.1**	**95.2**

Zero Air Voids

Moisture Content (%):	8.0	12.0	16.0
Dry Unit Weight (pcf):	138.6	127.3	117.7

Tested By CRW *Date* 11/24/25 *Checked By* AES *Date* 11/26/25

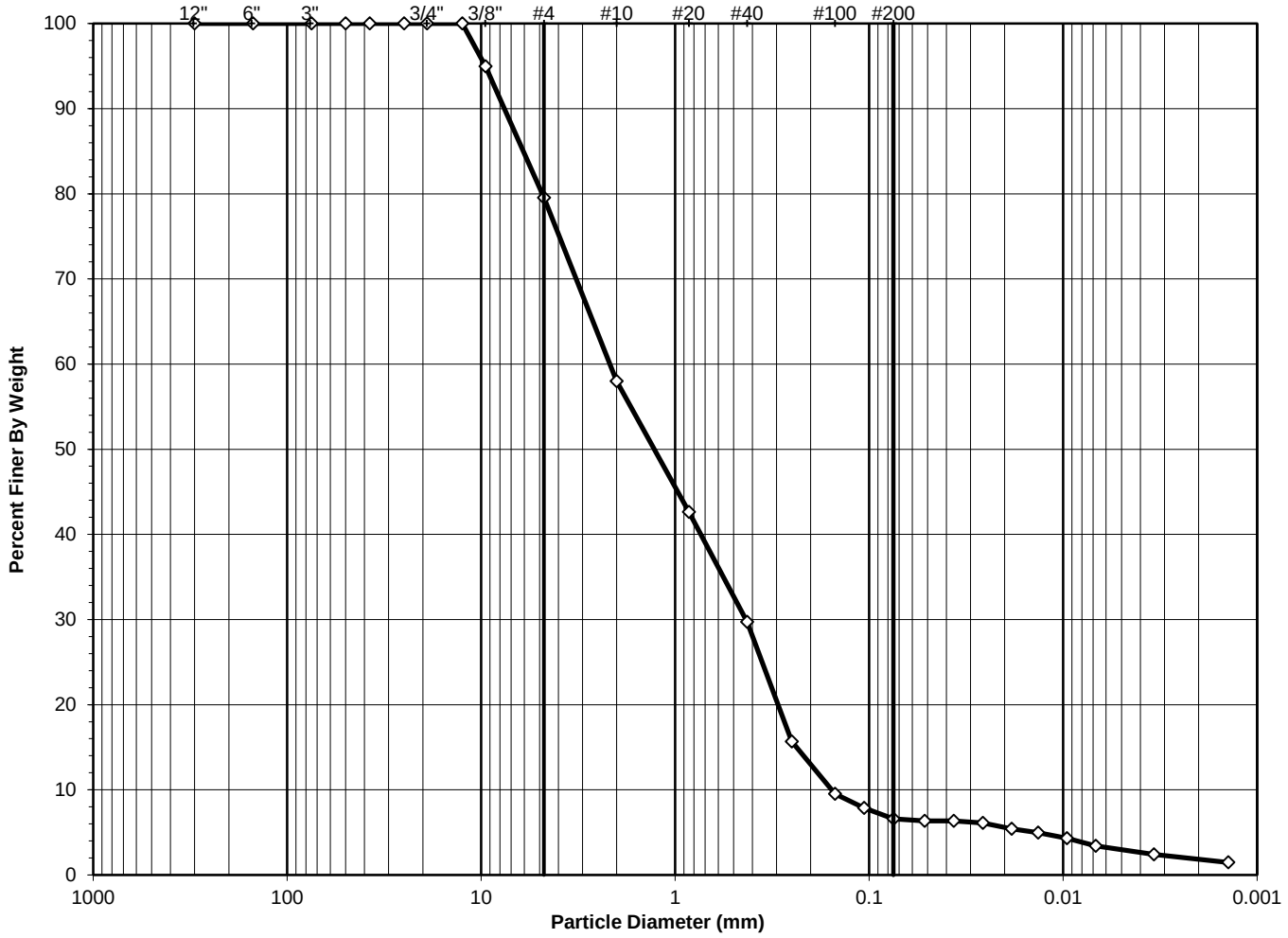
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-S4 ISS
Lab ID:	R-2025-197-005-004	Soil Color:	Gray Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP-SM, TESTED

D60 = 2.17 D50 = 1.28

D30 = 0.43 CU = 13.92

USCS Classification:
POORLY GRADED SAND WITH SILT AND GRAVEL (NON-PLASTIC FINES)

D10 = 0.156

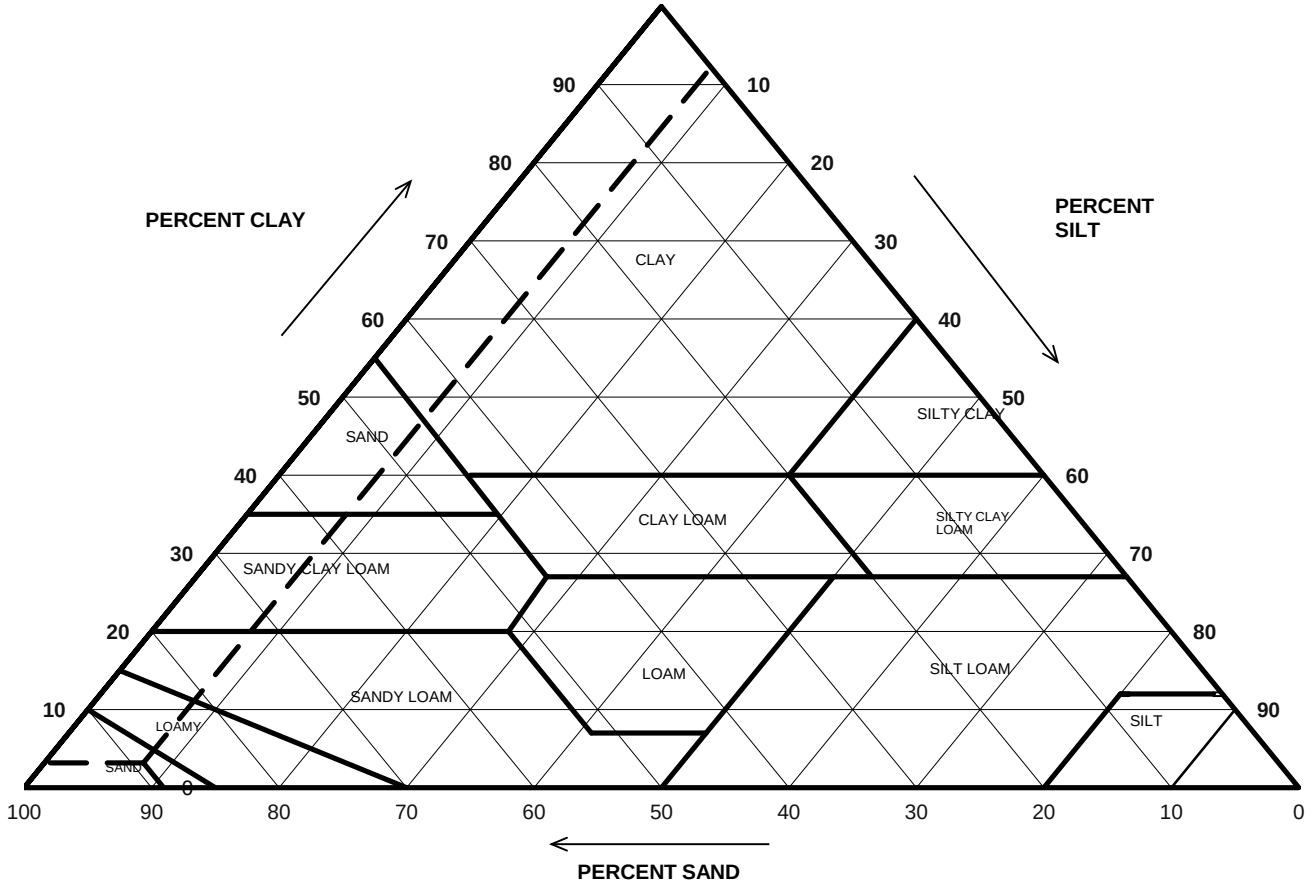
Tested By MFP Date 12/1/25 Checked By AES Date 12/2/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-S4 ISS
Lab ID:	R-2025-197-005-004	Soil Color:	Gray Brown



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**42.02**	
2	**57.98**	**Sand**	**51.64**	**89.06**
0.05	**6.35**	**Silt**	**4.51**	**7.77**
0.002	**1.84**	**Clay**	**1.84**	**3.17**

USDA Classification: SAND

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-S4 ISS
Lab ID:	R-2025-197-005-004	Soil Color:	Gray Brown

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	415	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	588.84	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	526.22	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	141.78	Weight of Tare (g):	NA
Weight of Water (g):	62.62	Weight of Water (g):	NA
Weight of Dry Soil (g):	384.44	Weight of Dry Soil (g):	NA
Moisture Content (%):	**16.3**	**Moisture Content (%):**	**0.0**

Dry Weight of Sample (g):	NA	Total Dry Weight of Sample (g):	384.44
Tare No. (Sub-Specimen)	415	Wet Weight of +3/4" Sample (g):	0.00
Wt. of Tare & Wet Sub-Specimen (g):	588.84	Dry Weight of + 3/4" Sample (g):	0.00
Weight of Tare (g):	141.78	Dry Weight of - 3/4" Sample (g):	384.44
Sub-Specimen Wet Weight (g):	447.06	Dry Weight -3/4" +3/8" Sample (g):	19.37
Tare No. (-3/8" Sub-Specimen):	NA	Dry Weight of -3/8" Sample (g):	365.07
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	NA	J - Factor (% Finer than 3/4"):	NA
Weight of Tare (g):	NA	J - Factor (% Finer than 3/8"):	NA
Sub-Specimen -3/8" Wet Weight (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100**
6"	150	0.00		0.00	0.00	100.00	**100**
3"	75	0.00		0.00	0.00	100.00	**100**
2"	50	0.00	(*)	0.00	0.00	100.00	**100**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100**
1"	25	0.00		0.00	0.00	100.00	**100**
3/4"	19	0.00		0.00	0.00	100.00	**100**
1/2"	12.5	0.00	(**)	0.00	0.00	100.00	**100**
3/8"	9.5	19.37		5.04	5.04	94.96	**95**
#4	4.75	59.27		15.42	20.46	79.54	**80**
#10	2	82.89		21.56	42.02	57.98	**58**
#20	0.85	59.06	(**)	15.36	57.38	42.62	**43**
#40	0.425	49.58		12.90	70.28	29.72	**30**
#60	0.25	54.01		14.05	84.33	15.67	**16**
#100	0.15	23.57		6.13	90.46	9.54	**10**
#140	0.106	6.47		1.68	92.14	7.86	**8**
#200	0.075	4.84		1.26	93.40	6.60	**7**
Pan	-	25.38		6.60	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By MFP Date 12/1/25 Checked By AES Date 12/2/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-S4 ISS
Lab ID:	R-2025-197-005-004	Soil Color:	Gray Brown

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	12.5	19.6	5.63	14.3	0.0517	96.1	6.3
2	12.5	19.6	5.63	14.3	0.0366	96.1	6.3
4	12.3	19.6	5.63	14.4	0.0259	92.6	6.1
8	11.5	19.6	5.63	14.5	0.0184	82.1	5.4
15	11.0	19.6	5.63	14.6	0.0135	75.1	5.0
30	10.3	19.7	5.59	14.8	0.0096	65.1	4.3
60	9.3	19.8	5.56	14.9	0.0068	51.6	3.4
240	8.0	20.3	5.40	15.2	0.0034	36.4	2.4
1440	7.3	19.5	5.66	15.3	0.0014	22.2	1.5

Soil Specimen Data

Tare No.:	200	Percent Finer than # 200:	6.60
Wt. of Tare & Dry Material (g):	183.09		
Weight of Tare (g):	171.02	Specific Gravity:	2.70 Assumed
Weight of Deflocculant (g):	5.0		
Weight of Dry Material (g):	7.07		

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By CB Date 12/4/25 Checked By AES Date 12/12/25

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ATTERBERG LIMITS

ASTM D 4318-17

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-005	Sample No.:	TS-S4 ISS
Lab ID:	R-2025-197-005-004	Color:	Gray Brown
			(MInus No. 40 sieve material)

As Received
Water Content

Tare Number	415
Wt. of Tare & Wet Sample (g)	588.84
Wt. of Tare & Dry Sample (g)	526.22
Weight of Tare (g)	141.78
Weight of Water (g)	62.62
Weight of Dry Sample (g)	384.44
Water Content (%)	**16.3**

NON - PLASTIC MATERIAL

Tested By *SM* *Date* *12/3/25* *Checked By* *AES* *Date* *12/3/25*

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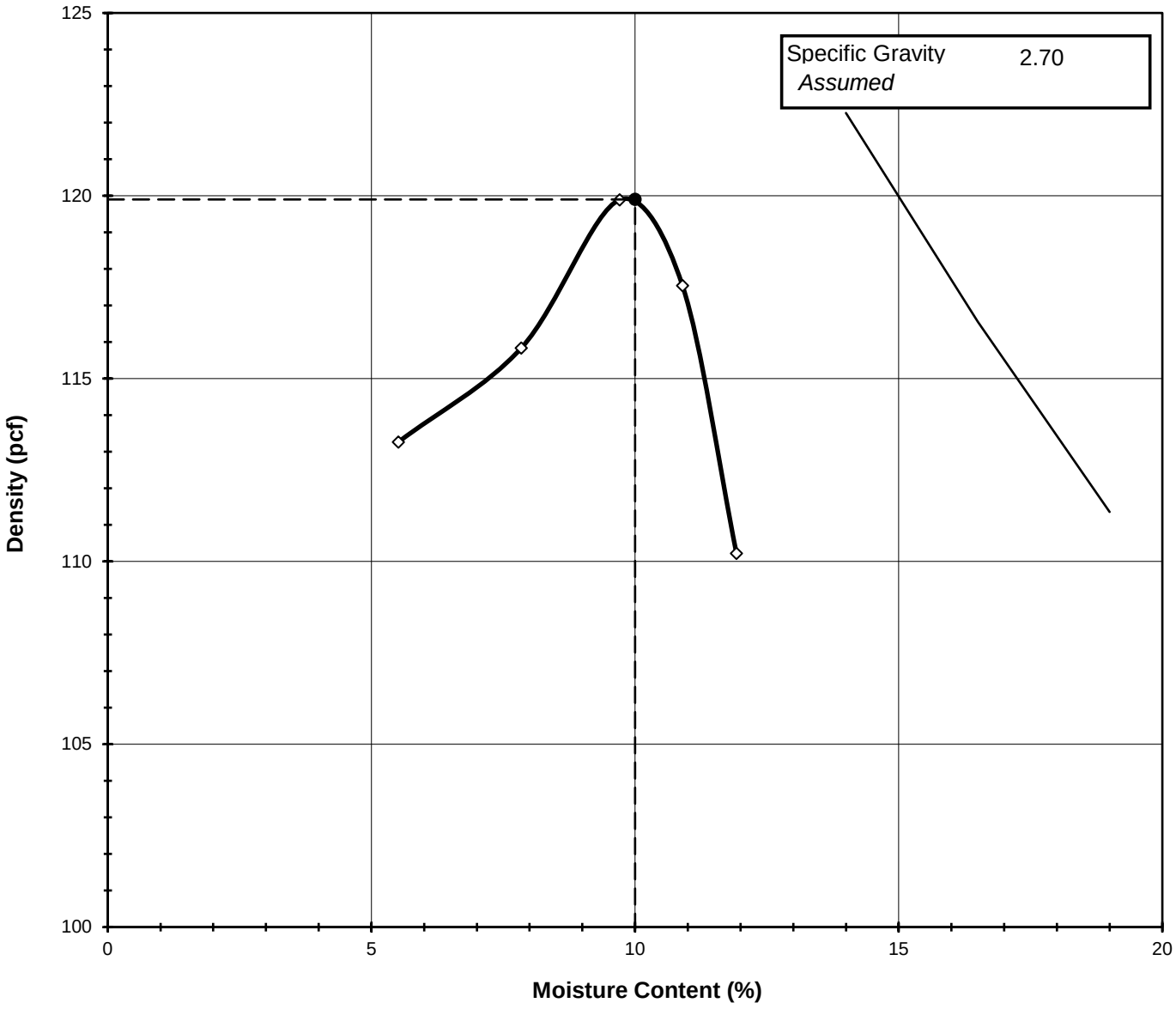
MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-005	Sample No.:	TS-S4 ISS
Lab ID:	R-2025-197-005-004	Test Method	**STANDARD**

Visual Description: Gray Brown Sand with Silt and Gravel

Optimum Moisture Content (%): 10.0
Maximum Dry Density (pcf): 119.9



Tested By *MFP* *Date* *12/5/25* *Checked By* *AES* *Date* 12/12/25

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MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-005	Sample No.:	TS-S4 ISS
Lab ID:	R-2025-197-005-004		

Visual Description: Gray Brown Sand with Silt and Gravel

Total Weight of the Sample (g):	31750
As Received Water Content (%):	NA
Assumed Specific Gravity:	2.70
Percent Retained on 3/4":	NA
Percent Retained on 3/8":	NA
Percent Retained on #4:	NA
Oversize Material:	Not included
Procedure Used:	C

Test Type:	**STANDARD**
Rammer Weight (lb):	5.5
Rammer Drop (in):	12
Rammer Type:	MECHANICAL
Machine ID:	R174
Mold ID:	R608
Mold diameter:	6"
Weight of the Mold (g):	5520
Volume of the Mold (cm^3):	2115

Mold / Specimen

Point No.	**1**	**2**	**3**	**4**	**5**
Weight of Mold & Wet Sample (g):	9571	9754	9978	9938	9701
Weight of Mold (g):	5520	5520	5520	5520	5520
Weight of Wet Sample (g):	4051	4235	4459	4419	4182
Mold Volume (cm^3):	2115	2115	2115	2115	2115

Moisture Content / Density

Tare Number:	486	711	491	495	714
Weight of Tare & Wet Sample (g):	440.20	445.60	498.30	529.80	745.40
Weight of Tare & Dry Sample (g):	422.35	419.91	463.09	487.49	675.27
Weight of Tare (g):	98.50	92.30	100.40	99.30	87.10
Weight of Water (g):	17.85	25.69	35.21	42.31	70.13
Weight of Dry Sample (g):	323.85	327.61	362.69	388.19	588.17

Wet Density (g/cm^3):	1.92	2.00	2.11	2.09	1.98
Wet Density (pcf):	119.5	124.9	131.5	130.4	123.4
Moisture Content (%):	**5.5**	**7.8**	**9.7**	**10.9**	**11.9**
Dry Density (pcf):	**113.3**	**115.8**	**119.9**	**117.5**	**110.2**

Zero Air Voids

Moisture Content (%):	14.0	16.5	19.0	
Dry Unit Weight (pcf):	122.3	116.6	111.4	

Tested By MFP *Date* 12/5/25 *Checked By* AES *Date* 12/12/25

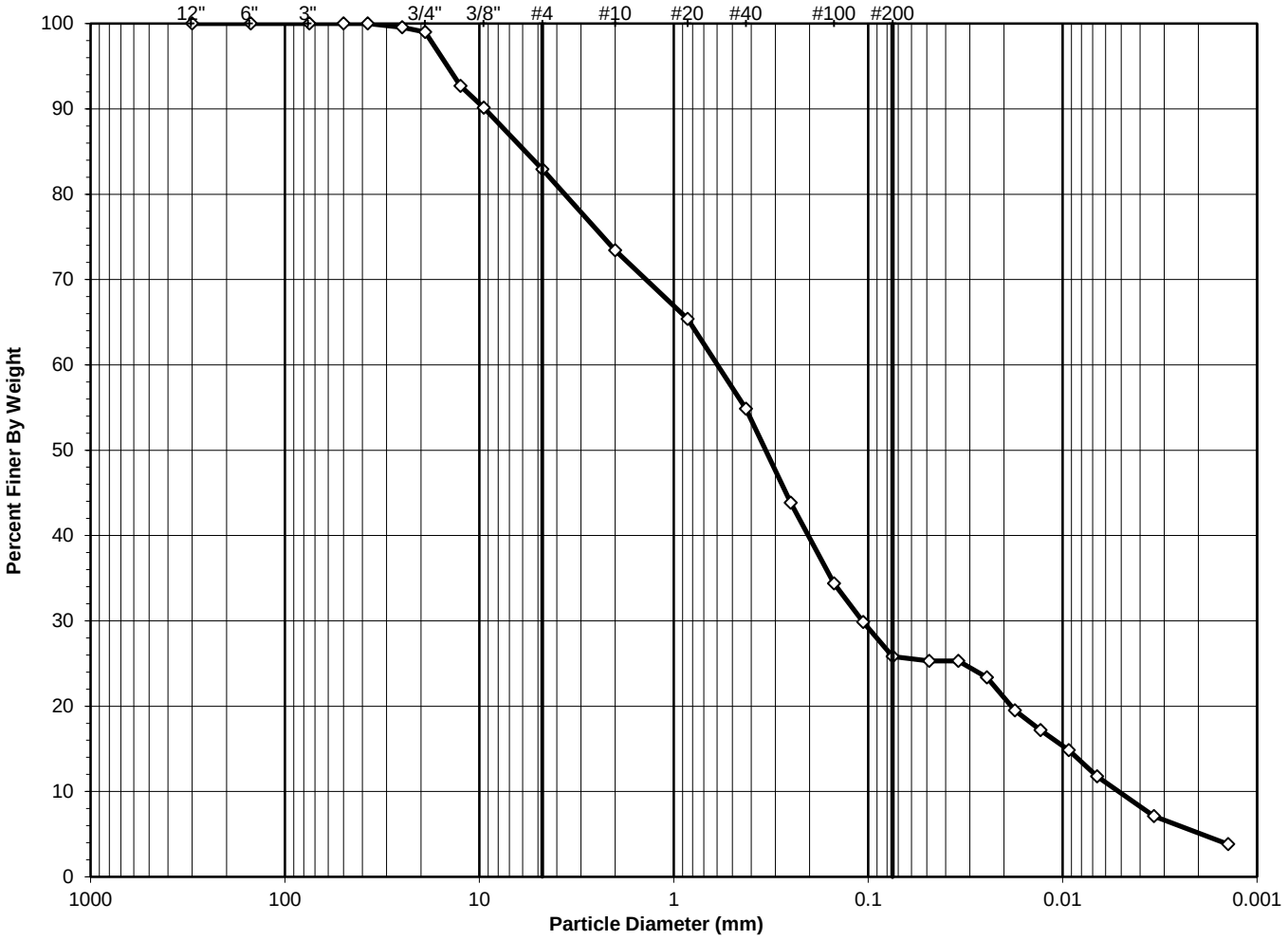
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-WP ISS
Lab ID:	R-2025-197-005-005	Soil Color:	Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SM, TESTED

D50 = 0.34

USCS Classification:
SILTY SAND WITH GRAVEL
(NON-PLASTIC FINES)

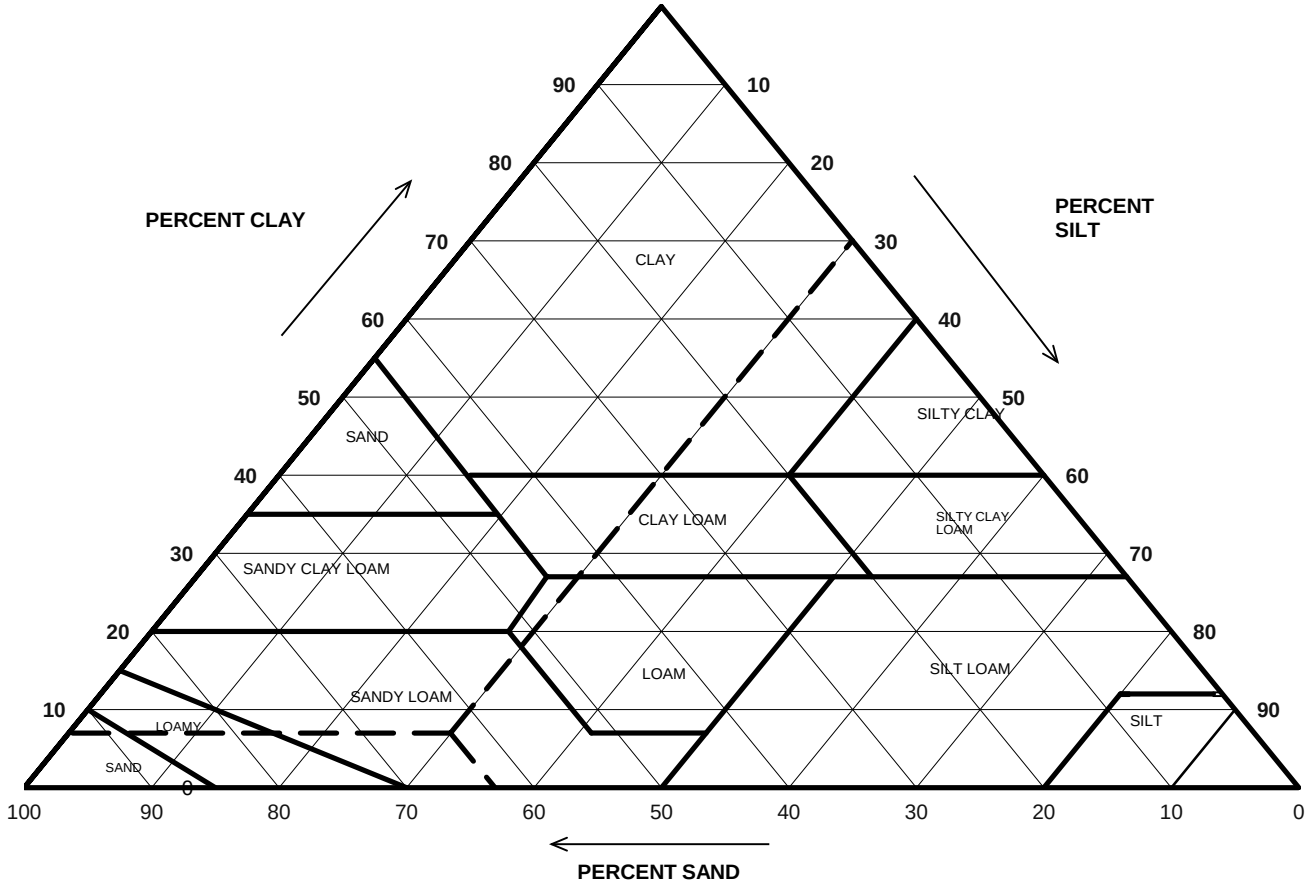
Tested By MFP Date 12/3/25 Checked By AES Date 12/12/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-WP ISS
Lab ID:	R-2025-197-005-005	Soil Color:	Brown



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**26.58**	
2	**73.42**	**Sand**	**46.30**	**63.06**
0.05	**27.12**	**Silt**	**21.99**	**29.95**
0.002	**5.13**	**Clay**	**5.13**	**6.99**

USDA Classification: SANDY LOAM

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-WP ISS
Lab ID:	R-2025-197-005-005	Soil Color:	Brown

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	418	Tare No.:	735
Wt. of Tare & Wet Sample (g):	537.91	Weight of Tare & Wet Sample (g):	375.93
Wt. of Tare & Dry Sample (g):	375.83	Weight of Tare & Dry Sample (g):	357.95
Weight of Tare (g):	138.29	Weight of Tare (g):	141.07
Weight of Water (g):	162.08	Weight of Water (g):	17.98
Weight of Dry Soil (g):	237.54	Weight of Dry Soil (g):	216.88
Moisture Content (%):	**68.2**	**Moisture Content (%):**	**8.3**

Wet Weight of -3/4" Sample (g):	31015.14	Total Dry Weight of Sample (g):	18621.12
Tare No. -3/4" Sub-Specimen (g):	9	Wet Weight of +3/4" Sample (g):	200.62
Wt. of Tare & Wet -3/4" Sub-Specimen (g):	1524.40	Dry Weight of + 3/4" Sample (g):	185.26
Weight of Tare (g):	312.10	Dry Weight of - 3/4" Sample (g):	18435.85
Sub-Specimen 3/4" Wet Weight (g):	1212.30	Dry Weight -3/4" +3/8" Sample (g):	1651.68
Tare No. (-3/8" Sub-Specimen):	454	Dry Weight of -3/8" Sample (g):	16784.17
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	533.73	J - Factor (% Finer than 3/4"):	99.0%
Weight of Tare (g):	138.20	J - Factor (% Finer than 3/8"):	90.1%
Sub-Specimen -3/8" Wet Weight (g):	395.53		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100**
6"	150	0.00		0.00	0.00	100.00	**100**
3"	75	0.00		0.00	0.00	100.00	**100**
2"	50	0.00	(*)	0.00	0.00	100.00	**100**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100**
1"	25	92.73		0.46	0.46	99.54	**100**
3/4"	19	107.89		0.54	0.99	99.01	**99**
1/2"	12.5	45.89	(**)	6.37	6.37	93.63	**93**
3/8"	9.5	18.67		2.59	8.96	91.04	**90**
#4	4.75	18.83		8.01	8.01	91.99	**83**
#10	2	24.76		10.53	18.54	81.46	**73**
#20	0.85	21.02	(**)	8.94	27.48	72.52	**65**
#40	0.425	27.44		11.67	39.15	60.85	**55**
#60	0.25	28.74		12.22	51.38	48.62	**44**
#100	0.15	24.66		10.49	61.86	38.14	**34**
#140	0.106	11.77		5.01	66.87	33.13	**30**
#200	0.075	10.52		4.47	71.35	28.65	**26**
Pan	-	67.37		28.65	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By MFP Date 12/3/25 Checked By AES Date 12/12/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-WP ISS
Lab ID:	R-2025-197-005-005	Soil Color:	Brown

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	22.0	19.5	5.66	12.6	0.0486	98.0	25.3
2	22.0	19.5	5.66	12.6	0.0344	98.0	25.3
4	20.8	19.5	5.66	12.9	0.0245	90.5	23.4
8	18.3	19.5	5.66	13.3	0.0176	75.5	19.5
15	16.8	19.5	5.66	13.6	0.0130	66.5	17.2
30	15.3	19.5	5.66	13.9	0.0093	57.5	14.9
60	13.3	19.5	5.66	14.2	0.0067	45.5	11.8
240	10.3	19.5	5.66	14.8	0.0034	27.5	7.1
1440	8.3	19.1	5.79	15.1	0.0014	14.8	3.8

Soil Specimen Data

Tare No.:	201	Percent Finer than # 200:	25.83
Wt. of Tare & Dry Material (g):	191.00		
Weight of Tare (g):	169.51	Specific Gravity:	2.70 Assumed
Weight of Deflocculant (g):	5.0		
Weight of Dry Material (g):	16.49		

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By CB Date 12/8/25 Checked By AES Date 12/12/25

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ATTERBERG LIMITS

ASTM D 4318-17

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-005	Sample No.:	TS-WP ISS
Lab ID:	R-2025-197-005-005	Color:	Brown
			(MInus No. 40 sieve material)

As Received
Water Content

Tare Number	418
Wt. of Tare & Wet Sample (g)	537.91
Wt. of Tare & Dry Sample (g)	375.83
Weight of Tare (g)	138.29
Weight of Water (g)	162.08
Weight of Dry Sample (g)	237.54
Water Content (%)	**68.2**

NON - PLASTIC MATERIAL

Tested By *CB* *Date* *12/5/25* *Checked By* *AES* *Date* *12/8/25*

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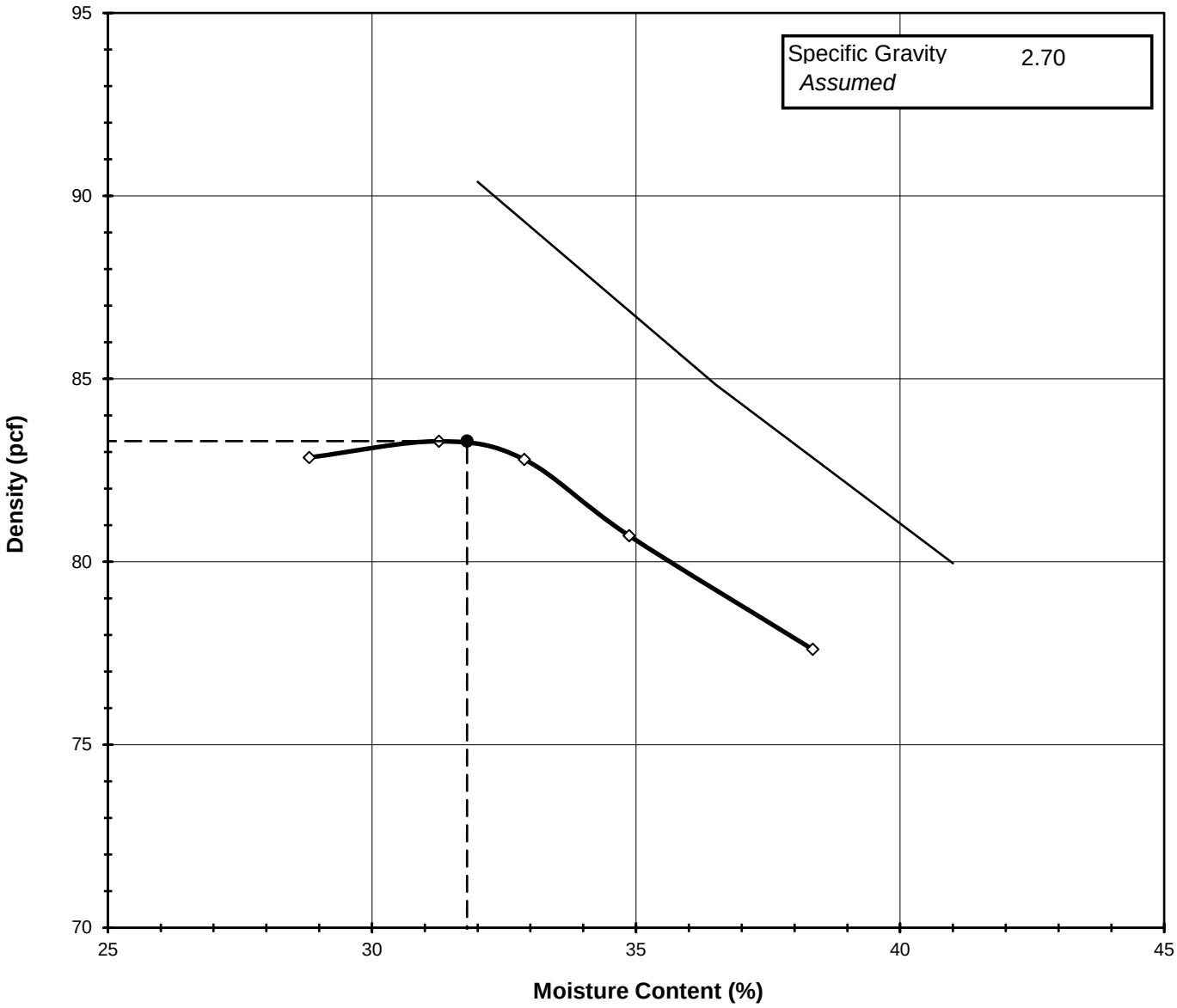
MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-005	Sample No.:	TS-WP ISS
Lab ID:	R-2025-197-005-005	Test Method	**STANDARD**

Visual Description: Brown Silty Sand with with Gravel

Optimum Moisture Content (%): 31.8
Maximum Dry Density (pcf): 83.3



Tested By CRW *Date* 12/5/25 *Checked By* AES *Date* 12/8/25

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MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-005	Sample No.:	TS-WP ISS
Lab ID:	R-2025-197-005-005		

Visual Description: Brown Silty Sand with with Gravel

Total Weight of the Sample (g):	31250
As Received Water Content (%):	NA
Assumed Specific Gravity:	2.70
Percent Retained on 3/4":	NA
Percent Retained on 3/8":	NA
Percent Retained on #4:	NA
Oversize Material:	Not included
Procedure Used:	B

Test Type:	**STANDARD**
Rammer Weight (lb):	5.5
Rammer Drop (in):	12
Rammer Type:	MECHANICAL
Machine ID:	R174
Mold ID:	R607
Mold diameter:	4"
Weight of the Mold (g):	4231
Volume of the Mold (cm^3):	937

Mold / Specimen

Point No.	**1**	**2**	**3**	**4**	**5**
Weight of Mold & Wet Sample (g):	5832	5872	5882	5864	5842
Weight of Mold (g):	4231	4231	4231	4231	4231
Weight of Wet Sample (g):	1602	1641	1651	1634	1612
Mold Volume (cm^3):	937	937	937	937	937

Moisture Content / Density

Tare Number:	19-A	8-A	485	428	702
Weight of Tare & Wet Sample (g):	335.60	310.60	359.40	387.20	325.30
Weight of Tare & Dry Sample (g):	280.15	258.34	295.11	312.74	260.50
Weight of Tare (g):	87.70	91.20	99.60	99.20	91.50
Weight of Water (g):	55.45	52.26	64.29	74.46	64.80
Weight of Dry Sample (g):	192.45	167.14	195.51	213.54	169.00

Wet Density (g/cm^3):	1.71	1.75	1.76	1.74	1.72
Wet Density (pcf):	106.7	109.3	110.0	108.9	107.4
Moisture Content (%):	**28.8**	**31.3**	**32.9**	**34.9**	**38.3**
Dry Density (pcf):	**82.9**	**83.3**	**82.8**	**80.7**	**77.6**

Zero Air Voids

Moisture Content (%):	32.0	36.5	41.0	
Dry Unit Weight (pcf):	90.4	84.9	80.0	

Tested By CRW *Date* 12/5/25 *Checked By* AES *Date* 12/8/25

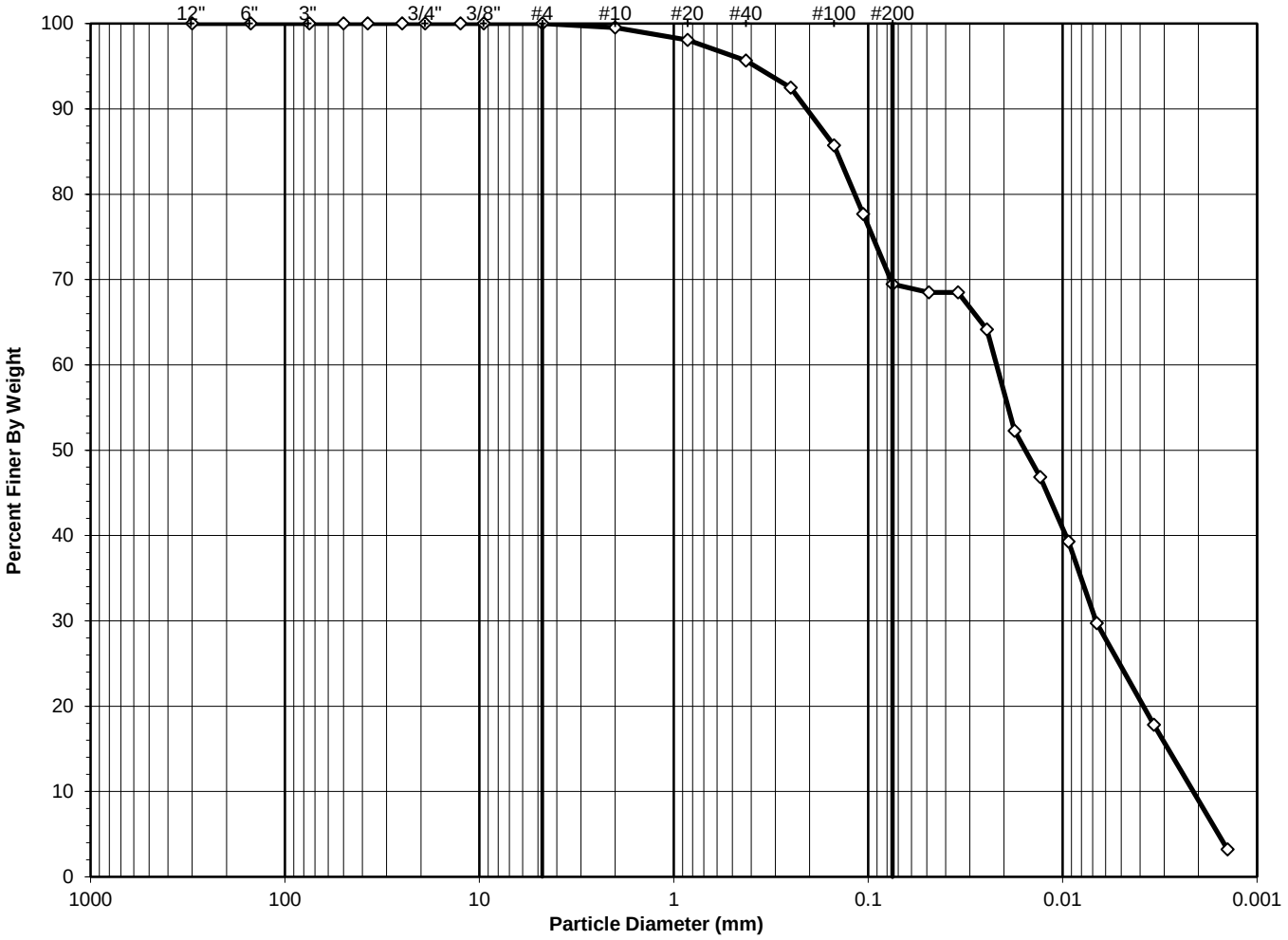
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SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-BW5 ISS
Lab ID:	R-2025-197-005-006	Soil Color:	Gray Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
MH, TESTED

USCS Classification:
SANDY ELASTIC SILT

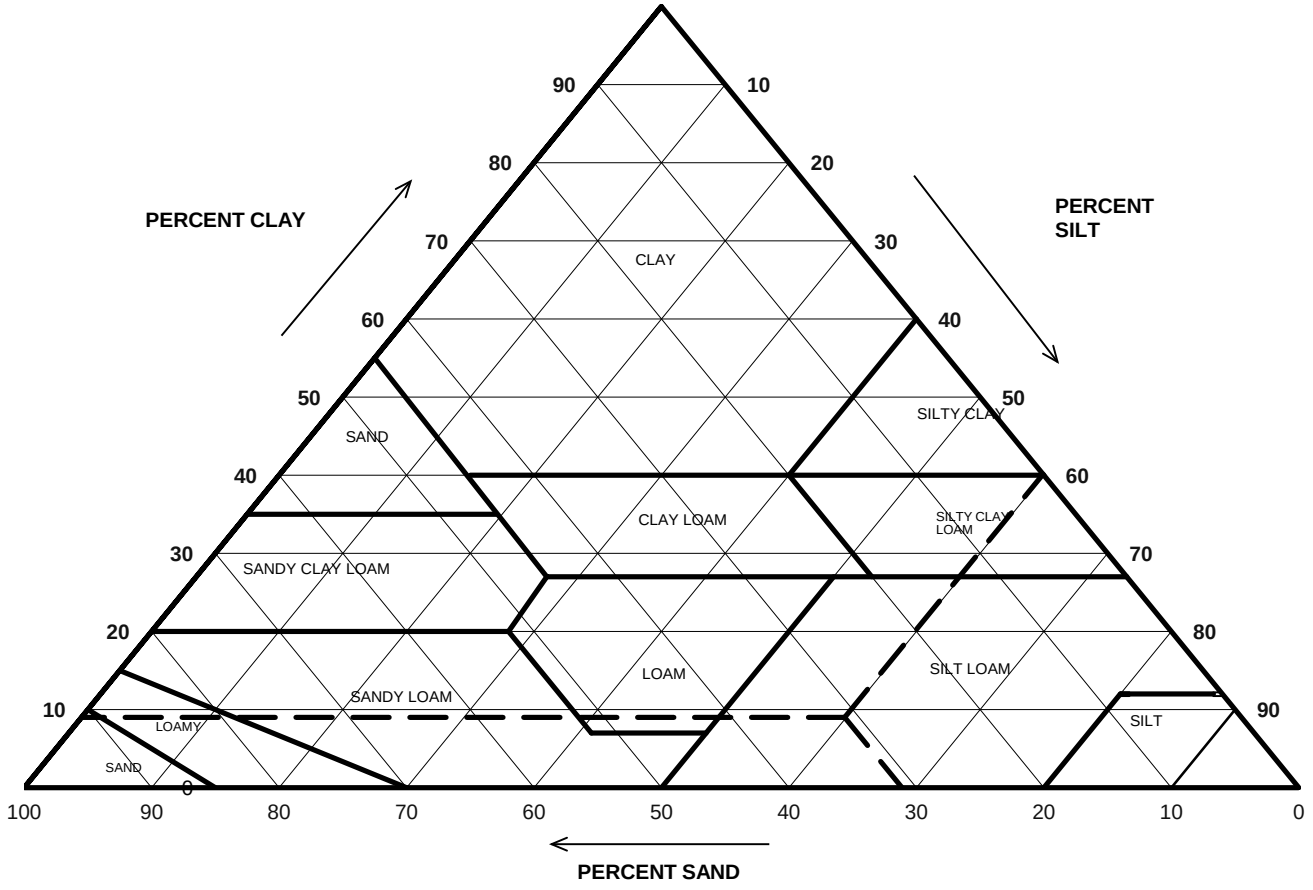
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DCN: CT-S73T, DATE 2/25/22, REV. 1

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USDA CLASSIFICATION CHART

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-BW5 ISS
Lab ID:	R-2025-197-005-006	Soil Color:	Gray Brown



USDA SUMMARY				
Particle Size (mm)	**Percent Finer**		**Actual Percentage**	Corrected % of Minus 2.0 mm material for USDA Classification
		Gravel	**0.49**	
2	**99.51**	**Sand**	**30.97**	**31.13**
0.05	**68.53**	**Silt**	**59.57**	**59.87**
0.002	**8.96**	**Clay**	**8.96**	**9.00**

USDA Classification: SILT LOAM

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WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-BW5 ISS
Lab ID:	R-2025-197-005-006	Soil Color:	Gray Brown

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	745	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	518.49	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	324.61	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	141.79	Weight of Tare (g):	NA
Weight of Water (g):	193.88	Weight of Water (g):	NA
Weight of Dry Soil (g):	182.82	Weight of Dry Soil (g):	NA
Moisture Content (%):	**106.0**	**Moisture Content (%):**	**0.0**

Dry Weight of Sample (g):	NA	Total Dry Weight of Sample (g):	182.82
Tare No. (Sub-Specimen)	745	Wet Weight of +3/4" Sample (g):	0.00
Wt. of Tare & Wet Sub-Specimen (g):	518.49	Dry Weight of + 3/4" Sample (g):	0.00
Weight of Tare (g):	141.79	Dry Weight of - 3/4" Sample (g):	182.82
Sub-Specimen Wet Weight (g):	376.70	Dry Weight -3/4" +3/8" Sample (g):	0.00
Tare No. (-3/8" Sub-Specimen):	454	Dry Weight of -3/8" Sample (g):	182.82
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	533.73	J - Factor (% Finer than 3/4"):	NA
Weight of Tare (g):	138.20	J - Factor (% Finer than 3/8"):	100.0%
Sub-Specimen -3/8" Wet Weight (g):	395.53		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)		Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	**Accumulated Percent Finer (%)**
12"	300	0.00		0.00	0.00	100.00	**100.0**
6"	150	0.00		0.00	0.00	100.00	**100.0**
3"	75	0.00		0.00	0.00	100.00	**100.0**
2"	50	0.00	(*)	0.00	0.00	100.00	**100.0**
1 1/2"	37.5	0.00		0.00	0.00	100.00	**100.0**
1"	25	0.00		0.00	0.00	100.00	**100.0**
3/4"	19	0.00		0.00	0.00	100.00	**100.0**
1/2"	12.5	0.00	(**)	0.00	0.00	100.00	**100.0**
3/8"	9.5	0.00		0.00	0.00	100.00	**100.0**
#4	4.75	0.00		0.00	0.00	100.00	**100.0**
#10	2	0.95		0.49	0.49	99.51	**99.5**
#20	0.85	2.73	(**)	1.42	1.92	98.08	**98.1**
#40	0.425	4.64		2.42	4.33	95.67	**95.7**
#60	0.25	6.12		3.19	7.52	92.48	**92.5**
#100	0.15	12.99		6.77	14.29	85.71	**85.7**
#140	0.106	15.44		8.04	22.33	77.67	**77.7**
#200	0.075	15.75		8.20	30.54	69.46	**69.5**
Pan	-	133.34		69.46	100.00	-	**-**

Notes : *(*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample*
*(**) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen*

Tested By	MFP	Date	12/5/25	Checked By	AES	Date	12/12/25

DCN: CT-S73T, DATE 2/25/22, REV. 1

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HYDROMETER ANALYSIS

ASTM D7928-21

Client:	Arcadis U.S., Inc.	Boring No.:	N/A
Client Reference:	Housatonic 5A	Depth (ft):	N/A
Project No.:	R-2025-197-005	Sample No.:	TS-BW5 ISS
Lab ID:	R-2025-197-005-006	Soil Color:	Gray Brown

Elapsed Time (min)	Reading rm	Temp. (C^0)	Offset rd,m	Effective Depth, Hm (cm)	D (mm)	Mass Percent (%) Finer, Nm	Mass Percent (%) Finer, Nm'
0	NA	NA	NA	NA	NA	NA	NA
1	21.5	19.5	5.66	12.7	0.0488	98.6	68.5
2	21.5	19.5	5.66	12.7	0.0345	98.6	68.5
4	20.5	19.5	5.66	12.9	0.0246	92.4	64.2
8	17.8	19.5	5.66	13.4	0.0177	75.2	52.3
15	16.5	19.5	5.66	13.6	0.0130	67.5	46.9
30	14.8	19.5	5.66	13.9	0.0093	56.6	39.3
60	12.5	19.6	5.63	14.3	0.0067	42.8	29.7
240	9.8	19.6	5.63	14.8	0.0034	25.7	17.8
1440	6.5	19.2	5.76	15.4	0.0014	4.6	3.2

Soil Specimen Data

Tare No.:	202	Percent Finer than # 200:	69.46
Wt. of Tare & Dry Material (g):	217.14		
Weight of Tare (g):	196.25	Specific Gravity:	2.70 Assumed
Weight of Deflocculant (g):	5.0		
Weight of Dry Material (g):	15.89		

Notes: Hydrometer test is performed on - # 200 sieve material.

Hydrometer - 152H	R- 480
Cylinder	R- 54
Thermometer	R- 1505
Balance	R- 657
#200 Sieve	R- 1944
Foam Inhibitor Used	No

Tested By CB Date 12/8/25 Checked By AES Date 12/12/25

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ATTERBERG LIMITS

ASTM D 4318-17

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-005	Sample No.:	TS-BW5 ISS
Lab ID:	R-2025-197-005-006	Soil Description:	GRAY BROWN ELASTIC SILT

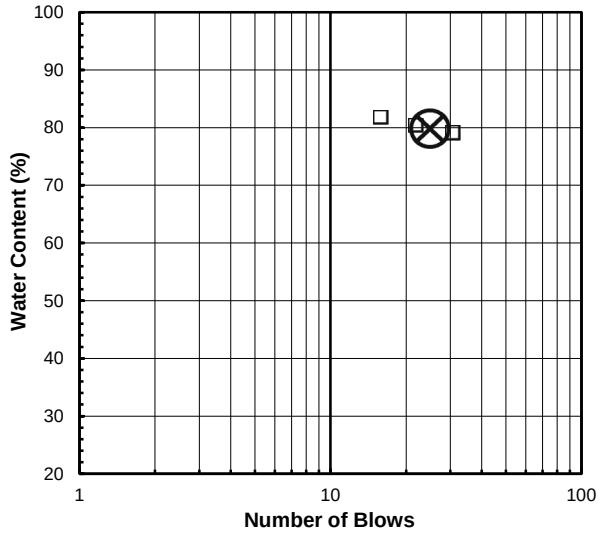
Note: The USCS symbol used with this test refers only to the minus No. 40 sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description. (Minus #40 sieve material, Air dried)

As Received Moisture Content		Liquid Limit Test			
ASTM D2216-19		1	2	3	M
Tare Number:	745	A-H	X-9	A-D	U
Wt. of Tare & Wet Sample (g):	518.49	30.74	28.14	31.07	L
Wt. of Tare & Dry Sample (g):	324.61	23.99	22.54	23.96	T
Weight of Tare (g):	141.79	15.45	15.56	15.26	I
Weight of Water (g):	193.9	6.8	5.6	7.1	P
Weight of Dry Sample (g):	182.8	8.5	7.0	8.7	O
Was As Received MC Preserved:	**Yes**				I
Moisture Content (%):	**106.0**	**79.0**	**80.2**	**81.7**	N
Number of Blows:		**31**	**22**	**16**	T

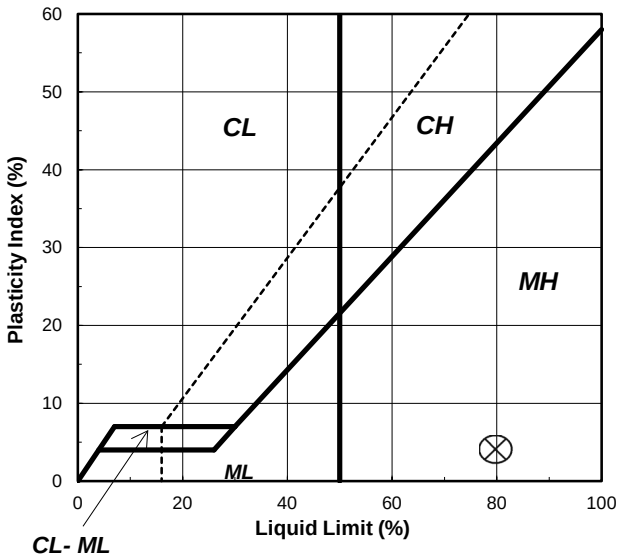
Plastic Limit Test	1	2	Range	
Tare Number:	20	35		
Wt. of Tare & Wet Sample (g):	14.73	14.73		
Wt. of Tare & Dry Sample (g):	11.40	11.41		
Weight of Tare (g):	7.02	7.03		
Weight of Water (g):	3.3	3.3		
Weight of Dry Sample (g):	4.4	4.4		
Moisture Content (%):	**76.0**	**75.8**	**0.2**	
Note: The acceptable range of the two Moisture Contents is ±				0.84

Test Results	
Liquid Limit (%):	**80**
Plastic Limit (%):	**76**
Plasticity Index (%):	**4**
USCS Symbol:	**MH**

Flow Curve



Plasticity Chart



Tested By CB *Date* 12/9/25 *Checked By* AES *Date* 12/10/25

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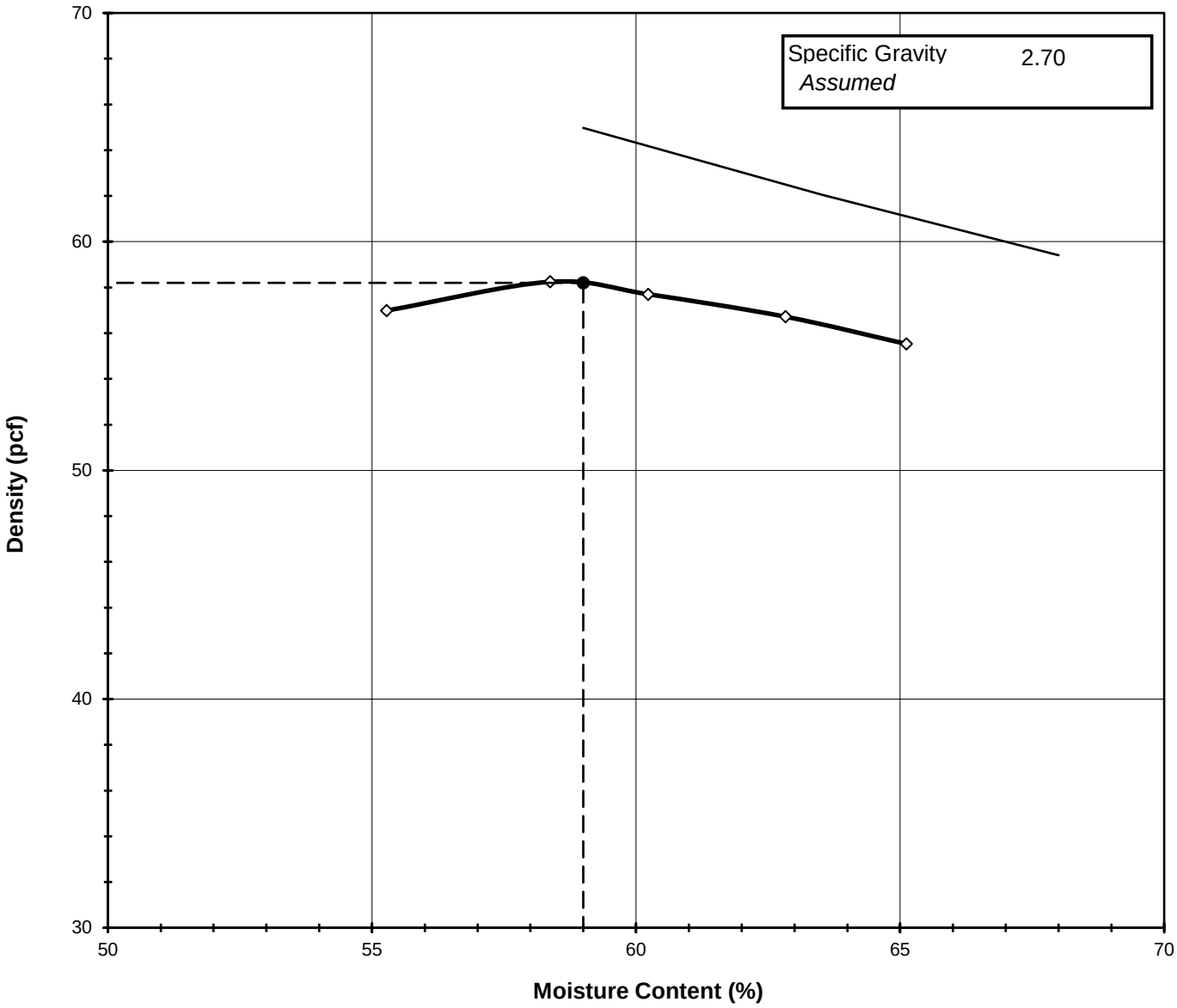
MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-005	Sample No.:	TS-BW5 ISS
Lab ID:	R-2025-197-005-006	Test Method	**STANDARD**

Visual Description: Gray Brown Sandy Elastic Silt

Optimum Moisture Content (%): 59.0
Maximum Dry Density (pcf): 58.2



Tested By MFP *Date* 12/10/25 *Checked By* AES *Date* 12/16/25

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MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client:	Arcadis U.S., Inc.	Boring No.:	NA
Client Reference:	Housatonic 5A	Depth (ft):	NA
Project No.:	R-2025-197-005	Sample No.:	TS-BW5 ISS
Lab ID:	R-2025-197-005-006		

Visual Description: Gray Brown Sandy Elastic Silt

Total Weight of the Sample (g):	25500
As Received Water Content (%):	NA
Assumed Specific Gravity:	2.70
Percent Retained on 3/4":	NA
Percent Retained on 3/8":	NA
Percent Retained on #4:	NA
Oversize Material:	Not included
Procedure Used:	B

Test Type:	**STANDARD**
Rammer Weight (lb):	5.5
Rammer Drop (in):	12
Rammer Type:	MECHANICAL
Machine ID:	R174
Mold ID:	R607
Mold diameter:	4"
Weight of the Mold (g):	4230
Volume of the Mold (cm^3):	937

Mold / Specimen

Point No.	**1**	**2**	**3**	**4**	**5**
Weight of Mold & Wet Sample (g):	5558	5614	5617	5616	5606
Weight of Mold (g):	4230	4230	4230	4230	4230
Weight of Wet Sample (g):	1328	1385	1388	1386	1376
Mold Volume (cm^3):	937	937	937	937	937
Tare Number:	488	443	441	10-A	706
Weight of Tare & Wet Sample (g):	328.80	368.50	356.40	329.40	377.90
Weight of Tare & Dry Sample (g):	247.10	269.28	259.23	236.06	264.56
Weight of Tare (g):	99.30	99.30	97.90	87.50	90.50
Weight of Water (g):	81.70	99.22	97.17	93.34	113.34
Weight of Dry Sample (g):	147.80	169.98	161.33	148.56	174.06
Wet Density (g/cm^3):	1.42	1.48	1.48	1.48	1.47
Wet Density (pcf):	88.5	92.2	92.5	92.4	91.7
Moisture Content (%):	**55.3**	**58.4**	**60.2**	**62.8**	**65.1**
Dry Density (pcf):	**57.0**	**58.2**	**57.7**	**56.7**	**55.5**

Zero Air Voids

Moisture Content (%):	59.0	63.5	68.0	
Dry Unit Weight (pcf):	65.0	62.1	59.4	

Tested By MFP *Date* 12/10/25 *Checked By* AES *Date* 12/16/25

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Appendix A6
Shake/Vibration Testing Results

Table A6-1
As-Received Samples Shake/Vibration Test

A6: Shake/Vibration Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Sample	Initial Paint Filter	Sediment Mass (gram)	Amount of Liquid Accumulated During Testing (gram)	Ratio of Water to Sediment (water/sediment)	Final Paint Filter
TS-S1	Passed	2,347	0.0	0.00	Passed
TS-WP	Failed	1,681	77	0.046	Passed
TS-S4	Passed	2,430	0.0	0.00	Passed
TS-S2	Passed	2,255	33	0.015	Passed
TS-BW5	Passed	1,402	1.5	0.0011	Passed
TS-S3	Passed	2,340	112	0.048	Passed

Notes:
1. Initial paint filter test performed as part of initial testing (see also Table 2-3).
2. Final paint filter test performed after accumulated liquid removed.

Table A6-2
Post-Gravity Drainage Study Samples Shake/Vibration Test

A6: Shake/Vibration Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Sample	Initial Paint Filter	Sediment Mass (gram)	Amount of Liquid Accumulation After Testing (gram)	Ratio of Water to Sediment (water/sediment)	Final Paint Filter
TS-S1	Passed	2,347	0.0	0.00	Passed
TS-WP	Passed	1,681	2.0	0.0012	Passed
TS-S4	Passed	2,430	0.0	0.00	Passed
TS-S2	Passed	2,255	0.0	0.00	Passed
TS-BW5	Passed	1,402	0.0	0.00	Passed
TS-S3	Passed	2,340	0.0	0.00	Passed

Notes:
1. Initial paint filter test performed as part of initial testing (see also Table 2-4).
2. Final paint filter test performed after accumulated liquid removed.

Table A6-3
Post-Sediment Stabilization Amendment Testing Samples Shake/Vibration Test

A6: Shake/Vibration Testing Results
Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

Sample	Stabilization Amendment and Mix Ratio	Initial Paint Filter	Sediment Mass (gram)	Sediment (with Amendment) Mass (gram)	Amount of Liquid Accumulation After Testing (gram)	Ratio of Water to Sediment (water/sediment)	Final Paint Filter
TS-S1	2.5% Type 1L	Passed	1,869	1,917	0.0	0.00	Passed
TS-WP	5% Type 1L	Passed	1,293	1,361	0.0	0.00	Passed
TS-S4	2.5% Type 1L	Passed	1,782	1,828	0.0	0.00	Passed
TS-S2	2.5% Type 1L	Passed	1,702	1,746	35	0.021	Passed
TS-BW5	12.5% Type 1L	Passed	928	1,061	0.0	0.00	Passed
TS-S3	5% Type 1L	Passed	1,520	1,600	42	0.028	Passed

Notes:
1. Initial paint filter test performed as part of initial testing (see also Table 2-8).
2. For samples TS-S2 and -S3, the test was prematurely concluded due to equipment failure; the liquid measured was produced after approximately an hour of shaking/vibrating. For samples TS-WP and -BW5, the samples cured for more than the 72 hours before testing.
4. Final paint filter test performed after accumulated liquid removed.

A6: Log of Example Photographs of Shake/Vibration Testing Results

Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

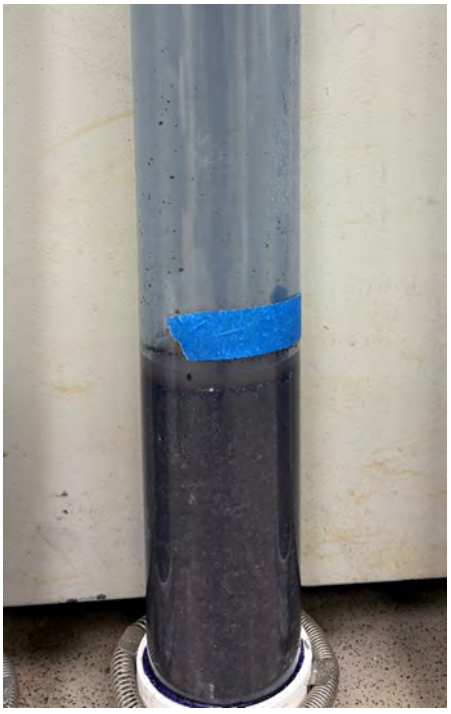


Photograph: 1

Description: TS-S1 Post Initial Vibration test. No liquid accumulation observed after testing.

Location:
Arcadis Treatability Laboratory, Durham, North Carolina

Date: 8/4/2025



Photograph: 2

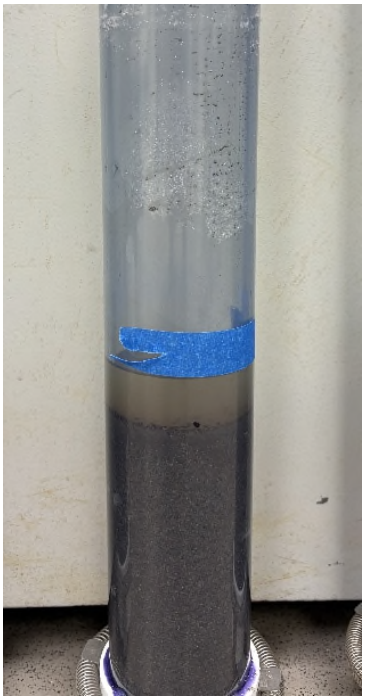
Description: TS-S2 Post Initial Vibration test. 33 grams liquid accumulation observed after testing.

Location:
Arcadis Treatability Laboratory, Durham, North Carolina

Date: 8/4/2025

A6: Log of Example Photographs of Shake/Vibration Testing Results

Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A



Photograph: 3

Description: TS-S3 Post Initial Vibration test. 112 grams liquid accumulation observed after testing.

Location:
Arcadis Treatability Laboratory, Durham, North Carolina

Date: 8/4/2025



Photograph: 4

Description: TS-S4 Post Initial Vibration test. No liquid accumulation observed after testing.

Location:
Arcadis Treatability Laboratory, Durham, North Carolina

Date: 8/4/2025

A6: Log of Example Photographs of Shake/Vibration Testing Results

Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A



Photograph: 5

Description: TS-BW5 Post Initial Vibration test. 1.5 grams liquid accumulation observed after testing.

Location:
Arcadis Treatability Laboratory, Durham, North Carolina

Date: 8/4/2025



Photograph: 6

Description: TS-WP Post Initial Vibration test. 77 grams liquid accumulation observed after testing.

Location:
Arcadis Treatability Laboratory, Durham, North Carolina

Date: 8/4/2025

A6: Log of Example Photographs of Shake/Vibration Testing Results

Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A



Photograph: 7

Description: TS-S1 Post Gravity Dewatering Vibration test. No liquid accumulation observed after testing.

Location:
Arcadis Treatability Laboratory, Durham, North Carolina

Date: 9/2/2025



Photograph: 8

Description: TS-S2 Post Gravity Dewatering Vibration test. No liquid accumulation observed after testing.

Location:
Arcadis Treatability Laboratory, Durham, North Carolina

Date: 9/2/2025

A6: Log of Example Photographs of Shake/Vibration Testing Results

Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A



Photograph: 9

Description: TS-S3 Post Gravity Dewatering Vibration test. No liquid accumulation observed after testing.

Location:
Arcadis Treatability Laboratory, Durham, North Carolina

Date: 9/2/2025



Photograph: 10

Description: TS-S4 Post Gravity Dewatering Vibration test. No liquid accumulation observed after testing.

Location:
Arcadis Treatability Laboratory, Durham, North Carolina

Date: 9/2/2025

A6: Log of Example Photographs of Shake/Vibration Testing Results

Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A



Photograph: 11

Description: TS-BW5 Post Gravity Dewatering Vibration test. No liquid accumulation observed after testing.

Location:
Arcadis Treatability Laboratory, Durham, North Carolina

Date: 9/2/2025



Photograph: 12

Description: TS-WP Post Gravity Dewatering Vibration test. 2 grams liquid accumulation observed after testing.

Location:
Arcadis Treatability Laboratory, Durham, North Carolina

Date: 9/2/2025

A6: Log of Example Photographs of Shake/Vibration Testing Results

Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

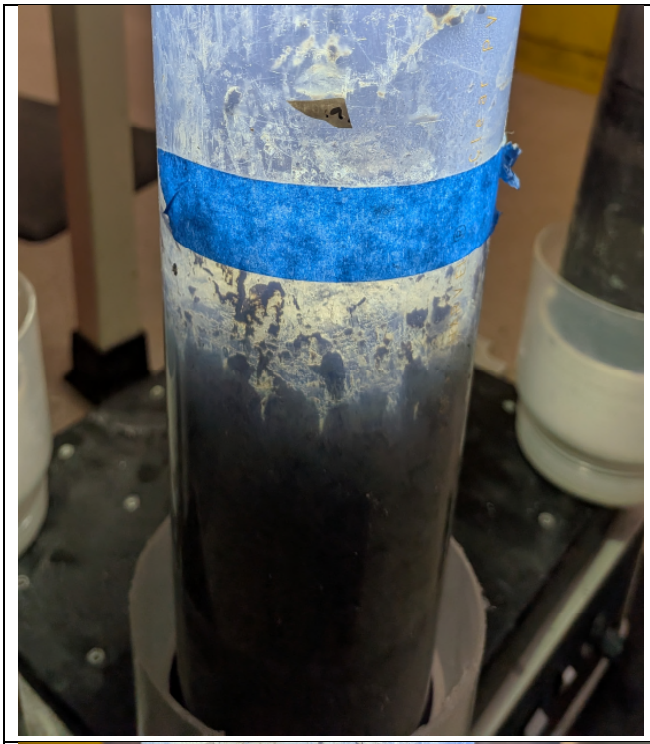
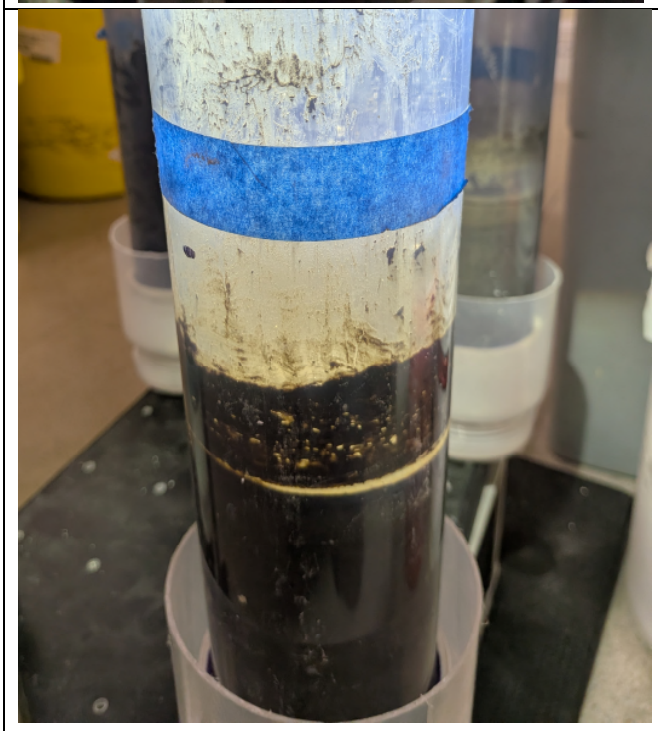
	**Photograph: 13** **Description:** TS-S1 Post Sediment Stabilization Amendment Testing Vibration test. No liquid accumulation observed after testing. **Location:** Arcadis Treatability Laboratory, Durham, North Carolina **Date:** 2/16/2026
	**Photograph: 14** **Description:** TS-S2 Post Sediment Stabilization Amendment Testing Vibration test. 35 grams liquid accumulation observed after testing. **Location:** Arcadis Treatability Laboratory, Durham, North Carolina **Date:** 2/6/2026

A6: Log of Example Photographs of Shake/Vibration Testing Results

Appendix A: Sediment Dewatering Treatability Study Results
Treatability Studies Summary Report for Reach 5A

	**Photograph: 15** **Description:** TS-S3 Post Sediment Stabilization Amendment Testing Vibration test. 42 grams liquid accumulation observed after testing. **Location:** Arcadis Treatability Laboratory, Durham, North Carolina **Date:** 2/6/2026
	**Photograph: 16** **Description:** TS-S4 Post Sediment Stabilization Amendment Testing Vibration test. No liquid accumulation observed after testing. **Location:** Arcadis Treatability Laboratory, Durham, North Carolina **Date:** 2/16/2026

A6: Log of Example Photographs of Shake/Vibration Testing Results

	**Photograph: 17** **Description:** TS-BW5 Post Sediment Stabilization Amendment Testing Vibration test. No liquid accumulation observed after testing. **Location:** Arcadis Treatability Laboratory, Durham, North Carolina **Date:** 2/6/2026
	**Photograph: 18** **Description:** TS-WP Post Sediment Stabilization Amendment Testing Vibration test. No measurable liquid accumulation observed after testing. **Location:** Arcadis Treatability Laboratory, Durham, North Carolina **Date:** 2/6/2026

Appendix B
Activated Carbon Specification Sheets

SALES SPECIFICATION SHEET

WPH

Powder Activated Carbon

Test	Specification		Calgon Carbon Test Method
	Min	Max	
IODINE NUMBER, mg/g	800	-	TM-4,ASTM D4607
MOISTURE (AS PACKAGED), wt%	-	8	TM-1,ASTM D2867
< 100 US MESH [0.150 mm], wt%	99	-	TM-13,ASTM D5158
< 200 US MESH [0.075 mm], wt%	95	-	TM-13,ASTM D5158
< 325 US MESH [0.045 mm], wt%	90	-	TM-13,ASTM D5158

Typical Properties:

Product to meet or exceed AWWA specification B-600-90.
This product complies with the requirements for activated carbon as defined by the Food Chemicals Codex (FCC) (Latest Edition) published by the U.S. Pharmacopeia.

Only products bearing the NSF Mark are Certified to NSF/ANSI/CAN 61 - Drinking Water System Components - Health Effects standard. Certified Products will bear the NSF Mark on packing or documentation shipped with the product.

Calgon Carbon Corporation's activated carbon products are continuously being improved and changes may have taken place since this publication went to press. 13365-12/16/2015



+1 800 422 7266 calgoncarbon.com

CalgonCarbon
A Kuraray Company

FILTRASORB® 400

Granular Activated Carbon

Applications



FILTRASORB 400 activated carbon can be used in a variety of liquid phase applications for the removal of dissolved organic compounds. FILTRASORB 400 has been successfully applied for over 40 years in applications such as drinking and process water purification, wastewater treatment, and food, pharmaceutical, and industrial purification.

Description

FILTRASORB 400 is a granular activated carbon for the removal of dissolved organic compounds from water and wastewater as well as industrial and food processing streams. These contaminants include taste and odor compounds, organic color, total organic carbon (TOC), industrial organic compounds such as TCE and PCE, and PFAS.

This activated carbon is made from select grades of bituminous coal through a process known as reagglomeration to produce a high activity, durable, granular product capable of withstanding the abrasion associated with repeated backwashing, hydraulic transport, and reactivation for reuse. Activation is carefully controlled to produce a significant volume of both low and high energy pores for effective adsorption of a broad range of high and low molecular weight organic contaminants.

FILTRASORB 400 is formulated to comply with all the applicable provisions of the AWWA Standard for Granular Activated Carbon (B604) and Food Chemicals Codex. This product may also be certified to the requirements of ANSI/NSF Standard 61 for use in municipal water treatment facilities. Only products bearing the NSF Mark are certified to the NSF/ANSI 61 - Drinking Water System Components - Health Effects standard. Certified Products will bear the NSF Mark on packaging or documentation shipped with the product.

Features / Benefits

- Produced from a pulverized blend of high quality bituminous coals resulting in a consistent, high quality product.
- Carbon granules are uniformly activated through the whole granule, not just the outside, resulting in excellent adsorption properties and constant adsorption kinetics.
- The reagglomerated structure ensures proper wetting while also eliminating floating material.
- High mechanical strength relative to other raw materials, thereby reducing the generation of fines during backwashing and hydraulic transport.
- Carbon bed segregation is retained after repeated backwashing, ensuring the adsorption profile remains unchanged and therefore maximizing the bed life.
- Reagglomerated with a high abrasion resistance, which provides excellent reactivation performance.
- High density carbon resulting in a greater adsorption capacity per unit volume.

Specifications[1]	FILTRASORB 400
Iodine Number, mg/g	1000 (min)
Moisture by Weight	2% (max)
Effective Size	0.55–0.75 mm
Uniformity Coefficient	1.9 (max)
Abrasion Number	75 (min)
Screen Size by Weight, US Sieve Series	
On 12 mesh	5% (max)
Through 40 mesh	4% (max)

[1]Calgon Carbon test method

Typical Properties*	FILTRASORB 400
Apparent Density (tamped)	0.54 g/cc
Water Extractables	<1%
Non-Wettable	<1%

*For general information only, not to be used as purchase specifications.

Safety Message

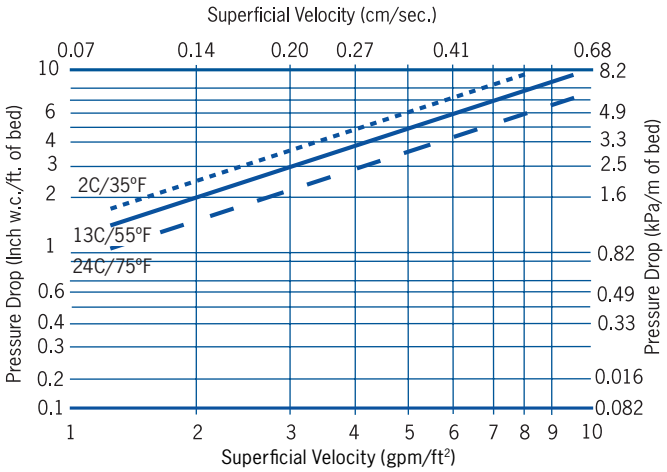
Wet activated carbon can deplete oxygen from air in enclosed spaces. If use in an enclosed space is required, procedures for work in an oxygen deficient environment should be followed.

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DS-FILTRA40017-EIN-E1

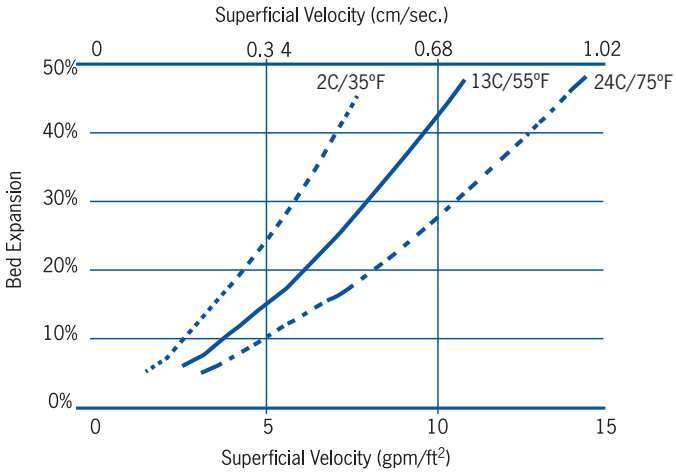
Typical Pressure Drop

Based on a backwashed and segregated bed



Typical Bed Expansion During Backwash

Based on a backwashed and segregated bed



Design Considerations

FILTRASORB 400 activated carbon is typically applied in down-flow packed-bed operations using either pressure or gravity systems. Design considerations for a treatment system is based on the user's operating conditions, the treatment objectives desired, and the chemical nature of the compound(s) being adsorbed.

Safety Message

Wet activated carbon can deplete oxygen from air in enclosed spaces. If use in an enclosed space is required, procedures for work in an oxygen deficient environment should be followed.

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Activated Carbon Products & Services

PO Box 70096 – Vancouver, WA 98665 Phone: (360) 727-3775 Email: Info@PacificCoastCarbon.com

PCC-BioCarbon™

Pacific Coast Carbon's BioCarbon is a high activity USDA certified BioCarbon blended product. It is produced in our "state of the art" patented continuous feed pyrolysis production facility which develops a highly active carbon with pore structures that are particularly well suited for adsorbing and retaining a multitude of organic and inorganic compounds.

Typical applications include storm water and process water treatment, soil remediation, soil amendment and revegetation applications. Pacific Coast Carbon BioCarbon presents superior specification to most other filtration mediums and carbons manufactured by kiln and partial gasification facilities. All of Pacific Coast Carbon BioCarbon products are manufactured under carefully controlled parameters to produce the highest quality and activity product with the following typical properties.

TYPICAL SPECIFICATIONS:

Butane Activity (g/100g dry)	10.5
U.S. Mesh Size Available	4x50 / 4x8 / 8x30/ 12x30/ 20x50
Ash (% weight maximum)	5%
Moisture (% weight)	0.5%
Bulk Density (lb/ft^3) varies by sieve size and feed stock	12 lb/ft3 – 25/ft3/ft3
Surface Area (m^2/gm. BET)	450
Ash (% weight)	1.6
Hardness Number	97 - 99
Total Nitrogen (% by mass)	0.70
Total Carbonates (as CaCO3)	1.0
pH value	7.2-7.8
Organic Carbon (% minimum)	92

Packaging: 7 ft3 drums / 27 ft3 bulk bags / bulk transport and smaller bagging options available
Shipping Point: Prineville, OR / Ridgefield, WA

Shipping Information: Pacific Coast Carbons BioCarbon is produced by high temperature pyrolysis equipment capable of creating graphitized products. It is therefore exempt from provisions of IMCO 4.2, IATA A 51, IATA #395 and UN1362. The domestic freight classification is
NMFC #40560; UFC #20460.

This information has been gathered from standard reference materials and/or test procedures and is believed to be true and accurate. It is offered solely for your consideration and verification. None of the information presented shall be construed as constituting a warranty or representation, expressed or implied, for which we assume legal responsibility or that the information or goods described is fit for any particular use either alone or in combination with other goods or processes, or that it's use does not conflict with existing patent rights. No license is granted to infringe on any patent rights or to practice any patented invention.

Appendix C
Data Validation Summary Reports

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Seattle, Washington 98101
206.287.9130

Data Validation Report – EPA Stage 2A

December 12, 2025

Project:	Housatonic Reach 5A Treatability - Backwater
Project Number:	250469-08.01
AQ DVR Number	AQ-2025-0188

This report summarizes the review of analytical results for two sediment samples collected July 1, 2025. The samples were collected by Anchor QEA and submitted to Eurofins Knoxville (ETK) in Knoxville, Tennessee. The following analytical parameter results were reviewed in this report:

- Polychlorinated biphenyls (PCBs; Aroclors) by U.S. Environmental Protection Agency (USEPA) Method 8082A
- PCBs by USEPA 1668C
- Total organic carbon (TOC) by Lloyd Kahn

ETK sample delivery group number (SDG) 140-44658-1 was reviewed in this report. Sample IDs, matrices, analyses, are presented in Table 1.

Table 1
Sample IDs, Matrices, and Analyses

Sample ID	Lab Sample ID	Matrix	Analyses
TS-BW1A	140-42658-1	Sediment	PCBs, Aroclors, TOC
TS-BW1B	140-42658-2	Sediment	PCBs, Aroclors, TOC

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the analytical procedures. Laboratory results were reviewed using the following guidelines:

- *Addendum to Treatability Study Work Plan for Reach 5A* (Anchor QEA 2025)
- *Field Sampling Plan/Quality Assurance Project Plan: GE-Pittsfield/Housatonic River Site* (Arcadis 2023)
- *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846, Third Edition; USEPA 1986)
- *National Functional Guidelines for Organic Superfund Methods Data Review* (USEPA 2020a)
- *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA 2020b)
- *National Functional Guidelines for High Resolution Superfund Methods Data Review* (USEPA 2020c)

Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody (COC) form was signed by Eurofins at the time of sample receipt. The samples were received in good condition and within the recommended temperature range.

Sample Preservation and Holding Times

Samples were appropriately preserved and analyzed within project required holding times except for TOC, which was analyzed outside of the project-required 14-day holding time. Both results have been qualified “J” to indicate they are estimated.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. Blanks were free of target analytes except for 81 PCB congeners and co-eluting congeners in batch 101657 that were detected above the method detection limit in the method blank. Associated detected batch sample results were significantly greater than (greater than five times) the concentrations detected in the method blank, so no data were qualified.

Field Quality Control

No field quality control samples were collected with this sample set.

Laboratory Control Samples and Laboratory Control Sample Duplicates

Laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) were analyzed at the required frequency and resulted in recoveries and/or RPD values within project-required control limits.

Matrix Spike and Matrix Spike Duplicate Samples

Matrix spike and matrix spike duplicate samples were not analyzed with these sample sets.

Laboratory Replicates

Laboratory duplicates were not evaluated for parameters in this sample set. Precision can be evaluated by continuous check standards; however, those are not a component of Stage 2A evaluation.

Surrogates and Labeled Compounds

Surrogates and labeled compounds were analyzed at the required frequency and within control limits for PCB congener and Aroclor samples.

Compound Quantitation

Some congeners were flagged by the laboratory for having interferences resulting in elevated detection limits. Associated results were qualified "J" to indicate a potential bias.

Estimated Maximum Potential Concentration

Results qualified as estimated maximum potential concentration (EMPC) by the laboratory due to ion abundance ratios outside of method-required criteria have been qualified "J" as estimated.

Method Reporting Limits

Most values were reported using the laboratory reporting limits (RLs) and were acceptable as reported. Values were reported as undiluted or when diluted, the reporting limit reflects the dilution factor.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the internal standard, surrogate, or LCS/LCSD recovery values. Precision was acceptable as demonstrated by the LCS/LCSD and laboratory duplicate RPD values. All data are acceptable as reported or as qualified. Table 2 summarizes the qualifiers applied to the sample results reviewed in this report.

Data Qualifier Definitions

U Indicates the compound or analyte was analyzed for but not detected at or above the specified limit.

J Indicates an estimated value.

UJ Indicates the compound or analyte was analyzed for but not detected and the specified limit reported is estimated

Table 2
Data Qualification Summary

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
All	PCBs	Various	Various	Various	EMPC
TS-BW1A	PCBs	Various	Various	J	Matrix interference
	Conventionals	TOC	74000 mg/kg	74000J mg/kg	Hold time exceedance
TS-BW1B	PCBs	Various	Various	J	Matrix interference
	Conventionals	TOC	27000 mg/kg	27000J mg/kg	Hold time exceedance

Note:
mg/kg = nanogram per kilogram

References

Anchor QEA, 2025. *Addendum to Treatability Study Work Plan for Reach 5A*. Prepared for the General Electric Company. February 2025.

Arcadis, 2023. *Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP*). Prepared for the General Electric Company, Pittsfield, Massachusetts. Revised December 2023.

USEPA (U.S. Environmental Protection Agency), 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846.

USEPA, 2020a. *National Functional Guidelines for Organic Superfund Methods Data Review*. Office of Superfund Remediation and Technology Innovation. U.S. Environmental Protection Agency. EPA-540-R-20-005. November 2020.

USEPA, 2020b. *National Functional Guidelines for Inorganic Superfund Methods Data Review*. Office of Superfund Remediation and Technology Innovation. U.S. Environmental Protection Agency. EPA-542-R-20-006. November 2020.

USEPA, 2020c. *National Functional Guidelines for High Resolution Superfund Methods Data Review*. Office of Superfund Remediation and Technology Innovation. U.S. Environmental Protection Agency. EPA-542-R-20-007. November 2020.

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Data Validation Report – EPA Stage 2A

December 11, 2025

Project:	Housatonic Reach 5A Treatability- Chemical Isolation
Project Number:	250469-08.01
Validation ID:	AQ-2025-0188_CIL

This report summarizes the review of analytical results for four porewater samples and three solid-phase microextraction (SPME) samples collected June 17 and August 03, 2025. The samples were collected by Anchor QEA and submitted to Eurofins Knoxville (ETK) in Knoxville, Tennessee. Samples were analyzed for the following parameters:

- Polychlorinated biphenyl congeners (PCBs) by U.S. Environmental Protection Agency (USEPA) Method 1668C
- Total organic carbon by USEPA 9060A
- Dissolved organic carbon (DOC) by Standard Method (SM) 5310C
- Total suspended solids (TSS) by SM 2540D

Sample IDs, matrices, analyses, and ETK sample delivery group numbers (SDGs) reviewed in this report are presented in Table 1.

Table 1
Sample IDs, SDGs, Matrices, and Analyses

Sample ID	Lab Sample ID	SDG	Matrix	Analyses (Methods)
HOUS-R5A-SPME-QAQC-1-20250617	140-42380-1	140-42380-1	SPME	PCBs
HOUS-R5A-SPME-QAQC-2-20250617	140-42380-2	140-42380-1	SPME	PCBs
HOUS-R5A-SPME-QAQC-3-20250617	140-42380-3	140-42380-1	SPME	PCBs
HOUS-R5A-TS-PW1-DWE-PW-20250803	140-43138-1	140-43138-1	Porewater	PCBs, DOC, TOC TSS
HOUS-R5A-TS-PW2-DWE-PW-20250803	140-43138-2	140-43138-1	Porewater	PCBs, DOC, TOC, TSS
HOUS-R5A-DI-AC-1254-SPIKE-20250803	140-43138-3	140-43138-2	Porewater	PCBs
HOUS-R5A-DI-AC-1260-SPIKE-20250803	140-43138-4	140-43138-2	Porewater	PCBs

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the analytical procedures. Laboratory results were reviewed using the following guidelines:

- *Addendum to Treatability Study Work Plan for Reach 5A* (Anchor QEA 2025)

- *Field Sampling Plan/Quality Assurance Project Plan: GE-Pittsfield/Housatonic River Site* (Arcadis 2023)
- *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846, Third Edition; USEPA 1986)
- *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA 2020a)
- *National Functional Guidelines for High Resolution Superfund Methods Data Review* (USEPA 2020b)

Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody (COC) form was signed by Eurofins at the time of sample receipt. The samples were received in good condition and within the recommended temperature range.

Sample Preservation and Holding Times

Samples were appropriately preserved and analyzed within project required holding times.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. Blanks were free of target analytes with the following exceptions:

- Batch 102075- Four PCB congeners and one co-eluting congener were detected in the SPME method blank for this sample batch. Associated batch sample results were not detected so no samples were qualified.
- Batch 103008- 128 PCB congeners or co-eluting congeners were detected above the method detection limit in the method blank. Associated detected sample results were not greater than 5x the levels in the blank and were qualified "U" at the detected value.

Qualified results are summarized in Table 2.

Field Quality Control

No field quality control samples were collected with this sample set.

Surrogate Spike and Internal Standard Recoveries

Surrogates and labeled compounds were analyzed at the required frequency and within control limits for PCB congener samples.

Laboratory Control Samples and Laboratory Control Sample Duplicates

Laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) were analyzed at the required frequency. LCS and LCSD recoveries were within project-required control limits with the following exceptions:

- Batch 102075- PCB-1, PCB-3, and PCB-19 did not recover in the LCS due to laboratory error. Associated congeners in samples that were not detected were rejected, and results are not considered useable.
- Batch 103008- PCB-105, PCB-118, and PCB- 156/157 recovered above the control limit in the LCS. Associated batch sample results not previously qualified as non-detect due to blank contamination were qualified "J" to indicate a possible high bias.

Matrix Spike and Matrix Spike Duplicate Samples

Matrix spike (MS) and matrix spike duplicate (MSD) samples were not analyzed with these sample sets.

Laboratory Duplicates

Laboratory duplicates were not evaluated for parameters in this sample set. Precision can be evaluated by continuous check standards; however, those are not a component of Stage 2A evaluation.

Compound Quantitation

Some congeners were flagged by the laboratory for having interferences resulting in elevated detection limits. Associated results were qualified "J" to indicate a potential bias.

Estimated Maximum Possible Concentration

Results qualified as estimated maximum potential concentration (EMPC) by the laboratory due to ion abundance ratios outside of method-required criteria have been qualified "J" as estimated.

Method Reporting Limits

Most method detection limits (MDLs), estimated detection limits (EDLs), and RLs were acceptable as reported. Non-detect values were reported using the laboratory MDL or EDL except for TSS results for samples HOUS-R5A-TS-PW1-DWE-PW-20250803 and HOUS-R5A-TS-PW2-DWE-PW-20250803 which were reported non-detect at an elevated RL. For analytes affected by field or method blank contamination, values were reported "U" at the detected value. All other values were reported as undiluted or when diluted, the reporting limit reflects the dilution factor.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. The case narrative indicated that two samples had insufficient sample volume was provided for TSS analyses. The results are reported not-detected at the elevated RL. Accuracy was mostly acceptable as demonstrated by the surrogate, or LCS/LCSD recovery values. Precision was acceptable as demonstrated by the LCS/LCSD, and laboratory duplicate RPD values, with the exceptions noted above. Most data are acceptable as reported or qualified. Table 2 summarizes the qualifiers applied to the sample results reviewed in this report.

Data Qualifier Definitions

U Indicates the compound or analyte was analyzed for but not detected at or above the specified limit.

UJ Indicates the compound or analyte was analyzed for but not detected and the specified limit reported is estimated.

J Indicates an estimated value.

R Indicates the result is rejected and unusable.

Table 2
Data Qualification Summary

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
All	PCBs	Various	Various	Various	EMPC
TS-BW1A	PCBs	Various	Various	Various	Matrix interference
TS-BW1B	PCBs	Various	Various	Various	Matrix interference
HOUS-R5A-DI-AC-1254-SPIKE-20250803	PCB Congeners	PCB-105	4400 ng/L	4400J ng/L	LCS %R above CL
		PCB-118	10000 ng/L	10000J ng/L	
		PCB-156/157	1800 ng/L	1800J ng/L	
HOUS-R5A-DI-AC-1260-SPIKE-20250803	PCB Congeners	PCB-105	210 ng/L	210J ng/L	LCS %R above CL
		PCB-118	1300 ng/L	1300J ng/L	
		PCB-156/157	1500 ng/L	1500J ng/L	
		Various	Various	Various	Matrix interference
HOUS-R5A-SPME-QAQC-1-20250617	PCB Congeners	PCB-001	0.0016U ng/samp	R	LCS %R below CL
		PCB-003	0.0042J ng/samp	0.0042J ng/samp	LCS %R below CL, EMPC
		PCB-019	0.0016U ng/samp	R	LCS %R below CL
HOUS-R5A-SPME-QAQC-2-20250617	PCB Congeners	PCB-001	0.0015U ng/samp	R	LCS %R below CL
		PCB-003	0.0021U ng/samp		
		PCB-019	0.0014U ng/samp		
HOUS-R5A-SPME-QAQC-3-20250617	PCB Congeners	PCB-001	0.021U ng/samp	R	LCS %R below CL
		PCB-003	0.016U ng/samp		
		PCB-019	0.0065U ng/samp		
HOUS-R5A-TS-PW1-DWE-PW-20250803	PCB Congeners	PCB-001	0.22 ng/L	0.22U ng/L	MB contamination

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
HOUS-R5A-TS-PW1-DWE-PW-20250803	PCB Congeners	PCB-002	0.028J ng/L	0.028U ng/L	MB contamination, EMPC
		PCB-003	0.076 ng/L	0.076U ng/L	
		PCB-004	0.25 ng/L	0.25U ng/L	
		PCB-005	0.018J ng/L	0.018U ng/L	
		PCB-006	0.083 ng/L	0.083U ng/L	
		PCB-007	0.03J ng/L	0.03U ng/L	
		PCB-008	0.32 ng/L	0.32U ng/L	
		PCB-009	0.048 ng/L	0.048U ng/L	
		PCB-010	0.024J ng/L	0.024U ng/L	
		PCB-011	0.048J ng/L	0.048U ng/L	
		PCB-012/013	0.028J ng/L	0.028U ng/L	
		PCB-014	0.0027J ng/L	0.0027U ng/L	
		PCB-015	0.094 ng/L	0.094U ng/L	
		PCB-016	0.1 ng/L	0.1U ng/L	
		PCB-017	0.15 ng/L	0.15U ng/L	
		PCB-019	0.085 ng/L	0.085U ng/L	
		PCB-020/028	0.3 ng/L	0.3U ng/L	
		PCB-021/033	0.21 ng/L	0.21U ng/L	
		PCB-022	0.089 ng/L	0.089U ng/L	
		PCB-024	0.009J ng/L	0.009U ng/L	
		PCB-025	0.039J ng/L	0.039U ng/L	
		PCB-026/029	0.14 ng/L	0.14U ng/L	
		PCB-027	0.03J ng/L	0.03U ng/L	
		PCB-031	0.42 ng/L	0.42U ng/L	
		PCB-032	0.099 ng/L	0.099U ng/L	
		PCB-035	0.021J ng/L	0.021U ng/L	
		PCB-037	0.064 ng/L	0.064U ng/L	
		PCB-040/041/071	0.56 ng/L	0.56U ng/L	
		PCB-042	0.27 ng/L	0.27U ng/L	
		PCB-044/047/065	3.5 ng/L	3.5U ng/L	
		PCB-046	0.052 ng/L	0.052U ng/L	
		PCB-048	0.22 ng/L	0.22U ng/L	
		PCB-049/069	1.9 ng/L	1.9U ng/L	
		PCB-050/053	0.37 ng/L	0.37U ng/L	
		PCB-052	9.2 ng/L	9.2U ng/L	
		PCB-056	0.47 ng/L	0.47U ng/L	
		PCB-059/062/075	0.1J ng/L	0.1U ng/L	
		PCB-060	0.24 ng/L	0.24U ng/L	
		PCB-061/070/074/076	5.3 ng/L	5.3U ng/L	
		PCB-063	0.067 ng/L	0.067U ng/L	
		PCB-064	0.97 ng/L	0.97U ng/L	
		PCB-066	1.3 ng/L	1.3U ng/L	
		PCB-067	0.071 ng/L	0.071U ng/L	
		PCB-077	0.049 ng/L	0.049U ng/L	
		PCB-079	0.057 ng/L	0.057U ng/L	
		PCB-082	0.93 ng/L	0.93U ng/L	

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
		PCB-083/099	4.4 ng/L	4.4U ng/L	
		PCB-084	3.3 ng/L	3.3U ng/L	
		PCB-085/116/117	1.4 ng/L	1.4U ng/L	
		PCB-086/087/097/109/119/125	2.3 ng/L	2.3U ng/L	
		PCB-088/091	1.5 ng/L	1.5U ng/L	
		PCB-089	0.086 ng/L	0.086U ng/L	
		PCB-090/101/113	13 ng/L	13U ng/L	
		PCB-092	2.2 ng/L	2.2U ng/L	
		PCB-095	14 ng/L	14U ng/L	
		PCB-096	0.071 ng/L	0.071U ng/L	
		PCB-098/102	0.31 ng/L	0.31U ng/L	
		PCB-103	0.086 ng/L	0.086U ng/L	
		PCB-105	2.2 ng/L	2.2U ng/L	
		PCB-107	0.41 ng/L	0.41U ng/L	
		PCB-108/124	0.27 ng/L	0.27U ng/L	
		PCB-110/115	9 ng/L	9U ng/L	
		PCB-114	0.17 ng/L	0.17U ng/L	
		PCB-118	5.9 ng/L	5.9U ng/L	
		PCB-122	0.088EMPC ng/L	0.088U ng/L	
HOUS-R5A-TS-PW1-DWE-PW-20250803	PCB Congeners	PCB-128/166	1.1 ng/L	1.1U ng/L	MB contamination
		PCB-129/138/160/163	9.3 ng/L	9.3U ng/L	
		PCB-130	0.58 ng/L	0.58U ng/L	
		PCB-131	0.18 ng/L	0.18U ng/L	
		PCB-132	3.7 ng/L	3.7U ng/L	
		PCB-133	0.13 ng/L	0.13U ng/L	
		PCB-135/151	4.9 ng/L	4.9U ng/L	
		PCB-136	2.5 ng/L	2.5U ng/L	
		PCB-137	0.42 ng/L	0.42U ng/L	
		PCB-139/140	0.17 ng/L	0.17U ng/L	
		PCB-141	2.4 ng/L	2.4U ng/L	
		PCB-144	0.77 ng/L	0.77U ng/L	
		PCB-145	0.015J ng/L	0.015U ng/L	
		PCB-146	1.3 ng/L	1.3U ng/L	
		PCB-147/149	9.1 ng/L	9.1U ng/L	
		PCB-150	0.019J ng/L	0.019U ng/L	
		PCB-152	0.014J ng/L	0.014U ng/L	
		PCB-153/168	7.7 ng/L	7.7U ng/L	
		PCB-156/157	0.86 ng/L	0.86U ng/L	
		PCB-158	1 ng/L	1U ng/L	
		PCB-159	0.082 ng/L	0.082U ng/L	
		PCB-164	0.64 ng/L	0.64U ng/L	
		PCB-167	0.25 ng/L	0.25U ng/L	
		PCB-170	1.7 ng/L	1.7U ng/L	
		PCB-171/173	0.69 ng/L	0.69U ng/L	
		PCB-172	0.35 ng/L	0.35U ng/L	
		PCB-174	2.3 ng/L	2.3U ng/L	

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
		PCB-175	0.12 ng/L	0.12U ng/L	
		PCB-176	0.46 ng/L	0.46U ng/L	
		PCB-177	1.2 ng/L	1.2U ng/L	
		PCB-178	0.53 ng/L	0.53U ng/L	
		PCB-179	1.3 ng/L	1.3U ng/L	
		PCB-180/193	4.1 ng/L	4.1U ng/L	
		PCB-183/185	1.7 ng/L	1.7U ng/L	
		PCB-187	2.6 ng/L	2.6U ng/L	
		PCB-189	0.056 ng/L	0.056U ng/L	
		PCB-190	0.36 ng/L	0.36U ng/L	
		PCB-191	0.097 ng/L	0.097U ng/L	
		PCB-194	0.46 ng/L	0.46U ng/L	
		PCB-195	0.28 ng/L	0.28U ng/L	
		PCB-196	0.43 ng/L	0.43U ng/L	
HOUS-R5A-TS-PW1-DWE-PW-20250803	PCB Congeners	PCB-197/200	0.038JEMPC ng/L	0.038UJ ng/L	MB contamination, EMPC
HOUS-R5A-TS-PW1-DWE-PW-20250803	PCB Congeners	PCB-198/199	0.76 ng/L	0.76U ng/L	MB contamination
		PCB-201	0.17 ng/L	0.17U ng/L	
		PCB-202	0.21 ng/L	0.21U ng/L	
		PCB-203	0.48 ng/L	0.48U ng/L	
		PCB-205	0.031J ng/L	0.031U ng/L	
		PCB-206	0.13 ng/L	0.13U ng/L	
		PCB-207	0.031J ng/L	0.031U ng/L	
		PCB-208	0.055 ng/L	0.055U ng/L	
		PCB-209	0.019J ng/L	0.019U ng/L	
HOUS-R5A-TS-PW1-DWE-PW-20250803	Conventionals	TSS	4.4U mg/L	4.4U mg/L	Elevated RL
HOUS-R5A-TS-PW2-DWE-PW-20250803	PCB Congeners	PCB-005	0.0092JEMPC ng/L	0.0092UJ ng/L	MB contamination, EMPC
		PCB-017	0.087EMPC ng/L	0.087UJ ng/L	
		PCB-024	0.0033JEMPC ng/L	0.0033UJ ng/L	
		PCB-055	0.0096JEMPC ng/L	0.0096UJ ng/L	
		PCB-094	0.014JEMPC ng/L	0.014UJ ng/L	
		PCB-098/102	0.082EMPC ng/L	0.082UJ ng/L	
		PCB-114	0.036JEMPC ng/L	0.036UJ ng/L	
		PCB-123	0.019JEMPC ng/L	0.019UJ ng/L	
		PCB-131	0.066EMPC ng/L	0.066UJ ng/L	
		PCB-137	0.11EMPC ng/L	0.11UJ ng/L	
		PCB-139/140	0.04JEMPC ng/L	0.04UJ ng/L	
		PCB-150	0.0052JEMPC ng/L	0.0052UJ ng/L	
		PCB-152	0.0041JEMPC ng/L	0.0041UJ ng/L	
HOUS-R5A-TS-PW2-DWE-PW-20250803	PCB Congeners	PCB-001	0.16 ng/L	0.16U ng/L	MB contamination
		PCB-002	0.025J ng/L	0.025U ng/L	
		PCB-003	0.059 ng/L	0.059U ng/L	
		PCB-004	0.19 ng/L	0.19U ng/L	
		PCB-006	0.058 ng/L	0.058U ng/L	
		PCB-007	0.019J ng/L	0.019U ng/L	
		PCB-008	0.22 ng/L	0.22U ng/L	

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
		PCB-009	0.031J ng/L	0.031U ng/L	
		PCB-010	0.013J ng/L	0.013U ng/L	
		PCB-011	0.047J ng/L	0.047U ng/L	
		PCB-012/013	0.016J ng/L	0.016U ng/L	
		PCB-015	0.055 ng/L	0.055U ng/L	
		PCB-016	0.065 ng/L	0.065U ng/L	
		PCB-018/030	0.19 ng/L	0.19U ng/L	
		PCB-019	0.052 ng/L	0.052U ng/L	
		PCB-020/028	0.15 ng/L	0.15U ng/L	
		PCB-021/033	0.096 ng/L	0.096U ng/L	
		PCB-022	0.042 ng/L	0.042U ng/L	
		PCB-025	0.015J ng/L	0.015U ng/L	
		PCB-026/029	0.048J ng/L	0.048U ng/L	
		PCB-027	0.018J ng/L	0.018U ng/L	
		PCB-031	0.17 ng/L	0.17U ng/L	
		PCB-032	0.053 ng/L	0.053U ng/L	
		PCB-035	0.006J ng/L	0.006U ng/L	
		PCB-037	0.025J ng/L	0.025U ng/L	
		PCB-040/041/071	0.17 ng/L	0.17U ng/L	
		PCB-042	0.074 ng/L	0.074U ng/L	
		PCB-043/073	0.047J ng/L	0.047U ng/L	
		PCB-044/047/065	0.96 ng/L	0.96U ng/L	
		PCB-045/051	0.17 ng/L	0.17U ng/L	
		PCB-046	0.021J ng/L	0.021U ng/L	
		PCB-048	0.077 ng/L	0.077U ng/L	
		PCB-049/069	0.54 ng/L	0.54U ng/L	
		PCB-050/053	0.14 ng/L	0.14U ng/L	
		PCB-052	2.6 ng/L	2.6U ng/L	
		PCB-056	0.1 ng/L	0.1U ng/L	
		PCB-059/062/075	0.033J ng/L	0.033U ng/L	
		PCB-060	0.059 ng/L	0.059U ng/L	
		PCB-061/070/074/076	1.1 ng/L	1.1U ng/L	
		PCB-063	0.018J ng/L	0.018U ng/L	
		PCB-064	0.24 ng/L	0.24U ng/L	
		PCB-066	0.28 ng/L	0.28U ng/L	
		PCB-067	0.023J ng/L	0.023U ng/L	
		PCB-077	0.017J ng/L	0.017U ng/L	
		PCB-079	0.014J ng/L	0.014U ng/L	
		PCB-082	0.21 ng/L	0.21U ng/L	
		PCB-083/099	1.1 ng/L	1.1U ng/L	
		PCB-084	0.82 ng/L	0.82U ng/L	
		PCB-085/116/117	0.31 ng/L	0.31U ng/L	
		PCB-086/087/097/109/119/125	1.7 ng/L	1.7U ng/L	
		PCB-088/091	0.34 ng/L	0.34U ng/L	
		PCB-089	0.025J ng/L	0.025U ng/L	
		PCB-090/101/113	5.7 ng/L	5.7U ng/L	

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
		PCB-092	0.88 ng/L	0.88U ng/L	
		PCB-093/100	0.13 ng/L	0.13U ng/L	
		PCB-095	5.5 ng/L	5.5U ng/L	
		PCB-096	0.021J ng/L	0.021U ng/L	
		PCB-103	0.028J ng/L	0.028U ng/L	
		PCB-105	0.5 ng/L	0.5U ng/L	
		PCB-107	0.078 ng/L	0.078U ng/L	
		PCB-108/124	0.068J ng/L	0.068U ng/L	
		PCB-110/115	2.9 ng/L	2.9U ng/L	
		PCB-118	1.6 ng/L	1.6U ng/L	
		PCB-122	0.02J ng/L	0.02U ng/L	
		PCB-128/166	0.59 ng/L	0.59U ng/L	
		PCB-129/138/160/163	6.3 ng/L	6.3U ng/L	
		PCB-130	0.32 ng/L	0.32U ng/L	
		PCB-132	2.4 ng/L	2.4U ng/L	
		PCB-133	0.084 ng/L	0.084U ng/L	
		PCB-134/143	0.47 ng/L	0.47U ng/L	
		PCB-135/151	4.1 ng/L	4.1U ng/L	
		PCB-136	1.7 ng/L	1.7U ng/L	
		PCB-141	2.1 ng/L	2.1U ng/L	
		PCB-144	0.62 ng/L	0.62U ng/L	
		PCB-146	0.92 ng/L	0.92U ng/L	
		PCB-147/149	7 ng/L	7U ng/L	
		PCB-153/168	6.2 ng/L	6.2U ng/L	
		PCB-156/157	0.44 ng/L	0.44U ng/L	
		PCB-158	0.68 ng/L	0.68U ng/L	
		PCB-159	0.11 ng/L	0.11U ng/L	
		PCB-164	0.46 ng/L	0.46U ng/L	
		PCB-167	0.16 ng/L	0.16U ng/L	
		PCB-170	1.9 ng/L	1.9U ng/L	
		PCB-171/173	0.78 ng/L	0.78U ng/L	
		PCB-172	0.4 ng/L	0.4U ng/L	
		PCB-174	2.7 ng/L	2.7U ng/L	
		PCB-175	0.13 ng/L	0.13U ng/L	
		PCB-176	0.48 ng/L	0.48U ng/L	
		PCB-177	1.4 ng/L	1.4U ng/L	
		PCB-178	0.58 ng/L	0.58U ng/L	
		PCB-179	1.4 ng/L	1.4U ng/L	
		PCB-180/193	4.8 ng/L	4.8U ng/L	
		PCB-183/185	2 ng/L	2U ng/L	
		PCB-187	3 ng/L	3U ng/L	
		PCB-189	0.063 ng/L	0.063U ng/L	
		PCB-190	0.41 ng/L	0.41U ng/L	
		PCB-191	0.11 ng/L	0.11U ng/L	
		PCB-194	0.64 ng/L	0.64U ng/L	
		PCB-195	0.34 ng/L	0.34U ng/L	

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
		PCB-196	0.55 ng/L	0.55U ng/L	
		PCB-197/200	0.24 ng/L	0.24U ng/L	
		PCB-198/199	0.99 ng/L	0.99U ng/L	
		PCB-201	0.21 ng/L	0.21U ng/L	
		PCB-202	0.25 ng/L	0.25U ng/L	
		PCB-203	0.58 ng/L	0.58U ng/L	
		PCB-205	0.042 ng/L	0.042U ng/L	
		PCB-206	0.19 ng/L	0.19U ng/L	
		PCB-207	0.038J ng/L	0.038U ng/L	
		PCB-208	0.071 ng/L	0.071U ng/L	
		PCB-209	0.025J ng/L	0.025U ng/L	
	Conventionals	TSS	4.4U mg/L	4.4U mg/L	Elevated RL

Notes:
MB: method blank
mg/L: milligram per liter
ng/L: nanogram per liter

References

Anchor QEA, 2025. Addendum to Treatability Study Work Plan for Reach 5A. Prepared for the General Electric Company. February 2025.

Arcadis, 2023. Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP). Prepared for the General Electric Company, Pittsfield, Massachusetts. Revised December 2023.

USEPA (U.S. Environmental Protection Agency),1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846.

USEPA, 2020a. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. EPA-540-R-20-006. November 2020.

USEPA, 2020b. USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. EPA 542-R-20-007. November 2020.

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Data Validation Report – EPA Stage 2A

December 29, 2025

Project:	Housatonic Reach 5A Treatability
Project Number:	250469-08.01
Validation ID:	AQ-2025-0189_BW

This report summarizes the review of analytical results for one sediment sample collected October 27, 2025. The samples were collected by Anchor QEA and submitted to Eurofins Knoxville (Eurofins) in Knoxville, Tennessee. Samples were analyzed for polychlorinated biphenyl congeners (PCBs) by U.S. Environmental Protection Agency (USEPA) Method 1668C.

- PCBs by USEPA Method 8082A
- PCB congeners by USEPA method 1668

Eurofins sample delivery groups (SDGs) 140-44488-1 and 140-44488-2 were reviewed in this report. Sample IDs, matrices, and analyses are presented in Table 1.

Table 1
Sample IDs, Matrices, and Analyses

Sample ID	Lab Sample ID	Matrix	Analyses
HOUS-TS-BW1A_SPIKE2-20251027	140-44488-1, 140-44488-2	Sediment	PCB Congeners, Aroclors

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the analytical procedures. Laboratory results were reviewed using the following guidelines:

- *Addendum to Treatability Study Work Plan for Reach 5A* (Anchor QEA 2025)
- *Field Sampling Plan/Quality Assurance Project Plan: GE-Pittsfield/Housatonic River Site* (Arcadis 2023)
- *National Functional Guidelines for Organic Superfund Methods Data Review* (USEPA 2020a)
- *National Functional Guidelines for High Resolution Superfund Methods Data Review* (USEPA 2020b)

Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody (COC) form was signed by Eurofins at the time of sample receipt. The samples were received in good condition and within the recommended temperature range.

Sample Preservation and Holding Times

Samples were appropriately preserved and analyzed within holding times except for samples TS-BW1A which was noted as being received in clear glass instead of amber as recommended in the analytical SOP and methods. No data are expected to be impacted.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. Blanks were free of target analytes except for 25 PCB congeners in the method blank in batch. Associated results were either non-detect or significantly greater than (greater than five times) the level detected in the blank, so no data were qualified.

Field Quality Control

No field QC samples were collected with this sample set.

Labeled Isotope and Surrogate Recoveries

Labeled isotope and surrogates were added all samples and quality control analyses as required. Surrogate recoveries were not evaluated for samples analyzed at dilutions of 5 or greater since accurate quantification is not possible at elevated dilutions. Labeled isotope and surrogate recoveries were within method-required or project control limits.

Laboratory Control Samples and Laboratory Control Sample Duplicates

Laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) were analyzed at the required frequency and resulted in recoveries and/or relative percent difference (RPD) values within project-required control limits.

Matrix Spike and Matrix Spike Duplicate Samples

MS and MSD samples were not analyzed for PCB congener or PCB Aroclor analyses. Associated, sample results were qualified “UJ” or “J” since required precision measurements were not performed.

Laboratory Replicates

LCSs were analyzed at the required frequency and resulted in recoveries within project-required control limits. LCSDs were analyzed in place of laboratory duplicates for Aroclors and had acceptable RPDs.

Compound Quantitation

Some congeners were flagged by the laboratory for having interferences resulting in elevated detection limits. Associated results were qualified "J" to indicate a potential bias.

Estimated Maximum Potential Concentration

Some results were qualified as estimated maximum potential concentration (EMPC) by the laboratory due to ion abundance ratios outside of method-required criteria and have been qualified "J" as estimated.

Reporting Limits and Estimated Detection Limits

Reporting limits (RLs) and estimated detection limits (EDLs) were acceptable as reported. Most values were reported using the laboratory MDL or EDL except for some elevated detection limits due to matrix interference or noise. Values were reported as undiluted or when diluted, the reporting limit reflects the dilution factor.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the internal standard, surrogate, LCS and LCSD recovery values. Precision was acceptable as demonstrated by the LCS/LCSD RPD values. All data are acceptable as reported or as qualified. Table 2 summarizes the qualifiers applied to the sample results reviewed in this report.

Data Qualifier Definitions

J Indicates an estimated value.

Table 2
Data Qualification Summary

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
Varies	PCB Congeners	Varies	Varies	J	EMPC
Varies	PCB Congeners	Varies	Varies	UJ, J	Missing required precision results
HOUS-TS-BW1A_SPIKE2-20251027	PCB congeners	PCB-046	13EMPC ng/g	13J ng/g	EMPC, matrix interference, missing required precision results
		PCB-060	6.8EMPC ng/g	6.8J ng/g	
		PCB-077	4.8EMPC ng/g	4.8J ng/g	
		PCB-123	4.3EMPC ng/g	4.3J ng/g	
		PCB-042	31 ng/g	31J ng/g	Matrix interference, missing required precision results
		PCB-048	11 ng/g	11J ng/g	
		PCB-052	330 ng/g	330J ng/g	
		PCB-130	280 ng/g	280J ng/g	
		PCB-131	57 ng/g	57J ng/g	
		PCB-132	2200 ng/g	2200J ng/g	
		PCB-133	77 ng/g	77J ng/g	
		PCB-134/143	400 ng/g	400J ng/g	
		PCB-141	2300 ng/g	2300J ng/g	
		PCB-146	910 ng/g	910J ng/g	
		PCB-158	660 ng/g	660J ng/g	
		PCB-159	180 ng/g	180J ng/g	
		PCB-164	490 ng/g	490J ng/g	
		PCB-167	150 ng/g	150J ng/g	
		PCB-169	31 ng/g	31J ng/g	

Note:
ng/g: nanogram per gram

References

Anchor QEA, 2025. *Addendum to Treatability Study Work Plan for Reach 5A*. Prepared for the General Electric Company. February 2025.

Arcadis, 2023. *Field Sampling Plan/Quality Assurance Project Plan, GE-Pittsfield/Housatonic River Site*. Prepared for General Electric. Revised December 2023.

USEPA (U.S. Environmental Protection Agency), 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846.

USEPA, 2020a. *National Functional Guidelines for Organic Superfund Methods Data Review*. Office of Superfund Remediation and Technology Innovation. U.S. Environmental Protection Agency. EPA-540-R-20-005. November 2020.

USEPA, 2020b. *National Functional Guidelines for High Resolution Superfund Methods Data Review*. Office of Superfund Remediation and Technology Innovation. U.S. Environmental Protection Agency. EPA-542-R-20-007. November 2020.

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Data Validation Report – EPA Stage 2A

December 29, 2025

Project:	Housatonic Reach 5A Treatability
Project Number:	250469-08.01
Validation ID:	AQ-2025-0189_CIL

This report summarizes the review of analytical results for six SPME samples collected October 28, 2025. The samples were collected by Anchor QEA and submitted to Eurofins Knoxville (Eurofins) in Knoxville, Tennessee. Samples were analyzed for polychlorinated biphenyl congeners (PCBs) by U.S. Environmental Protection Agency (USEPA) Method 1668C.

Eurofins sample delivery group (SDG) 140-44485-1 was reviewed in this report. Sample IDs, matrices, analyses, are presented in Table 1.

Table 1
Sample IDs, Matrices, and Analyses

Sample ID	Lab Sample ID	Matrix	Analyses
HOUS-R5A-KINETICS-PW1-GAC-4-20251028	140-44485-1	SPME	PCB Congeners
HOUS-R5A-KINETICS-PW1-PAC-4-20251028	140-44485-2	SPME	PCB Congeners
HOUS-R5A-KINETICS-PW1-CTRL-4-20251028	140-44485-3	SPME	PCB Congeners
HOUS-R5A-KINETICS-PW2-GAC-4-20251028	140-44485-4	SPME	PCB Congeners
HOUS-R5A-KINETICS-PW2-PAC-4-20251028	140-44485-5	SPME	PCB Congeners
HOUS-R5A-KINETICS-PW2-CTRL-4-20251028	140-44485-6	SPME	PCB Congeners

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the analytical procedures. Laboratory results were reviewed using the following guidelines:

- *Addendum to Treatability Study Work Plan for Reach 5A* (Anchor QEA 2025)
- *Field Sampling Plan/Quality Assurance Project Plan: GE-Pittsfield/Housatonic River Site* (Arcadis 2023)
- *National Functional Guidelines for High Resolution Superfund Methods Data Review* (USEPA 2020)

Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody (COC) form was signed by Eurofins at the time of sample receipt. The samples were received in good condition and within the recommended temperature range.

Sample Preservation and Holding Times

Samples were appropriately preserved and analyzed within holding times.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. Blanks were free of target analytes except for five co-eluting PCB congeners in the method blank in batch 140-106909. One associated result that was not significantly greater than (greater than five times) the level detected in the blank was qualified "U" at the detected value.

Field Quality Control

No field QC samples were collected with this sample set.

Labeled Isotope and Surrogate Recoveries

Labeled isotope and surrogates were added all samples and QC analyses as required. Labeled isotope and surrogate recoveries were within method-required or project control limits.

Laboratory Control Samples

Laboratory control samples (LCS) were analyzed at the required frequency and resulted in recoveries within project-required control limits.

Matrix Spike and Matrix Spike Duplicate Samples

Matrix spike (MS) and matrix spike duplicate (MSD) were not analyzed for PCB congener analyses. Associated sample results were qualified "UJ" or "J" to indicate they are estimated. Results previously qualified for method blank contamination received no further qualification.

Laboratory Replicates

Laboratory replicate samples were not analyzed for PCB analyses.

Compound Quantitation

Some congeners were flagged by the laboratory for having interferences resulting in elevated detection limits. Associated results were qualified "J" to indicate a potential bias.

Estimated Maximum Potential Concentration

Some results were qualified as estimated maximum potential concentration (EMPC) by the laboratory due to ion abundance ratios outside of method-required criteria and have been qualified "J" as estimated.

Reporting Limits and Estimated Detection Limits

Reporting limits (RLs) and estimated detection limits (EDLs) were acceptable as reported. Most values were reported using the laboratory MDL or EDL with the exception of some elevated detection limits due to matrix interference or noise. Values were reported as undiluted or when diluted, the reporting limit reflects the dilution factor.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the internal standard, surrogate, LCS recovery values. All data are acceptable as reported or as qualified. Table 2 summarizes the qualifiers applied to the sample results reviewed in this report.

Data Qualifier Definitions

J Indicates an estimated value

U Indicates the compound or analyte was analyzed for but not detected at or above the specified limit

UJ Indicates the compound or analyte was analyzed for but not detected and the specified limit reported is estimated

Table 2
Data Qualification Summary

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
Varies	PCB Congeners	Varies	Varies	J	EMPC
Varies	PCB Congeners	Varies	Varies	UJ, J	Missing required precision results
HOUS-R5A-KINETICS-PW1-GAC-4-20251028	PCBs	PCB-042	0.71 ng/samp	0.71J ng/samp	Matrix interference
HOUS-R5A-KINETICS-PW1-GAC-4-20251028	PCBs	PCB-105	10 ng/samp	10J ng/samp	Matrix interference
HOUS-R5A-KINETICS-PW1-GAC-4-20251028	PCBs	PCB-107	1.4 ng/samp	1.4J ng/samp	Matrix interference

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
HOUS-R5A-KINETICS-PW1-GAC-4-20251028	PCBs	PCB-114	0.77 ng/samp	0.77J ng/samp	Matrix interference
HOUS-R5A-KINETICS-PW1-GAC-4-20251028	PCBs	PCB-118	27 ng/samp	27J ng/samp	Matrix interference
HOUS-R5A-KINETICS-PW1-GAC-4-20251028	PCBs	PCB-122	0.44EMPC ng/samp	0.44J ng/samp	Matrix interference
HOUS-R5A-KINETICS-PW1-GAC-4-20251028	PCBs	PCB-123	0.50 ng/samp	0.50J ng/samp	Matrix interference
HOUS-R5A-KINETICS-PW1-GAC-4-20251028	PCBs	PCB-130	4.6 ng/samp	4.6J ng/samp	Matrix interference
HOUS-R5A-KINETICS-PW1-GAC-4-20251028	PCBs	PCB-131	1.1 ng/samp	1.1J ng/samp	Matrix interference
HOUS-R5A-KINETICS-PW1-GAC-4-20251028	PCBs	PCB-132	26 ng/samp	26J ng/samp	Matrix interference
HOUS-R5A-KINETICS-PW1-GAC-4-20251028	PCBs	PCB-137	2.5 ng/samp	2.5J ng/samp	Matrix interference
HOUS-R5A-KINETICS-PW2-PAC-4-20251028	PCBs	PCB-044/047/065	0.024JEMPC ng/samp	0.024U ng/samp	MB contamination, EMPC

Notes:
MB: method blank
ng/samp: nanogram per sample

References

Anchor QEA, 2025. *Addendum to Treatability Study Work Plan for Reach 5A*. Prepared for the General Electric Company. February 2025.

Arcadis, 2023. *Field Sampling Plan/Quality Assurance Project Plan, GE-Pittsfield/Housatonic River Site*. Prepared for General Electric. Revised December 2023.

USEPA (U.S. Environmental Protection Agency), 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods.* U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846.

USEPA, 2020. *National Functional Guidelines for High Resolution Superfund Methods Data Review.* Office of Superfund Remediation and Technology Innovation. U.S. Environmental Protection Agency. EPA-542-R-20-007. November 2020.

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Data Validation Report – EPA Stage 2A

December 29, 2025

Project:	Housatonic Reach 5A Treatability
Project Number:	250469-08.01
Validation ID:	AQ-2025-0191_BW

This report summarizes the review of analytical results for three sediment samples collected between July 1 and October 6, 2025. The samples were collected by Anchor QEA and submitted to Eurofins Knoxville (Eurofins) in Knoxville, Tennessee and SGS North America in Wilmington, North Carolina and Dayton, New Jersey. The following analytical parameter results were reviewed in this report:

- Polychlorinated biphenyl (PCB) Aroclors by U.S. Environmental Protection Agency (USEPA) Method 8082A
- PCB congeners by USEPA Method 1668 and 1668C
- Total solids by Standard Method 2540D

Sample delivery groups (SDGs) C1900, JE18934,140-44140-1, and 140-44140-2 were reviewed in this report. Sample IDs, matrices and analyses are presented in Table 1.

Table 1
Sample IDs, Matrices, and Analyses

Sample ID	Eurofins Sample IDs	SGS Sample ID	Matrix	Analyses
HOUS-TS-BW1A-20251006	140-44140-1	--	SE	Aroclors, PCB congeners
TS-BW1A-RE[1]	JE18934-1	C1900_22448_PCB_001	SE	PCB congeners, Aroclors, TS
TS-BW1B-RE[1]	JE18934-2	C1900_22448_PCB_002	SE	PCB congeners, Aroclors, TS

Note:
Total organic carbon was analyzed as part of SDG 140-42658-1 and is reported in data validation report AQ-2025-0188_BW.

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the analytical procedures. Laboratory results were reviewed using the following guidelines:

- *Addendum to Treatability Study Work Plan for Reach 5A* (Anchor QEA 2025).
- *Field Sampling Plan/Quality Assurance Project Plan: GE-Pittsfield/Housatonic River Site* (Arcadis 2023)
- *National Functional Guidelines for Organic Superfund Methods Data Review* (USEPA 2020a)

- *National Functional Guidelines for High Resolution Superfund Methods Data Review* (USEPA 2020b)

Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody (COC) form was signed by Eurofins and SGS labs at the time of sample receipt. The samples were received in good condition and within the recommended temperature range.

Sample Preservation and Holding Times

Samples were appropriately preserved and analyzed within holding times.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. Blanks were free of target analytes with some exceptions for PCB congeners:

- Batch 22448: Six PCB congeners or co-eluting congeners were detected above the MRL in the method blank. Associated detected sample results were greater than 5x the levels in the blank, so no data were qualified.
- Batch 105702: Twenty-seven PCB congeners or co-eluting congeners were detected above the MRL in the method blank. Associated detected sample results were greater than 5x the levels in the blank, so no data were qualified.

Field Quality Control

No field QC samples were collected with this sample set.

Labeled Isotope and Surrogate Recoveries

Labeled isotope and surrogates were added all samples and QC samples as required.

Surrogate recoveries were within control limits for all samples. Surrogate recoveries were not evaluated for samples analyzed at dilutions of 5 or greater since accurate quantification is not possible at elevated dilutions.

Laboratory Control Samples and Ongoing Precision and Recovery Samples

Laboratory control samples (LCS) and Ongoing Precision and Recovery Samples (OPRs) were analyzed at the required frequency and resulted in recoveries within control limits.

Matrix Spike and Matrix Spike Duplicate Samples

Matrix spike (MS) and matrix spike duplicate (MSD) samples were analyzed at required frequencies for Aroclors and had recoveries and RPD values within control limits except for the MSD and RPD on sample TS-BW1B which were above the control limit. Aroclor 1260 was qualified "J" to indicate a high bias in the native sample. MS and MSD samples were not analyzed for PCB congener analyses. As a result, sample results were qualified "UJ" or "J" to indicate they are estimated. Results previously qualified for method blank contamination received no further qualification.

Laboratory Replicates

LCSDs were analyzed in place of laboratory duplicates for Aroclors and had acceptable RPDs. Laboratory replicate samples were not analyzed for PCB congener analyses.

Compound Quantitation

Some congeners were flagged by the laboratory for having interferences resulting in elevated detection limits or exceeding the linear range of the calibration. Associated results were qualified "J" to indicate a potential bias.

Dual Column Confirmations

Dual column confirmations appear to have been performed based on reference to primary and secondary signals; the report indicates the primary signal met performance criteria and was used for quantitation.

Estimated Maximum Potential Concentration

Some results were qualified as estimated maximum potential concentration (EMPC) by the laboratory due to ion abundance ratios outside of method-required criteria and have been qualified "J" as estimated.

Reporting Limits and Estimated Detection Limits

Most reporting limits were acceptable as reported. Values were reported as undiluted or when diluted, the reporting limit reflects the dilution factor. All analytes were detected above the RLs except for Aroclors in sample HOUS-TS-BW1A-20251006. Results were reported at a 20X dilution and were non-detect at significantly elevated RLs for all Aroclors except Aroclor 1260.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the internal standard, surrogate, LCS and LCSD recovery values. Precision was acceptable as

demonstrated by the LCS/LCSD RPD values for Aroclor data. Precision data was not reported for PCB congeners, so results were qualified estimated to indicate a possible bias. All data are acceptable as reported or as qualified. Table 2 summarizes the qualifiers applied to the sample results reviewed in this report.

Data Qualifier Definitions

J Indicates an estimated value

U Indicates the compound or analyte was analyzed for but not detected at or above the specified limit

UJ Indicates the compound or analyte was analyzed for but not detected and the specified limit reported is estimated

Table 2
Data Qualification Summary

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
All	PCBs	All	Varies	UJ, J	Missing required precision results
All	PCBs	All	Varies	J	Linear range exceedance
HOUS-TS-BW1A-20251006	PCBs	PCB-002	0.76JEMPC ng/g	0.76J ng/g	EMPC, missing required precision results
		PCB-003	2.6EMPC ng/g	2.6J ng/g	EMPC, missing required precision results
		PCB-005	0.81JEMPC ng/g	0.81J ng/g	
		PCB-060	3.6EMPC ng/g	3.6J ng/g	
		PCB-067	2.2JEMPC ng/g	2.2J ng/g	
		PCB-068	3.8EMPC ng/g	3.8J ng/g	
		PCB-072	2.5EMPC ng/g	2.5J ng/g	
		PCB-082	12EMPC ng/g	12J ng/g	
		PCB-098/102	17EMPC ng/g	17J ng/g	
		PCB-120	3.7EMPC ng/g	3.7J ng/g	
		PCB-145	2.7EMPC ng/g	2.7J ng/g	
		PCB-150	5.6EMPC ng/g	5.6J ng/g	
		PCB-188	1.6JEMPC ng/g	1.6J ng/g	
TS-BW1A-RE	PCBs	PCB-204	39.8EMPC pg/g	39.8J pg/g	
TS-BW1B-RE	PCBs	Aroclor 1260	142 ug/kg	142J ug/kg	MSD %R and RPD above CL
TS-BW1B-RE	PCBs	PCB-038	91.4EMPC pg/g	91.4J pg/g	Missing required precision results, EMPC

Notes:
µg/kg: microgram per kilogram
ng/g: nanogram per gram

References

Anchor QEA, 2025. *Addendum to Treatability Study Work Plan for Reach 5A*. Prepared for the General Electric Company. February 2025.

Arcadis, 2023. *Field Sampling Plan / Quality Assurance Project Plan, GE-Pittsfield/Housatonic River Site*. Prepared for General Electric. Revised December 2023.

USEPA (U.S. Environmental Protection Agency), 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846.

USEPA, 2020a. *National Functional Guidelines for Organic Superfund Methods Data Review*. Office of Superfund Remediation and Technology Innovation. U.S. Environmental Protection Agency. EPA-540-R-20-005. November 2020.

USEPA, 2020b. *National Functional Guidelines for High Resolution Superfund Methods Data Review*. Office of Superfund Remediation and Technology Innovation. U.S. Environmental Protection Agency. EPA-542-R-20-007. November 2020.

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ANCHOR QEA

Data Validation Report – EPA Stage 2A

December 29, 2025

Project:	Housatonic Reach 5A Treatability
Project Number:	250469-08.01
Validation ID:	AQ-2025-0191_CIL

This report summarizes the review of analytical results for six SPME samples collected or generated on November 04, 2025. The samples were collected by Anchor QEA and submitted to Eurofins Knoxville (Eurofins) in Knoxville, Tennessee. Samples were analyzed for polychlorinated biphenyl congeners (PCBs) by U.S. Environmental Protection Agency (USEPA) method 1668C.

Sample delivery group (SDG) 140-44609-1 was reviewed in this report. Sample IDs, matrix, and analyses, are presented in Table 1.

Table 1
Sample IDs, Matrices, and Analyses

Sample ID	Sample IDs	Matrix	Analyses
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	140-44609-1	SPME	PCB congeners
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	140-44609-2	SPME	PCB congeners
HOUS-R5A-KINETICS-PW1-CTRL-5-20251104	140-44609-3	SPME	PCB congeners
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	140-44609-4	SPME	PCB congeners
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	140-44609-5	SPME	PCB congeners
HOUS-R5A-KINETICS-PW2-CTRL-5-20251104	140-44609-6	SPME	PCB congeners

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the analytical procedures. Laboratory results were reviewed using the following guidelines:

- *Addendum to Treatability Study Work Plan for Reach 5A* (Anchor QEA 2025)
- *Field Sampling Plan/Quality Assurance Project Plan: GE-Pittsfield/Housatonic River Site* (Arcadis 2023)
- *National Functional Guidelines for High Resolution Superfund Methods Data Review* (USEPA 2020)

Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody (COC) form was signed by Eurofins and SGS labs at the time of sample receipt. The samples were received in good condition and within the recommended temperature range.

Sample Preservation and Holding Times

Samples were appropriately preserved and analyzed within holding times.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. Blanks were free of target analytes except for fourteen PCBs or co-eluting congeners that were detected above the method reporting limit (MRL) in the method blank in batch 105702. Associated detected sample results that were not greater than 5x the levels in the blank were qualified “U” at the detected value, or “UJ” when the result is between the estimated detection limit (EDL) and MRL.

Qualified results are summarized in Table 2.

Field Quality Control

No field QC samples were collected with this sample set.

Labeled Isotope and Surrogate Recoveries

Labeled isotope and surrogates were added all samples and QC samples as required. Labeled isotope and surrogate recoveries were within method-required or project control limits.

Laboratory Control Samples

Laboratory control samples (LCS) were analyzed at the required frequency and resulted in recoveries within control limits.

Matrix Spike and Matrix Spike Duplicate Samples

Matrix spike (MS) and matrix spike duplicate (MSD) samples were not analyzed for PCB congener analyses. As a result, sample results were qualified “UJ” or “J” to indicate they are estimated. Results previously qualified for method blank contamination received no further qualification.

Laboratory Replicates

Laboratory replicate samples were not analyzed for PCB analyses.

Compound Quantitation

Some PCBs were flagged by the laboratory for having interferences resulting in elevated detection limits. Associated results were qualified "J" to indicate a potential bias.

Estimated Maximum Potential Concentration

Some results were qualified as estimated maximum potential concentration (EMPC) by the laboratory due to ion abundance ratios outside of method-required criteria and have been qualified "J" as estimated.

Method Reporting Limits and Estimated Detection Limits

Most reporting limits were acceptable as reported. Values were reported as undiluted or when diluted, the reporting limit reflects the dilution factor.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the internal standard, surrogate, LCS recovery values. Precision data was not reported so results were qualified to indicate a possible bias. All data are acceptable as reported or as qualified. Table 2 summarizes the qualifiers applied to the sample results reviewed in this report.

Data Qualifier Definitions

J Indicates an estimated value

U Indicates the compound or analyte was analyzed for but not detected at or above the specified limit

UJ Indicates the compound or analyte was analyzed for but not detected and the specified limit reported is estimated

Table 2
Data Qualification Summary

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
All	PCBs	All	Varies	UJ, J	Missing required precision results
HOUS-R5A-KINETICS-PW1-CTRL-5-20251104	PCBs	PCB-001	0.1J ng/samp	0.1UJ ng/samp	MB contamination
HOUS-R5A-KINETICS-PW1-CTRL-5-20251104	PCBs	PCB-021/033	0.37JEMPC ng/samp	0.37J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-CTRL-5-20251104	PCBs	PCB-026/029	0.49EMPC ng/samp	0.49J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-CTRL-5-20251104	PCBs	PCB-049/069	3.6EMPC ng/samp	3.6J ng/samp	Linear range exceedance, missing required precision results

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
HOUS-R5A-KINETICS-PW1-CTRL-5-20251104	PCBs	PCB-050/053	0.39JEMPC ng/samp	0.39J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-CTRL-5-20251104	PCBs	PCB-060	0.8EMPC ng/samp	0.8J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-CTRL-5-20251104	PCBs	PCB-096	0.12J ng/samp	0.12J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-CTRL-5-20251104	PCBs	PCB-098/102	0.68EMPC ng/samp	0.68J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-CTRL-5-20251104	PCBs	PCB-104	0.036JEMPC ng/samp	0.036J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-CTRL-5-20251104	PCBs	PCB-123	0.46EMPC ng/samp	0.46J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-CTRL-5-20251104	PCBs	PCB-130	4.6 ng/samp	4.6J ng/samp	Missing required precision results, matrix interference
HOUS-R5A-KINETICS-PW1-CTRL-5-20251104	PCBs	PCB-131	1 ng/samp	1J ng/samp	Missing required precision results, matrix interference
HOUS-R5A-KINETICS-PW1-CTRL-5-20251104	PCBs	PCB-150	0.036JEMPC ng/samp	0.036J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-CTRL-5-20251104	PCBs	PCB-159	1.7EMPC ng/samp	1.7J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-CTRL-5-20251104	PCBs	PCB-201	1.9EMPC ng/samp	1.9J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-CTRL-5-20251104	PCBs	PCB-209	0.13J ng/samp	0.13J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-001	0.053J ng/samp	0.053UJ ng/samp	MB contamination
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-008	0.1J ng/samp	0.1UJ ng/samp	MB contamination
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-016	0.12EMPC ng/samp	0.12J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-020/028	0.17J ng/samp	0.17J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-021/033	0.12J ng/samp	0.12J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-022	0.047J ng/samp	0.047J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-032	0.092JEMPC ng/samp	0.092J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-040/041/071	0.83EMPC ng/samp	0.83J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-042	0.67EMPC ng/samp	0.67J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-094	0.081JEMPC ng/samp	0.081J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-103	0.089J ng/samp	0.089J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-104	0.063J ng/samp	0.063J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-114	0.67EMPC ng/samp	0.67J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-123	0.36EMPC ng/samp	0.36J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-130	4.4 ng/samp	4.4J ng/samp	Missing required precision results, matrix interference

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-131	0.89 ng/samp	0.89J ng/samp	Missing required precision results, matrix interference
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-132	25 ng/samp	25J ng/samp	Missing required precision results, matrix interference
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-137	2.3 ng/samp	2.3J ng/samp	Missing required precision results, matrix interference
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-145	0.071JEMPC ng/samp	0.071J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-152	0.031JEMPC ng/samp	0.031J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-182	0.21EMPC ng/samp	0.21J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-GAC-5-20251104	PCBs	PCB-209	0.12EMPC ng/samp	0.12J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-001	0.043JEMPC ng/samp	0.043UJ ng/samp	MB contamination, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-003	0.0077JEMPC ng/samp	0.0077J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-004	0.27 ng/samp	0.27U ng/samp	MB contamination
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-008	0.042JEMPC ng/samp	0.042UJ ng/samp	MB contamination, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-044/047/065	0.046JEMPC ng/samp	0.046J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-052	0.029JEMPC ng/samp	0.029J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-061/070/074/076	0.072J ng/samp	0.072J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-083/099	0.015JEMPC ng/samp	0.015J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-084	0.0062JEMPC ng/samp	0.0062J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-086/087/097/109/119/125	0.09JEMPC ng/samp	0.09J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-090/101/113	0.09JEMPC ng/samp	0.09J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-092	0.019JEMPC ng/samp	0.019J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-095	0.051JEMPC ng/samp	0.051J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-110/115	0.066J ng/samp	0.066J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-118	0.026JEMPC ng/samp	0.026J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-128/166	0.084JEMPC ng/samp	0.084J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-130	0.04J ng/samp	0.04J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-132	0.22EMPC ng/samp	0.22J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-133	0.0091JEMPC ng/samp	0.0091J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-134/143	0.034JEMPC ng/samp	0.034J ng/samp	Missing required precision results, EMPC

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-141	0.14EMPC ng/samp	0.14J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-144	0.02JEMPC ng/samp	0.02J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-156/157	0.027JEMPC ng/samp	0.027J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-158	0.043J ng/samp	0.043J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-159	0.03J ng/samp	0.03J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-164	0.043J ng/samp	0.043J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-175	0.015JEMPC ng/samp	0.015J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-177	0.29EMPC ng/samp	0.29J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-179	0.34EMPC ng/samp	0.34J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-196	0.19EMPC ng/samp	0.19J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-198/199	0.35EMPC ng/samp	0.35J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-201	0.075JEMPC ng/samp	0.075J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-202	0.12EMPC ng/samp	0.12J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-205	0.0042JEMPC ng/samp	0.0042J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-206	0.094JEMPC ng/samp	0.094J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-208	0.042JEMPC ng/samp	0.042J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-5-20251104	PCBs	PCB-209	0.0034JEMPC ng/samp	0.0034J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW2-CTRL-5-20251104	PCBs	PCB-001	0.1JEMPC ng/samp	0.1UJ ng/samp	MB contamination, EMPC
HOUS-R5A-KINETICS-PW2-CTRL-5-20251104	PCBs	PCB-008	0.43EMPC ng/samp	0.43J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-CTRL-5-20251104	PCBs	PCB-018/030	0.59EMPC ng/samp	0.59J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-CTRL-5-20251104	PCBs	PCB-037	0.33EMPC ng/samp	0.33J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-CTRL-5-20251104	PCBs	PCB-056	1.8EMPC ng/samp	1.8J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-CTRL-5-20251104	PCBs	PCB-060	0.91EMPC ng/samp	0.91J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-CTRL-5-20251104	PCBs	PCB-082	3.9EMPC ng/samp	3.9J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-CTRL-5-20251104	PCBs	PCB-122	0.61EMPC ng/samp	0.61J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-CTRL-5-20251104	PCBs	PCB-137	2.1EMPC ng/samp	2.1J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-CTRL-5-20251104	PCBs	PCB-154	0.42EMPC ng/samp	0.42J ng/samp	Linear range exceedance, missing required precision results

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
HOUS-R5A-KINETICS-PW2-CTRL-5-20251104	PCBs	PCB-207	0.24EMPC ng/samp	0.24J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-CTRL-5-20251104	PCBs	PCB-209	0.12J ng/samp	0.12J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-001	0.051JEMPC ng/samp	0.051UJ ng/samp	MB contamination, EMPC
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-008	0.076J ng/samp	0.076UJ ng/samp	MB contamination
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-021/033	0.15J ng/samp	0.15J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-022	0.063J ng/samp	0.063J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-040/041/071	0.88EMPC ng/samp	0.88J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-042	0.62EMPC ng/samp	0.62J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-060	0.44EMPC ng/samp	0.44J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-094	0.079J ng/samp	0.079J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-104	0.058JEMPC ng/samp	0.058J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-107	1.5 ng/samp	1.5J ng/samp	Missing required precision results, matrix interference
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-114	0.68 ng/samp	0.68J ng/samp	Missing required precision results, matrix interference
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-118	28 ng/samp	28J ng/samp	Missing required precision results, matrix interference
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-122	0.34EMPC ng/samp	0.34UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-123	0.49 ng/samp	0.49J ng/samp	Missing required precision results, matrix interference
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-130	4.2 ng/samp	4.2J ng/samp	Missing required precision results, matrix interference
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-131	1.1 ng/samp	1.1J ng/samp	Missing required precision results, matrix interference
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-132	24 ng/samp	24J ng/samp	Missing required precision results, matrix interference
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-133	0.85 ng/samp	0.85J ng/samp	Missing required precision results, matrix interference
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-137	2.1 ng/samp	2.1J ng/samp	Missing required precision results, matrix interference
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-139/140	0.79EMPC ng/samp	0.79UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-141	19 ng/samp	19J ng/samp	Missing required precision results, matrix interference
HOUS-R5A-KINETICS-PW2-GAC-5-20251104	PCBs	PCB-145	0.053JEMPC ng/samp	0.053UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-001	0.052J ng/samp	0.052UJ ng/samp	MB contamination
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-003	0.0077JEMPC ng/samp	0.0077UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-004	0.24EMPC ng/samp	0.24UJ ng/samp	MB contamination, EMPC

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-008	0.054J ng/samp	0.054UJ ng/samp	MB contamination
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-044/047/065	0.077J ng/samp	0.077J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-052	0.054JEMPC ng/samp	0.054UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-054	0.047JEMPC ng/samp	0.047UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-061/070/074/076	0.08J ng/samp	0.08J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-079	0.0012JEMPC ng/samp	0.0012UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-083/099	0.016JEMPC ng/samp	0.016UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-084	0.0071JEMPC ng/samp	0.0071UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-085/116/117	0.0056JEMPC ng/samp	0.0056UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-086/087/097/109/119/125	0.063JEMPC ng/samp	0.063UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-090/101/113	0.043JEMPC ng/samp	0.043J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-095	0.047JEMPC ng/samp	0.047UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-105	0.0083JEMPC ng/samp	0.0083UJ ng/samp	MB contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-110/115	0.033JEMPC ng/samp	0.033UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-118	0.036JEMPC ng/samp	0.036UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-128/166	0.026JEMPC ng/samp	0.026J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-129/138/160/163	0.21JEMPC ng/samp	0.21UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-130	0.017J ng/samp	0.017J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-132	0.093JEMPC ng/samp	0.093UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-135/151	0.071JEMPC ng/samp	0.071UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-136	0.043JEMPC ng/samp	0.043UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-141	0.058JEMPC ng/samp	0.058UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-144	0.0076JEMPC ng/samp	0.0076UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-146	0.023JEMPC ng/samp	0.023J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-147/149	0.16JEMPC ng/samp	0.16J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-153/168	0.19J ng/samp	0.19J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-156/157	0.0061JEMPC ng/samp	0.0061UJ ng/samp	MB Contamination, EMPC

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-164	0.016JEMPC ng/samp	0.016UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-171/173	0.089J ng/samp	0.089J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-172	0.016JEMPC ng/samp	0.016UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-175	0.0063JEMPC ng/samp	0.0063UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-178	0.038JEMPC ng/samp	0.038UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-179	0.078J ng/samp	0.078J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-183/185	0.13J ng/samp	0.13J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-187	0.2EMPC ng/samp	0.2UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-190	0.014JEMPC ng/samp	0.014J ng/samp	Missing required precision results, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-194	0.087J ng/samp	0.087J ng/samp	Linear range exceedance, missing required precision results
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-195	0.034JEMPC ng/samp	0.034UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-196	0.051JEMPC ng/samp	0.051UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-198/199	0.096JEMPC ng/samp	0.096UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-202	0.022JEMPC ng/samp	0.022UJ ng/samp	MB Contamination, EMPC
HOUS-R5A-KINETICS-PW2-PAC-5-20251104	PCBs	PCB-203	0.067JEMPC ng/samp	0.067UJ ng/samp	MB Contamination, EMPC

Notes:
MB: method blank
ng/samp: nanogram per sample

References

Anchor QEA, 2025. *Addendum to Treatability Study Work Plan for Reach 5A*. Prepared for the General Electric Company. February 2025.

Arcadis, 2023. *Field Sampling Plan/Quality Assurance Project Plan, GE-Pittsfield/Housatonic River Site*. Prepared for General Electric. Revised December 2023.

USEPA (U.S. Environmental Protection Agency), 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods.* U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846.

USEPA, 2020. *National Functional Guidelines for High Resolution Superfund Methods Data Review.* Office of Superfund Remediation and Technology Innovation. U.S. Environmental Protection Agency. EPA-542-R-20-007. November 2020.

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Data Validation Report – EPA Stage 2A

December 2, 2025

Project:	Housatonic Reach 5A Treatability
Project Number:	250469-08.01
Validation ID:	AQ-2025-0195_BW

This report summarizes the review of analytical results for six solid-phase microextraction fiber (SPME) samples collected October 14, 2025. The samples were collected by Anchor QEA and submitted to Eurofins Knoxville (ETK) in Knoxville, Tennessee. Samples were analyzed for polychlorinated biphenyls (PCB) congeners by USEPA (U.S. Environmental Protection Agency) method 1668.

ETK sample delivery group (SDG) 140-44270-1 was reviewed in this report. Sample IDs, matrices, analyses, are presented in Table 1.

Table 1
Sample IDs, Matrices, and Analyses

Sample ID	Lab Sample ID	Matrix	Analyses
HOUS-R5A-JAR-SPME-MB-20251014	140-44270-1	SPME	PCB congeners
HOUS-R5A-JAR-SPME-INT-PRC-1-20251014	140-44270-2	SPME	PCB congeners
HOUS-R5A-JAR-SPME-INT-PRC-2-20251014	140-44270-3	SPME	PCB congeners
HOUS-R5A-JAR-SPME-INT-PRC-3-20251014	140-44270-4	SPME	PCB congeners
HOUS-R5A-JAR-SPME-INT-PRC-4-20251014	140-44270-5	SPME	PCB congeners
HOUS-R5A-JAR-SPME-INT-PRC-5-20251014	140-44270-6	SPME	PCB congeners

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the analytical procedures. Laboratory results were reviewed using the following guidelines:

- *Addendum to Treatability Study Work Plan for Reach 5A* (Anchor QEA 2025)
- *Field Sampling Plan/Quality Assurance Project Plan: GE-Pittsfield/Housatonic River Site* (Arcadis 2023)
- *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846, Third Edition; USEPA 1986)
- *National Functional Guidelines for High Resolution Superfund Methods Data Review* (USEPA 2020)

Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody (COC) form was signed by Eurofins at the time of sample receipt. The samples were received within the recommended temperature range and in good condition.

Sample Preservation and Holding Times

Samples were appropriately preserved and analyzed within holding times.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies and were free of target analytes with the following exception of thirteen PCB congeners or co-eluting congeners which were detected above the method detection limit (MDL) in the method blank in prep batch 106124. Associated detected results that were not significantly greater than (greater than five times) the level detected in the blank have been qualified “U”.

Field Quality Control

Two field blanks were collected with these sample sets. Results that were previously qualified as not detected due to method blank contamination were not further evaluated for field blank detections. Seven PCB congeners or co-eluting congeners were detected in field blank sample HOUS-R5A-JAR-SPME-MB-20251014 and 13 PCB congeners were detected in field blank sample HOUS-R5A-KINETICS-MB-20251010. Associated detected results that were not significantly greater than (greater than five times) the level detected in the blank have been qualified “U”.

Labeled Isotope Recoveries

Labeled isotopes were added to all samples and quality control analyses as required. Labeled isotope recoveries were within method-required or project control limits.

Laboratory Control Samples

Laboratory control samples (LCS) were analyzed at the required frequency and resulted in recoveries and/or RPD values within project-required control limits.

Matrix Spike and Matrix Spike Duplicate Samples

Matrix spike (MS) and matrix spike duplicate (MSD) samples were not analyzed for PCB congener analyses. As a result, sample results were qualified “UJ” or “J” to indicate they are estimated and QAPP required precision measurements were not available.

Laboratory Replicates

Laboratory duplicates were not evaluated for parameters in this sample set. Precision can be evaluated by continuous check standards; however, those are not a component of Stage 2A evaluation.

Estimated Maximum Potential Concentration

Some results were qualified as estimated maximum potential concentration (EMPC) by the laboratory due to ion abundance ratios outside of method-required criteria and have been qualified "J" as estimated.

Reporting Limits and Estimated Detection Limits

Reporting limits were acceptable as reported. All values were reported using the laboratory reporting limits. Values were reported as undiluted or when diluted, the reporting limit reflects the dilution factor.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the internal standard and LCS recovery values. Precision could not be evaluated due to the lack of duplicate samples. As a result, sample results were qualified "UJ" or "J" to indicate they are estimated. All data are acceptable as reported or as qualified. Table 2 summarizes the qualifiers applied to the sample results reviewed in this report.

Data Qualifier Definitions

J Indicates an estimated value.

U Indicates the compound or analyte was analyzed for but not detected at or above the specified limit.

UJ Indicates the compound or analyte of interest was analyzed for but not detected and the specified limit reported is estimated.

Table 2
Data Qualification Summary

Sample ID	Analyte	Reported Result	Qualified Result	Reason
Various	Varies	EMPC	J	EMPC
All	All	Varies	UJ, J	Missing required precision results

Sample ID	Analyte	Reported Result	Qualified Result	Reason
HOUS-R5A-JAR-SPME-MB-20251014	PCB-114	0.0033JEMPC ng/samp	0.0033UJ ng/samp	MB contamination, missing precision results, EMPC
	PCB-183/185	0.0033JEMPC ng/samp	0.0033UJ ng/samp	

Note:
ng/samp: nanogram per sample

References

Anchor QEA, 2025. *Addendum to Treatability Study Work Plan for Reach 5A*. Prepared for the General Electric Company. February 2025.

Arcadis, 2023. *Field Sampling Plan/Quality Assurance Project Plan, GE-Pittsfield/Housatonic River Site*. Prepared for General Electric. Revised December 2023.

USEPA (U.S. Environmental Protection Agency), 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846.

USEPA, 2020. *National Functional Guidelines for High Resolution Superfund Methods Data Review*. Office of Superfund Remediation and Technology Innovation. U.S. Environmental Protection Agency. EPA-542-R-20-007. November 2020.

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ANCHOR QEA

Data Validation Report – EPA Stage 2A

December 2, 2025

Project: Housatonic Reach 5A Treatability

Project Number: 250469-08.01

Validation ID: AQ-2025-0195_CIL

This report summarizes the review of analytical results for 19 solid-phase microextraction fiber (SPME) samples collected October 10-21, 2025. The samples were collected by Anchor QEA and submitted to Eurofins Knoxville (ETK) in Knoxville, Tennessee. Samples were analyzed for polychlorinated biphenyls (PCB) congeners by U.S. Environmental Protection Agency (USEPA) Method 1668.

ETK sample delivery groups (SDGs) 140-44271-1 and 140-44378-1 were reviewed in this report. Sample IDs, matrices, analyses, are presented in Table 1.

Table 1
Sample IDs, Matrices, and Analyses

Sample ID	Lab Sample ID	Matrix	Analyses
HOUS-R5A-Kinetics-PW1-GAC-1-20251010	140-44271-1	SPME	PCB congeners
HOUS-R5A-Kinetics-PW1-PAC-1-20251010	140-44271-2	SPME	PCB congeners
HOUS-R5A-Kinetics-PW1-CTRL-1-20251010	140-44271-3	SPME	PCB congeners
HOUS-R5A-Kinetics-PW2-GAC-1-20251010	140-44271-4	SPME	PCB congeners
HOUS-R5A-Kinetics-PW2-PAC-1-20251010	140-44271-5	SPME	PCB congeners
HOUS-R5A-Kinetics-PW2-CTRL-1-20251010	140-44271-6	SPME	PCB congeners
HOUS-R5A-Kinetics-MB-20251010	140-44271-7	SPME	PCB congeners
HOUS-R5A-Kinetics-PW1-GAC-2-20251014	140-44271-8	SPME	PCB congeners
HOUS-R5A-Kinetics-PW1-PAC-2-20251014	140-44271-9	SPME	PCB congeners
HOUS-R5A-Kinetics-PW1-CTRL-2-20251014	140-44271-10	SPME	PCB congeners
HOUS-R5A-Kinetics-PW2-GAC-2-20251014	140-44271-11	SPME	PCB congeners
HOUS-R5A-Kinetics-PW2-PAC-2-20251014	140-44271-12	SPME	PCB congeners
HOUS-R5A-Kinetics-PW2-CTRL-2-20251014	140-44271-13	SPME	PCB congeners
HOUS-R5A-Kinetics-PW1-GAC-3-20251021	140-44378-1	SPME	PCB congeners
HOUS-R5A-Kinetics-PW1-PAC-3-20251021	140-44378-2	SPME	PCB congeners
HOUS-R5A-Kinetics-PW1-CTRL-3-20251021	140-44378-3	SPME	PCB congeners
HOUS-R5A-Kinetics-PW2-GAC-3-20251021	140-44378-4	SPME	PCB congeners
HOUS-R5A-Kinetics-PW2-PAC-3-20251021	140-44378-5	SPME	PCB congeners
HOUS-R5A-Kinetics-PW2-CTRL-3-20251021	140-44378-6	SPME	PCB congeners

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the analytical procedures. Laboratory results were reviewed using the following guidelines:

- *Addendum to Treatability Study Work Plan for Reach 5A* (Anchor QEA 2025)
- *Field Sampling Plan/Quality Assurance Project Plan: GE-Pittsfield/Housatonic River Site* (Arcadis 2023)
- *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846, Third Edition; USEPA 1986)
- *National Functional Guidelines for High Resolution Superfund Methods Data Review* (USEPA 2020)

Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody (COC) forms were signed by Eurofins at the time of sample receipt. The samples were received within the recommended temperature range and in good condition.

Sample Preservation and Holding Times

Samples were appropriately preserved and analyzed within holding times.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies and were free of target analytes with the following exceptions:

Thirteen PCB congeners or co-eluting congeners were detected above the method detection limit (MDL) in the method blank in prep batch 106124. Associated detected results that were not significantly greater than (greater than five times) the level detected in the blank have been qualified "U".

Thirty-two PCB congeners or co-eluting congeners were detected above the MDL in the method blank in prep batch 106661. Associated detected results that were not significantly greater than (greater than five times) the level detected in the blank have been qualified "U".

Field Quality Control

One field blank was collected with these sample sets. 13 PCB congeners or co-eluting congeners were detected in field blank sample HOUS-R5A-KINETICS-MB-20251010 and were qualified "U".

Associated sample results were either non-detect or significantly greater than (greater than five times) the concentrations detected in the field blanks.

Labeled Isotope Recoveries

Labeled isotopes were added to all samples and quality control analyses as required. Labeled isotope recoveries were within method-required or project control limits.

Laboratory Control Samples

Laboratory control samples (LCS) were analyzed at the required frequency and resulted in recoveries within project-required control limits.

Matrix Spike and Matrix Spike Duplicate Samples

Matrix spike (MS) and matrix spike duplicate (MSD) samples were not analyzed for PCB congener analyses. As a result, sample results were qualified “UJ” or “J” to indicate they are estimated and QAPP required precision measurements were not available.

Laboratory Replicates

Laboratory duplicates were not evaluated for parameters in this sample set. Precision can be evaluated by continuous check standards; however, those are not a component of Stage 2A evaluation.

Estimated Maximum Potential Concentration

Some results were qualified as estimated maximum potential concentration (EMPC) by the laboratory due to ion abundance ratios outside of method-required criteria and have been qualified “J” as estimated.

Reporting Limits and Estimated Detection Limits

Reporting limits were acceptable as reported. All values were reported using the laboratory reporting limits. Values were reported as undiluted or when diluted, the reporting limit reflects the dilution factor.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the internal standard and LCS recovery values. Precision could not be evaluated due to the lack of duplicate samples. As a result, sample results were qualified “UJ” or “J” to indicate they are estimated.

All data are acceptable as reported or as qualified. Table 2 summarizes the qualifiers applied to the sample results reviewed in this report.

Data Qualifier Definitions

J Indicates an estimated value.

U Indicates the compound or analyte was analyzed for but not detected at or above the specified limit.

UJ Indicates the compound or analyte of interest was analyzed for but not detected and the specified limit reported is estimated.

Table 2
Data Qualification Summary

Sample ID	Analyte	Reported Result	Qualified Result	Reason
Various	Varies	EMPC	J	EMPC
All	All	Varies	UJ, J	Missing required precision results
HOUS-R5A-KINETICS-MB-20251010	PCB-004	0.014JEMPC ng/samp	0.014UJ ng/samp	FB contamination, missing required precision results, EMPC
	PCB-010	0.016JEMPC ng/samp	0.016UJ ng/samp	FB contamination, missing required precision results, EMPC
	PCB-011	0.0059JEMPC ng/samp	0.0059UJ ng/samp	FB contamination, missing required precision results, EMPC
	PCB-019	0.0066JEMPC ng/samp	0.0066UJ ng/samp	FB contamination, missing required precision results, EMPC
	PCB-034	0.0010JEMPC ng/samp	0.0010UJ ng/samp	FB contamination, missing required precision results, EMPC
	PCB-054	0.0033J ng/samp	0.0033UJ ng/samp	FB contamination, missing required precision results
	PCB-061/070/074/076	0.011JEMPC ng/samp	0.011UJ ng/samp	FB contamination, missing required precision results, EMPC
	PCB-090/101/113	0.0046JEMPC ng/samp	0.0046UJ ng/samp	MB contamination, missing required precision results, EMPC
	PCB-129/138/160/163	0.0078J ng/samp	0.0078UJ ng/samp	FB contamination, missing required precision results
	PCB-141	0.0021J ng/samp	0.0021UJ ng/samp	FB contamination, missing required precision results
	PCB-153/168	0.0023JEMPC ng/samp	0.0023UJ ng/samp	MB contamination, missing required precision results, EMPC
	PCB-156/157	0.0021JEMPC ng/samp	0.0021UJ ng/samp	MB contamination, missing required precision results, EMPC
	PCB-161	0.0011J ng/samp	0.0011UJ ng/samp	FB contamination, missing required precision results
	PCB-174	0.0022JEMPC ng/samp	0.0022UJ ng/samp	FB contamination, missing required precision results, EMPC
	PCB-180/193	0.0024JEMPC ng/samp	0.0024UJ ng/samp	FB contamination, missing required precision results, EMPC

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	PCB-183/185	0.0066JEMPC ng/samp	0.0066UJ ng/samp	MB contamination, missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-CTRL-2-20251014	PCB-001	0.049J ng/samp	0.049UJ ng/samp	FB contamination, missing required precision results
HOUS-R5A-KINETICS-PW1-PAC-2-20251014	PCB-114	0.0052JEMPC ng/samp	0.0052UJ ng/samp	MB contamination, missing required precision results, EMPC
HOUS-R5A-KINETICS-PW1-PAC-3-20251021	PCB-108/124	0.0042JEMPC ng/samp	0.0042UJ ng/samp	MB contamination, missing required precision results, EMPC
	PCB-181	0.0063J ng/samp	0.0063UJ ng/samp	MB contamination, missing required precision results
	PCB-205	0.011J ng/samp	0.011UJ ng/samp	MB contamination, missing required precision results
HOUS-R5A-KINETICS-PW2-CTRL-2-20251014	PCB-001	0.072J ng/samp	0.072UJ ng/samp	FB contamination, missing required precision results
HOUS-R5A-KINETICS-PW2-GAC-2-20251014	PCB-001	0.026JEMPC ng/samp	0.026UJ ng/samp	FB contamination, missing required precision results, EMPC
HOUS-R5A-KINETICS-PW2-PAC-1-20251010	PCB-010	0.057JEMPC ng/samp	0.057UJ ng/samp	FB contamination, missing required precision results, EMPC
	PCB-061/070/074/076	0.051J ng/samp	0.051UJ ng/samp	FB contamination, missing required precision results
	PCB-134/143	0.0046JEMPC ng/samp	0.0046UJ ng/samp	MB contamination, missing required precision results, EMPC
	PCB-156/157	0.0067JEMPC ng/samp	0.0067UJ ng/samp	MB contamination, missing required precision results, EMPC
HOUS-R5A-KINETICS-PW2-PAC-2-20251014	PCB-032	0.0017JEMPC ng/samp	0.0017UJ ng/samp	FB contamination, missing required precision results, EMPC
HOUS-R5A-KINETICS-PW2-PAC-3-20251021	PCB-132	0.10 ng/samp	0.10UJ ng/samp	MB contamination, missing required precision results
	PCB-156/157	0.014J ng/samp	0.014UJ ng/samp	MB contamination, missing required precision results
	PCB-159	0.0030JEMPC ng/samp	0.0030UJ ng/samp	MB contamination, missing required precision results, EMPC
	PCB-171/173	0.030JEMPC ng/samp	0.030UJ ng/samp	
	PCB-205	0.0031JEMPC ng/samp	0.0031UJ ng/samp	

Notes:
FB: field blank
MB: method blank
ng/samp: nanogram per sample

References

Anchor QEA, 2025. *Addendum to Treatability Study Work Plan for Reach 5A*. Prepared for the General Electric Company. February 2025.

Arcadis, 2023. *Field Sampling Plan/Quality Assurance Project Plan, GE-Pittsfield/Housatonic River Site*. Prepared for General Electric. Revised December 2023.

USEPA (U.S. Environmental Protection Agency), 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846.

USEPA, 2020. *National Functional Guidelines for High Resolution Superfund Methods Data Review*. Office of Superfund Remediation and Technology Innovation. U.S. Environmental Protection Agency. EPA-542-R-20-007. November 2020.

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Data Validation Report – EPA Stage 2A

December 17, 2025

Project:	Housatonic Reach 5A Treatability
Project Number:	250469-08.01
Validation ID:	AQ-2025-0202

This report summarizes the review of analytical results for two porewater and six SPME samples collected or generated on October 07 and November 18, 2025. The samples were collected by Anchor QEA and submitted to Eurofins Knoxville (Eurofins) in Knoxville, Tennessee. The following analytical parameter results were reviewed in this report:

- Polychlorinated biphenyls (PCB) congeners by U.S. Environmental Protection Agency (EPA) Method 1668C

Sample delivery groups (SDGs) 140-44766-1 and 140-44822-1 were reviewed in this report. Sample IDs, matrices, analyses, are presented in Table 1.

Table 1
Sample IDs, Matrices, and Analyses

Sample ID	Laboratory Sample ID	Matrix	Analyses
HOUS-R5A-Kine-PW1-PCB-spiked-20251007	140-44766-1	Porewater	PCB congeners
HOUS-R5A-Kine-PW2-PCB-spiked-20251007	140-44766-2	Porewater	PCB congeners
HOUS-R5A-Kinetics-PW1-GAC-6-20251118	140-44822-1	SPME	PCB congeners
HOUS-R5A-Kinetics-PW1-PAC-6-20251118	140-44822-2	SPME	PCB congeners
HOUS-R5A-Kinetics-PW1-CTRL-6-20251118	140-44822-3	SPME	PCB congeners
HOUS-R5A-Kinetics-PW2-GAC-6-20251118	140-44822-4	SPME	PCB congeners
HOUS-R5A-Kinetics-PW2-PAC-6-20251118	140-44822-5	SPME	PCB congeners
HOUS-R5A-Kinetics-PW2-CTRL-6-20251118	140-44822-6	SPME	PCB congeners

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the analytical procedures. Laboratory results were reviewed using the following guidelines:

- Addendum to Treatability Study Work Plan for Reach 5A (Anchor QEA 2025).
- Field Sampling Plan / Quality Assurance Project Plan: GE-Pittsfield/Housatonic River Site. Arcadis 2023).
- USEPA National Functional Guidelines for Organic Superfund Methods Data Review (USEPA 2020a)

- USEPA National Functional Guidelines for High Resolution Superfund Methods Data Review (USEPA 2020b)

Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody (COC) form was signed by Eurofins at the time of sample receipt. The samples were received in good condition and within the recommended temperature range.

Sample Preservation and Holding Times

Samples were appropriately preserved and analyzed within holding times.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. Method blanks were free of target analytes with the exception of 49 congeners or co-eluting congeners that were detected above the MDL in the method blank analyzed in prep batch 140-107829. Associated detected sample results were greater than 5x the levels in the blank so no data were qualified.

Field Quality Control

No field quality control samples were collected with this sample set.

Labeled Isotope and Surrogate Recoveries

Labeled isotope and surrogates were added all samples and quality control samples as required. Labeled isotope and surrogate recoveries were within method-required or project control limits.

Laboratory Control Samples

Laboratory control samples (LCS) were analyzed at the required frequency and resulted in recoveries within control limits.

Matrix Spike and Matrix Spike Duplicate Samples

MS and MSD samples were not analyzed for PCB congener analyses.

Laboratory Replicates

Laboratory duplicates were not evaluated for parameters in this sample set. Precision can be evaluated by continuous check standards; however, those are not a component of Stage 2A evaluation.

Compound Quantitation

Some congeners were flagged by the laboratory for having interferences resulting in elevated detection limits. Associated results were qualified "J" to indicate a potential bias.

Estimated Maximum Potential Concentration

Some results were qualified as estimated maximum potential concentration (EMPC) by the laboratory due to ion abundance ratios outside of method-required criteria and have been qualified "J" as estimated.

Reporting Limits and Estimated Detection Limits

Most reporting limits were acceptable as reported. Values were reported as undiluted or when diluted, the reporting limit reflects the dilution factor.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the internal standard, surrogate, and LCS recovery values. Precision could not be evaluated due to the lack of duplicate samples. As a result, sample results were qualified "UJ" or "J" to indicate they are estimated. All data are acceptable as reported or as qualified. Table 2 summarizes the qualifiers applied to the sample results reviewed in this report.

Data Qualifier Definitions

J Indicates an estimated value

Table 2
Data Qualification Summary

Sample ID	Analyte	Reported Result	Qualified Result	Reason
All	All	Varies	UJ, J	Missing required precision results
Various	Various	EMPC	J	EMPC
HOUS-R5A-KINETICS-PW1-GAC-6-20251118	PCB-122	0.28 ng/samp	0.28J ng/samp	Missing required precision results, Matrix interference
	PCB-123	0.29EMPC ng/samp	0.29J ng/samp	Missing required precision results, Matrix interference, EMPC
	PCB-130	3.6 ng/samp	3.6J ng/samp	Missing required precision results, Matrix interference

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	PCB-131	0.70 ng/samp	0.70J ng/samp	Missing required precision results, Matrix interference
	PCB-132	19 ng/samp	19J ng/samp	Missing required precision results, Matrix interference
	PCB-137	1.4EMPC ng/samp	1.4J ng/samp	Missing required precision results, Matrix interference, EMPC
HOUS-R5A-KINETICS-PW1-CTRL-6-20251118	PCB-130	3.8 ng/samp	3.8J ng/samp	Missing required precision results, Matrix interference
HOUS-R5A-KINETICS-PW2-GAC-6-20251118	PCB-122	0.21EMPC ng/samp	0.21J ng/samp	Missing required precision results, Matrix interference, EMPC
	PCB-123	0.26 EMPC ng/samp	0.26J ng/samp	Missing required precision results, Matrix interference, EMPC
	PCB-130	3.6 ng/samp	3.6J ng/samp	Missing required precision results, Matrix interference
	PCB-131	0.62 EMPC ng/samp	0.62J ng/samp	Missing required precision results, Matrix interference, EMPC
	PCB-132	19 ng/samp	19J ng/samp	Missing required precision results, Matrix interference
	PCB-133	0.55 ng/samp	0.55J ng/samp	Missing required precision results, Matrix interference
	PCB-137	1.9 EMPC ng/samp	1.9J ng/samp	Missing required precision results, Matrix interference, EMPC
	PCB-141	17 ng/samp	17J ng/samp	Missing required precision results, Matrix interference
	PCB-146	7.1 ng/samp	7.1J ng/samp	Missing required precision results, Matrix interference
HOUS-R5A-KINETICS-PW2-CTRL-6-20251118	PCB-042	1.1 ng/samp	1.1J ng/samp	Missing required precision results, Matrix interference
	PCB-052	95 ng/samp	95J ng/samp	Missing required precision results, Matrix interference
	PCB-122	0.71 ng/samp	0.71J ng/samp	Missing required precision results, Matrix interference
	PCB-130	4.4 ng/samp	4.4J ng/samp	Missing required precision results, Matrix interference

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	PCB-131	0.80 ng/samp	0.80J ng/samp	Missing required precision results, Matrix interference
	PCB-132	22 ng/samp	22J ng/samp	Missing required precision results, Matrix interference
	PCB-133	0.55 ng/samp	0.55J ng/samp	Missing required precision results, Matrix interference
	PCB-137	2.1 ng/samp	2.1J ng/samp	Missing required precision results, Matrix interference, EMPC
	PCB-141	19 ng/samp	19J ng/samp	Missing required precision results, Matrix interference
	PCB-146	8.4 ng/samp	8.4J ng/samp	Missing required precision results, Matrix interference
	PCB-158	8.7 ng/samp	8.7J ng/samp	Missing required precision results, Matrix interference
	PCB-164	5.3 ng/samp	5.3J ng/samp	Missing required precision results, Matrix interference
	PCB-167	2.6 ng/samp	2.6J ng/samp	Missing required precision results, Matrix interference

Notes:
Ng: nanogram
Samp: sample

References

Anchor QEA, 2025. *Addendum to Treatability Study Work Plan for Reach 5A*. Prepared for the General Electric Company. February 2025.

Arcadis, 2023. *Field Sampling Plan / Quality Assurance Project Plan, GE-Pittsfield/Housatonic River Site*. Prepared for General Electric. Revised December 2023.

USEPA (U.S. Environmental Protection Agency), 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846.

USEPA, 2020a. *National Functional Guidelines for Organic Superfund Methods Data Review*. Office of Superfund Remediation and Technology Innovation. U.S. Environmental Protection Agency. EPA-540-R-20-005. November 2020.

USEPA, 2020b. *National Functional Guidelines for High Resolution Superfund Methods Data Review*. Office of Superfund Remediation and Technology Innovation. U.S. Environmental Protection Agency. EPA-542-R-20-007. November 2020.

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ANCHOR QEA

Data Validation Report – EPA Stage 2A

January 20, 2026

Project: Housatonic Reach 5A Treatability

Project Number: 250469-08.01

Validation ID: AQ-2026-0016

This report summarizes the review of analytical results for 48 SPME samples collected or generated on December 3rd and 4th, 2025. The samples were collected by Anchor QEA and submitted to Eurofins Knoxville (Eurofins) in Knoxville, Tennessee. Samples were analyzed for polychlorinated biphenyl congeners (PCBs) by U.S. Environmental Protection Agency (USEPA) method 1668C.

Sample delivery groups (SDG) 140-45052-1, 140-45052-2, and 140-45052-3 were reviewed in this report. Sample IDs, SDG, matrix, and analyses, are presented in Table 1.

Table 1
Sample IDs, Matrices, and Analyses

Sample ID	Lab Sample ID	SDG	Matrix	Analyses
HOUS-R5A-Isotherm-PW1-GAC-2-20251203	140-45052-1	140-45052-1	SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-GAC-3-20251203	140-45052-2		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-GAC-4-20251203	140-45052-3		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-GAC-5-20251203	140-45052-4		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-GAC-6-20251203	140-45052-5		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-GAC-7-20251203	140-45052-6		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-GAC-8-20251203	140-45052-7		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-GAC-9-20251203	140-45052-8		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-PAC-2-20251203	140-45052-9		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-PAC-3-20251203	140-45052-10		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-PAC-4-20251203	140-45052-11		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-PAC-5-20251203	140-45052-12		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-PAC-6-20251203	140-45052-13		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-PAC-7-20251203	140-45052-14		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-PAC-8-20251203	140-45052-15		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-PAC-9-20251203	140-45052-16		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-CTRL-2-20251203	140-45052-17		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-CTRL-3-20251203	140-45052-18		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-CTRL-4-20251203	140-45052-19		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-CTRL-5-20251203	140-45052-20		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-CTRL-6-20251203	140-45052-21	140-45052-2	SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-CTRL-7-20251203	140-45052-22		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-CTRL-8-20251203	140-45052-23		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW1-CTRL-9-20251203	140-45052-24		SPME	PCB Congeners

Sample ID	Lab Sample ID	SDG	Matrix	Analyses
HOUS-R5A-Isotherm-PW2-GAC-2-20251204	140-45052-25	140-45052-2 (Continued)	SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-GAC-3-20251204	140-45052-26		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-GAC-4-20251204	140-45052-27		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-GAC-5-20251204	140-45052-28		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-GAC-6-20251204	140-45052-29		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-GAC-7-20251204	140-45052-30		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-GAC-8-20251204	140-45052-31		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-GAC-9-20251204	140-45052-32		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-PAC-2-20251204	140-45052-33		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-PAC-3-20251204	140-45052-34		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-PAC-4-20251204	140-45052-35		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-PAC-5-20251204	140-45052-36		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-PAC-6-20251204	140-45052-37		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-PAC-7-20251204	140-45052-38		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-PAC-8-20251204	140-45052-39		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-PAC-9-20251204	140-45052-40		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-CTRL-2-20251204	140-45052-41	140-45052-3	SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-CTRL-3-20251204	140-45052-42		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-CTRL-4-20251204	140-45052-43		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-CTRL-5-20251204	140-45052-44		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-CTRL-6-20251204	140-45052-45		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-CTRL-7-20251204	140-45052-46		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-CTRL-8-20251204	140-45052-47		SPME	PCB Congeners
HOUS-R5A-Isotherm-PW2-CTRL-9-20251204	140-45052-48		SPME	PCB Congeners

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the analytical procedures. Laboratory results were reviewed using the following guidelines:

- Addendum to Treatability Study Work Plan for Reach 5A (Anchor QEA 2025).
- Field Sampling Plan / Quality Assurance Project Plan: GE-Pittsfield/Housatonic River Site. Arcadis 2023).
- USEPA National Functional Guidelines for High Resolution Superfund Methods Data Review (USEPA 2020)

Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody (COC) form was signed by Eurofins and SGS labs at the time of sample receipt. The samples were received in good condition and within the recommended temperature range.

Sample Preservation and Holding Times

Samples were appropriately preserved and analyzed within holding times.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. Blanks were free of target analytes except for twenty-one PCBs or co-eluting congeners that were detected above the estimated detection limit (EDL) in the method blank in batches 108321, 108447, and 108448. Associated detected sample results that were not greater than 5x the levels in the blank were qualified "U" at the detected value.

Qualified results are summarized in Table 2.

Field Quality Control

No field quality control samples were collected with this sample set.

Labeled Isotope and Surrogate Recoveries

Labeled isotope and surrogates were added all samples and quality control samples as required. Labeled isotope and surrogate recoveries were within method-required or project control limits with the following exceptions. Labeled isotope internal standard PCB-209-C13 recovered above laboratory control limits in in samples HOUS-R5A-ISOTHERM-PW1-GAC-2-20251203 (163%) and HOUS-R5A-ISOTHERM-PW1-GAC-3-20251203 (163%). Associated detected sample results have been qualified "J" to indicate a potential high bias.

Laboratory Control Samples

Laboratory control samples (LCS) were analyzed at the required frequency and resulted in recoveries within control limits.

Matrix Spike and Matrix Spike Duplicate Samples

Matrix spike (MS) and matrix spike duplicate (MSD) samples were not analyzed for PCB congener analyses. As a result, sample results were qualified "UJ" or "J" to indicate they are estimated due to the lack of a laboratory precision evaluation. Results previously qualified for method blank contamination received no further qualification.

Laboratory Replicates

Laboratory replicate samples were not analyzed for PCB analyses.

Compound Quantitation

Some PCBs were flagged by the laboratory for having interferences resulting in elevated detection limits or exceeding the upper calibration limit. Associated results were qualified "J" to indicate a potential bias.

Estimated Maximum Potential Concentration

Some results were qualified as estimated maximum potential concentration (EMPC) by the laboratory due to ion abundance ratios outside of method-required criteria and have been qualified "J" as estimated.

Method Reporting Limits and Estimated Detection Limits

Most reporting limits were acceptable as reported. Values were reported as undiluted or when diluted, the reporting limit reflects the dilution factor.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the internal standard, surrogate, LCS recovery values with the exceptions noted above. Precision data was not reported so results were qualified to indicate a possible bias. All data are acceptable as reported or as qualified. Table 2 summarizes the qualifiers applied to the sample results reviewed in this report.

Data Qualifier Definitions

J Indicates an estimated value

U Indicates the compound or analyte was analyzed for but not detected at or above the specified limit

UJ Indicates the compound or analyte was analyzed for but not detected and the specified limit reported is estimated

Table 2
Data Qualification Summary

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
Various	PCBs	Varies	EMPC	J	EMPC
All	PCBs	All	Varies	UJ, J	Missing required precision results
HOUS-R5A-ISOTHERM-PW1-CTRL-9-20251203	PCBs	PCB-046	3.2 ng/samp	3.2J ng/samp	QL raised due to matrix interference; Missing required precision results
		PCB-052	4300 ng/samp	4300J ng/samp	Linear range exceedance; Missing required precision results
		PCB-054	5200 ng/samp	5200J ng/samp	
HOUS-R5A-ISOTHERM-PW1-GAC-2-20251203	PCBs	PCB-209	0.012JEMPC ng/samp	0.012J ng/samp	IS %R above CL; EMPC; Missing required precision results
HOUS-R5A-ISOTHERM-PW1-GAC-3-20251203	PCBs	PCB-209	0.02JEMPC ng/samp	0.02J ng/samp	IS %R above CL; EMPC; Missing required precision results
HOUS-R5A-ISOTHERM-PW1-GAC-8-20251203	PCBs	PCB-130	3.4 ng/samp	3.4J ng/samp	QL raised due to matrix interference; Missing required precision results
		PCB-131	0.79 ng/samp	0.79J ng/samp	
		PCB-132	21 ng/samp	21J ng/samp	
		PCB-133	0.64 ng/samp	0.64J ng/samp	
		PCB-137	2.2 ng/samp	2.2J ng/samp	
		PCB-141	16 ng/samp	16J ng/samp	
		PCB-146	8.2 ng/samp	8.2J ng/samp	
HOUS-R5A-ISOTHERM-PW1-GAC-9-20251203	PCBs	PCB-130	5.2 ng/samp	5.2J ng/samp	QL raised due to matrix interference; Missing required precision results
		PCB-131	1.1 ng/samp	1.1J ng/samp	
		PCB-132	33 ng/samp	33J ng/samp	
		PCB-133	1.1 ng/samp	1.1J ng/samp	
		PCB-137	3.6 ng/samp	3.6J ng/samp	
		PCB-141	26 ng/samp	26J ng/samp	
		PCB-146	13 ng/samp	13J ng/samp	
		PCB-158	9.3 ng/samp	9.3J ng/samp	
		PCB-164	6 ng/samp	6J ng/samp	
		PCB-167	2.7 ng/samp	2.7J ng/samp	
HOUS-R5A-ISOTHERM-PW1-PAC-2-20251203	PCBs	PCB-183/185	0.045J ng/samp	0.045U ng/samp	Detected in MB
HOUS-R5A-ISOTHERM-PW1-PAC-3-20251203	PCBs	PCB-183/185	0.044J ng/samp	0.044U ng/samp	Detected in MB

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
HOUS-R5A-ISOTHERM-PW2-CTRL-8-20251204	PCBs	PCB-046	4.2 ng/samp	4.2J ng/samp	QL raised due to matrix interference; Missing required precision results
		PCB-052	3900 ng/samp	3900J ng/samp	Linear range exceedance; QL raised due to matrix interference
		PCB-054	4800 ng/samp	4800J ng/samp	Linear range exceedance; Missing required precision results
HOUS-R5A-ISOTHERM-PW2-GAC-7-20251204	PCBs	PCB-130	7.4 ng/samp	7.4J ng/samp	QL raised due to matrix interference; Missing required precision results
		PCB-131	1.6 ng/samp	1.6J ng/samp	
		PCB-132	44 ng/samp	44J ng/samp	
		PCB-133	1.3 ng/samp	1.3J ng/samp	
		PCB-137	4.4 ng/samp	4.4J ng/samp	
		PCB-141	35 ng/samp	35J ng/samp	
HOUS-R5A-ISOTHERM-PW2-GAC-9-20251204	PCBs	PCB-052	37 ng/samp	37J ng/samp	QL raised due to matrix interference; Missing required precision results
		PCB-105	16 ng/samp	16J ng/samp	
		PCB-107	2.9 ng/samp	2.9J ng/samp	
		PCB-114	1.4 ng/samp	1.4J ng/samp	
		PCB-118	51 ng/samp	51J ng/samp	
		PCB-122	0.84 ng/samp	0.84J ng/samp	
		PCB-123	1 ng/samp	1J ng/samp	
		PCB-127	0.3 ng/samp	0.3J ng/samp	
		PCB-130	15 ng/samp	15J ng/samp	
		PCB-131	3.5 ng/samp	3.5J ng/samp	
		PCB-132	96 ng/samp	96J ng/samp	
		PCB-133	2.7 ng/samp	2.7J ng/samp	
		PCB-134/143	16 ng/samp	16J ng/samp	
		PCB-137	8.5 ng/samp	8.5J ng/samp	
		PCB-141	68 ng/samp	68J ng/samp	
		PCB-146	32 ng/samp	32J ng/samp	
		PCB-158	28 ng/samp	28J ng/samp	
		PCB-159	5.5 ng/samp	5.5J ng/samp	
		PCB-164	18 ng/samp	18J ng/samp	
		PCB-167	7.2 ng/samp	7.2J ng/samp	
HOUS-R5A-ISOTHERM-PW2-PAC-2-20251204	PCBs	PCB-136	0.008JEMPC ng/samp	0.008UJ ng/samp	Detected in MB; EMPC

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
HOUS-R5A-ISOTHERM-PW2-PAC-6-20251204	PCBs	PCB-019	0.015J ng/samp	0.015U ng/samp	Detected in MB

Notes:
ng/samp = nanogram per sample
CL: Control limit
EMPC: Estimated maximum possible concentration
MB: method blank
QL: Quantitation limit

References

Anchor QEA, 2025. *Addendum to Treatability Study Work Plan for Reach 5A*. Prepared for the General Electric Company. February 2025.

Arcadis, 2023. *Field Sampling Plan / Quality Assurance Project Plan, GE-Pittsfield/Housatonic River Site*. Prepared for General Electric. Revised December 2023.

USEPA, 1986. *Test methods for Evaluating Solid Waste: Physical/Chemical Methods.* U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846.

USEPA, 2020. *National Functional Guidelines for High Resolution Superfund Methods Data Review.* Office of Superfund Remediation and Technology Innovation. United States Environmental Protection Agency. EPA-542-R-20-007. November 2020.

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Data Validation Report – EPA Stage 2A

December 12, 2025

Project:	Housatonic Reach 5A Treatability- Backwater
Project Number:	250469-08.01
AQ DVR Number	AQ-2025-0021

This report summarizes the review of analytical results for 24 solid-phase microextraction fiber (SPME) samples and 24 field duplicate samples collected December 2 and 30, 2025. The samples were collected by Anchor QEA and submitted to Eurofins Knoxville (ETK) in Knoxville, Tennessee. Samples were analyzed for polychlorinated biphenyls (PCB) congeners by USEPA (U.S. Environmental Protection Agency) method 1668.

ETK sample delivery groups (SDGs) 140-45017-1 and 140-45381-1 were reviewed in this report. Sample IDs, matrices, analyses, are presented in Table 1.

Table 1
Sample IDs, Matrices, and Analyses

Sample ID	Lab Sample ID	Matrix	Analyses
HOUS-R5A-TS-BW1A-JAR-SPME-CTRL	140-45017-1	SPME	PCB congeners
HOUS-R5A-TS-BW1A-JAR-SPME-CTRL-DUP	140-45017-2	SPME	PCB congeners
HOUS-R5A-TS-BW1A-JAR-SPME-1PAC	140-45017-3	SPME	PCB congeners
HOUS-R5A-TS-BW1A-JAR-SPME-1PAC-DUP	140-45017-4	SPME	PCB congeners
HOUS-R5A-TS-BW1A-JAR-SPME-2PAC	140-45017-5	SPME	PCB congeners
HOUS-R5A-TS-BW1A-JAR-SPME-2PAC-DUP	140-45017-6	SPME	PCB congeners
HOUS-R5A-TS-BW1A-JAR-SPME-5PAC	140-45017-7	SPME	PCB congeners
HOUS-R5A-TS-BW1A-JAR-SPME-5PAC-DUP	140-45017-8	SPME	PCB congeners
HOUS-R5A-TS-BW1A-JAR-SPME-2GAC	140-45017-9	SPME	PCB congeners
HOUS-R5A-TS-BW1A-JAR-SPME-2GAC-DUP	140-45017-10	SPME	PCB congeners
HOUS-R5A-TS-BW1A-JAR-SPME-5GAC	140-45017-11	SPME	PCB congeners
HOUS-R5A-TS-BW1A-JAR-SPME-5GAC-DUP	140-45017-12	SPME	PCB congeners
HOUS-R5A-TS-BW1A-JAR-SPME-5BC	140-45017-13	SPME	PCB congeners
HOUS-R5A-TS-BW1A-JAR-SPME-5BC-DUP	140-45017-14	SPME	PCB congeners
HOUS-R5A-TS-BW1A-JAR-SPME-10BC	140-45017-15	SPME	PCB congeners
HOUS-R5A-TS-BW1A-JAR-SPME-10BC-DUP	140-45017-16	SPME	PCB congeners
HOUS-R5A-TS-BW1B-JAR-SPME-CTRL	140-45017-17	SPME	PCB congeners
HOUS-R5A-TS-BW1B-JAR-SPME-CTRL-DUP	140-45017-18	SPME	PCB congeners
HOUS-R5A-TS-BW1B-JAR-SPME-1PAC	140-45017-19	SPME	PCB congeners
HOUS-R5A-TS-BW1B-JAR-SPME-1PAC-DUP	140-45017-20	SPME	PCB congeners
HOUS-R5A-TS-BW1B-JAR-SPME-2PAC	140-45017-21	SPME	PCB congeners
HOUS-R5A-TS-BW1B-JAR-SPME-2PAC-DUP	140-45017-22	SPME	PCB congeners
HOUS-R5A-TS-BW1B-JAR-SPME-5PAC	140-45017-23	SPME	PCB congeners
HOUS-R5A-TS-BW1B-JAR-SPME-5PAC-DUP	140-45017-24	SPME	PCB congeners
HOUS-R5A-TS-BW1B-JAR-SPME-2GAC	140-45017-25	SPME	PCB congeners
HOUS-R5A-TS-BW1B-JAR-SPME-2GAC-DUP	140-45017-26	SPME	PCB congeners

Sample ID	Lab Sample ID	Matrix	Analyses
HOUS-R5A-TS-BW1B-JAR-SPME-5GAC	140-45017-27	SPME	PCB congeners
HOUS-R5A-TS-BW1B-JAR-SPME-5GAC-DUP	140-45017-28	SPME	PCB congeners
HOUS-R5A-TS-BW1B-JAR-SPME-5BC	140-45017-29	SPME	PCB congeners
HOUS-R5A-TS-BW1B-JAR-SPME-5BC-DUP	140-45017-30	SPME	PCB congeners
HOUS-R5A-TS-BW1B-JAR-SPME-10BC	140-45017-31	SPME	PCB congeners
HOUS-R5A-TS-BW1B-JAR-SPME-10BC-DUP	140-45017-32	SPME	PCB congeners
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-CTRL	140-45381-1	SPME	PCB congeners
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-CTRL-DUP	140-45381-2	SPME	PCB congeners
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-1PAC	140-45381-3	SPME	PCB congeners
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-1PAC-DUP	140-45381-4	SPME	PCB congeners
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-2PAC	140-45381-5	SPME	PCB congeners
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-2PAC-DUP	140-45381-6	SPME	PCB congeners
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-5PAC	140-45381-7	SPME	PCB congeners
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-5PAC-DUP	140-45381-8	SPME	PCB congeners
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-2GAC	140-45381-9	SPME	PCB congeners
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-2GAC-DUP	140-45381-10	SPME	PCB congeners
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-5GAC	140-45381-11	SPME	PCB congeners
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-5GAC-DUP	140-45381-12	SPME	PCB congeners
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-5BC	140-45381-13	SPME	PCB congeners
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-5BC-DUP	140-45381-14	SPME	PCB congeners
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-10BC	140-45381-15	SPME	PCB congeners
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-10BC-DUP	140-45381-16	SPME	PCB congeners

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the analytical procedures. Laboratory results were reviewed using the following guidelines:

- Addendum to Treatability Study- Work Plan for Reach 5A (Anchor QEA 2025).
- Field Sampling Plan / Quality Assurance Project Plan: GE-Pittsfield/Housatonic River Site. Arcadis 2023).
- USEPA 1986 (SW-846, Third Edition), Test Methods for Evaluating Solid Waste: Physical/Chemical Methods.
- USEPA National Functional Guidelines for Organic Superfund Methods Data Review (USEPA 2020a)
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA 2020b)
- USEPA National Functional Guidelines for High Resolution Superfund Methods Data Review (USEPA 2020c)

Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody (COC) form was signed by Eurofins at the time of sample receipt. The samples were received in good condition and within the recommended temperature range.

Sample Preservation and Holding Times

Samples were appropriately preserved and analyzed within project required holding times.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. Blanks were free of target analytes except for 12 PCB congeners and co-eluting congeners in batch 108180 and 22 PCB congeners and co-eluting congeners in batch 109263. Associated detected batch sample results that were not significantly greater than (greater than 5 times) the concentrations detected in the method blank have been qualified "U".

Field Quality Control

Field Duplicates

Twenty-four field duplicates were collected in association with these sample sets. Result values less than five times the reporting limit (RL) may have exaggerated relative percent difference (RPD) values; therefore, if the sample or field duplicate result was less than five times the RL, the sample result is evaluated by the difference between them using the RL as the control limit. Results that had RPD/difference values above the control limits have been qualified "J" to indicate estimated values. Qualified data is summarized in table 2. Detected results are summarized in Table A-1.

Laboratory Control Samples

Laboratory control samples (LCS) were analyzed at the required frequency and resulted in recoveries and/or RPD values within project-required control limits.

Matrix Spike and Matrix Spike Duplicate Samples

Matrix spike (MS) and matrix spike duplicate (MSD) samples were not analyzed for PCB congener analyses. No laboratory duplicates were evaluated for this sample set.
However, several field duplicate RPDs or differences were outside of control limits. Without laboratory duplicate analyses it cannot be determined if variability was due to sample heterogeneity, matrix effects or laboratory analytical variability. No samples were qualified solely for lack of laboratory precision results.

Surrogates and Labeled Compounds

Surrogates and labeled compounds were analyzed at the required frequency and within control limits.

Compound Quantitation

Some congeners were flagged by the laboratory for having interferences resulting in elevated detection limits. Associated results were qualified "J" to indicate a potential bias.

Estimated Maximum Potential Concentration

Results qualified as estimated maximum potential concentration (EMPC) by the laboratory due to ion abundance ratios outside of method-required criteria have been qualified "J" as estimated.

Method Reporting Limits

Most values were reported using the laboratory reporting limits (RLs) and were acceptable as reported. Values were reported as undiluted or when diluted, the reporting limit reflects the dilution factor.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the internal standard, surrogate, or LCS recovery values. Precision was acceptable as demonstrated by field duplicate RPD and difference values with the exceptions noted above. All data are acceptable as reported or as qualified. Table 2 summarizes the qualifiers applied to the sample results reviewed in this report.

Data Qualifier Definitions

U Indicates the compound or analyte was analyzed for but not detected at or above the specified limit.

J Indicates an estimated value.

UJ Indicates the compound or analyte was analyzed for but not detected and the specified limit reported is estimated

Table 2
Data Qualification Summary

Sample ID	Analyte	Reported Result	Qualified Result	Reason
All	Various	Various	UJ/J	EMPC
Various	Various	Various	J	Matrix interference
HOUS-R5A-TS-BW1A-JAR-SPME-CTRL	PCB-004	1.6 ng/samp	1.6J ng/samp	FD difference above CL

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	PCB-006	0.66 ng/samp	0.66J ng/samp	FD difference above CL, EMPC
	PCB-008	0.60 ng/samp	0.60J ng/samp	FD difference above CL
	PCB-015	0.33 ng/samp	0.33J ng/samp	FD difference above CL
	PCB-016	0.28 ng/samp	0.28J ng/samp	FD difference above CL
	PCB-017	2.9 ng/samp	2.9J ng/samp	FD RPD above CL
	PCB-020/028	4.7 ng/samp	4.7J ng/samp	FD RPD above CL
	PCB-021/033	1.7 ng/samp	1.7J ng/samp	FD difference above CL
	PCB-022	0.27 ng/samp	0.27J ng/samp	FD difference above CL
	PCB-026/029	2.2 ng/samp	2.2J ng/samp	FD RPD above CL
	PCB-027	8.3 ng/samp	8.3J ng/samp	FD RPD above CL
	PCB-031	1.6 ng/samp	1.6J ng/samp	FD difference above CL
	PCB-032	6.6 ng/samp	6.6J ng/samp	FD RPD above CL
	PCB-042	3.8 ng/samp	3.8J ng/samp	FD RPD above CL, matrix interference
	PCB-044/047/065	77 ng/samp	77J ng/samp	FD RPD above CL
	PCB-045/051	37 ng/samp	37J ng/samp	FD RPD above CL
	PCB-049/069	43 ng/samp	43J ng/samp	FD RPD above CL
	PCB-052	24 ng/samp	24J ng/samp	FD RPD above CL
	PCB-054	4.7 ng/samp	4.7J ng/samp	FD RPD above CL
	PCB-056	0.32 ng/samp	0.32J ng/samp	FD difference above CL
	PCB-059/062/075	2.2 ng/samp	2.2J ng/samp	FD difference above CL
	PCB-064	1.3 ng/samp	1.3J ng/samp	FD RPD above CL
	PCB-066	5.4 ng/samp	5.4J ng/samp	FD RPD above CL
	PCB-068	1.5 ng/samp	1.5J ng/samp	FD RPD above CL
	PCB-072	0.76 ng/samp	0.76J ng/samp	FD difference above CL
	PCB-088/091	32 ng/samp	32J ng/samp	FD RPD above CL
	PCB-093/100	18 ng/samp	18J ng/samp	FD RPD above CL
	PCB-095	41 ng/samp	41J ng/samp	FD RPD above CL
	PCB-104	1.3 ng/samp	1.3J ng/samp	FD RPD above CL
	PCB-105	2.7 ng/samp	2.7J ng/samp	FD RPD above CL
	PCB-108/124	0.73 ng/samp	0.73J ng/samp	FD difference above CL
	PCB-111	0.28 ng/samp	0.28J ng/samp	FD difference above CL
	PCB-120	0.66 ng/samp	0.66J ng/samp	FD difference above CL
	PCB-121	0.42 ng/samp	0.42J ng/samp	FD difference above CL
	PCB-131	0.65 ng/samp	0.65J ng/samp	FD difference above CL, matrix interference
	PCB-139/140	1.8 ng/samp	1.8J ng/samp	FD difference above CL
	PCB-147/149	130 ng/samp	130J ng/samp	FD RPD above CL
	PCB-156/157	3.7 ng/samp	3.7J ng/samp	FD RPD above CL
	PCB-165	0.61 ng/samp	0.61J ng/samp	FD difference above CL, matrix interference
	PCB-188	0.73 ng/samp	0.73J ng/samp	FD difference above CL
	PCB-194	17 ng/samp	17J ng/samp	FD RPD above CL
	PCB-195	12 ng/samp	12J ng/samp	FD RPD above CL
	PCB-205	1.1 ng/samp	1.1J ng/samp	FD RPD above CL
HOUS-R5A-TS-BW1A-JAR-SPME-CTRL-DUP	PCB-004	0.92 ng/samp	0.92J ng/samp	FD difference above CL
	PCB-006	0.42 ng/samp	0.42J ng/samp	FD difference above CL
	PCB-008	0.35 ng/samp	0.35J ng/samp	FD difference above CL
	PCB-015	0.17 ng/samp	0.17J ng/samp	FD difference above CL
	PCB-016	0.12 ng/samp	0.12J ng/samp	FD difference above CL, EMPC
	PCB-017	1.7 ng/samp	1.7J ng/samp	FD RPD above CL
	PCB-020/028	2.6 ng/samp	2.6J ng/samp	FD RPD above CL
	PCB-021/033	0.94 ng/samp	0.94J ng/samp	FD difference above CL
	PCB-022	0.14 ng/samp	0.14J ng/samp	FD difference above CL
	PCB-026/029	1.2 ng/samp	1.2J ng/samp	FD RPD above CL
	PCB-027	4.7 ng/samp	4.7J ng/samp	FD RPD above CL
	PCB-031	0.93 ng/samp	0.93J ng/samp	FD difference above CL
	PCB-032	3.7 ng/samp	3.7J ng/samp	FD RPD above CL
	PCB-042	2.2 ng/samp	2.2J ng/samp	FD RPD above CL
	PCB-044/047/065	45 ng/samp	45J ng/samp	FD RPD above CL
	PCB-045/051	22 ng/samp	22J ng/samp	FD RPD above CL
	PCB-049/069	25 ng/samp	25J ng/samp	FD RPD above CL
	PCB-052	14 ng/samp	14J ng/samp	FD RPD above CL

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	PCB-054	2.7 ng/samp	2.7J ng/samp	FD RPD above CL
	PCB-056	0.20 ng/samp	0.20J ng/samp	FD difference above CL
	PCB-059/062/075	1.4 ng/samp	1.4J ng/samp	FD difference above CL
	PCB-064	0.70 ng/samp	0.70J ng/samp	FD RPD above CL
	PCB-066	3.2 ng/samp	3.2J ng/samp	FD RPD above CL
	PCB-068	0.75 ng/samp	0.75J ng/samp	FD RPD above CL, EMPC
	PCB-072	0.48 ng/samp	0.48J ng/samp	FD difference above CL
	PCB-088/091	19 ng/samp	19J ng/samp	FD RPD above CL
	PCB-093/100	10 ng/samp	10J ng/samp	FD RPD above CL
	PCB-095	24 ng/samp	24J ng/samp	FD RPD above CL
	PCB-104	0.76 ng/samp	0.76J ng/samp	FD RPD above CL
	PCB-105	1.6 ng/samp	1.6J ng/samp	FD RPD above CL
	PCB-108/124	0.45 ng/samp	0.45J ng/samp	FD difference above CL
	PCB-111	0.17 ng/samp	0.17J ng/samp	FD difference above CL, EMPC
	PCB-120	0.46 ng/samp	0.46J ng/samp	FD difference above CL
	PCB-121	0.25 ng/samp	0.25J ng/samp	FD difference above CL
	PCB-131	0.36 ng/samp	0.36J ng/samp	FD difference above CL, matrix interference
	PCB-139/140	1 ng/samp	1J ng/samp	FD difference above CL
	PCB-147/149	75 ng/samp	75J ng/samp	FD RPD above CL
	PCB-156/157	2.2 ng/samp	2.2J ng/samp	FD RPD above CL
	PCB-165	0.34 ng/samp	0.34J ng/samp	FD difference above CL
	PCB-188	0.44 ng/samp	0.44J ng/samp	FD difference above CL, EMPC
	PCB-194	10 ng/samp	10J ng/samp	FD RPD above CL
	PCB-195	7.0 ng/samp	7.0J ng/samp	FD RPD above CL
	PCB-205	0.56 ng/samp	0.56J ng/samp	FD RPD above CL, EMPC
HOUS-R5A-TS-BW1A-JAR-SPME-1PAC	PCB-044/047/065	0.26 ng/samp	0.26J ng/samp	FD difference above CL
	PCB-045/051	0.14 ng/samp	0.14J ng/samp	FD difference above CL
	PCB-049/069	0.15 ng/samp	0.15J ng/samp	FD difference above CL
	PCB-052	0.095 ng/samp	0.095J ng/samp	FD difference above CL
	PCB-083/099	0.36 ng/samp	0.36J ng/samp	FD difference above CL
	PCB-088/091	0.31 ng/samp	0.31J ng/samp	FD difference above CL
	PCB-090/101/113	0.64 ng/samp	0.64J ng/samp	FD difference above CL
	PCB-092	0.24 ng/samp	0.24J ng/samp	FD difference above CL
	PCB-093/100	0.20 ng/samp	0.20J ng/samp	FD difference above CL
	PCB-094	0.10 ng/samp	0.10J ng/samp	FD difference above CL
	PCB-095	0.47 ng/samp	0.47J ng/samp	FD difference above CL
	PCB-096	0.042 ng/samp	0.042J ng/samp	FD difference above CL, EMPC
	PCB-103	0.10 ng/samp	0.10J ng/samp	FD difference above CL
	PCB-110/115	0.28 ng/samp	0.28J ng/samp	FD difference above CL
	PCB-118	0.19 ng/samp	0.19J ng/samp	FD difference above CL
	PCB-129/138/160/163	2.8 ng/samp	2.8J ng/samp	FD RPD above CL
	PCB-130	0.17 ng/samp	0.17J ng/samp	FD difference above CL, EMPC
	PCB-132	0.97 ng/samp	0.97J ng/samp	FD RPD above CL
	PCB-133	0.12 ng/samp	0.12J ng/samp	FD difference above CL, EMPC
	PCB-135/151	3.1 ng/samp	3.1J ng/samp	FD RPD above CL
	PCB-134/143	0.18 ng/samp	0.18J ng/samp	FD difference above CL, EMPC
	PCB-136	1.2 ng/samp	1.2J ng/samp	FD RPD above CL
	PCB-141	0.72 ng/samp	0.72J ng/samp	FD RPD above CL
	PCB-144	0.24 ng/samp	0.24J ng/samp	FD difference above CL
	PCB-146	0.70 ng/samp	0.70J ng/samp	FD RPD above CL
	PCB-147/149	4.4 ng/samp	4.4J ng/samp	FD RPD above CL
	PCB-148	0.084 ng/samp	0.084J ng/samp	FD difference above CL
	PCB-150	0.095 ng/samp	0.095J ng/samp	FD difference above CL, EMPC
	PCB-152	0.094 ng/samp	0.094J ng/samp	FD difference above CL
	PCB-153/168	3.1 ng/samp	3.1J ng/samp	FD RPD above CL
	PCB-154	0.27 ng/samp	0.27J ng/samp	FD difference above CL, EMPC
	PCB-158	0.31 ng/samp	0.31J ng/samp	FD difference above CL
	PCB-159	0.43 ng/samp	0.43J ng/samp	FD difference above CL
	PCB-164	0.19 ng/samp	0.19J ng/samp	FD difference above CL
	PCB-170	4.1 ng/samp	4.1J ng/samp	FD RPD above CL

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	PCB-171/173	2.2 ng/samp	2.2J ng/samp	FD RPD above CL
	PCB-172	1.3 ng/samp	1.3J ng/samp	FD RPD above CL
	PCB-174	8.8 ng/samp	8.8J ng/samp	FD RPD above CL
	PCB-175	0.37 ng/samp	0.37J ng/samp	FD difference above CL
	PCB-176	1.7 ng/samp	1.7J ng/samp	FD RPD above CL
	PCB-177	4.9 ng/samp	4.9J ng/samp	FD RPD above CL
	PCB-178	2.8 ng/samp	2.8J ng/samp	FD RPD above CL
	PCB-179	6.7 ng/samp	6.7J ng/samp	FD RPD above CL
	PCB-180/193	11 ng/samp	11J ng/samp	FD RPD above CL
	PCB-183/185	5.5 ng/samp	5.5J ng/samp	FD RPD above CL
	PCB-187	12 ng/samp	12J ng/samp	FD RPD above CL
	PCB-188	0.089 ng/samp	0.089J ng/samp	FD difference above CL, EMPC
	PCB-189	0.092 ng/samp	0.092J ng/samp	FD difference above CL
	PCB-190	0.86 ng/samp	0.86J ng/samp	FD RPD above CL
	PCB-191	0.20 ng/samp	0.20J ng/samp	FD difference above CL
	PCB-194	4.3 ng/samp	4.3J ng/samp	FD RPD above CL
	PCB-195	2.7 ng/samp	2.7J ng/samp	FD RPD above CL
	PCB-196	4.6 ng/samp	4.6J ng/samp	FD RPD above CL
	PCB-197/200	2.8 ng/samp	2.8J ng/samp	FD RPD above CL
	PCB-198/199	9.6 ng/samp	9.6J ng/samp	FD RPD above CL
	PCB-201	2.2 ng/samp	2.2J ng/samp	FD RPD above CL
	PCB-202	3.4 ng/samp	3.4J ng/samp	FD RPD above CL
	PCB-203	5.8 ng/samp	5.8J ng/samp	FD RPD above CL
	PCB-205	0.24 ng/samp	0.24J ng/samp	FD difference above CL
	PCB-206	2.5 ng/samp	2.5J ng/samp	FD RPD above CL
	PCB-207	0.48 ng/samp	0.48J ng/samp	FD difference above CL
	PCB-208	0.89 ng/samp	0.89J ng/samp	FD RPD above CL
	PCB-209	0.36 ng/samp	0.36J ng/samp	FD difference above CL, EMPC
HOUS-R5A-TS-BW1A-JAR-SPME-1PAC-DUP	PCB-015	0.0055 ng/samp	0.0055UJ ng/samp	MB contamination, EMPC
	PCB-032	0.011 ng/samp	0.011UJ ng/samp	MB contamination, EMPC
	PCB-044/047/065	0.66 ng/samp	0.66J ng/samp	FD difference above CL
	PCB-045/051	0.38 ng/samp	0.38J ng/samp	FD difference above CL
	PCB-049/069	0.37 ng/samp	0.37J ng/samp	FD difference above CL
	PCB-052	0.24 ng/samp	0.24J ng/samp	FD difference above CL
	PCB-083/099	0.88 ng/samp	0.88J ng/samp	FD difference above CL, EMPC
	PCB-088/091	0.96 ng/samp	0.96J ng/samp	FD difference above CL
	PCB-090/101/113	1.8 ng/samp	1.8J ng/samp	FD difference above CL
	PCB-092	0.66 ng/samp	0.66J ng/samp	FD difference above CL
	PCB-093/100	0.59 ng/samp	0.59J ng/samp	FD difference above CL
	PCB-094	0.28 ng/samp	0.28J ng/samp	FD difference above CL
	PCB-095	1.0 ng/samp	1.0J ng/samp	FD difference above CL, EMPC
	PCB-096	0.15 ng/samp	0.15J ng/samp	FD difference above CL
	PCB-103	0.26 ng/samp	0.26J ng/samp	FD difference above CL, EMPC
	PCB-110/115	0.77 ng/samp	0.77J ng/samp	FD difference above CL
	PCB-118	0.38 ng/samp	0.38J ng/samp	FD difference above CL, EMPC
	PCB-129/138/160/163	7.6 ng/samp	7.6J ng/samp	FD RPD above CL
	PCB-130	0.50 ng/samp	0.50J ng/samp	FD difference above CL
	PCB-132	2.6 ng/samp	2.6J ng/samp	FD RPD above CL
	PCB-133	0.34 ng/samp	0.34J ng/samp	FD difference above CL, EMPC
	PCB-134/143	0.56 ng/samp	0.56J ng/samp	FD difference above CL
	PCB-135/151	8.4 ng/samp	8.4J ng/samp	FD RPD above CL
	PCB-136	3.3 ng/samp	3.3J ng/samp	FD RPD above CL
	PCB-141	1.8 ng/samp	1.8J ng/samp	FD RPD above CL
	PCB-144	0.68 ng/samp	0.68J ng/samp	FD difference above CL
	PCB-146	1.9 ng/samp	1.9J ng/samp	FD RPD above CL
	PCB-147/149	12 ng/samp	12J ng/samp	FD RPD above CL
	PCB-148	0.21 ng/samp	0.21J ng/samp	FD difference above CL
	PCB-150	0.40 ng/samp	0.40J ng/samp	FD difference above CL

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	PCB-152	0.25 ng/samp	0.25J ng/samp	FD difference above CL
	PCB-153/168	8.7 ng/samp	8.7J ng/samp	FD RPD above CL
	PCB-154	0.85 ng/samp	0.85J ng/samp	FD difference above CL
	PCB-158	0.85 ng/samp	0.85J ng/samp	FD difference above CL
	PCB-159	1.1 ng/samp	1.1J ng/samp	FD difference above CL
	PCB-164	0.60 ng/samp	0.60J ng/samp	FD difference above CL
	PCB-170	11 ng/samp	11J ng/samp	FD RPD above CL
	PCB-171/173	5.4 ng/samp	5.4J ng/samp	FD RPD above CL
	PCB-172	3.5 ng/samp	3.5J ng/samp	FD RPD above CL
	PCB-174	23 ng/samp	23J ng/samp	FD RPD above CL
	PCB-175	0.90 ng/samp	0.90J ng/samp	FD difference above CL
	PCB-176	4.5 ng/samp	4.5J ng/samp	FD RPD above CL
	PCB-177	13 ng/samp	13J ng/samp	FD RPD above CL
	PCB-178	7.5 ng/samp	7.5J ng/samp	FD RPD above CL
	PCB-179	18 ng/samp	18J ng/samp	FD RPD above CL
	PCB-180/193	29 ng/samp	29J ng/samp	FD RPD above CL
	PCB-183/185	15 ng/samp	15J ng/samp	FD RPD above CL
	PCB-187	35 ng/samp	35J ng/samp	FD RPD above CL
	PCB-188	0.32 ng/samp	0.32J ng/samp	FD difference above CL
	PCB-189	0.23 ng/samp	0.23J ng/samp	FD difference above CL
	PCB-190	2.3 ng/samp	2.3J ng/samp	FD RPD above CL
	PCB-191	0.56 ng/samp	0.56J ng/samp	FD difference above CL
	PCB-194	11 ng/samp	11J ng/samp	FD RPD above CL
	PCB-195	6.8 ng/samp	6.8J ng/samp	FD RPD above CL
	PCB-196	12 ng/samp	12J ng/samp	FD RPD above CL
	PCB-197/200	7.2 ng/samp	7.2J ng/samp	FD RPD above CL
	PCB-198/199	26 ng/samp	26J ng/samp	FD RPD above CL
	PCB-201	5.8 ng/samp	5.8J ng/samp	FD RPD above CL
	PCB-202	8.7 ng/samp	8.7J ng/samp	FD RPD above CL
	PCB-203	16 ng/samp	16J ng/samp	FD RPD above CL
	PCB-205	0.67 ng/samp	0.67J ng/samp	FD difference above CL
	PCB-206	5.3 ng/samp	5.3J ng/samp	FD RPD above CL
	PCB-207	1.2 ng/samp	1.2J ng/samp	FD difference above CL
	PCB-208	2.0 ng/samp	2.0J ng/samp	FD RPD above CL
	PCB-209	0.49 ng/samp	0.49J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1A-JAR-SPME-2PAC	PCB-015	0.0041 ng/samp	0.0041UJ ng/samp	MB contamination, EMPC
	PCB-032	0.014 ng/samp	0.014UJ ng/samp	MB contamination, EMPC
	PCB-128/166	0.18 ng/samp	0.18J ng/samp	FD difference above CL
	PCB-158	0.14 ng/samp	0.14J ng/samp	FD difference above CL, EMPC
	PCB-159	0.34 ng/samp	0.34J ng/samp	FD difference above CL, EMPC
HOUS-R5A-TS-BW1A-JAR-SPME-2PAC-DUP	PCB-032	0.011 ng/samp	0.011UJ ng/samp	MB contamination, EMPC
	PCB-128/166	1.2 ng/samp	1.2J ng/samp	FD difference above CL
	PCB-158	0.39 ng/samp	0.39J ng/samp	FD difference above CL
	PCB-159	0.60 ng/samp	0.60J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1A-JAR-SPME-5PAC	PCB-032	0.012 ng/samp	0.012UJ ng/samp	MB contamination, EMPC
HOUS-R5A-TS-BW1A-JAR-SPME-5PAC-DUP	PCB-032	0.011 ng/samp	0.011UJ ng/samp	MB contamination, EMPC
HOUS-R5A-TS-BW1A-JAR-SPME-2GAC	PCB-044/047/065	0.52 ng/samp	0.52J ng/samp	FD difference above CL
	PCB-045/051	0.32 ng/samp	0.32J ng/samp	FD difference above CL
	PCB-049/069	0.31 ng/samp	0.31J ng/samp	FD difference above CL
	PCB-050/053	0.23 ng/samp	0.23J ng/samp	FD difference above CL
	PCB-052	0.20 ng/samp	0.20J ng/samp	FD difference above CL
	PCB-083/099	1.9 ng/samp	1.9J ng/samp	FD RPD above CL
	PCB-084	0.31 ng/samp	0.31J ng/samp	FD difference above CL
	PCB-085/116/117	0.27 ng/samp	0.27J ng/samp	FD difference above CL, EMPC
	PCB-086/087/097/109/119/125	0.67 ng/samp	0.67J ng/samp	FD difference above CL

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	PCB-088/091	2.1 ng/samp	2.1J ng/samp	FD RPD above CL
	PCB-090/101/113	2.9 ng/samp	2.9J ng/samp	FD RPD above CL
	PCB-092	1.3 ng/samp	1.3J ng/samp	FD RPD above CL
	PCB-093/100	1.3 ng/samp	1.3J ng/samp	FD RPD above CL
	PCB-094	0.71 ng/samp	0.71J ng/samp	FD RPD above CL, EMPC
	PCB-095	2.0 ng/samp	2.0J ng/samp	FD RPD above CL
	PCB-096	0.39 ng/samp	0.39J ng/samp	FD difference above CL
	PCB-098/102	0.28 ng/samp	0.28J ng/samp	FD difference above CL, EMPC
	PCB-103	0.58 ng/samp	0.58J ng/samp	FD RPD above CL
	PCB-104	0.17 ng/samp	0.17J ng/samp	FD difference above CL, EMPC
	PCB-110/115	0.98 ng/samp	0.98J ng/samp	FD difference above CL
	PCB-118	0.17 ng/samp	0.17J ng/samp	FD difference above CL, EMPC
	PCB-128/166	1.2 ng/samp	1.2J ng/samp	FD RPD above CL
	PCB-129/138/160/163	22 ng/samp	22J ng/samp	FD RPD above CL
	PCB-130	1.4 ng/samp	1.4J ng/samp	FD RPD above CL, matrix interference
	PCB-137	0.22 ng/samp	0.22J ng/samp	FD difference above CL, matrix interference
	PCB-139/140	0.6 ng/samp	0.6J ng/samp	FD difference above CL
	PCB-156/157	0.40 ng/samp	0.40J ng/samp	FD difference above CL
	PCB-158	1.2 ng/samp	1.2J ng/samp	FD RPD above CL, matrix interference
	PCB-167	0.22 ng/samp	0.22J ng/samp	FD difference above CL, EMPC, matrix interference
	PCB-189	0.44 ng/samp	0.44J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1A-JAR-SPME-2GAC-DUP	PCB-044/047/065	1.1 ng/samp	1.1J ng/samp	FD difference above CL
	PCB-045/051	0.78 ng/samp	0.78J ng/samp	FD difference above CL
	PCB-049/069	0.61 ng/samp	0.61J ng/samp	FD difference above CL
	PCB-050/053	0.53 ng/samp	0.53J ng/samp	FD difference above CL
	PCB-052	0.42 ng/samp	0.42J ng/samp	FD difference above CL
	PCB-083/099	4.1 ng/samp	4.1J ng/samp	FD RPD above CL
	PCB-084	0.75 ng/samp	0.75J ng/samp	FD difference above CL
	PCB-085/116/117	0.78 ng/samp	0.78J ng/samp	FD difference above CL, EMPC
	PCB-086/087/097/109/119/125	1.8 ng/samp	1.8J ng/samp	FD difference above CL
	PCB-088/091	5.4 ng/samp	5.4J ng/samp	FD RPD above CL
	PCB-090/101/113	7.3 ng/samp	7.3J ng/samp	FD RPD above CL
	PCB-092	3.1 ng/samp	3.1J ng/samp	FD RPD above CL
	PCB-093/100	3.3 ng/samp	3.3J ng/samp	FD RPD above CL
	PCB-094	1.8 ng/samp	1.8J ng/samp	FD RPD above CL
	PCB-095	5.5 ng/samp	5.5J ng/samp	FD RPD above CL
	PCB-096	0.92 ng/samp	0.92J ng/samp	FD difference above CL
	PCB-098/102	0.62 ng/samp	0.62J ng/samp	FD difference above CL, EMPC
	PCB-103	1.5 ng/samp	1.5J ng/samp	FD RPD above CL
	PCB-104	0.37 ng/samp	0.37J ng/samp	FD difference above CL
	PCB-110/115	2.7 ng/samp	2.7J ng/samp	FD difference above CL
	PCB-118	0.41 ng/samp	0.41J ng/samp	FD difference above CL, EMPC
	PCB-128/166	2.3 ng/samp	2.3J ng/samp	FD RPD above CL
	PCB-129/138/160/163	37 ng/samp	37J ng/samp	FD RPD above CL
	PCB-130	2.4 ng/samp	2.4J ng/samp	FD RPD above CL, matrix interference
	PCB-137	0.72 ng/samp	0.72J ng/samp	FD difference above CL
	PCB-139/140	0.98 ng/samp	0.98J ng/samp	FD difference above CL
	PCB-156/157	0.83 ng/samp	0.83J ng/samp	FD difference above CL
	PCB-158	2.9 ng/samp	2.9J ng/samp	FD RPD above CL
	PCB-167	0.51 ng/samp	0.51J ng/samp	FD difference above CL
	PCB-189	0.56 ng/samp	0.56J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1A-JAR-SPME-5GAC	PCB-032	0.011 ng/samp	0.011UJ ng/samp	MB contamination, EMPC
	PCB-129/138/160/163	3 ng/samp	3J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1A-JAR-SPME-5GAC-DUP	PCB-015	0.0030 ng/samp	0.0030UJ ng/samp	MB contamination, EMPC
	PCB-129/138/160/163	1.3 ng/samp	1.3J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1A-JAR-SPME-5BC	PCB-095	3.6 ng/samp	3.6J ng/samp	FD difference above CL

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	PCB-118	0.38 ng/samp	0.38J ng/samp	FD difference above CL
	PCB-132	7.0 ng/samp	7.0J ng/samp	FD difference above CL
	PCB-133	0.92 ng/samp	0.92J ng/samp	FD difference above CL
	PCB-135/151	23 ng/samp	23J ng/samp	FD RPD above CL
	PCB-136	10 ng/samp	10J ng/samp	FD difference above CL
	PCB-141	4.1 ng/samp	4.1J ng/samp	FD difference above CL
	PCB-144	1.6 ng/samp	1.6J ng/samp	FD difference above CL
	PCB-146	4.7 ng/samp	4.7J ng/samp	FD difference above CL
	PCB-147/149	36 ng/samp	36J ng/samp	FD RPD above CL
	PCB-150	1.1 ng/samp	1.1J ng/samp	FD difference above CL
	PCB-153/168	21 ng/samp	21J ng/samp	FD RPD above CL
	PCB-154	2.4 ng/samp	2.4J ng/samp	FD difference above CL
	PCB-159	1.7 ng/samp	1.7J ng/samp	FD difference above CL
	PCB-164	1.3 ng/samp	1.3J ng/samp	FD difference above CL
	PCB-170	20 ng/samp	20J ng/samp	FD RPD above CL
	PCB-171/173	10 ng/samp	10J ng/samp	FD RPD above CL
	PCB-172	5.7 ng/samp	5.7J ng/samp	FD RPD above CL
	PCB-174	43 ng/samp	43J ng/samp	FD RPD above CL
	PCB-175	1.7 ng/samp	1.7J ng/samp	FD difference above CL
	PCB-176	9.2 ng/samp	9.2J ng/samp	FD RPD above CL
	PCB-177	24 ng/samp	24J ng/samp	FD RPD above CL
	PCB-178	15 ng/samp	15J ng/samp	FD RPD above CL
	PCB-179	37 ng/samp	37J ng/samp	FD RPD above CL
	PCB-180/193	53 ng/samp	53J ng/samp	FD RPD above CL
	PCB-183/185	29 ng/samp	29J ng/samp	FD RPD above CL
	PCB-187	62 ng/samp	62J ng/samp	FD RPD above CL
	PCB-188	0.64 ng/samp	0.64J ng/samp	FD difference above CL
	PCB-189	0.39 ng/samp	0.39J ng/samp	FD difference above CL
	PCB-190	4.2 ng/samp	4.2J ng/samp	FD RPD above CL
	PCB-191	1.0 ng/samp	1.0J ng/samp	FD difference above CL
	PCB-194	17 ng/samp	17J ng/samp	FD RPD above CL
	PCB-203	22 ng/samp	22J ng/samp	FD RPD above CL
	PCB-205	0.99 ng/samp	0.99J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1A-JAR-SPME-5BC-DUP	PCB-095	3.9 ng/samp	3.9J ng/samp	FD difference above CL
	PCB-118	0.49 ng/samp	0.49J ng/samp	FD difference above CL
	PCB-132	7.1 ng/samp	7.1J ng/samp	FD difference above CL, matrix interference
	PCB-133	0.93 ng/samp	0.93J ng/samp	FD difference above CL, matrix interference
	PCB-135/151	24 ng/samp	24J ng/samp	FD RPD above CL
	PCB-136	10 ng/samp	10J ng/samp	FD difference above CL
	PCB-141	4.3 ng/samp	4.3J ng/samp	FD difference above CL, matrix interference
	PCB-144	1.7 ng/samp	1.7J ng/samp	FD difference above CL
	PCB-146	4.9 ng/samp	4.9J ng/samp	FD difference above CL, matrix interference
	PCB-147/149	37 ng/samp	37J ng/samp	FD RPD above CL
	PCB-150	1.2 ng/samp	1.2J ng/samp	FD difference above CL
	PCB-153/168	23 ng/samp	23J ng/samp	FD RPD above CL
	PCB-154	2.6 ng/samp	2.6J ng/samp	FD difference above CL
	PCB-159	2.0 ng/samp	2.0J ng/samp	FD difference above CL, matrix interference
	PCB-164	1.4 ng/samp	1.4J ng/samp	FD difference above CL, matrix interference
	PCB-170	21 ng/samp	21J ng/samp	FD RPD above CL
	PCB-171/173	11 ng/samp	11J ng/samp	FD RPD above CL
	PCB-172	6.3 ng/samp	6.3J ng/samp	FD RPD above CL
	PCB-174	45 ng/samp	45J ng/samp	FD RPD above CL
	PCB-175	1.7 ng/samp	1.7J ng/samp	FD difference above CL
	PCB-176	9.3 ng/samp	9.3J ng/samp	FD RPD above CL
	PCB-177	25 ng/samp	25J ng/samp	FD RPD above CL
	PCB-178	16 ng/samp	16J ng/samp	FD RPD above CL
	PCB-179	37 ng/samp	37J ng/samp	FD RPD above CL
	PCB-180/193	56 ng/samp	56J ng/samp	FD RPD above CL
	PCB-183/185	30 ng/samp	30J ng/samp	FD RPD above CL
	PCB-187	67 ng/samp	67J ng/samp	FD RPD above CL

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	PCB-188	0.64 ng/samp	0.64J ng/samp	FD difference above CL
	PCB-189	0.42 ng/samp	0.42J ng/samp	FD difference above CL
	PCB-190	4.5 ng/samp	4.5J ng/samp	FD RPD above CL
	PCB-191	0.96 ng/samp	0.96J ng/samp	FD difference above CL
	PCB-194	16 ng/samp	16J ng/samp	FD RPD above CL
	PCB-203	21 ng/samp	21J ng/samp	FD RPD above CL
	PCB-205	0.94 ng/samp	0.94J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1A-JAR-SPME-10BC	PCB-032	0.0092 ng/samp	0.0092UJ ng/samp	MB contamination, EMPC
	PCB-034	0.0028 ng/samp	0.0028U ng/samp	MB contamination
	PCB-035	0.0027 ng/samp	0.0027U ng/samp	MB contamination
	PCB-036	0.0022 ng/samp	0.0022U ng/samp	MB contamination
	PCB-037	0.0026 ng/samp	0.0026U ng/samp	MB contamination
	PCB-038	0.0026 ng/samp	0.0026U ng/samp	MB contamination
	PCB-039	0.0026 ng/samp	0.0026U ng/samp	MB contamination
	PCB-040/041/071	0.036 ng/samp	0.036U ng/samp	MB contamination
	PCB-042	0.0059 ng/samp	0.0059U ng/samp	MB contamination
	PCB-043/073	0.0045 ng/samp	0.0045U ng/samp	MB contamination
	PCB-044/047/065	0.29 ng/samp	0.29U ng/samp	MB contamination
	PCB-045/051	0.18 ng/samp	0.18U ng/samp	MB contamination
	PCB-046	0.0066 ng/samp	0.0066U ng/samp	MB contamination
	PCB-048	0.0055 ng/samp	0.0055U ng/samp	MB contamination
	PCB-049/069	0.14 ng/samp	0.14UJ ng/samp	MB contamination, EMPC
	PCB-093/100	0.45 ng/samp	0.45J ng/samp	FD difference above CL
	PCB-154	0.54 ng/samp	0.54J ng/samp	FD difference above CL
	PCB-158	0.38 ng/samp	0.38J ng/samp	FD difference above CL
	PCB-175	0.53 ng/samp	0.53J ng/samp	FD difference above CL
	PCB-188	0.34 ng/samp	0.34J ng/samp	FD difference above CL
	PCB-205	0.52 ng/samp	0.52J ng/samp	FD difference above CL
	PCB-209	0.60 ng/samp	0.60J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1A-JAR-SPME-10BC-DUP	PCB-032	0.0038 ng/samp	0.0038UJ ng/samp	MB contamination, EMPC
	PCB-093/100	0.19 ng/samp	0.19J ng/samp	FD difference above CL, EMPC
	PCB-154	0.42 ng/samp	0.42J ng/samp	FD difference above CL
	PCB-158	0.14 ng/samp	0.14J ng/samp	FD difference above CL
	PCB-175	0.37 ng/samp	0.37J ng/samp	FD difference above CL, EMPC
	PCB-188	0.21 ng/samp	0.21J ng/samp	FD difference above CL
	PCB-205	0.41 ng/samp	0.41J ng/samp	FD difference above CL
	PCB-209	0.47 ng/samp	0.47J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1B-JAR-SPME-1PAC	PCB-017	0.016 ng/samp	0.016J ng/samp	FD difference above CL, EMPC
	PCB-018/030	0.015 ng/samp	0.015J ng/samp	FD difference above CL, EMPC
	PCB-019	0.013 ng/samp	0.013J ng/samp	FD difference above CL, EMPC
	PCB-020/028	0.04 ng/samp	0.04J ng/samp	FD difference above CL, EMPC
	PCB-021/033	0.012 ng/samp	0.012J ng/samp	FD difference above CL, EMPC
	PCB-022	0.0049 ng/samp	0.0049J ng/samp	FD difference above CL, EMPC
	PCB-025	0.012 ng/samp	0.012J ng/samp	FD difference above CL, EMPC
	PCB-026/029	0.016 ng/samp	0.016J ng/samp	FD difference above CL, EMPC
	PCB-027	0.026 ng/samp	0.026J ng/samp	FD difference above CL
	PCB-031	0.01 ng/samp	0.01J ng/samp	FD difference above CL, EMPC
	PCB-032	0.052 ng/samp	0.052J ng/samp	FD difference above CL
	PCB-040/041/071	0.12 ng/samp	0.12J ng/samp	FD difference above CL, EMPC
	PCB-042	0.049 ng/samp	0.049J ng/samp	FD difference above CL, EMPC

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	PCB-043/073	0.026 ng/samp	0.026J ng/samp	FD difference above CL, EMPC
	PCB-044/047/065	0.92 ng/samp	0.92J ng/samp	FD difference above CL
	PCB-045/051	0.55 ng/samp	0.55J ng/samp	FD difference above CL
	PCB-046	0.029 ng/samp	0.029J ng/samp	FD difference above CL
	PCB-049/069	0.53 ng/samp	0.53J ng/samp	FD difference above CL
	PCB-050/053	0.34 ng/samp	0.34J ng/samp	FD difference above CL
	PCB-052	0.31 ng/samp	0.31J ng/samp	FD difference above CL
	PCB-054	0.064 ng/samp	0.064J ng/samp	FD difference above CL, EMPC
	PCB-059/062/075	0.032 ng/samp	0.032J ng/samp	FD difference above CL
	PCB-061/070/074/076	0.067 ng/samp	0.067J ng/samp	FD difference above CL, EMPC
	PCB-064	0.018 ng/samp	0.018J ng/samp	FD difference above CL
	PCB-066	0.075 ng/samp	0.075J ng/samp	FD difference above CL
	PCB-068	0.019 ng/samp	0.019J ng/samp	FD difference above CL
	PCB-072	0.010 ng/samp	0.010J ng/samp	FD difference above CL
	PCB-083/099	0.96 ng/samp	0.96J ng/samp	FD difference above CL
	PCB-084	0.16 ng/samp	0.16J ng/samp	FD difference above CL
	PCB-085/116/117	0.21 ng/samp	0.21J ng/samp	FD difference above CL
	PCB-086/087/097/109/119/125	0.45 ng/samp	0.45J ng/samp	FD difference above CL
	PCB-088/091	0.89 ng/samp	0.89J ng/samp	FD difference above CL
	PCB-090/101/113	1.7 ng/samp	1.7J ng/samp	FD RPD above CL
	PCB-092	0.53 ng/samp	0.53J ng/samp	FD RPD above CL, EMPC
	PCB-093/100	0.55 ng/samp	0.55J ng/samp	FD difference above CL
	PCB-094	0.24 ng/samp	0.24J ng/samp	FD difference above CL, EMPC
	PCB-095	1.0 ng/samp	1.0J ng/samp	FD RPD above CL
	PCB-096	0.13 ng/samp	0.13J ng/samp	FD difference above CL
	PCB-098/102	0.11 ng/samp	0.11J ng/samp	FD difference above CL
	PCB-103	0.20 ng/samp	0.20J ng/samp	FD difference above CL, EMPC
	PCB-104	0.042 ng/samp	0.042J ng/samp	FD difference above CL, EMPC
	PCB-105	0.070 ng/samp	0.070J ng/samp	FD difference above CL
	PCB-107	0.034 ng/samp	0.034J ng/samp	FD difference above CL, EMPC
	PCB-110/115	0.81 ng/samp	0.81J ng/samp	FD difference above CL
	PCB-118	0.43 ng/samp	0.43J ng/samp	FD difference above CL
	PCB-120	0.030 ng/samp	0.030J ng/samp	FD difference above CL
	PCB-121	0.0081 ng/samp	0.0081J ng/samp	FD difference above CL, EMPC
	PCB-128/166	0.29 ng/samp	0.29J ng/samp	FD difference above CL, EMPC
	PCB-129/138/160/163	6.4 ng/samp	6.4J ng/samp	FD RPD above CL
	PCB-130	0.43 ng/samp	0.43J ng/samp	FD difference above CL
	PCB-132	2.2 ng/samp	2.2J ng/samp	FD RPD above CL
	PCB-133	0.34 ng/samp	0.34J ng/samp	FD difference above CL
	PCB-134/143	0.52 ng/samp	0.52J ng/samp	FD difference above CL
	PCB-135/151	6.6 ng/samp	6.6J ng/samp	FD RPD above CL
	PCB-136	2.4 ng/samp	2.4J ng/samp	FD RPD above CL
	PCB-137	0.14 ng/samp	0.14J ng/samp	FD difference above CL
	PCB-139/140	0.16 ng/samp	0.16J ng/samp	FD difference above CL
	PCB-141	1.5 ng/samp	1.5J ng/samp	FD RPD above CL
	PCB-144	0.55 ng/samp	0.55J ng/samp	FD RPD above CL
	PCB-146	1.7 ng/samp	1.7J ng/samp	FD RPD above CL
	PCB-147/149	10 ng/samp	10J ng/samp	FD RPD above CL
	PCB-148	0.16 ng/samp	0.16J ng/samp	FD difference above CL, EMPC
	PCB-150	0.30 ng/samp	0.30J ng/samp	FD difference above CL
	PCB-152	0.22 ng/samp	0.22J ng/samp	FD difference above CL
	PCB-153/168	7.4 ng/samp	7.4J ng/samp	FD RPD above CL
	PCB-154	0.74 ng/samp	0.74J ng/samp	FD RPD above CL
	PCB-155	0.027 ng/samp	0.027J ng/samp	FD difference above CL, EMPC
	PCB-156/157	0.21 ng/samp	0.21J ng/samp	FD difference above CL
	PCB-158	0.65 ng/samp	0.65J ng/samp	FD RPD above CL
	PCB-159	0.67 ng/samp	0.67J ng/samp	FD RPD above CL
	PCB-164	0.46 ng/samp	0.46J ng/samp	FD difference above CL

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	PCB-167	0.11 ng/samp	0.11J ng/samp	FD difference above CL
	PCB-170	9.3 ng/samp	9.3J ng/samp	FD RPD above CL
	PCB-171/173	4.5 ng/samp	4.5J ng/samp	FD RPD above CL
	PCB-172	2.9 ng/samp	2.9J ng/samp	FD RPD above CL
	PCB-174	19 ng/samp	19J ng/samp	FD RPD above CL
	PCB-175	0.75 ng/samp	0.75J ng/samp	FD RPD above CL
	PCB-176	3.9 ng/samp	3.9J ng/samp	FD RPD above CL
	PCB-177	10 ng/samp	10J ng/samp	FD RPD above CL
	PCB-178	6.2 ng/samp	6.2J ng/samp	FD RPD above CL
	PCB-179	15 ng/samp	15J ng/samp	FD RPD above CL
	PCB-180/193	25 ng/samp	25J ng/samp	FD RPD above CL
	PCB-182	0.21 ng/samp	0.21J ng/samp	FD difference above CL, EMPC
	PCB-183/185	12 ng/samp	12J ng/samp	FD RPD above CL
	PCB-187	27 ng/samp	27J ng/samp	FD RPD above CL
	PCB-188	0.32 ng/samp	0.32J ng/samp	FD difference above CL
	PCB-189	0.20 ng/samp	0.20J ng/samp	FD difference above CL, EMPC
	PCB-190	1.9 ng/samp	1.9J ng/samp	FD RPD above CL
	PCB-191	0.41 ng/samp	0.41J ng/samp	FD difference above CL, EMPC
	PCB-209	0.98 ng/samp	0.98J ng/samp	FD RPD above CL
HOUS-R5A-TS-BW1B-JAR-SPME-1PAC-DUP	PCB-017	2.8 ng/samp	2.8J ng/samp	FD difference above CL
	PCB-018/030	3.8 ng/samp	3.8J ng/samp	FD difference above CL
	PCB-019	1.3 ng/samp	1.3J ng/samp	FD difference above CL
	PCB-020/028	4.6 ng/samp	4.6J ng/samp	FD difference above CL
	PCB-021/033	1.4 ng/samp	1.4J ng/samp	FD difference above CL
	PCB-022	0.27 ng/samp	0.27J ng/samp	FD difference above CL
	PCB-025	1.7 ng/samp	1.7J ng/samp	FD difference above CL
	PCB-026/029	2.2 ng/samp	2.2J ng/samp	FD difference above CL
	PCB-027	7.8 ng/samp	7.8J ng/samp	FD difference above CL
	PCB-031	1.6 ng/samp	1.6J ng/samp	FD difference above CL
	PCB-032	6.2 ng/samp	6.2J ng/samp	FD difference above CL
	PCB-040/041/071	9.4 ng/samp	9.4J ng/samp	FD difference above CL
	PCB-042	3.7 ng/samp	3.7J ng/samp	FD difference above CL, atrix interference
	PCB-043/073	2.6 ng/samp	2.6J ng/samp	FD difference above CL
	PCB-044/047/065	76 ng/samp	76J ng/samp	FD difference above CL
	PCB-045/051	37 ng/samp	37J ng/samp	FD difference above CL
	PCB-046	2.7 ng/samp	2.7J ng/samp	FD difference above CL, atrix interference
	PCB-049/069	42 ng/samp	42J ng/samp	FD difference above CL
	PCB-050/053	30 ng/samp	30J ng/samp	FD difference above CL
	PCB-052	24 ng/samp	24J ng/samp	FD difference above CL
	PCB-054	4.7 ng/samp	4.7J ng/samp	FD difference above CL
	PCB-059/062/075	2.2 ng/samp	2.2J ng/samp	FD difference above CL
	PCB-061/070/074/076	4.7 ng/samp	4.7J ng/samp	FD difference above CL
	PCB-064	1.3 ng/samp	1.3J ng/samp	FD difference above CL
	PCB-066	5.4 ng/samp	5.4J ng/samp	FD difference above CL
	PCB-068	1.3 ng/samp	1.3J ng/samp	FD difference above CL, EMPC
	PCB-072	0.77 ng/samp	0.77J ng/samp	FD difference above CL
	PCB-083/099	35 ng/samp	35J ng/samp	FD difference above CL
	PCB-084	4.7 ng/samp	4.7J ng/samp	FD difference above CL
	PCB-085/116/117	6.4 ng/samp	6.4J ng/samp	FD difference above CL
	PCB-088/091	31 ng/samp	31J ng/samp	FD difference above CL
	PCB-086/087/097/109/119/125	18 ng/samp	18J ng/samp	FD difference above CL
	PCB-090/101/113	61 ng/samp	61J ng/samp	FD RPD above CL
	PCB-092	22 ng/samp	22J ng/samp	FD RPD above CL
	PCB-093/100	17 ng/samp	17J ng/samp	FD difference above CL
	PCB-094	8.0 ng/samp	8.0J ng/samp	FD difference above CL
	PCB-095	40 ng/samp	40J ng/samp	FD RPD above CL
	PCB-096	4.0 ng/samp	4.0J ng/samp	FD difference above CL
	PCB-098/102	4 ng/samp	4J ng/samp	FD difference above CL
	PCB-103	8.8 ng/samp	8.8J ng/samp	FD difference above CL

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	PCB-104	1.3 ng/samp	1.3J ng/samp	FD difference above CL
	PCB-105	2.7 ng/samp	2.7J ng/samp	FD difference above CL
	PCB-107	1.5 ng/samp	1.5J ng/samp	FD difference above CL
	PCB-110/115	29 ng/samp	29J ng/samp	FD difference above CL
	PCB-118	14 ng/samp	14J ng/samp	FD difference above CL
	PCB-120	0.63 ng/samp	0.63J ng/samp	FD difference above CL
	PCB-121	0.42 ng/samp	0.42J ng/samp	FD difference above CL
	PCB-128/166	5.2 ng/samp	5.2J ng/samp	FD difference above CL
	PCB-129/138/160/163	93 ng/samp	93J ng/samp	FD RPD above CL
	PCB-130	5.6 ng/samp	5.6J ng/samp	FD difference above CL, matrix interference
	PCB-132	26 ng/samp	26J ng/samp	FD RPD above CL, matrix interference
	PCB-133	3.2 ng/samp	3.2J ng/samp	FD difference above CL, matrix interference
	PCB-134/143	5.5 ng/samp	5.5J ng/samp	FD difference above CL
	PCB-135/151	83 ng/samp	83J ng/samp	FD RPD above CL
	PCB-136	27 ng/samp	27J ng/samp	FD RPD above CL
	PCB-137	1.6 ng/samp	1.6J ng/samp	FD difference above CL, EMPC, matrix interference
	PCB-139/140	1.7 ng/samp	1.7J ng/samp	FD difference above CL
	PCB-141	18 ng/samp	18J ng/samp	FD RPD above CL, matrix interference
	PCB-144	6.4 ng/samp	6.4J ng/samp	FD RPD above CL
	PCB-146	19 ng/samp	19J ng/samp	FD RPD above CL
	PCB-147/149	120 ng/samp	120J ng/samp	FD RPD above CL
	PCB-148	1.9 ng/samp	1.9J ng/samp	FD difference above CL
	PCB-150	2.6 ng/samp	2.6J ng/samp	FD difference above CL
	PCB-152	2.1 ng/samp	2.1J ng/samp	FD difference above CL
	PCB-153/168	100 ng/samp	100J ng/samp	FD RPD above CL
	PCB-154	7.9 ng/samp	7.9J ng/samp	FD RPD above CL
	PCB-155	0.27 ng/samp	0.27J ng/samp	FD difference above CL
	PCB-156/157	3.6 ng/samp	3.6J ng/samp	FD difference above CL
	PCB-158	7.4 ng/samp	7.4J ng/samp	FD RPD above CL
	PCB-159	2.6 ng/samp	2.6J ng/samp	FD RPD above CL
	PCB-164	5.9 ng/samp	5.9J ng/samp	FD difference above CL
	PCB-167	2.0 ng/samp	2.0J ng/samp	FD difference above CL
	PCB-170	36 ng/samp	36J ng/samp	FD RPD above CL
	PCB-171/173	16 ng/samp	16J ng/samp	FD RPD above CL
	PCB-172	9.2 ng/samp	9.2J ng/samp	FD RPD above CL
	PCB-174	65 ng/samp	65J ng/samp	FD RPD above CL
	PCB-175	2.5 ng/samp	2.5J ng/samp	FD RPD above CL
	PCB-176	11 ng/samp	11J ng/samp	FD RPD above CL
	PCB-177	35 ng/samp	35J ng/samp	FD RPD above CL
	PCB-178	24 ng/samp	24J ng/samp	FD RPD above CL
	PCB-179	44 ng/samp	44J ng/samp	FD RPD above CL
	PCB-180/193	96 ng/samp	96J ng/samp	FD RPD above CL
	PCB-182	0.57 ng/samp	0.57J ng/samp	FD difference above CL
	PCB-183/185	44 ng/samp	44J ng/samp	FD RPD above CL
	PCB-187	92 ng/samp	92J ng/samp	FD RPD above CL
	PCB-188	0.66 ng/samp	0.66J ng/samp	FD difference above CL
	PCB-189	0.98 ng/samp	0.98J ng/samp	FD difference above CL
	PCB-190	8.4 ng/samp	8.4J ng/samp	FD RPD above CL
	PCB-191	1.8 ng/samp	1.8J ng/samp	FD difference above CL
	PCB-209	0.52 ng/samp	0.52J ng/samp	FD RPD above CL
HOUS-R5A-TS-BW1B-JAR-SPME-2PAC	PCB-135/151	1.3 ng/samp	1.3J ng/samp	FD difference above CL
	PCB-172	0.62 ng/samp	0.62J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1B-JAR-SPME-2PAC-DUP	PCB-135/151	0.93 ng/samp	0.93J ng/samp	FD difference above CL
	PCB-172	0.49 ng/samp	0.49J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1B-JAR-SPME-5PAC	PCB-187	0.65 ng/samp	0.65J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1B-JAR-SPME-5PAC-DUP	PCB-187	0.45 ng/samp	0.45J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1B-JAR-SPME-2GAC	PCB-052	0.26 ng/samp	0.26J ng/samp	FD difference above CL
	PCB-083/099	1.2 ng/samp	1.2J ng/samp	FD RPD above CL
	PCB-084	0.20 ng/samp	0.20J ng/samp	FD difference above CL

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	PCB-088/091	1.1 ng/samp	1.1J ng/samp	FD RPD above CL
	PCB-092	0.87 ng/samp	0.87J ng/samp	FD RPD above CL
	PCB-093/100	0.82 ng/samp	0.82J ng/samp	FD difference above CL
	PCB-094	0.51 ng/samp	0.51J ng/samp	FD RPD above CL
	PCB-096	0.22 ng/samp	0.22J ng/samp	FD difference above CL
	PCB-098/102	0.18 ng/samp	0.18J ng/samp	FD difference above CL
	PCB-103	0.31 ng/samp	0.31J ng/samp	FD difference above CL, EMPC
	PCB-104	0.10 ng/samp	0.10J ng/samp	FD difference above CL, EMPC
	PCB-110/115	0.93 ng/samp	0.93J ng/samp	FD difference above CL
	PCB-128/166	0.76 ng/samp	0.76J ng/samp	FD difference above CL
	PCB-129/138/160/163	12 ng/samp	12J ng/samp	FD RPD above CL
	PCB-130	0.90 ng/samp	0.90J ng/samp	FD RPD above CL, matrix interference
	PCB-132	5.4 ng/samp	5.4J ng/samp	FD RPD above CL, matrix interference
	PCB-133	0.88 ng/samp	0.88J ng/samp	FD RPD above CL
	PCB-134/143	1.3 ng/samp	1.3J ng/samp	FD RPD above CL
	PCB-135/151	18 ng/samp	18J ng/samp	FD RPD above CL
	PCB-136	8.0 ng/samp	8.0J ng/samp	FD RPD above CL
	PCB-137	0.24 ng/samp	0.24J ng/samp	FD difference above CL, matrix interference
	PCB-139/140	0.36 ng/samp	0.36J ng/samp	FD difference above CL
	PCB-144	1.3 ng/samp	1.3J ng/samp	FD RPD above CL
	PCB-147/149	27 ng/samp	27J ng/samp	FD RPD above CL
	PCB-152	0.97 ng/samp	0.97J ng/samp	FD RPD above CL
	PCB-153/168	14 ng/samp	14J ng/samp	FD RPD above CL
	PCB-164	1.0 ng/samp	1.0J ng/samp	FD RPD above CL
	PCB-165	0.11 ng/samp	0.11J ng/samp	FD difference above CL, EMPC
	PCB-167	0.13 ng/samp	0.13J ng/samp	FD difference above CL
	PCB-189	0.38 ng/samp	0.38J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1B-JAR-SPME-2GAC-DUP	PCB-052	0.38 ng/samp	0.38J ng/samp	FD difference above CL
	PCB-083/099	2.1 ng/samp	2.1J ng/samp	FD RPD above CL
	PCB-084	0.32 ng/samp	0.32J ng/samp	FD difference above CL
	PCB-088/091	2.2 ng/samp	2.2J ng/samp	FD RPD above CL
	PCB-092	1.6 ng/samp	1.6J ng/samp	FD RPD above CL
	PCB-093/100	1.8 ng/samp	1.8J ng/samp	FD difference above CL
	PCB-094	1.0 ng/samp	1.0J ng/samp	FD RPD above CL
	PCB-096	0.42 ng/samp	0.42J ng/samp	FD difference above CL
	PCB-098/102	0.51 ng/samp	0.51J ng/samp	FD difference above CL, EMPC
	PCB-103	0.75 ng/samp	0.75J ng/samp	FD difference above CL
	PCB-110/115	1.4 ng/samp	1.4J ng/samp	FD difference above CL
	PCB-128/166	1.5 ng/samp	1.5J ng/samp	FD difference above CL
	PCB-104	0.26 ng/samp	0.26J ng/samp	FD difference above CL
	PCB-129/138/160/163	23 ng/samp	23J ng/samp	FD RPD above CL
	PCB-130	1.6 ng/samp	1.6J ng/samp	FD RPD above CL, matrix interference
	PCB-132	9.2 ng/samp	9.2J ng/samp	FD RPD above CL
	PCB-133	1.6 ng/samp	1.6J ng/samp	FD RPD above CL
	PCB-134/143	2.2 ng/samp	2.2J ng/samp	FD RPD above CL
	PCB-135/151	32 ng/samp	32J ng/samp	FD RPD above CL
	PCB-136	14 ng/samp	14J ng/samp	FD RPD above CL
	PCB-137	0.52 ng/samp	0.52J ng/samp	FD difference above CL
	PCB-139/140	0.57 ng/samp	0.57J ng/samp	FD difference above CL, EMPC
	PCB-144	2.2 ng/samp	2.2J ng/samp	FD RPD above CL
	PCB-147/149	46 ng/samp	46J ng/samp	FD RPD above CL
	PCB-152	1.7 ng/samp	1.7J ng/samp	FD RPD above CL
	PCB-153/168	25 ng/samp	25J ng/samp	FD RPD above CL
	PCB-164	1.8 ng/samp	1.8J ng/samp	FD RPD above CL
	PCB-165	0.25 ng/samp	0.25J ng/samp	FD difference above CL
	PCB-167	0.32 ng/samp	0.32J ng/samp	FD difference above CL
	PCB-189	0.57 ng/samp	0.57J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1B-JAR-SPME-5GAC	PCB-158	0.16 ng/samp	0.16J ng/samp	FD difference above CL
	PCB-205	0.45 ng/samp	0.45J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1B-JAR-SPME-5GAC-DUP	PCB-158	0.054 ng/samp	0.054J ng/samp	FD difference above CL, EMPC

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	PCB-205	0.32 ng/samp	0.32J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1B-JAR-SPME-5BC	PCB-110/115	0.65 ng/samp	0.65J ng/samp	FD difference above CL
	PCB-209	0.29 ng/samp	0.29J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1B-JAR-SPME-5BC-DUP	PCB-110/115	0.88 ng/samp	0.88J ng/samp	FD difference above CL
	PCB-209	0.55 ng/samp	0.55J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-1PAC	PCB-088/091	1.1 ng/samp	1.1J ng/samp	FD difference above CL
	PCB-131	0.77 ng/samp	0.77J ng/samp	FD difference above CL, matrix interference
	PCB-148	0.32 ng/samp	0.32J ng/samp	FD difference above CL
	PCB-209	0.61 ng/samp	0.61J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-1PAC-DUP	PCB-088/091	0.84 ng/samp	0.84J ng/samp	FD difference above CL
	PCB-131	0.55 ng/samp	0.55J ng/samp	FD difference above CL, EMPC, matrix interference
	PCB-148	0.19 ng/samp	0.19J ng/samp	FD difference above CL
	PCB-209	0.48 ng/samp	0.48J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-2PAC	PCB-083/099	0.29 ng/samp	0.29J ng/samp	FD difference above CL, EMPC
	PCB-092	0.36 ng/samp	0.36J ng/samp	FD difference above CL
	PCB-095	2.0 ng/samp	2.0J ng/samp	FD RPD above CL
	PCB-110/115	0.58 ng/samp	0.58J ng/samp	FD difference above CL
	PCB-128/166	3.1 ng/samp	3.1J ng/samp	FD difference above CL
	PCB-134/143	0.89 ng/samp	0.89J ng/samp	FD difference above CL
	PCB-154	0.23 ng/samp	0.23J ng/samp	FD difference above CL, EMPC
	PCB-194	31 ng/samp	31J ng/samp	FD RPD above CL
	PCB-195	18 ng/samp	18J ng/samp	FD RPD above CL
	PCB-196	35 ng/samp	35J ng/samp	FD RPD above CL
	PCB-197	18 ng/samp	18J ng/samp	FD RPD above CL
	PCB-198/199	67 ng/samp	67J ng/samp	FD RPD above CL
	PCB-200	18 ng/samp	18J ng/samp	FD RPD above CL
	PCB-201	16 ng/samp	16J ng/samp	FD RPD above CL
	PCB-202	22 ng/samp	22J ng/samp	FD RPD above CL
	PCB-203	34 ng/samp	34J ng/samp	FD RPD above CL
	PCB-206	14 ng/samp	14J ng/samp	FD RPD above CL
	PCB-207	2.4 ng/samp	2.4J ng/samp	FD RPD above CL
	PCB-208	6.1 ng/samp	6.1J ng/samp	FD RPD above CL
	PCB-209	1.6 ng/samp	1.6J ng/samp	FD RPD above CL
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-2PAC-DUP	PCB-061/070/074/076	0.030 ng/samp	0.030U ng/samp	MB contamination
	PCB-083/099	0.53 ng/samp	0.53J ng/samp	FD difference above CL, EMPC
	PCB-092	0.59 ng/samp	0.59J ng/samp	FD difference above CL
	PCB-095	3.4 ng/samp	3.4J ng/samp	FD RPD above CL
	PCB-110/115	0.94 ng/samp	0.94J ng/samp	FD difference above CL
	PCB-128/166	0.52 ng/samp	0.52J ng/samp	FD difference above CL, EMPC
	PCB-134/143	1.2 ng/samp	1.2J ng/samp	FD difference above CL
	PCB-154	0.34 ng/samp	0.34J ng/samp	FD difference above CL
	PCB-194	18 ng/samp	18J ng/samp	FD RPD above CL
	PCB-195	9.4 ng/samp	9.4J ng/samp	FD RPD above CL
	PCB-196	20 ng/samp	20J ng/samp	FD RPD above CL
	PCB-197	8.9 ng/samp	8.9J ng/samp	FD RPD above CL
	PCB-198/199	39 ng/samp	39J ng/samp	FD RPD above CL
	PCB-200	8.9 ng/samp	8.9J ng/samp	FD RPD above CL
	PCB-201	7.9 ng/samp	7.9J ng/samp	FD RPD above CL
	PCB-202	10 ng/samp	10J ng/samp	FD RPD above CL
	PCB-203	20 ng/samp	20J ng/samp	FD RPD above CL
	PCB-206	6.5 ng/samp	6.5J ng/samp	FD RPD above CL
	PCB-207	0.99 ng/samp	0.99J ng/samp	FD RPD above CL
	PCB-208	2.6 ng/samp	2.6J ng/samp	FD RPD above CL
	PCB-209	0.83 ng/samp	0.83J ng/samp	FD RPD above CL
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-5PAC	PCB-061/070/074/076	0.017 ng/samp	0.017UJ ng/samp	MB contamination, EMPC
	PCB-141	0.49 ng/samp	0.49J ng/samp	FD difference above CL
	PCB-207	0.51 ng/samp	0.51J ng/samp	FD difference above CL
	PCB-208	1.3 ng/samp	1.3J ng/samp	FD RPD above CL

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	PCB-209	0.66 ng/samp	0.66J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-5PAC-DUP	PCB-061/070/074/076	0.0084 ng/samp	0.0084UJ ng/samp	MB contamination, EMPC
	PCB-141	0.68 ng/samp	0.68J ng/samp	FD difference above CL
	PCB-207	0.29 ng/samp	0.29J ng/samp	FD difference above CL
	PCB-208	0.77 ng/samp	0.77J ng/samp	FD RPD above CL
	PCB-209	0.45 ng/samp	0.45J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-5BC	PCB-083/099	2.1 ng/samp	2.1J ng/samp	FD difference above CL, EMPC
	PCB-131	2.5 ng/samp	2.5J ng/samp	FD difference above CL, EMPC, matrix interference
	PCB-195	37 ng/samp	37J ng/samp	FD RPD above CL
	PCB-197	34 ng/samp	34J ng/samp	FD RPD above CL
	PCB-200	34 ng/samp	34J ng/samp	FD RPD above CL
	PCB-201	31 ng/samp	31J ng/samp	FD RPD above CL
	PCB-202	39 ng/samp	39J ng/samp	FD RPD above CL
	PCB-205	4.0 ng/samp	4.0J ng/samp	FD RPD above CL
	PCB-206	19 ng/samp	19J ng/samp	FD RPD above CL
	PCB-207	2.4 ng/samp	2.4J ng/samp	FD difference above CL, EMPC
	PCB-209	1.9 ng/samp	1.9J ng/samp	FD difference above CL
	PCB-208	7.0 ng/samp	7.0J ng/samp	FD RPD above CL
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-5BC-DUP	PCB-083/099	3.7 ng/samp	3.7J ng/samp	FD difference above CL
	PCB-131	3.5 ng/samp	3.5J ng/samp	FD difference above CL, atrix interference
	PCB-195	21 ng/samp	21J ng/samp	FD RPD above CL
	PCB-197	19 ng/samp	19J ng/samp	FD RPD above CL
	PCB-200	19 ng/samp	19J ng/samp	FD RPD above CL
	PCB-201	16 ng/samp	16J ng/samp	FD RPD above CL
	PCB-202	21 ng/samp	21J ng/samp	FD RPD above CL
	PCB-205	2.1 ng/samp	2.1J ng/samp	FD RPD above CL, EMPC
	PCB-206	6.5 ng/samp	6.5J ng/samp	FD RPD above CL
	PCB-207	1 ng/samp	1J ng/samp	FD difference above CL
	PCB-208	3.1 ng/samp	3.1J ng/samp	FD RPD above CL, EMPC
	PCB-209	0.85 ng/samp	0.85J ng/samp	FD difference above CL
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-10BC	PCB-061/070/074/076	0.021 ng/samp	0.021UJ ng/samp	MB contamination, EMPC
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-CTRL	PCB-004	6.4 ng/samp	6.4J ng/samp	FD difference above CL
	PCB-079	0.16 ng/samp	0.16J ng/samp	FD difference above CL, EMPC
HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-CTRL-DUP	PCB-004	5 ng/samp	5J ng/samp	FD difference above CL
	PCB-079	0.22 ng/samp	0.22J ng/samp	FD difference above CL, EMPC

Note:
ng/samp = nanogram per sample
CL = control limit
FD = field duplicate

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Appendix A

Field Duplicate Summary

Table A-1
Field Duplicate Detect Summary

Analyte	HOUS-R5A-TS-BW1A-JAR-SPME-10BC	HOUS-R5A-TS-BW1A-JAR-SPME-10BC-DUP	RPD	Difference	Difference CL
PCB-020/028	0.012 ng/samp	0.010 ng/samp	--	0.002 ng/samp	0.20 ng/samp
PCB-021/033	0.0037 ng/samp	0.0049 ng/samp	--	0.0012 ng/samp	0.20 ng/samp
PCB-025	0.0076 ng/samp	0.0051 ng/samp	--	0.0025 ng/samp	0.10 ng/samp
PCB-027	0.0041 ng/samp	0.0041 ng/samp	--	0.0000 ng/samp	0.10 ng/samp
PCB-032	0.0092 ng/samp	0.0038 ng/samp	--	0.0054 ng/samp	0.10 ng/samp
PCB-040/041/071	0.036 ng/samp	0.027 ng/samp	--	0.009 ng/samp	0.30 ng/samp
PCB-044/047/065	0.29 ng/samp	0.24 ng/samp	--	0.05 ng/samp	0.30 ng/samp
PCB-045/051	0.18 ng/samp	0.14 ng/samp	--	0.04 ng/samp	0.20 ng/samp
PCB-049/069	0.14 ng/samp	0.13 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-050/053	0.12 ng/samp	0.12 ng/samp	--	0.0000 ng/samp	0.20 ng/samp
PCB-052	0.076 ng/samp	0.084 ng/samp	--	0.008 ng/samp	0.10 ng/samp
PCB-054	0.028 ng/samp	0.017 ng/samp	--	0.011 ng/samp	0.10 ng/samp
PCB-061/070/074/076	0.027 ng/samp	0.018 ng/samp	--	0.009 ng/samp	0.40 ng/samp
PCB-066	0.025 ng/samp	0.012 ng/samp	--	0.013 ng/samp	0.10 ng/samp
PCB-083/099	0.45 ng/samp	0.41 ng/samp	--	0.04 ng/samp	0.20 ng/samp
PCB-084	0.070 ng/samp	0.053 ng/samp	--	0.017 ng/samp	0.10 ng/samp
PCB-085/116/117	0.16 ng/samp	0.11 ng/samp	--	0.05 ng/samp	0.30 ng/samp
PCB-086/087/097/109/119/125	0.20 ng/samp	0.17 ng/samp	--	0.03 ng/samp	0.60 ng/samp
PCB-088/091	0.51 ng/samp	0.42 ng/samp	--	0.09 ng/samp	0.20 ng/samp
PCB-090/101/113	0.70 ng/samp	0.70 ng/samp	--	0.0000 ng/samp	0.30 ng/samp
PCB-092	0.24 ng/samp	0.24 ng/samp	--	0.0000 ng/samp	0.10 ng/samp
PCB-093/100	0.45 ng/samp	0.19 ng/samp	--	0.26 ng/samp	0.20 ng/samp
PCB-094	0.15 ng/samp	0.14 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-095	0.51 ng/samp	0.50 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-096	0.095 ng/samp	0.071 ng/samp	--	0.024 ng/samp	0.10 ng/samp
PCB-103	0.15 ng/samp	0.11 ng/samp	--	0.04 ng/samp	0.10 ng/samp
PCB-104	0.038 ng/samp	0.023 ng/samp	--	0.015 ng/samp	0.10 ng/samp
PCB-110/115	0.29 ng/samp	0.25 ng/samp	--	0.04 ng/samp	0.20 ng/samp
PCB-118	0.086 ng/samp	0.16 ng/samp	--	0.074 ng/samp	0.10 ng/samp
PCB-120	0.026 ng/samp	0.018 ng/samp	--	0.008 ng/samp	0.10 ng/samp
PCB-128/166	0.18 ng/samp	0.16 ng/samp	--	0.02 ng/samp	0.20 ng/samp
PCB-129/138/160/163	3.0 ng/samp	2.7 ng/samp	10.53 %	--	--
PCB-130	0.19 ng/samp	0.22 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-132	1.2 ng/samp	1.0 ng/samp	18.18 %	--	--
PCB-133	0.21 ng/samp	0.21 ng/samp	--	0.0000 ng/samp	0.10 ng/samp
PCB-134/143	0.25 ng/samp	0.26 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-135/151	4.0 ng/samp	3.7 ng/samp	7.79 %	--	--
PCB-136	1.8 ng/samp	1.6 ng/samp	11.76 %	--	--
PCB-137	0.066 ng/samp	0.064 ng/samp	--	0.002 ng/samp	0.10 ng/samp
PCB-139/140	0.094 ng/samp	0.084 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-141	0.72 ng/samp	0.68 ng/samp	5.71 %	--	--
PCB-144	0.29 ng/samp	0.28 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-146	0.82 ng/samp	0.71 ng/samp	14.38 %	--	--
PCB-147/149	6.8 ng/samp	5.2 ng/samp	26.67 %	--	--
PCB-148	0.14 ng/samp	0.093 ng/samp	--	0.047 ng/samp	0.10 ng/samp
PCB-150	0.28 ng/samp	0.19 ng/samp	--	0.09 ng/samp	0.10 ng/samp
PCB-152	0.22 ng/samp	0.16 ng/samp	--	0.06 ng/samp	0.10 ng/samp
PCB-153/168	3.6 ng/samp	3.1 ng/samp	14.93 %	--	--
PCB-154	0.54 ng/samp	0.42 ng/samp	--	0.12 ng/samp	0.10 ng/samp
PCB-155	0.049 ng/samp	0.032 ng/samp	--	0.017 ng/samp	0.10 ng/samp
PCB-156/157	0.064 ng/samp	0.068 ng/samp	--	0.004 ng/samp	0.20 ng/samp
PCB-158	0.38 ng/samp	0.14 ng/samp	--	0.24 ng/samp	0.10 ng/samp
PCB-159	0.56 ng/samp	0.50 ng/samp	--	0.06 ng/samp	0.10 ng/samp
PCB-164	0.24 ng/samp	0.22 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-167	0.058 ng/samp	0.048 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-170	5.0 ng/samp	4.2 ng/samp	17.39 %	--	--
PCB-171/173	2.7 ng/samp	2.4 ng/samp	11.76 %	--	--
PCB-172	1.8 ng/samp	1.5 ng/samp	18.18 %	--	--
PCB-174	12 ng/samp	10 ng/samp	18.18 %	--	--
PCB-175	0.53 ng/samp	0.37 ng/samp	--	0.16 ng/samp	0.10 ng/samp
PCB-176	3.0 ng/samp	2.6 ng/samp	14.29 %	--	--
PCB-177	6.5 ng/samp	5.8 ng/samp	11.38 %	--	--
PCB-178	4.1 ng/samp	3.5 ng/samp	15.79 %	--	--
PCB-179	12 ng/samp	9.9 ng/samp	19.18 %	--	--
PCB-180/193	14 ng/samp	11 ng/samp	24.00 %	--	--
PCB-182	0.13 ng/samp	0.097 ng/samp	--	0.033 ng/samp	0.10 ng/samp
PCB-183/185	7.9 ng/samp	6.7 ng/samp	16.44 %	--	--
PCB-187	20 ng/samp	17 ng/samp	16.22 %	--	--
PCB-188	0.34 ng/samp	0.21 ng/samp	--	0.13 ng/samp	0.10 ng/samp
PCB-189	0.10 ng/samp	0.076 ng/samp	--	0.024 ng/samp	0.10 ng/samp

PCB-190	1.0 ng/samp	0.85 ng/samp	16.22 %	--	--
PCB-191	0.25 ng/samp	0.20 ng/samp	--	0.05 ng/samp	0.10 ng/samp
PCB-194	8.9 ng/samp	7.5 ng/samp	17.07 %	--	--
PCB-195	5.7 ng/samp	4.7 ng/samp	19.23 %	--	--
PCB-196	11 ng/samp	9.0 ng/samp	20.00 %	--	--
PCB-197/200	6.9 ng/samp	5.9 ng/samp	15.63 %	--	--
PCB-198/199	23 ng/samp	19 ng/samp	19.05 %	--	--
PCB-201	6.0 ng/samp	4.7 ng/samp	24.30 %	--	--
PCB-202	8.9 ng/samp	7.6 ng/samp	15.76 %	--	--
PCB-203	14 ng/samp	12 ng/samp	15.38 %	--	--
PCB-205	0.52 ng/samp	0.41 ng/samp	--	0.11 ng/samp	0.10 ng/samp
PCB-206	6.0 ng/samp	4.8 ng/samp	22.22 %	--	--
PCB-207	1.3 ng/samp	1.0 ng/samp	26.09 %	--	--
PCB-208	2.4 ng/samp	1.8 ng/samp	28.57 %	--	--
PCB-209	0.60 ng/samp	0.47 ng/samp	--	0.13 ng/samp	0.10 ng/samp
Analyte	**HOUS-R5A-TS-BW1A-JAR-SPME-1PAC**	**HOUS-R5A-TS-BW1A-JAR-SPME-1PAC-DUP**	**RPD**	**Difference**	**Difference CL**
PCB-017	0.0054 ng/samp	0.016 ng/samp	--	0.0106 ng/samp	0.10 ng/samp
PCB-018/030	0.0060 ng/samp	0.016 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-020/028	0.012 ng/samp	0.019 ng/samp	--	0.007 ng/samp	0.20 ng/samp
PCB-021/033	0.0051 ng/samp	0.016 ng/samp	--	0.0109 ng/samp	0.20 ng/samp
PCB-025	0.0033 ng/samp	0.015 ng/samp	--	0.0117 ng/samp	0.10 ng/samp
PCB-026/029	0.0031 ng/samp	0.0097 ng/samp	--	0.0066 ng/samp	0.20 ng/samp
PCB-027	0.010 ng/samp	0.024 ng/samp	--	0.014 ng/samp	0.10 ng/samp
PCB-032	0.019 ng/samp	0.011 ng/samp	--	0.008 ng/samp	0.10 ng/samp
PCB-040/041/071	0.016 ng/samp	0.083 ng/samp	--	0.067 ng/samp	0.30 ng/samp
PCB-044/047/065	0.26 ng/samp	0.66 ng/samp	--	0.4 ng/samp	0.30 ng/samp
PCB-045/051	0.14 ng/samp	0.38 ng/samp	--	0.24 ng/samp	0.20 ng/samp
PCB-049/069	0.15 ng/samp	0.37 ng/samp	--	0.22 ng/samp	0.20 ng/samp
PCB-050/053	0.11 ng/samp	0.31 ng/samp	--	0.2 ng/samp	0.20 ng/samp
PCB-052	0.095 ng/samp	0.24 ng/samp	--	0.145 ng/samp	0.10 ng/samp
PCB-054	0.017 ng/samp	0.075 ng/samp	--	0.058 ng/samp	0.10 ng/samp
PCB-061/070/074/076	0.043 ng/samp	0.074 ng/samp	--	0.031 ng/samp	0.40 ng/samp
PCB-082	0.011 ng/samp	0.035 ng/samp	--	0.024 ng/samp	0.10 ng/samp
PCB-083/099	0.36 ng/samp	0.88 ng/samp	--	0.52 ng/samp	0.20 ng/samp
PCB-084	0.073 ng/samp	0.17 ng/samp	--	0.097 ng/samp	0.10 ng/samp
PCB-085/116/117	0.063 ng/samp	0.25 ng/samp	--	0.187 ng/samp	0.30 ng/samp
PCB-086/087/097/109/119/125	0.18 ng/samp	0.47 ng/samp	--	0.29 ng/samp	0.60 ng/samp
PCB-088/091	0.31 ng/samp	0.96 ng/samp	--	0.65 ng/samp	0.20 ng/samp
PCB-090/101/113	0.64 ng/samp	1.8 ng/samp	--	1.16 ng/samp	0.30 ng/samp
PCB-092	0.24 ng/samp	0.66 ng/samp	--	0.42 ng/samp	0.10 ng/samp
PCB-093/100	0.20 ng/samp	0.59 ng/samp	--	0.39 ng/samp	0.20 ng/samp
PCB-094	0.10 ng/samp	0.28 ng/samp	--	0.18 ng/samp	0.10 ng/samp
PCB-095	0.47 ng/samp	1.0 ng/samp	--	0.53 ng/samp	0.10 ng/samp
PCB-096	0.042 ng/samp	0.15 ng/samp	--	0.108 ng/samp	0.10 ng/samp
PCB-098/102	0.039 ng/samp	0.15 ng/samp	--	0.111 ng/samp	0.20 ng/samp
PCB-103	0.10 ng/samp	0.26 ng/samp	--	0.16 ng/samp	0.10 ng/samp
PCB-105	0.015 ng/samp	0.056 ng/samp	--	0.041 ng/samp	0.10 ng/samp
PCB-110/115	0.28 ng/samp	0.77 ng/samp	--	0.49 ng/samp	0.20 ng/samp
PCB-118	0.19 ng/samp	0.38 ng/samp	--	0.19 ng/samp	0.10 ng/samp
PCB-128/166	0.17 ng/samp	0.41 ng/samp	--	0.24 ng/samp	0.20 ng/samp
PCB-129/138/160/163	2.8 ng/samp	7.6 ng/samp	92.31 %	--	--
PCB-130	0.17 ng/samp	0.50 ng/samp	--	0.33 ng/samp	0.10 ng/samp
PCB-132	0.97 ng/samp	2.6 ng/samp	91.32 %	--	--
PCB-133	0.12 ng/samp	0.34 ng/samp	--	0.22 ng/samp	0.10 ng/samp
PCB-134/143	0.18 ng/samp	0.56 ng/samp	--	0.38 ng/samp	0.20 ng/samp
PCB-135/151	3.1 ng/samp	8.4 ng/samp	92.17 %	--	--
PCB-136	1.2 ng/samp	3.3 ng/samp	93.33 %	--	--
PCB-137	0.053 ng/samp	0.093 ng/samp	--	0.04 ng/samp	0.10 ng/samp
PCB-139/140	0.051 ng/samp	0.18 ng/samp	--	0.129 ng/samp	0.20 ng/samp
PCB-141	0.72 ng/samp	1.8 ng/samp	85.71 %	--	--
PCB-144	0.24 ng/samp	0.68 ng/samp	--	0.44 ng/samp	0.10 ng/samp
PCB-146	0.70 ng/samp	1.9 ng/samp	92.31 %	--	--
PCB-147/149	4.4 ng/samp	12 ng/samp	92.68 %	--	--
PCB-148	0.084 ng/samp	0.21 ng/samp	--	0.126 ng/samp	0.10 ng/samp
PCB-150	0.095 ng/samp	0.40 ng/samp	--	0.305 ng/samp	0.10 ng/samp
PCB-152	0.094 ng/samp	0.25 ng/samp	--	0.156 ng/samp	0.10 ng/samp
PCB-153/168	3.1 ng/samp	8.7 ng/samp	94.92 %	--	--
PCB-154	0.27 ng/samp	0.85 ng/samp	--	0.58 ng/samp	0.10 ng/samp
PCB-155	0.016 ng/samp	0.036 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-156/157	0.081 ng/samp	0.16 ng/samp	--	0.079 ng/samp	0.20 ng/samp
PCB-158	0.31 ng/samp	0.85 ng/samp	--	0.54 ng/samp	0.10 ng/samp
PCB-159	0.43 ng/samp	1.1 ng/samp	--	0.67 ng/samp	0.10 ng/samp
PCB-164	0.19 ng/samp	0.60 ng/samp	--	0.41 ng/samp	0.10 ng/samp
PCB-167	0.040 ng/samp	0.13 ng/samp	--	0.09 ng/samp	0.10 ng/samp
PCB-170	4.1 ng/samp	11 ng/samp	91.39 %	--	--

PCB-171/173	2.2 ng/samp	5.4 ng/samp	84.21 %	--	--
PCB-172	1.3 ng/samp	3.5 ng/samp	91.67 %	--	--
PCB-174	8.8 ng/samp	23 ng/samp	89.31 %	--	--
PCB-175	0.37 ng/samp	0.90 ng/samp	--	0.53 ng/samp	0.10 ng/samp
PCB-176	1.7 ng/samp	4.5 ng/samp	90.32 %	--	--
PCB-177	4.9 ng/samp	13 ng/samp	90.50 %	--	--
PCB-178	2.8 ng/samp	7.5 ng/samp	91.26 %	--	--
PCB-179	6.7 ng/samp	18 ng/samp	91.50 %	--	--
PCB-180/193	11 ng/samp	29 ng/samp	90.00 %	--	--
PCB-183/185	5.5 ng/samp	15 ng/samp	92.68 %	--	--
PCB-187	12 ng/samp	35 ng/samp	97.87 %	--	--
PCB-188	0.089 ng/samp	0.32 ng/samp	--	0.231 ng/samp	0.10 ng/samp
PCB-189	0.092 ng/samp	0.23 ng/samp	--	0.138 ng/samp	0.10 ng/samp
PCB-190	0.86 ng/samp	2.3 ng/samp	91.14 %	--	--
PCB-191	0.20 ng/samp	0.56 ng/samp	--	0.36 ng/samp	0.10 ng/samp
PCB-194	4.3 ng/samp	11 ng/samp	87.58 %	--	--
PCB-195	2.7 ng/samp	6.8 ng/samp	86.32 %	--	--
PCB-196	4.6 ng/samp	12 ng/samp	89.16 %	--	--
PCB-197/200	2.8 ng/samp	7.2 ng/samp	88.00 %	--	--
PCB-198/199	9.6 ng/samp	26 ng/samp	92.13 %	--	--
PCB-201	2.2 ng/samp	5.8 ng/samp	90.00 %	--	--
PCB-202	3.4 ng/samp	8.7 ng/samp	87.60 %	--	--
PCB-203	5.8 ng/samp	16 ng/samp	93.58 %	--	--
PCB-205	0.24 ng/samp	0.67 ng/samp	--	0.43 ng/samp	0.10 ng/samp
PCB-206	2.5 ng/samp	5.3 ng/samp	71.79 %	--	--
PCB-207	0.48 ng/samp	1.2 ng/samp	--	0.72 ng/samp	0.10 ng/samp
PCB-208	0.89 ng/samp	2.0 ng/samp	76.82 %	--	--
PCB-209	0.36 ng/samp	0.49 ng/samp	--	0.13 ng/samp	0.10 ng/samp

Analyte	HOUS-R5A-TS-BW1A-JAR-SPME-2GAC	HOUS-R5A-TS-BW1A-JAR-SPME-2GAC-DUP	RPD	Difference	Difference CL
PCB-018/030	0.0082 ng/samp	0.021 ng/samp	--	0.0128 ng/samp	0.20 ng/samp
PCB-020/028	0.022 ng/samp	0.039 ng/samp	--	0.017 ng/samp	0.20 ng/samp
PCB-021/033	0.013 ng/samp	0.027 ng/samp	--	0.014 ng/samp	0.20 ng/samp
PCB-025	0.011 ng/samp	0.027 ng/samp	--	0.016 ng/samp	0.10 ng/samp
PCB-026/029	0.0099 ng/samp	0.014 ng/samp	--	0.0041 ng/samp	0.20 ng/samp
PCB-027	0.013 ng/samp	0.048 ng/samp	--	0.035 ng/samp	0.10 ng/samp
PCB-031	0.0035 ng/samp	0.013 ng/samp	--	0.0095 ng/samp	0.20 ng/samp
PCB-032	0.023 ng/samp	0.033 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-040/041/071	0.070 ng/samp	0.13 ng/samp	--	0.06 ng/samp	0.30 ng/samp
PCB-042	0.032 ng/samp	0.051 ng/samp	--	0.019 ng/samp	0.10 ng/samp
PCB-043/073	0.030 ng/samp	0.067 ng/samp	--	0.037 ng/samp	0.20 ng/samp
PCB-044/047/065	0.52 ng/samp	1.1 ng/samp	--	0.58 ng/samp	0.30 ng/samp
PCB-045/051	0.32 ng/samp	0.78 ng/samp	--	0.46 ng/samp	0.20 ng/samp
PCB-049/069	0.31 ng/samp	0.61 ng/samp	--	0.3 ng/samp	0.20 ng/samp
PCB-050/053	0.23 ng/samp	0.53 ng/samp	--	0.3 ng/samp	0.20 ng/samp
PCB-052	0.20 ng/samp	0.42 ng/samp	--	0.22 ng/samp	0.10 ng/samp
PCB-054	0.046 ng/samp	0.13 ng/samp	--	0.084 ng/samp	0.10 ng/samp
PCB-061/070/074/076	0.11 ng/samp	0.21 ng/samp	--	0.1 ng/samp	0.40 ng/samp
PCB-066	0.036 ng/samp	0.066 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-083/099	1.9 ng/samp	4.1 ng/samp	73.33 %	--	--
PCB-084	0.31 ng/samp	0.75 ng/samp	--	0.44 ng/samp	0.10 ng/samp
PCB-085/116/117	0.27 ng/samp	0.78 ng/samp	--	0.51 ng/samp	0.30 ng/samp
PCB-086/087/097/109/119/125	0.67 ng/samp	1.8 ng/samp	--	1.13 ng/samp	0.60 ng/samp
PCB-088/091	2.1 ng/samp	5.4 ng/samp	88.00 %	--	--
PCB-090/101/113	2.9 ng/samp	7.3 ng/samp	86.27 %	--	--
PCB-092	1.3 ng/samp	3.1 ng/samp	81.82 %	--	--
PCB-093/100	1.3 ng/samp	3.3 ng/samp	86.96 %	--	--
PCB-094	0.71 ng/samp	1.8 ng/samp	86.85 %	--	--
PCB-095	2.0 ng/samp	5.5 ng/samp	93.33 %	--	--
PCB-096	0.39 ng/samp	0.92 ng/samp	--	0.53 ng/samp	0.10 ng/samp
PCB-098/102	0.28 ng/samp	0.62 ng/samp	--	0.34 ng/samp	0.20 ng/samp
PCB-103	0.58 ng/samp	1.5 ng/samp	88.46 %	--	--
PCB-104	0.17 ng/samp	0.37 ng/samp	--	0.2 ng/samp	0.10 ng/samp
PCB-110/115	0.98 ng/samp	2.7 ng/samp	--	1.72 ng/samp	0.20 ng/samp
PCB-118	0.17 ng/samp	0.41 ng/samp	--	0.24 ng/samp	0.10 ng/samp
PCB-120	0.13 ng/samp	0.15 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-128/166	1.2 ng/samp	2.3 ng/samp	62.86 %	--	--
PCB-129/138/160/163	22 ng/samp	37 ng/samp	50.85 %	--	--
PCB-130	1.4 ng/samp	2.4 ng/samp	52.63 %	--	--
PCB-132	9.2 ng/samp	13 ng/samp	34.23 %	--	--
PCB-133	1.3 ng/samp	2.1 ng/samp	47.06 %	--	--
PCB-134/143	2.0 ng/samp	3.0 ng/samp	40.00 %	--	--
PCB-135/151	28 ng/samp	39 ng/samp	32.84 %	--	--
PCB-136	12 ng/samp	15 ng/samp	22.22 %	--	--
PCB-137	0.22 ng/samp	0.72 ng/samp	--	0.5 ng/samp	0.20 ng/samp
PCB-139/140	0.60 ng/samp	0.98 ng/samp	--	0.38 ng/samp	0.20 ng/samp

PCB-141	5.1 ng/samp	8.0 ng/samp	44.27 %	--	--
PCB-144	2.0 ng/samp	2.9 ng/samp	36.73 %	--	--
PCB-146	5.6 ng/samp	8.8 ng/samp	44.44 %	--	--
PCB-147/149	45 ng/samp	67 ng/samp	39.29 %	--	--
PCB-148	0.70 ng/samp	0.97 ng/samp	32.34 %	--	--
PCB-150	1.4 ng/samp	1.6 ng/samp	13.33 %	--	--
PCB-152	1.0 ng/samp	1.3 ng/samp	26.09 %	--	--
PCB-153/168	25 ng/samp	41 ng/samp	48.48 %	--	--
PCB-154	3.0 ng/samp	4.1 ng/samp	30.99 %	--	--
PCB-155	0.16 ng/samp	0.18 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-156/157	0.40 ng/samp	0.83 ng/samp	--	0.43 ng/samp	0.20 ng/samp
PCB-158	1.2 ng/samp	2.9 ng/samp	82.93 %	--	--
PCB-159	2.7 ng/samp	2.2 ng/samp	20.41 %	--	--
PCB-164	1.7 ng/samp	2.6 ng/samp	41.86 %	--	--
PCB-165	0.18 ng/samp	0.27 ng/samp	--	0.09 ng/samp	0.16 ng/samp
PCB-167	0.22 ng/samp	0.51 ng/samp	--	0.29 ng/samp	0.13 ng/samp
PCB-169	0.20 ng/samp	0.19 ng/samp	--	0.01 ng/samp	0.11 ng/samp
PCB-170	22 ng/samp	26 ng/samp	16.67 %	--	--
PCB-171/173	11 ng/samp	12 ng/samp	8.70 %	--	--
PCB-172	6.5 ng/samp	7.9 ng/samp	19.44 %	--	--
PCB-174	48 ng/samp	51 ng/samp	6.06 %	--	--
PCB-175	1.8 ng/samp	2.0 ng/samp	10.53 %	--	--
PCB-176	9.4 ng/samp	9.6 ng/samp	2.11 %	--	--
PCB-177	25 ng/samp	28 ng/samp	11.32 %	--	--
PCB-178	16 ng/samp	18 ng/samp	11.76 %	--	--
PCB-179	38 ng/samp	39 ng/samp	2.60 %	--	--
PCB-180/193	58 ng/samp	66 ng/samp	12.90 %	--	--
PCB-182	0.51 ng/samp	0.45 ng/samp	--	0.06 ng/samp	0.10 ng/samp
PCB-183/185	31 ng/samp	34 ng/samp	9.23 %	--	--
PCB-187	74 ng/samp	84 ng/samp	12.66 %	--	--
PCB-188	0.59 ng/samp	0.68 ng/samp	14.17 %	--	--
PCB-189	0.44 ng/samp	0.56 ng/samp	--	0.12 ng/samp	0.10 ng/samp
PCB-190	4.7 ng/samp	5.6 ng/samp	17.48 %	--	--
PCB-191	1.0 ng/samp	1.2 ng/samp	18.18 %	--	--
PCB-194	16 ng/samp	15 ng/samp	6.45 %	--	--
PCB-195	9.4 ng/samp	9.2 ng/samp	2.15 %	--	--
PCB-196	16 ng/samp	16 ng/samp	0.00 %	--	--
PCB-197/200	9.6 ng/samp	9.2 ng/samp	4.26 %	--	--
PCB-198/199	35 ng/samp	34 ng/samp	2.90 %	--	--
PCB-201	7.6 ng/samp	7.6 ng/samp	0.00 %	--	--
PCB-202	12 ng/samp	12 ng/samp	0.00 %	--	--
PCB-203	23 ng/samp	23 ng/samp	0.00 %	--	--
PCB-205	0.87 ng/samp	0.90 ng/samp	3.39 %	--	--
PCB-206	5.9 ng/samp	6.1 ng/samp	3.33 %	--	--
PCB-207	1.2 ng/samp	1.3 ng/samp	8.00 %	--	--
PCB-208	2.1 ng/samp	2.3 ng/samp	9.09 %	--	--
PCB-209	0.57 ng/samp	0.88 ng/samp	42.76 %	--	--

Analyte	HOUS-R5A-TS-BW1A-JAR-SPME-2PAC	HOUS-R5A-TS-BW1A-JAR-SPME-2PAC-DUP	RPD	Difference	Difference CL
PCB-018/030	0.010 ng/samp	0.0034 ng/samp	--	0.0066 ng/samp	0.20 ng/samp
PCB-020/028	0.021 ng/samp	0.014 ng/samp	--	0.007 ng/samp	0.20 ng/samp
PCB-021/033	0.0086 ng/samp	0.0092 ng/samp	--	0.0006 ng/samp	0.20 ng/samp
PCB-025	0.0066 ng/samp	0.0080 ng/samp	--	0.0014 ng/samp	0.10 ng/samp
PCB-026/029	0.0056 ng/samp	0.0036 ng/samp	--	0.002 ng/samp	0.20 ng/samp
PCB-027	0.013 ng/samp	0.0068 ng/samp	--	0.0062 ng/samp	0.10 ng/samp
PCB-031	0.0067 ng/samp	0.0052 ng/samp	--	0.0015 ng/samp	0.20 ng/samp
PCB-032	0.014 ng/samp	0.011 ng/samp	--	0.003 ng/samp	0.10 ng/samp
PCB-044/047/065	0.30 ng/samp	0.27 ng/samp	--	0.03 ng/samp	0.30 ng/samp
PCB-045/051	0.11 ng/samp	0.15 ng/samp	--	0.04 ng/samp	0.20 ng/samp
PCB-049/069	0.17 ng/samp	0.16 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-050/053	0.099 ng/samp	0.099 ng/samp	--	0.0000 ng/samp	0.20 ng/samp
PCB-052	0.094 ng/samp	0.077 ng/samp	--	0.017 ng/samp	0.10 ng/samp
PCB-054	0.013 ng/samp	0.012 ng/samp	--	0.001 ng/samp	0.10 ng/samp
PCB-083/099	0.33 ng/samp	0.38 ng/samp	--	0.05 ng/samp	0.20 ng/samp
PCB-085/116/117	0.12 ng/samp	0.15 ng/samp	--	0.03 ng/samp	0.30 ng/samp
PCB-086/087/097/109/119/125	0.16 ng/samp	0.18 ng/samp	--	0.02 ng/samp	0.60 ng/samp
PCB-088/091	0.29 ng/samp	0.31 ng/samp	--	0.02 ng/samp	0.20 ng/samp
PCB-090/101/113	0.57 ng/samp	0.64 ng/samp	--	0.07 ng/samp	0.30 ng/samp
PCB-092	0.20 ng/samp	0.18 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-093/100	0.13 ng/samp	0.13 ng/samp	--	0.0000 ng/samp	0.20 ng/samp
PCB-094	0.073 ng/samp	0.081 ng/samp	--	0.008 ng/samp	0.10 ng/samp
PCB-095	0.35 ng/samp	0.34 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-103	0.081 ng/samp	0.074 ng/samp	--	0.007 ng/samp	0.10 ng/samp
PCB-105	0.026 ng/samp	0.015 ng/samp	--	0.011 ng/samp	0.10 ng/samp
PCB-110/115	0.28 ng/samp	0.28 ng/samp	--	0.0000 ng/samp	0.20 ng/samp
PCB-118	0.17 ng/samp	0.18 ng/samp	--	0.01 ng/samp	0.10 ng/samp

PCB-128/166	0.18 ng/samp	1.2 ng/samp	--	1.02 ng/samp	0.20 ng/samp
PCB-129/138/160/163	2.4 ng/samp	2.7 ng/samp	11.76 %	--	--
PCB-130	0.17 ng/samp	0.18 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-132	0.78 ng/samp	0.91 ng/samp	15.38 %	--	--
PCB-133	0.11 ng/samp	0.16 ng/samp	--	0.05 ng/samp	0.10 ng/samp
PCB-134/143	0.19 ng/samp	0.20 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-135/151	2.4 ng/samp	2.6 ng/samp	8.00 %	--	--
PCB-136	0.91 ng/samp	1.0 ng/samp	9.42 %	--	--
PCB-137	0.061 ng/samp	0.062 ng/samp	--	0.001 ng/samp	0.10 ng/samp
PCB-139/140	0.055 ng/samp	0.069 ng/samp	--	0.014 ng/samp	0.20 ng/samp
PCB-141	0.52 ng/samp	0.61 ng/samp	15.93 %	--	--
PCB-144	0.18 ng/samp	0.23 ng/samp	--	0.05 ng/samp	0.10 ng/samp
PCB-146	0.60 ng/samp	0.67 ng/samp	11.02 %	--	--
PCB-147/149	3.5 ng/samp	3.9 ng/samp	10.81 %	--	--
PCB-148	0.059 ng/samp	0.049 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-150	0.074 ng/samp	0.12 ng/samp	--	0.046 ng/samp	0.10 ng/samp
PCB-152	0.062 ng/samp	0.083 ng/samp	--	0.021 ng/samp	0.10 ng/samp
PCB-153/168	2.7 ng/samp	3.0 ng/samp	10.53 %	--	--
PCB-154	0.25 ng/samp	0.25 ng/samp	--	0.0000 ng/samp	0.10 ng/samp
PCB-155	0.012 ng/samp	0.0061 ng/samp	--	0.0059 ng/samp	0.10 ng/samp
PCB-156/157	0.064 ng/samp	0.11 ng/samp	--	0.046 ng/samp	0.20 ng/samp
PCB-158	0.14 ng/samp	0.39 ng/samp	--	0.25 ng/samp	0.10 ng/samp
PCB-159	0.34 ng/samp	0.60 ng/samp	--	0.26 ng/samp	0.10 ng/samp
PCB-164	0.18 ng/samp	0.20 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-167	0.045 ng/samp	0.053 ng/samp	--	0.008 ng/samp	0.10 ng/samp
PCB-170	4.3 ng/samp	4.7 ng/samp	8.89 %	--	--
PCB-171/173	2.0 ng/samp	2.3 ng/samp	13.95 %	--	--
PCB-172	1.5 ng/samp	1.7 ng/samp	12.50 %	--	--
PCB-174	8.2 ng/samp	9.4 ng/samp	13.64 %	--	--
PCB-175	0.34 ng/samp	0.40 ng/samp	--	0.06 ng/samp	0.10 ng/samp
PCB-176	1.7 ng/samp	1.9 ng/samp	11.11 %	--	--
PCB-177	4.6 ng/samp	5.5 ng/samp	17.82 %	--	--
PCB-178	2.6 ng/samp	3.0 ng/samp	14.29 %	--	--
PCB-179	6.3 ng/samp	7.4 ng/samp	16.06 %	--	--
PCB-180/193	10 ng/samp	13 ng/samp	26.09 %	--	--
PCB-182	0.098 ng/samp	0.12 ng/samp	--	0.022 ng/samp	0.10 ng/samp
PCB-183/185	5.1 ng/samp	6.1 ng/samp	17.86 %	--	--
PCB-187	14 ng/samp	16 ng/samp	13.33 %	--	--
PCB-188	0.12 ng/samp	0.11 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-189	0.086 ng/samp	0.11 ng/samp	--	0.024 ng/samp	0.10 ng/samp
PCB-190	0.86 ng/samp	0.95 ng/samp	9.94 %	--	--
PCB-191	0.19 ng/samp	0.21 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-194	6.4 ng/samp	7.5 ng/samp	15.83 %	--	--
PCB-195	3.9 ng/samp	4.3 ng/samp	9.76 %	--	--
PCB-196	6.9 ng/samp	7.2 ng/samp	4.26 %	--	--
PCB-197/200	4.1 ng/samp	4.3 ng/samp	4.76 %	--	--
PCB-198/199	14 ng/samp	15 ng/samp	6.90 %	--	--
PCB-201	3.1 ng/samp	3.4 ng/samp	9.23 %	--	--
PCB-202	4.9 ng/samp	5.2 ng/samp	5.94 %	--	--
PCB-203	10 ng/samp	10 ng/samp	0.00 %	--	--
PCB-205	0.36 ng/samp	0.40 ng/samp	--	0.04 ng/samp	0.10 ng/samp
PCB-206	4.2 ng/samp	4.4 ng/samp	4.65 %	--	--
PCB-207	0.81 ng/samp	0.80 ng/samp	1.24 %	--	--
PCB-208	1.5 ng/samp	1.6 ng/samp	6.45 %	--	--
PCB-209	0.54 ng/samp	0.51 ng/samp	5.71 %	--	--

Analyte	HOUS-R5A-TS-BW1A-JAR-SPME-5BC	HOUS-R5A-TS-BW1A-JAR-SPME-5BC-DUP	RPD	Difference	Difference CL
PCB-004	0.012 ng/samp	0.0051 ng/samp	--	0.0069 ng/samp	0.20 ng/samp
PCB-017	0.024 ng/samp	0.025 ng/samp	--	0.001 ng/samp	0.10 ng/samp
PCB-018/030	0.021 ng/samp	0.036 ng/samp	--	0.015 ng/samp	0.20 ng/samp
PCB-019	0.014 ng/samp	0.011 ng/samp	--	0.003 ng/samp	0.10 ng/samp
PCB-020/028	0.019 ng/samp	0.025 ng/samp	--	0.006 ng/samp	0.20 ng/samp
PCB-021/033	0.033 ng/samp	0.044 ng/samp	--	0.011 ng/samp	0.20 ng/samp
PCB-025	0.029 ng/samp	0.035 ng/samp	--	0.006 ng/samp	0.10 ng/samp
PCB-026/029	0.011 ng/samp	0.014 ng/samp	--	0.003 ng/samp	0.20 ng/samp
PCB-027	0.034 ng/samp	0.046 ng/samp	--	0.012 ng/samp	0.10 ng/samp
PCB-031	0.0078 ng/samp	0.011 ng/samp	--	0.0032 ng/samp	0.20 ng/samp
PCB-032	0.037 ng/samp	0.054 ng/samp	--	0.017 ng/samp	0.10 ng/samp
PCB-040/041/071	0.19 ng/samp	0.19 ng/samp	--	0.0000 ng/samp	0.30 ng/samp
PCB-042	0.069 ng/samp	0.077 ng/samp	--	0.008 ng/samp	0.10 ng/samp
PCB-043/073	0.078 ng/samp	0.069 ng/samp	--	0.009 ng/samp	0.20 ng/samp
PCB-044/047/065	1.3 ng/samp	1.6 ng/samp	--	0.3 ng/samp	0.30 ng/samp
PCB-045/051	1.1 ng/samp	1.2 ng/samp	8.70 %	--	--
PCB-046	0.068 ng/samp	0.082 ng/samp	--	0.014 ng/samp	0.10 ng/samp
PCB-049/069	0.83 ng/samp	0.88 ng/samp	--	0.05 ng/samp	0.20 ng/samp
PCB-050/053	0.83 ng/samp	0.89 ng/samp	--	0.06 ng/samp	0.20 ng/samp

PCB-052	0.56 ng/samp	0.60 ng/samp	6.90 %	--	--
PCB-054	0.22 ng/samp	0.23 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-061/070/074/076	0.14 ng/samp	0.15 ng/samp	--	0.01 ng/samp	0.40 ng/samp
PCB-066	0.045 ng/samp	0.053 ng/samp	--	0.008 ng/samp	0.10 ng/samp
PCB-082	0.13 ng/samp	0.12 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-083/099	2.5 ng/samp	2.8 ng/samp	11.32 %	--	--
PCB-084	0.50 ng/samp	0.49 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-085/116/117	0.43 ng/samp	0.50 ng/samp	--	0.07 ng/samp	0.30 ng/samp
PCB-086/087/097/109/119/125	1.2 ng/samp	1.3 ng/samp	--	0.1 ng/samp	0.60 ng/samp
PCB-088/091	2.9 ng/samp	3.1 ng/samp	6.67 %	--	--
PCB-090/101/113	4.5 ng/samp	4.8 ng/samp	6.45 %	--	--
PCB-092	1.7 ng/samp	1.9 ng/samp	11.11 %	--	--
PCB-093/100	1.7 ng/samp	1.8 ng/samp	5.71 %	--	--
PCB-094	1.0 ng/samp	0.96 ng/samp	4.08 %	--	--
PCB-095	3.6 ng/samp	3.9 ng/samp	8.00 %	--	--
PCB-096	0.54 ng/samp	0.58 ng/samp	7.14 %	--	--
PCB-098/102	0.42 ng/samp	0.48 ng/samp	--	0.06 ng/samp	0.20 ng/samp
PCB-103	0.85 ng/samp	0.91 ng/samp	6.82 %	--	--
PCB-104	0.20 ng/samp	0.23 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-105	0.068 ng/samp	0.10 ng/samp	--	0.032 ng/samp	0.10 ng/samp
PCB-107	0.074 ng/samp	0.089 ng/samp	--	0.015 ng/samp	0.10 ng/samp
PCB-110/115	1.7 ng/samp	1.8 ng/samp	5.71 %	--	--
PCB-118	0.38 ng/samp	0.49 ng/samp	--	0.11 ng/samp	0.10 ng/samp
PCB-120	0.089 ng/samp	0.10 ng/samp	--	0.011 ng/samp	0.10 ng/samp
PCB-121	0.028 ng/samp	0.036 ng/samp	--	0.008 ng/samp	0.10 ng/samp
PCB-128/166	0.98 ng/samp	1.0 ng/samp	--	0.02 ng/samp	0.20 ng/samp
PCB-129/138/160/163	18 ng/samp	19 ng/samp	5.41 %	--	--
PCB-130	1.2 ng/samp	1.2 ng/samp	0.00 %	--	--
PCB-132	7.0 ng/samp	7.1 ng/samp	1.42 %	--	--
PCB-133	0.92 ng/samp	0.93 ng/samp	1.08 %	--	--
PCB-134/143	1.7 ng/samp	1.5 ng/samp	12.50 %	--	--
PCB-135/151	23 ng/samp	24 ng/samp	4.26 %	--	--
PCB-136	10 ng/samp	10 ng/samp	0.00 %	--	--
PCB-137	0.36 ng/samp	0.32 ng/samp	--	0.04 ng/samp	0.20 ng/samp
PCB-139/140	0.44 ng/samp	0.45 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-141	4.1 ng/samp	4.3 ng/samp	4.76 %	--	--
PCB-144	1.6 ng/samp	1.7 ng/samp	6.06 %	--	--
PCB-146	4.7 ng/samp	4.9 ng/samp	4.17 %	--	--
PCB-147/149	36 ng/samp	37 ng/samp	2.74 %	--	--
PCB-148	0.51 ng/samp	0.62 ng/samp	19.47 %	--	--
PCB-150	1.1 ng/samp	1.2 ng/samp	8.70 %	--	--
PCB-152	0.85 ng/samp	0.81 ng/samp	4.82 %	--	--
PCB-153/168	21 ng/samp	23 ng/samp	9.09 %	--	--
PCB-154	2.4 ng/samp	2.6 ng/samp	8.00 %	--	--
PCB-155	0.13 ng/samp	0.15 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-156/157	0.38 ng/samp	0.41 ng/samp	--	0.03 ng/samp	0.20 ng/samp
PCB-158	1.7 ng/samp	1.9 ng/samp	11.11 %	--	--
PCB-159	1.7 ng/samp	2.0 ng/samp	16.22 %	--	--
PCB-164	1.3 ng/samp	1.4 ng/samp	7.41 %	--	--
PCB-167	0.24 ng/samp	0.26 ng/samp	--	0.02 ng/samp	0.12 ng/samp
PCB-169	0.086 ng/samp	0.17 ng/samp	--	0.084 ng/samp	0.11 ng/samp
PCB-170	20 ng/samp	21 ng/samp	4.88 %	--	--
PCB-171/173	10 ng/samp	11 ng/samp	9.52 %	--	--
PCB-172	5.7 ng/samp	6.3 ng/samp	10.00 %	--	--
PCB-174	43 ng/samp	45 ng/samp	4.55 %	--	--
PCB-175	1.7 ng/samp	1.7 ng/samp	0.00 %	--	--
PCB-176	9.2 ng/samp	9.3 ng/samp	1.08 %	--	--
PCB-177	24 ng/samp	25 ng/samp	4.08 %	--	--
PCB-178	15 ng/samp	16 ng/samp	6.45 %	--	--
PCB-179	37 ng/samp	37 ng/samp	0.00 %	--	--
PCB-180/193	53 ng/samp	56 ng/samp	5.50 %	--	--
PCB-182	0.45 ng/samp	0.53 ng/samp	--	0.08 ng/samp	0.10 ng/samp
PCB-183/185	29 ng/samp	30 ng/samp	3.39 %	--	--
PCB-187	62 ng/samp	67 ng/samp	7.75 %	--	--
PCB-188	0.64 ng/samp	0.64 ng/samp	0.00 %	--	--
PCB-189	0.39 ng/samp	0.42 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-190	4.2 ng/samp	4.5 ng/samp	6.90 %	--	--
PCB-191	1.0 ng/samp	0.96 ng/samp	4.08 %	--	--
PCB-194	17 ng/samp	16 ng/samp	6.06 %	--	--
PCB-195	10 ng/samp	9.5 ng/samp	5.13 %	--	--
PCB-196	18 ng/samp	17 ng/samp	5.71 %	--	--
PCB-197/200	11 ng/samp	9.0 ng/samp	20.00 %	--	--
PCB-198/199	38 ng/samp	34 ng/samp	11.11 %	--	--
PCB-201	8.8 ng/samp	7.5 ng/samp	15.95 %	--	--
PCB-202	14 ng/samp	12 ng/samp	15.38 %	--	--
PCB-203	22 ng/samp	21 ng/samp	4.65 %	--	--

PCB-205	0.99 ng/samp	0.94 ng/samp	5.18 %	--	--
PCB-206	7.0 ng/samp	6.1 ng/samp	13.74 %	--	--
PCB-207	1.4 ng/samp	1.1 ng/samp	24.00 %	--	--
PCB-208	2.5 ng/samp	2.1 ng/samp	17.39 %	--	--
PCB-209	0.66 ng/samp	0.68 ng/samp	2.99 %	--	--
Analyte	**HOUS-R5A-TS-BW1A-JAR-SPME-5GAC**	**HOUS-R5A-TS-BW1A-JAR-SPME-5GAC-DUP**	**RPD**	**Difference**	**Difference CL**
PCB-018/030	0.0080 ng/samp	0.0032 ng/samp	--	0.0048 ng/samp	0.20 ng/samp
PCB-020/028	0.010 ng/samp	0.015 ng/samp	--	0.005 ng/samp	0.20 ng/samp
PCB-025	0.0043 ng/samp	0.0050 ng/samp	--	0.0007 ng/samp	0.10 ng/samp
PCB-026/029	0.0046 ng/samp	0.0072 ng/samp	--	0.0026 ng/samp	0.20 ng/samp
PCB-027	0.010 ng/samp	0.013 ng/samp	--	0.003 ng/samp	0.10 ng/samp
PCB-031	0.0030 ng/samp	0.0050 ng/samp	--	0.002 ng/samp	0.20 ng/samp
PCB-044/047/065	0.18 ng/samp	0.20 ng/samp	--	0.02 ng/samp	0.30 ng/samp
PCB-045/051	0.089 ng/samp	0.077 ng/samp	--	0.012 ng/samp	0.20 ng/samp
PCB-049/069	0.081 ng/samp	0.10 ng/samp	--	0.019 ng/samp	0.20 ng/samp
PCB-050/053	0.061 ng/samp	0.058 ng/samp	--	0.003 ng/samp	0.20 ng/samp
PCB-052	0.076 ng/samp	0.062 ng/samp	--	0.014 ng/samp	0.10 ng/samp
PCB-061/070/074/076	0.020 ng/samp	0.018 ng/samp	--	0.002 ng/samp	0.40 ng/samp
PCB-066	0.014 ng/samp	0.019 ng/samp	--	0.005 ng/samp	0.10 ng/samp
PCB-083/099	0.22 ng/samp	0.20 ng/samp	--	0.02 ng/samp	0.20 ng/samp
PCB-084	0.045 ng/samp	0.019 ng/samp	--	0.026 ng/samp	0.10 ng/samp
PCB-085/116/117	0.071 ng/samp	0.041 ng/samp	--	0.03 ng/samp	0.30 ng/samp
PCB-086/087/097/109/119/125	0.12 ng/samp	0.086 ng/samp	--	0.034 ng/samp	0.60 ng/samp
PCB-088/091	0.24 ng/samp	0.15 ng/samp	--	0.09 ng/samp	0.20 ng/samp
PCB-090/101/113	0.45 ng/samp	0.27 ng/samp	--	0.18 ng/samp	0.30 ng/samp
PCB-092	0.18 ng/samp	0.11 ng/samp	--	0.07 ng/samp	0.10 ng/samp
PCB-093/100	0.13 ng/samp	0.079 ng/samp	--	0.051 ng/samp	0.20 ng/samp
PCB-094	0.058 ng/samp	0.039 ng/samp	--	0.019 ng/samp	0.10 ng/samp
PCB-095	0.25 ng/samp	0.13 ng/samp	--	0.12 ng/samp	0.10 ng/samp
PCB-096	0.022 ng/samp	0.0078 ng/samp	--	0.0142 ng/samp	0.10 ng/samp
PCB-103	0.063 ng/samp	0.032 ng/samp	--	0.031 ng/samp	0.10 ng/samp
PCB-105	0.018 ng/samp	0.021 ng/samp	--	0.003 ng/samp	0.10 ng/samp
PCB-110/115	0.20 ng/samp	0.16 ng/samp	--	0.04 ng/samp	0.20 ng/samp
PCB-128/166	0.21 ng/samp	0.068 ng/samp	--	0.142 ng/samp	0.20 ng/samp
PCB-129/138/160/163	3.0 ng/samp	1.3 ng/samp	--	1.7 ng/samp	0.40 ng/samp
PCB-130	0.19 ng/samp	0.094 ng/samp	--	0.096 ng/samp	0.10 ng/samp
PCB-132	1.0 ng/samp	0.42 ng/samp	--	0.58 ng/samp	0.10 ng/samp
PCB-133	0.28 ng/samp	0.057 ng/samp	--	0.223 ng/samp	0.10 ng/samp
PCB-134/143	0.20 ng/samp	0.072 ng/samp	--	0.128 ng/samp	0.20 ng/samp
PCB-135/151	3.2 ng/samp	1.1 ng/samp	97.67 %	--	--
PCB-136	1.2 ng/samp	0.39 ng/samp	--	0.81 ng/samp	0.10 ng/samp
PCB-139/140	0.072 ng/samp	0.026 ng/samp	--	0.046 ng/samp	0.20 ng/samp
PCB-141	0.71 ng/samp	0.32 ng/samp	--	0.39 ng/samp	0.10 ng/samp
PCB-144	0.24 ng/samp	0.069 ng/samp	--	0.171 ng/samp	0.10 ng/samp
PCB-146	0.84 ng/samp	0.31 ng/samp	--	0.53 ng/samp	0.10 ng/samp
PCB-147/149	5.4 ng/samp	1.8 ng/samp	100.00 %	--	--
PCB-148	0.073 ng/samp	0.012 ng/samp	--	0.061 ng/samp	0.10 ng/samp
PCB-150	0.19 ng/samp	0.065 ng/samp	--	0.125 ng/samp	0.10 ng/samp
PCB-152	0.12 ng/samp	0.029 ng/samp	--	0.091 ng/samp	0.10 ng/samp
PCB-153/168	3.4 ng/samp	1.4 ng/samp	83.33 %	--	--
PCB-154	0.40 ng/samp	0.14 ng/samp	--	0.26 ng/samp	0.10 ng/samp
PCB-155	0.015 ng/samp	0.0027 ng/samp	--	0.0123 ng/samp	0.10 ng/samp
PCB-156/157	0.10 ng/samp	0.047 ng/samp	--	0.053 ng/samp	0.20 ng/samp
PCB-159	0.93 ng/samp	0.35 ng/samp	--	0.58 ng/samp	0.10 ng/samp
PCB-164	0.24 ng/samp	0.11 ng/samp	--	0.13 ng/samp	0.10 ng/samp
PCB-167	0.044 ng/samp	0.028 ng/samp	--	0.016 ng/samp	0.10 ng/samp
PCB-169	0.052 ng/samp	0.016 ng/samp	--	0.036 ng/samp	0.10 ng/samp
PCB-170	9.5 ng/samp	3.5 ng/samp	92.31 %	--	--
PCB-171/173	4.9 ng/samp	1.9 ng/samp	88.24 %	--	--
PCB-172	3.4 ng/samp	1.0 ng/samp	109.09 %	--	--
PCB-174	20 ng/samp	7.7 ng/samp	88.81 %	--	--
PCB-175	0.86 ng/samp	0.29 ng/samp	--	0.57 ng/samp	0.10 ng/samp
PCB-176	4.8 ng/samp	1.9 ng/samp	86.57 %	--	--
PCB-177	12 ng/samp	4.4 ng/samp	92.68 %	--	--
PCB-178	6.7 ng/samp	2.4 ng/samp	94.51 %	--	--
PCB-179	19 ng/samp	7.0 ng/samp	92.31 %	--	--
PCB-180/193	23 ng/samp	8.7 ng/samp	90.22 %	--	--
PCB-183/185	13 ng/samp	4.8 ng/samp	92.13 %	--	--
PCB-187	35 ng/samp	10 ng/samp	111.11 %	--	--
PCB-188	0.41 ng/samp	0.17 ng/samp	--	0.24 ng/samp	0.10 ng/samp
PCB-189	0.18 ng/samp	0.065 ng/samp	--	0.115 ng/samp	0.10 ng/samp
PCB-190	1.7 ng/samp	0.68 ng/samp	85.71 %	--	--
PCB-191	0.36 ng/samp	0.14 ng/samp	--	0.22 ng/samp	0.10 ng/samp
PCB-194	14 ng/samp	7.8 ng/samp	56.88 %	--	--
PCB-195	9.0 ng/samp	5.5 ng/samp	48.28 %	--	--

PCB-196	16 ng/samp	9.8 ng/samp	48.06 %	--	--
PCB-197/200	9.9 ng/samp	6.5 ng/samp	41.46 %	--	--
PCB-198/199	33 ng/samp	21 ng/samp	44.44 %	--	--
PCB-201	8.0 ng/samp	5.2 ng/samp	42.42 %	--	--
PCB-202	12 ng/samp	8.0 ng/samp	40.00 %	--	--
PCB-203	24 ng/samp	11 ng/samp	74.29 %	--	--
PCB-205	0.76 ng/samp	0.43 ng/samp	--	0.33 ng/samp	0.10 ng/samp
PCB-206	6.1 ng/samp	5.0 ng/samp	19.82 %	--	--
PCB-207	1.2 ng/samp	1.1 ng/samp	8.70 %	--	--
PCB-208	2.1 ng/samp	1.9 ng/samp	10.00 %	--	--
PCB-209	0.40 ng/samp	0.49 ng/samp	--	0.09 ng/samp	0.10 ng/samp
Analyte	**HOUS-R5A-TS-BW1A-JAR-SPME-5PAC**	**HOUS-R5A-TS-BW1A-JAR-SPME-5PAC-DUP**	**RPD**	**Difference**	**Difference CL**
PCB-017	0.0064 ng/samp	0.0027 ng/samp	--	0.0037 ng/samp	0.10 ng/samp
PCB-018/030	0.0064 ng/samp	0.011 ng/samp	--	0.0046 ng/samp	0.20 ng/samp
PCB-020/028	0.012 ng/samp	0.014 ng/samp	--	0.002 ng/samp	0.20 ng/samp
PCB-025	0.0055 ng/samp	0.0036 ng/samp	--	0.0019 ng/samp	0.10 ng/samp
PCB-027	0.0097 ng/samp	0.014 ng/samp	--	0.0043 ng/samp	0.10 ng/samp
PCB-031	0.0045 ng/samp	0.0068 ng/samp	--	0.0023 ng/samp	0.20 ng/samp
PCB-032	0.012 ng/samp	0.011 ng/samp	--	0.001 ng/samp	0.10 ng/samp
PCB-040/041/071	0.021 ng/samp	0.015 ng/samp	--	0.006 ng/samp	0.30 ng/samp
PCB-044/047/065	0.16 ng/samp	0.17 ng/samp	--	0.01 ng/samp	0.30 ng/samp
PCB-045/051	0.064 ng/samp	0.070 ng/samp	--	0.006 ng/samp	0.20 ng/samp
PCB-049/069	0.087 ng/samp	0.098 ng/samp	--	0.011 ng/samp	0.20 ng/samp
PCB-050/053	0.048 ng/samp	0.057 ng/samp	--	0.009 ng/samp	0.20 ng/samp
PCB-052	0.046 ng/samp	0.053 ng/samp	--	0.007 ng/samp	0.10 ng/samp
PCB-061/070/074/076	0.016 ng/samp	0.020 ng/samp	--	0.004 ng/samp	0.40 ng/samp
PCB-066	0.016 ng/samp	0.021 ng/samp	--	0.005 ng/samp	0.10 ng/samp
PCB-083/099	0.13 ng/samp	0.12 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-084	0.015 ng/samp	0.016 ng/samp	--	0.001 ng/samp	0.10 ng/samp
PCB-085/116/117	0.078 ng/samp	0.073 ng/samp	--	0.005 ng/samp	0.30 ng/samp
PCB-086/087/097/109/119/125	0.062 ng/samp	0.061 ng/samp	--	0.001 ng/samp	0.60 ng/samp
PCB-088/091	0.11 ng/samp	0.080 ng/samp	--	0.03 ng/samp	0.20 ng/samp
PCB-090/101/113	0.20 ng/samp	0.18 ng/samp	--	0.02 ng/samp	0.30 ng/samp
PCB-092	0.063 ng/samp	0.054 ng/samp	--	0.009 ng/samp	0.10 ng/samp
PCB-093/100	0.039 ng/samp	0.051 ng/samp	--	0.012 ng/samp	0.20 ng/samp
PCB-094	0.019 ng/samp	0.031 ng/samp	--	0.012 ng/samp	0.10 ng/samp
PCB-095	0.11 ng/samp	0.080 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-110/115	0.098 ng/samp	0.11 ng/samp	--	0.012 ng/samp	0.20 ng/samp
PCB-118	0.057 ng/samp	0.087 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-128/166	0.17 ng/samp	0.16 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-129/138/160/163	0.60 ng/samp	0.56 ng/samp	--	0.04 ng/samp	0.40 ng/samp
PCB-130	0.032 ng/samp	0.037 ng/samp	--	0.005 ng/samp	0.10 ng/samp
PCB-132	0.16 ng/samp	0.14 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-133	0.031 ng/samp	0.015 ng/samp	--	0.016 ng/samp	0.10 ng/samp
PCB-135/151	0.43 ng/samp	0.37 ng/samp	--	0.06 ng/samp	0.20 ng/samp
PCB-136	0.13 ng/samp	0.13 ng/samp	--	0.0000 ng/samp	0.10 ng/samp
PCB-141	0.12 ng/samp	0.13 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-144	0.037 ng/samp	0.039 ng/samp	--	0.002 ng/samp	0.10 ng/samp
PCB-146	0.097 ng/samp	0.11 ng/samp	--	0.013 ng/samp	0.10 ng/samp
PCB-147/149	0.67 ng/samp	0.61 ng/samp	--	0.06 ng/samp	0.20 ng/samp
PCB-150	0.0059 ng/samp	0.0047 ng/samp	--	0.0012 ng/samp	0.10 ng/samp
PCB-152	0.015 ng/samp	0.0051 ng/samp	--	0.0099 ng/samp	0.10 ng/samp
PCB-153/168	0.57 ng/samp	0.58 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-154	0.046 ng/samp	0.044 ng/samp	--	0.002 ng/samp	0.10 ng/samp
PCB-156/157	0.022 ng/samp	0.029 ng/samp	--	0.007 ng/samp	0.20 ng/samp
PCB-158	0.051 ng/samp	0.062 ng/samp	--	0.011 ng/samp	0.10 ng/samp
PCB-159	0.064 ng/samp	0.061 ng/samp	--	0.003 ng/samp	0.10 ng/samp
PCB-164	0.037 ng/samp	0.037 ng/samp	--	0.0000 ng/samp	0.10 ng/samp
PCB-170	0.66 ng/samp	0.55 ng/samp	18.18 %	--	--
PCB-171/173	0.28 ng/samp	0.22 ng/samp	--	0.06 ng/samp	0.20 ng/samp
PCB-172	0.16 ng/samp	0.14 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-174	1.1 ng/samp	0.90 ng/samp	20.00 %	--	--
PCB-175	0.037 ng/samp	0.040 ng/samp	--	0.003 ng/samp	0.10 ng/samp
PCB-176	0.18 ng/samp	0.18 ng/samp	--	0.0000 ng/samp	0.10 ng/samp
PCB-177	0.57 ng/samp	0.52 ng/samp	9.17 %	--	--
PCB-178	0.31 ng/samp	0.31 ng/samp	--	0.0000 ng/samp	0.10 ng/samp
PCB-179	0.70 ng/samp	0.58 ng/samp	18.75 %	--	--
PCB-180/193	1.6 ng/samp	1.4 ng/samp	13.33 %	--	--
PCB-183/185	0.68 ng/samp	0.58 ng/samp	--	0.1 ng/samp	0.20 ng/samp
PCB-187	1.8 ng/samp	1.4 ng/samp	25.00 %	--	--
PCB-189	0.022 ng/samp	0.016 ng/samp	--	0.006 ng/samp	0.10 ng/samp
PCB-190	0.12 ng/samp	0.13 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-191	0.018 ng/samp	0.023 ng/samp	--	0.005 ng/samp	0.10 ng/samp
PCB-194	1.2 ng/samp	1.1 ng/samp	8.70 %	--	--
PCB-195	0.64 ng/samp	0.63 ng/samp	1.57 %	--	--

PCB-196	0.98 ng/samp	1.0 ng/samp	2.02 %	--	--
PCB-197/200	0.58 ng/samp	0.61 ng/samp	5.04 %	--	--
PCB-198/199	2.1 ng/samp	2.3 ng/samp	9.09 %	--	--
PCB-201	0.47 ng/samp	0.50 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-202	0.68 ng/samp	0.72 ng/samp	5.71 %	--	--
PCB-203	1.5 ng/samp	1.4 ng/samp	6.90 %	--	--
PCB-205	0.061 ng/samp	0.051 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-206	1.3 ng/samp	1.2 ng/samp	8.00 %	--	--
PCB-207	0.20 ng/samp	0.24 ng/samp	--	0.04 ng/samp	0.10 ng/samp
PCB-208	0.42 ng/samp	0.46 ng/samp	--	0.04 ng/samp	0.10 ng/samp
PCB-209	0.23 ng/samp	0.25 ng/samp	--	0.02 ng/samp	0.10 ng/samp
Analyte	**HOUS-R5A-TS-BW1A-JAR-SPME-CTRL**	**HOUS-R5A-TS-BW1A-JAR-SPME-CTRL-DUP**	**RPD**	**Difference**	**Difference CL**
PCB-001	0.093 ng/samp	0.049 ng/samp	--	0.044 ng/samp	0.10 ng/samp
PCB-003	0.025 ng/samp	0.0089 ng/samp	--	0.0161 ng/samp	0.10 ng/samp
PCB-004	1.6 ng/samp	0.92 ng/samp	--	0.68 ng/samp	0.20 ng/samp
PCB-006	0.66 ng/samp	0.42 ng/samp	--	0.24 ng/samp	0.10 ng/samp
PCB-007	0.083 ng/samp	0.061 ng/samp	--	0.022 ng/samp	0.10 ng/samp
PCB-008	0.60 ng/samp	0.35 ng/samp	--	0.25 ng/samp	0.20 ng/samp
PCB-009	0.11 ng/samp	0.067 ng/samp	--	0.043 ng/samp	0.10 ng/samp
PCB-010	0.082 ng/samp	0.067 ng/samp	--	0.015 ng/samp	0.10 ng/samp
PCB-015	0.33 ng/samp	0.17 ng/samp	--	0.16 ng/samp	0.10 ng/samp
PCB-016	0.28 ng/samp	0.12 ng/samp	--	0.16 ng/samp	0.10 ng/samp
PCB-017	2.9 ng/samp	1.7 ng/samp	52.17 %	--	--
PCB-018/030	4.0 ng/samp	2.4 ng/samp	50.00 %	--	--
PCB-019	1.4 ng/samp	0.84 ng/samp	50.00 %	--	--
PCB-020/028	4.7 ng/samp	2.6 ng/samp	57.53 %	--	--
PCB-021/033	1.7 ng/samp	0.94 ng/samp	--	0.76 ng/samp	0.20 ng/samp
PCB-022	0.27 ng/samp	0.14 ng/samp	--	0.13 ng/samp	0.10 ng/samp
PCB-025	1.9 ng/samp	1.2 ng/samp	45.16 %	--	--
PCB-026/029	2.2 ng/samp	1.2 ng/samp	58.82 %	--	--
PCB-027	8.3 ng/samp	4.7 ng/samp	55.38 %	--	--
PCB-031	1.6 ng/samp	0.93 ng/samp	--	0.67 ng/samp	0.20 ng/samp
PCB-032	6.6 ng/samp	3.7 ng/samp	56.31 %	--	--
PCB-034	0.12 ng/samp	0.080 ng/samp	--	0.04 ng/samp	0.10 ng/samp
PCB-037	0.14 ng/samp	0.065 ng/samp	--	0.075 ng/samp	0.10 ng/samp
PCB-040/041/071	9.5 ng/samp	5.7 ng/samp	50.00 %	--	--
PCB-042	3.8 ng/samp	2.2 ng/samp	53.33 %	--	--
PCB-043/073	2.5 ng/samp	1.5 ng/samp	50.00 %	--	--
PCB-044/047/065	77 ng/samp	45 ng/samp	52.46 %	--	--
PCB-045/051	37 ng/samp	22 ng/samp	50.85 %	--	--
PCB-046	2.6 ng/samp	1.6 ng/samp	47.62 %	--	--
PCB-049/069	43 ng/samp	25 ng/samp	52.94 %	--	--
PCB-050/053	30 ng/samp	18 ng/samp	50.00 %	--	--
PCB-052	24 ng/samp	14 ng/samp	52.63 %	--	--
PCB-054	4.7 ng/samp	2.7 ng/samp	54.05 %	--	--
PCB-056	0.32 ng/samp	0.20 ng/samp	--	0.12 ng/samp	0.10 ng/samp
PCB-059/062/075	2.2 ng/samp	1.4 ng/samp	--	0.8 ng/samp	0.30 ng/samp
PCB-061/070/074/076	4.7 ng/samp	2.9 ng/samp	47.37 %	--	--
PCB-064	1.3 ng/samp	0.70 ng/samp	60.00 %	--	--
PCB-066	5.4 ng/samp	3.2 ng/samp	51.16 %	--	--
PCB-067	0.33 ng/samp	0.29 ng/samp	--	0.04 ng/samp	0.10 ng/samp
PCB-068	1.5 ng/samp	0.75 ng/samp	66.67 %	--	--
PCB-072	0.76 ng/samp	0.48 ng/samp	--	0.28 ng/samp	0.10 ng/samp
PCB-082	1.3 ng/samp	0.84 ng/samp	42.99 %	--	--
PCB-083/099	36 ng/samp	23 ng/samp	44.07 %	--	--
PCB-084	4.9 ng/samp	3.1 ng/samp	45.00 %	--	--
PCB-085/116/117	6.5 ng/samp	4.2 ng/samp	42.99 %	--	--
PCB-086/087/097/109/119/125	18 ng/samp	11 ng/samp	48.28 %	--	--
PCB-088/091	32 ng/samp	19 ng/samp	50.98 %	--	--
PCB-090/101/113	63 ng/samp	38 ng/samp	49.50 %	--	--
PCB-092	22 ng/samp	14 ng/samp	44.44 %	--	--
PCB-093/100	18 ng/samp	10 ng/samp	57.14 %	--	--
PCB-094	8.6 ng/samp	5.2 ng/samp	49.28 %	--	--
PCB-095	41 ng/samp	24 ng/samp	52.31 %	--	--
PCB-096	4.1 ng/samp	2.5 ng/samp	48.48 %	--	--
PCB-098/102	4.3 ng/samp	2.7 ng/samp	45.71 %	--	--
PCB-103	8.9 ng/samp	5.4 ng/samp	48.95 %	--	--
PCB-104	1.3 ng/samp	0.76 ng/samp	52.43 %	--	--
PCB-105	2.7 ng/samp	1.6 ng/samp	51.16 %	--	--
PCB-107	1.5 ng/samp	0.97 ng/samp	42.91 %	--	--
PCB-108/124	0.73 ng/samp	0.45 ng/samp	--	0.28 ng/samp	0.20 ng/samp
PCB-110/115	29 ng/samp	19 ng/samp	41.67 %	--	--
PCB-111	0.28 ng/samp	0.17 ng/samp	--	0.11 ng/samp	0.10 ng/samp
PCB-118	14 ng/samp	8.6 ng/samp	47.79 %	--	--
PCB-120	0.66 ng/samp	0.46 ng/samp	--	0.2 ng/samp	0.10 ng/samp

PCB-121	0.42 ng/samp	0.25 ng/samp	--	0.17 ng/samp	0.10 ng/samp
PCB-123	0.26 ng/samp	0.19 ng/samp	--	0.07 ng/samp	0.10 ng/samp
PCB-128/166	5.5 ng/samp	3.3 ng/samp	50.00 %	--	--
PCB-129/138/160/163	93 ng/samp	56 ng/samp	49.66 %	--	--
PCB-130	5.6 ng/samp	3.4 ng/samp	48.89 %	--	--
PCB-131	0.65 ng/samp	0.36 ng/samp	--	0.29 ng/samp	0.16 ng/samp
PCB-132	26 ng/samp	16 ng/samp	47.62 %	--	--
PCB-133	3.3 ng/samp	2.0 ng/samp	49.06 %	--	--
PCB-134/143	5.7 ng/samp	3.6 ng/samp	45.16 %	--	--
PCB-135/151	80 ng/samp	51 ng/samp	44.27 %	--	--
PCB-136	26 ng/samp	16 ng/samp	47.62 %	--	--
PCB-137	1.6 ng/samp	1.2 ng/samp	28.57 %	--	--
PCB-139/140	1.8 ng/samp	1.0 ng/samp	--	0.8 ng/samp	0.20 ng/samp
PCB-141	19 ng/samp	12 ng/samp	45.16 %	--	--
PCB-144	6.4 ng/samp	4.1 ng/samp	43.81 %	--	--
PCB-146	20 ng/samp	12 ng/samp	50.00 %	--	--
PCB-147/149	130 ng/samp	75 ng/samp	53.66 %	--	--
PCB-148	1.8 ng/samp	1.1 ng/samp	48.28 %	--	--
PCB-150	2.6 ng/samp	1.6 ng/samp	47.62 %	--	--
PCB-152	2.0 ng/samp	1.3 ng/samp	42.42 %	--	--
PCB-153/168	100 ng/samp	60 ng/samp	50.00 %	--	--
PCB-154	7.8 ng/samp	5.0 ng/samp	43.75 %	--	--
PCB-155	0.23 ng/samp	0.13 ng/samp	--	0.1 ng/samp	0.10 ng/samp
PCB-156/157	3.7 ng/samp	2.2 ng/samp	50.85 %	--	--
PCB-158	7.2 ng/samp	4.4 ng/samp	48.28 %	--	--
PCB-159	2.9 ng/samp	1.8 ng/samp	46.81 %	--	--
PCB-164	6.1 ng/samp	3.7 ng/samp	48.98 %	--	--
PCB-165	0.61 ng/samp	0.34 ng/samp	--	0.27 ng/samp	0.12 ng/samp
PCB-167	2.0 ng/samp	1.2 ng/samp	50.00 %	--	--
PCB-170	36 ng/samp	22 ng/samp	48.28 %	--	--
PCB-171/173	16 ng/samp	9.9 ng/samp	47.10 %	--	--
PCB-172	9.1 ng/samp	6.3 ng/samp	36.36 %	--	--
PCB-174	64 ng/samp	41 ng/samp	43.81 %	--	--
PCB-175	2.5 ng/samp	1.6 ng/samp	43.90 %	--	--
PCB-176	11 ng/samp	7.1 ng/samp	43.09 %	--	--
PCB-177	36 ng/samp	22 ng/samp	48.28 %	--	--
PCB-178	23 ng/samp	14 ng/samp	48.65 %	--	--
PCB-179	45 ng/samp	28 ng/samp	46.58 %	--	--
PCB-180/193	94 ng/samp	60 ng/samp	44.16 %	--	--
PCB-183/185	45 ng/samp	28 ng/samp	46.58 %	--	--
PCB-187	90 ng/samp	61 ng/samp	38.41 %	--	--
PCB-188	0.73 ng/samp	0.44 ng/samp	--	0.29 ng/samp	0.10 ng/samp
PCB-189	0.95 ng/samp	0.61 ng/samp	43.59 %	--	--
PCB-190	8.3 ng/samp	5.3 ng/samp	44.12 %	--	--
PCB-191	1.8 ng/samp	1.1 ng/samp	48.28 %	--	--
PCB-194	17 ng/samp	10 ng/samp	51.85 %	--	--
PCB-195	12 ng/samp	7.0 ng/samp	52.63 %	--	--
PCB-196	17 ng/samp	11 ng/samp	42.86 %	--	--
PCB-197/200	9.2 ng/samp	6.2 ng/samp	38.96 %	--	--
PCB-198/199	34 ng/samp	22 ng/samp	42.86 %	--	--
PCB-201	7.4 ng/samp	4.8 ng/samp	42.62 %	--	--
PCB-202	11 ng/samp	7.0 ng/samp	44.44 %	--	--
PCB-203	20 ng/samp	15 ng/samp	28.57 %	--	--
PCB-205	1.1 ng/samp	0.56 ng/samp	65.06 %	--	--
PCB-206	6.1 ng/samp	4.0 ng/samp	41.58 %	--	--
PCB-207	1.3 ng/samp	0.80 ng/samp	47.62 %	--	--
PCB-208	2.2 ng/samp	1.5 ng/samp	37.84 %	--	--
PCB-209	0.52 ng/samp	0.50 ng/samp	--	0.02 ng/samp	0.10 ng/samp

Analyte	HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-10BC	HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-10BC-DUP	RPD	Difference	Difference CL
PCB-018/030	0.010 ng/samp	0.0046 ng/samp	--	0.0054 ng/samp	0.20 ng/samp
PCB-021/033	0.011 ng/samp	0.0059 ng/samp	--	0.0051 ng/samp	0.20 ng/samp
PCB-032	0.0039 ng/samp	0.010 ng/samp	--	0.0061 ng/samp	0.10 ng/samp
PCB-044/047/065	0.20 ng/samp	0.16 ng/samp	--	0.04 ng/samp	0.30 ng/samp
PCB-045/051	0.15 ng/samp	0.13 ng/samp	--	0.02 ng/samp	0.20 ng/samp
PCB-049/069	0.12 ng/samp	0.11 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-050/053	0.12 ng/samp	0.10 ng/samp	--	0.02 ng/samp	0.20 ng/samp
PCB-052	0.18 ng/samp	0.15 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-054	0.032 ng/samp	0.022 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-083/099	1.3 ng/samp	1.1 ng/samp	16.67 %	--	--
PCB-084	0.36 ng/samp	0.30 ng/samp	--	0.06 ng/samp	0.10 ng/samp
PCB-085/116/117	0.092 ng/samp	0.090 ng/samp	--	0.002 ng/samp	0.30 ng/samp
PCB-086/087/097/109/119/125	0.75 ng/samp	0.66 ng/samp	--	0.09 ng/samp	0.60 ng/samp
PCB-088/091	0.45 ng/samp	0.39 ng/samp	--	0.06 ng/samp	0.20 ng/samp
PCB-090/101/113	5.8 ng/samp	5.1 ng/samp	12.84 %	--	--

PCB-092	1.0 ng/samp	0.81 ng/samp	20.99 %	--	--
PCB-093/100	0.40 ng/samp	0.29 ng/samp	--	0.11 ng/samp	0.20 ng/samp
PCB-094	0.17 ng/samp	0.16 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-095	7.0 ng/samp	6.2 ng/samp	12.12 %	--	--
PCB-096	0.10 ng/samp	0.081 ng/samp	--	0.019 ng/samp	0.10 ng/samp
PCB-098/102	0.10 ng/samp	0.11 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-103	0.15 ng/samp	0.11 ng/samp	--	0.04 ng/samp	0.10 ng/samp
PCB-104	0.048 ng/samp	0.036 ng/samp	--	0.012 ng/samp	0.10 ng/samp
PCB-110/115	1.5 ng/samp	1.4 ng/samp	6.90 %	--	--
PCB-118	0.091 ng/samp	0.12 ng/samp	--	0.029 ng/samp	0.10 ng/samp
PCB-128/166	1.3 ng/samp	1.2 ng/samp	8.00 %	--	--
PCB-129/138/160/163	34 ng/samp	29 ng/samp	15.87 %	--	--
PCB-130	1.5 ng/samp	1.3 ng/samp	14.29 %	--	--
PCB-131	0.37 ng/samp	0.36 ng/samp	--	0.01 ng/samp	0.25 ng/samp
PCB-132	18 ng/samp	15 ng/samp	18.18 %	--	--
PCB-133	0.74 ng/samp	0.63 ng/samp	--	0.11 ng/samp	0.21 ng/samp
PCB-134/143	3.8 ng/samp	3.2 ng/samp	17.14 %	--	--
PCB-135/151	58 ng/samp	49 ng/samp	16.82 %	--	--
PCB-136	33 ng/samp	28 ng/samp	16.39 %	--	--
PCB-141	14 ng/samp	11 ng/samp	24.00 %	--	--
PCB-144	7.4 ng/samp	6.4 ng/samp	14.49 %	--	--
PCB-146	6.9 ng/samp	5.6 ng/samp	20.80 %	--	--
PCB-147/149	82 ng/samp	67 ng/samp	20.13 %	--	--
PCB-150	0.33 ng/samp	0.31 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-152	0.26 ng/samp	0.18 ng/samp	--	0.08 ng/samp	0.10 ng/samp
PCB-153/168	45 ng/samp	35 ng/samp	25.00 %	--	--
PCB-154	0.85 ng/samp	0.82 ng/samp	3.59 %	--	--
PCB-156/157	0.62 ng/samp	0.60 ng/samp	--	0.02 ng/samp	0.20 ng/samp
PCB-158	3.6 ng/samp	3.0 ng/samp	18.18 %	--	--
PCB-159	5.4 ng/samp	3.9 ng/samp	32.26 %	--	--
PCB-164	2.8 ng/samp	2.3 ng/samp	19.61 %	--	--
PCB-167	0.30 ng/samp	0.28 ng/samp	--	0.02 ng/samp	0.14 ng/samp
PCB-170	58 ng/samp	42 ng/samp	32.00 %	--	--
PCB-171/173	33 ng/samp	25 ng/samp	27.59 %	--	--
PCB-172	16 ng/samp	11 ng/samp	37.04 %	--	--
PCB-174	140 ng/samp	110 ng/samp	24.00 %	--	--
PCB-175	6.3 ng/samp	4.7 ng/samp	29.09 %	--	--
PCB-176	32 ng/samp	24 ng/samp	28.57 %	--	--
PCB-177	68 ng/samp	50 ng/samp	30.51 %	--	--
PCB-178	33 ng/samp	25 ng/samp	27.59 %	--	--
PCB-179	110 ng/samp	79 ng/samp	32.80 %	--	--
PCB-180/193	180 ng/samp	130 ng/samp	32.26 %	--	--
PCB-183/185	94 ng/samp	69 ng/samp	30.67 %	--	--
PCB-187	160 ng/samp	120 ng/samp	28.57 %	--	--
PCB-189	0.93 ng/samp	0.59 ng/samp	44.74 %	--	--
PCB-190	12 ng/samp	8.7 ng/samp	31.88 %	--	--
PCB-191	3.4 ng/samp	2.8 ng/samp	19.35 %	--	--
PCB-194	32 ng/samp	23 ng/samp	32.73 %	--	--
PCB-195	17 ng/samp	12 ng/samp	34.48 %	--	--
PCB-196	36 ng/samp	27 ng/samp	28.57 %	--	--
PCB-197	17 ng/samp	13 ng/samp	26.67 %	--	--
PCB-198/199	70 ng/samp	52 ng/samp	29.51 %	--	--
PCB-200	17 ng/samp	13 ng/samp	26.67 %	--	--
PCB-201	15 ng/samp	11 ng/samp	30.77 %	--	--
PCB-202	20 ng/samp	15 ng/samp	28.57 %	--	--
PCB-203	37 ng/samp	28 ng/samp	27.69 %	--	--
PCB-205	1.9 ng/samp	1.4 ng/samp	30.30 %	--	--
PCB-206	9.3 ng/samp	6.9 ng/samp	29.63 %	--	--
PCB-207	1.5 ng/samp	1.0 ng/samp	40.00 %	--	--
PCB-208	3.8 ng/samp	2.8 ng/samp	30.30 %	--	--
PCB-209	0.93 ng/samp	0.72 ng/samp	25.45 %	--	--

Analyte	HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-1PAC	HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-1PAC-DUP	RPD	Difference	Difference CL
PCB-016	0.0070 ng/samp	0.011 ng/samp	--	0.004 ng/samp	0.10 ng/samp
PCB-017	0.0070 ng/samp	0.012 ng/samp	--	0.005 ng/samp	0.10 ng/samp
PCB-018/030	0.027 ng/samp	0.026 ng/samp	--	0.001 ng/samp	0.20 ng/samp
PCB-020/028	0.029 ng/samp	0.014 ng/samp	--	0.015 ng/samp	0.20 ng/samp
PCB-021/033	0.023 ng/samp	0.013 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-025	0.012 ng/samp	0.0081 ng/samp	--	0.0039 ng/samp	0.10 ng/samp
PCB-026/029	0.0074 ng/samp	0.0056 ng/samp	--	0.0018 ng/samp	0.20 ng/samp
PCB-027	0.018 ng/samp	0.0083 ng/samp	--	0.0097 ng/samp	0.10 ng/samp
PCB-031	0.017 ng/samp	0.015 ng/samp	--	0.002 ng/samp	0.20 ng/samp
PCB-032	0.024 ng/samp	0.028 ng/samp	--	0.004 ng/samp	0.10 ng/samp
PCB-040/041/071	0.10 ng/samp	0.077 ng/samp	--	0.023 ng/samp	0.30 ng/samp
PCB-042	0.034 ng/samp	0.032 ng/samp	--	0.002 ng/samp	0.10 ng/samp

PCB-043/073	0.016 ng/samp	0.015 ng/samp	--	0.001 ng/samp	0.20 ng/samp
PCB-044/047/065	0.74 ng/samp	0.56 ng/samp	--	0.18 ng/samp	0.30 ng/samp
PCB-045/051	0.45 ng/samp	0.30 ng/samp	--	0.15 ng/samp	0.20 ng/samp
PCB-049/069	0.40 ng/samp	0.30 ng/samp	--	0.1 ng/samp	0.20 ng/samp
PCB-050/053	0.33 ng/samp	0.24 ng/samp	--	0.09 ng/samp	0.20 ng/samp
PCB-052	0.47 ng/samp	0.41 ng/samp	--	0.06 ng/samp	0.10 ng/samp
PCB-054	0.047 ng/samp	0.046 ng/samp	--	0.001 ng/samp	0.10 ng/samp
PCB-059/062/075	0.027 ng/samp	0.016 ng/samp	--	0.011 ng/samp	0.30 ng/samp
PCB-061/070/074/076	0.084 ng/samp	0.10 ng/samp	--	0.016 ng/samp	0.40 ng/samp
PCB-064	0.024 ng/samp	0.011 ng/samp	--	0.013 ng/samp	0.10 ng/samp
PCB-066	0.047 ng/samp	0.022 ng/samp	--	0.025 ng/samp	0.10 ng/samp
PCB-083/099	2.3 ng/samp	1.8 ng/samp	24.39 %	--	--
PCB-084	0.64 ng/samp	0.57 ng/samp	11.57 %	--	--
PCB-085/116/117	0.23 ng/samp	0.18 ng/samp	--	0.05 ng/samp	0.30 ng/samp
PCB-086/087/097/109/119/125	1.8 ng/samp	1.4 ng/samp	--	0.4 ng/samp	0.60 ng/samp
PCB-088/091	1.1 ng/samp	0.84 ng/samp	--	0.26 ng/samp	0.20 ng/samp
PCB-090/101/113	13 ng/samp	10 ng/samp	26.09 %	--	--
PCB-092	2.1 ng/samp	1.7 ng/samp	21.05 %	--	--
PCB-093/100	0.63 ng/samp	0.62 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-094	0.27 ng/samp	0.21 ng/samp	--	0.06 ng/samp	0.10 ng/samp
PCB-095	13 ng/samp	11 ng/samp	16.67 %	--	--
PCB-096	0.16 ng/samp	0.12 ng/samp	--	0.04 ng/samp	0.10 ng/samp
PCB-098/102	0.16 ng/samp	0.14 ng/samp	--	0.02 ng/samp	0.20 ng/samp
PCB-103	0.25 ng/samp	0.24 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-104	0.070 ng/samp	0.052 ng/samp	--	0.018 ng/samp	0.10 ng/samp
PCB-107	0.057 ng/samp	0.041 ng/samp	--	0.016 ng/samp	0.10 ng/samp
PCB-110/115	3.6 ng/samp	2.9 ng/samp	21.54 %	--	--
PCB-118	0.77 ng/samp	0.55 ng/samp	33.33 %	--	--
PCB-128/166	2.8 ng/samp	2.4 ng/samp	15.38 %	--	--
PCB-129/138/160/163	71 ng/samp	58 ng/samp	20.16 %	--	--
PCB-130	3.3 ng/samp	2.7 ng/samp	20.00 %	--	--
PCB-131	0.77 ng/samp	0.55 ng/samp	--	0.22 ng/samp	0.18 ng/samp
PCB-132	31 ng/samp	26 ng/samp	17.54 %	--	--
PCB-133	1.3 ng/samp	1.0 ng/samp	26.09 %	--	--
PCB-134/143	5.9 ng/samp	4.7 ng/samp	22.64 %	--	--
PCB-135/151	85 ng/samp	71 ng/samp	17.95 %	--	--
PCB-136	40 ng/samp	33 ng/samp	19.18 %	--	--
PCB-141	27 ng/samp	22 ng/samp	20.41 %	--	--
PCB-144	12 ng/samp	9.3 ng/samp	25.35 %	--	--
PCB-146	13 ng/samp	10 ng/samp	26.09 %	--	--
PCB-147/149	120 ng/samp	100 ng/samp	18.18 %	--	--
PCB-148	0.32 ng/samp	0.19 ng/samp	--	0.13 ng/samp	0.10 ng/samp
PCB-150	0.38 ng/samp	0.30 ng/samp	--	0.08 ng/samp	0.10 ng/samp
PCB-152	0.29 ng/samp	0.20 ng/samp	--	0.09 ng/samp	0.10 ng/samp
PCB-153/168	82 ng/samp	66 ng/samp	21.62 %	--	--
PCB-154	1.4 ng/samp	1.0 ng/samp	33.33 %	--	--
PCB-156/157	2.1 ng/samp	1.8 ng/samp	15.38 %	--	--
PCB-158	7.0 ng/samp	5.6 ng/samp	22.22 %	--	--
PCB-159	5.8 ng/samp	4.3 ng/samp	29.70 %	--	--
PCB-164	5.6 ng/samp	4.9 ng/samp	13.33 %	--	--
PCB-167	1.0 ng/samp	0.81 ng/samp	20.99 %	--	--
PCB-170	77 ng/samp	59 ng/samp	26.47 %	--	--
PCB-171/173	36 ng/samp	28 ng/samp	25.00 %	--	--
PCB-172	18 ng/samp	13 ng/samp	32.26 %	--	--
PCB-174	160 ng/samp	120 ng/samp	28.57 %	--	--
PCB-175	6.7 ng/samp	5.3 ng/samp	23.33 %	--	--
PCB-176	30 ng/samp	22 ng/samp	30.77 %	--	--
PCB-177	74 ng/samp	57 ng/samp	25.95 %	--	--
PCB-178	36 ng/samp	27 ng/samp	28.57 %	--	--
PCB-179	97 ng/samp	71 ng/samp	30.95 %	--	--
PCB-180/193	210 ng/samp	160 ng/samp	27.03 %	--	--
PCB-183/185	100 ng/samp	77 ng/samp	25.99 %	--	--
PCB-187	170 ng/samp	130 ng/samp	26.67 %	--	--
PCB-188	0.17 ng/samp	0.11 ng/samp	--	0.06 ng/samp	0.10 ng/samp
PCB-189	1.5 ng/samp	1.2 ng/samp	22.22 %	--	--
PCB-190	16 ng/samp	12 ng/samp	28.57 %	--	--
PCB-191	4.5 ng/samp	3.3 ng/samp	30.77 %	--	--
PCB-194	28 ng/samp	21 ng/samp	28.57 %	--	--
PCB-195	14 ng/samp	11 ng/samp	24.00 %	--	--
PCB-196	28 ng/samp	21 ng/samp	28.57 %	--	--
PCB-197	13 ng/samp	9.2 ng/samp	34.23 %	--	--
PCB-198/199	57 ng/samp	41 ng/samp	32.65 %	--	--
PCB-200	13 ng/samp	9.2 ng/samp	34.23 %	--	--
PCB-201	11 ng/samp	8.0 ng/samp	31.58 %	--	--
PCB-202	15 ng/samp	11 ng/samp	30.77 %	--	--
PCB-203	29 ng/samp	22 ng/samp	27.45 %	--	--

PCB-205	1.7 ng/samp	1.2 ng/samp	34.48 %	--	--
PCB-206	6.9 ng/samp	5.1 ng/samp	30.00 %	--	--
PCB-207	1.0 ng/samp	0.75 ng/samp	28.57 %	--	--
PCB-208	2.6 ng/samp	2.0 ng/samp	26.09 %	--	--
PCB-209	0.61 ng/samp	0.48 ng/samp	--	0.13 ng/samp	0.10 ng/samp

Analyte	HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-2GAC	HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-2GAC-DUP	RPD	Difference	Difference CL
PCB-016	0.25 ng/samp	0.28 ng/samp	--	0.03 ng/samp	0.50 ng/samp
PCB-017	0.56 ng/samp	0.46 ng/samp	--	0.1 ng/samp	0.50 ng/samp
PCB-018/030	0.85 ng/samp	0.70 ng/samp	--	0.15 ng/samp	1.0 ng/samp
PCB-019	0.19 ng/samp	0.19 ng/samp	--	0.0000 ng/samp	0.50 ng/samp
PCB-020/028	0.27 ng/samp	0.30 ng/samp	--	0.03 ng/samp	1.0 ng/samp
PCB-021/033	0.51 ng/samp	0.50 ng/samp	--	0.01 ng/samp	1.0 ng/samp
PCB-025	0.31 ng/samp	0.26 ng/samp	--	0.05 ng/samp	0.50 ng/samp
PCB-026/029	0.13 ng/samp	0.16 ng/samp	--	0.03 ng/samp	1.0 ng/samp
PCB-027	0.44 ng/samp	0.41 ng/samp	--	0.03 ng/samp	0.50 ng/samp
PCB-031	0.26 ng/samp	0.31 ng/samp	--	0.05 ng/samp	1.0 ng/samp
PCB-032	0.37 ng/samp	0.42 ng/samp	--	0.05 ng/samp	0.50 ng/samp
PCB-040/041/071	3.5 ng/samp	3.5 ng/samp	--	0.0000 ng/samp	1.5 ng/samp
PCB-042	1.4 ng/samp	1.8 ng/samp	--	0.4 ng/samp	0.50 ng/samp
PCB-043/073	1.2 ng/samp	0.95 ng/samp	--	0.25 ng/samp	1.0 ng/samp
PCB-044/047/065	23 ng/samp	23 ng/samp	0.00 %	--	--
PCB-045/051	13 ng/samp	13 ng/samp	0.00 %	--	--
PCB-046	1.2 ng/samp	1.0 ng/samp	--	0.2 ng/samp	0.50 ng/samp
PCB-048	0.58 ng/samp	0.76 ng/samp	--	0.18 ng/samp	0.50 ng/samp
PCB-049/069	13 ng/samp	13 ng/samp	0.00 %	--	--
PCB-050/053	9.7 ng/samp	9.8 ng/samp	1.03 %	--	--
PCB-052	20 ng/samp	20 ng/samp	0.00 %	--	--
PCB-054	1.6 ng/samp	1.4 ng/samp	--	0.2 ng/samp	0.50 ng/samp
PCB-056	0.38 ng/samp	0.35 ng/samp	--	0.03 ng/samp	0.50 ng/samp
PCB-059/062/075	0.80 ng/samp	0.96 ng/samp	--	0.16 ng/samp	1.5 ng/samp
PCB-061/070/074/076	2.5 ng/samp	2.7 ng/samp	--	0.2 ng/samp	2.0 ng/samp
PCB-064	0.89 ng/samp	0.87 ng/samp	--	0.02 ng/samp	0.50 ng/samp
PCB-066	1.4 ng/samp	1.5 ng/samp	--	0.1 ng/samp	0.50 ng/samp
PCB-072	0.13 ng/samp	0.21 ng/samp	--	0.08 ng/samp	0.50 ng/samp
PCB-083/099	28 ng/samp	30 ng/samp	6.90 %	--	--
PCB-084	15 ng/samp	16 ng/samp	6.45 %	--	--
PCB-085/116/117	4.1 ng/samp	4.1 ng/samp	--	0.0000 ng/samp	1.5 ng/samp
PCB-086/087/097/109/119/125	44 ng/samp	47 ng/samp	6.59 %	--	--
PCB-088/091	17 ng/samp	18 ng/samp	5.71 %	--	--
PCB-090/101/113	340 ng/samp	340 ng/samp	0.00 %	--	--
PCB-092	47 ng/samp	48 ng/samp	2.11 %	--	--
PCB-093/100	11 ng/samp	12 ng/samp	8.70 %	--	--
PCB-094	4.1 ng/samp	4.8 ng/samp	15.73 %	--	--
PCB-095	340 ng/samp	340 ng/samp	0.00 %	--	--
PCB-096	2.5 ng/samp	2.4 ng/samp	--	0.1 ng/samp	0.50 ng/samp
PCB-098/102	3.2 ng/samp	2.5 ng/samp	--	0.7 ng/samp	1.0 ng/samp
PCB-103	4.7 ng/samp	4.9 ng/samp	4.17 %	--	--
PCB-105	2.1 ng/samp	2.0 ng/samp	--	0.1 ng/samp	0.50 ng/samp
PCB-107	0.98 ng/samp	1.2 ng/samp	--	0.22 ng/samp	0.50 ng/samp
PCB-108/124	1.0 ng/samp	1.1 ng/samp	--	0.1 ng/samp	1.0 ng/samp
PCB-110/115	100 ng/samp	100 ng/samp	0.00 %	--	--
PCB-118	25 ng/samp	25 ng/samp	0.00 %	--	--
PCB-123	0.37 ng/samp	0.33 ng/samp	--	0.04 ng/samp	0.50 ng/samp
PCB-128/166	25 ng/samp	24 ng/samp	4.08 %	--	--
PCB-129/138/160/163	610 ng/samp	590 ng/samp	3.33 %	--	--
PCB-130	25 ng/samp	25 ng/samp	0.00 %	--	--
PCB-131	6.1 ng/samp	6.5 ng/samp	6.35 %	--	--
PCB-132	220 ng/samp	220 ng/samp	0.00 %	--	--
PCB-133	8.5 ng/samp	8.7 ng/samp	2.33 %	--	--
PCB-134/143	43 ng/samp	47 ng/samp	8.89 %	--	--
PCB-135/151	620 ng/samp	600 ng/samp	3.28 %	--	--
PCB-136	260 ng/samp	250 ng/samp	3.92 %	--	--
PCB-141	210 ng/samp	210 ng/samp	0.00 %	--	--
PCB-144	89 ng/samp	89 ng/samp	0.00 %	--	--
PCB-146	88 ng/samp	89 ng/samp	1.13 %	--	--
PCB-147/149	970 ng/samp	900 ng/samp	7.49 %	--	--
PCB-148	1.4 ng/samp	1.4 ng/samp	--	0.0000 ng/samp	0.50 ng/samp
PCB-150	1.7 ng/samp	1.6 ng/samp	--	0.1 ng/samp	0.50 ng/samp
PCB-152	1.3 ng/samp	1.4 ng/samp	--	0.1 ng/samp	0.50 ng/samp
PCB-153/168	720 ng/samp	670 ng/samp	7.19 %	--	--
PCB-154	8.3 ng/samp	8.0 ng/samp	3.68 %	--	--
PCB-156/157	25 ng/samp	23 ng/samp	8.33 %	--	--
PCB-158	57 ng/samp	54 ng/samp	5.41 %	--	--
PCB-159	15 ng/samp	14 ng/samp	6.90 %	--	--

PCB-164	44 ng/samp	43 ng/samp	2.30 %	--	--
PCB-167	9.9 ng/samp	10 ng/samp	1.01 %	--	--
PCB-170	240 ng/samp	220 ng/samp	8.70 %	--	--
PCB-171/173	110 ng/samp	99 ng/samp	10.53 %	--	--
PCB-172	52 ng/samp	49 ng/samp	5.94 %	--	--
PCB-174	440 ng/samp	400 ng/samp	9.52 %	--	--
PCB-175	20 ng/samp	18 ng/samp	10.53 %	--	--
PCB-176	79 ng/samp	74 ng/samp	6.54 %	--	--
PCB-177	210 ng/samp	200 ng/samp	4.88 %	--	--
PCB-178	100 ng/samp	93 ng/samp	7.25 %	--	--
PCB-179	260 ng/samp	230 ng/samp	12.24 %	--	--
PCB-180/193	680 ng/samp	610 ng/samp	10.85 %	--	--
PCB-183/185	300 ng/samp	280 ng/samp	6.90 %	--	--
PCB-187	500 ng/samp	450 ng/samp	10.53 %	--	--
PCB-189	5.7 ng/samp	5.5 ng/samp	3.57 %	--	--
PCB-190	55 ng/samp	51 ng/samp	7.55 %	--	--
PCB-191	15 ng/samp	14 ng/samp	6.90 %	--	--
PCB-194	55 ng/samp	54 ng/samp	1.83 %	--	--
PCB-195	27 ng/samp	28 ng/samp	3.64 %	--	--
PCB-196	58 ng/samp	57 ng/samp	1.74 %	--	--
PCB-197	24 ng/samp	23 ng/samp	4.26 %	--	--
PCB-198/199	110 ng/samp	110 ng/samp	0.00 %	--	--
PCB-200	24 ng/samp	23 ng/samp	4.26 %	--	--
PCB-201	22 ng/samp	20 ng/samp	9.52 %	--	--
PCB-202	27 ng/samp	26 ng/samp	3.77 %	--	--
PCB-203	62 ng/samp	58 ng/samp	6.67 %	--	--
PCB-205	3.5 ng/samp	3.4 ng/samp	2.90 %	--	--
PCB-206	11 ng/samp	11 ng/samp	0.00 %	--	--
PCB-207	1.6 ng/samp	1.5 ng/samp	--	0.1 ng/samp	0.50 ng/samp
PCB-208	4.3 ng/samp	4.3 ng/samp	0.00 %	--	--
PCB-209	0.82 ng/samp	0.79 ng/samp	--	0.03 ng/samp	0.50 ng/samp

Analyte	HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-2PAC	HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-2PAC-DUP	RPD	Difference	Difference CL
PCB-018/030	0.0032 ng/samp	0.0051 ng/samp	--	0.0019 ng/samp	0.20 ng/samp
PCB-019	0.0080 ng/samp	0.0049 ng/samp	--	0.0031 ng/samp	0.10 ng/samp
PCB-020/028	0.0099 ng/samp	0.0062 ng/samp	--	0.0037 ng/samp	0.20 ng/samp
PCB-021/033	0.0040 ng/samp	0.0070 ng/samp	--	0.003 ng/samp	0.20 ng/samp
PCB-025	0.0050 ng/samp	0.0071 ng/samp	--	0.0021 ng/samp	0.10 ng/samp
PCB-032	0.0072 ng/samp	0.0060 ng/samp	--	0.0012 ng/samp	0.10 ng/samp
PCB-040/041/071	0.016 ng/samp	0.029 ng/samp	--	0.013 ng/samp	0.30 ng/samp
PCB-044/047/065	0.10 ng/samp	0.21 ng/samp	--	0.11 ng/samp	0.30 ng/samp
PCB-045/051	0.062 ng/samp	0.12 ng/samp	--	0.058 ng/samp	0.20 ng/samp
PCB-049/069	0.066 ng/samp	0.11 ng/samp	--	0.044 ng/samp	0.20 ng/samp
PCB-050/053	0.039 ng/samp	0.085 ng/samp	--	0.046 ng/samp	0.20 ng/samp
PCB-052	0.077 ng/samp	0.12 ng/samp	--	0.043 ng/samp	0.10 ng/samp
PCB-054	0.014 ng/samp	0.012 ng/samp	--	0.002 ng/samp	0.10 ng/samp
PCB-061/070/074/076	0.031 ng/samp	0.030 ng/samp	--	0.001 ng/samp	0.40 ng/samp
PCB-083/099	0.29 ng/samp	0.53 ng/samp	--	0.24 ng/samp	0.20 ng/samp
PCB-084	0.10 ng/samp	0.19 ng/samp	--	0.09 ng/samp	0.10 ng/samp
PCB-086/087/097/109/119/125	0.36 ng/samp	0.48 ng/samp	--	0.12 ng/samp	0.60 ng/samp
PCB-088/091	0.16 ng/samp	0.30 ng/samp	--	0.14 ng/samp	0.20 ng/samp
PCB-090/101/113	2.0 ng/samp	3.3 ng/samp	49.06 %	--	--
PCB-092	0.36 ng/samp	0.59 ng/samp	--	0.23 ng/samp	0.10 ng/samp
PCB-093/100	0.14 ng/samp	0.23 ng/samp	--	0.09 ng/samp	0.20 ng/samp
PCB-094	0.028 ng/samp	0.11 ng/samp	--	0.082 ng/samp	0.10 ng/samp
PCB-095	2.0 ng/samp	3.4 ng/samp	51.85 %	--	--
PCB-096	0.024 ng/samp	0.048 ng/samp	--	0.024 ng/samp	0.10 ng/samp
PCB-098/102	0.045 ng/samp	0.041 ng/samp	--	0.004 ng/samp	0.20 ng/samp
PCB-103	0.060 ng/samp	0.081 ng/samp	--	0.021 ng/samp	0.10 ng/samp
PCB-110/115	0.58 ng/samp	0.94 ng/samp	--	0.36 ng/samp	0.20 ng/samp
PCB-118	0.12 ng/samp	0.19 ng/samp	--	0.07 ng/samp	0.10 ng/samp
PCB-128/166	3.1 ng/samp	0.52 ng/samp	--	2.58 ng/samp	0.20 ng/samp
PCB-129/138/160/163	11 ng/samp	15 ng/samp	30.77 %	--	--
PCB-130	0.47 ng/samp	0.61 ng/samp	--	0.14 ng/samp	0.19 ng/samp
PCB-132	4.9 ng/samp	6.5 ng/samp	28.07 %	--	--
PCB-134/143	0.89 ng/samp	1.2 ng/samp	--	0.31 ng/samp	0.20 ng/samp
PCB-135/151	13 ng/samp	18 ng/samp	32.26 %	--	--
PCB-136	6.7 ng/samp	8.9 ng/samp	28.21 %	--	--
PCB-141	4.1 ng/samp	5.5 ng/samp	29.17 %	--	--
PCB-144	1.9 ng/samp	2.4 ng/samp	23.26 %	--	--
PCB-146	2.1 ng/samp	2.7 ng/samp	25.00 %	--	--
PCB-147/149	19 ng/samp	25 ng/samp	27.27 %	--	--
PCB-148	0.059 ng/samp	0.045 ng/samp	--	0.014 ng/samp	0.10 ng/samp
PCB-150	0.081 ng/samp	0.10 ng/samp	--	0.019 ng/samp	0.10 ng/samp
PCB-152	0.052 ng/samp	0.058 ng/samp	--	0.006 ng/samp	0.10 ng/samp

PCB-153/168	13 ng/samp	17 ng/samp	26.67 %	--	--
PCB-154	0.23 ng/samp	0.34 ng/samp	--	0.11 ng/samp	0.10 ng/samp
PCB-156/157	0.32 ng/samp	0.48 ng/samp	--	0.16 ng/samp	0.20 ng/samp
PCB-158	1.5 ng/samp	1.6 ng/samp	6.45 %	--	--
PCB-159	2.2 ng/samp	1.9 ng/samp	14.63 %	--	--
PCB-164	0.84 ng/samp	1.2 ng/samp	35.29 %	--	--
PCB-167	0.11 ng/samp	0.16 ng/samp	--	0.05 ng/samp	0.10 ng/samp
PCB-170	27 ng/samp	25 ng/samp	7.69 %	--	--
PCB-171/173	14 ng/samp	12 ng/samp	15.38 %	--	--
PCB-172	6.8 ng/samp	6.3 ng/samp	7.63 %	--	--
PCB-174	59 ng/samp	51 ng/samp	14.55 %	--	--
PCB-175	2.8 ng/samp	2.4 ng/samp	15.38 %	--	--
PCB-176	14 ng/samp	11 ng/samp	24.00 %	--	--
PCB-177	29 ng/samp	26 ng/samp	10.91 %	--	--
PCB-178	14 ng/samp	12 ng/samp	15.38 %	--	--
PCB-179	41 ng/samp	33 ng/samp	21.62 %	--	--
PCB-180/193	75 ng/samp	69 ng/samp	8.33 %	--	--
PCB-183/185	38 ng/samp	33 ng/samp	14.08 %	--	--
PCB-187	63 ng/samp	56 ng/samp	11.76 %	--	--
PCB-189	0.48 ng/samp	0.50 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-190	5.3 ng/samp	5.1 ng/samp	3.85 %	--	--
PCB-191	1.6 ng/samp	1.5 ng/samp	6.45 %	--	--
PCB-194	31 ng/samp	18 ng/samp	53.06 %	--	--
PCB-195	18 ng/samp	9.4 ng/samp	62.77 %	--	--
PCB-196	35 ng/samp	20 ng/samp	54.55 %	--	--
PCB-197	18 ng/samp	8.9 ng/samp	67.66 %	--	--
PCB-198/199	67 ng/samp	39 ng/samp	52.83 %	--	--
PCB-200	18 ng/samp	8.9 ng/samp	67.66 %	--	--
PCB-201	16 ng/samp	7.9 ng/samp	67.78 %	--	--
PCB-202	22 ng/samp	10 ng/samp	75.00 %	--	--
PCB-203	34 ng/samp	20 ng/samp	51.85 %	--	--
PCB-205	1.7 ng/samp	1.1 ng/samp	42.86 %	--	--
PCB-206	14 ng/samp	6.5 ng/samp	73.17 %	--	--
PCB-207	2.4 ng/samp	0.99 ng/samp	83.19 %	--	--
PCB-208	6.1 ng/samp	2.6 ng/samp	80.46 %	--	--
PCB-209	1.6 ng/samp	0.83 ng/samp	63.37 %	--	--

Analyte	HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-5BC	HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-5BC-DUP	RPD	Difference	Difference CL
PCB-044/047/065	1.4 ng/samp	1.4 ng/samp	--	0.0000 ng/samp	1.2 ng/samp
PCB-045/051	1.0 ng/samp	1.1 ng/samp	--	0.1 ng/samp	0.80 ng/samp
PCB-049/069	0.83 ng/samp	0.75 ng/samp	--	0.08 ng/samp	0.80 ng/samp
PCB-050/053	0.79 ng/samp	0.81 ng/samp	--	0.02 ng/samp	0.80 ng/samp
PCB-052	1.2 ng/samp	1.3 ng/samp	--	0.1 ng/samp	0.40 ng/samp
PCB-054	0.19 ng/samp	0.18 ng/samp	--	0.01 ng/samp	0.40 ng/samp
PCB-082	0.17 ng/samp	0.20 ng/samp	--	0.03 ng/samp	0.40 ng/samp
PCB-083/099	2.1 ng/samp	3.7 ng/samp	--	1.6 ng/samp	0.80 ng/samp
PCB-084	2.2 ng/samp	3.2 ng/samp	37.04 %	--	--
PCB-085/116/117	0.54 ng/samp	0.74 ng/samp	--	0.2 ng/samp	1.2 ng/samp
PCB-086/087/097/109/119/125	4.7 ng/samp	6.6 ng/samp	--	1.9 ng/samp	2.4 ng/samp
PCB-088/091	3.3 ng/samp	3.7 ng/samp	--	0.4 ng/samp	0.80 ng/samp
PCB-090/101/113	38 ng/samp	54 ng/samp	34.78 %	--	--
PCB-092	6.5 ng/samp	9.2 ng/samp	34.39 %	--	--
PCB-093/100	2.6 ng/samp	2.9 ng/samp	--	0.3 ng/samp	0.80 ng/samp
PCB-094	1.1 ng/samp	1.3 ng/samp	--	0.2 ng/samp	0.40 ng/samp
PCB-095	45 ng/samp	63 ng/samp	33.33 %	--	--
PCB-096	0.59 ng/samp	0.51 ng/samp	--	0.08 ng/samp	0.40 ng/samp
PCB-098/102	0.43 ng/samp	0.76 ng/samp	--	0.33 ng/samp	0.80 ng/samp
PCB-103	1.0 ng/samp	1.2 ng/samp	--	0.2 ng/samp	0.40 ng/samp
PCB-104	0.22 ng/samp	0.33 ng/samp	--	0.11 ng/samp	0.40 ng/samp
PCB-110/115	8.3 ng/samp	12 ng/samp	36.45 %	--	--
PCB-118	1.1 ng/samp	0.86 ng/samp	--	0.24 ng/samp	0.40 ng/samp
PCB-120	0.087 ng/samp	0.16 ng/samp	--	0.073 ng/samp	0.40 ng/samp
PCB-128/166	8.0 ng/samp	10 ng/samp	22.22 %	--	--
PCB-129/138/160/163	190 ng/samp	250 ng/samp	27.27 %	--	--
PCB-130	8.6 ng/samp	11 ng/samp	24.49 %	--	--
PCB-131	2.5 ng/samp	3.5 ng/samp	--	1 ng/samp	0.53 ng/samp
PCB-132	88 ng/samp	110 ng/samp	22.22 %	--	--
PCB-133	3.7 ng/samp	4.6 ng/samp	21.69 %	--	--
PCB-134/143	18 ng/samp	22 ng/samp	20.00 %	--	--
PCB-135/151	230 ng/samp	310 ng/samp	29.63 %	--	--
PCB-136	120 ng/samp	150 ng/samp	22.22 %	--	--
PCB-141	74 ng/samp	93 ng/samp	22.75 %	--	--
PCB-144	33 ng/samp	44 ng/samp	28.57 %	--	--
PCB-146	33 ng/samp	42 ng/samp	24.00 %	--	--
PCB-147/149	380 ng/samp	470 ng/samp	21.18 %	--	--
PCB-150	0.79 ng/samp	1.1 ng/samp	--	0.31 ng/samp	0.40 ng/samp

PCB-152	0.85 ng/samp	0.70 ng/samp	--	0.15 ng/samp	0.40 ng/samp
PCB-153/168	230 ng/samp	300 ng/samp	26.42 %	--	--
PCB-154	3.8 ng/samp	3.9 ng/samp	2.60 %	--	--
PCB-156/157	4.4 ng/samp	5.9 ng/samp	29.13 %	--	--
PCB-158	17 ng/samp	23 ng/samp	30.00 %	--	--
PCB-159	11 ng/samp	11 ng/samp	0.00 %	--	--
PCB-164	14 ng/samp	20 ng/samp	35.29 %	--	--
PCB-167	2.2 ng/samp	3.1 ng/samp	33.96 %	--	--
PCB-170	160 ng/samp	150 ng/samp	6.45 %	--	--
PCB-171/173	79 ng/samp	75 ng/samp	5.19 %	--	--
PCB-172	38 ng/samp	37 ng/samp	2.67 %	--	--
PCB-174	320 ng/samp	300 ng/samp	6.45 %	--	--
PCB-175	15 ng/samp	14 ng/samp	6.90 %	--	--
PCB-176	68 ng/samp	57 ng/samp	17.60 %	--	--
PCB-177	160 ng/samp	150 ng/samp	6.45 %	--	--
PCB-178	75 ng/samp	70 ng/samp	6.90 %	--	--
PCB-179	210 ng/samp	180 ng/samp	15.38 %	--	--
PCB-180/193	440 ng/samp	440 ng/samp	0.00 %	--	--
PCB-183/185	220 ng/samp	210 ng/samp	4.65 %	--	--
PCB-187	360 ng/samp	340 ng/samp	5.71 %	--	--
PCB-189	2.9 ng/samp	2.9 ng/samp	0.00 %	--	--
PCB-190	34 ng/samp	35 ng/samp	2.90 %	--	--
PCB-191	9.9 ng/samp	9.1 ng/samp	8.42 %	--	--
PCB-194	68 ng/samp	42 ng/samp	47.27 %	--	--
PCB-195	37 ng/samp	21 ng/samp	55.17 %	--	--
PCB-196	76 ng/samp	46 ng/samp	49.18 %	--	--
PCB-197	34 ng/samp	19 ng/samp	56.60 %	--	--
PCB-198/199	140 ng/samp	88 ng/samp	45.61 %	--	--
PCB-200	34 ng/samp	19 ng/samp	56.60 %	--	--
PCB-201	31 ng/samp	16 ng/samp	63.83 %	--	--
PCB-202	39 ng/samp	21 ng/samp	60.00 %	--	--
PCB-203	78 ng/samp	49 ng/samp	45.67 %	--	--
PCB-205	4.0 ng/samp	2.1 ng/samp	62.30 %	--	--
PCB-206	19 ng/samp	6.5 ng/samp	98.04 %	--	--
PCB-207	2.4 ng/samp	1.0 ng/samp	--	1.4 ng/samp	0.40 ng/samp
PCB-208	7.0 ng/samp	3.1 ng/samp	77.23 %	--	--
PCB-209	1.9 ng/samp	0.85 ng/samp	--	1.05 ng/samp	0.40 ng/samp

Analyte	HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-5GAC	HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-5GAC-DUP	RPD	Difference	Difference CL
PCB-040/041/071	0.65 ng/samp	0.54 ng/samp	--	0.11 ng/samp	1.5 ng/samp
PCB-042	0.27 ng/samp	0.20 ng/samp	--	0.07 ng/samp	0.50 ng/samp
PCB-044/047/065	4.6 ng/samp	3.8 ng/samp	--	0.8 ng/samp	1.5 ng/samp
PCB-045/051	3.0 ng/samp	2.3 ng/samp	--	0.7 ng/samp	1.0 ng/samp
PCB-049/069	2.7 ng/samp	2.0 ng/samp	--	0.7 ng/samp	1.0 ng/samp
PCB-050/053	1.9 ng/samp	1.3 ng/samp	--	0.6 ng/samp	1.0 ng/samp
PCB-052	3.9 ng/samp	2.9 ng/samp	29.41 %	--	--
PCB-054	0.46 ng/samp	0.27 ng/samp	--	0.19 ng/samp	0.50 ng/samp
PCB-061/070/074/076	0.58 ng/samp	0.55 ng/samp	--	0.03 ng/samp	2.0 ng/samp
PCB-079	0.086 ng/samp	0.095 ng/samp	--	0.009 ng/samp	0.50 ng/samp
PCB-082	0.83 ng/samp	1.0 ng/samp	--	0.17 ng/samp	0.50 ng/samp
PCB-083/099	17 ng/samp	17 ng/samp	0.00 %	--	--
PCB-084	8.1 ng/samp	7.1 ng/samp	13.16 %	--	--
PCB-085/116/117	2.1 ng/samp	1.8 ng/samp	--	0.3 ng/samp	1.5 ng/samp
PCB-086/087/097/109/119/125	23 ng/samp	21 ng/samp	9.09 %	--	--
PCB-088/091	9.9 ng/samp	9.1 ng/samp	8.42 %	--	--
PCB-090/101/113	180 ng/samp	160 ng/samp	11.76 %	--	--
PCB-092	26 ng/samp	24 ng/samp	8.00 %	--	--
PCB-093/100	6.6 ng/samp	7.0 ng/samp	5.88 %	--	--
PCB-094	2.8 ng/samp	2.6 ng/samp	7.41 %	--	--
PCB-095	170 ng/samp	150 ng/samp	12.50 %	--	--
PCB-096	1.2 ng/samp	1.2 ng/samp	--	0.0000 ng/samp	0.50 ng/samp
PCB-098/102	2.1 ng/samp	1.9 ng/samp	--	0.2 ng/samp	1.0 ng/samp
PCB-103	2.7 ng/samp	2.7 ng/samp	0.00 %	--	--
PCB-105	0.66 ng/samp	0.72 ng/samp	--	0.06 ng/samp	0.50 ng/samp
PCB-107	0.54 ng/samp	0.53 ng/samp	--	0.01 ng/samp	0.50 ng/samp
PCB-108/124	0.58 ng/samp	0.47 ng/samp	--	0.11 ng/samp	1.0 ng/samp
PCB-110/115	49 ng/samp	44 ng/samp	10.75 %	--	--
PCB-118	9.8 ng/samp	8.4 ng/samp	15.38 %	--	--
PCB-123	0.20 ng/samp	0.25 ng/samp	--	0.05 ng/samp	0.50 ng/samp
PCB-128/166	19 ng/samp	20 ng/samp	5.13 %	--	--
PCB-129/138/160/163	440 ng/samp	430 ng/samp	2.30 %	--	--
PCB-130	20 ng/samp	19 ng/samp	5.13 %	--	--
PCB-131	5.6 ng/samp	5.6 ng/samp	0.00 %	--	--
PCB-132	170 ng/samp	170 ng/samp	0.00 %	--	--
PCB-133	7.0 ng/samp	6.9 ng/samp	1.44 %	--	--

PCB-134/143	35 ng/samp	37 ng/samp	5.56 %	--	--
PCB-135/151	450 ng/samp	430 ng/samp	4.55 %	--	--
PCB-136	190 ng/samp	180 ng/samp	5.41 %	--	--
PCB-141	160 ng/samp	160 ng/samp	0.00 %	--	--
PCB-144	66 ng/samp	63 ng/samp	4.65 %	--	--
PCB-146	68 ng/samp	67 ng/samp	1.48 %	--	--
PCB-147/149	710 ng/samp	760 ng/samp	6.80 %	--	--
PCB-150	1.4 ng/samp	1.2 ng/samp	--	0.2 ng/samp	0.50 ng/samp
PCB-152	1.0 ng/samp	0.94 ng/samp	--	0.06 ng/samp	0.50 ng/samp
PCB-153/168	510 ng/samp	490 ng/samp	4.00 %	--	--
PCB-154	6.4 ng/samp	5.5 ng/samp	15.13 %	--	--
PCB-156/157	17 ng/samp	16 ng/samp	6.06 %	--	--
PCB-158	42 ng/samp	39 ng/samp	7.41 %	--	--
PCB-159	14 ng/samp	11 ng/samp	24.00 %	--	--
PCB-164	34 ng/samp	32 ng/samp	6.06 %	--	--
PCB-167	6.6 ng/samp	7.2 ng/samp	8.70 %	--	--
PCB-170	210 ng/samp	170 ng/samp	21.05 %	--	--
PCB-171/173	94 ng/samp	75 ng/samp	22.49 %	--	--
PCB-172	46 ng/samp	36 ng/samp	24.39 %	--	--
PCB-174	380 ng/samp	300 ng/samp	23.53 %	--	--
PCB-175	18 ng/samp	14 ng/samp	25.00 %	--	--
PCB-176	72 ng/samp	56 ng/samp	25.00 %	--	--
PCB-177	190 ng/samp	150 ng/samp	23.53 %	--	--
PCB-178	88 ng/samp	70 ng/samp	22.78 %	--	--
PCB-179	230 ng/samp	180 ng/samp	24.39 %	--	--
PCB-180/193	570 ng/samp	450 ng/samp	23.53 %	--	--
PCB-183/185	260 ng/samp	210 ng/samp	21.28 %	--	--
PCB-187	420 ng/samp	330 ng/samp	24.00 %	--	--
PCB-189	4.7 ng/samp	3.9 ng/samp	18.60 %	--	--
PCB-190	47 ng/samp	38 ng/samp	21.18 %	--	--
PCB-191	13 ng/samp	11 ng/samp	16.67 %	--	--
PCB-194	58 ng/samp	41 ng/samp	34.34 %	--	--
PCB-195	31 ng/samp	21 ng/samp	38.46 %	--	--
PCB-196	62 ng/samp	40 ng/samp	43.14 %	--	--
PCB-197	26 ng/samp	16 ng/samp	47.62 %	--	--
PCB-198/199	120 ng/samp	77 ng/samp	43.65 %	--	--
PCB-200	26 ng/samp	16 ng/samp	47.62 %	--	--
PCB-201	22 ng/samp	14 ng/samp	44.44 %	--	--
PCB-202	29 ng/samp	19 ng/samp	41.67 %	--	--
PCB-203	64 ng/samp	41 ng/samp	43.81 %	--	--
PCB-205	3.8 ng/samp	2.6 ng/samp	37.50 %	--	--
PCB-206	12 ng/samp	7.9 ng/samp	41.21 %	--	--
PCB-207	1.7 ng/samp	1.3 ng/samp	--	0.4 ng/samp	0.50 ng/samp
PCB-208	4.7 ng/samp	2.9 ng/samp	47.37 %	--	--
PCB-209	1.0 ng/samp	0.56 ng/samp	--	0.44 ng/samp	0.50 ng/samp

Analyte	HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-5PAC	HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-5PAC-DUP	RPD	Difference	Difference CL
PCB-020/028	0.0040 ng/samp	0.0095 ng/samp	--	0.0055 ng/samp	0.20 ng/samp
PCB-031	0.0054 ng/samp	0.0027 ng/samp	--	0.0027 ng/samp	0.20 ng/samp
PCB-044/047/065	0.036 ng/samp	0.033 ng/samp	--	0.003 ng/samp	0.30 ng/samp
PCB-045/051	0.015 ng/samp	0.016 ng/samp	--	0.001 ng/samp	0.20 ng/samp
PCB-049/069	0.018 ng/samp	0.020 ng/samp	--	0.002 ng/samp	0.20 ng/samp
PCB-052	0.023 ng/samp	0.026 ng/samp	--	0.003 ng/samp	0.10 ng/samp
PCB-054	0.0050 ng/samp	0.010 ng/samp	--	0.005 ng/samp	0.10 ng/samp
PCB-061/070/074/076	0.017 ng/samp	0.0084 ng/samp	--	0.0086 ng/samp	0.40 ng/samp
PCB-083/099	0.038 ng/samp	0.061 ng/samp	--	0.023 ng/samp	0.20 ng/samp
PCB-086/087/097/109/119/125	0.082 ng/samp	0.083 ng/samp	--	0.001 ng/samp	0.60 ng/samp
PCB-088/091	0.012 ng/samp	0.032 ng/samp	--	0.02 ng/samp	0.20 ng/samp
PCB-090/101/113	0.44 ng/samp	0.39 ng/samp	--	0.05 ng/samp	0.30 ng/samp
PCB-092	0.052 ng/samp	0.082 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-093/100	0.020 ng/samp	0.020 ng/samp	--	0.0000 ng/samp	0.20 ng/samp
PCB-095	0.34 ng/samp	0.44 ng/samp	--	0.1 ng/samp	0.10 ng/samp
PCB-110/115	0.17 ng/samp	0.15 ng/samp	--	0.02 ng/samp	0.20 ng/samp
PCB-118	0.055 ng/samp	0.036 ng/samp	--	0.019 ng/samp	0.10 ng/samp
PCB-128/166	0.063 ng/samp	0.084 ng/samp	--	0.021 ng/samp	0.20 ng/samp
PCB-129/138/160/163	1.5 ng/samp	1.8 ng/samp	--	0.3 ng/samp	0.40 ng/samp
PCB-132	0.57 ng/samp	0.74 ng/samp	25.95 %	--	--
PCB-134/143	0.082 ng/samp	0.12 ng/samp	--	0.038 ng/samp	0.20 ng/samp
PCB-135/151	1.4 ng/samp	1.9 ng/samp	30.30 %	--	--
PCB-136	0.62 ng/samp	0.91 ng/samp	37.91 %	--	--
PCB-141	0.49 ng/samp	0.68 ng/samp	--	0.19 ng/samp	0.10 ng/samp
PCB-144	0.19 ng/samp	0.27 ng/samp	--	0.08 ng/samp	0.10 ng/samp
PCB-146	0.25 ng/samp	0.31 ng/samp	--	0.06 ng/samp	0.10 ng/samp
PCB-147/149	2.1 ng/samp	2.7 ng/samp	25.00 %	--	--
PCB-153/168	1.6 ng/samp	2.0 ng/samp	22.22 %	--	--

PCB-154	0.030 ng/samp	0.051 ng/samp	--	0.021 ng/samp	0.10 ng/samp
PCB-156/157	0.082 ng/samp	0.088 ng/samp	--	0.006 ng/samp	0.20 ng/samp
PCB-158	0.18 ng/samp	0.21 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-159	0.19 ng/samp	0.19 ng/samp	--	0.0000 ng/samp	0.10 ng/samp
PCB-164	0.12 ng/samp	0.12 ng/samp	--	0.0000 ng/samp	0.10 ng/samp
PCB-170	2.7 ng/samp	2.8 ng/samp	3.64 %	--	--
PCB-171/173	1.2 ng/samp	1.2 ng/samp	0.00 %	--	--
PCB-172	0.67 ng/samp	0.69 ng/samp	2.94 %	--	--
PCB-174	4.5 ng/samp	4.9 ng/samp	8.51 %	--	--
PCB-175	0.22 ng/samp	0.25 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-176	1.0 ng/samp	0.96 ng/samp	4.08 %	--	--
PCB-177	2.4 ng/samp	2.6 ng/samp	8.00 %	--	--
PCB-178	1.1 ng/samp	1.1 ng/samp	0.00 %	--	--
PCB-179	3.0 ng/samp	2.8 ng/samp	6.90 %	--	--
PCB-180/193	6.6 ng/samp	7.6 ng/samp	14.08 %	--	--
PCB-183/185	3.1 ng/samp	3.3 ng/samp	6.25 %	--	--
PCB-187	5.0 ng/samp	5.2 ng/samp	3.92 %	--	--
PCB-189	0.062 ng/samp	0.065 ng/samp	--	0.003 ng/samp	0.10 ng/samp
PCB-190	0.53 ng/samp	0.65 ng/samp	20.34 %	--	--
PCB-191	0.13 ng/samp	0.15 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-194	3.5 ng/samp	2.7 ng/samp	25.81 %	--	--
PCB-195	1.9 ng/samp	1.4 ng/samp	30.30 %	--	--
PCB-196	3.9 ng/samp	2.8 ng/samp	32.84 %	--	--
PCB-197	1.8 ng/samp	1.3 ng/samp	32.26 %	--	--
PCB-198/199	6.9 ng/samp	5.5 ng/samp	22.58 %	--	--
PCB-200	1.8 ng/samp	1.3 ng/samp	32.26 %	--	--
PCB-201	1.6 ng/samp	1.1 ng/samp	37.04 %	--	--
PCB-202	1.9 ng/samp	1.4 ng/samp	30.30 %	--	--
PCB-203	3.7 ng/samp	3.0 ng/samp	20.90 %	--	--
PCB-205	0.19 ng/samp	0.16 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-206	2.9 ng/samp	1.9 ng/samp	41.67 %	--	--
PCB-207	0.51 ng/samp	0.29 ng/samp	--	0.22 ng/samp	0.10 ng/samp
PCB-208	1.3 ng/samp	0.77 ng/samp	51.21 %	--	--
PCB-209	0.66 ng/samp	0.45 ng/samp	--	0.21 ng/samp	0.10 ng/samp

Analyte	HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-CTRL	HOUS-R5A-TS-BW1A-SPIKE-JAR-SPME-CTRL-DUP	RPD	Difference	Difference CL
PCB-001	2.7 ng/samp	2.2 ng/samp	--	0.5 ng/samp	0.50 ng/samp
PCB-002	0.15 ng/samp	0.12 ng/samp	--	0.03 ng/samp	0.50 ng/samp
PCB-003	0.71 ng/samp	0.60 ng/samp	--	0.11 ng/samp	0.50 ng/samp
PCB-004	6.4 ng/samp	5.0 ng/samp	--	1.4 ng/samp	1.0 ng/samp
PCB-005	0.30 ng/samp	0.21 ng/samp	--	0.09 ng/samp	0.50 ng/samp
PCB-006	2.6 ng/samp	2.2 ng/samp	--	0.4 ng/samp	0.50 ng/samp
PCB-007	0.64 ng/samp	0.56 ng/samp	--	0.08 ng/samp	0.50 ng/samp
PCB-008	8.6 ng/samp	7.4 ng/samp	15.00 %	--	--
PCB-009	0.88 ng/samp	0.77 ng/samp	--	0.11 ng/samp	0.50 ng/samp
PCB-010	0.40 ng/samp	0.40 ng/samp	--	0.0000 ng/samp	0.50 ng/samp
PCB-012/013	0.38 ng/samp	0.23 ng/samp	--	0.15 ng/samp	1.0 ng/samp
PCB-015	1.5 ng/samp	1.4 ng/samp	--	0.1 ng/samp	0.50 ng/samp
PCB-016	3.6 ng/samp	3.7 ng/samp	2.74 %	--	--
PCB-017	7.2 ng/samp	6.4 ng/samp	11.76 %	--	--
PCB-018/030	12 ng/samp	11 ng/samp	8.70 %	--	--
PCB-019	2.0 ng/samp	1.9 ng/samp	--	0.1 ng/samp	0.50 ng/samp
PCB-020/028	11 ng/samp	9.5 ng/samp	14.63 %	--	--
PCB-021/033	6.2 ng/samp	5.6 ng/samp	10.17 %	--	--
PCB-022	2.6 ng/samp	2.4 ng/samp	--	0.2 ng/samp	0.50 ng/samp
PCB-024	0.27 ng/samp	0.27 ng/samp	--	0.0000 ng/samp	0.50 ng/samp
PCB-025	1.9 ng/samp	1.6 ng/samp	--	0.3 ng/samp	0.50 ng/samp
PCB-026/029	3.4 ng/samp	2.9 ng/samp	--	0.5 ng/samp	1.0 ng/samp
PCB-027	6.0 ng/samp	5.4 ng/samp	10.53 %	--	--
PCB-031	7.9 ng/samp	6.9 ng/samp	13.51 %	--	--
PCB-032	7.2 ng/samp	6.3 ng/samp	13.33 %	--	--
PCB-034	0.13 ng/samp	0.10 ng/samp	--	0.03 ng/samp	0.50 ng/samp
PCB-037	1.1 ng/samp	0.95 ng/samp	--	0.15 ng/samp	0.50 ng/samp
PCB-040/041/071	10 ng/samp	8.6 ng/samp	15.05 %	--	--
PCB-042	3.9 ng/samp	3.7 ng/samp	5.26 %	--	--
PCB-043/073	2.5 ng/samp	1.7 ng/samp	--	0.8 ng/samp	1.0 ng/samp
PCB-044/047/065	60 ng/samp	52 ng/samp	14.29 %	--	--
PCB-045/051	27 ng/samp	24 ng/samp	11.76 %	--	--
PCB-046	2.5 ng/samp	2.3 ng/samp	--	0.2 ng/samp	0.50 ng/samp
PCB-048	1.8 ng/samp	1.4 ng/samp	--	0.4 ng/samp	0.50 ng/samp
PCB-049/069	34 ng/samp	29 ng/samp	15.87 %	--	--
PCB-050/053	23 ng/samp	19 ng/samp	19.05 %	--	--
PCB-052	51 ng/samp	44 ng/samp	14.74 %	--	--
PCB-054	3.3 ng/samp	2.9 ng/samp	12.90 %	--	--
PCB-056	1.4 ng/samp	1.2 ng/samp	--	0.2 ng/samp	0.50 ng/samp

PCB-059/062/075	2.2 ng/samp	1.8 ng/samp	--	0.4 ng/samp	1.5 ng/samp
PCB-060	0.99 ng/samp	0.93 ng/samp	--	0.06 ng/samp	0.50 ng/samp
PCB-061/070/074/076	9.4 ng/samp	8.1 ng/samp	--	1.3 ng/samp	2.0 ng/samp
PCB-063	0.49 ng/samp	0.35 ng/samp	--	0.14 ng/samp	0.50 ng/samp
PCB-064	3.1 ng/samp	2.7 ng/samp	13.79 %	--	--
PCB-066	6.5 ng/samp	5.4 ng/samp	18.49 %	--	--
PCB-068	0.98 ng/samp	0.78 ng/samp	--	0.2 ng/samp	0.50 ng/samp
PCB-072	0.56 ng/samp	0.49 ng/samp	--	0.07 ng/samp	0.50 ng/samp
PCB-079	0.16 ng/samp	0.22 ng/samp	--	0.06 ng/samp	0.50 ng/samp
PCB-082	2.7 ng/samp	2.3 ng/samp	--	0.4 ng/samp	0.50 ng/samp
PCB-083/099	39 ng/samp	33 ng/samp	16.67 %	--	--
PCB-084	21 ng/samp	16 ng/samp	27.03 %	--	--
PCB-085/116/117	6.0 ng/samp	4.8 ng/samp	--	1.2 ng/samp	1.5 ng/samp
PCB-086/087/097/109/119/125	65 ng/samp	55 ng/samp	16.67 %	--	--
PCB-088/091	23 ng/samp	19 ng/samp	19.05 %	--	--
PCB-090/101/113	500 ng/samp	410 ng/samp	19.78 %	--	--
PCB-092	68 ng/samp	55 ng/samp	21.14 %	--	--
PCB-093/100	15 ng/samp	12 ng/samp	22.22 %	--	--
PCB-094	6.3 ng/samp	5.2 ng/samp	19.13 %	--	--
PCB-095	490 ng/samp	400 ng/samp	20.22 %	--	--
PCB-096	2.9 ng/samp	2.6 ng/samp	10.91 %	--	--
PCB-098/102	3.9 ng/samp	3.6 ng/samp	--	0.3 ng/samp	1.0 ng/samp
PCB-103	6.4 ng/samp	5.6 ng/samp	13.33 %	--	--
PCB-104	0.92 ng/samp	0.82 ng/samp	--	0.1 ng/samp	0.50 ng/samp
PCB-105	4.2 ng/samp	3.6 ng/samp	15.38 %	--	--
PCB-107	2.0 ng/samp	1.5 ng/samp	--	0.5 ng/samp	0.50 ng/samp
PCB-108/124	1.7 ng/samp	1.4 ng/samp	--	0.3 ng/samp	1.0 ng/samp
PCB-110/115	150 ng/samp	130 ng/samp	14.29 %	--	--
PCB-118	47 ng/samp	40 ng/samp	16.09 %	--	--
PCB-123	0.49 ng/samp	0.49 ng/samp	--	0.0000 ng/samp	0.50 ng/samp
PCB-128/166	29 ng/samp	26 ng/samp	10.91 %	--	--
PCB-129/138/160/163	810 ng/samp	670 ng/samp	18.92 %	--	--
PCB-130	29 ng/samp	26 ng/samp	10.91 %	--	--
PCB-131	7.7 ng/samp	6.2 ng/samp	21.58 %	--	--
PCB-132	270 ng/samp	230 ng/samp	16.00 %	--	--
PCB-133	10 ng/samp	8.8 ng/samp	12.77 %	--	--
PCB-134/143	51 ng/samp	44 ng/samp	14.74 %	--	--
PCB-135/151	770 ng/samp	690 ng/samp	10.96 %	--	--
PCB-136	310 ng/samp	280 ng/samp	10.17 %	--	--
PCB-137	2.8 ng/samp	3.7 ng/samp	27.69 %	--	--
PCB-141	260 ng/samp	220 ng/samp	16.67 %	--	--
PCB-144	110 ng/samp	99 ng/samp	10.53 %	--	--
PCB-146	110 ng/samp	93 ng/samp	16.75 %	--	--
PCB-147/149	1200 ng/samp	1000 ng/samp	18.18 %	--	--
PCB-148	1.5 ng/samp	1.6 ng/samp	--	0.1 ng/samp	0.50 ng/samp
PCB-150	2.0 ng/samp	1.9 ng/samp	--	0.1 ng/samp	0.50 ng/samp
PCB-152	1.4 ng/samp	1.4 ng/samp	--	0.0000 ng/samp	0.50 ng/samp
PCB-153/168	930 ng/samp	770 ng/samp	18.82 %	--	--
PCB-154	9.1 ng/samp	8.8 ng/samp	3.35 %	--	--
PCB-155	0.16 ng/samp	0.18 ng/samp	--	0.02 ng/samp	0.50 ng/samp
PCB-156/157	33 ng/samp	28 ng/samp	16.39 %	--	--
PCB-158	71 ng/samp	61 ng/samp	15.15 %	--	--
PCB-159	17 ng/samp	15 ng/samp	12.50 %	--	--
PCB-164	53 ng/samp	43 ng/samp	20.83 %	--	--
PCB-167	14 ng/samp	11 ng/samp	24.00 %	--	--
PCB-170	260 ng/samp	240 ng/samp	8.00 %	--	--
PCB-171/173	110 ng/samp	100 ng/samp	9.52 %	--	--
PCB-172	57 ng/samp	51 ng/samp	11.11 %	--	--
PCB-174	480 ng/samp	440 ng/samp	8.70 %	--	--
PCB-175	22 ng/samp	19 ng/samp	14.63 %	--	--
PCB-176	84 ng/samp	80 ng/samp	4.88 %	--	--
PCB-177	230 ng/samp	210 ng/samp	9.09 %	--	--
PCB-178	110 ng/samp	100 ng/samp	9.52 %	--	--
PCB-179	280 ng/samp	260 ng/samp	7.41 %	--	--
PCB-180/193	760 ng/samp	690 ng/samp	9.66 %	--	--
PCB-183/185	330 ng/samp	310 ng/samp	6.25 %	--	--
PCB-187	550 ng/samp	500 ng/samp	9.52 %	--	--
PCB-188	0.43 ng/samp	0.46 ng/samp	--	0.03 ng/samp	0.50 ng/samp
PCB-189	6.4 ng/samp	6.2 ng/samp	3.17 %	--	--
PCB-190	62 ng/samp	56 ng/samp	10.17 %	--	--
PCB-191	16 ng/samp	15 ng/samp	6.45 %	--	--
PCB-194	61 ng/samp	62 ng/samp	1.63 %	--	--
PCB-195	31 ng/samp	32 ng/samp	3.17 %	--	--
PCB-196	61 ng/samp	67 ng/samp	9.38 %	--	--
PCB-197	25 ng/samp	28 ng/samp	11.32 %	--	--
PCB-198/199	120 ng/samp	130 ng/samp	8.00 %	--	--

PCB-200	25 ng/samp	28 ng/samp	11.32 %	--	--
PCB-201	22 ng/samp	24 ng/samp	8.70 %	--	--
PCB-202	29 ng/samp	33 ng/samp	12.90 %	--	--
PCB-203	64 ng/samp	71 ng/samp	10.37 %	--	--
PCB-205	3.7 ng/samp	3.9 ng/samp	5.26 %	--	--
PCB-206	13 ng/samp	14 ng/samp	7.41 %	--	--
PCB-207	1.8 ng/samp	2.1 ng/samp	--	0.3 ng/samp	0.50 ng/samp
PCB-208	4.3 ng/samp	4.9 ng/samp	13.04 %	--	--
PCB-209	0.90 ng/samp	1.1 ng/samp	--	0.2 ng/samp	0.50 ng/samp
Analyte	**HOUS-R5A-TS-BW1B-JAR-SPME-10BC**	**HOUS-R5A-TS-BW1B-JAR-SPME-10BC-DUP**	**RPD**	**Difference**	**Difference CL**
PCB-020/028	0.0080 ng/samp	0.0024 ng/samp	--	0.0056 ng/samp	0.20 ng/samp
PCB-027	0.010 ng/samp	0.0049 ng/samp	--	0.0051 ng/samp	0.10 ng/samp
PCB-040/041/071	0.018 ng/samp	0.022 ng/samp	--	0.004 ng/samp	0.30 ng/samp
PCB-044/047/065	0.19 ng/samp	0.17 ng/samp	--	0.02 ng/samp	0.30 ng/samp
PCB-045/051	0.086 ng/samp	0.078 ng/samp	--	0.008 ng/samp	0.20 ng/samp
PCB-049/069	0.088 ng/samp	0.094 ng/samp	--	0.006 ng/samp	0.20 ng/samp
PCB-050/053	0.060 ng/samp	0.060 ng/samp	--	0.0000 ng/samp	0.20 ng/samp
PCB-052	0.0044 ng/samp	0.050 ng/samp	--	0.0456 ng/samp	0.10 ng/samp
PCB-066	0.020 ng/samp	0.015 ng/samp	--	0.005 ng/samp	0.10 ng/samp
PCB-083/099	0.18 ng/samp	0.16 ng/samp	--	0.02 ng/samp	0.20 ng/samp
PCB-084	0.034 ng/samp	0.028 ng/samp	--	0.006 ng/samp	0.10 ng/samp
PCB-085/116/117	0.066 ng/samp	0.020 ng/samp	--	0.046 ng/samp	0.30 ng/samp
PCB-086/087/097/109/119/125	0.087 ng/samp	0.089 ng/samp	--	0.002 ng/samp	0.60 ng/samp
PCB-088/091	0.21 ng/samp	0.18 ng/samp	--	0.03 ng/samp	0.20 ng/samp
PCB-090/101/113	0.35 ng/samp	0.33 ng/samp	--	0.02 ng/samp	0.30 ng/samp
PCB-092	0.099 ng/samp	0.088 ng/samp	--	0.011 ng/samp	0.10 ng/samp
PCB-093/100	0.13 ng/samp	0.12 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-094	0.041 ng/samp	0.063 ng/samp	--	0.022 ng/samp	0.10 ng/samp
PCB-095	0.18 ng/samp	0.15 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-096	0.048 ng/samp	0.039 ng/samp	--	0.009 ng/samp	0.10 ng/samp
PCB-098/102	0.035 ng/samp	0.042 ng/samp	--	0.007 ng/samp	0.20 ng/samp
PCB-103	0.046 ng/samp	0.050 ng/samp	--	0.004 ng/samp	0.10 ng/samp
PCB-104	0.0068 ng/samp	0.011 ng/samp	--	0.0042 ng/samp	0.10 ng/samp
PCB-110/115	0.13 ng/samp	0.14 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-118	0.070 ng/samp	0.054 ng/samp	--	0.016 ng/samp	0.10 ng/samp
PCB-129/138/160/163	1.1 ng/samp	1.2 ng/samp	--	0.1 ng/samp	0.40 ng/samp
PCB-132	0.35 ng/samp	0.37 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-135/151	1.2 ng/samp	1.3 ng/samp	8.00 %	--	--
PCB-136	0.52 ng/samp	0.46 ng/samp	--	0.06 ng/samp	0.10 ng/samp
PCB-141	0.24 ng/samp	0.22 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-144	0.10 ng/samp	0.11 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-146	0.27 ng/samp	0.29 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-147/149	1.8 ng/samp	1.9 ng/samp	5.41 %	--	--
PCB-150	0.050 ng/samp	0.056 ng/samp	--	0.006 ng/samp	0.10 ng/samp
PCB-152	0.053 ng/samp	0.050 ng/samp	--	0.003 ng/samp	0.10 ng/samp
PCB-153/168	1.2 ng/samp	1.2 ng/samp	0.00 %	--	--
PCB-154	0.13 ng/samp	0.13 ng/samp	--	0.0000 ng/samp	0.10 ng/samp
PCB-159	0.11 ng/samp	0.15 ng/samp	--	0.04 ng/samp	0.10 ng/samp
PCB-164	0.061 ng/samp	0.073 ng/samp	--	0.012 ng/samp	0.10 ng/samp
PCB-170	1.7 ng/samp	1.7 ng/samp	0.00 %	--	--
PCB-171/173	0.93 ng/samp	0.92 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-172	0.56 ng/samp	0.49 ng/samp	--	0.07 ng/samp	0.10 ng/samp
PCB-174	3.8 ng/samp	4.0 ng/samp	5.13 %	--	--
PCB-175	0.16 ng/samp	0.14 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-176	0.89 ng/samp	0.87 ng/samp	2.27 %	--	--
PCB-177	2.0 ng/samp	2.1 ng/samp	4.88 %	--	--
PCB-178	1.3 ng/samp	1.3 ng/samp	0.00 %	--	--
PCB-179	3.2 ng/samp	3.4 ng/samp	6.06 %	--	--
PCB-180/193	4.4 ng/samp	5.0 ng/samp	12.77 %	--	--
PCB-183/185	2.2 ng/samp	2.4 ng/samp	8.70 %	--	--
PCB-187	5.6 ng/samp	5.3 ng/samp	5.50 %	--	--
PCB-188	0.087 ng/samp	0.093 ng/samp	--	0.006 ng/samp	0.10 ng/samp
PCB-189	0.028 ng/samp	0.040 ng/samp	--	0.012 ng/samp	0.10 ng/samp
PCB-190	0.39 ng/samp	0.38 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-191	0.11 ng/samp	0.079 ng/samp	--	0.031 ng/samp	0.10 ng/samp
PCB-194	3.7 ng/samp	3.8 ng/samp	2.67 %	--	--
PCB-195	2.4 ng/samp	2.5 ng/samp	4.08 %	--	--
PCB-196	4.7 ng/samp	4.6 ng/samp	2.15 %	--	--
PCB-197/200	3.1 ng/samp	3.1 ng/samp	0.00 %	--	--
PCB-198/199	9.5 ng/samp	9.5 ng/samp	0.00 %	--	--
PCB-201	2.5 ng/samp	2.5 ng/samp	0.00 %	--	--
PCB-202	3.8 ng/samp	3.8 ng/samp	0.00 %	--	--
PCB-203	5.9 ng/samp	4.8 ng/samp	20.56 %	--	--
PCB-205	0.21 ng/samp	0.23 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-206	3.6 ng/samp	3.8 ng/samp	5.41 %	--	--

PCB-207	0.76 ng/samp	0.87 ng/samp	13.50 %	--	--
PCB-208	1.4 ng/samp	1.5 ng/samp	6.90 %	--	--
PCB-209	0.33 ng/samp	0.42 ng/samp	--	0.09 ng/samp	0.10 ng/samp
Analyte	**HOUS-R5A-TS-BW1B-JAR-SPME-1PAC**	**HOUS-R5A-TS-BW1B-JAR-SPME-1PAC-DUP**	**RPD**	**Difference**	**Difference CL**
PCB-017	0.016 ng/samp	2.8 ng/samp	--	2.784 ng/samp	0.10 ng/samp
PCB-018/030	0.015 ng/samp	3.8 ng/samp	--	3.785 ng/samp	0.20 ng/samp
PCB-019	0.013 ng/samp	1.3 ng/samp	--	1.287 ng/samp	0.10 ng/samp
PCB-020/028	0.040 ng/samp	4.6 ng/samp	--	4.56 ng/samp	0.20 ng/samp
PCB-021/033	0.012 ng/samp	1.4 ng/samp	--	1.388 ng/samp	0.20 ng/samp
PCB-022	0.0049 ng/samp	0.27 ng/samp	--	0.2651 ng/samp	0.10 ng/samp
PCB-025	0.012 ng/samp	1.7 ng/samp	--	1.688 ng/samp	0.10 ng/samp
PCB-026/029	0.016 ng/samp	2.2 ng/samp	--	2.184 ng/samp	0.20 ng/samp
PCB-027	0.026 ng/samp	7.8 ng/samp	--	7.774 ng/samp	0.10 ng/samp
PCB-031	0.010 ng/samp	1.6 ng/samp	--	1.59 ng/samp	0.20 ng/samp
PCB-032	0.052 ng/samp	6.2 ng/samp	--	6.148 ng/samp	0.10 ng/samp
PCB-040/041/071	0.12 ng/samp	9.4 ng/samp	--	9.28 ng/samp	0.30 ng/samp
PCB-042	0.049 ng/samp	3.7 ng/samp	--	3.651 ng/samp	0.11 ng/samp
PCB-043/073	0.026 ng/samp	2.6 ng/samp	--	2.574 ng/samp	0.20 ng/samp
PCB-044/047/065	0.92 ng/samp	76 ng/samp	--	75.08 ng/samp	0.30 ng/samp
PCB-045/051	0.55 ng/samp	37 ng/samp	--	36.45 ng/samp	0.20 ng/samp
PCB-046	0.029 ng/samp	2.7 ng/samp	--	2.671 ng/samp	0.12 ng/samp
PCB-049/069	0.53 ng/samp	42 ng/samp	--	41.47 ng/samp	0.20 ng/samp
PCB-050/053	0.34 ng/samp	30 ng/samp	--	29.66 ng/samp	0.20 ng/samp
PCB-052	0.31 ng/samp	24 ng/samp	--	23.69 ng/samp	0.10 ng/samp
PCB-054	0.064 ng/samp	4.7 ng/samp	--	4.636 ng/samp	0.10 ng/samp
PCB-059/062/075	0.032 ng/samp	2.2 ng/samp	--	2.168 ng/samp	0.30 ng/samp
PCB-061/070/074/076	0.067 ng/samp	4.7 ng/samp	--	4.633 ng/samp	0.40 ng/samp
PCB-064	0.018 ng/samp	1.3 ng/samp	--	1.282 ng/samp	0.10 ng/samp
PCB-066	0.075 ng/samp	5.4 ng/samp	--	5.325 ng/samp	0.10 ng/samp
PCB-068	0.019 ng/samp	1.3 ng/samp	--	1.281 ng/samp	0.10 ng/samp
PCB-072	0.010 ng/samp	0.77 ng/samp	--	0.76 ng/samp	0.10 ng/samp
PCB-083/099	0.96 ng/samp	35 ng/samp	--	34.04 ng/samp	0.20 ng/samp
PCB-084	0.16 ng/samp	4.7 ng/samp	--	4.54 ng/samp	0.10 ng/samp
PCB-085/116/117	0.21 ng/samp	6.4 ng/samp	--	6.19 ng/samp	0.30 ng/samp
PCB-086/087/097/109/119/125	0.45 ng/samp	18 ng/samp	--	17.55 ng/samp	0.60 ng/samp
PCB-088/091	0.89 ng/samp	31 ng/samp	--	30.11 ng/samp	0.20 ng/samp
PCB-090/101/113	1.7 ng/samp	61 ng/samp	189.15 %	--	--
PCB-092	0.53 ng/samp	22 ng/samp	190.59 %	--	--
PCB-093/100	0.55 ng/samp	17 ng/samp	--	16.45 ng/samp	0.20 ng/samp
PCB-094	0.24 ng/samp	8.0 ng/samp	--	7.76 ng/samp	0.10 ng/samp
PCB-095	1.0 ng/samp	40 ng/samp	190.24 %	--	--
PCB-096	0.13 ng/samp	4.0 ng/samp	--	3.87 ng/samp	0.10 ng/samp
PCB-098/102	0.11 ng/samp	4.0 ng/samp	--	3.89 ng/samp	0.20 ng/samp
PCB-103	0.20 ng/samp	8.8 ng/samp	--	8.6 ng/samp	0.10 ng/samp
PCB-104	0.042 ng/samp	1.3 ng/samp	--	1.258 ng/samp	0.10 ng/samp
PCB-105	0.070 ng/samp	2.7 ng/samp	--	2.63 ng/samp	0.10 ng/samp
PCB-107	0.034 ng/samp	1.5 ng/samp	--	1.466 ng/samp	0.10 ng/samp
PCB-110/115	0.81 ng/samp	29 ng/samp	--	28.19 ng/samp	0.20 ng/samp
PCB-118	0.43 ng/samp	14 ng/samp	--	13.57 ng/samp	0.10 ng/samp
PCB-120	0.030 ng/samp	0.63 ng/samp	--	0.6 ng/samp	0.10 ng/samp
PCB-121	0.0081 ng/samp	0.42 ng/samp	--	0.4119 ng/samp	0.10 ng/samp
PCB-128/166	0.29 ng/samp	5.2 ng/samp	--	4.91 ng/samp	0.20 ng/samp
PCB-129/138/160/163	6.4 ng/samp	93 ng/samp	174.25 %	--	--
PCB-130	0.43 ng/samp	5.6 ng/samp	--	5.17 ng/samp	0.16 ng/samp
PCB-132	2.2 ng/samp	26 ng/samp	168.79 %	--	--
PCB-133	0.34 ng/samp	3.2 ng/samp	--	2.86 ng/samp	0.12 ng/samp
PCB-134/143	0.52 ng/samp	5.5 ng/samp	--	4.98 ng/samp	0.20 ng/samp
PCB-135/151	6.6 ng/samp	83 ng/samp	170.54 %	--	--
PCB-136	2.4 ng/samp	27 ng/samp	167.35 %	--	--
PCB-137	0.14 ng/samp	1.6 ng/samp	--	1.46 ng/samp	0.13 ng/samp
PCB-139/140	0.16 ng/samp	1.7 ng/samp	--	1.54 ng/samp	0.20 ng/samp
PCB-141	1.5 ng/samp	18 ng/samp	169.23 %	--	--
PCB-144	0.55 ng/samp	6.4 ng/samp	168.35 %	--	--
PCB-146	1.7 ng/samp	19 ng/samp	167.15 %	--	--
PCB-147/149	10 ng/samp	120 ng/samp	169.23 %	--	--
PCB-148	0.16 ng/samp	1.9 ng/samp	--	1.74 ng/samp	0.10 ng/samp
PCB-150	0.30 ng/samp	2.6 ng/samp	--	2.3 ng/samp	0.10 ng/samp
PCB-152	0.22 ng/samp	2.1 ng/samp	--	1.88 ng/samp	0.10 ng/samp
PCB-153/168	7.4 ng/samp	100 ng/samp	172.44 %	--	--
PCB-154	0.74 ng/samp	7.9 ng/samp	165.74 %	--	--
PCB-155	0.027 ng/samp	0.27 ng/samp	--	0.243 ng/samp	0.10 ng/samp
PCB-156/157	0.21 ng/samp	3.6 ng/samp	--	3.39 ng/samp	0.20 ng/samp
PCB-158	0.65 ng/samp	7.4 ng/samp	167.70 %	--	--
PCB-159	0.67 ng/samp	2.6 ng/samp	118.04 %	--	--
PCB-164	0.46 ng/samp	5.9 ng/samp	--	5.44 ng/samp	0.10 ng/samp

PCB-167	0.11 ng/samp	2.0 ng/samp	--	1.89 ng/samp	0.10 ng/samp
PCB-170	9.3 ng/samp	36 ng/samp	117.88 %	--	--
PCB-171/173	4.5 ng/samp	16 ng/samp	112.20 %	--	--
PCB-172	2.9 ng/samp	9.2 ng/samp	104.13 %	--	--
PCB-174	19 ng/samp	65 ng/samp	109.52 %	--	--
PCB-175	0.75 ng/samp	2.5 ng/samp	107.69 %	--	--
PCB-176	3.9 ng/samp	11 ng/samp	95.30 %	--	--
PCB-177	10 ng/samp	35 ng/samp	111.11 %	--	--
PCB-178	6.2 ng/samp	24 ng/samp	117.88 %	--	--
PCB-179	15 ng/samp	44 ng/samp	98.31 %	--	--
PCB-180/193	25 ng/samp	96 ng/samp	117.36 %	--	--
PCB-182	0.21 ng/samp	0.57 ng/samp	--	0.36 ng/samp	0.10 ng/samp
PCB-183/185	12 ng/samp	44 ng/samp	114.29 %	--	--
PCB-187	27 ng/samp	92 ng/samp	109.24 %	--	--
PCB-188	0.32 ng/samp	0.66 ng/samp	--	0.34 ng/samp	0.10 ng/samp
PCB-189	0.20 ng/samp	0.98 ng/samp	--	0.78 ng/samp	0.10 ng/samp
PCB-190	1.9 ng/samp	8.4 ng/samp	126.21 %	--	--
PCB-191	0.41 ng/samp	1.8 ng/samp	--	1.39 ng/samp	0.10 ng/samp
PCB-194	13 ng/samp	17 ng/samp	26.67 %	--	--
PCB-195	9.2 ng/samp	13 ng/samp	34.23 %	--	--
PCB-196	15 ng/samp	17 ng/samp	12.50 %	--	--
PCB-197/200	9.0 ng/samp	9.4 ng/samp	4.35 %	--	--
PCB-198/199	30 ng/samp	35 ng/samp	15.38 %	--	--
PCB-201	7.6 ng/samp	7.5 ng/samp	1.32 %	--	--
PCB-202	11 ng/samp	12 ng/samp	8.70 %	--	--
PCB-203	18 ng/samp	21 ng/samp	15.38 %	--	--
PCB-205	0.77 ng/samp	1.1 ng/samp	35.29 %	--	--
PCB-206	8.0 ng/samp	6.1 ng/samp	26.95 %	--	--
PCB-207	1.8 ng/samp	1.3 ng/samp	32.26 %	--	--
PCB-208	3.1 ng/samp	2.2 ng/samp	33.96 %	--	--
PCB-209	0.98 ng/samp	0.52 ng/samp	61.33 %	--	--

Analyte	HOUS-R5A-TS-BW1B-JAR-SPME-2GAC	HOUS-R5A-TS-BW1B-JAR-SPME-2GAC-DUP	RPD	Difference	Difference CL
PCB-017	0.013 ng/samp	0.019 ng/samp	--	0.006 ng/samp	0.10 ng/samp
PCB-019	0.0028 ng/samp	0.0076 ng/samp	--	0.0048 ng/samp	0.10 ng/samp
PCB-020/028	0.041 ng/samp	0.030 ng/samp	--	0.011 ng/samp	0.20 ng/samp
PCB-021/033	0.015 ng/samp	0.018 ng/samp	--	0.003 ng/samp	0.20 ng/samp
PCB-025	0.018 ng/samp	0.015 ng/samp	--	0.003 ng/samp	0.10 ng/samp
PCB-026/029	0.020 ng/samp	0.014 ng/samp	--	0.006 ng/samp	0.20 ng/samp
PCB-027	0.031 ng/samp	0.015 ng/samp	--	0.016 ng/samp	0.10 ng/samp
PCB-031	0.017 ng/samp	0.010 ng/samp	--	0.007 ng/samp	0.20 ng/samp
PCB-032	0.049 ng/samp	0.038 ng/samp	--	0.011 ng/samp	0.10 ng/samp
PCB-040/041/071	0.11 ng/samp	0.12 ng/samp	--	0.01 ng/samp	0.30 ng/samp
PCB-042	0.046 ng/samp	0.031 ng/samp	--	0.015 ng/samp	0.10 ng/samp
PCB-043/073	0.031 ng/samp	0.063 ng/samp	--	0.032 ng/samp	0.20 ng/samp
PCB-044/047/065	0.78 ng/samp	0.92 ng/samp	--	0.14 ng/samp	0.30 ng/samp
PCB-045/051	0.49 ng/samp	0.62 ng/samp	--	0.13 ng/samp	0.20 ng/samp
PCB-049/069	0.45 ng/samp	0.53 ng/samp	--	0.08 ng/samp	0.20 ng/samp
PCB-050/053	0.31 ng/samp	0.40 ng/samp	--	0.09 ng/samp	0.20 ng/samp
PCB-052	0.26 ng/samp	0.38 ng/samp	--	0.12 ng/samp	0.10 ng/samp
PCB-054	0.077 ng/samp	0.093 ng/samp	--	0.016 ng/samp	0.10 ng/samp
PCB-059/062/075	0.026 ng/samp	0.037 ng/samp	--	0.011 ng/samp	0.30 ng/samp
PCB-061/070/074/076	0.073 ng/samp	0.11 ng/samp	--	0.037 ng/samp	0.40 ng/samp
PCB-066	0.060 ng/samp	0.078 ng/samp	--	0.018 ng/samp	0.10 ng/samp
PCB-082	0.063 ng/samp	0.10 ng/samp	--	0.037 ng/samp	0.10 ng/samp
PCB-083/099	1.2 ng/samp	2.1 ng/samp	54.55 %	--	--
PCB-084	0.20 ng/samp	0.32 ng/samp	--	0.12 ng/samp	0.10 ng/samp
PCB-085/116/117	0.22 ng/samp	0.46 ng/samp	--	0.24 ng/samp	0.30 ng/samp
PCB-086/087/097/109/119/125	0.60 ng/samp	0.97 ng/samp	--	0.37 ng/samp	0.60 ng/samp
PCB-088/091	1.1 ng/samp	2.2 ng/samp	66.67 %	--	--
PCB-090/101/113	2.2 ng/samp	3.6 ng/samp	48.28 %	--	--
PCB-092	0.87 ng/samp	1.6 ng/samp	59.11 %	--	--
PCB-093/100	0.82 ng/samp	1.8 ng/samp	--	0.98 ng/samp	0.20 ng/samp
PCB-094	0.51 ng/samp	1.0 ng/samp	64.90 %	--	--
PCB-095	1.4 ng/samp	2.3 ng/samp	48.65 %	--	--
PCB-096	0.22 ng/samp	0.42 ng/samp	--	0.2 ng/samp	0.10 ng/samp
PCB-098/102	0.18 ng/samp	0.51 ng/samp	--	0.33 ng/samp	0.20 ng/samp
PCB-103	0.31 ng/samp	0.75 ng/samp	--	0.44 ng/samp	0.10 ng/samp
PCB-104	0.10 ng/samp	0.26 ng/samp	--	0.16 ng/samp	0.10 ng/samp
PCB-105	0.059 ng/samp	0.072 ng/samp	--	0.013 ng/samp	0.10 ng/samp
PCB-110/115	0.93 ng/samp	1.4 ng/samp	--	0.47 ng/samp	0.20 ng/samp
PCB-118	0.26 ng/samp	0.36 ng/samp	--	0.1 ng/samp	0.10 ng/samp
PCB-120	0.064 ng/samp	0.11 ng/samp	--	0.046 ng/samp	0.10 ng/samp
PCB-128/166	0.76 ng/samp	1.5 ng/samp	--	0.74 ng/samp	0.20 ng/samp
PCB-129/138/160/163	12 ng/samp	23 ng/samp	62.86 %	--	--
PCB-130	0.90 ng/samp	1.6 ng/samp	56.00 %	--	--

PCB-132	5.4 ng/samp	9.2 ng/samp	52.05 %	--	--
PCB-133	0.88 ng/samp	1.6 ng/samp	58.06 %	--	--
PCB-134/143	1.3 ng/samp	2.2 ng/samp	51.43 %	--	--
PCB-135/151	18 ng/samp	32 ng/samp	56.00 %	--	--
PCB-136	8.0 ng/samp	14 ng/samp	54.55 %	--	--
PCB-137	0.24 ng/samp	0.52 ng/samp	--	0.28 ng/samp	0.12 ng/samp
PCB-139/140	0.36 ng/samp	0.57 ng/samp	--	0.21 ng/samp	0.20 ng/samp
PCB-141	3.3 ng/samp	5.5 ng/samp	50.00 %	--	--
PCB-144	1.3 ng/samp	2.2 ng/samp	51.43 %	--	--
PCB-146	3.7 ng/samp	5.8 ng/samp	44.21 %	--	--
PCB-147/149	27 ng/samp	46 ng/samp	52.05 %	--	--
PCB-148	0.67 ng/samp	0.99 ng/samp	38.55 %	--	--
PCB-150	1.3 ng/samp	2.0 ng/samp	42.42 %	--	--
PCB-152	0.97 ng/samp	1.7 ng/samp	54.68 %	--	--
PCB-153/168	14 ng/samp	25 ng/samp	56.41 %	--	--
PCB-154	2.2 ng/samp	3.6 ng/samp	48.28 %	--	--
PCB-155	0.20 ng/samp	0.22 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-156/157	0.30 ng/samp	0.48 ng/samp	--	0.18 ng/samp	0.20 ng/samp
PCB-158	1.4 ng/samp	2.2 ng/samp	44.44 %	--	--
PCB-159	1.8 ng/samp	2.3 ng/samp	24.39 %	--	--
PCB-164	1.0 ng/samp	1.8 ng/samp	57.14 %	--	--
PCB-165	0.11 ng/samp	0.25 ng/samp	--	0.14 ng/samp	0.10 ng/samp
PCB-167	0.13 ng/samp	0.32 ng/samp	--	0.19 ng/samp	0.10 ng/samp
PCB-170	22 ng/samp	30 ng/samp	30.77 %	--	--
PCB-171/173	12 ng/samp	15 ng/samp	22.22 %	--	--
PCB-172	6.8 ng/samp	8.7 ng/samp	24.52 %	--	--
PCB-174	49 ng/samp	59 ng/samp	18.52 %	--	--
PCB-175	2.1 ng/samp	2.5 ng/samp	17.39 %	--	--
PCB-176	11 ng/samp	12 ng/samp	8.70 %	--	--
PCB-177	27 ng/samp	32 ng/samp	16.95 %	--	--
PCB-178	17 ng/samp	21 ng/samp	21.05 %	--	--
PCB-179	42 ng/samp	46 ng/samp	9.09 %	--	--
PCB-180/193	57 ng/samp	74 ng/samp	25.95 %	--	--
PCB-182	0.61 ng/samp	0.64 ng/samp	4.80 %	--	--
PCB-183/185	31 ng/samp	38 ng/samp	20.29 %	--	--
PCB-187	73 ng/samp	94 ng/samp	25.15 %	--	--
PCB-188	0.92 ng/samp	1.1 ng/samp	17.82 %	--	--
PCB-189	0.38 ng/samp	0.57 ng/samp	--	0.19 ng/samp	0.10 ng/samp
PCB-190	4.3 ng/samp	6.1 ng/samp	34.62 %	--	--
PCB-191	1.0 ng/samp	1.4 ng/samp	33.33 %	--	--
PCB-194	20 ng/samp	22 ng/samp	9.52 %	--	--
PCB-195	13 ng/samp	14 ng/samp	7.41 %	--	--
PCB-196	22 ng/samp	25 ng/samp	12.77 %	--	--
PCB-197/200	14 ng/samp	14 ng/samp	0.00 %	--	--
PCB-198/199	46 ng/samp	51 ng/samp	10.31 %	--	--
PCB-201	11 ng/samp	12 ng/samp	8.70 %	--	--
PCB-202	17 ng/samp	17 ng/samp	0.00 %	--	--
PCB-203	29 ng/samp	32 ng/samp	9.84 %	--	--
PCB-205	1.2 ng/samp	1.3 ng/samp	8.00 %	--	--
PCB-206	9.4 ng/samp	8.9 ng/samp	5.46 %	--	--
PCB-207	2.1 ng/samp	1.9 ng/samp	10.00 %	--	--
PCB-208	3.6 ng/samp	3.2 ng/samp	11.76 %	--	--
PCB-209	0.99 ng/samp	0.76 ng/samp	26.29 %	--	--

Analyte	HOUS-R5A-TS-BW1B-JAR-SPME-2PAC	HOUS-R5A-TS-BW1B-JAR-SPME-2PAC-DUP	RPD	Difference	Difference CL
PCB-011	0.0041 ng/samp	0.0042 ng/samp	--	0.0001 ng/samp	0.20 ng/samp
PCB-018/030	0.0074 ng/samp	0.0026 ng/samp	--	0.0048 ng/samp	0.20 ng/samp
PCB-020/028	0.017 ng/samp	0.021 ng/samp	--	0.004 ng/samp	0.20 ng/samp
PCB-032	0.0028 ng/samp	0.024 ng/samp	--	0.0212 ng/samp	0.10 ng/samp
PCB-040/041/071	0.021 ng/samp	0.026 ng/samp	--	0.005 ng/samp	0.30 ng/samp
PCB-044/047/065	0.21 ng/samp	0.21 ng/samp	--	0.0000 ng/samp	0.30 ng/samp
PCB-045/051	0.14 ng/samp	0.13 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-049/069	0.094 ng/samp	0.11 ng/samp	--	0.016 ng/samp	0.20 ng/samp
PCB-050/053	0.068 ng/samp	0.079 ng/samp	--	0.011 ng/samp	0.20 ng/samp
PCB-052	0.046 ng/samp	0.054 ng/samp	--	0.008 ng/samp	0.10 ng/samp
PCB-061/070/074/076	0.013 ng/samp	0.026 ng/samp	--	0.013 ng/samp	0.40 ng/samp
PCB-066	0.032 ng/samp	0.018 ng/samp	--	0.014 ng/samp	0.10 ng/samp
PCB-083/099	0.24 ng/samp	0.16 ng/samp	--	0.08 ng/samp	0.20 ng/samp
PCB-086/087/097/109/119/125	0.13 ng/samp	0.068 ng/samp	--	0.062 ng/samp	0.60 ng/samp
PCB-088/091	0.18 ng/samp	0.14 ng/samp	--	0.04 ng/samp	0.20 ng/samp
PCB-090/101/113	0.37 ng/samp	0.29 ng/samp	--	0.08 ng/samp	0.30 ng/samp
PCB-092	0.13 ng/samp	0.12 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-093/100	0.073 ng/samp	0.066 ng/samp	--	0.007 ng/samp	0.20 ng/samp
PCB-094	0.032 ng/samp	0.054 ng/samp	--	0.022 ng/samp	0.10 ng/samp
PCB-095	0.19 ng/samp	0.15 ng/samp	--	0.04 ng/samp	0.10 ng/samp
PCB-103	0.053 ng/samp	0.044 ng/samp	--	0.009 ng/samp	0.10 ng/samp

PCB-104	0.012 ng/samp	0.011 ng/samp	--	0.001 ng/samp	0.10 ng/samp
PCB-110/115	0.17 ng/samp	0.15 ng/samp	--	0.02 ng/samp	0.20 ng/samp
PCB-118	0.097 ng/samp	0.059 ng/samp	--	0.038 ng/samp	0.10 ng/samp
PCB-128/166	0.084 ng/samp	0.075 ng/samp	--	0.009 ng/samp	0.20 ng/samp
PCB-129/138/160/163	1.3 ng/samp	1.0 ng/samp	--	0.3 ng/samp	0.40 ng/samp
PCB-130	0.089 ng/samp	0.061 ng/samp	--	0.028 ng/samp	0.10 ng/samp
PCB-132	0.39 ng/samp	0.31 ng/samp	--	0.08 ng/samp	0.10 ng/samp
PCB-135/151	1.3 ng/samp	0.93 ng/samp	--	0.37 ng/samp	0.20 ng/samp
PCB-136	0.37 ng/samp	0.38 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-137	0.026 ng/samp	0.013 ng/samp	--	0.013 ng/samp	0.10 ng/samp
PCB-141	0.25 ng/samp	0.21 ng/samp	--	0.04 ng/samp	0.10 ng/samp
PCB-144	0.095 ng/samp	0.066 ng/samp	--	0.029 ng/samp	0.10 ng/samp
PCB-146	0.33 ng/samp	0.24 ng/samp	--	0.09 ng/samp	0.10 ng/samp
PCB-147/149	1.7 ng/samp	1.4 ng/samp	19.35 %	--	--
PCB-148	0.025 ng/samp	0.013 ng/samp	--	0.012 ng/samp	0.10 ng/samp
PCB-150	0.045 ng/samp	0.032 ng/samp	--	0.013 ng/samp	0.10 ng/samp
PCB-152	0.019 ng/samp	0.011 ng/samp	--	0.008 ng/samp	0.10 ng/samp
PCB-153/168	1.5 ng/samp	1.1 ng/samp	30.77 %	--	--
PCB-154	0.15 ng/samp	0.13 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-156/157	0.060 ng/samp	0.040 ng/samp	--	0.02 ng/samp	0.20 ng/samp
PCB-158	0.14 ng/samp	0.098 ng/samp	--	0.042 ng/samp	0.10 ng/samp
PCB-159	0.14 ng/samp	0.12 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-164	0.091 ng/samp	0.064 ng/samp	--	0.027 ng/samp	0.10 ng/samp
PCB-170	2.2 ng/samp	1.9 ng/samp	14.63 %	--	--
PCB-171/173	0.92 ng/samp	0.81 ng/samp	--	0.11 ng/samp	0.20 ng/samp
PCB-172	0.62 ng/samp	0.49 ng/samp	--	0.13 ng/samp	0.10 ng/samp
PCB-174	3.8 ng/samp	3.1 ng/samp	20.29 %	--	--
PCB-175	0.13 ng/samp	0.11 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-176	0.74 ng/samp	0.62 ng/samp	17.65 %	--	--
PCB-177	2.2 ng/samp	1.9 ng/samp	14.63 %	--	--
PCB-178	1.2 ng/samp	0.98 ng/samp	20.18 %	--	--
PCB-179	2.6 ng/samp	2.2 ng/samp	16.67 %	--	--
PCB-180/193	5.8 ng/samp	4.9 ng/samp	16.82 %	--	--
PCB-183/185	2.4 ng/samp	2.1 ng/samp	13.33 %	--	--
PCB-187	5.7 ng/samp	4.1 ng/samp	32.65 %	--	--
PCB-189	0.060 ng/samp	0.059 ng/samp	--	0.001 ng/samp	0.10 ng/samp
PCB-190	0.47 ng/samp	0.41 ng/samp	--	0.06 ng/samp	0.10 ng/samp
PCB-191	0.12 ng/samp	0.079 ng/samp	--	0.041 ng/samp	0.10 ng/samp
PCB-194	3.9 ng/samp	3.6 ng/samp	8.00 %	--	--
PCB-195	2.2 ng/samp	2.1 ng/samp	4.65 %	--	--
PCB-196	4.2 ng/samp	4.0 ng/samp	4.88 %	--	--
PCB-197/200	2.5 ng/samp	2.0 ng/samp	22.22 %	--	--
PCB-198/199	8.9 ng/samp	7.9 ng/samp	11.90 %	--	--
PCB-201	1.9 ng/samp	1.7 ng/samp	11.11 %	--	--
PCB-202	2.6 ng/samp	2.5 ng/samp	3.92 %	--	--
PCB-203	5.6 ng/samp	4.2 ng/samp	28.57 %	--	--
PCB-205	0.22 ng/samp	0.17 ng/samp	--	0.05 ng/samp	0.10 ng/samp
PCB-206	3.1 ng/samp	2.8 ng/samp	10.17 %	--	--
PCB-207	0.69 ng/samp	0.56 ng/samp	20.80 %	--	--
PCB-208	1.0 ng/samp	0.95 ng/samp	5.13 %	--	--
PCB-209	0.37 ng/samp	0.28 ng/samp	--	0.09 ng/samp	0.10 ng/samp

Analyte	HOUS-R5A-TS-BW1B-JAR-SPME-5BC	HOUS-R5A-TS-BW1B-JAR-SPME-5BC-DUP	RPD	Difference	Difference CL
PCB-004	0.0062 ng/samp	0.0048 ng/samp	--	0.0014 ng/samp	0.20 ng/samp
PCB-018/030	0.011 ng/samp	0.012 ng/samp	--	0.001 ng/samp	0.20 ng/samp
PCB-020/028	0.014 ng/samp	0.012 ng/samp	--	0.002 ng/samp	0.20 ng/samp
PCB-021/033	0.017 ng/samp	0.025 ng/samp	--	0.008 ng/samp	0.20 ng/samp
PCB-025	0.0087 ng/samp	0.011 ng/samp	--	0.0023 ng/samp	0.10 ng/samp
PCB-027	0.011 ng/samp	0.025 ng/samp	--	0.014 ng/samp	0.10 ng/samp
PCB-031	0.0033 ng/samp	0.0078 ng/samp	--	0.0045 ng/samp	0.20 ng/samp
PCB-032	0.018 ng/samp	0.023 ng/samp	--	0.005 ng/samp	0.10 ng/samp
PCB-040/041/071	0.084 ng/samp	0.13 ng/samp	--	0.046 ng/samp	0.30 ng/samp
PCB-042	0.025 ng/samp	0.036 ng/samp	--	0.011 ng/samp	0.10 ng/samp
PCB-043/073	0.045 ng/samp	0.047 ng/samp	--	0.002 ng/samp	0.20 ng/samp
PCB-044/047/065	0.71 ng/samp	0.83 ng/samp	--	0.12 ng/samp	0.30 ng/samp
PCB-045/051	0.57 ng/samp	0.68 ng/samp	--	0.11 ng/samp	0.20 ng/samp
PCB-049/069	0.37 ng/samp	0.47 ng/samp	--	0.1 ng/samp	0.20 ng/samp
PCB-050/053	0.37 ng/samp	0.41 ng/samp	--	0.04 ng/samp	0.20 ng/samp
PCB-052	0.23 ng/samp	0.26 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-054	0.13 ng/samp	0.10 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-059/062/075	0.025 ng/samp	0.033 ng/samp	--	0.008 ng/samp	0.30 ng/samp
PCB-061/070/074/076	0.061 ng/samp	0.065 ng/samp	--	0.004 ng/samp	0.40 ng/samp
PCB-066	0.024 ng/samp	0.037 ng/samp	--	0.013 ng/samp	0.10 ng/samp
PCB-083/099	1.1 ng/samp	1.3 ng/samp	16.67 %	--	--
PCB-084	0.17 ng/samp	0.22 ng/samp	--	0.05 ng/samp	0.10 ng/samp
PCB-085/116/117	0.21 ng/samp	0.26 ng/samp	--	0.05 ng/samp	0.30 ng/samp

PCB-086/087/097/109/119/125	0.51 ng/samp	0.61 ng/samp	--	0.1 ng/samp	0.60 ng/samp
PCB-088/091	1.3 ng/samp	1.4 ng/samp	7.41 %	--	--
PCB-090/101/113	1.8 ng/samp	2.2 ng/samp	20.00 %	--	--
PCB-092	0.72 ng/samp	0.89 ng/samp	21.12 %	--	--
PCB-093/100	0.85 ng/samp	0.99 ng/samp	--	0.14 ng/samp	0.20 ng/samp
PCB-094	0.52 ng/samp	0.57 ng/samp	9.17 %	--	--
PCB-095	1.1 ng/samp	1.4 ng/samp	24.00 %	--	--
PCB-096	0.25 ng/samp	0.24 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-098/102	0.16 ng/samp	0.19 ng/samp	--	0.03 ng/samp	0.20 ng/samp
PCB-103	0.44 ng/samp	0.42 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-104	0.11 ng/samp	0.14 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-107	0.041 ng/samp	0.050 ng/samp	--	0.009 ng/samp	0.10 ng/samp
PCB-110/115	0.65 ng/samp	0.88 ng/samp	--	0.23 ng/samp	0.20 ng/samp
PCB-118	0.15 ng/samp	0.23 ng/samp	--	0.08 ng/samp	0.10 ng/samp
PCB-120	0.028 ng/samp	0.036 ng/samp	--	0.008 ng/samp	0.10 ng/samp
PCB-121	0.015 ng/samp	0.019 ng/samp	--	0.004 ng/samp	0.10 ng/samp
PCB-128/166	0.42 ng/samp	0.51 ng/samp	--	0.09 ng/samp	0.20 ng/samp
PCB-129/138/160/163	7.3 ng/samp	7.9 ng/samp	7.89 %	--	--
PCB-130	0.50 ng/samp	0.54 ng/samp	--	0.04 ng/samp	0.10 ng/samp
PCB-132	2.8 ng/samp	2.9 ng/samp	3.51 %	--	--
PCB-133	0.49 ng/samp	0.44 ng/samp	--	0.05 ng/samp	0.10 ng/samp
PCB-134/143	0.59 ng/samp	0.69 ng/samp	--	0.1 ng/samp	0.20 ng/samp
PCB-135/151	9.6 ng/samp	11 ng/samp	13.59 %	--	--
PCB-136	4.2 ng/samp	4.4 ng/samp	4.65 %	--	--
PCB-137	0.19 ng/samp	0.19 ng/samp	--	0.0000 ng/samp	0.10 ng/samp
PCB-139/140	0.22 ng/samp	0.19 ng/samp	--	0.03 ng/samp	0.20 ng/samp
PCB-141	1.6 ng/samp	1.9 ng/samp	17.14 %	--	--
PCB-144	0.66 ng/samp	0.81 ng/samp	20.41 %	--	--
PCB-146	1.9 ng/samp	2.1 ng/samp	10.00 %	--	--
PCB-147/149	14 ng/samp	15 ng/samp	6.90 %	--	--
PCB-148	0.32 ng/samp	0.29 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-150	0.58 ng/samp	0.60 ng/samp	3.39 %	--	--
PCB-152	0.48 ng/samp	0.50 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-153/168	8.5 ng/samp	9.2 ng/samp	7.91 %	--	--
PCB-154	1.1 ng/samp	1.2 ng/samp	8.70 %	--	--
PCB-155	0.062 ng/samp	0.076 ng/samp	--	0.014 ng/samp	0.10 ng/samp
PCB-156/157	0.18 ng/samp	0.17 ng/samp	--	0.01 ng/samp	0.20 ng/samp
PCB-158	0.80 ng/samp	0.83 ng/samp	3.68 %	--	--
PCB-159	0.98 ng/samp	1.0 ng/samp	2.02 %	--	--
PCB-164	0.49 ng/samp	0.49 ng/samp	--	0.0000 ng/samp	0.10 ng/samp
PCB-167	0.092 ng/samp	0.11 ng/samp	--	0.018 ng/samp	0.10 ng/samp
PCB-170	12 ng/samp	12 ng/samp	0.00 %	--	--
PCB-171/173	6.2 ng/samp	6.5 ng/samp	4.72 %	--	--
PCB-172	3.8 ng/samp	3.9 ng/samp	2.60 %	--	--
PCB-174	26 ng/samp	27 ng/samp	3.77 %	--	--
PCB-175	1.1 ng/samp	1.1 ng/samp	0.00 %	--	--
PCB-176	5.8 ng/samp	6.0 ng/samp	3.39 %	--	--
PCB-177	14 ng/samp	15 ng/samp	6.90 %	--	--
PCB-178	9.2 ng/samp	9.2 ng/samp	0.00 %	--	--
PCB-179	23 ng/samp	23 ng/samp	0.00 %	--	--
PCB-180/193	31 ng/samp	33 ng/samp	6.25 %	--	--
PCB-182	0.29 ng/samp	0.28 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-183/185	17 ng/samp	17 ng/samp	0.00 %	--	--
PCB-187	44 ng/samp	41 ng/samp	7.06 %	--	--
PCB-188	0.59 ng/samp	0.57 ng/samp	3.45 %	--	--
PCB-189	0.23 ng/samp	0.22 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-190	2.5 ng/samp	2.6 ng/samp	3.92 %	--	--
PCB-191	0.54 ng/samp	0.57 ng/samp	5.41 %	--	--
PCB-194	13 ng/samp	14 ng/samp	7.41 %	--	--
PCB-195	8.3 ng/samp	8.3 ng/samp	0.00 %	--	--
PCB-196	15 ng/samp	15 ng/samp	0.00 %	--	--
PCB-197/200	8.7 ng/samp	8.6 ng/samp	1.16 %	--	--
PCB-198/199	32 ng/samp	32 ng/samp	0.00 %	--	--
PCB-201	7.1 ng/samp	7.0 ng/samp	1.42 %	--	--
PCB-202	10 ng/samp	11 ng/samp	9.52 %	--	--
PCB-203	20 ng/samp	19 ng/samp	5.13 %	--	--
PCB-205	0.77 ng/samp	0.79 ng/samp	2.56 %	--	--
PCB-206	4.9 ng/samp	5.7 ng/samp	15.09 %	--	--
PCB-207	0.95 ng/samp	0.99 ng/samp	4.12 %	--	--
PCB-208	1.6 ng/samp	1.9 ng/samp	17.14 %	--	--
PCB-209	0.29 ng/samp	0.55 ng/samp	--	0.26 ng/samp	0.10 ng/samp
Analyte	**HOUS-R5A-TS-BW1B-JAR-SPME-5GAC**	**HOUS-R5A-TS-BW1B-JAR-SPME-5GAC-DUP**	**RPD**	**Difference**	**Difference CL**
PCB-018/030	0.0026 ng/samp	0.0074 ng/samp	--	0.0048 ng/samp	0.20 ng/samp
PCB-020/028	0.0087 ng/samp	0.017 ng/samp	--	0.0083 ng/samp	0.20 ng/samp
PCB-032	0.013 ng/samp	0.016 ng/samp	--	0.003 ng/samp	0.10 ng/samp

PCB-044/047/065	0.15 ng/samp	0.25 ng/samp	--	0.1 ng/samp	0.30 ng/samp
PCB-045/051	0.079 ng/samp	0.12 ng/samp	--	0.041 ng/samp	0.20 ng/samp
PCB-049/069	0.089 ng/samp	0.12 ng/samp	--	0.031 ng/samp	0.20 ng/samp
PCB-050/053	0.056 ng/samp	0.080 ng/samp	--	0.024 ng/samp	0.20 ng/samp
PCB-052	0.055 ng/samp	0.063 ng/samp	--	0.008 ng/samp	0.10 ng/samp
PCB-054	0.0084 ng/samp	0.0066 ng/samp	--	0.0018 ng/samp	0.10 ng/samp
PCB-066	0.018 ng/samp	0.030 ng/samp	--	0.012 ng/samp	0.10 ng/samp
PCB-083/099	0.12 ng/samp	0.19 ng/samp	--	0.07 ng/samp	0.20 ng/samp
PCB-086/087/097/109/119/125	0.097 ng/samp	0.13 ng/samp	--	0.033 ng/samp	0.60 ng/samp
PCB-088/091	0.12 ng/samp	0.16 ng/samp	--	0.04 ng/samp	0.20 ng/samp
PCB-090/101/113	0.29 ng/samp	0.34 ng/samp	--	0.05 ng/samp	0.30 ng/samp
PCB-092	0.091 ng/samp	0.12 ng/samp	--	0.029 ng/samp	0.10 ng/samp
PCB-093/100	0.079 ng/samp	0.12 ng/samp	--	0.041 ng/samp	0.20 ng/samp
PCB-094	0.019 ng/samp	0.043 ng/samp	--	0.024 ng/samp	0.10 ng/samp
PCB-095	0.14 ng/samp	0.17 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-096	0.012 ng/samp	0.019 ng/samp	--	0.007 ng/samp	0.10 ng/samp
PCB-098/102	0.030 ng/samp	0.018 ng/samp	--	0.012 ng/samp	0.20 ng/samp
PCB-103	0.051 ng/samp	0.042 ng/samp	--	0.009 ng/samp	0.10 ng/samp
PCB-104	0.0080 ng/samp	0.0073 ng/samp	--	0.0007 ng/samp	0.10 ng/samp
PCB-105	0.016 ng/samp	0.029 ng/samp	--	0.013 ng/samp	0.10 ng/samp
PCB-110/115	0.12 ng/samp	0.17 ng/samp	--	0.05 ng/samp	0.20 ng/samp
PCB-118	0.075 ng/samp	0.10 ng/samp	--	0.025 ng/samp	0.10 ng/samp
PCB-128/166	0.052 ng/samp	0.070 ng/samp	--	0.018 ng/samp	0.20 ng/samp
PCB-129/138/160/163	1.1 ng/samp	1.1 ng/samp	--	0.0000 ng/samp	0.40 ng/samp
PCB-130	0.061 ng/samp	0.067 ng/samp	--	0.006 ng/samp	0.10 ng/samp
PCB-132	0.34 ng/samp	0.35 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-133	0.061 ng/samp	0.057 ng/samp	--	0.004 ng/samp	0.10 ng/samp
PCB-135/151	1.1 ng/samp	1.1 ng/samp	0.00 %	--	--
PCB-136	0.43 ng/samp	0.37 ng/samp	--	0.06 ng/samp	0.10 ng/samp
PCB-141	0.28 ng/samp	0.22 ng/samp	--	0.06 ng/samp	0.10 ng/samp
PCB-144	0.077 ng/samp	0.076 ng/samp	--	0.001 ng/samp	0.10 ng/samp
PCB-146	0.29 ng/samp	0.30 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-147/149	1.6 ng/samp	1.7 ng/samp	6.06 %	--	--
PCB-148	0.036 ng/samp	0.029 ng/samp	--	0.007 ng/samp	0.10 ng/samp
PCB-150	0.057 ng/samp	0.056 ng/samp	--	0.001 ng/samp	0.10 ng/samp
PCB-152	0.033 ng/samp	0.031 ng/samp	--	0.002 ng/samp	0.10 ng/samp
PCB-153/168	1.2 ng/samp	1.2 ng/samp	0.00 %	--	--
PCB-154	0.11 ng/samp	0.12 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-156/157	0.040 ng/samp	0.053 ng/samp	--	0.013 ng/samp	0.20 ng/samp
PCB-158	0.16 ng/samp	0.054 ng/samp	--	0.106 ng/samp	0.10 ng/samp
PCB-164	0.083 ng/samp	0.068 ng/samp	--	0.015 ng/samp	0.10 ng/samp
PCB-170	2.8 ng/samp	2.1 ng/samp	28.57 %	--	--
PCB-171/173	1.7 ng/samp	1.2 ng/samp	34.48 %	--	--
PCB-172	0.89 ng/samp	0.66 ng/samp	29.68 %	--	--
PCB-174	6.7 ng/samp	4.8 ng/samp	33.04 %	--	--
PCB-175	0.30 ng/samp	0.20 ng/samp	--	0.1 ng/samp	0.10 ng/samp
PCB-176	1.8 ng/samp	1.2 ng/samp	40.00 %	--	--
PCB-177	3.7 ng/samp	2.7 ng/samp	31.25 %	--	--
PCB-178	2.2 ng/samp	1.7 ng/samp	25.64 %	--	--
PCB-179	6.2 ng/samp	4.4 ng/samp	33.96 %	--	--
PCB-180/193	7.2 ng/samp	5.6 ng/samp	25.00 %	--	--
PCB-183/185	4.0 ng/samp	2.9 ng/samp	31.88 %	--	--
PCB-187	9.1 ng/samp	6.4 ng/samp	34.84 %	--	--
PCB-188	0.19 ng/samp	0.13 ng/samp	--	0.06 ng/samp	0.10 ng/samp
PCB-189	0.063 ng/samp	0.059 ng/samp	--	0.004 ng/samp	0.10 ng/samp
PCB-190	0.53 ng/samp	0.44 ng/samp	--	0.09 ng/samp	0.10 ng/samp
PCB-191	0.12 ng/samp	0.092 ng/samp	--	0.028 ng/samp	0.10 ng/samp
PCB-194	8.9 ng/samp	6.3 ng/samp	34.21 %	--	--
PCB-195	6.7 ng/samp	4.8 ng/samp	33.04 %	--	--
PCB-196	11 ng/samp	8.3 ng/samp	27.98 %	--	--
PCB-197/200	8.0 ng/samp	6.1 ng/samp	26.95 %	--	--
PCB-198/199	24 ng/samp	18 ng/samp	28.57 %	--	--
PCB-201	6.7 ng/samp	5.1 ng/samp	27.12 %	--	--
PCB-202	10 ng/samp	7.7 ng/samp	25.99 %	--	--
PCB-203	13 ng/samp	9.1 ng/samp	35.29 %	--	--
PCB-205	0.45 ng/samp	0.32 ng/samp	--	0.13 ng/samp	0.10 ng/samp
PCB-206	7.1 ng/samp	6.0 ng/samp	16.79 %	--	--
PCB-207	1.5 ng/samp	1.4 ng/samp	6.90 %	--	--
PCB-208	2.8 ng/samp	2.4 ng/samp	15.38 %	--	--
PCB-209	0.86 ng/samp	0.77 ng/samp	11.04 %	--	--

Analyte	HOUS-R5A-TS-BW1B-JAR-SPME-5PAC	HOUS-R5A-TS-BW1B-JAR-SPME-5PAC-DUP	RPD	Difference	Difference CL
PCB-018/030	0.0069 ng/samp	0.0041 ng/samp	--	0.0028 ng/samp	0.20 ng/samp
PCB-019	0.0034 ng/samp	0.0035 ng/samp	--	0.0001 ng/samp	0.10 ng/samp
PCB-020/028	0.037 ng/samp	0.019 ng/samp	--	0.018 ng/samp	0.20 ng/samp
PCB-031	0.0072 ng/samp	0.0027 ng/samp	--	0.0045 ng/samp	0.20 ng/samp

PCB-032	0.017 ng/samp	0.0033 ng/samp	--	0.0137 ng/samp	0.10 ng/samp
PCB-040/041/071	0.052 ng/samp	0.028 ng/samp	--	0.024 ng/samp	0.30 ng/samp
PCB-044/047/065	0.33 ng/samp	0.16 ng/samp	--	0.17 ng/samp	0.30 ng/samp
PCB-045/051	0.13 ng/samp	0.076 ng/samp	--	0.054 ng/samp	0.20 ng/samp
PCB-049/069	0.14 ng/samp	0.083 ng/samp	--	0.057 ng/samp	0.20 ng/samp
PCB-050/053	0.082 ng/samp	0.062 ng/samp	--	0.02 ng/samp	0.20 ng/samp
PCB-052	0.086 ng/samp	0.039 ng/samp	--	0.047 ng/samp	0.10 ng/samp
PCB-054	0.020 ng/samp	0.015 ng/samp	--	0.005 ng/samp	0.10 ng/samp
PCB-083/099	0.13 ng/samp	0.11 ng/samp	--	0.02 ng/samp	0.20 ng/samp
PCB-085/116/117	0.084 ng/samp	0.055 ng/samp	--	0.029 ng/samp	0.30 ng/samp
PCB-086/087/097/109/119/125	0.070 ng/samp	0.034 ng/samp	--	0.036 ng/samp	0.60 ng/samp
PCB-088/091	0.093 ng/samp	0.067 ng/samp	--	0.026 ng/samp	0.20 ng/samp
PCB-090/101/113	0.26 ng/samp	0.18 ng/samp	--	0.08 ng/samp	0.30 ng/samp
PCB-092	0.030 ng/samp	0.054 ng/samp	--	0.024 ng/samp	0.10 ng/samp
PCB-093/100	0.036 ng/samp	0.043 ng/samp	--	0.007 ng/samp	0.20 ng/samp
PCB-094	0.018 ng/samp	0.017 ng/samp	--	0.001 ng/samp	0.10 ng/samp
PCB-095	0.14 ng/samp	0.043 ng/samp	--	0.097 ng/samp	0.10 ng/samp
PCB-098/102	0.014 ng/samp	0.0099 ng/samp	--	0.0041 ng/samp	0.20 ng/samp
PCB-103	0.020 ng/samp	0.0047 ng/samp	--	0.0153 ng/samp	0.10 ng/samp
PCB-110/115	0.15 ng/samp	0.11 ng/samp	--	0.04 ng/samp	0.20 ng/samp
PCB-118	0.098 ng/samp	0.060 ng/samp	--	0.038 ng/samp	0.10 ng/samp
PCB-128/166	0.035 ng/samp	0.041 ng/samp	--	0.006 ng/samp	0.20 ng/samp
PCB-129/138/160/163	0.52 ng/samp	0.36 ng/samp	--	0.16 ng/samp	0.40 ng/samp
PCB-132	0.075 ng/samp	0.067 ng/samp	--	0.008 ng/samp	0.10 ng/samp
PCB-135/151	0.31 ng/samp	0.24 ng/samp	--	0.07 ng/samp	0.20 ng/samp
PCB-136	0.078 ng/samp	0.066 ng/samp	--	0.012 ng/samp	0.10 ng/samp
PCB-141	0.081 ng/samp	0.045 ng/samp	--	0.036 ng/samp	0.10 ng/samp
PCB-146	0.095 ng/samp	0.050 ng/samp	--	0.045 ng/samp	0.10 ng/samp
PCB-147/149	0.46 ng/samp	0.32 ng/samp	--	0.14 ng/samp	0.20 ng/samp
PCB-153/168	0.45 ng/samp	0.33 ng/samp	--	0.12 ng/samp	0.20 ng/samp
PCB-154	0.016 ng/samp	0.0081 ng/samp	--	0.0079 ng/samp	0.10 ng/samp
PCB-156/157	0.025 ng/samp	0.024 ng/samp	--	0.001 ng/samp	0.20 ng/samp
PCB-158	0.031 ng/samp	0.022 ng/samp	--	0.009 ng/samp	0.10 ng/samp
PCB-164	0.024 ng/samp	0.0084 ng/samp	--	0.0156 ng/samp	0.10 ng/samp
PCB-170	0.30 ng/samp	0.23 ng/samp	--	0.07 ng/samp	0.10 ng/samp
PCB-171/173	0.079 ng/samp	0.085 ng/samp	--	0.006 ng/samp	0.20 ng/samp
PCB-172	0.084 ng/samp	0.070 ng/samp	--	0.014 ng/samp	0.10 ng/samp
PCB-174	0.42 ng/samp	0.32 ng/samp	--	0.1 ng/samp	0.10 ng/samp
PCB-176	0.056 ng/samp	0.050 ng/samp	--	0.006 ng/samp	0.10 ng/samp
PCB-177	0.23 ng/samp	0.18 ng/samp	--	0.05 ng/samp	0.10 ng/samp
PCB-178	0.11 ng/samp	0.059 ng/samp	--	0.051 ng/samp	0.10 ng/samp
PCB-179	0.18 ng/samp	0.15 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-180/193	0.81 ng/samp	0.63 ng/samp	--	0.18 ng/samp	0.20 ng/samp
PCB-183/185	0.25 ng/samp	0.22 ng/samp	--	0.03 ng/samp	0.20 ng/samp
PCB-187	0.65 ng/samp	0.45 ng/samp	--	0.2 ng/samp	0.10 ng/samp
PCB-189	0.014 ng/samp	0.012 ng/samp	--	0.002 ng/samp	0.10 ng/samp
PCB-190	0.057 ng/samp	0.063 ng/samp	--	0.006 ng/samp	0.10 ng/samp
PCB-191	0.017 ng/samp	0.0097 ng/samp	--	0.0073 ng/samp	0.10 ng/samp
PCB-194	0.39 ng/samp	0.39 ng/samp	--	0.0000 ng/samp	0.10 ng/samp
PCB-195	0.24 ng/samp	0.20 ng/samp	--	0.04 ng/samp	0.10 ng/samp
PCB-196	0.35 ng/samp	0.40 ng/samp	--	0.05 ng/samp	0.10 ng/samp
PCB-197/200	0.22 ng/samp	0.23 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-198/199	0.75 ng/samp	0.68 ng/samp	--	0.07 ng/samp	0.20 ng/samp
PCB-201	0.20 ng/samp	0.14 ng/samp	--	0.06 ng/samp	0.10 ng/samp
PCB-202	0.26 ng/samp	0.22 ng/samp	--	0.04 ng/samp	0.10 ng/samp
PCB-203	0.48 ng/samp	0.45 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-205	0.019 ng/samp	0.0076 ng/samp	--	0.0114 ng/samp	0.10 ng/samp
PCB-206	1.2 ng/samp	1.1 ng/samp	8.70 %	--	--
PCB-207	0.20 ng/samp	0.19 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-208	0.45 ng/samp	0.45 ng/samp	--	0.0000 ng/samp	0.10 ng/samp
PCB-209	0.45 ng/samp	0.45 ng/samp	--	0.0000 ng/samp	0.10 ng/samp
Analyte	**HOUS-R5A-TS-BW1B-JAR-SPME-CTRL**	**HOUS-R5A-TS-BW1B-JAR-SPME-CTRL-DUP**	**RPD**	**Difference**	**Difference CL**
PCB-001	0.32 ng/samp	0.35 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-002	0.014 ng/samp	0.017 ng/samp	--	0.003 ng/samp	0.10 ng/samp
PCB-003	0.036 ng/samp	0.036 ng/samp	--	0.0000 ng/samp	0.10 ng/samp
PCB-004	4.1 ng/samp	4.0 ng/samp	2.47 %	--	--
PCB-006	1.1 ng/samp	1.2 ng/samp	8.70 %	--	--
PCB-007	0.16 ng/samp	0.15 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-008	1.1 ng/samp	1.1 ng/samp	0.00 %	--	--
PCB-009	0.17 ng/samp	0.18 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-010	0.25 ng/samp	0.23 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-012/013	0.24 ng/samp	0.18 ng/samp	--	0.06 ng/samp	0.20 ng/samp
PCB-015	0.30 ng/samp	0.33 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-016	0.51 ng/samp	0.47 ng/samp	--	0.04 ng/samp	0.10 ng/samp
PCB-017	6.0 ng/samp	6.3 ng/samp	4.88 %	--	--

PCB-018/030	6.9 ng/samp	7.1 ng/samp	2.86 %	--	--
PCB-019	3.1 ng/samp	3.1 ng/samp	0.00 %	--	--
PCB-020/028	9.4 ng/samp	9.6 ng/samp	2.11 %	--	--
PCB-021/033	3.9 ng/samp	3.1 ng/samp	22.86 %	--	--
PCB-022	0.49 ng/samp	0.53 ng/samp	--	0.04 ng/samp	0.10 ng/samp
PCB-025	3.9 ng/samp	3.3 ng/samp	16.67 %	--	--
PCB-026/029	3.6 ng/samp	3.5 ng/samp	2.82 %	--	--
PCB-027	12 ng/samp	13 ng/samp	8.00 %	--	--
PCB-031	3.1 ng/samp	3.1 ng/samp	0.00 %	--	--
PCB-032	16 ng/samp	16 ng/samp	0.00 %	--	--
PCB-034	0.23 ng/samp	0.23 ng/samp	--	0.0000 ng/samp	0.10 ng/samp
PCB-037	0.21 ng/samp	0.20 ng/samp	--	0.01 ng/samp	0.10 ng/samp
PCB-040/041/071	23 ng/samp	22 ng/samp	4.44 %	--	--
PCB-042	7.9 ng/samp	7.8 ng/samp	1.27 %	--	--
PCB-043/073	5.9 ng/samp	5.7 ng/samp	3.45 %	--	--
PCB-044/047/065	180 ng/samp	170 ng/samp	5.71 %	--	--
PCB-045/051	110 ng/samp	100 ng/samp	9.52 %	--	--
PCB-046	6.1 ng/samp	5.8 ng/samp	5.04 %	--	--
PCB-049/069	90 ng/samp	87 ng/samp	3.39 %	--	--
PCB-050/053	69 ng/samp	68 ng/samp	1.46 %	--	--
PCB-052	46 ng/samp	45 ng/samp	2.20 %	--	--
PCB-054	14 ng/samp	14 ng/samp	0.00 %	--	--
PCB-056	0.55 ng/samp	0.54 ng/samp	--	0.01 ng/samp	0.14 ng/samp
PCB-059/062/075	5.3 ng/samp	4.9 ng/samp	7.84 %	--	--
PCB-061/070/074/076	8.3 ng/samp	8.0 ng/samp	3.68 %	--	--
PCB-063	1.3 ng/samp	1.2 ng/samp	8.00 %	--	--
PCB-064	2.2 ng/samp	2.2 ng/samp	0.00 %	--	--
PCB-066	9.9 ng/samp	9.9 ng/samp	0.00 %	--	--
PCB-068	3.1 ng/samp	3.3 ng/samp	6.25 %	--	--
PCB-072	1.5 ng/samp	1.5 ng/samp	0.00 %	--	--
PCB-079	0.74 ng/samp	0.29 ng/samp	--	0.45 ng/samp	0.12 ng/samp
PCB-082	2.2 ng/samp	2.2 ng/samp	0.00 %	--	--
PCB-083/099	67 ng/samp	63 ng/samp	6.15 %	--	--
PCB-084	9.1 ng/samp	8.6 ng/samp	5.65 %	--	--
PCB-085/116/117	12 ng/samp	12 ng/samp	0.00 %	--	--
PCB-086/087/097/109/119/125	33 ng/samp	32 ng/samp	3.08 %	--	--
PCB-088/091	65 ng/samp	62 ng/samp	4.72 %	--	--
PCB-090/101/113	110 ng/samp	110 ng/samp	0.00 %	--	--
PCB-092	42 ng/samp	40 ng/samp	4.88 %	--	--
PCB-093/100	41 ng/samp	39 ng/samp	5.00 %	--	--
PCB-094	22 ng/samp	21 ng/samp	4.65 %	--	--
PCB-095	68 ng/samp	64 ng/samp	6.06 %	--	--
PCB-096	9.5 ng/samp	9.3 ng/samp	2.13 %	--	--
PCB-098/102	9.8 ng/samp	9.9 ng/samp	1.02 %	--	--
PCB-103	20 ng/samp	19 ng/samp	5.13 %	--	--
PCB-104	3.5 ng/samp	3.5 ng/samp	0.00 %	--	--
PCB-105	4.3 ng/samp	4.2 ng/samp	2.35 %	--	--
PCB-107	2.7 ng/samp	2.5 ng/samp	7.69 %	--	--
PCB-108/124	1.1 ng/samp	1.1 ng/samp	0.00 %	--	--
PCB-110/115	49 ng/samp	49 ng/samp	0.00 %	--	--
PCB-111	0.57 ng/samp	0.53 ng/samp	7.27 %	--	--
PCB-114	0.15 ng/samp	0.17 ng/samp	--	0.02 ng/samp	0.10 ng/samp
PCB-118	22 ng/samp	21 ng/samp	4.65 %	--	--
PCB-120	1.2 ng/samp	1.0 ng/samp	18.18 %	--	--
PCB-121	0.86 ng/samp	0.82 ng/samp	4.76 %	--	--
PCB-122	0.31 ng/samp	0.29 ng/samp	--	0.02 ng/samp	0.11 ng/samp
PCB-123	0.42 ng/samp	0.45 ng/samp	--	0.03 ng/samp	0.10 ng/samp
PCB-128/166	9.6 ng/samp	9.4 ng/samp	2.11 %	--	--
PCB-129/138/160/163	160 ng/samp	160 ng/samp	0.00 %	--	--
PCB-130	9.6 ng/samp	10 ng/samp	4.08 %	--	--
PCB-131	1.0 ng/samp	1.1 ng/samp	--	0.1 ng/samp	0.34 ng/samp
PCB-132	45 ng/samp	46 ng/samp	2.20 %	--	--
PCB-133	6.3 ng/samp	6.2 ng/samp	1.60 %	--	--
PCB-134/143	10 ng/samp	10 ng/samp	0.00 %	--	--
PCB-135/151	150 ng/samp	140 ng/samp	6.90 %	--	--
PCB-136	49 ng/samp	47 ng/samp	4.17 %	--	--
PCB-137	3.2 ng/samp	3.0 ng/samp	6.45 %	--	--
PCB-139/140	3.0 ng/samp	3.1 ng/samp	3.28 %	--	--
PCB-141	32 ng/samp	33 ng/samp	3.08 %	--	--
PCB-144	11 ng/samp	11 ng/samp	0.00 %	--	--
PCB-146	35 ng/samp	35 ng/samp	0.00 %	--	--
PCB-147/149	240 ng/samp	230 ng/samp	4.26 %	--	--
PCB-148	3.9 ng/samp	4.0 ng/samp	2.53 %	--	--
PCB-150	5.7 ng/samp	5.6 ng/samp	1.77 %	--	--
PCB-152	5.1 ng/samp	4.9 ng/samp	4.00 %	--	--
PCB-153/168	180 ng/samp	180 ng/samp	0.00 %	--	--

PCB-154	15 ng/samp	15 ng/samp	0.00 %	--	--
PCB-155	0.60 ng/samp	0.54 ng/samp	10.53 %	--	--
PCB-156/157	6.2 ng/samp	6.2 ng/samp	0.00 %	--	--
PCB-158	13 ng/samp	12 ng/samp	8.00 %	--	--
PCB-159	5.1 ng/samp	4.2 ng/samp	19.35 %	--	--
PCB-164	10 ng/samp	11 ng/samp	9.52 %	--	--
PCB-165	1.2 ng/samp	1.3 ng/samp	--	0.1 ng/samp	0.25 ng/samp
PCB-167	3.3 ng/samp	3.5 ng/samp	5.88 %	--	--
PCB-170	66 ng/samp	67 ng/samp	1.50 %	--	--
PCB-171/173	29 ng/samp	30 ng/samp	3.39 %	--	--
PCB-172	17 ng/samp	16 ng/samp	6.06 %	--	--
PCB-174	120 ng/samp	120 ng/samp	0.00 %	--	--
PCB-175	4.7 ng/samp	4.9 ng/samp	4.17 %	--	--
PCB-176	20 ng/samp	21 ng/samp	4.88 %	--	--
PCB-177	63 ng/samp	65 ng/samp	3.13 %	--	--
PCB-178	43 ng/samp	42 ng/samp	2.35 %	--	--
PCB-179	81 ng/samp	82 ng/samp	1.23 %	--	--
PCB-180/193	180 ng/samp	180 ng/samp	0.00 %	--	--
PCB-182	1.3 ng/samp	1.3 ng/samp	0.00 %	--	--
PCB-183/185	81 ng/samp	82 ng/samp	1.23 %	--	--
PCB-187	170 ng/samp	160 ng/samp	6.06 %	--	--
PCB-188	1.6 ng/samp	1.6 ng/samp	0.00 %	--	--
PCB-189	1.7 ng/samp	1.8 ng/samp	5.71 %	--	--
PCB-190	15 ng/samp	15 ng/samp	0.00 %	--	--
PCB-191	3.3 ng/samp	3.3 ng/samp	0.00 %	--	--
PCB-194	32 ng/samp	31 ng/samp	3.17 %	--	--
PCB-195	22 ng/samp	20 ng/samp	9.52 %	--	--
PCB-196	34 ng/samp	31 ng/samp	9.23 %	--	--
PCB-197/200	18 ng/samp	17 ng/samp	5.71 %	--	--
PCB-198/199	68 ng/samp	63 ng/samp	7.63 %	--	--
PCB-201	15 ng/samp	14 ng/samp	6.90 %	--	--
PCB-202	21 ng/samp	21 ng/samp	0.00 %	--	--
PCB-203	41 ng/samp	37 ng/samp	10.26 %	--	--
PCB-205	2.0 ng/samp	1.9 ng/samp	5.13 %	--	--
PCB-206	11 ng/samp	11 ng/samp	0.00 %	--	--
PCB-207	2.5 ng/samp	2.3 ng/samp	8.33 %	--	--
PCB-208	4.0 ng/samp	4.0 ng/samp	0.00 %	--	--
PCB-209	0.88 ng/samp	1.1 ng/samp	22.22 %	--	--

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ANCHOR QEA

Data Validation Report – EPA Stage 2A

January 6, 2026

Project:	Housatonic Reach 5A Treatability
Project Number:	250469-08.01
Validation ID:	AQ-2026-0003

This report summarizes the review of analytical results for six solid-phase microextraction fiber (SPME) samples collected December 2, 2025. The samples were collected by Anchor QEA and submitted to Eurofins Knoxville (ETK) in Knoxville, Tennessee. Samples were analyzed for polychlorinated biphenyls (PCB) congeners by USEPA (U.S. Environmental Protection Agency) method 1668.

ETK sample delivery group (SDG) 140-45015-1 was reviewed in this report. Sample IDs, matrices, analyses, are presented in Table 1.

Table 1
Sample IDs, Matrices, and Analyses

Sample ID	Lab Sample ID	Matrix	Analyses
HOUS-R5A-Kinetics-PW1-GAC-7-20251202	140-45015-1	SPME	PCB congeners
HOUS-R5A-Kinetics-PW1-PAC-7-20251202	140-45015-2	SPME	PCB congeners
HOUS-R5A-Kinetics-PW1-CTRL-7-20251202	140-45015-3	SPME	PCB congeners
HOUS-R5A-Kinetics-PW2-GAC-7-20251202	140-45015-4	SPME	PCB congeners
HOUS-R5A-Kinetics-PW2-PAC-7-20251202	140-45015-5	SPME	PCB congeners
HOUS-R5A-Kinetics-PW2-CTRL-7-20251202	140-45015-6	SPME	PCB congeners

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the analytical procedures. Laboratory results were reviewed using the following guidelines:

- Addendum to Treatability Study- Work Plan for Reach 5A (Anchor QEA 2025).
- Field Sampling Plan / Quality Assurance Project Plan: GE-Pittsfield/Housatonic River Site. Arcadis 2023).
- USEPA 1986 (SW-846, Third Edition), Test Methods for Evaluating Solid Waste: Physical/Chemical Methods.
- USEPA National Functional Guidelines for High Resolution Superfund Methods Data Review (USEPA 2020)

Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody (COC) forms were signed by Eurofins at the time of sample receipt. The samples were received within the recommended temperature range and in good condition.

Sample Preservation and Holding Times

Samples were appropriately preserved and analyzed within holding times.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies and were free of target analytes except for twelve PCB congeners or co-eluting congeners were detected above the method detection limit (MDL) in the method blank in prep batch 108181 and analysis batch 108759. Associated detected results that were not significantly greater than (greater than five times) the level detected in the blank have been qualified “U”.

Field Quality Control

No field quality samples were collected with this sample set.

Labeled Isotope Recoveries

Labeled isotopes were added to all samples and quality control analyses as required. Labeled isotope recoveries were within method-required or project control limits.

Laboratory Control Samples

Laboratory control samples (LCS) were analyzed at the required frequency and resulted in recoveries within project-required control limits.

Matrix Spike and Matrix Spike Duplicate Samples

Matrix spike (MS) and matrix spike duplicate (MSD) samples were not analyzed for PCB congener analyses. As a result, sample results were qualified “UJ” or “J” to indicate they are estimated and QAPP required precision measurements were not available.

Laboratory Replicates

Laboratory duplicates were not evaluated for parameters in this sample set. Precision can be evaluated by continuous check standards; however, those are not a component of Stage 2A evaluation.

Estimated Maximum Potential Concentration

Some results were qualified as estimated maximum potential concentration (EMPC) by the laboratory due to ion abundance ratios outside of method-required criteria and have been qualified "J" as estimated.

Reporting Limits and Estimated Detection Limits

Reporting limits were acceptable as reported. All values were reported using the laboratory reporting limits. Values were reported as undiluted or when diluted, the reporting limit reflects the dilution factor.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the internal standard and LCS recovery values. Precision could not be evaluated due to the lack of duplicate samples. As a result, sample results were qualified "UJ" or "J" to indicate they are estimated. All data are acceptable as reported or as qualified. Table 2 summarizes the qualifiers applied to the sample results reviewed in this report.

Data Qualifier Definitions

J Indicates an estimated value.

U Indicates the compound or analyte was analyzed for but not detected at or above the specified limit.

UJ Indicates the compound or analyte of interest was analyzed for but not detected and the specified limit reported is estimated.

Table 2
Data Qualification Summary

Sample ID	Analyte	Reported Result	Qualified Result	Reason
Various	Varies	EMPC	J	EMPC
All	All	Varies	UJ, J	Missing required precision results
HOUS-R5A-KINETICS-PW1-PAC-7-20251202	PCB-090/101/113	0.015JEMPC ng/samp	0.015UJ ng/samp	MB contamination, EMPC, missing required precision results
HOUS-R5A-KINETICS-PW2-GAC-7-20251202	PCB-031	0.011JEMPC ng/samp	0.011UJ ng/samp	MB contamination, EMPC, missing required precision results

Sample ID	Analyte	Reported Result	Qualified Result	Reason
HOUS-R5A-KINETICS-PW2-PAC-7-20251202	PCB-090/101/113	0.016JEMPC ng/samp	0.016UJ ng/samp	MB contamination, EMPC, missing required precision results
HOUS-R5A-KINETICS-PW2-PAC-7-20251202	PCB-183/185	0.041JEMPC ng/samp	0.041UJ ng/samp	MB contamination, EMPC, missing required precision results
HOUS-R5A-KINETICS-PW2-PAC-7-20251202	PCB-189	0.0031JEMPC ng/samp	0.0031UJ ng/samp	MB contamination, EMPC, missing required precision results

Note:
ng/samp = nanogram per sample

References

Anchor QEA, 2025. *Addendum to Treatability Study Work Plan for Reach 5A*. Prepared for the General Electric Company. February 2025.

Arcadis, 2023. *Field Sampling Plan / Quality Assurance Project Plan, GE-Pittsfield/Housatonic River Site*. Prepared for General Electric. Revised December 2023.

USEPA (U.S. Environmental Protection Agency), 1986. *Test methods for Evaluating Solid Waste: Physical/Chemical Methods*. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846.

USEPA, 2020. *National Functional Guidelines for High Resolution Superfund Methods Data Review*. Office of Superfund Remediation and Technology Innovation. U.S. Environmental Protection Agency. EPA-542-R-20-007. November 2020.

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Data Validation Report – EPA Stage 2A

December 29, 2025

Project:	Housatonic Reach 5A Treatability
Project Number:	250469-08.01
Validation ID:	AQ-2026-0023

This report summarizes the review of analytical results for six SPME samples collected or generated on December 30, 2025. The samples were collected by Anchor QEA and submitted to Eurofins Knoxville (Eurofins) in Knoxville, Tennessee. Samples were analyzed for polychlorinated biphenyl congeners (PCBs) by U.S. Environmental Protection Agency (USEPA) method 1668C.

Sample delivery group (SDG) 140-45379-1 was reviewed in this report. Sample IDs, matrix, and analyses, are presented in Table 1.

Table 1
Sample IDs, Matrices, and Analyses

Sample ID	Laboratory Sample IDs	Matrix	Analyses
HOUS-R5A-Kinetics-PW1-GAC-8-20251230	140-45379-1	SPME	PCB congeners
HOUS-R5A-Kinetics-PW1-PAC-8-20251230	140-45379-2	SPME	PCB congeners
HOUS-R5A-Kinetics-PW1-CTRL-8-20251230	140-45379-3	SPME	PCB congeners
HOUS-R5A-Kinetics-PW2-GAC-8-20251230	140-45379-4	SPME	PCB congeners
HOUS-R5A-Kinetics-PW2-PAC-8-20251230	140-45379-5	SPME	PCB congeners
HOUS-R5A-Kinetics-PW2-CTRL-8-20251230	140-45379-6	SPME	PCB congeners

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the analytical procedures. Laboratory results were reviewed using the following guidelines:

- Addendum to Treatability Study Work Plan for Reach 5A (Anchor QEA 2025).
- Field Sampling Plan / Quality Assurance Project Plan: GE-Pittsfield/Housatonic River Site. Arcadis 2023).
- USEPA National Functional Guidelines for High Resolution Superfund Methods Data Review (USEPA 2020)

Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody (COC) form was signed by Eurofins and SGS labs at the time of sample receipt. The samples were received in good condition and within the recommended temperature range.

Sample Preservation and Holding Times

Samples were appropriately preserved and analyzed within holding times.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. Blanks were free of target analytes except for PCB-183/185 which was detected in the method blank in batch 109257. Associated detected sample results were significantly greater than (greater than 5x) the concentration detected in the method blank so no data were qualified.

Field Quality Control

No field quality control samples were collected with this sample set.

Labeled Isotope and Surrogate Recoveries

Labeled isotope and surrogates were added all samples and quality control samples as required. Labeled isotope and surrogate recoveries were within method-required or project control limits.

Laboratory Control Samples

Laboratory control samples (LCS) were analyzed at the required frequency and resulted in recoveries within control limits.

Matrix Spike and Matrix Spike Duplicate Samples

Matrix spike (MS) and matrix spike duplicate (MSD) samples were not analyzed for PCB congener analyses. As a result, sample results were qualified “UJ” or “J” to indicate they are estimated. Results previously qualified for method blank contamination received no further qualification.

Laboratory Replicates

Laboratory replicate samples were not analyzed for PCB analyses.

Estimated Maximum Potential Concentration

Some results were qualified as estimated maximum potential concentration (EMPC) by the laboratory due to ion abundance ratios outside of method-required criteria and have been qualified "J" as estimated.

Method Reporting Limits and Estimated Detection Limits

Most reporting limits were acceptable as reported. Values were reported as undiluted or when diluted, the reporting limit reflects the dilution factor.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the internal standard, surrogate, LCS recovery values. Precision data was not reported so results were qualified to indicate a possible bias. All data are acceptable as reported or as qualified. Table 2 summarizes the qualifiers applied to the sample results reviewed in this report.

Data Qualifier Definitions

J Indicates an estimated value

U Indicates the compound or analyte was analyzed for but not detected at or above the specified limit

UJ Indicates the compound or analyte was analyzed for but not detected and the specified limit reported is estimated

Table 2
Data Qualification Summary

Sample ID	Analyte	Reported Result	Qualified Result	Reason
All	All	Varies	UJ, J	Missing required precision results
HOUS-R5A-KINETICS-PW1-GAC-8-20251230	PCB-031	0.0092 ng/samp	0.0092J ng/samp	EMPC, missing required precision results
	PCB-040/041/071	0.13 ng/samp	0.13J ng/samp	EMPC, missing required precision results
	PCB-042	0.081 ng/samp	0.081J ng/samp	EMPC, missing required precision results
	PCB-043/073	0.071 ng/samp	0.071J ng/samp	EMPC, missing required precision results
	PCB-045/051	0.072 ng/samp	0.072J ng/samp	EMPC, missing required precision results
	PCB-094	0.043 ng/samp	0.043J ng/samp	EMPC, missing required precision results
	PCB-096	0.072 ng/samp	0.072J ng/samp	EMPC, missing required precision results
	PCB-098/102	0.35 ng/samp	0.35J ng/samp	EMPC, missing required precision results
	PCB-103	0.075 ng/samp	0.075J ng/samp	EMPC, missing required precision results
	PCB-139/140	0.49 ng/samp	0.49J ng/samp	EMPC, missing required precision results
	PCB-150	0.019 ng/samp	0.019J ng/samp	EMPC, missing required precision results
HOUS-R5A-KINETICS-PW1-PAC-8-20251230	PCB-004	0.022 ng/samp	0.022J ng/samp	EMPC, missing required precision results
	PCB-010	0.017 ng/samp	0.017J ng/samp	EMPC, missing required precision results
	PCB-019	0.022 ng/samp	0.022J ng/samp	EMPC, missing required precision results
	PCB-044/047/065	0.011 ng/samp	0.011J ng/samp	EMPC, missing required precision results

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	PCB-054	0.033 ng/samp	0.033J ng/samp	EMPC, missing required precision results
	PCB-118	0.016 ng/samp	0.016J ng/samp	EMPC, missing required precision results
	PCB-132	0.021 ng/samp	0.021J ng/samp	EMPC, missing required precision results
	PCB-133	0.0035 ng/samp	0.0035J ng/samp	EMPC, missing required precision results
	PCB-134/143	0.0054 ng/samp	0.0054J ng/samp	EMPC, missing required precision results
	PCB-136	0.023 ng/samp	0.023J ng/samp	EMPC, missing required precision results
	PCB-141	0.018 ng/samp	0.018J ng/samp	EMPC, missing required precision results
	PCB-146	0.012 ng/samp	0.012J ng/samp	EMPC, missing required precision results
	PCB-147/149	0.072 ng/samp	0.072J ng/samp	EMPC, missing required precision results
	PCB-156/157	0.0070 ng/samp	0.0070J ng/samp	EMPC, missing required precision results
	PCB-158	0.014 ng/samp	0.014J ng/samp	EMPC, missing required precision results
	PCB-164	0.0035 ng/samp	0.0035J ng/samp	EMPC, missing required precision results
	PCB-171/173	0.080 ng/samp	0.080J ng/samp	EMPC, missing required precision results
	PCB-172	0.030 ng/samp	0.030J ng/samp	EMPC, missing required precision results
	PCB-175	0.016 ng/samp	0.016J ng/samp	EMPC, missing required precision results
	PCB-178	0.063 ng/samp	0.063J ng/samp	EMPC, missing required precision results
	PCB-190	0.040 ng/samp	0.040J ng/samp	EMPC, missing required precision results
	PCB-195	0.059 ng/samp	0.059J ng/samp	EMPC, missing required precision results
	PCB-201	0.049 ng/samp	0.049J ng/samp	EMPC, missing required precision results
	PCB-203	0.16 ng/samp	0.16J ng/samp	EMPC, missing required precision results
	PCB-209	0.017 ng/samp	0.017J ng/samp	EMPC, missing required precision results
HOUS-R5A-KINETICS-PW1-CTRL-8-20251230	PCB-008	0.32 ng/samp	0.32J ng/samp	EMPC, missing required precision results
	PCB-025	0.053 ng/samp	0.053J ng/samp	EMPC, missing required precision results
	PCB-037	0.20 ng/samp	0.20J ng/samp	EMPC, missing required precision results
	PCB-045/051	0.29 ng/samp	0.29J ng/samp	EMPC, missing required precision results
	PCB-048	0.24 ng/samp	0.24J ng/samp	EMPC, missing required precision results
	PCB-082	3.1 ng/samp	3.1J ng/samp	EMPC, missing required precision results
	PCB-093/100	0.40 ng/samp	0.40J ng/samp	EMPC, missing required precision results
	PCB-094	0.10 ng/samp	0.10J ng/samp	EMPC, missing required precision results
	PCB-096	0.12 ng/samp	0.12J ng/samp	EMPC, missing required precision results
	PCB-098/102	0.56 ng/samp	0.56J ng/samp	EMPC, missing required precision results
	PCB-122	0.40 ng/samp	0.40J ng/samp	EMPC, missing required precision results
	PCB-127	0.099 ng/samp	0.099J ng/samp	EMPC, missing required precision results
	PCB-131	0.63 ng/samp	0.63J ng/samp	EMPC, missing required precision results
	PCB-137	1.9 ng/samp	1.9J ng/samp	EMPC, missing required precision results
	PCB-139/140	0.61 ng/samp	0.61J ng/samp	EMPC, missing required precision results
	PCB-145	0.061 ng/samp	0.061J ng/samp	EMPC, missing required precision results
	PCB-152	0.035 ng/samp	0.035J ng/samp	EMPC, missing required precision results
	PCB-209	0.32 ng/samp	0.32J ng/samp	EMPC, missing required precision results
HOUS-R5A-KINETICS-PW2-GAC-8-20251230	PCB-020/028	0.0087 ng/samp	0.0087J ng/samp	EMPC, missing required precision results
	PCB-026/029	0.015 ng/samp	0.015J ng/samp	EMPC, missing required precision results
	PCB-031	0.012 ng/samp	0.012J ng/samp	EMPC, missing required precision results
	PCB-040/041/071	0.31 ng/samp	0.31J ng/samp	EMPC, missing required precision results
	PCB-043/073	0.34 ng/samp	0.34J ng/samp	EMPC, missing required precision results
	PCB-048	0.088 ng/samp	0.088J ng/samp	EMPC, missing required precision results
	PCB-050/053	0.11 ng/samp	0.11J ng/samp	EMPC, missing required precision results
	PCB-060	0.092 ng/samp	0.092J ng/samp	EMPC, missing required precision results
	PCB-098/102	0.50 ng/samp	0.50J ng/samp	EMPC, missing required precision results
	PCB-104	0.056 ng/samp	0.056J ng/samp	EMPC, missing required precision results
	PCB-123	0.24 ng/samp	0.24J ng/samp	EMPC, missing required precision results
	PCB-145	0.030 ng/samp	0.030J ng/samp	EMPC, missing required precision results

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	PCB-150	0.021 ng/samp	0.021J ng/samp	EMPC, missing required precision results
	PCB-152	0.027 ng/samp	0.027J ng/samp	EMPC, missing required precision results
	PCB-182	0.21 ng/samp	0.21J ng/samp	EMPC, missing required precision results
HOUS-R5A-KINETICS-PW2-PAC-8-20251230	PCB-019	0.0080 ng/samp	0.0080J ng/samp	EMPC, missing required precision results
	PCB-044/047/065	0.013 ng/samp	0.013J ng/samp	EMPC, missing required precision results
	PCB-052	0.0045 ng/samp	0.0045J ng/samp	EMPC, missing required precision results
	PCB-061/070/074/076	0.0093 ng/samp	0.0093J ng/samp	EMPC, missing required precision results
	PCB-118	0.0068 ng/samp	0.0068J ng/samp	EMPC, missing required precision results
	PCB-147/149	0.022 ng/samp	0.022J ng/samp	EMPC, missing required precision results
	PCB-153/168	0.027 ng/samp	0.027J ng/samp	EMPC, missing required precision results
	PCB-170	0.049 ng/samp	0.049J ng/samp	EMPC, missing required precision results
	PCB-171/173	0.021 ng/samp	0.021J ng/samp	EMPC, missing required precision results
	PCB-174	0.076 ng/samp	0.076J ng/samp	EMPC, missing required precision results
	PCB-177	0.034 ng/samp	0.034J ng/samp	EMPC, missing required precision results
	PCB-179	0.038 ng/samp	0.038J ng/samp	EMPC, missing required precision results
	PCB-190	0.0082 ng/samp	0.0082J ng/samp	EMPC, missing required precision results
	PCB-195	0.014 ng/samp	0.014J ng/samp	EMPC, missing required precision results
	PCB-201	0.019 ng/samp	0.019J ng/samp	EMPC, missing required precision results
	PCB-202	0.017 ng/samp	0.017J ng/samp	EMPC, missing required precision results
	PCB-203	0.050 ng/samp	0.050J ng/samp	EMPC, missing required precision results
	PCB-209	0.0033 ng/samp	0.0033J ng/samp	EMPC, missing required precision results
HOUS-R5A-KINETICS-PW2-CTRL-8-20251230	PCB-018/030	0.52 ng/samp	0.52J ng/samp	EMPC, missing required precision results
	PCB-026/029	0.53 ng/samp	0.53J ng/samp	EMPC, missing required precision results
	PCB-037	0.27 ng/samp	0.27J ng/samp	EMPC, missing required precision results
	PCB-043/073	1.1 ng/samp	1.1J ng/samp	EMPC, missing required precision results
	PCB-094	0.085 ng/samp	0.085J ng/samp	EMPC, missing required precision results
	PCB-096	0.14 ng/samp	0.14J ng/samp	EMPC, missing required precision results
	PCB-103	0.13 ng/samp	0.13J ng/samp	EMPC, missing required precision results
	PCB-104	0.053 ng/samp	0.053J ng/samp	EMPC, missing required precision results
	PCB-122	0.46 ng/samp	0.46J ng/samp	EMPC, missing required precision results
	PCB-123	0.49 ng/samp	0.49J ng/samp	EMPC, missing required precision results
	PCB-134/143	3.4 ng/samp	3.4J ng/samp	EMPC, missing required precision results
	PCB-137	2.2 ng/samp	2.2J ng/samp	EMPC, missing required precision results
	PCB-139/140	0.75 ng/samp	0.75J ng/samp	EMPC, missing required precision results

Notes:
ng/samp = nanogram per sample

References

Anchor QEA, 2025. *Addendum to Treatability Study Work Plan for Reach 5A*. Prepared for the General Electric Company. February 2025.

Arcadis, 2023. *Field Sampling Plan / Quality Assurance Project Plan, GE-Pittsfield/Housatonic River Site*. Prepared for General Electric. Revised December 2023.

USEPA (U.S. Environmental Protection Agency), 1986. *Test methods for Evaluating Solid Waste: Physical/Chemical Methods.* U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846.

USEPA, 2020. *National Functional Guidelines for High Resolution Superfund Methods Data Review*. Office of Superfund Remediation and Technology Innovation. U.S. Environmental Protection Agency. EPA-542-R-20-007. November 2020.

General Electric Company

Data Validation Report

Reach 5A Sediment Dewatering Treatability Study
Housatonic River – Rest of River
Pittsfield, Massachusetts

Polychlorinated Biphenyls Analyses

SDG JE14797

Tier I and II Level Data Review

Analyses Performed By:
SGS North America Inc.
Dayton, New Jersey, USA

Report 62024R
Project: 30299802.0002

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Appendices

Appendix A **Chain-of-Custody Forms**

Appendix B **Annotated Sample Analysis Data Sheets**

1 Summary

This document summarizes the data validation review of Sample Delivery Group (SDG) JE14797 performed on behalf of the General Electric Company (GE) for sampling activities conducted as part of the Reach 5A sediment dewatering treatability study performed for the GE-Pittsfield/Housatonic River Site. The review was conducted at Tier I and Tier II levels and included review for data package completeness. Field documentation was not included in this review. Included with this assessment are the chain-of-custody forms (Appendix A) and the validation annotated sample analysis data sheets (Appendix B). Analyses were performed on the samples listed in Table 1.

Table 1. Summary of Samples Subjected to Tier I and Tier II Data Validation

Sample ID	Laboratory ID	Matrix	Sample Collection Date	Parent Sample	Analysis
					PCBs
TS-WP	JE14797-1	Soil	07/03/2025	NA	X
TS-BWS	JE14797-2	Soil	07/07/2025	NA	X
TS-S1	JE14797-3	Soil	07/03/2025	NA	X
TS-S2	JE14797-4	Soil	07/03/2025	NA	X
TS-S3	JE14797-5	Soil	07/03/2025	NA	X
TS-S4	JE14797-6	Soil	07/03/2025	NA	X

Notes:
PCB = polychlorinated biphenyl
NA = not applicable

1.1 Analytical Data Package Documentation

The table below provides a summary of the data package completeness evaluation.

Table 2. Evaluation of 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. RLs.		X		X	
6. Sample collection date.		X		X	
7. Laboratory sample received date.		X		X	
8. Sample preservation verification (as applicable).		X		X	

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
9. Sample preparation/extraction/analysis dates.		X		X	
10. Fully executed chain-of-custody form.		X		X	
11. Narrative summary of QA or sample problems provided.		X		X	
12. Data package completeness and compliance.		X		X	

Notes:
QA = quality assurance
RL = reporting limit

1.2 Data Validation Procedures

Analyses were performed according to United States Environmental Protection Agency (EPA) SW-846 Method 8082A. Data were reviewed in accordance with the following documents:

- Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP) – GE-Pittsfield/Housatonic River Site, General Electric Company, Pittsfield, Massachusetts, prepared by Arcadis (Revised December 21, 2023);
- EPA Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses (EPA Region I Guidelines) (July 1996, revised December 1996); and
- Supplemental Data Collection Work Plan for Reach 5A, Housatonic River – Rest of River, General Electric Company, Pittsfield, Massachusetts, prepared by Anchor QEA and AECOM (Submitted September 28, 2023 as Appendix I of the Conceptual Remedial Design/Remedial Action Work Plan for Reach 5A).

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 EPA National Functional Guidelines:

- Concentration 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 Qualifiers:
  - E The compound was quantitated above the calibration range.
  - D The 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 The compound is 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 kept in mind 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 in data tables because they cannot be relied upon, even as a last resort. Second, 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.

Section 7.5 of the revised FSP/QAPP states that all analytical data will be validated to a Tier I level following the procedures presented in the EPA Region I Guidelines. The Tier I review consisted of a completeness evidence audit, as outlined in the EPA Region I Complete Sample Delivery Group File (CSF) Completeness Evidence Audit Program (EPA Region I, July 31, 1991), to ensure that laboratory data and documentation were present. In the event that data packages were determined to be incomplete, the missing information was requested from the laboratory. Upon completion of the Tier I review, the data packages complied with the EPA Region I Tier I data completeness requirements.

The analytical results described above were also subjected to a Tier II data review. The Tier II data review consisted of a review of data package summary forms for identification of QA/QC deviations and qualification of the data according to the EPA Region I Guidelines. Additionally, field duplicates were examined for relative percent difference (RPD) compliance with the criteria specified in the FSP/QAPP. A tabulated summary of the number of sample analyses subject to Tier I and Tier II data review is presented in the following table.

Table 3. Summary of Sample Analyses Subjected to Tier I and Tier II Data Validation

	Tier I Only			Tier I and Tier II			
Parameter	Samples	Duplicates	Blanks	Samples	Duplicates	Blanks	Total
PCBs	0	0	0	6	0	0	6

When qualification of the sample data was required, the sample results associated with a QA/QC parameter deviation were qualified in accordance with the procedures outlined in the EPA Region I Guidelines. When the data validation process identified several QC deficiencies, the cumulative effect of the various deficiencies was employed in assigning the final data qualifier. The annotated sample analysis data sheets attached to this validation report (Appendix B) reflect any added data qualifiers.

2 Polychlorinated Biphenyl Analyses

2.1 Holding Times

The specified holding times for EPA SW-846 Method 8082A are presented in the following table.

Table 4. Holding Times for SW-846 Method 8082A

Method	Matrix	Holding Time	Preservation
SW-846 Method 8082A	Soil	One year from collection to extraction and 40 days from extraction to analysis	Cool to < 6°C

Notes:
< = less than
°C = degrees Celsius

All samples were analyzed within the specified holding time criteria.

2.2 Blank Contamination

QA blanks (i.e., method and rinse blanks) are prepared to identify any contamination that 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 of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at 10 times) is calculated for QA blanks containing concentrations greater than the method detection limit. The blank action level is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the method detection limit in the associated blanks; therefore, detected sample results were not associated with blank contamination.

2.3 System Performance

System performance and column resolution were acceptable.

2.4 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.

All Aroclors associated with calibrations were within the specified control limits for initial calibration and continuing calibration, as described below.

2.4.1 Initial Calibration

A maximum relative standard deviation (RSD) of 20 percent (%) or a correlation coefficient greater than 0.99 is allowed. Multiple-point calibrations were performed for Aroclors 1016 and 1260 only. Single-point calibrations were performed for the remaining Aroclors.

2.4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a % difference less than the control limit (15%).

2.5 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. PCB analysis requires that both the surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

2.6 Matrix Spike/Matrix Spike Duplicate Analysis

Matrix Spike (MS)/Matrix Spike Duplicate (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 % recovery (%R) within the laboratory-established acceptance limits. The 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 the MS/MSD analysis performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD analysis was performed on sample TS-WP. The MS/MSD analysis exhibited recoveries and RPDs within the control limits.

2.7 Laboratory Control Sample Analysis

Laboratory Control Sample (LCS) analysis is used to assess accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a %R within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

2.8 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. When the parent and/or duplicate sample concentrations are less than or

equal to five 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.

A field duplicate sample was not collected for this SDG.

2.9 Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed, the RPD of detected sample results must be less than 25%.

All compounds exhibited acceptable RPDs.

2.10 System Performance and Overall Assessment

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

Table 5. Analysis for Compounds Exhibiting a Concentration Greater than the Linear Range of Instrument Calibration

Sample ID	Compounds	Original Analysis	Diluted Analysis	Reported Analysis
TS-S1	Aroclor 1260	--	19.2	19.2 D
TS-S3	Aroclor 1260	--	12.0	12.0 D

Note: When 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 submitted as the final reported sample result.

Table 6. Evaluation Criteria for Compounds Exhibiting a Concentration Greater than the Linear Range of Instrument Calibration

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

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

2.11 Data Validation Checklist for Polychlorinated Biphenyls

Table 7. Data Validation Checklist for Polychlorinated Biphenyls

PCBs: EPA SW 846 Method 8082A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY					
Tier I Validation					
Holding Times		X		X	
RLs (units)		X		X	
Blanks:					
A. Method blanks		X		X	
B. Equipment blanks	X				X
LCS %R		X		X	
LCSD %R	X				X
LCS/LCSD Precision (RPD)	X				X
MS %R		X		X	
MSD %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Laboratory Duplicate (RPD)	X				X
Surrogate Spike Recoveries		X	X		
Column (RPD) (if dual column is performed-not confirmation purposes only)		X		X	
Dilution Factor		X		X	
Moisture Content		X		X	
Tier II Validation					
Initial Calibration %RSD		X		X	
Continuing Calibration %D		X		X	
System Performance and Column Resolution		X		X	
Compound Identification and Quantitation:					
A. Quantitation Reports		X		X	
B. Retention time of sample compounds within the established retention time windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. RLs adjusted to reflect sample dilutions		X		X	

Notes:
%D = percent difference
LCSD = LCS Duplicate

3 Overall Data Usability

This section summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. The % usability calculation included analyses evaluated under both Tier I and Tier II data validation reviews. The % usability calculation also includes QC samples (i.e., field/equipment blanks, trip blanks, and field duplicates) to aid in the evaluation of data usability. Data usability is summarized in the following table.

Table 8. Overall Summary of Data Usability

Parameter	% Usability	Rejected Data
PCBs	100%	0

The data package completeness, as determined from the Tier I data review, was used in combination with the data quality deviations identified during the Tier II data review to determine overall data quality. As specified in the FSP/QAPP, the overall precision, accuracy, representativeness, comparability, and completeness parameters determined from the Tier I and Tier II data reviews were used as indicators of overall data quality. These parameters were assessed through an evaluation of the results of the field and laboratory QA/QC sample analyses (discussed in this report) to provide a measure of compliance of the analytical data with the Data Quality Objectives specified in the FSP/QAPP.

VALIDATION PERFORMED BY: Allana Lopez

SIGNATURE: 

DATE: December 08, 2025

PEER REVIEW: Andrew Korycinski

DATE: December 9, 2025

Appendix A

Chain-of-Custody Forms

ARCADIS SO

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

LAB REFERENCE NUMBER: JE14797

Page _1_ of _1_

PROJECT NUMBER	PROJECT NAME	SAMPLE ORIGIN
30189487	Housatonic 5A	
SEND RESULTS TO: Dave Liles	EMAIL ADDRESS: David.Liles@arcadis.com	TELEPHONE: +1 919 328-5574
SAMPLERS: Patrick Chang		

SAMPLE ID	DATE	TIME	MATRIX	COMPOSITE / GRAB	QUANTITY	REQUESTED ANALYSES 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	REMARKS
TS-WP -1	7/3/25	16:15	SO	Grab	1	X															
TS-BWS -2	7/7/25	14:00	SO	Grab	1	X															
TS-S1 -3	7/3/25	13:45	SO	Grab	1	X															
TS-S2 -4	7/3/25	14:45	SO	Grab	1	X															
TS-S3 -5	7/3/25	14:50	SO	Grab	1	X															
TS-S4 -6	7/3/25	15:45	SO	Grab	1	X															Initial Assessment TJ-2B Label Verification

	Requested Analyses	Container	Pres.
1	PCB Aroclors 8082		N/A
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Special Instructions/Comments:

☐ Special QA/QC Instructions
☐ USDA Regulated
☐ Packed with Ice

Laboratory Information and Receipt

Lab Name:
Lab Project Manager:
Shipping Tracking #: 8825 7809 3283
Specify Turnaround Requirements:

☐ Custody seal intact
☐ Samples intact

Sample Receipt:
Condition/Cooler Temp: 2.5°C (IR)C

Relinquished by:	DATE	TIME	Received by:	DATE	TIME
Patrick Chang	7/7/2025	16:35	fed ex	[redacted]	[redacted]
fed ex	07/09	9:45	TJ		

5.1 5

JE14797: Chain of Custody
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Appendix B

Annotated Sample Analysis Data Sheets

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-WP		
Lab Sample ID:	JE14797-1	**Date Sampled:**	07/03/25
Matrix:	SO - Soil	**Date Received:**	07/09/25
Method:	SW846 8082A SW846 3570	**Percent Solids:**	45.8
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	RL29099.D	1	07/10/25 18:14	AS	07/10/25 12:50	OP65245	GRL738
Run #2							

	Initial Weight	Final Volume
Run #1	5.2 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.042	0.018	mg/kg	
11104-28-2	Aroclor 1221	ND	0.042	0.014	mg/kg	
11141-16-5	Aroclor 1232	ND	0.042	0.035	mg/kg	
53469-21-9	Aroclor 1242	ND	0.042	0.025	mg/kg	
12672-29-6	Aroclor 1248	ND	0.042	0.0091	mg/kg	
11097-69-1	Aroclor 1254	ND	0.042	0.0045	mg/kg	
11096-82-5	Aroclor 1260	0.0644	0.042	0.014	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	82%		35-154%
877-09-8	Tetrachloro-m-xylene	99%		35-154%
2051-24-3	Decachlorobiphenyl	75%		24-176%
2051-24-3	Decachlorobiphenyl	90%		24-176%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-BWS		
Lab Sample ID:	JE14797-2	**Date Sampled:**	07/07/25
Matrix:	SO - Soil	**Date Received:**	07/09/25
Method:	SW846 8082A SW846 3570	**Percent Solids:**	30.3
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	RL29100.D	1	07/10/25 18:30	AS	07/10/25 12:50	OP65245	GRL738
Run #2							

	Initial Weight	Final Volume
Run #1	5.1 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.065	0.028	mg/kg	
11104-28-2	Aroclor 1221	ND	0.065	0.022	mg/kg	
11141-16-5	Aroclor 1232	ND	0.065	0.054	mg/kg	
53469-21-9	Aroclor 1242	ND	0.065	0.039	mg/kg	
12672-29-6	Aroclor 1248	ND	0.065	0.014	mg/kg	
11097-69-1	Aroclor 1254	ND	0.065	0.0070	mg/kg	
11096-82-5	Aroclor 1260	2.03	0.065	0.022	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	73%		35-154%
877-09-8	Tetrachloro-m-xylene	94%		35-154%
2051-24-3	Decachlorobiphenyl	70%		24-176%
2051-24-3	Decachlorobiphenyl	85%		24-176%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-S1		
Lab Sample ID:	JE14797-3	**Date Sampled:**	07/03/25
Matrix:	SO - Soil	**Date Received:**	07/09/25
Method:	SW846 8082A SW846 3570	**Percent Solids:**	81.7
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	RL29101.D	1	07/10/25 18:47	AS	07/10/25 12:50	OP65245	GRL738
Run #2	RL29143.D	100	07/11/25 10:26	RK	07/10/25 12:50	OP65245	GRL740

	Initial Weight	Final Volume
Run #1	5.3 g	10.0 ml
Run #2	5.3 g	10.0 ml

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.023	0.0098	mg/kg	
11104-28-2	Aroclor 1221	ND	0.023	0.0078	mg/kg	
11141-16-5	Aroclor 1232	ND	0.023	0.019	mg/kg	
53469-21-9	Aroclor 1242	ND	0.023	0.014	mg/kg	
12672-29-6	Aroclor 1248	ND	0.023	0.0050	mg/kg	
11097-69-1	Aroclor 1254	ND	0.023	0.0025	mg/kg	
11096-82-5	Aroclor 1260	19.2 [a] D	2.3	0.80	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	86%	0% [b]	35-154%
877-09-8	Tetrachloro-m-xylene	103%	0% [b]	35-154%
2051-24-3	Decachlorobiphenyl	96%	0% [b]	24-176%
2051-24-3	Decachlorobiphenyl	116%	0% [b]	24-176%

(a) Result is from Run# 2
(b) Outside control limits due to dilution.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-S2		
Lab Sample ID:	JE14797-4	**Date Sampled:**	07/03/25
Matrix:	SO - Soil	**Date Received:**	07/09/25
Method:	SW846 8082A SW846 3570	**Percent Solids:**	79.1
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	RL29102.D	1	07/10/25 19:03	AS	07/10/25 12:50	OP65245	GRL738
Run #2							

	Initial Weight	Final Volume
Run #1	5.1 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.025	0.011	mg/kg	
11104-28-2	Aroclor 1221	ND	0.025	0.0083	mg/kg	
11141-16-5	Aroclor 1232	ND	0.025	0.021	mg/kg	
53469-21-9	Aroclor 1242	ND	0.025	0.015	mg/kg	
12672-29-6	Aroclor 1248	ND	0.025	0.0054	mg/kg	
11097-69-1	Aroclor 1254	ND	0.025	0.0027	mg/kg	
11096-82-5	Aroclor 1260	1.08	0.025	0.0086	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	85%		35-154%
877-09-8	Tetrachloro-m-xylene	102%		35-154%
2051-24-3	Decachlorobiphenyl	81%		24-176%
2051-24-3	Decachlorobiphenyl	95%		24-176%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-S3		
Lab Sample ID:	JE14797-5	**Date Sampled:**	07/03/25
Matrix:	SO - Soil	**Date Received:**	07/09/25
Method:	SW846 8082A SW846 3570	**Percent Solids:**	73.5
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	RL29103.D	1	07/10/25 19:20	AS	07/10/25 12:50	OP65245	GRL738
Run #2	RL29144.D	100	07/11/25 10:42	RK	07/10/25 12:50	OP65245	GRL740

	Initial Weight	Final Volume
Run #1	5.2 g	10.0 ml
Run #2	5.2 g	10.0 ml

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.026	0.011	mg/kg	
11104-28-2	Aroclor 1221	ND	0.026	0.0088	mg/kg	
11141-16-5	Aroclor 1232	ND	0.026	0.022	mg/kg	
53469-21-9	Aroclor 1242	ND	0.026	0.016	mg/kg	
12672-29-6	Aroclor 1248	ND	0.026	0.0057	mg/kg	
11097-69-1	Aroclor 1254	ND	0.026	0.0028	mg/kg	
11096-82-5	Aroclor 1260	12.0 [a] D	2.6	0.90	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	90%	0% [b]	35-154%
877-09-8	Tetrachloro-m-xylene	104%	0% [b]	35-154%
2051-24-3	Decachlorobiphenyl	93%	0% [b]	24-176%
2051-24-3	Decachlorobiphenyl	110%	0% [b]	24-176%

(a) Result is from Run# 2
(b) Outside control limits due to dilution.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-S4		
Lab Sample ID:	JE14797-6	**Date Sampled:**	07/03/25
Matrix:	SO - Soil	**Date Received:**	07/09/25
Method:	SW846 8082A SW846 3570	**Percent Solids:**	80.4
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	RL29104.D	1	07/10/25 19:37	AS	07/10/25 12:50	OP65245	GRL738
Run #2							

	Initial Weight	Final Volume
Run #1	5.2 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.024	0.010	mg/kg	
11104-28-2	Aroclor 1221	ND	0.024	0.0080	mg/kg	
11141-16-5	Aroclor 1232	ND	0.024	0.020	mg/kg	
53469-21-9	Aroclor 1242	ND	0.024	0.014	mg/kg	
12672-29-6	Aroclor 1248	ND	0.024	0.0052	mg/kg	
11097-69-1	Aroclor 1254	ND	0.024	0.0026	mg/kg	
11096-82-5	Aroclor 1260	0.949	0.024	0.0083	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	83%		35-154%
877-09-8	Tetrachloro-m-xylene	103%		35-154%
2051-24-3	Decachlorobiphenyl	76%		24-176%
2051-24-3	Decachlorobiphenyl	95%		24-176%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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General Electric Company

Data Validation Report

Reach 5A Sediment Dewatering Treatability Study
Housatonic River – Rest of River
Pittsfield, Massachusetts

Polychlorinated Biphenyls, Metals, and General Chemistry Analyses

SDGs JE16862, JE16862R and JE16862T

Tier I and II Level Data Review

Analyses Performed By:
SGS North America Inc.
Dayton, New Jersey, USA

Report 62026R
Project: 30299802.0002

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Appendices

Appendix A Chain-of-Custody Forms

Appendix B Annotated Sample Analysis Data Sheets

1 Summary

This document summarizes the data validation review of Sample Delivery Groups (SDGs) JE16862, JE16862R, and JE16862T performed on behalf of the General Electric Company (GE) for sampling activities conducted as part of the Reach 5A sediment dewatering treatability study performed for the GE-Pittsfield/Housatonic River Site. The review was conducted at Tier I and Tier II levels and included review for data package completeness. Field documentation was not included in this review. Included with this assessment are the chain-of-custody forms (Appendix A) and the validation annotated sample analysis data sheets (Appendix B). Analyses were performed on the samples listed in Table 1.

Table 1. Summary of Samples Subjected to Tier I and Tier II Data Validation

SDG	Sample ID	Laboratory ID	Matrix	Sample Collection Date	Parent Sample	Analysis		
						PCBs	Metals	GenChem
JE16862	TS-S2	JE16862-1	Water	08/07/2025	NA	X		X
	TS-WP	JE16862-2	Water	08/07/2025	NA	X		X
	TS-BW5	JE16862-3	Water	08/07/2025	NA	X		X
JE16862R	TS-S2	JE16862R-1	Water	08/07/2025	NA	X		
	TS-WP	JE16862R-2	Water	08/07/2025	NA	X		
	TS-BW5	JE16862R-3	Water	08/07/2025	NA	X		
JE16862RT	TS-S2	JE16862T-1	Water	08/07/2025	NA		X	
	TS-WP	JE16862T-2	Water	08/07/2025	NA		X	
	TS-BW5	JE16862T-3	Water	08/07/2025	NA		X	

Notes:
PCB = polychlorinated biphenyl
GenChem = general chemistry
NA = not applicable

1.1 Analytical Data Package Documentation

The table below provides a summary of the data package completeness evaluation.

Table 2. Evaluation of 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	

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
5. RLs.		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 form.		X		X	
11. Narrative summary of QA or sample problems provided.		X		X	
12. Data package completeness and compliance.		X		X	

Notes:
QA = quality assurance
RL = reporting limit

1.2 Data Validation Procedures

Analyses were performed according to United States Environmental Protection Agency (EPA) Methods 608.3, 1664A, 200.8, 245.1, and SW-846 8082A and Standard Method (SM) 2540 D-15/20. Data were reviewed in accordance with the following documents:

- Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP) – GE-Pittsfield/Housatonic River Site, General Electric Company, Pittsfield, Massachusetts, prepared by Arcadis (Revised December 21, 2023);
- EPA Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses (EPA Region I Guidelines) (July 1996, revised December 1996);
- EPA National Functional Guidelines for High Resolution Superfund Methods Data Review OLEM 9240.1-65EPA, 542-R-20-007 (November 2020); and
- Supplemental Data Collection Work Plan for Reach 5A, Housatonic River – Rest of River, General Electric Company, Pittsfield, Massachusetts, prepared by Anchor QEA and AECOM (Submitted September 28, 2023 as Appendix I of the Conceptual Remedial Design/Remedial Action Work Plan for Reach 5A).

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 EPA National Functional Guidelines:

- Concentration 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 Qualifiers:
  - E The compound was quantitated above the calibration range.
  - D The 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 The compound is 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 kept in mind 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 in data tables because they cannot be relied upon, even as a last resort. Second, 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.

Section 7.5 of the revised FSP/QAPP states that all analytical data will be validated to a Tier I level following the procedures presented in the EPA Region I Guidelines. The Tier I review consisted of a completeness evidence audit, as outlined in the EPA Region I Complete Sample Delivery Group File (CSF) Completeness Evidence Audit Program (EPA Region I, July 31, 1991), to ensure that laboratory data and documentation were present. In the event that data packages were determined to be incomplete, the missing information was requested from the laboratory. Upon completion of the Tier I review, the data packages complied with the EPA Region I Tier I data completeness requirements.

The analytical results described above were also subjected to a Tier II data review. The Tier II data review consisted of a review of data package summary forms for identification of QA/QC deviations and qualification of the data according to the EPA Region I Guidelines. Additionally, field duplicates were examined for relative percent difference (RPD) compliance with the criteria specified in the FSP/QAPP. A tabulated summary of the number of sample analyses subject to Tier I and Tier II data review is presented in the following table.

Table 3. Summary of Sample Analyses Subjected to Tier I and Tier II Data Validation

Parameter	Tier I Only			Tier I and Tier II			Total
	Samples	Duplicates	Blanks	Samples	Duplicates	Blanks	
PCBs	0	0	0	6	0	0	6
Metals	0	0	0	3	0	0	3
Oil and Grease	0	0	0	3	0	0	3
TSS	0	0	0	3	0	0	3

Note:
TSS = total suspended solids

When qualification of the sample data was required, the sample results associated with a QA/QC parameter deviation were qualified in accordance with the procedures outlined in the EPA Region I Guidelines. When the data validation process identified several QC deficiencies, the cumulative effect of the various deficiencies was employed in assigning the final data qualifier. The annotated sample analysis data sheets attached to this validation report (Appendix B) reflect any added data qualifiers.

2 Polychlorinated Biphenyl Analyses

2.1 Holding Times

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

Table 4. Holding Time for Methods 608.3 and SW-846 8082A

Method	Matrix	Holding Time	Preservation
608.3 and SW-946 8082A	Water	One year from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C

Notes:
< = less than
°C = degrees Celsius

All samples were analyzed within the specified holding time criteria.

2.2 Blank Contamination

QA blanks (i.e., method and rinse blanks) are prepared to identify any contamination that 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 10 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.

SDGs JE16862 and JE16862R: Aroclors were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

2.3 System Performance

System performance and column resolution were acceptable.

2.4 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.

2.4.1 Initial Calibration

A maximum relative standard deviation (RSD) of 20 percent (%) or a correlation coefficient greater than 0.99 is allowed.

2.4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a % difference (%D) less than the control limit (20%).

SDGs JE16862 and JE16862R: All compounds associated with the calibrations were within the specified control limits.

2.5 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. PCB analysis requires that both the surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

SDG JE16862R: All surrogate recoveries were within control limits.

SDG JE16862: Samples associated with surrogates exhibiting recoveries outside of the control limits are presented in the following table.

Table 5. Samples Associated with Surrogates Exhibiting Recoveries Outside of the Control Limits

Sample ID	Surrogates	Recovery
TS-WP (Run #1)	Tetrachloro-m-xylene (Signal #1)	< LCL but > 10%
	Decachlorobiphenyl (Signal #1 and #2)	< LCL but > 10%
TS-BW5 (Run #1)	Tetrachloro-m-xylene (Signal #1)	< LCL but > 10%
	Decachlorobiphenyl (Signal #1 and #2)	< LCL but > 10%

Notes:
> = greater than
LCL = lower control limit

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.

Table 6. Evaluation Criteria for Surrogate Recoveries

Control Limit	Sample Result	Qualification
> the UCL	Non-Detect	No Action
	Detect	J
< the LCL 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 target compounds.	Non-Detect	UJ/J[1]
	Detect	

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

2.6 Internal Standard Performance

Internal standard performance criteria ensure that the Gas Chromatography/Mass Spectrometry sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds 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.

SDGs JE16862 and JE16862R: All internal standard responses were within control limits.

2.7 Matrix Spike/Matrix Spike Duplicate Analysis

Matrix Spike (MS)/Matrix Spike Duplicate (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 % recovery (%R) within the laboratory-established acceptance limits. The 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 the MS/MSD analysis 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.

SDGs JE16862 and JE16862R: The MS/MSD analysis was not performed on any samples from these SDGs.

2.8 Laboratory Control Sample/Laboratory Control Sample Duplicate Analysis

The Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD) analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a %R and RPD within the laboratory-established acceptance limits.

SDGs JE16862 and JE16862R: Samples associated with the LCS/LCSD analysis exhibited recoveries and RPDs within the control limits.

2.9 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 is applied to the RPD between the parent sample and the field duplicate. When the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied for water matrices.

SDGs JE16862 and JE16862R: Field duplicate samples were not collected for these SDGs.

2.10 Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed, the RPD of detected sample results must be less than 40%.

SDG JE16862R: All compounds exhibited acceptable RPDs.

SDG JE16862: Samples with compounds exhibiting RPDs outside of the control limits are presented in the following table.

Table 7. Samples Associated with Dual Column Relative Percent Differences Exhibiting Recoveries Outside of the Control Limits

Sample ID	Compounds	RPD
TS-S2 (SW-846 8082A analysis only)	Aroclor 1260	46.2%
	Total PCBs	46.2%
TS-WP (SW-846 8082A analysis only)	Aroclor 1260	48.3%
	Total PCBs	48.3%
TS-BW5 (SW-846 8082A analysis only)	Aroclor 1260	45.3%
	Total PCBs	45.3%

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

Table 8. Criteria for Evaluation of Relative Percent Differences for Method 608.3

Control Limit (RPD)	Qualification
> 25% to 70%	J
> 70% to 100%	JN
> 100% [1]	R
> 100% to 200% (Interference detected) [2]	J or JN
> 50% (PCB sample results < RL)	U

When the sample results are less than the RL and the RPD is greater than 50%, the sample result is raised to the RL and reported as non-detect.

Note 1: If the pattern is confirmed, sample results will be qualified as estimated (J). If the pattern exhibits interference or if the pesticide cannot be positively determined due to weathering, the sample results will be qualified as tentative identification estimate (JN).

Note 2: If interference is detected in either column, the sample results will be qualified as tentative identification estimate (JN).

2.11 System Performance and Overall Assessment

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

2.12 Data Validation Checklist for Polychlorinated Biphenyls

Table 9. Data Validation Checklist for Polychlorinated Biphenyls

PCBs: EPA SW 846 Method 8082A and EPA Method 608.3	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY					
Tier I Validation					
Holding Times		X		X	
RLs (units)		X		X	
Blanks:					
A. Method blanks		X		X	
B. Equipment blank	X				X
LCS %R		X		X	
LCSD %R		X		X	

PCBs: EPA SW 846 Method 8082A and EPA Method 608.3	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
LCS/LCSD Precision (RPD)		X		X	
MS %R	X				X
MSD %R	X				X
MS/MSD Precision (RPD)	X				X
Field/Laboratory Duplicate (RPD)	X				X
Surrogate Spike Recoveries		X	X		
Dual Column (RPD)		X	X		
Dilution Factor		X		X	
Moisture Content	X				X
Tier II Validation					
Initial Calibration %RSD		X		X	
Continuing Calibration %D		X		X	
Internal Standard		X		X	
Instrument Tune and Performance Check		X		X	
Ion Abundance Criteria for Each Instrument Used		X		X	
System Performance and Column Resolution		X		X	
Compound Identification and Quantitation:					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. Retention time of sample compounds within the established retention time windows		X		X	
D. Transcription/calculation errors present		X		X	
E. RLs adjusted to reflect sample dilutions		X		X	

3 Metals Analyses

3.1 Holding Times

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

Table 10. Holding Time for Methods 200.8 and 245.1

Method	Matrix	Holding Time	Preservation
200.8 (Metals)	Water	180 days from collection to analysis	Preserve to a pH < 2 s.u.
245.1 (Mercury)	Water	28 days from collection to analysis	Cool to < 6 °C and preserve to a pH < 2s.u.

Note:
s.u. = standard units

SDG JE16862T: All samples were analyzed within the specified holding time with the below exception.

Table 11. Samples Analyzed Outside the Method 245.1 Holding Time

Sample ID	Actual Holding Time	Method Criteria
TS-S2	32 days	< 28 days
TS-WP	32 days	< 28 days
TS-BW5	32 days	< 28 days

Sample results associated with samples analyzed by EPA Method 245.1 were qualified, as specified in the table below. All other holding times were met.

Table 12. Evaluation Criteria for Outside Holding Time

Criteria	Qualification	
	Detected Analytes	Non Detect Analytes
Analysis completed < two times the holding time	J	UJ
Analysis completed > two times the holding time	J	R

3.2 Blank Contamination

QA blanks (i.e., method and rinse blanks) are prepared to identify any contamination that 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 BAL of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the MDL. The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

SDG JE16862T: Analytes were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3.3 Calibration

Satisfactory instrument calibration is established to provide 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's continuing performance is satisfactory.

3.3.1 Initial Calibration and Continuing Calibration

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-Inductively Coupled Plasma (ICP) analytes.

SDG JE16862T: All initial and continuing calibration verification standard recoveries were within the control limits.

3.3.2 Reporting Limit Check Standard

The RL check standard serves to verify the linearity of calibration of the analysis at the RL. The RL standard is not required for the analysis of aluminum, barium, calcium, iron, magnesium, sodium, and potassium.

SDG JE16862T: All RL standard recoveries were within control limits.

3.3.3 Inductively Coupled Plasma Interference Control Sample

The Interference Control Sample (ICS) verifies the laboratory's interelement and background correction factors.

SDG JE16862T: All ICS exhibited recoveries within the control limits.

3.4 Matrix Spike/Matrix Spike Duplicate/Laboratory Duplicate Analysis

MS and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

3.4.1 Matrix Spike/Matrix Spike Duplicate Analysis

All metal analytes must exhibit a %R within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for the MS/MSD analysis performed on samples where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. When this is true, the data will not be qualified, even if the %R does not meet the control limits, and the laboratory flag will be removed.

SDG JE16862T: The MS/MSD analysis performed on sample TS-S2 exhibited recoveries and a RPD within the control limits, except for the following analytes present in the table below.

Table 13. Samples with Matrix Spike/Matrix Spike Duplicate Exhibiting Recoveries Outside of the Control Limit

Sample ID	Analytes	MS Recovery	MSD Recovery
TS-S2	Antimony	43.7%	45.0%
	Arsenic	65.0%	65.7%
	Barium	AC	69.0%
	Chromium	AC	55.5%
	Cobalt	AC	63.4%
	Copper	AC	63.0%
	Lead	AC	65.3%
	Molybdenum	51.5%	56.8%
	Nickel	15.0%	6.0%
	Selenium	66.9%	67.5%
	Vanadium	67.4%	54.7%

Note:
AC = acceptable

The criteria used to evaluate MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified. The qualifications are applied to all sample results in the associated sample preparation batch.

Table 14. Evaluation Criteria for Matrix Spike/Matrix Spike Duplicate Recoveries

Control limit	Sample Result	Qualification
MS/MSD %R: 30% to 74%	Non-Detect	UJ
	Detect	J
MS/MSD %R: < 30%	Non-Detect	R
	Detect	J
MS/MSD %R: > 125%	Non-Detect	No Action
	Detect	J

3.4.2 Laboratory Duplicate Analysis

The laboratory duplicate RPD criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. When the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of one time the RL is applied for water matrices.

SDG JE16862T: The laboratory duplicate analysis was not performed on any sample from this SDG.

3.5 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 is applied to the RPD between the parent sample and the field duplicate. When the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied for water matrices.

SDG JE16862T: A field duplicate sample was not collected for this SDG.

3.6 Laboratory Control Sample Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a %R between the control limits of 80% and 120%.

SDG JE16862T: The LCS analysis exhibited recovery within the control limits.

3.7 Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to the sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have a %D of less than 10%

between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

SDG JE16862T: The serial dilution analysis was not performed on a sample associated with this SDG.

3.8 System Performance and Overall Assessment

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

3.9 Data Validation Checklist for Metals

Table 15. Data Validation Checklist for Metals

METALS: EPA Methods 200.8 and 245.1	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
ICP-Mass Spectrometry Atomic Absorption – Manual Cold Vapor					
Tier II Validation					
Holding Times		X	X		
RLs (units)		X		X	
Blanks:					
A. Instrument blanks	X				X
B. Method blanks		X		X	
C. Equipment/field Blanks	X				X
LCS %R		X		X	
LCSD %R	X				X
LCS/LCSD Precision (RPD)	X				X
MS %R		X	X		
MSD %R		X	X		
MS/MSD Precision (RPD)		X		X	
Field/Laboratory Duplicate (RPD)	X				X
ICP Serial Dilution %D	X				X
RL Verification		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
Contract Required Detection Limit Standard Recovery		X		X	
ICP Interference Check		X		X	
ICP-Mass Spectrometry Internal Standards		X		X	

METALS: EPA Methods 200.8 and 245.1	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Transcription/Calculations Acceptable	Not required for Tier II plus calibration				
Raw Data		X		X	
RLs Adjusted to Reflect Sample Dilutions		X		X	

4 General Chemistry Analyses

4.1 Holding Times

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

Table 16. Holding Time for General Chemistry Methods

Method	Matrix	Holding Time	Preservation
TSS by SM 2540 D-15/20	Water	7 days from collection to analysis	Cool to < 6 °C
Hexane Extractable Material Oil and Grease by EPA Method 1664A	Water	28 days from collection to analysis	Cool to < 6 °C and preserve to a pH < 2 s.u.

SDG JE16862: All samples were analyzed within the specified holding time criteria.

4.2 Blank Contamination

QA blanks (i.e., method and rinse blanks) are prepared to identify any contamination that 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 BAL of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the RL. The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

SDG JE16862: Analytes were not detected above the RL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

4.3 Matrix Spike/Matrix Spike Duplicate/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.3.1 Matrix Spike/Matrix Spike Duplicate Analysis

All analytes must exhibit a %R within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for the MS/MSD analysis performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. When this is true, the data will not be qualified, even if the %R does not meet the control limits, and the laboratory flag will be removed.

SDG JE16862: The MS/MSD analysis was not performed on any sample from this SDG.

4.3.2 Laboratory Duplicate Analysis

The laboratory duplicate RPD criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the RL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. When the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of one time the RL is applied for water matrices and two times the RL for soil matrices.

SDG JE16862: The laboratory duplicate analysis was not performed on any sample from this SDG.

4.4 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 is applied to the RPD between the parent sample and the field duplicate. When the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied for water matrices.

SDG JE16862: A field duplicate sample was not collected for this SDG.

4.5 Laboratory Control Sample Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a %R between the control limits of 80% and 120%.

SDG JE16862: All LCS recoveries were within control limits.

4.6 System Performance and Overall Assessment

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

4.7 Data Validation Checklist for General Chemistry

Table 17. Data Validation Checklist for General Chemistry

GenChem: SM 2540 D 15/20 and EPA Method 1664A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier I/II Validation					
Holding Times/Preservation		X		X	
RLs (units)		X		X	
Blanks:					
A. Method blanks		X		X	
B. Equipment/field Blanks	X				X
LCS %R		X		X	
MS %R	X				X
MSD %R	X				X
MS/MSD Precision (RPD)	X				X
Field/Laboratory Duplicate (RPD)	X				
Transcription/Calculations Acceptable		X		X	
Raw Data		X		X	
RLs Adjusted to Reflect Sample Dilutions		X		X	

5 Overall Data Usability

This section summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. The % usability calculation included analyses evaluated under both Tier I and Tier II data validation reviews. The % usability calculation also includes QC samples (i.e., field/equipment blanks, trip blanks, and field duplicates) to aid in the evaluation of data usability. Data usability is summarized in the following table.

Table 18. Overall Summary of Data Usability

Parameter	% Usability	Rejected Data
PCBs	100%	0
Metals	100%	0
Oil and Grease	100%	0
TSS	100%	0

The data package completeness, as determined from the Tier I data review, was used in combination with the data quality deviations identified during the Tier II data review to determine overall data quality. As specified in the FSP/QAPP, the overall precision, accuracy, representativeness, comparability, and completeness parameters determined from the Tier I and Tier II data reviews were used as indicators of overall data quality. These parameters were assessed through an evaluation of the results of the field and laboratory QA/QC sample analyses (discussed in this report) to provide a measure of compliance of the analytical data with the Data Quality Objectives specified in the FSP/QAPP.

VALIDATION PERFORMED BY: Allana Lopez

SIGNATURE: 

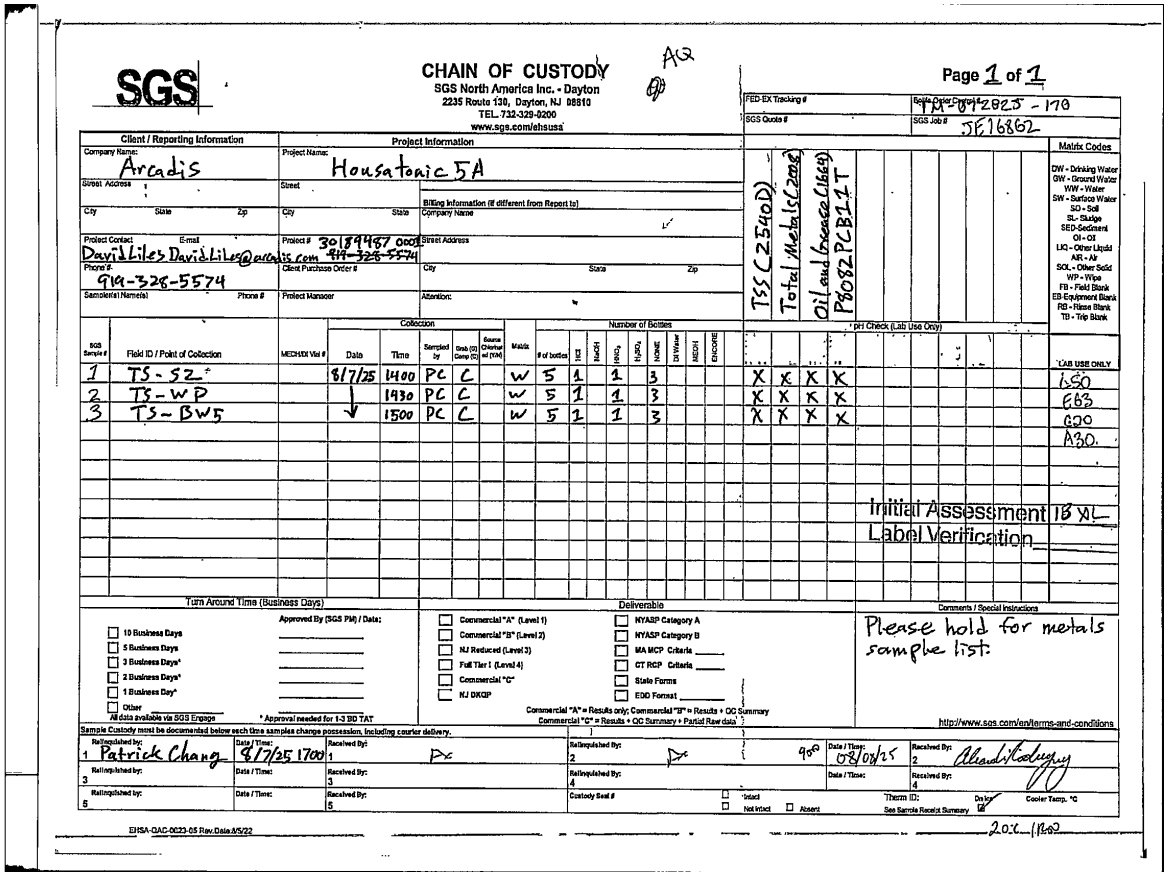
DATE: December 5, 2025

PEER REVIEW: Andrew Korycinski

DATE: December 9, 2025

Appendix A

Chain-of-Custody Forms



CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200
www.sgs.com/ehsusa

Page 1 of 1

FED-EX Tracking #: TA-591-2825 - 170
SGS Quote #:
SGS Job #: JE16862

Client / Reporting Information

Company Name: Arcadis
Street Address:
City / State / Zip:
Project Contact: David Liles
E-mail: David.Liles@arcadis.com
Phone #: 919-326-5574
Sampler(s) Name(s):
Phone #:

Project Information

Project Name: Housatonic 5A
Street:
City / State:
Billing Information (if different from Report to)
Company Name:
Project # 30159487 0005
Street Address:
City / State / Zip:
Client Purchase Order #:
Project Manager:
Attention:

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB-Equipment Blank; RB - Rinse Blank; TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Code (WW only)	Matrix	# of bottles	HCl	MeOH	HNO3	NONE	DI Water	ASCOR	ENCORE	TSS (2540D)	Total Metals (200.8)	Oil and Grease (1664)	PCB 8082 PCB 1 1 T	pH Check (Lab Use Only)	LAB USE ONLY
1	TS-S2		8/7/25	1400	PC	C		W	5	1		1		3				X	X	X	X	1550
2	TS-WP			1430	PC	C		W	5	1		1		3				X	X	X	X	1553
3	TS-BW5		↓	1500	PC	C		W	5	1		1		3				X	X	X	X	1530

Initial Assessment IB XL
Label Verification

Turn Around Time (Business Days)

Approved By (SGS PM) / Date:

- 10 Business Days
- 5 Business Days
- 3 Business Days*
- 2 Business Days*
- 1 Business Day*
- Other

All data available via SGS Engage

* Approval needed for 1-3 BD TAT

Deliverable

- Commercial "A" (Level 1)
- Commercial "B" (Level 2)
- NJ Reduced (Level 3)
- Full Tier I (Level 4)
- Commercial "C"
- NJ DKQP
- NYASP Category A
- NYASP Category B
- MA MCP Criteria
- CT RCP Criteria
- State Forms
- EDD Format

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Please hold for metals sample list:

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

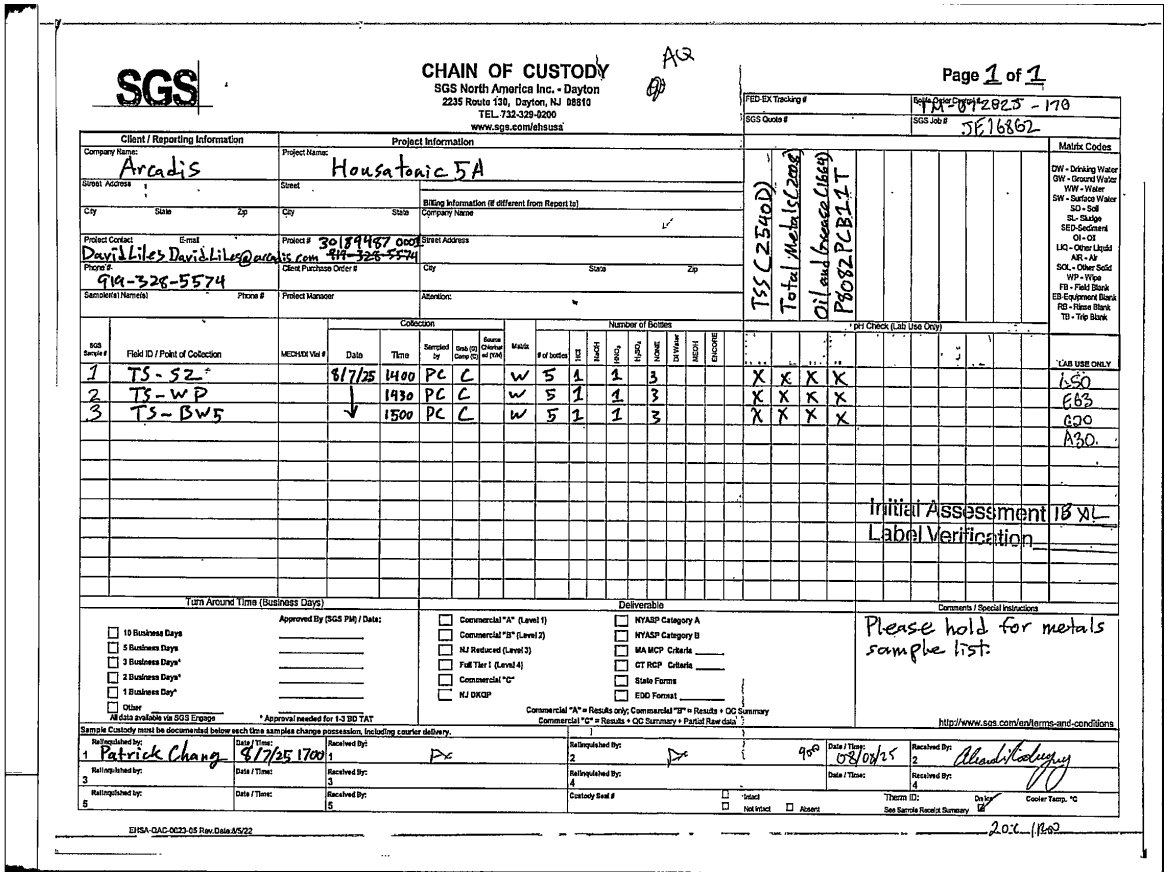
	Relinquished by:	Date / Time:	Received By:
1	Patrick Chang	8/7/25 1700	1
2			2
3			3
4			4
5			5

Custody Seal #: ☐ Intact ☐ Not Intact ☐ Absent

Therm ID: See Sample Receipt Summary — Cooler Temp. °C

EHSA-DAC-0023-05 Rev.Date 8/5/22

20x 1800



CHAIN OF CUSTODY

SGS North America Inc. - Dayton
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TEL. 732-329-0200
www.sgs.com/ehsusa

Page 1 of 1

FED-EX Tracking #: TA-[illegible]2825 - 170
SGS Quote #:
SGS Job #: JE16862

Client / Reporting Information

Company Name: Arcadis
Street Address:
City / State / Zip:
Project Contact: David Liles
E-mail: David.Liles@arcadis.com
Phone #: 919-326-5574
Sampler(s) Name(s):
Phone #:

Project Information

Project Name: Housatonic 5A
Street:
City / State:
Billing Information (if different from Report to)
Company Name:
Project # 30159487 0005
Street Address:
Client Purchase Order #:
City / State / Zip:
Project Manager:
Attention:

Analysis: TSS (2540D), Total Metals (200.8), Oil and Grease (1664), PB082 PCB 1 1 T

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB-Equipment Blank; RB - Rinse Blank; TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorine ref (Y/N)	Matrix	# of bottles	HCl	NaOH	HNO3	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	LAB USE ONLY
1	TS-S2		8/7/25	1400	PC	C		W	5	1		1		3				LSO
2	TS-WP			1430	PC	C		W	5	1		1		3				EBS
3	TS-BW5		↓	1500	PC	C		W	5	1		1		3				GDO
																		ABO

Initial Assessment IB XL
Label Verification

Turn Around Time (Business Days)

Approved By (SGS PM) / Date:

- 10 Business Days
- 5 Business Days
- 3 Business Days*
- 2 Business Days*
- 1 Business Day*
- Other

All data available via SGS Engage

* Approval needed for 1-3 BD TAT

Deliverable

- Commercial "A" (Level 1)
- Commercial "B" (Level 2)
- NJ Reduced (Level 3)
- Full Tier I (Level 4)
- Commercial "C"
- NJ DKQP
- NYASP Category A
- NYASP Category B
- MA MCP Criteria
- CT RCP Criteria
- State Forms
- EDD Format

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Please hold for metals sample list:

http://www.sgs.com/en/terms-and-conditions

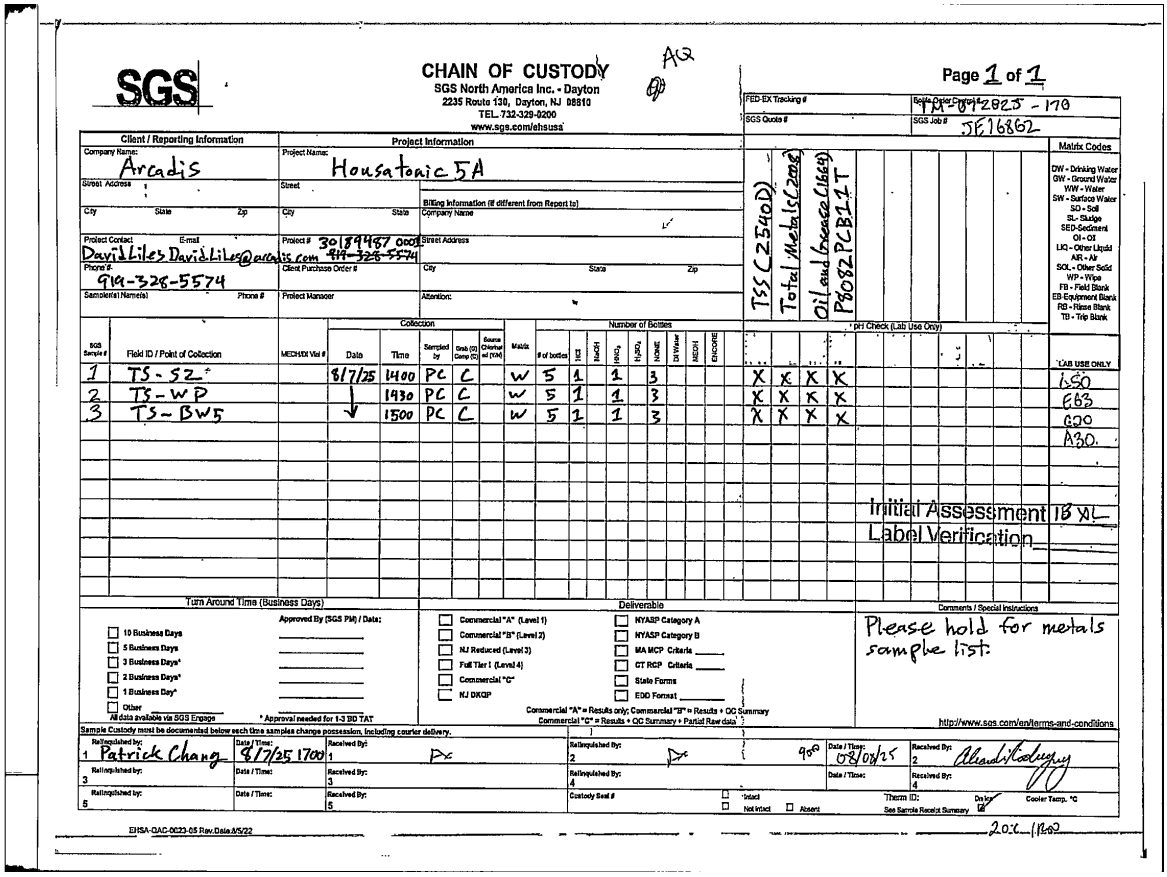
Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1	Patrick Chang	8/7/25 1700	1	2	08/08/25	2
3			3	4		4
5			5	Custody Seal #	Intact / Not Intact / Absent	Therm ID: / See Sample Receipt Summary	Cooler Temp. °C

EHSA-OAC-0023-05 Rev.Date.5/5/22

20x 1800

5.1.5



CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200
www.sgs.com/ehsusa

Page 1 of 1

FED-EX Tracking #: TA-591-2825 - 170
SGS Quote #:
SGS Job #: JE16862

Client / Reporting Information: Company Name: Arcadis; Street Address; City State Zip; Project Contact: David Liles; E-mail: David.Liles@arcadis.com 919-326-5574; Phone #: 919-326-5574; Sampler(s) Name(s); Phone #

Project Information: Project Name: Housatonic 5A; Street; City State; Project #: 30159487 0005; Client Purchase Order #; Project Manager; Billing Information (if different from Report to): Company Name; Street Address; City State Zip; Attention:

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB-Equipment Blank; RB - Rinse Blank; TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Code (WW only)	Matrix	# of bottles	HCl	MeOH	HNO3	NONE	DI Water	ASCOR	ENCORE	TSS (2540D)	Total Metals (200.8)	Oil and Grease (1664)	PCB 8082 PCB1-T	LAB USE ONLY
1	TS-S2		8/7/25	1400	PC	C		W	5	1		1		3				X	X	X	X	650
2	TS-WP			1430	PC	C		W	5	1		1		3				X	X	X	X	651
3	TS-BW5			1500	PC	C		W	5	1		1		3				X	X	X	X	652

* pH Check (Lab Use Only)

Initial Assessment IB XL
Label Verification

Turn Around Time (Business Days): Approved By (SGS PM) / Date:
- 10 Business Days
- 5 Business Days
- 3 Business Days*
- 2 Business Days*
- 1 Business Day*
- Other

All data available via SGS Engage * Approval needed for 1-3 BD TAT

Deliverable:
- Commercial "A" (Level 1)
- Commercial "B" (Level 2)
- NJ Reduced (Level 3)
- Full Tier I (Level 4)
- Commercial "C"
- NJ DKQP
- NYASP Category A
- NYASP Category B
- MA MCP Criteria
- CT RCP Criteria
- State Forms
- EDD Format

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions: Please hold for metals sample list:

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1	Patrick Chang	8/7/25 1700	1	2	08/08/25	2
3			3	4		4
5			5	Custody Seal #	Intact / Not Intact / Absent	Therm ID: / See Sample Receipt Summary	Cooler Temp. °C

EHSA-DAC-0023-05 Rev.Date 5/5/22

20x 1800

Appendix B

Annotated Sample Analysis Data Sheets

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-S2		
Lab Sample ID:	JE16862-1	**Date Sampled:**	08/07/25
Matrix:	AQ - Ground Water	**Date Received:**	08/08/25
Method:	SW846 8082A SW846 3511	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G240014.D	1	08/14/25 04:33	MLC	08/13/25 10:45	OP66253	G2G6355
Run #2							

	Initial Volume	Final Volume
Run #1	53.3 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.19	0.051	ug/l	
11104-28-2	Aroclor 1221	ND	0.19	0.098	ug/l	
11141-16-5	Aroclor 1232	ND	0.19	0.072	ug/l	
53469-21-9	Aroclor 1242	ND	0.19	0.041	ug/l	
12672-29-6	Aroclor 1248	ND	0.19	0.037	ug/l	
11097-69-1	Aroclor 1254	ND	0.19	0.069	ug/l	
11096-82-5	Aroclor 1260	1.5	0.19	0.12	ug/l	J
11100-14-4	Aroclor 1268	ND	0.19	0.064	ug/l	
37324-23-5	Aroclor 1262	ND	0.19	0.041	ug/l	
1336-36-3	Total PCBs	1.5	0.19	0.037	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	59%		50-150%
877-09-8	Tetrachloro-m-xylene	79%		50-150%
2051-24-3	Decachlorobiphenyl	68%		50-150%
2051-24-3	Decachlorobiphenyl	64%		50-150%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-S2		
Lab Sample ID:	JE16862-1	**Date Sampled:**	08/07/25
Matrix:	AQ - Ground Water	**Date Received:**	08/08/25
		Percent Solids:	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
HEM Oil and Grease	< 7.1	7.1	mg/l	1	08/18/25 17:00	SS	EPA 1664A
Solids, Total Suspended	2050	4.0	mg/l	1	08/12/25 12:00	SD	SM2540 D-15/20

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-WP		
Lab Sample ID:	JE16862-2	**Date Sampled:**	08/07/25
Matrix:	AQ - Ground Water	**Date Received:**	08/08/25
Method:	SW846 8082A SW846 3511	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G240017.D	1	08/14/25 05:46	MLC	08/13/25 10:45	OP66253	G2G6355
Run #2							

	Initial Volume	Final Volume
Run #1	55.1 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND UJ	0.18	0.050	ug/l	
11104-28-2	Aroclor 1221	ND	0.18	0.095	ug/l	
11141-16-5	Aroclor 1232	ND	0.18	0.070	ug/l	
53469-21-9	Aroclor 1242	ND	0.18	0.039	ug/l	
12672-29-6	Aroclor 1248	ND	0.18	0.036	ug/l	
11097-69-1	Aroclor 1254	ND	0.18	0.067	ug/l	
11096-82-5	Aroclor 1260	0.11	0.18	0.11	ug/l	J
11100-14-4	Aroclor 1268	ND UJ	0.18	0.062	ug/l	
37324-23-5	Aroclor 1262	ND UJ	0.18	0.040	ug/l	
1336-36-3	Total PCBs	0.11	0.18	0.036	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	38% [a]		50-150%
877-09-8	Tetrachloro-m-xylene	53%		50-150%
2051-24-3	Decachlorobiphenyl	48% [a]		50-150%
2051-24-3	Decachlorobiphenyl	40% [a]		50-150%

(a) Outside of in house control limits.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-WP		
Lab Sample ID:	JE16862-2	**Date Sampled:**	08/07/25
Matrix:	AQ - Ground Water	**Date Received:**	08/08/25
		Percent Solids:	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
HEM Oil and Grease	< 5.0	5.0	mg/l	1	08/18/25 17:00	SS	EPA 1664A
Solids, Total Suspended	597	4.0	mg/l	1	08/12/25 12:00	SD	SM2540 D-15/20

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-BW5		
Lab Sample ID:	JE16862-3	**Date Sampled:**	08/07/25
Matrix:	AQ - Ground Water	**Date Received:**	08/08/25
Method:	SW846 8082A SW846 3511	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G240016.D	1	08/14/25 05:22	MLC	08/13/25 10:45	OP66253	G2G6355
Run #2							

	Initial Volume	Final Volume
Run #1	52.4 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND UJ	0.19	0.052	ug/l	
11104-28-2	Aroclor 1221	ND	0.19	0.10	ug/l	
11141-16-5	Aroclor 1232	ND	0.19	0.073	ug/l	
53469-21-9	Aroclor 1242	ND	0.19	0.041	ug/l	
12672-29-6	Aroclor 1248	ND	0.19	0.037	ug/l	
11097-69-1	Aroclor 1254	ND	0.19	0.071	ug/l	
11096-82-5	Aroclor 1260	0.58 J	0.19	0.12	ug/l	
11100-14-4	Aroclor 1268	ND UJ	0.19	0.065	ug/l	
37324-23-5	Aroclor 1262	ND UJ	0.19	0.042	ug/l	
1336-36-3	Total PCBs	0.58 J	0.19	0.037	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	39% [a]		50-150%
877-09-8	Tetrachloro-m-xylene	53%		50-150%
2051-24-3	Decachlorobiphenyl	42% [a]		50-150%
2051-24-3	Decachlorobiphenyl	35% [a]		50-150%

(a) Outside of in house control limits.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-BW5		
Lab Sample ID:	JE16862-3	**Date Sampled:**	08/07/25
Matrix:	AQ - Ground Water	**Date Received:**	08/08/25
		Percent Solids:	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
HEM Oil and Grease	< 6.7	6.7	mg/l	1	08/18/25 17:00	SS	EPA 1664A
Solids, Total Suspended	557	4.0	mg/l	1	08/12/25 12:00	SD	SM2540 D-15/20

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-S2		
Lab Sample ID:	JE16862-1R	**Date Sampled:**	08/07/25
Matrix:	AQ - Ground Water	**Date Received:**	08/08/25
Method:	EPA 608.3 EPA 608	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2524363.D	1	08/22/25 21:58	AS	08/22/25 09:45	OP66554A	GXX8933
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.40	0.21	ug/l	
11104-28-2	Aroclor 1221	ND	0.80	0.63	ug/l	
11141-16-5	Aroclor 1232	ND	0.40	0.18	ug/l	
53469-21-9	Aroclor 1242	ND	0.40	0.25	ug/l	
12672-29-6	Aroclor 1248	ND	0.40	0.12	ug/l	
11097-69-1	Aroclor 1254	ND	0.40	0.17	ug/l	
11096-82-5	Aroclor 1260	14.5	0.40	0.17	ug/l	
37324-23-5	Aroclor 1262	ND	0.40	0.11	ug/l	
11100-14-4	Aroclor 1268	ND	0.40	0.20	ug/l	
1336-36-3	Total PCBs	14.5	0.40		ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	34%		10-159%
877-09-8	Tetrachloro-m-xylene	28%		10-159%
2051-24-3	Decachlorobiphenyl	35%		10-135%
2051-24-3	Decachlorobiphenyl	26%		10-135%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-WP		
Lab Sample ID:	JE16862-2R	**Date Sampled:**	08/07/25
Matrix:	AQ - Ground Water	**Date Received:**	08/08/25
Method:	EPA 608.3 EPA 608	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2524364.D	1	08/22/25 22:16	AS	08/22/25 09:45	OP66554A	GXX8933
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.40	0.21	ug/l	
11104-28-2	Aroclor 1221	ND	0.80	0.63	ug/l	
11141-16-5	Aroclor 1232	ND	0.40	0.18	ug/l	
53469-21-9	Aroclor 1242	ND	0.40	0.25	ug/l	
12672-29-6	Aroclor 1248	ND	0.40	0.12	ug/l	
11097-69-1	Aroclor 1254	ND	0.40	0.17	ug/l	
11096-82-5	Aroclor 1260	0.34	0.40	0.17	ug/l	J
37324-23-5	Aroclor 1262	ND	0.40	0.11	ug/l	
11100-14-4	Aroclor 1268	ND	0.40	0.20	ug/l	
1336-36-3	Total PCBs	0.34	0.40		ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	28%		10-159%
877-09-8	Tetrachloro-m-xylene	23%		10-159%
2051-24-3	Decachlorobiphenyl	23%		10-135%
2051-24-3	Decachlorobiphenyl	22%		10-135%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-BW5		
Lab Sample ID:	JE16862-3R	**Date Sampled:**	08/07/25
Matrix:	AQ - Ground Water	**Date Received:**	08/08/25
Method:	EPA 608.3 EPA 608	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2524365.D	1	08/22/25 22:35	AS	08/22/25 09:45	OP66554A	GXX8933
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.40	0.21	ug/l	
11104-28-2	Aroclor 1221	ND	0.80	0.63	ug/l	
11141-16-5	Aroclor 1232	ND	0.40	0.18	ug/l	
53469-21-9	Aroclor 1242	ND	0.40	0.25	ug/l	
12672-29-6	Aroclor 1248	ND	0.40	0.12	ug/l	
11097-69-1	Aroclor 1254	ND	0.40	0.17	ug/l	
11096-82-5	Aroclor 1260	3.3	0.40	0.17	ug/l	
37324-23-5	Aroclor 1262	ND	0.40	0.11	ug/l	
11100-14-4	Aroclor 1268	ND	0.40	0.20	ug/l	
1336-36-3	Total PCBs	3.3	0.40		ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	35%		10-159%
877-09-8	Tetrachloro-m-xylene	30%		10-159%
2051-24-3	Decachlorobiphenyl	35%		10-135%
2051-24-3	Decachlorobiphenyl	29%		10-135%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TS-S2
Lab Sample ID: JE16862-1T
Matrix: AQ - Ground Water
Project: GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA

Date Sampled: 08/07/25
Date Received: 08/08/25
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	45700	4200	ug/l	50	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Antimony	< 3.3 UJ	3.3	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Arsenic	17.4 J	1.7	ug/l	1	09/08/25	09/18/25	NV	EPA 200.8 [3]	EPA 200.8 [4]
Barium	303 J	83	ug/l	50	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Beryllium	2.8	0.83	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Cadmium	4.9	0.83	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Calcium	104000	21000	ug/l	50	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Chromium	< 330 UJ	330	ug/l	50	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Cobalt	74.5 J	0.83	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Copper	< 330 UJ	330	ug/l	50	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Iron	96600	4200	ug/l	50	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Lead	469 J	42	ug/l	50	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Magnesium	61500	21000	ug/l	50	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Manganese	6720	83	ug/l	50	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Mercury [a]	2.3 J	1.2	ug/l	1	09/08/25	09/08/25	CM	EPA 245.1 [1]	EPA 245.1 [5]
Molybdenum	< 1.7 UJ	1.7	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Nickel	115 J	6.7	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Potassium	4720	420	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Selenium	4.1 J	1.7	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Silver	< 3.3	3.3	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Sodium	12400	420	ug/l	1	09/08/25	09/18/25	NV	EPA 200.8 [3]	EPA 200.8 [4]
Thallium	< 42	42	ug/l	50	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Titanium	807	17	ug/l	10	09/08/25	09/18/25	NV	EPA 200.8 [3]	EPA 200.8 [4]
Vanadium	75.1 J	6.7	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Zinc	988	170	ug/l	10	09/08/25	09/18/25	NV	EPA 200.8 [3]	EPA 200.8 [4]

(1) Instrument QC Batch: MA59284
(2) Instrument QC Batch: MA59336
(3) Instrument QC Batch: MA59365
(4) Prep QC Batch: MP57050
(5) Prep QC Batch: MP57071

(a) Analyzed beyond Holdtime.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TS-WP		
Lab Sample ID:	JE16862-2T	**Date Sampled:**	08/07/25
Matrix:	AQ - Ground Water	**Date Received:**	08/08/25
		Percent Solids:	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	11400	83	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Antimony	< 3.3 UJ	3.3	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Arsenic	3.1 J	1.7	ug/l	1	09/08/25	09/18/25	NV	EPA 200.8 [3]	EPA 200.8 [5]
Barium	53.4 J	1.7	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Beryllium	< 0.83	0.83	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Cadmium	< 0.83	0.83	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Calcium	69500	4200	ug/l	10	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Chromium	16.1 J	6.7	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Cobalt	7.8 J	0.83	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Copper	34.9 J	6.7	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Iron	12700	83	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Lead	48.2 J	0.83	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Magnesium	28200	4200	ug/l	10	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Manganese	164	17	ug/l	10	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Mercury [a]	< 1.2 UJ	1.2	ug/l	1	09/08/25	09/08/25	CM	EPA 245.1 [1]	EPA 245.1 [6]
Molybdenum	< 1.7 UJ	1.7	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Nickel	19.8 J	6.7	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Potassium	3940	420	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Selenium	1.9 J	1.7	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Silver	< 3.3	3.3	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Sodium	9730	420	ug/l	1	09/08/25	09/18/25	NV	EPA 200.8 [3]	EPA 200.8 [5]
Thallium	< 0.83	0.83	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Titanium	146	3.3	ug/l	2	09/08/25	10/03/25	NV	EPA 200.8 [4]	EPA 200.8 [5]
Vanadium	12.0 J	6.7	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [5]
Zinc	113	17	ug/l	1	09/08/25	09/18/25	NV	EPA 200.8 [3]	EPA 200.8 [5]

(1) Instrument QC Batch: MA59284
(2) Instrument QC Batch: MA59336
(3) Instrument QC Batch: MA59365
(4) Instrument QC Batch: MA59481
(5) Prep QC Batch: MP57050
(6) Prep QC Batch: MP57071

(a) Analyzed beyond Holdtime.

RL = Reporting Limit

Report of Analysis

Client Sample ID: TS-BW5
Lab Sample ID: JE16862-3T
Matrix: AQ - Ground Water
Project: GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA

Date Sampled: 08/07/25
Date Received: 08/08/25
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	10500	83	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Antimony	< 3.3 UJ	3.3	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Arsenic	4.7 J	1.7	ug/l	1	09/08/25	09/18/25	NV	EPA 200.8 [3]	EPA 200.8 [4]
Barium	118 J	1.7	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Beryllium	< 0.83	0.83	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Cadmium	1.5	0.83	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Calcium	69600	4200	ug/l	10	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Chromium	35.5 J	6.7	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Cobalt	10.5 J	0.83	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Copper	55.9 J	6.7	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Iron	15300	830	ug/l	10	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Lead	99.8 J	0.83	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Magnesium	26400	4200	ug/l	10	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Manganese	379	17	ug/l	10	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Mercury [a]	< 1.2 UJ	1.2	ug/l	1	09/08/25	09/08/25	CM	EPA 245.1 [1]	EPA 245.1 [5]
Molybdenum	2.0 J	1.7	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Nickel	23.2 J	6.7	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Potassium	1390	420	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Selenium	< 1.7 UJ	1.7	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Silver	< 3.3	3.3	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Sodium	11700	420	ug/l	1	09/08/25	09/18/25	NV	EPA 200.8 [3]	EPA 200.8 [4]
Thallium	< 0.83	0.83	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Titanium	230	3.3	ug/l	2	09/08/25	09/18/25	NV	EPA 200.8 [3]	EPA 200.8 [4]
Vanadium	19.0 J	6.7	ug/l	1	09/08/25	09/12/25	NV	EPA 200.8 [2]	EPA 200.8 [4]
Zinc	200	33	ug/l	2	09/08/25	09/18/25	NV	EPA 200.8 [3]	EPA 200.8 [4]

(1) Instrument QC Batch: MA59284
(2) Instrument QC Batch: MA59336
(3) Instrument QC Batch: MA59365
(4) Prep QC Batch: MP57050
(5) Prep QC Batch: MP57071

(a) Analyzed beyond Holdtime.

RL = Reporting Limit

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General Electric Company

Data Validation Report

Reach 5A Sediment Dewatering Treatability Study
Housatonic River – Rest of River
Pittsfield, Massachusetts

Volatile Organic Compounds, Semi-Volatile Organic Compounds, Total Petroleum Hydrocarbons, Polychlorinated Biphenyls, Metals, and General Chemistry Analyses

SDG JE17629

Tier I and II Level Data Review

Analyses Performed By:
SGS North America Inc.
Dayton, New Jersey, USA

Report 62025R
Project: 30299802.0002

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1 Summary

This document summarizes the data validation review of Sample Delivery Group (SDG) JE17629 performed on behalf of the General Electric Company (GE) for sampling activities conducted as part of the Reach 5A sediment dewatering treatability study performed for the GE-Pittsfield/Housatonic River Site. The review was conducted at Tier I and Tier II levels and included review for data package completeness. Field documentation was not included in this review. Included with this assessment are the chain-of-custody forms (Appendix A) and the validation annotated sample analysis data sheets (Appendix B). Analyses were performed on the samples listed in Table 1.

Table 1. Summary of Samples Subjected to Tier I and Tier II Data Validation

Sample ID	Laboratory ID	Matrix	Sample Collection Date	Parent Sample	Analysis					
					VOCs	SVOCs	TPHs	PCBs	Metals	GenChem
TS-S1	JE17629-1	Water	08/18/2025	NA				X	X	X
TS-S4	JE17629-2	Water	08/18/2025	NA				X	X	X
TS-S3	JE17629-3	Water	08/18/2025	NA	X	X	X	X	X	X
TS-S1	JE17629-4	Water	08/13/2025	NA	X					
TS-S3	JE17629-5	Water	08/13/2025	NA	X					

Notes:
VOC = volatile organic compound
SVOC = semi-volatile organic compound
TPH = total petroleum hydrocarbon
PCB = polychlorinated biphenyl
GenChem = general chemistry
NA = not applicable

1.1 Analytical Data Package Documentation

The table below provides a summary of the data package completeness evaluation.

Table 2. Evaluation of 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. RLs.		X		X	
6. Sample collection date.		X		X	

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
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 form.		X		X	
11. Narrative summary of QA or sample problems provided.		X		X	
12. Data package completeness and compliance.		X		X	

Notes:
QA = quality assurance
RL = reporting limit

1.2 Data Validation Procedures

Analyses were performed according to United States Environmental Protection Agency (EPA) Methods 624.1, 625.1, 608.3, and SW-846 Methods 8260D and 8015D. Data were reviewed in accordance with the following documents:

- Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP) – GE-Pittsfield/Housatonic River Site, General Electric Company, Pittsfield, Massachusetts, prepared by Arcadis (Revised December 21, 2023);
- EPA Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses (EPA Region I Guidelines) (July 1996, revised December 1996); and
- Supplemental Data Collection Work Plan for Reach 5A, Housatonic River – Rest of River, General Electric Company, Pittsfield, Massachusetts, prepared by Anchor QEA and AECOM (Submitted September 28, 2023 as Appendix I of the Conceptual Remedial Design/Remedial Action Work Plan for Reach 5A).

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 EPA National Functional Guidelines:

- Concentration 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 Qualifiers:
  - E The compound was quantitated above the calibration range.
  - D The 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 The compound is 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 kept in mind 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 in data tables because they cannot be relied upon, even as a last resort. Second, 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.

Section 7.5 of the revised FSP/QAPP states that all analytical data will be validated to a Tier I level following the procedures presented in the EPA Region I Guidelines. The Tier I review consisted of a completeness evidence audit, as outlined in the EPA Region I Complete Sample Delivery Group File (CSF) Completeness Evidence Audit Program (EPA Region I, July 31, 1991), to ensure that laboratory data and documentation were present. In the event that data packages were determined to be incomplete, the missing information was requested from the laboratory. Upon completion of the Tier I review, the data packages complied with the EPA Region I Tier I data completeness requirements.

The analytical results described above were also subjected to a Tier II data review. The Tier II data review consisted of a review of data package summary forms for identification of QA/QC deviations and qualification of the data according to the EPA Region I Guidelines. Additionally, field duplicates were examined for relative percent difference (RPD) compliance with the criteria specified in the FSP/QAPP. A tabulated summary of the number of sample analyses subject to Tier I and Tier II data review is presented in the following table.

Table 3. Summary of Sample Analyses Subjected to Tier I and Tier II Data Validation

	Tier I Only			Tier I and Tier II			
Parameter	Samples	Duplicates	Blanks	Samples	Duplicates	Blanks	Total
VOCs	0	0	0	3	0	0	3
SVOCs	0	0	0	1	0	0	1
PCBs	0	0	0	3	0	0	3
TPHs	0	0	0	1	0	0	1

Parameter	Tier I Only			Tier I and Tier II			Total
	Samples	Duplicates	Blanks	Samples	Duplicates	Blanks	
Metals	0	0	0	3	0	0	3
GenChem	0	0	0	3	0	0	3

When qualification of the sample data was required, the sample results associated with a QA/QC parameter deviation were qualified in accordance with the procedures outlined in the EPA Region I Guidelines. When the data validation process identified several QC deficiencies, the cumulative effect of the various deficiencies was employed in assigning the final data qualifier. The annotated sample analysis data sheets attached to this validation report (Appendix B) reflect any added data qualifiers.

2 Volatile Organic Compounds Analyses

2.1 Holding Times

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

Table 4. Holding Times for SW-846 Method 8260D and Method 624.1

EPA Method	Matrix	Holding Time	Preservation
SW-846 Method 8260D	Water	14 days from collection to analysis (preserved)	Cool to < 6 °C and preserve to a pH < 2 s.u.
Method 624.1	Water	7 days from collection to analysis (non-preserved)	Cool to < 6 °C and preserve to a pH < 2 s.u.

Notes:
< = less than
°C = degrees Celsius
s.u. = standard units

All samples were analyzed within the specified holding time with below exception.

Table 5. Exception to Holding Time for SW-846 Method 8260D

Sample ID	Actual Holding Time	Method Criteria
TS-S3 (JE17629-3R)	28 days	< 14 days
TS-S3 (JE17629-5R)	22 days	< 14 days

Sample results associated with samples analyzed by EPA SW-846 Method 8260D were qualified, as specified in the table below. All other holding times were met.

Table 6. Holding Time Criteria for SW-846 Method 8260D

Criteria	Qualification	
	Detected Analytes	Non Detect Analytes
Analysis completed < two times holding time	J	UJ
Analysis completed > two times holding time	J	R

Note:
> = greater than

2.2 Blank Contamination

QA blanks (i.e., method and rinse blanks) are prepared to identify any contamination that 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 10 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.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

2.3 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.

2.4 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.

2.4.1 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).

All compounds associated with the initial calibrations were within the specified control limits.

2.4.2 Continuing Calibration

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

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Table 7. Volatile Organic Compounds Not Within Calibration Specified Control Limits

Sample ID	Initial/Continuing Calibration	Compound	Criteria
TS-S3	CCV %D	Chloromethane	89.6%
		Trichlorofluoromethane	20.6%
		1,2-Dibromo-3-chloropropane	22.6%

Note:
CCV = Coefficient of Variation

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Table 8. Criteria Used to Evaluate Initial and Continuing Calibration

Calibration	Criteria	Sample Result	Qualification
Continuing	%D > 20% (increase in sensitivity)	Non-Detect	UJ
		Detect	J
	%D > 20% (decrease in sensitivity)	Non-Detect	UJ
		Detect	J
	%D > 90% (increase/decrease in sensitivity)	Non-Detect	R
		Detect	J

2.5 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. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

2.6 Internal Standard Performance

Internal standard performance criteria insure that the Gas Chromatography/Mass Spectrometry sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC 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.

All internal standard responses were within control limits.

2.7 Matrix Spike/Matrix Spike Duplicate Analysis

Matrix Spike (MS)/Matrix Spike Duplicate (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 % recovery (%R) within the laboratory-established acceptance limits. The RPD between the MS/MSD recoveries must exhibit an RPD within 20%.

Note: The MS/MSD recovery control limits do not apply for the MS/MSD analysis 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.

The MS/MSD analysis was not performed on any samples in this SDG.

2.8 Laboratory Control Sample/Laboratory Control Sample Duplicate Analysis

The Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (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 %R within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits with the exceptions noted in the table below.

Table 9. Volatile Organic Compounds Not Associated with Laboratory Control Sample Analysis

Sample ID	Analytical Batch	Compounds	LCS Recovery
TS-S3 (JE17629-5R)	V1U2799	Chloromethane	> UCL
		1,1-Dichloroethene	> UCL

Note:
UCL = upper control limit

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

Table 10. Criteria Used to Evaluate the Laboratory Control Sample/Laboratory Control Sample Duplicate Recoveries

Control Limit	Sample Result	Qualification
> the UCL	Non-Detect	No Action
	Detect	J
< the LCL but > 10%	Non-Detect	UJ
	Detect	J
< 10%	Non-Detect	R
	Detect	J

Note:
LCL = lower control limit

2.9 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 is applied to the RPD between the parent sample and the field duplicate. When the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate sample was not collected for this SDG.

2.10 Compound Identification

Compounds are identified on the Gas Chromatography/Mass Spectrometry by using the analyte's relative retention time and ion spectra.

All identified compounds met the specified criteria.

2.11 System Performance and Overall Assessment

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

2.12 Data Validation Checklist for Volatile Organic Compounds

Table 11. Data Validation Checklist for Volatile Organic Compounds

VOCs: EPA SW 846 Method 8260D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY					
Tier II Validation					
Holding Times		X	X		
RLs (units)		X		X	
Blanks:					
A. Method blanks		X		X	
B. Equipment blanks	X				X
LCS %R		X	X		
LCSD %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
MS %R	X				X
MSD %R	X				X
MS/MSD Precision (RPD)	X				X

VOCs: EPA SW 846 Method 8260D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Field/Laboratory 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 %RSD		X		X	
Initial Calibration %D		X		X	
Continuing Calibration RRF		X		X	
Continuing Calibration %D		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. Retention time of sample compounds within the established retention time windows		X		X	
D. Transcription/calculation errors present		X		X	
E. RLs adjusted to reflect sample dilutions		X		X	

3 Semi Volatile Organic Compounds Analyses

3.1 Holding Times

The specified holding time for EPA Method 625.1 is presented in the following table.

Table 12. Holding Time for Method SW-846 625.1

Method	Matrix	Holding Time	Preservation
Method 625.1	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C

All samples were analyzed within the specified holding time.

3.2 Blank Contamination

QA blanks (i.e., method and rinse blanks) are prepared to identify any contamination that 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 BAL of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at 10 times) is calculated for QA blanks containing concentrations greater than the MDL. The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

SVOCs were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3.3 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.

3.4 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.

3.4.1 Initial Calibration

The method specifies %RSD and 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).

All compounds associated with the initial calibrations were within the specified control limits.

3.4.2 Continuing Calibration

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

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Table 13. Semi-Volatile Organic Compounds Not Within Calibration Specified Control Limits

Sample ID	Initial/Continuing Calibration	Compound	Criteria
TS-S3	CCV %D	2,4-Dinitrophenol	72.4%
		4,6-Dinitro-o-cresol	69.7%
		2-Nitrophenol	75.5%
		2,4,6-Trichlorophenol	23.5%
		Butyl benzyl phthalate	28.0%
		2,4-Dinitrotoluene	28.9%
		2,6-Dinitrotoluene	25.8%
		Hexachlorocyclopentadiene	26.2%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Table 14. Criteria Used to Evaluate Initial and Continuing Calibration

Calibration	Criteria	Sample Result	Qualification
Continuing	%D > 20% (increase in sensitivity)	Non-Detect	UJ
		Detect	J
	%D > 20% (decrease in sensitivity)	Non-Detect	UJ
		Detect	J
	%D > 90% (increase/decrease in sensitivity)	Non-Detect	R
		Detect	J

3.5 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.

All surrogate recoveries were within control limits.

3.6 Internal Standard Performance

Internal standard performance criteria ensure that the Gas Chromatography/Mass Spectrometry 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.

All internal standard responses were within control limits.

3.7 Matrix Spike/Matrix Spike Duplicate 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 %R within the laboratory-established acceptance limits. The RPD between the MS/MSD recoveries must exhibit an RPD within 20%.

Note: The MS/MSD recovery control limits do not apply for the MS/MSD analysis 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.

The MS/MSD analysis was not performed on any samples in this SDG.

3.8 Laboratory Control Sample/Laboratory Control Sample Duplicate 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 %R within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits with the exceptions noted in the table below.

Table 15. Semi-Volatile Organic Compounds Not Associated with Laboratory Control Sample Analysis

Sample ID	Preparatory Batch	Compound	LCS Recovery	LCSD Recovery
TS-S3	OP66567B	bis(2-Chloroethyl)ether	> UCL	> UCL
		2,4-Dinitrophenol	AC	> UCL
		4,6-Dinitro-o-cresol	AC	> UCL
		2-Nitrophenol	AC	> UCL

Note:
AC = acceptable

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

Table 16. Criteria Used to Evaluate LCS/LCSD Recoveries

Control Limit	Sample Result	Qualification
> the UCL	Non-Detect	No Action
	Detect	J
< the LCL but > 10%	Non-Detect	UJ
	Detect	J
< 10%	Non-Detect	R
	Detect	J

3.9 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 is applied to the RPD between the parent sample and the field duplicate. When the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate sample was not collected for this SDG.

3.10 Compound Identification

Compounds are identified on the Gas Chromatography/Mass Spectrometry by using the analyte's relative retention time and ion spectra.

All identified compounds met the specified criteria.

3.11 System Performance and Overall Assessment

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

3.12 Data Validation Checklist for Semi-Volatile Organic Compounds

Table 17. Data Validation Checklist for Semi-Volatile Organic Compounds

SVOCs: EPA Method 625.1	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY					
Tier II Validation					
Holding Times		X		X	
RLs (units)		X		X	
Blanks:					
A. Method blanks		X		X	
B. Equipment blanks	X				X
LCS %R		X	X		
LCSD %R		X	X		
LCS/LCSD Precision (RPD)		X		X	
MS %R	X				X
MSD %R	X				X
MS/MSD Precision (RPD)	X				X

SVOCs: EPA Method 625.1	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Field/Laboratory 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 %RSD		X		X	
Initial Calibration %D		X		X	
Continuing Calibration RRF		X		X	
Continuing Calibration %D		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. Retention time of sample compounds within the established retention time windows		X		X	
D. Transcription/calculation errors present		X		X	
E. RLs adjusted to reflect sample dilutions		X		X	

4 Total Petroleum Hydrocarbons Analyses

4.1 Holding Times

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

Table 18. Holding Time for SW-846 Method 8015D

Method	Matrix	Holding Time	Preservation
TPH DRO by SW-846 Method 8015D	Water	14 days from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C
TPH GRO by SW-846 Method 8015D	Water	14 days from collection to analysis	Cool to < 6 °C

Notes:
DRO = Diesel Range Organics
GRO = Gasoline Range Organics

All samples were analyzed within the specified holding time criteria.

4.2 Blank Contamination

QA blanks (i.e., method and rinse blanks) are prepared to identify any contamination that 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 BAL of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at 10 times) is calculated for QA blanks containing concentrations greater than the MDL. The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

4.3 System Performance

System performance and column resolution were acceptable.

4.4 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.

All Aroclors associated with calibrations were within the specified control limits for initial calibration and continuing calibration, as described below.

4.4.1 Initial Calibration

The method specifies %RSD and RRF limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

The initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99.

The initial calibration criteria were within the control limits.

4.4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a %D less than the control limit (20%).

All continuing calibration criteria were within the specified control limits.

4.5 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. TPH DRO and TPH GRO analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4.6 Matrix Spike Analysis

MS data is used to assess the accuracy of the analytical method. The compounds used to perform the MS analysis must exhibit a %R within the laboratory-established acceptance limits.

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

The MS analysis was not performed on any samples in this SDG.

4.7 Laboratory Control Sample/Laboratory Control Sample Duplicate 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 %R within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

4.8 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. When the parent and/or duplicate sample concentrations are less than or equal to five 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.

A field duplicate sample was not collected in association with this SDG.

4.9 Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows.

All identified compounds met the specified criteria.

4.10 System Performance and Overall Assessment

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

4.11 Data Validation Checklist for Total Petroleum Hydrocarbons

Table 19. Data Validation Checklist for Total Petroleum Hydrocarbons

TPH DRO and TPH GRO: EPA SW 846 Method 8015D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/FLAME IONIZATION DETECTOR					
Tier II Validation					
Holding Times		X		X	
RLs (units)		X		X	
Blanks:					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
LCS %R		X		X	
LCSD %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
MS %R	X				X
MSD %R	X				X
MS/MSD Precision (RPD)	X				X
Field/Laboratory 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 %RSD		X		X	
Continuing Calibration %D		X		X	
Compound Identification and Quantitation:					
A. Quantitation Reports		X		X	
B. Retention time of sample compounds within the established retention time windows		X		X	

TPH DRO and TPH GRO: EPA SW 846 Method 8015D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
C. Transcription/calculation errors present		X		X	
D. RLs adjusted to reflect sample dilutions		X		X	

5 Polychlorinated Biphenyl Analyses

5.1 Holding Times

The specified holding time for EPA Method 608.3 is presented in the following table.

Table 20. Holding Time for Method 608.3

Method	Matrix	Holding Time	Preservation
Method 608.3	Water	One year from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C

All samples were analyzed within the specified holding time criteria.

5.2 Blank Contamination

QA blanks (i.e., method and rinse blanks) are prepared to identify any contamination that 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 BAL of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at 10 times) is calculated for QA blanks containing concentrations greater than the MDL. The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

5.3 System Performance

System performance and column resolution were acceptable.

5.4 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.

All Aroclors associated with calibrations were within the specified control limits for initial calibration and continuing calibration, as described below.

5.4.1 Initial Calibration

A maximum RSD of 20% or a correlation coefficient greater than 0.99 is allowed. Multiple-point calibrations were performed for Aroclors 1016 and 1260 only. Single-point calibrations were performed for the remaining Aroclors.

5.4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a %D less than the control limit (15%).

5.5 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. PCB analysis requires that both the surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

5.6 Matrix Spike/Matrix Spike Duplicate 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 %R within the laboratory-established acceptance limits. The 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 the MS/MSD analysis performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD analysis was not performed on any samples from this SDG.

5.7 Laboratory Control Sample/Laboratory Control Sample Duplicate 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 %R within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

5.8 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. When the parent and/or duplicate sample concentrations are less than or equal to five 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.

A field duplicate sample was not collected for this SDG.

5.9 Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed, the RPD of detected sample results must be less than 25%.

Table 21. Samples Associated with Dual Column Relative Percent Differences Exhibiting Recoveries Outside of the Control Limits

Sample ID	Compounds	RPD
TS-S1	Aroclor 1260	53.7%
	Total PCBs	53.7%
TS-S4	Aroclor 1260	56.1%
	Total PCBs	56.1%
TS-S3	Aroclor 1260	48.7%
	Total PCBs	48.7%

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

Table 22. Criteria for Evaluation of Relative Percent Differences for Method 608.3

Control Limit (RPD)	Qualification
> 25% to 70%	J
> 70% to 100%	JN
> 100% [1]	R
> 100% to 200% (Interference detected) [2]	J or JN
> 50% (PCB sample results < RL)	U

When the sample results are less than the RL and the RPD is greater than 50%, the sample results are raised to the RL and reported as non-detect.

Note 1: If the pattern is confirmed, sample results will be qualified as estimated (J). If the pattern exhibits interference or if the pesticide cannot be positively determined due to weathering, the sample results will be qualified as tentative identification estimate (JN).

Note 2: If interference is detected in either column, the sample results will be qualified as tentative identification estimate (JN).

5.10 System Performance and Overall Assessment

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

Table 23. Analysis for Compounds Exhibiting a Concentration Greater than the Linear Range of Instrument Calibration

Sample ID	Compounds	Original Analysis	Diluted Analysis	Reported Analysis
TS-S3	Aroclor 1260	--	38.8	38.8 D
	Total PCBs	--	38.8	38.8 D

Note: When 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 submitted as the final reported sample result.

Table 24. Evaluation Criteria for Compounds Exhibiting a Concentration Greater than the Linear Range of Instrument Calibration

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result < calibration range	DJ
Diluted sample result > calibration range	EDJ
Original sample result > calibration range	EJ

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

5.11 Data Validation Checklist for Polychlorinated Biphenyls

Table 25. Data Validation Checklist for Polychlorinated Biphenyls

PCBs: EPA SW 846 Method 8082A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY					
Tier I Validation					
Holding Times		X		X	
RLs (units)		X		X	
Blanks:					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
LCS %R		X		X	
LCSD %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
MS %R	X				X
MSD %R	X				X
MS/MSD Precision (RPD)	X				X
Field/Laboratory Duplicate (RPD)	X				X
Surrogate Spike Recoveries		X		X	
Column (RPD) (if dual column is performed-not confirmation purposes only)		X	X		
Dilution Factor		X		X	
Moisture Content		X		X	
Tier II Validation					
Initial Calibration %RSD		X		X	
Continuing Calibration %D		X		X	
System Performance and Column Resolution		X		X	
Compound Identification and Quantitation:					
A. Quantitation Reports		X		X	
B. Retention time of sample compounds within the established retention time windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. RLs adjusted to reflect sample dilutions		X		X	

6 Metals Analyses

6.1 Holding Times

The specified holding times for EPA Methods 200.8 and 245.1 are presented in the following table.

Table 26. Holding Times for Methods 200.8 and 245.1

Method	Matrix	Holding Time	Preservation
200.8 (Metals)	Water	180 days from collection to analysis	Preserve to a pH < 2 s.u.
245.1 (Mercury)	Water	28 days from collection to analysis	Cool to < 6 °C and preserve to a pH < 2 s.u.

All samples were analyzed within the specified holding time criteria.

6.2 Blank Contamination

QA blanks (i.e., method and rinse blanks) are prepared to identify any contamination that 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 BAL of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at 10 times) is calculated for QA blanks containing concentrations greater than the MDL. The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

6.3 System Performance

System performance and column resolution were acceptable.

6.4 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.

All Aroclors associated with calibrations were within the specified control limits for initial calibration and continuing calibration, as described below.

6.4.1 Initial Calibration

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-Inductively Coupled Plasma (ICP) analytes.

All initial and continuing calibration verification standard recoveries were within the control limits.

The initial calibration criteria were within the control limits.

6.4.2 Reporting Limit Check Standard

The RL check standard serves to verify the linearity of calibration of the analysis at the RL. The RL standard is not required for the analysis of aluminum, barium, calcium, iron, magnesium, sodium, and potassium.

All RL standard recoveries were within control limits.

6.4.3 Inductively Coupled Plasma Interference Control Sample

The Interference Control Sample (ICS) verifies the laboratory's interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

6.5 Matrix Spike/Matrix Spike Duplicate Analysis

All metal analytes must exhibit a %R within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for the MS/MSD analysis performed on samples where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. When this is true, the data will not be qualified, even if the %R does not meet the control limits, and the laboratory flag will be removed.

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

The MS/MSD analysis was performed on sample TS-S3, which exhibited acceptable recoveries and RPDs within the control limits, except for the analytes presented in the table below.

Table 27. Sample Associated with Matrix Spike/Matrix Spike Duplicate Exhibiting Recoveries Outside of the Control Limit

Sample ID	Analytes	MS Recovery	MSD Recovery
TS-S3	Manganese (filtered)	37.5%	62.5%

The criteria used to evaluate MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified. The qualifications are applied to all sample results in the associated sample preparation batch.

Table 28. Evaluation Criteria for Matrix Spike/Matrix Spike Duplicate Recoveries

Control Limit	Sample Result	Qualification
MS/MSD %R: 30% to 74%	Non-Detect	UJ
	Detect	J
MS/MSD %R: < 30%	Non-Detect	R
	Detect	J
MS/MSD %R: > 125%	Non-Detect	No Action
	Detect	J

Samples associated with MS/MSDs exhibiting RPDs greater than the control limit are presented in the following table.

Table 29. Matrix Spike/Matrix Spike Duplicate Samples Exhibiting Relative Percent Differences Greater than Control Limit

Sample ID	Analytes
TS-S3	Iron
	Selenium

The criteria used to evaluate the RPDs between the MS and MSD are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below. The qualifications are applied to all sample results associated with the analytical batch.

Table 30. Evaluation Criteria for Relative Percent Differences Between Matrix Spike and Matrix Spike Duplicate

Control Limit	Sample Result	Qualification
> 20% (Water)	Non-Detect	UJ
	Detect	J

6.6 Laboratory Duplicate Analysis

The laboratory duplicate RPD criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. When the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of one time the RL is applied for water matrices.

The laboratory duplicate analysis was not performed on any sample from this SDG.

6.7 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. When the parent and/or duplicate sample concentrations are less than or

equal to five 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.

A field duplicate sample was not collected from this SDG.

6.8 Laboratory Control Sample Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a %R between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

6.9 Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to the sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have a %D of less than 10% between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

The serial dilution analysis was not performed on a sample associated with this SDG.

6.10 System Performance and Overall Assessment

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

6.11 Data Validation Checklist for Metals

Table 31. Data Validation Checklist for Metals

Metals: EPA Methods 200.8 and 245.1	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
ICP-Mass Spectrometry Atomic Absorption – Manual Cold Vapor					
Tier II Validation					
Holding Times		X		X	
RLs (units)		X		X	
Blanks:					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
LCS %R		X		X	
LCSD %R		X		X	

Metals: EPA Methods 200.8 and 245.1	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
LCS/LCSD Precision (RPD)		X		X	
MS %R		X	X		
MSD %R		X	X		
MS/MSD Precision (RPD)		X	X		
Field/Lab Duplicate (RPD)	X				X
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
Contract Required Detection Limit Standard Recovery					
ICP Interference Check					
ICP-Mass Spectrometry Internal Standards					
Transcription/Calculations Acceptable	Not required for Tier II plus calibration				
Raw Data		X		X	
RLs Adjusted to Reflect Sample Dilutions		X		X	

7 General Chemistry Analyses

7.1 Holding Times

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

Table 32. Holding Time for General Chemistry Methods

Method	Matrix	Holding Time	Preservation
Hexane Extractable Material Oil and Grease by EPA Method 1664A	Water	28 days from collection to analysis	Cool to < 6 °C and preserve to a pH < 2 s.u.
Alkalinity by SM 2320 B-11/21	Water	14 days from collection to analysis	Cool to < 6 °C
Hardness (Total) by SM 2340 C-11/21	Water	180 days from collection to analysis	NA
Total Suspended Solids by SM 2540 D-15/20	Water	7 days from collection to analysis	Cool to < 6 °C
Total Organic Carbon by SM 5310 B-11/14	Water	28 days from collection to analysis	Cool to < 6 °C and preserve to a pH < 2 s.u.

Note:
SM = Standard Method

All samples were analyzed within the specified holding time criteria.

7.2 Blank Contamination

QA blanks (i.e., method and rinse blanks) are prepared to identify any contamination that 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 BAL of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at 10 times) is calculated for QA blanks containing concentrations greater than the MDL. The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

7.3 System Performance

System performance and column resolution were acceptable.

7.4 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.

All Aroclors associated with calibrations were within the specified control limits for initial calibration and continuing calibration, as described below.

7.4.1 Initial Calibration

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes.

All initial and continuing calibration verification standard recoveries were within the control limits.

The initial calibration criteria were within the control limits.

7.4.2 Reporting Limit Check Standard

The RL check standard serves to verify the linearity of calibration of the analysis at the RL. The RL standard is not required for the analysis of aluminum, barium, calcium, iron, magnesium, sodium, and potassium.

All RL standard recoveries were within control limits.

7.4.3 Inductively Coupled Plasma Interference Control Sample

The ICS verifies the laboratory's interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

7.5 Matrix Spike/Matrix Spike Duplicate Analysis

All metal analytes must exhibit a %R within the established acceptance limits of 75% to 125%. The MS/MSD recoveries control limits do not apply for the MS/MSD analysis performed on samples where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. When this is true, the data will not be qualified, even if the %R does not meet the control limits, and the laboratory flag will be removed.

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

The MS/MSD analysis was not performed on any of the samples from this SDG.

7.6 Laboratory Duplicate Analysis

The laboratory duplicate RPD criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. When the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of one time the RL is applied for water matrices.

The laboratory duplicate analysis was not performed on any sample from this SDG.

7.7 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. When the parent and/or duplicate sample concentrations are less than or equal to five 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.

A field duplicate sample was not collected from this SDG.

7.8 Laboratory Control Sample Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a %R between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7.9 System Performance and Overall Assessment

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

7.10 Data Validation Checklist for General Chemistry

Table 33. Data Validation Checklist for General Chemistry

GenChem: Various EPA and SMs	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding Times		X		X	
RLs (units)		X		X	
Blanks:					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
LCS %R		X		X	
LCSD %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
MS %R	X				X
MSD %R	X				X
MS/MSD Precision (RPD)	X				X
Field/Lab Duplicate (RPD)	X				X
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
Contract Required Detection Limit Standard Recovery					
ICP Interference Check					
ICP-Mass Spectrometry Internal Standards					
Transcription/Calculations Acceptable	Not required for Tier II plus calibration				
Raw Data		X		X	
RLs Adjusted to Reflect Sample Dilutions		X		X	

8 Overall Data Usability

This section summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. The % usability calculation included analyses evaluated under both Tier I and Tier II data validation

reviews. The % usability calculation also includes QC samples (i.e., field/equipment blanks, trip blanks, and field duplicates) to aid in the evaluation of data usability. Data usability is summarized in the following table.

Table 34. Overall Summary of Data Usability

Parameter	% Usability	Rejected Data
VOCs	100%	0
SVOCs	100%	0
PCBs	100%	0
TPHs	100%	0
Metals	100%	0
GenChem	100%	0

The data package completeness, as determined from the Tier I data review, was used in combination with the data quality deviations identified during the Tier II data review to determine overall data quality. As specified in the FSP/QAPP, the overall precision, accuracy, representativeness, comparability, and completeness parameters determined from the Tier I and Tier II data reviews were used as indicators of overall data quality. These parameters were assessed through an evaluation of the results of the field and laboratory QA/QC sample analyses (discussed in this report) to provide a measure of compliance of the analytical data with the Data Quality Objectives specified in the FSP/QAPP.

VALIDATION PERFORMED BY: Allana Lopez

SIGNATURE: 

DATE: December 08, 2025

PEER REVIEW: Andrew Korycinski

DATE: December 9, 2025

Appendix A

Chain-of-Custody Forms

WW 8876 6741 8742 TM-072825-170 RV

ARCADIS

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

LAB REFERENCE NUMBER: JE17629

Page 1 of 1

PROJECT NUMBER	PROJECT NAME	SAMPLE ORIGIN
30189487 task 01	Housatonic SA	Maryland
SEND RESULTS TO: Lauren Putnam	EMAIL ADDRESS: lauren.putnam@arcadis.com	TELEPHONE: +1 315 671 9385
SAMPLERS:		

	SAMPLE ID	DATE	TIME	MATRIX	/ GRAB	QUANTITY	REQUESTED ANALYSES 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	REMARKS
1	TS-S1	8/18/25	14:00	Aq	Comp	5	X	X	X	X												
2	TS-S4	8/18/25	14:10	Aq	Comp	5	X	X	X	X												
3P	TS-S3	8/18/25	17:00	Aq	Comp	11	X	X	X	X	X	X	X	X	X	X	X					
4	TS-S1	8/13/25	16:30	Aq	Comp	3												X				
5	TS-S3	8/13/25	16:35	Aq	Comp	3												X				

L28
E31
A28
G24
P9
V180

	Requested Analyses	Container	Pres.
1	PCBs (8082)	250mL Amber Glass	None
2	TSS (2540D)	1L HDPE	None
3	Oil and Grease (1664)	1L Amber Glass	HCL
4	Total Metals (200.8)	500mL HDPE	HNO3
5	SVOCs (625.1)	1L Amber Glass	None
6	TPH - DRO (8015D)	60mL Amber VOA	HCL
7	TPH - GRO (8015D)	40mL VOA	HCL
8	Dissolved Metals (200.8)	500mL HDPE	HNO3
9	Alkalinity (2320B)	250mL HDPE	None
10	Hardness (2340C)	250mL HDPE	HNO3
11	TOC (5310C)	60mL Amber VOA	HCL
12	VOCs (624.1)	40mL VOA	HCL
13			
14			
15			

Special Instructions/Comments:

Metals requested for reporting (total and dissolved samples): Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Titanium, Vanadium, Zinc, Mercury (by 245.1)

☐ Special QA/QC Instructions
☐ USDA Regulated
☐ Packed with Ice

Laboratory Information and Receipt

Lab Name: ☐ Custody seal intact — Sample Receipt:
Lab Project Manager: ☐ Shipping intact — Condition/Cooler Temp:
Shipping Tracking #:
Specify Turnaround Requirements:

Relinquished by:	DATE	TIME	Received by:	DATE	TIME
David S. Bl	8/18/25	17:30	FedEx		
FedEx	8/19/25	9:50	James Lun	8/19/25	9:50

4.0
IR-50

Initial Assessment 3B JC
Label Verification

Appendix B

Annotated Sample Analysis Data Sheets

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-S1		
Lab Sample ID:	JE17629-1	**Date Sampled:**	08/18/25
Matrix:	AQ - Water	**Date Received:**	08/19/25
Method:	EPA 608.3 EPA 608	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G151691.D	1	08/27/25 18:33	AS	08/26/25 08:45	OP66600A	G3G5551
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.40	0.21	ug/l	
11104-28-2	Aroclor 1221	ND	0.80	0.63	ug/l	
11141-16-5	Aroclor 1232	ND	0.40	0.18	ug/l	
53469-21-9	Aroclor 1242	ND	0.40	0.25	ug/l	
12672-29-6	Aroclor 1248	ND	0.40	0.12	ug/l	
11097-69-1	Aroclor 1254	ND	0.40	0.17	ug/l	
11096-82-5	Aroclor 1260 [a]	3.0	0.40	0.17	ug/l	J
37324-23-5	Aroclor 1262	ND	0.40	0.11	ug/l	
11100-14-4	Aroclor 1268	ND	0.40	0.20	ug/l	
1336-36-3	Total PCBs [a]	3.0	0.40		ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	56%		10-159%
877-09-8	Tetrachloro-m-xylene	75%		10-159%
2051-24-3	Decachlorobiphenyl	32%		10-135%
2051-24-3	Decachlorobiphenyl	47%		10-135%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TS-S1
Lab Sample ID: JE17629-1
Matrix: AQ - Water
Project: GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA

Date Sampled: 08/18/25
Date Received: 08/19/25
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	88600	500	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Antimony	< 2.0	2.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Arsenic	19.1	1.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Barium	349	10	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Beryllium	2.5	0.50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Cadmium	2.4	0.50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Calcium	73100	2500	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Chromium	223	40	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Cobalt	70.9	0.50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Copper	384	40	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Iron	189000	2500	ug/l	50	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Lead	862	5.0	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Magnesium	56600	2500	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Manganese	4900	100	ug/l	100	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Mercury	2.2	1.2	ug/l	1	08/26/25	08/26/25	CM	EPA 245.1 [1]	EPA 245.1 [4]
Molybdenum	2.4	1.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Nickel	171	40	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Potassium	6030	250	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Selenium	2.6	1.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Silver	3.2	2.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Sodium	25600	2500	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Thallium	< 0.50	0.50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Titanium	686	10	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Vanadium	77.8	4.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Zinc	1020	500	ug/l	50	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]

(1) Instrument QC Batch: MA59212
(2) Instrument QC Batch: MA59231
(3) Prep QC Batch: MP56787
(4) Prep QC Batch: MP56795

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-S1		
Lab Sample ID:	JE17629-1	**Date Sampled:**	08/18/25
Matrix:	AQ - Water	**Date Received:**	08/19/25
		Percent Solids:	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
HEM Oil and Grease	< 5.0	5.0	mg/l	1	08/26/25 18:00	SS	EPA 1664A
Solids, Total Suspended	2640	4.0	mg/l	1	08/25/25 15:00	SD	SM2540 D-15/20

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-S4		
Lab Sample ID:	JE17629-2	**Date Sampled:**	08/18/25
Matrix:	AQ - Water	**Date Received:**	08/19/25
Method:	EPA 608.3 EPA 608	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G151692.D	1	08/27/25 18:49	AS	08/26/25 08:45	OP66600A	G3G5551
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.40	0.21	ug/l	
11104-28-2	Aroclor 1221	ND	0.80	0.63	ug/l	
11141-16-5	Aroclor 1232	ND	0.40	0.18	ug/l	
53469-21-9	Aroclor 1242	ND	0.40	0.25	ug/l	
12672-29-6	Aroclor 1248	ND	0.40	0.12	ug/l	
11097-69-1	Aroclor 1254	ND	0.40	0.17	ug/l	
11096-82-5	Aroclor 1260 [a]	4.1 J	0.40	0.17	ug/l	
37324-23-5	Aroclor 1262	ND	0.40	0.11	ug/l	
11100-14-4	Aroclor 1268	ND	0.40	0.20	ug/l	
1336-36-3	Total PCBs [a]	4.1 J	0.40		ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	39%		10-159%
877-09-8	Tetrachloro-m-xylene	58%		10-159%
2051-24-3	Decachlorobiphenyl	23%		10-135%
2051-24-3	Decachlorobiphenyl	34%		10-135%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TS-S4
Lab Sample ID: JE17629-2
Matrix: AQ - Water
Project: GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA

Date Sampled: 08/18/25
Date Received: 08/19/25
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	32300	500	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Antimony	< 2.0	2.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Arsenic	10.3	1.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Barium	182	10	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Beryllium	1.1	0.50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Cadmium	1.5	0.50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Calcium	76200	2500	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Chromium	77.8	4.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Cobalt	31.9	0.50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Copper	189	40	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Iron	79800	500	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Lead	360	5.0	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Magnesium	39800	2500	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Manganese	4330	100	ug/l	100	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Mercury	< 1.2	1.2	ug/l	1	08/26/25	08/26/25	CM	EPA 245.1 [1]	EPA 245.1 [4]
Molybdenum	2.0	1.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Nickel	54.1	4.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Potassium	4290	250	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Selenium	2.1	1.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Silver	< 2.0	2.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Sodium	22700	2500	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Thallium	< 0.50	0.50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Titanium	396	10	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Vanadium	33.8	4.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Zinc	526	100	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]

(1) Instrument QC Batch: MA59212
(2) Instrument QC Batch: MA59231
(3) Prep QC Batch: MP56787
(4) Prep QC Batch: MP56795

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

4.2

Client Sample ID:	TS-S4		
Lab Sample ID:	JE17629-2	**Date Sampled:**	08/18/25
Matrix:	AQ - Water	**Date Received:**	08/19/25
		Percent Solids:	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
HEM Oil and Grease	< 5.0	5.0	mg/l	1	08/26/25 18:00	SS	EPA 1664A
Solids, Total Suspended	944	4.0	mg/l	1	08/25/25 15:00	SD	SM2540 D-15/20

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-S3		
Lab Sample ID:	JE17629-3	**Date Sampled:**	08/18/25
Matrix:	AQ - Water	**Date Received:**	08/19/25
Method:	EPA 625.1 EPA 625	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F227737.D	1	08/26/25 12:45	AO	08/25/25 09:45	OP66567B	EF10121
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	0.82	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	0.89	ug/l	
120-83-2	2,4-Dichlorophenol	ND	2.0	1.3	ug/l	
105-67-9	2,4-Dimethylphenol	ND	5.0	2.4	ug/l	
51-28-5	2,4-Dinitrophenol [a]	ND UJ	10	1.6	ug/l	
534-52-1	4,6-Dinitro-o-cresol [a]	ND UJ	5.0	1.3	ug/l	
95-48-7	2-Methylphenol	ND	2.0	0.89	ug/l	
	3&4-Methylphenol	ND	2.0	0.88	ug/l	
88-75-5	2-Nitrophenol [a]	ND UJ	5.0	0.96	ug/l	
100-02-7	4-Nitrophenol	ND	10	1.2	ug/l	
87-86-5	Pentachlorophenol	ND	5.0	1.4	ug/l	
108-95-2	Phenol	ND	2.0	0.39	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	5.0	1.5	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	1.3	ug/l	
88-06-2	2,4,6-Trichlorophenol [a]	ND UJ	5.0	0.92	ug/l	
83-32-9	Acenaphthene	ND	1.0	0.19	ug/l	
208-96-8	Acenaphthylene	0.21	1.0	0.14	ug/l	J
98-86-2	Acetophenone	ND	2.0	0.21	ug/l	
120-12-7	Anthracene	ND	1.0	0.21	ug/l	
1912-24-9	Atrazine	ND	2.0	0.45	ug/l	
100-52-7	Benzaldehyde	ND	5.0	0.29	ug/l	
56-55-3	Benzo(a)anthracene	0.54	1.0	0.20	ug/l	J
50-32-8	Benzo(a)pyrene	0.55	1.0	0.21	ug/l	J
205-99-2	Benzo(b)fluoranthene	0.65	1.0	0.21	ug/l	J
191-24-2	Benzo(g,h,i)perylene	0.46	1.0	0.34	ug/l	J
207-08-9	Benzo(k)fluoranthene	0.25	1.0	0.21	ug/l	J
101-55-3	4-Bromophenyl phenyl ether	ND	2.0	0.40	ug/l	
85-68-7	Butyl benzyl phthalate [a]	ND UJ	2.0	0.46	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.0	0.21	ug/l	
91-58-7	2-Chloronaphthalene	ND	2.0	0.24	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	0.34	ug/l	
86-74-8	Carbazole	ND	1.0	0.23	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-S3		
Lab Sample ID:	JE17629-3	**Date Sampled:**	08/18/25
Matrix:	AQ - Water	**Date Received:**	08/19/25
Method:	EPA 625.1 EPA 625	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	2.0	0.65	ug/l	
218-01-9	Chrysene	0.50	1.0	0.18	ug/l	J
111-91-1	bis(2-Chloroethoxy)methane	ND	2.0	0.28	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	2.0	0.25	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	2.0	0.40	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	2.0	0.37	ug/l	
121-14-2	2,4-Dinitrotoluene [a]	ND UJ	1.0	0.55	ug/l	
606-20-2	2,6-Dinitrotoluene [a]	ND UJ	1.0	0.48	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	2.0	0.51	ug/l	
123-91-1	1,4-Dioxane	ND	1.0	0.66	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	1.0	0.33	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.22	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	0.50	ug/l	
117-84-0	Di-n-octyl phthalate	ND	2.0	0.23	ug/l	
84-66-2	Diethyl phthalate	ND	2.0	0.26	ug/l	
131-11-3	Dimethyl phthalate	ND	2.0	0.22	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	1.7	ug/l	
206-44-0	Fluoranthene	0.72	1.0	0.17	ug/l	J
86-73-7	Fluorene	ND	1.0	0.17	ug/l	
118-74-1	Hexachlorobenzene	ND	1.0	0.33	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.49	ug/l	
77-47-4	Hexachlorocyclopentadiene [a]	ND UJ	10	2.8	ug/l	
67-72-1	Hexachloroethane	ND	2.0	0.39	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	0.38	1.0	0.33	ug/l	J
78-59-1	Isophorone	ND	2.0	0.28	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	0.21	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	0.28	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	0.39	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	0.44	ug/l	
91-20-3	Naphthalene	ND	1.0	0.23	ug/l	
98-95-3	Nitrobenzene	ND	2.0	0.64	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	2.0	0.48	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.22	ug/l	
85-01-8	Phenanthrene	0.33	1.0	0.18	ug/l	J
129-00-0	Pyrene	0.79	1.0	0.22	ug/l	J
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	2.0	0.37	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	37%		10-110%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-S3		
Lab Sample ID:	JE17629-3	**Date Sampled:**	08/18/25
Matrix:	AQ - Water	**Date Received:**	08/19/25
Method:	EPA 625.1 EPA 625	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	24%		10-110%
118-79-6	2,4,6-Tribromophenol	80%		35-147%
4165-60-0	Nitrobenzene-d5	82%		32-132%
321-60-8	2-Fluorobiphenyl	75%		40-117%
1718-51-0	Terphenyl-d14	79%		33-126%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-S3		
Lab Sample ID:	JE17629-3	**Date Sampled:**	08/18/25
Matrix:	AQ - Water	**Date Received:**	08/19/25
Method:	SW846 8015D	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KM12953.D	1	08/25/25 14:15	JN	n/a	n/a	GKM545
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.11	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	80%		63-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-S3		
Lab Sample ID:	JE17629-3	**Date Sampled:**	08/18/25
Matrix:	AQ - Water	**Date Received:**	08/19/25
Method:	EPA 608.3 EPA 608	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G151693.D	1	08/27/25 19:06	AS	08/26/25 08:45	OP66600A	G3G5551
Run #2	3G151738.D	5	08/28/25 14:23	MLC	08/26/25 08:45	OP66600A	G3G5552

	Initial Volume	Final Volume
Run #1	250 ml	2.0 ml
Run #2	250 ml	2.0 ml

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.40	0.21	ug/l	
11104-28-2	Aroclor 1221	ND	0.80	0.63	ug/l	
11141-16-5	Aroclor 1232	ND	0.40	0.18	ug/l	
53469-21-9	Aroclor 1242	ND	0.40	0.25	ug/l	
12672-29-6	Aroclor 1248	ND	0.40	0.12	ug/l	
11097-69-1	Aroclor 1254	ND	0.40	0.17	ug/l	
11096-82-5	Aroclor 1260 [a]	38.8 [b] DJ	2.0	0.86	ug/l	
37324-23-5	Aroclor 1262	ND	0.40	0.11	ug/l	
11100-14-4	Aroclor 1268	ND	0.40	0.20	ug/l	
1336-36-3	Total PCBs	38.8 [b] DJ	2.0		ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	48%	61%	10-159%
877-09-8	Tetrachloro-m-xylene	63%	71%	10-159%
2051-24-3	Decachlorobiphenyl	33%	41%	10-135%
2051-24-3	Decachlorobiphenyl	54%	62%	10-135%

(a) More than 40 % RPD for detected concentrations between the two GC columns.
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-S3		
Lab Sample ID:	JE17629-3	**Date Sampled:**	08/18/25
Matrix:	AQ - Water	**Date Received:**	08/19/25
Method:	SW846 8015D SW846 3511	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Y95490.D	1	08/30/25 13:20	TL	08/25/25 10:10	OP66578	G3Y3706
Run #2							

	Initial Volume	Final Volume
Run #1	50.9 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.079	0.038	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	117%		70-130%
438-22-2	5a-Androstane	109%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-S3		
Lab Sample ID:	JE17629-3	**Date Sampled:**	08/18/25
Matrix:	AQ - Water	**Date Received:**	08/19/25
		Percent Solids:	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	46300	500	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Antimony	< 2.0	2.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Arsenic	10	1.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Barium	266	10	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Beryllium	1.5	0.50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Cadmium	2.4	0.50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Calcium	60200	2500	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Chromium	213	40	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Cobalt	42.5	0.50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Copper	208	40	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Iron	80100	5000	ug/l	100	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Lead	261	5.0	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Magnesium	40700	2500	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Manganese	5530	100	ug/l	100	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Mercury	1.7	1.2	ug/l	1	08/26/25	08/26/25	CM	EPA 245.1 [1]	EPA 245.1 [4]
Molybdenum	1.7	1.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Nickel	72.9	4.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Potassium	4370	250	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Selenium	2.0	1.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Silver	2.6	2.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Sodium	11000	2500	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Thallium	< 0.50	0.50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Titanium	552	10	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Vanadium	44.8	4.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]
Zinc	706	100	ug/l	10	08/26/25	08/28/25	NV	EPA 200.8 [2]	EPA 200.8 [3]

(1) Instrument QC Batch: MA59212
(2) Instrument QC Batch: MA59231
(3) Prep QC Batch: MP56787
(4) Prep QC Batch: MP56795

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TS-S3		
Lab Sample ID:	JE17629-3	**Date Sampled:**	08/18/25
Matrix:	AQ - Water	**Date Received:**	08/19/25
		Percent Solids:	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 [a]	228	5.0	mg/l	1	08/24/25 21:35	MS	SM2320 B-11/21
HEM Oil and Grease	< 7.1	7.1	mg/l	1	08/26/25 18:00	SS	EPA 1664A
Hardness, Total as CaCO3	320	5.0	mg/l	1	08/27/25 16:42	MS	SM2340 C-11/21
Solids, Total Suspended	6390	4.0	mg/l	1	08/25/25 15:00	SD	SM2540 D-15/20
Total Organic Carbon	7.9	1.0	mg/l	1	08/26/25 13:36	MB	SM5310 B-11/14

(a) Sample was titrated to a final pH of 4.5. Sample received without head space.

RL = Reporting Limit

Report of Analysis

Client Sample ID: TS-S3
Lab Sample ID: JE17629-3F
Matrix: AQ - Water Filtered
Project: GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA

Date Sampled: 08/18/25
Date Received: 08/19/25
Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	< 50	50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Antimony	< 2.0	2.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Arsenic	< 1.0	1.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Barium	27.4	1.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Beryllium	< 0.50	0.50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Cadmium	< 0.50	0.50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Calcium	35200	5000	ug/l	20	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Chromium	< 4.0	4.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Cobalt	< 0.50	0.50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Copper	< 4.0	4.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Iron	< 50 UJ	50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Lead	< 0.50	0.50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Magnesium	14700	5000	ug/l	20	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Manganese	1340 J	20	ug/l	20	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Molybdenum	1.2	1.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Nickel	< 4.0	4.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Potassium	2060	250	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Selenium	< 1.0 UJ	1.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Silver	< 2.0	2.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Sodium	6570	250	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Thallium	< 0.50	0.50	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Titanium	< 1.0	1.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Vanadium	< 4.0	4.0	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]
Zinc	< 10	10	ug/l	1	08/26/25	08/28/25	NV	EPA 200.8 [1]	EPA 200.8 [2]

(1) Instrument QC Batch: MA59231
(2) Prep QC Batch: MP56787

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-S3		
Lab Sample ID:	JE17629-3R	**Date Sampled:**	08/18/25
Matrix:	AQ - Water	**Date Received:**	08/19/25
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	4A19624.D	1	09/15/25 20:51	CF	n/a	n/a	V4A529
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND UJ	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-S3		
Lab Sample ID:	JE17629-3R	**Date Sampled:**	08/18/25
Matrix:	AQ - Water	**Date Received:**	08/19/25
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND UJ	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.52	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	91%		80-120%
2037-26-5	Toluene-D8	95%		80-120%
460-00-4	4-Bromofluorobenzene	85%		82-114%

(a) Sample analyzed outside the holding time.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	TS-S1		
Lab Sample ID:	JE17629-4	**Date Sampled:**	08/13/25
Matrix:	AQ - Water	**Date Received:**	08/19/25
Method:	EPA 624.1	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D145839.D	1	08/26/25 12:45	NW	n/a	n/a	V4D6387
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
71-43-2	Benzene	ND	1.0	0.71	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.94	ug/l	
75-25-2	Bromoform	ND	1.0	0.60	ug/l	
74-83-9	Bromomethane	ND	1.0	0.87	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon disulfide	ND	1.0	0.52	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.87	ug/l	
75-00-3	Chloroethane	ND	1.0	0.54	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.78	ug/l	
98-82-8	Cumene	ND	1.0	0.77	ug/l	
110-82-7	Cyclohexane	ND	2.0	0.66	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.98	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	1.1	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.91	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.69	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.42	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.96	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.46	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.96	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.93	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.84	ug/l	
76-13-1	Freon 113	ND	2.0	0.87	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-S1		
Lab Sample ID:	JE17629-4	**Date Sampled:**	08/13/25
Matrix:	AQ - Water	**Date Received:**	08/19/25
Method:	EPA 624.1	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
591-78-6	2-Hexanone	ND	5.0	1.8	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.94	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.2	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.80	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.64	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	1.4	ug/l	
100-42-5	Styrene	ND	2.0	0.98	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.73	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.41	ug/l	
108-88-3	Toluene	ND	1.0	0.77	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.43	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.41	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.43	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.33	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.76	ug/l	
95-47-6	o-Xylene	ND	1.0	0.92	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	0.76	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	108%		80-128%
2037-26-5	Toluene-D8 (SUR)	100%		82-113%
460-00-4	4-Bromofluorobenzene (SUR)	102%		79-117%
1868-53-7	Dibromofluoromethane (S)	106%		84-121%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

4.7

Client Sample ID:	TS-S3		
Lab Sample ID:	JE17629-5R	**Date Sampled:**	08/13/25
Matrix:	AQ - Water	**Date Received:**	08/19/25
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1U80226.D	1	09/04/25 20:42	CF	n/a	n/a	V1U2799
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	4.7	10	3.1	ug/l	J
71-43-2	Benzene	ND UJ	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane [b]	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropan [c]	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene [d]	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-S3		
Lab Sample ID:	JE17629-5R	**Date Sampled:**	08/13/25
Matrix:	AQ - Water	**Date Received:**	08/19/25
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	GE Housatonic ROR Reach 5A Treatability Study, Pittsfield, MA		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND UJ	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane [c]	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.52	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	105%		80-120%
460-00-4	4-Bromofluorobenzene	102%		82-114%

(a) Sample analyzed outside the holding time.
(b) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
(c) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
(d) This compound in blank spike is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Appendix D
Analytical Data Summary Tables

Table D-1

Summary of Backwater Sediment Characterization Results for Amendment Jar Testing

Chemical	Sample ID / Laboratory / Method	TS-BW1A Eurofins	TS-BW1A SGS	TS-BW1B Eurofins	TS-BW1B SGS	TS-BW1A-SPIKED (Initial Spike) Eurofins	TS-BW1A-SPIKED2 (2nd Spike) Eurofins
Conventional Parameters (pct)							
Total organic carbon	LloydKahn	**7.4 J**	--	**2.7 J**	--	--	--
Total solids	SM2540D	--	**32.6**	--	**59.4**	--	--
PCB Aroclors (mg/kg)							
Aroclor 1016	SW8082A	0.48 U	0.060 U	0.26 U	0.032 U	9.1 U	13 UJ
Aroclor 1221	SW8082A	0.48 U	0.060 U	0.26 U	0.032 U	9.1 U	13 UJ
Aroclor 1232	SW8082A	0.48 U	0.060 U	0.26 U	0.032 U	9.1 U	13 UJ
Aroclor 1242	SW8082A	0.48 U	0.060 U	0.26 U	0.032 U	9.1 U	13 UJ
Aroclor 1248	SW8082A	0.48 U	0.060 U	0.26 U	0.032 U	9.1 U	13 UJ
Aroclor 1254	SW8082A	0.48 U	**0.0709**	0.26 U	0.032 U	9.1 U	13 UJ
Aroclor 1260	SW8082A	**2.1**	**0.212**	**0.94**	**0.142 J**	**24**	**44 J**
Total PCB Aroclors (U = 0 max limit)	Calculated	**2.1**	**0.283**	**0.94**	**0.142 J**	**24**	**44 J**
PCB Congeners (mg/kg)							
PCB-001	E1668 / E1668C	**0.00053**	**0.000579 J**	**0.00054**	**0.00106 J**	**0.0052 J**	**0.013 J**
PCB-002	E1668 / E1668C	**0.00013 J**	**0.000115 J**	**0.000065 J**	**0.0000874 J**	**0.00076 J**	**0.00097 J**
PCB-003	E1668 / E1668C	**0.00041**	**0.00038 J**	**0.00018 J**	**0.00029 J**	**0.0026 J**	**0.0050 J**
PCB-004	E1668 / E1668C	**0.0069**	**0.00762 J**	**0.0040**	**0.00938 J**	**0.013 J**	**0.025 J**
PCB-005	E1668 / E1668C	0.000013 U	**0.0000209 J**	0.0000088 U	0.00000843 UJ	**0.00081 J**	**0.0017 J**
PCB-006	E1668 / E1668C	**0.0053**	**0.00421 J**	**0.0020**	**0.00355 J**	**0.0073 J**	**0.014 J**
PCB-007	E1668 / E1668C	**0.00058**	**0.000456 J**	**0.00024**	**0.000417 J**	**0.0016 J**	**0.0035 J**
PCB-008	E1668 / E1668C	**0.0047**	**0.00397 J**	**0.0020**	**0.00374 J**	**0.023 J**	**0.051 J**
PCB-009	E1668 / E1668C	**0.00092 J**	**0.000465 J**	**0.00039**	**0.000392 J**	**0.0025 J**	**0.0046 J**
PCB-010	E1668 / E1668C	**0.00039**	**0.0003 J**	**0.00027**	**0.000405 J**	**0.00097 J**	**0.0024 J**
PCB-011	E1668 / E1668C	**0.00016 J**	**0.000235 J**	**0.000035 J**	**0.000175 J**	0.00012 UJ	0.00044 UJ
PCB-012/013	E1668 / E1668C	**0.0011**	**0.00071 J**	**0.00041**	**0.000531 J**	**0.0018 J**	**0.0030 J**
PCB-014	E1668 / E1668C	0.000012 U	0.00000625 UJ	0.0000084 U	0.00000843 UJ	0.00013 UJ	0.00048 UJ
PCB-015	E1668 / E1668C	**0.0060**	**0.00554 J**	**0.0019**	**0.00315 J**	**0.01 J**	**0.02 J**
PCB-016	E1668 / E1668C	**0.0019**	**0.00102 J**	**0.00066 J**	**0.000936 J**	**0.0090 J**	**0.021 J**
PCB-017	E1668 / E1668C	**0.014**	**0.0138 J**	**0.0063**	**0.013 J**	**0.017 J**	**0.03 J**
PCB-018/030	E1668 / E1668C	**0.02**	**0.0181 J**	**0.0069**	**0.0138 J**	**0.026 J**	**0.051 J**
PCB-019	E1668 / E1668C	**0.0060**	**0.00644 J**	**0.0030**	**0.00629 J**	**0.0052 J**	**0.0074 J**
PCB-020/028	E1668 / E1668C	**0.04**	**0.0334 J**	**0.02**	**0.0326 J**	**0.049 J**	**0.087 J**
PCB-021/033	E1668 / E1668C	**0.0095**	**0.00729 J**	**0.0056**	**0.00719 J**	**0.024 J**	**0.051 J**
PCB-022	E1668 / E1668C	**0.0027**	**0.00202 J**	**0.0012**	**0.00176 J**	**0.011 J**	**0.024 J**
PCB-023	E1668 / E1668C	0.00028 U	0.0000218 UJ	0.000090 U	0.0000183 UJ	0.00048 UJ	0.0012 UJ
PCB-024	E1668 / E1668C	**0.00062 J**	0.00000851 UJ	0.0000054 U	0.00000744 UJ	**0.00057 J**	0.00013 UJ
PCB-025	E1668 / E1668C	**0.013**	**0.0106 J**	**0.0065**	**0.00979 J**	**0.0092 J**	**0.014 J**
PCB-026/029	E1668 / E1668C	**0.016**	**0.013 J**	**0.0061**	**0.00974 J**	**0.014 J**	**0.027 J**
PCB-027	E1668 / E1668C	**0.035**	**0.0334 J**	**0.012**	**0.0254 J**	**0.017 J**	**0.03 J**
PCB-031	E1668 / E1668C	**0.015**	**0.0108 J**	**0.0070**	**0.0099 J**	**0.029 J**	**0.058 J**
PCB-032	E1668 / E1668C	**0.033**	**0.0299 J**	**0.016**	**0.0323 J**	**0.021 J**	**0.034 J**
PCB-034	E1668 / E1668C	**0.00071**	**0.000645 J**	**0.00036**	**0.000573 J**	**0.00056 J**	0.0012 UJ
PCB-035	E1668 / E1668C	0.00027 U	**0.000102 J**	0.000086 U	**0.0000841 J**	0.00048 UJ	0.0012 UJ
PCB-036	E1668 / E1668C	0.00028 U	0.0000192 UJ	0.000088 U	0.000016 UJ	0.00039 UJ	0.00096 UJ
PCB-037	E1668 / E1668C	**0.0026**	**0.00195 J**	**0.0012**	**0.00151 J**	**0.0072 J**	**0.015 J**
PCB-038	E1668 / E1668C	0.00028 U	0.0000206 UJ	0.000090 U	**0.0000914 J**	0.00045 UJ	0.0011 UJ
PCB-039	E1668 / E1668C	0.00027 U	**0.000116 J**	0.000084 U	**0.0000953 J**	0.00047 UJ	0.0011 UJ
PCB-040/041/071	E1668	**0.052**	--	**0.031**	--	**0.045 J**	**0.068 J**
PCB-040/071	E1668C	--	**0.0443 J**	--	**0.0482 J**	--	--
PCB-041	E1668C	--	0.000012 UJ	--	0.0000090 UJ	--	--
PCB-042	E1668 / E1668C	**0.023 J**	**0.0217 J**	**0.012 J**	**0.0206 J**	**0.019 J**	**0.031 J**

Table D-1
Summary of Backwater Sediment Characterization Results for Amendment Jar Testing

Chemical	Sample ID / Laboratory / Method	TS-BW1A Eurofins	TS-BW1A SGS	TS-BW1B Eurofins	TS-BW1B SGS	TS-BW1A-SPIKED (Initial Spike) Eurofins	TS-BW1A-SPIKED2 (2nd Spike) Eurofins
PCB-043	E1668C	--	**0.000762 J**	--	**0.000825 J**	--	--
PCB-043/073	E1668	**0.012 J**	--	**0.0070 J**	--	**0.012 J**	**0.02 J**
PCB-044/047/065	E1668 / E1668C	**0.49**	**0.38 J**	**0.27**	**0.386 J**	**0.29 J**	**0.43 J**
PCB-045	E1668C	--	**0.0169 J**	--	**0.0209 J**	--	--
PCB-045/051	E1668	**0.19 J**	--	**0.13 J**	--	**0.12 J**	**0.16 J**
PCB-046	E1668 / E1668C	**0.013 J**	**0.0114 J**	**0.0068 J**	**0.0112 J**	**0.0096 J**	**0.013 J**
PCB-048	E1668 / E1668C	**0.0015 J**	**0.000618 J**	**0.00058 J**	**0.000453 J**	**0.0062 J**	**0.011 J**
PCB-049/069	E1668 / E1668C	**0.25 J**	**0.218 J**	**0.13 J**	**0.204 J**	**0.16 J**	**0.23 J**
PCB-050/053	E1668 / E1668C	**0.16 J**	**0.12 J**	**0.081 J**	**0.121 J**	**0.089 J**	**0.13 J**
PCB-051	E1668C	--	**0.126 J**	--	**0.161 J**	--	--
PCB-052	E1668 / E1668C	**0.14 J**	**0.117 J**	**0.068 J**	**0.0998 J**	**0.18 J**	**0.33 J**
PCB-054	E1668 / E1668C	**0.017**	**0.0155 J**	**0.011**	**0.0202 J**	**0.01 J**	**0.015 J**
PCB-055	E1668 / E1668C	0.00069 U	0.0000409 UJ	0.00036 U	0.0000239 UJ	0.0011 UJ	0.0026 UJ
PCB-056	E1668 / E1668C	**0.0037 J**	**0.00359 J**	**0.0016 J**	**0.00269 J**	**0.0072 J**	**0.014 J**
PCB-057	E1668 / E1668C	0.00084 U	**0.000595 J**	0.00044 U	**0.000564 J**	0.0013 UJ	0.0031 UJ
PCB-058	E1668 / E1668C	0.00069 U	0.0000381 UJ	0.00036 U	**0.000671 J**	0.0012 UJ	0.0027 UJ
PCB-059/062/075	E1668 / E1668C	**0.011**	**0.00856 J**	**0.0063**	**0.00899 J**	**0.01 J**	**0.015 J**
PCB-060	E1668 / E1668C	0.00081 U	**0.000753 J**	0.00042 U	**0.000543 J**	**0.0036 J**	**0.0068 J**
PCB-061/070/074/076	E1668 / E1668C	**0.039**	**0.0337 J**	**0.018**	**0.0259 J**	**0.05 J**	**0.087 J**
PCB-063	E1668 / E1668C	**0.0032 J**	**0.00347 J**	**0.0019 J**	**0.00363 J**	**0.0026 J**	**0.0047 J**
PCB-064	E1668 / E1668C	**0.0081 J**	**0.00773 J**	**0.0035 J**	**0.00581 J**	**0.011 J**	**0.021 J**
PCB-066	E1668 / E1668C	**0.053 J**	**0.0473 J**	**0.025 J**	**0.0407 J**	**0.047 J**	**0.071 J**
PCB-067	E1668 / E1668C	0.00064 U	**0.000602 J**	0.00033 U	**0.000361 J**	**0.0022 J**	0.0026 UJ
PCB-068	E1668 / E1668C	**0.0087 J**	**0.00765 J**	**0.0048 J**	**0.00745 J**	**0.0038 J**	**0.0052 J**
PCB-072	E1668 / E1668C	**0.0053 J**	**0.00478 J**	**0.0026 J**	**0.00414 J**	**0.0025 J**	**0.0036 J**
PCB-073	E1668C	--	**0.00834 J**	--	**0.00846 J**	--	--
PCB-077	E1668 / E1668C	**0.0022 J**	**0.00238 J**	**0.0011 J**	**0.00173 J**	**0.0028 J**	**0.0048 J**
PCB-078	E1668 / E1668C	0.00078 U	**0.000122 J**	0.00041 U	**0.000105 J**	0.0013 UJ	0.0030 UJ
PCB-079	E1668 / E1668C	**0.0014 J**	**0.00142 J**	**0.00073 J**	**0.000978 J**	0.0010 UJ	**0.0026 J**
PCB-080	E1668 / E1668C	0.00069 U	0.0000416 UJ	0.00036 U	**0.00255 J**	0.0012 UJ	0.0028 UJ
PCB-081	E1668 / E1668C	0.00083 U	0.0000526 UJ	0.00044 U	0.0000307 UJ	0.0014 UJ	0.0035 UJ
PCB-082	E1668 / E1668C	**0.0093**	**0.00863 J**	**0.0042**	**0.00601 J**	**0.012 J**	**0.023 J**
PCB-083	E1668C	--	**0.02 J**	--	**0.0158 J**	--	--
PCB-083/099	E1668	**0.21**	--	**0.098**	--	**0.16 J**	**0.27 J**
PCB-084	E1668 / E1668C	**0.026**	**0.027 J**	**0.012**	**0.0199 J**	**0.061 J**	**0.12 J**
PCB-085/116	E1668C	--	**0.0251 J**	--	**0.0173 J**	--	--
PCB-085/116/117	E1668	**0.036**	--	**0.018**	--	**0.028 J**	**0.042 J**
PCB-086/087/097/109/119/125	E1668 / E1668C	**0.1**	**0.112 J**	**0.048**	**0.0822 J**	**0.22 J**	**0.44 J**
PCB-088	E1668C	--	0.00000711 UJ	--	**0.105 J**	--	--
PCB-088/091	E1668	**0.15**	--	**0.076**	--	**0.093 J**	**0.14 J**
PCB-089	E1668 / E1668C	**0.00094**	**0.000467 J**	**0.00036**	**0.000331 J**	0.00016 UJ	0.00058 UJ
PCB-090/101/113	E1668 / E1668C	**0.35**	**0.344 J**	**0.16**	**0.256 J**	**1.3 J**	**3 J**
PCB-091	E1668C	--	**0.146 J**	--	**0.0174 J**	--	--
PCB-092	E1668 / E1668C	**0.1**	**0.113 J**	**0.048**	**0.09 J**	**0.19 J**	**0.38 J**
PCB-093/100	E1668 / E1668C	**0.064**	**0.0676 J**	**0.038**	**0.0672 J**	**0.054 J**	**0.099 J**
PCB-094	E1668 / E1668C	**0.03**	**0.0309 J**	**0.018**	**0.033 J**	**0.02 J**	**0.03 J**
PCB-095	E1668 / E1668C	**0.18**	**0.167 J**	**0.07**	**0.114 J**	**1 J**	**2.4 J**
PCB-096	E1668 / E1668C	**0.017**	**0.0175 J**	**0.0090**	**0.0167 J**	**0.0092 J**	**0.015 J**
PCB-098	E1668C	--	0.00000622 UJ	--	0.00000867 UJ	--	--
PCB-098/102	E1668	**0.022**	--	**0.012**	--	**0.017 J**	**0.028 J**

Table D-1
Summary of Backwater Sediment Characterization Results for Amendment Jar Testing

Chemical	Sample ID / Laboratory / Method	TS-BW1A Eurofins	TS-BW1A SGS	TS-BW1B Eurofins	TS-BW1B SGS	TS-BW1A-SPIKED (Initial Spike) Eurofins	TS-BW1A-SPIKED2 (2nd Spike) Eurofins
PCB-099	E1668C	--	**0.139 J**	--	**0.104 J**	--	--
PCB-102	E1668C	--	**0.0174 J**	--	**0.0165 J**	--	--
PCB-103	E1668 / E1668C	**0.032**	**0.0322 J**	**0.017**	**0.0299 J**	**0.02 J**	**0.032 J**
PCB-104	E1668 / E1668C	**0.0040**	**0.0041 J**	**0.0030**	**0.00486 J**	**0.0026 J**	**0.0028 J**
PCB-105	E1668 / E1668C	**0.038**	**0.0383 J**	**0.017 J**	**0.0291 J**	**0.034 J**	**0.052 J**
PCB-106	E1668 / E1668C	0.00035 U	0.00000525 UJ	0.00030 U	0.00000732 UJ	0.0012 UJ	0.0029 UJ
PCB-107	E1668 / E1668C	**0.015**	**0.0156 J**	**0.0069 J**	**0.0114 J**	**0.013 J**	**0.02 J**
PCB-108/124	E1668 / E1668C	**0.0055**	**0.00575 J**	**0.0026**	**0.00406 J**	**0.0097 J**	**0.019 J**
PCB-110	E1668C	--	**0.199 J**	--	**0.14 J**	--	--
PCB-110/115	E1668	**0.23**	--	**0.1**	--	**0.51 J**	**1.1 J**
PCB-111	E1668 / E1668C	**0.0020**	**0.00157 J**	**0.00099**	**0.00137 J**	0.00012 UJ	0.00042 UJ
PCB-112	E1668 / E1668C	0.000010 U	**0.00112 J**	0.0000095 U	**0.000774 J**	0.000099 UJ	0.00035 UJ
PCB-114	E1668 / E1668C	**0.0025**	**0.00234 J**	**0.0010 J**	**0.00158 J**	0.0012 UJ	0.0030 UJ
PCB-115	E1668C	--	0.00000543 UJ	--	0.00000757 UJ	--	--
PCB-117	E1668C	--	**0.0162 J**	--	**0.0141 J**	--	--
PCB-118	E1668 / E1668C	**0.12**	**0.128 J**	**0.053 J**	**0.0896 J**	**0.29 J**	**0.57 J**
PCB-120	E1668 / E1668C	**0.0039**	**0.00339 J**	**0.0019**	**0.00249 J**	**0.0037 J**	**0.0059 J**
PCB-121	E1668 / E1668C	**0.0019**	**0.00172 J**	**0.00098**	**0.00155 J**	0.00011 UJ	0.00038 UJ
PCB-122	E1668 / E1668C	**0.0019 J**	**0.00184 J**	**0.00077 J**	**0.00122 J**	0.0016 UJ	0.0039 UJ
PCB-123	E1668 / E1668C	**0.0028 J**	**0.0027 J**	**0.0014 J**	**0.00198 J**	**0.0037 J**	**0.0043 J**
PCB-126	E1668 / E1668C	**0.00078 J**	**0.000665 J**	**0.00034 J**	**0.00054 J**	0.0015 UJ	0.0036 UJ
PCB-127	E1668 / E1668C	0.00033 U	0.00000466 UJ	0.00028 U	**0.000372 J**	0.0012 UJ	0.0029 UJ
PCB-128/166	E1668 / E1668C	**0.081**	**0.0709 J**	**0.037**	**0.0568 J**	**0.24 J**	**0.55 J**
PCB-129/138/160/163	E1668	**0.84**	--	**0.37**	--	**3.5 J**	**7.6 J**
PCB-129/138/163	E1668C	--	**0.621 J**	--	**0.489 J**	--	--
PCB-130	E1668 / E1668C	**0.039 J**	**0.0322 J**	**0.018 J**	**0.0257 J**	**0.14 J**	**0.28 J**
PCB-131	E1668 / E1668C	**0.0036 J**	**0.00271 J**	**0.0016 J**	**0.00209 J**	**0.027 J**	**0.057 J**
PCB-132	E1668 / E1668C	**0.18 J**	**0.136 J**	**0.078 J**	**0.105 J**	**0.97 J**	**2.2 J**
PCB-133	E1668 / E1668C	**0.021 J**	**0.0162 J**	**0.0099 J**	**0.0138 J**	**0.042 J**	**0.077 J**
PCB-134	E1668C	--	**0.0276 J**	--	**0.022 J**	--	--
PCB-134/143	E1668	**0.031**	--	**0.014**	--	**0.19 J**	**0.4 J**
PCB-135/151	E1668 / E1668C	**0.43**	**0.284 J**	**0.19**	**0.227 J**	**1.6 J**	**3.6 J**
PCB-136	E1668 / E1668C	**0.11**	**0.117 J**	**0.049**	**0.088 J**	**0.6 J**	**1.3 J**
PCB-137	E1668 / E1668C	**0.015 J**	**0.0107 J**	**0.0070 J**	**0.00909 J**	**0.022 J**	0.0071 UJ
PCB-139/140	E1668 / E1668C	**0.0095**	**0.00713 J**	**0.0047**	**0.00591 J**	**0.013 J**	**0.022 J**
PCB-141	E1668 / E1668C	**0.13 J**	**0.108 J**	**0.058 J**	**0.0843 J**	**1 J**	**2.3 J**
PCB-142	E1668 / E1668C	0.00049 U	0.00000323 UJ	0.00024 U	0.00000899 UJ	0.0035 UJ	0.0072 UJ
PCB-143	E1668C	--	0.00000315 UJ	--	0.00000878 UJ	--	--
PCB-144	E1668 / E1668C	**0.028**	**0.0218 J**	**0.013**	**0.0168 J**	**0.25 J**	**0.52 J**
PCB-145	E1668 / E1668C	0.00000040 U	0.00000285 UJ	0.000014 U	0.00000651 UJ	**0.0027 J**	0.000024 UJ
PCB-146	E1668 / E1668C	**0.14 J**	**0.102 J**	**0.064**	**0.0812 J**	**0.43 J**	**0.91 J**
PCB-147/149	E1668 / E1668C	**0.87**	**0.541 J**	**0.39**	**0.435 J**	**3.4 J**	**7.7 J**
PCB-148	E1668 / E1668C	**0.0074**	**0.00578 J**	**0.0040**	0.00000808 UJ	**0.0050 J**	**0.0080 J**
PCB-150	E1668 / E1668C	**0.0095**	**0.0103 J**	**0.0052**	**0.00961 J**	**0.0056 J**	**0.0091 J**
PCB-152	E1668 / E1668C	**0.0088**	**0.00723 J**	**0.0050**	**0.00748 J**	**0.0041 J**	**0.0059 J**
PCB-153/168	E1668 / E1668C	**0.89**	**0.56 J**	**0.39**	**0.444 J**	**3.5 J**	**8 J**
PCB-154	E1668 / E1668C	**0.037**	**0.0261 J**	**0.017**	**0.022 J**	**0.032 J**	**0.053 J**
PCB-155	E1668 / E1668C	**0.00078 J**	**0.000709 J**	**0.00047 J**	**0.000727 J**	**0.00059 J**	0.000027 UJ
PCB-156/157	E1668 / E1668C	**0.041**	**0.0398 J**	**0.019**	**0.03 J**	**0.2 J**	**0.42 J**
PCB-158	E1668 / E1668C	**0.048**	**0.0402 J**	**0.021**	**0.0316 J**	**0.31 J**	**0.66 J**

Table D-1
Summary of Backwater Sediment Characterization Results for Amendment Jar Testing

Chemical	Sample ID / Laboratory / Method	TS-BW1A Eurofins	TS-BW1A SGS	TS-BW1B Eurofins	TS-BW1B SGS	TS-BW1A-SPIKED (Initial Spike) Eurofins	TS-BW1A-SPIKED2 (2nd Spike) Eurofins
PCB-159	E1668 / E1668C	**0.014**	**0.0128 J**	**0.0067**	**0.00962 J**	**0.072 J**	**0.18 J**
PCB-160	E1668C	--	0.00000212 UJ	--	0.0000059 UJ	--	--
PCB-161	E1668 / E1668C	0.00033 U	0.00000209 UJ	0.00016 U	0.00000583 UJ	0.0020 UJ	0.0042 UJ
PCB-162	E1668 / E1668C	**0.0020**	**0.002 J**	**0.0010**	**0.00169 J**	0.0023 UJ	0.0047 UJ
PCB-164	E1668 / E1668C	**0.051 J**	**0.0379 J**	**0.023**	**0.0306 J**	**0.23 J**	**0.49 J**
PCB-165	E1668 / E1668C	**0.0038 J**	**0.00318 J**	**0.0017**	**0.00286 J**	0.0027 UJ	0.0056 UJ
PCB-167	E1668 / E1668C	**0.021**	**0.0196 J**	**0.0097**	**0.0162 J**	**0.073 J**	**0.15 J**
PCB-169	E1668 / E1668C	0.00026 U	0.0000981 UJ	0.00013 U	0.0000821 UJ	0.0024 UJ	**0.031 J**
PCB-170	E1668 / E1668C	**0.28**	**0.302 J**	**0.14**	**0.242 J**	**1.5 J**	**3.3 J**
PCB-171/173	E1668 / E1668C	**0.085**	**0.0777 J**	**0.042**	**0.0596 J**	**0.45 J**	**0.95 J**
PCB-172	E1668 / E1668C	**0.061**	**0.0485 J**	**0.03**	**0.0371 J**	**0.26 J**	**0.55 J**
PCB-174	E1668 / E1668C	**0.36**	**0.295 J**	**0.18**	**0.224 J**	**1.6 J**	**3.6 J**
PCB-175	E1668 / E1668C	**0.011**	**0.0105 J**	**0.0056**	**0.00825 J**	**0.073 J**	**0.14 J**
PCB-176	E1668 / E1668C	**0.039**	**0.0431 J**	**0.019**	**0.0363 J**	**0.24 J**	**0.5 J**
PCB-177	E1668 / E1668C	**0.2**	**0.168 J**	**0.098**	**0.128 J**	**0.86 J**	**1.8 J**
PCB-178	E1668 / E1668C	**0.091**	**0.0925 J**	**0.045**	**0.0791 J**	**0.34 J**	**0.68 J**
PCB-179	E1668 / E1668C	**0.14**	**0.153 J**	**0.072**	**0.131 J**	**0.69 J**	**1.5 J**
PCB-180/193	E1668 / E1668C	**0.81**	**0.599 J**	**0.4**	**0.469 J**	**3.4 J**	**8 J**
PCB-181	E1668 / E1668C	**0.0023 J**	0.0000568 UJ	**0.0013 J**	**0.00107 J**	0.000053 UJ	0.0000074 UJ
PCB-182	E1668 / E1668C	**0.0048**	**0.0019 J**	**0.0020 J**	**0.00154 J**	0.000050 UJ	0.0000069 UJ
PCB-183	E1668C	--	**0.153 J**	--	**0.119 J**	--	--
PCB-183/185	E1668	**0.21**	--	**0.11**	--	**1.1 J**	**2.4 J**
PCB-184	E1668 / E1668C	0.00000055 U	**0.000229 J**	0.000012 U	**0.000214 J**	0.000040 UJ	0.0000056 UJ
PCB-185	E1668C	--	**0.0356 J**	--	**0.0266 J**	--	--
PCB-186	E1668 / E1668C	0.00000051 U	0.00000294 UJ	0.000011 U	**0.0000193 J**	0.000036 UJ	0.0000050 UJ
PCB-187	E1668 / E1668C	**0.49**	**0.365 J**	**0.24**	**0.279 J**	**1.8 J**	**4 J**
PCB-188	E1668 / E1668C	**0.0020**	**0.00202 J**	**0.0012**	**0.00212 J**	**0.0016 J**	0.0000057 UJ
PCB-189	E1668 / E1668C	**0.012**	**0.0106 J**	**0.0062**	**0.00847 J**	**0.055 J**	**0.11 J**
PCB-190	E1668 / E1668C	**0.066**	**0.0624 J**	**0.033**	**0.0495 J**	**0.3 J**	**0.64 J**
PCB-191	E1668 / E1668C	**0.013**	**0.0102 J**	**0.0067**	**0.00815 J**	**0.082 J**	**0.17 J**
PCB-192	E1668 / E1668C	0.00000056 U	0.0000454 UJ	0.000012 U	0.0000365 UJ	0.000042 UJ	0.0000058 UJ
PCB-194	E1668 / E1668C	**0.16 J**	**0.168 J**	**0.08**	**0.145 J**	**0.64 J**	**1.3 J**
PCB-195	E1668 / E1668C	**0.071 J**	**0.078 J**	**0.035**	**0.0658 J**	**0.28 J**	**0.56 J**
PCB-196	E1668 / E1668C	**0.089**	**0.0873 J**	**0.045**	**0.0833 J**	**0.41 J**	**0.8 J**
PCB-197	E1668 / E1668C	**0.0061**	**0.00662 J**	**0.0030**	**0.00643 J**	--	--
PCB-197/200	E1668	--	--	--	--	**0.14 J**	**0.27 J**
PCB-198/199	E1668 / E1668C	**0.19**	**0.179 J**	**0.094**	**0.167 J**	**0.74 J**	**1.5 J**
PCB-200	E1668 / E1668C	**0.024**	**0.0264 J**	**0.012**	**0.0248 J**	--	--
PCB-201	E1668 / E1668C	**0.021**	**0.0233 J**	**0.011**	**0.0222 J**	**0.12 J**	**0.23 J**
PCB-202	E1668 / E1668C	**0.033**	**0.0308 J**	**0.017**	**0.0293 J**	**0.14 J**	**0.27 J**
PCB-203	E1668 / E1668C	**0.12**	**0.104 J**	**0.058**	**0.0974 J**	**0.44 J**	**0.87 J**
PCB-204	E1668 / E1668C	0.000011 U	**0.0000398 J**	0.0000079 U	**0.0000411 J**	0.000051 UJ	0.000019 UJ
PCB-205	E1668 / E1668C	**0.01 J**	**0.00956 J**	**0.0050**	**0.00811 J**	**0.04 J**	**0.088 J**
PCB-206	E1668 / E1668C	**0.036**	**0.0448 J**	**0.019**	**0.0362 J**	**0.2 J**	**0.41 J**
PCB-207	E1668 / E1668C	**0.0046**	**0.00537 J**	**0.0025**	**0.00481 J**	**0.025 J**	**0.049 J**

Table D-1

Summary of Backwater Sediment Characterization Results for Amendment Jar Testing

Chemical	Sample ID / Laboratory / Method	TS-BW1A Eurofins	TS-BW1A SGS	TS-BW1B Eurofins	TS-BW1B SGS	TS-BW1A-SPIKED (Initial Spike) Eurofins	TS-BW1A-SPIKED2 (2nd Spike) Eurofins
PCB-208	E1668 / E1668C	**0.0076**	**0.00788 J**	**0.0040**	**0.00701 J**	**0.054 J**	**0.11 J**
PCB-209	E1668 / E1668C	**0.0027**	**0.00339 J**	**0.0013**	**0.00255 J**	**0.029 J**	**0.057 J**
Total PCB Congener (U = 0 max limit)	Calculated	**11 J**	**9.2 J**	**5.4 J**	**7.6 J**	**38 J**	**83 J**

Notes:

Bold: Detected result

Eurofins: Eurofins TestAmerica in Knoxville, Tennessee

J: Estimated value

mg/kg: milligram per kilogram

pct: percent

SGS: SGS North America in Wilmington, North Carolina

U: Compound analyzed for, but not detected above detection limit

UJ: Compound analyzed for, but not detected above estimated detection limit

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-JAR-SPME-CTRL TS-BW1A Control	TS-BW1A-JAR-SPME-CTRL-DUP TS-BW1A Control	TS-BW1A-JAR-SPME-1PAC TS-BW1A 1% PAC	TS-BW1A-JAR-SPME-1PAC-DUP TS-BW1A 1% PAC	TS-BW1A-JAR-SPME-2PAC TS-BW1A 2% PAC	TS-BW1A-JAR-SPME-2PAC-DUP TS-BW1A 2% PAC
PCB Congeners (SPME) (ng/L)							
PCB-001	E1668	**0.260 J**	**0.114 J**	0.00208 U	0.00256 U	0.00231 U	0.00369 U
PCB-002	E1668	**0.00979 J**	0.00163 U	0.000781 U	0.000949 U	0.000803 U	0.00130 U
PCB-003	E1668	**0.0222 J**	**0.00661 J**	0.000851 U	0.00102 U	0.000870 U	0.00137 U
PCB-004	E1668	**1.81 J**	**0.867 J**	0.00396 U	0.00318 U	**0.00153 J**	0.00530 U
PCB-005	E1668	0.00277 U	0.00281 U	0.00150 U	0.00121 U	0.000301 U	0.00210 U
PCB-006	E1668	**0.270 J**	**0.144 J**	0.00101 U	0.000811 U	0.000206 U	0.00141 U
PCB-007	E1668	**0.0333 J**	**0.0204 J**	0.00115 U	0.000947 U	0.000235 U	0.00162 U
PCB-008	E1668	**0.241 J**	**0.117 J**	0.000959 U	**0.00131 J**	**0.00127 J**	0.00135 U
PCB-009	E1668	**0.0450**	**0.0229 J**	0.00111 U	0.000905 U	**0.00114 J**	0.00156 U
PCB-010	E1668	**0.0894 J**	**0.0610 J**	0.00330 U	0.00266 U	0.000656 U	0.00455 U
PCB-011	E1668	**0.00258 J**	0.00127 U	0.000679 U	0.000551 U	**0.000485 J**	0.000946 U
PCB-012/013	E1668	0.00158 U	**0.0227 J**	0.000864 U	0.000692 U	**0.000440 J**	0.00122 U
PCB-014	E1668	0.00139 U	0.00140 U	0.000762 U	0.000610 U	0.000153 U	0.00106 U
PCB-015	E1668	**0.0817 J**	**0.0351 J**	0.000671 U	0.00104 UJ	0.000763 UJ	0.000998 U
PCB-016	E1668	**0.0930 J**	**0.0333 J**	0.000225 U	0.000354 U	0.000449 U	0.000584 U
PCB-017	E1668	**0.797 J**	**0.390 J**	**0.00118 J**	**0.00335 J**	**0.00124 J**	0.000484 U
PCB-018/030	E1668	**1.12**	**0.562**	**0.00134 J**	**0.00342 J**	**0.00211 J**	**0.000699 J**
PCB-019	E1668	**0.623**	**0.312**	0.000270 U	0.000441 U	**0.00137 J**	0.000685 U
PCB-020/028	E1668	**0.660 J**	**0.305 J**	**0.00134 J**	**0.00203 J**	**0.00222 J**	**0.00144 J**
PCB-021/033	E1668	**0.295 J**	**0.136 J**	**0.000707 J**	**0.00212 J**	**0.00112 J**	**0.00117 J**
PCB-022	E1668	**0.0371 J**	**0.0161 J**	0.000263 U	0.000252 U	0.000248 U	0.000272 U
PCB-023	E1668	0.00562 U	0.00235 U	0.000302 U	0.000289 U	0.000285 U	0.000309 U
PCB-024	E1668	0.00192 U	0.00121 U	0.000105 U	0.000165 U	0.000201 U	0.000261 U
PCB-025	E1668	**0.216**	**0.114**	**0.000300 J**	**0.00130 J**	**0.000565 J**	**0.000668 J**
PCB-026/029	E1668	**0.256 J**	**0.117 J**	**0.000288 J**	**0.000860 J**	**0.000490 J**	**0.000307 J**
PCB-027	E1668	**1.53 J**	**0.724 J**	**0.00147 J**	**0.00338 J**	**0.00180 J**	**0.000920 J**
PCB-031	E1668	**0.182 J**	**0.0884 J**	0.000209 U	**0.000504 J**	**0.000574 J**	**0.000434 J**
PCB-032	E1668	**1.22 J**	**0.570 J**	**0.00280 J**	0.00155 UJ	0.00194 UJ	0.00149 UJ
PCB-034	E1668	**0.0140**	**0.00777 J**	0.000260 U	0.000248 U	0.000245 U	0.000264 U
PCB-035	E1668	0.00341 U	0.00139 U	0.000179 U	0.000171 U	0.000169 U	0.000183 U
PCB-036	E1668	0.00242 U	0.00104 U	0.000129 U	0.000123 U	0.000121 U	0.000134 U
PCB-037	E1668	**0.0114**	**0.00442 J**	0.000169 U	0.000161 U	0.000159 U	0.000173 U
PCB-038	E1668	0.00358 U	0.00150 U	0.000188 U	0.000180 U	0.000177 U	0.000194 U
PCB-039	E1668	0.00280 U	0.00120 U	0.000149 U	0.000142 U	0.000140 U	0.000153 U
PCB-040/041/071	E1668	**0.849**	**0.425**	**0.00114 J**	**0.00565 J**	**0.00296 J**	0.00157 U
PCB-042	E1668	**0.358 J**	**0.173 J**	0.000669 U	**0.00208 J**	0.000461 U	0.00173 U
PCB-043/073	E1668	**0.241**	**0.121**	0.000522 U	**0.00228 J**	0.000362 U	0.00134 U
PCB-044/047/065	E1668	**7.42 J**	**3.62 J**	**0.0200 J**	**0.0484 J**	**0.0217**	**0.0191 J**
PCB-045/051	E1668	**5.65 J**	**2.81 J**	**0.0171 J**	**0.0442 J**	**0.0126 J**	**0.0168 J**
PCB-046	E1668	**0.397 J**	**0.204**	0.00121 U	**0.00314 J**	0.000827 U	0.00314 U
PCB-048	E1668	0.0109 U	0.00581 U	0.000599 U	0.000600 U	0.000415 U	0.00159 U
PCB-049/069	E1668	**2.62 J**	**1.27 J**	**0.00729 J**	**0.0172 J**	**0.00779 J**	**0.00715 J**
PCB-050/053	E1668	**3.72**	**1.86**	**0.0109 J**	**0.0293**	**0.00922 J**	**0.00899 J**
PCB-052	E1668	**1.91 J**	**0.932 J**	**0.00604 J**	**0.0146 J**	**0.00564 J**	**0.00450 J**
PCB-054	E1668	**0.697 J**	**0.334 J**	**0.00201 J**	**0.00847 J**	**0.00145 J**	**0.00130 J**
PCB-055	E1668	0.00335 U	0.00185 U	0.000188 U	0.000190 U	0.000129 U	0.000498 U
PCB-056	E1668	**0.0145 J**	**0.00756 J**	0.000206 U	0.000207 U	0.000143 U	0.000531 U
PCB-057	E1668	0.00347 U	0.00190 U	0.000194 U	0.000195 U	0.000135 U	0.000497 U
PCB-058	E1668	0.00307 U	0.00167 U	0.000172 U	0.000173 U	0.000120 U	0.000439 U

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-JAR-SPME-CTRL TS-BW1A Control	TS-BW1A-JAR-SPME-CTRL-DUP TS-BW1A Control	TS-BW1A-JAR-SPME-1PAC TS-BW1A 1% PAC	TS-BW1A-JAR-SPME-1PAC-DUP TS-BW1A 1% PAC	TS-BW1A-JAR-SPME-2PAC TS-BW1A 2% PAC	TS-BW1A-JAR-SPME-2PAC-DUP TS-BW1A 2% PAC
PCB-059/062/075	E1668	**0.139 J**	**0.0740 J**	0.000333 U	0.000333 U	0.000233 U	0.000882 U
PCB-060	E1668	0.00425 U	0.00230 U	0.000238 U	0.000238 U	0.000163 U	0.000630 U
PCB-061/070/074/076	E1668	**0.261**	**0.134**	**0.00190 J**	**0.00313 J**	**0.00150 J**	0.000650 U
PCB-063	E1668	**0.0215**	0.00193 U	0.000197 U	0.000198 U	0.000138 U	0.000526 U
PCB-064	E1668	**0.0823 J**	**0.0370 J**	0.000298 U	0.000299 U	0.000205 U	0.000789 U
PCB-066	E1668	**0.202 J**	**0.100 J**	0.000164 U	**0.000771 J**	**0.000620 J**	0.000439 U
PCB-067	E1668	**0.0124 J**	**0.00907**	0.000152 U	0.000154 U	0.000107 U	0.000412 U
PCB-068	E1668	**0.0496 J**	**0.0207 J**	0.000153 U	0.000154 U	0.000104 U	0.000387 U
PCB-072	E1668	**0.0251 J**	**0.0132 J**	0.000150 U	0.000151 U	0.000104 U	0.000387 U
PCB-077	E1668	0.00340 U	0.00180 U	0.000185 U	0.000185 U	0.000131 U	0.000483 U
PCB-078	E1668	0.00235 U	0.00128 U	0.000131 U	0.000131 U	0.0000905 U	0.000341 U
PCB-079	E1668	0.00158 U	**0.00532**	0.0000885 U	0.0000900 U	0.0000622 U	0.000225 U
PCB-080	E1668	0.00165 U	0.000904 U	0.0000913 U	0.0000921 U	0.0000642 U	0.000244 U
PCB-081	E1668	0.00263 U	0.00145 U	0.000150 U	0.000151 U	0.000103 U	0.000393 U
PCB-082	E1668	**0.0487**	**0.0263**	**0.000329 J**	**0.001000 J**	0.000234 U	0.000769 U
PCB-083/099	E1668	**1.19**	**0.634**	**0.00949 J**	**0.0222 J**	**0.00820**	**0.00920**
PCB-084	E1668	**0.257**	**0.136**	**0.00305 J**	**0.00679 J**	**0.00229 J**	0.00127 U
PCB-085/116/117	E1668	**0.197**	**0.107**	**0.00153 J**	**0.00579 J**	**0.00274 J**	**0.00334 J**
PCB-086/087/097/109/119/125	E1668	**0.633**	**0.323**	**0.00505 J**	**0.0126 J**	**0.00423 J**	**0.00464 J**
PCB-088/091	E1668	**1.57 J**	**0.781 J**	**0.0122 J**	**0.0360 J**	**0.0107**	**0.0112**
PCB-089	E1668	0.000541 U	0.000822 U	0.000345 U	0.000375 U	0.000315 U	0.00101 U
PCB-090/101/113	E1668	**1.69**	**0.850**	**0.0137 J**	**0.0368 J**	**0.0115**	**0.0126**
PCB-092	E1668	**0.602**	**0.320**	**0.00524 J**	**0.0138 J**	**0.00411**	**0.00361 J**
PCB-093/100	E1668	**0.943 J**	**0.438 J**	**0.00836 J**	**0.0236 J**	**0.00512 J**	**0.00499 J**
PCB-094	E1668	**0.373**	**0.188**	**0.00346 J**	**0.00926 J**	**0.00238 J**	**0.00258 J**
PCB-095	E1668	**1.78 J**	**0.870 J**	**0.0163 J**	**0.0331 J**	**0.0114**	**0.0108**
PCB-096	E1668	**0.429**	**0.219**	**0.00351 J**	**0.0120 J**	**0.00315 J**	0.00154 U
PCB-098/102	E1668	**0.187**	**0.0978**	**0.00135 J**	**0.00496 J**	**0.000848 J**	0.000795 U
PCB-103	E1668	**0.320**	**0.162**	**0.00287 J**	**0.00712 J**	**0.00219 J**	**0.00195 J**
PCB-104	E1668	**0.110 J**	**0.0539 J**	0.000474 U	**0.00395 J**	0.000428 U	0.00137 U
PCB-105	E1668	**0.0394 J**	**0.0195 J**	**0.000174 J**	**0.000622 J**	**0.000285 J**	**0.000160 J**
PCB-106	E1668	0.000596 U	0.000572 U	0.0000974 U	0.000159 U	0.0000862 U	0.000120 U
PCB-107	E1668	**0.0193**	**0.0104**	0.0000810 U	**0.000333 J**	0.0000715 U	0.000104 U
PCB-108/124	E1668	**0.00938 J**	**0.00483 J**	0.0000974 U	0.000157 U	0.0000860 U	0.000122 U
PCB-110/115	E1668	**0.604**	**0.330**	**0.00465 J**	**0.0122 J**	**0.00438**	**0.00427**
PCB-111	E1668	**0.00324 J**	**0.00164 J**	0.0000591 U	0.0000662 U	0.0000531 U	0.000170 U
PCB-112	E1668	0.000153 U	0.000222 U	0.0000937 U	0.000107 U	0.0000851 U	0.000276 U
PCB-114	E1668	**0.00160**	0.000633 U	0.000110 U	0.000178 U	0.0000954 U	0.000139 U
PCB-118	E1668	**0.169**	**0.0867**	**0.00183 J**	**0.00350 J**	**0.00154**	**0.00159**
PCB-120	E1668	**0.00717 J**	**0.00417 J**	0.0000442 U	0.0000497 U	0.0000400 U	0.000127 U
PCB-121	E1668	**0.00625 J**	**0.00311 J**	0.0000689 U	**0.000204 J**	0.0000627 U	0.000207 U
PCB-122	E1668	**0.00283**	0.000783 U	0.000131 U	0.000204 U	0.000112 U	0.000164 U
PCB-123	E1668	**0.00314 J**	**0.00191**	0.0000963 U	0.000156 U	0.0000853 U	0.000124 U
PCB-126	E1668	0.000344 U	0.000331 U	0.0000562 U	0.0000873 U	0.0000510 U	0.0000711 U
PCB-127	E1668	0.000319 U	0.000305 U	0.0000514 U	0.0000829 U	0.0000456 U	0.0000683 U
PCB-128/166	E1668	**0.0450**	**0.0225**	**0.00111 J**	**0.00256 J**	**0.00111 J**	**0.00720 J**
PCB-129/138/160/163	E1668	**1.15**	**0.576**	**0.0275 J**	**0.0714 J**	**0.0222**	**0.0244**
PCB-130	E1668	**0.0596 J**	**0.0302 J**	**0.00144 J**	**0.00406 J**	**0.00136**	**0.00140**
PCB-131	E1668	**0.0110 J**	**0.00508 J**	0.000606 U	0.00108 U	0.000356 U	0.000260 U
PCB-132	E1668	**0.439 J**	**0.226 J**	**0.0131 J**	**0.0335 J**	**0.00990**	**0.0113**

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-JAR-SPME-CTRL TS-BW1A Control	TS-BW1A-JAR-SPME-CTRL-DUP TS-BW1A Control	TS-BW1A-JAR-SPME-1PAC TS-BW1A 1% PAC	TS-BW1A-JAR-SPME-1PAC-DUP TS-BW1A 1% PAC	TS-BW1A-JAR-SPME-2PAC TS-BW1A 2% PAC	TS-BW1A-JAR-SPME-2PAC-DUP TS-BW1A 2% PAC
PCB-133	E1668	**0.0310 J**	**0.0157 J**	**0.000898 J**	**0.00243 J**	**0.000776 J**	**0.00110**
PCB-134/143	E1668	**0.102**	**0.0540**	**0.00258 J**	**0.00768 J**	**0.00257 J**	**0.00264**
PCB-135/151	E1668	**1.19**	**0.634**	**0.0368 J**	**0.0953 J**	**0.0269**	**0.0284**
PCB-136	E1668	**0.325**	**0.167**	**0.0120 J**	**0.0315 J**	**0.00856**	**0.00917**
PCB-137	E1668	**0.0160 J**	**0.0100 J**	**0.000422 J**	**0.000708 J**	**0.000458 J**	**0.000454 J**
PCB-139/140	E1668	**0.0252 J**	**0.0117 J**	**0.000569 J**	**0.00192 J**	**0.000578 J**	**0.000707 J**
PCB-141	E1668	**0.194 J**	**0.102 J**	**0.00586 J**	**0.0140 J**	**0.00399**	**0.00456**
PCB-142	E1668	0.00313 U	0.00212 U	0.000686 U	0.00119 U	0.000382 U	0.000287 U
PCB-144	E1668	**0.0895**	**0.0479**	**0.00268 J**	**0.00725 J**	**0.00189**	**0.00236**
PCB-145	E1668	0.000159 U	**0.00175 J**	0.0000888 U	0.0000823 U	0.0000634 U	0.0000119 U
PCB-146	E1668	**0.176 J**	**0.0883**	**0.00492 J**	**0.0128 J**	**0.00398**	**0.00433**
PCB-147/149	E1668	**1.94 J**	**0.932 J**	**0.0522 J**	**0.136 J**	**0.0392**	**0.0426**
PCB-148	E1668	**0.0222**	**0.0113**	**0.000826 J**	**0.00197 J**	**0.000547 J**	**0.000443 J**
PCB-150	E1668	**0.0757**	**0.0389**	**0.00221 J**	**0.00888 J**	**0.00162 J**	**0.00256**
PCB-152	E1668	**0.0719**	**0.0390**	**0.00269 J**	**0.00685 J**	**0.00168 J**	**0.00219 J**
PCB-153/168	E1668	**0.828**	**0.415**	**0.0205 J**	**0.0549 J**	**0.0168**	**0.0182**
PCB-154	E1668	**0.0903**	**0.0483**	**0.00249 J**	**0.00750 J**	**0.00218**	**0.00212 J**
PCB-155	E1668	**0.00202 J**	**0.000954**	**0.000112 J**	**0.000241 J**	**0.0000793 J**	**0.0000393 J**
PCB-156/157	E1668	**0.0177 J**	**0.00881 J**	**0.000310 J**	**0.000585 J**	**0.000231 J**	**0.000387 J**
PCB-158	E1668	**0.0483**	**0.0246**	**0.00166 J**	**0.00435 J**	**0.000706 J**	**0.00192 J**
PCB-159	E1668	**0.0123**	**0.00636**	**0.00145 J**	**0.00355 J**	**0.00108 J**	**0.00186 J**
PCB-161	E1668	0.000538 U	0.000361 U	0.000123 U	0.000212 U	0.0000712 U	0.0000520 U
PCB-162	E1668	0.000423 U	0.000290 U	0.0000978 U	0.000171 U	0.0000541 U	0.0000403 U
PCB-164	E1668	**0.0409**	**0.0207**	**0.00102 J**	**0.00307 J**	**0.000908**	**0.000984**
PCB-165	E1668	**0.00384 J**	**0.00179 J**	0.000171 U	0.000303 U	0.0000995 U	**0.000102 J**
PCB-167	E1668	**0.00794**	**0.00398**	**0.000127 J**	**0.000394**	**0.000134 J**	**0.000154 J**
PCB-169	E1668	0.000614 U	0.000399 U	0.000125 U	0.000239 U	0.0000769 U	**0.000290 J**
PCB-170	E1668	**0.143**	**0.0729**	**0.0130 J**	**0.0333 J**	**0.0128**	**0.0137**
PCB-171/173	E1668	**0.0889**	**0.0459**	**0.00975 J**	**0.0229 J**	**0.00835**	**0.00936**
PCB-172	E1668	**0.0319**	**0.0184**	**0.00363 J**	**0.00934 J**	**0.00395**	**0.00436**
PCB-174	E1668	**0.356**	**0.190**	**0.0390 J**	**0.0974 J**	**0.0343**	**0.0383**
PCB-175	E1668	**0.0122**	**0.00654**	**0.00145 J**	**0.00336 J**	**0.00125**	**0.00144**
PCB-176	E1668	**0.127**	**0.0686**	**0.0157 J**	**0.0397 J**	**0.0148**	**0.0161**
PCB-177	E1668	**0.213**	**0.109**	**0.0231 J**	**0.0586 J**	**0.0205**	**0.0238**
PCB-178	E1668	**0.120**	**0.0610**	**0.0116 J**	**0.0298 J**	**0.0102**	**0.0115**
PCB-179	E1668	**0.555**	**0.288**	**0.0659 J**	**0.169 J**	**0.0584**	**0.0669**
PCB-180/193	E1668	**0.309**	**0.165**	**0.0288 J**	**0.0727 J**	**0.0247**	**0.0313**
PCB-181	E1668	0.00000778 U	0.0000339 U	0.0000124 U	0.00000847 U	0.0000171 U	0.000000814 U
PCB-182	E1668	**0.00285**	0.0000261 U	**0.000403**	0.00000666 U	**0.000339 J**	**0.000405**
PCB-183/185	E1668	**0.207**	**0.108**	**0.0202 J**	**0.0526 J**	**0.0176**	**0.0206**
PCB-184	E1668	0.00000958 U	0.0000440 U	0.0000161 U	0.0000110 U	0.0000223 U	0.00000105 U
PCB-186	E1668	0.0000126 U	0.0000548 U	0.0000203 U	0.0000143 U	0.0000282 U	0.00000138 U
PCB-187	E1668	**0.441**	**0.249**	**0.0469 J**	**0.131 J**	**0.0516**	**0.0574**
PCB-188	E1668	**0.00745 J**	**0.00375 J**	**0.000724 J**	**0.00249 J**	**0.000921**	**0.000823 J**
PCB-189	E1668	**0.00150**	**0.000804**	**0.000116 J**	**0.000277 J**	**0.000102 J**	**0.000127**
PCB-190	E1668	**0.0221**	**0.0118**	**0.00183 J**	**0.00467 J**	**0.00172**	**0.00186**
PCB-191	E1668	**0.00397**	**0.00203**	**0.000352 J**	**0.000942 J**	**0.000315**	**0.000340 J**
PCB-192	E1668	0.00000259 U	0.0000112 U	0.00000412 U	0.00000287 U	0.00000583 U	0.000000276 U
PCB-194	E1668	**0.0222 J**	**0.0109 J**	**0.00448 J**	**0.0110 J**	**0.00629**	**0.00718**
PCB-195	E1668	**0.0259 J**	**0.0126 J**	**0.00465 J**	**0.0112 J**	**0.00634**	**0.00681**

Table D-2

Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-JAR-SPME-CTRL TS-BW1A Control	TS-BW1A-JAR-SPME-CTRL-DUP TS-BW1A Control	TS-BW1A-JAR-SPME-1PAC TS-BW1A 1% PAC	TS-BW1A-JAR-SPME-1PAC-DUP TS-BW1A 1% PAC	TS-BW1A-JAR-SPME-2PAC TS-BW1A 2% PAC	TS-BW1A-JAR-SPME-2PAC-DUP TS-BW1A 2% PAC
PCB-196	E1668	**0.0304**	**0.0164**	**0.00657 J**	**0.0164 J**	**0.00929**	**0.00944**
PCB-197/200	E1668	**0.0343**	**0.0193**	**0.00833 J**	**0.0205 J**	**0.0115**	**0.0118**
PCB-198/199	E1668	**0.0648**	**0.0350**	**0.0146 J**	**0.0378 J**	**0.0201**	**0.0210**
PCB-201	E1668	**0.0141**	**0.00764**	**0.00334 J**	**0.00843 J**	**0.00444**	**0.00475**
PCB-202	E1668	**0.0383**	**0.0204**	**0.00945 J**	**0.0231 J**	**0.0128**	**0.0133**
PCB-203	E1668	**0.0358**	**0.0224**	**0.00828 J**	**0.0218 J**	**0.0135**	**0.0131**
PCB-204	E1668	0.0000310 U	0.0000436 U	0.0000506 U	0.0000512 U	0.0000813 U	0.0000765 U
PCB-205	E1668	**0.000945 J**	**0.000402 J**	**0.000164 J**	**0.000439 J**	**0.000232**	**0.000252**
PCB-206	E1668	**0.00434**	**0.00237**	**0.00142 J**	**0.00287 J**	**0.00225**	**0.00229**
PCB-207	E1668	**0.00193**	**0.000990**	**0.000567 J**	**0.00136 J**	**0.000903**	**0.000869 J**
PCB-208	E1668	**0.00347**	**0.00198**	**0.00112 J**	**0.00241 J**	**0.00178**	**0.00185**
PCB-209	E1668	**0.000580**	**0.000466**	**0.000320 J**	**0.000416 J**	**0.000453**	**0.000417**
Total PCB Congener (U = 0 max limit)	Calculated	**55.7 J**	**27.7 J**	**0.710 J**	**1.84 J**	**0.656 J**	**0.698 J**

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-JAR-SPME-5PAC TS-BW1A 5% PAC	TS-BW1A-JAR-SPME-5PAC-DUP TS-BW1A 5% PAC	TS-BW1A-JAR-SPME-2GAC TS-BW1A 2% GAC	TS-BW1A-JAR-SPME-2GAC-DUP TS-BW1A 2% GAC	TS-BW1A-JAR-SPME-5GAC TS-BW1A 5% GAC	TS-BW1A-JAR-SPME-5GAC-DUP TS-BW1A 5% GAC
PCB Congeners (SPME) (ng/L)							
PCB-001	E1668	0.00229 U	0.00270 U	0.00335 U	0.00294 U	0.00329 U	0.00280 U
PCB-002	E1668	0.000859 U	0.000989 U	0.00120 U	0.00107 U	0.00118 U	0.00103 U
PCB-003	E1668	0.000925 U	0.000989 U	0.00120 U	0.00113 U	0.00131 U	0.00109 U
PCB-004	E1668	0.00218 U	0.00318 U	0.00381 U	0.00229 U	0.00282 U	0.00269 U
PCB-005	E1668	0.000882 U	0.00128 U	0.00144 U	0.000853 U	0.00113 U	0.00103 U
PCB-006	E1668	0.000578 U	0.000850 U	0.000981 U	0.000583 U	0.000751 U	**0.00138 J**
PCB-007	E1668	0.000685 U	0.000981 U	0.00114 U	0.000661 U	0.000853 U	0.000801 U
PCB-008	E1668	0.000566 U	0.000802 U	0.000931 U	**0.00234 J**	0.000706 U	0.000647 U
PCB-009	E1668	0.000639 U	0.000941 U	0.00107 U	0.000645 U	0.000842 U	0.000786 U
PCB-010	E1668	0.00186 U	0.00275 U	0.00318 U	0.00188 U	0.00240 U	0.00226 U
PCB-011	E1668	0.000403 U	0.000574 U	0.000657 U	0.000387 U	**0.00129 J**	0.000476 U
PCB-012/013	E1668	0.000500 U	0.000738 U	0.000833 U	0.000505 U	0.000645 U	0.000607 U
PCB-014	E1668	0.000441 U	0.000631 U	0.000735 U	0.000445 U	0.000568 U	0.000516 U
PCB-015	E1668	0.000423 U	0.000605 U	0.000667 U	0.000390 U	0.000527 U	0.000570 UJ
PCB-016	E1668	0.000444 U	**0.000787 J**	0.000373 U	0.000373 U	0.000390 U	0.000332 U
PCB-017	E1668	**0.00131 J**	**0.000550 J**	**0.00189 J**	0.000309 U	0.000323 U	0.000275 U
PCB-018/030	E1668	**0.00133 J**	**0.00229 J**	**0.00172 J**	**0.00442 J**	**0.00165 J**	**0.000690 J**
PCB-019	E1668	0.000529 U	0.000528 U	0.000434 U	**0.00207 J**	**0.00229 J**	0.000376 U
PCB-020/028	E1668	**0.00125 J**	**0.00146 J**	**0.00231 J**	**0.00411 J**	**0.00103 J**	**0.00162 J**
PCB-021/033	E1668	0.000206 U	**0.000670 J**	**0.00169 J**	**0.00352 J**	0.000268 U	0.000320 U
PCB-022	E1668	0.000153 U	0.000184 U	0.000206 U	0.000299 U	0.000202 U	0.000243 U
PCB-023	E1668	0.000177 U	0.000208 U	0.000231 U	0.000337 U	0.000227 U	0.000270 U
PCB-024	E1668	0.000215 U	0.000198 U	0.000167 U	0.000167 U	0.000180 U	0.000149 U
PCB-025	E1668	**0.000465 J**	**0.000304 J**	**0.000938 J**	**0.00231 J**	**0.000359 J**	**0.000437 J**
PCB-026/029	E1668	0.000156 U	**0.000431 J**	**0.000862 J**	**0.00122 J**	**0.000393 J**	**0.000643 J**
PCB-027	E1668	**0.00133 J**	**0.00191 J**	**0.00180 J**	**0.00664 J**	**0.00135 J**	**0.00184 J**
PCB-031	E1668	**0.000381 J**	**0.000574 J**	**0.000299 J**	**0.00111 J**	**0.000251 J**	**0.000437 J**
PCB-032	E1668	0.00164 UJ	0.00150 UJ	**0.00318 J**	**0.00457 J**	0.00149 UJ	0.000113 U
PCB-034	E1668	0.000156 U	0.000181 U	0.000200 U	0.000296 U	0.000196 U	0.000232 U
PCB-035	E1668	0.000105 U	0.000123 U	0.000137 U	0.000206 U	0.000134 U	0.000166 U
PCB-036	E1668	0.0000763 U	0.0000869 U	0.0000988 U	0.000148 U	0.0000969 U	0.000118 U
PCB-037	E1668	0.000103 U	0.000115 U	0.000128 U	0.000195 U	0.000131 U	0.000156 U
PCB-038	E1668	0.000112 U	0.000133 U	0.000148 U	0.000219 U	0.000145 U	0.000174 U
PCB-039	E1668	0.0000907 U	0.000101 U	0.000113 U	0.000172 U	0.000116 U	0.000138 U
PCB-040/041/071	E1668	**0.00139 J**	**0.000993 J**	**0.00468 J**	**0.00871 J**	0.000852 U	**0.00137 J**
PCB-042	E1668	0.000161 U	0.000454 U	**0.00226 J**	**0.00361 J**	0.000969 U	0.000645 U
PCB-043/073	E1668	0.000129 U	0.000357 U	**0.00216 J**	**0.00484 J**	0.000707 U	0.000503 U
PCB-044/047/065	E1668	**0.0114 J**	**0.0121 J**	**0.0375 J**	**0.0794 J**	**0.0127 J**	**0.0148 J**
PCB-045/051	E1668	**0.00726 J**	**0.00793 J**	**0.0366 J**	**0.0893 J**	**0.00998 J**	**0.00904 J**
PCB-046	E1668	0.000295 U	0.000815 U	0.00137 U	**0.00493 J**	0.00168 U	0.00116 U
PCB-048	E1668	0.000148 U	0.000409 U	0.000677 U	0.00108 U	0.000863 U	0.000584 U
PCB-049/069	E1668	**0.00394 J**	**0.00443 J**	**0.0141 J**	**0.0279 J**	**0.00362 J**	**0.00468 J**
PCB-050/053	E1668	**0.00442 J**	**0.00523 J**	**0.0213 J**	**0.0492 J**	**0.00555 J**	**0.00552 J**
PCB-052	E1668	**0.00272 J**	**0.00313 J**	**0.0119 J**	**0.0251 J**	**0.00445 J**	**0.00380 J**
PCB-054	E1668	**0.000319 J**	0.000220 U	**0.00511 J**	**0.0144**	0.000207 U	**0.000455 J**
PCB-055	E1668	0.0000471 U	0.000127 U	0.000217 U	0.000339 U	0.000266 U	0.000184 U
PCB-056	E1668	0.0000504 U	0.000141 U	0.000234 U	0.000373 U	0.000289 U	0.000198 U
PCB-057	E1668	0.0000474 U	0.000133 U	0.000224 U	0.000359 U	0.000275 U	0.000190 U
PCB-058	E1668	0.0000415 U	0.000118 U	0.000197 U	0.000299 U	0.000243 U	0.000166 U

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-JAR-SPME-5PAC TS-BW1A 5% PAC	TS-BW1A-JAR-SPME-5PAC-DUP TS-BW1A 5% PAC	TS-BW1A-JAR-SPME-2GAC TS-BW1A 2% GAC	TS-BW1A-JAR-SPME-2GAC-DUP TS-BW1A 2% GAC	TS-BW1A-JAR-SPME-5GAC TS-BW1A 5% GAC	TS-BW1A-JAR-SPME-5GAC-DUP TS-BW1A 5% GAC
PCB-059/062/075	E1668	0.0000799 U	0.000230 U	0.000384 U	0.000617 U	0.000465 U	0.000321 U
PCB-060	E1668	0.0000572 U	0.000161 U	0.000275 U	0.000441 U	0.000332 U	0.000229 U
PCB-061/070/074/076	E1668	**0.000659 J**	**0.000822 J**	**0.00457 J**	**0.00873 J**	**0.000814 J**	**0.000767 J**
PCB-063	E1668	0.0000474 U	0.000136 U	0.000227 U	0.000359 U	0.000278 U	0.000190 U
PCB-064	E1668	0.0000705 U	0.000202 U	0.000341 U	0.000522 U	0.000423 U	0.000287 U
PCB-066	E1668	**0.000445 J**	**0.000583 J**	**0.00101 J**	**0.00185 J**	**0.000385 J**	**0.000547 J**
PCB-067	E1668	0.0000362 U	0.000106 U	0.000177 U	**0.00169 J**	0.000217 U	0.000147 U
PCB-068	E1668	0.0000368 U	0.000103 U	0.000176 U	0.000272 U	0.000216 U	0.000147 U
PCB-072	E1668	0.0000368 U	0.000103 U	0.000173 U	0.000272 U	0.000213 U	0.000147 U
PCB-077	E1668	0.0000464 U	0.000126 U	0.000213 U	0.000338 U	0.000255 U	0.000181 U
PCB-078	E1668	0.0000325 U	0.0000892 U	0.000152 U	0.000246 U	0.000187 U	0.000128 U
PCB-079	E1668	0.0000211 U	0.0000613 U	0.000103 U	0.000161 U	0.000127 U	0.0000871 U
PCB-080	E1668	0.0000217 U	0.0000633 U	0.000106 U	0.000172 U	0.000130 U	0.0000896 U
PCB-081	E1668	0.0000358 U	0.000103 U	0.000173 U	0.000261 U	0.000216 U	0.000144 U
PCB-082	E1668	0.000192 U	0.000164 U	0.000674 U	**0.00534**	0.000239 U	0.000167 U
PCB-083/099	E1668	**0.00319 J**	**0.00294 J**	**0.0470 J**	**0.102 J**	**0.00534**	**0.00508**
PCB-084	E1668	**0.000584 J**	**0.000622 J**	**0.0122 J**	**0.0295 J**	**0.00173 J**	**0.000765 J**
PCB-085/116/117	E1668	**0.00176 J**	**0.00164 J**	**0.00614 J**	**0.0178 J**	**0.00158 J**	**0.000957 J**
PCB-086/087/097/109/119/125	E1668	**0.00162 J**	**0.00159 J**	**0.0177 J**	**0.0475 J**	**0.00310 J**	**0.00232 J**
PCB-088/091	E1668	**0.00402 J**	**0.00292 J**	**0.0774 J**	**0.199 J**	**0.00867**	**0.00567 J**
PCB-089	E1668	0.000256 U	0.000219 U	0.000885 U	0.000554 U	0.000322 U	0.000223 U
PCB-090/101/113	E1668	**0.00398 J**	**0.00357 J**	**0.0582 J**	**0.147 J**	**0.00885**	**0.00556 J**
PCB-092	E1668	**0.00128 J**	**0.00109 J**	**0.0266 J**	**0.0636 J**	**0.00361**	**0.00231**
PCB-093/100	E1668	**0.00152 J**	**0.00198 J**	**0.0510 J**	**0.130 J**	**0.00500 J**	**0.00318 J**
PCB-094	E1668	**0.000613 J**	**0.000997 J**	**0.0231 J**	**0.0586 J**	**0.00185 J**	**0.00130 J**
PCB-095	E1668	**0.00355**	**0.00257 J**	**0.0650 J**	**0.179 J**	**0.00796**	**0.00433 J**
PCB-096	E1668	0.000389 U	0.000326 U	**0.0306 J**	**0.0722 J**	**0.00169 J**	**0.000628 J**
PCB-098/102	E1668	0.000200 U	0.000170 U	**0.00910 J**	**0.0202 J**	0.000248 U	0.000173 U
PCB-103	E1668	0.000192 U	0.000162 U	**0.0156 J**	**0.0404 J**	**0.00166 J**	**0.000883 J**
PCB-104	E1668	0.000353 U	0.000302 U	**0.0108 J**	**0.0236 J**	0.000436 U	0.000307 U
PCB-105	E1668	**0.000227 J**	0.0000832 U	0.000328 U	**0.00131**	**0.000193 J**	**0.000235 J**
PCB-106	E1668	0.0000597 U	0.0000784 U	0.000301 U	0.000223 U	0.000106 U	0.0000641 U
PCB-107	E1668	0.0000497 U	0.0000648 U	0.000250 U	**0.00125**	**0.000142 J**	0.0000533 U
PCB-108/124	E1668	0.0000592 U	0.0000781 U	0.000308 U	**0.000357 J**	0.000104 U	0.0000642 U
PCB-110/115	E1668	**0.00152 J**	**0.00170 J**	**0.0153 J**	**0.0422 J**	**0.00306**	**0.00256 J**
PCB-111	E1668	0.0000439 U	0.0000369 U	0.000147 U	0.0000955 U	0.0000544 U	0.0000382 U
PCB-112	E1668	0.0000692 U	0.0000592 U	0.000233 U	0.000150 U	0.0000863 U	0.0000613 U
PCB-114	E1668	0.0000682 U	0.0000854 U	0.000328 U	0.000240 U	0.000118 U	0.0000694 U
PCB-118	E1668	**0.000511 J**	**0.000778 J**	**0.00154 J**	**0.00371 J**	0.0000886 U	**0.000844 J**
PCB-120	E1668	0.0000323 U	0.0000282 U	**0.00106**	**0.00122**	**0.0000798 J**	0.0000284 U
PCB-121	E1668	0.0000520 U	0.0000441 U	0.000178 U	**0.000659 J**	0.0000645 U	0.0000446 U
PCB-122	E1668	0.0000807 U	0.000106 U	0.000413 U	0.000301 U	0.000142 U	0.0000869 U
PCB-123	E1668	0.0000592 U	0.0000787 U	0.000307 U	0.000217 U	0.000106 U	0.0000621 U
PCB-126	E1668	0.0000340 U	0.0000470 U	0.000178 U	0.000132 U	0.0000634 U	0.0000386 U
PCB-127	E1668	0.0000317 U	0.0000415 U	0.000163 U	0.000117 U	0.0000559 U	0.0000340 U
PCB-128/166	E1668	**0.00103 J**	**0.000970 J**	**0.00735 J**	**0.0141 J**	**0.00126 J**	**0.000427 J**
PCB-129/138/160/163	E1668	**0.00549**	**0.00512**	**0.203 J**	**0.342 J**	**0.0271 J**	**0.0123 J**
PCB-130	E1668	**0.000253 J**	**0.000292 J**	**0.0112 J**	**0.0192 J**	**0.00148 J**	**0.000769 J**
PCB-131	E1668	0.000120 U	0.0000876 U	0.00266 U	**0.00392 J**	0.000235 U	0.000118 U
PCB-132	E1668	**0.00201**	**0.00175**	**0.116 J**	**0.165**	**0.0124**	**0.00545**

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-JAR-SPME-5PAC TS-BW1A 5% PAC	TS-BW1A-JAR-SPME-5PAC-DUP TS-BW1A 5% PAC	TS-BW1A-JAR-SPME-2GAC TS-BW1A 2% GAC	TS-BW1A-JAR-SPME-2GAC-DUP TS-BW1A 2% GAC	TS-BW1A-JAR-SPME-5GAC TS-BW1A 5% GAC	TS-BW1A-JAR-SPME-5GAC-DUP TS-BW1A 5% GAC
PCB-133	E1668	**0.000216 J**	**0.000104 J**	**0.00914 J**	**0.0148**	**0.00193**	**0.000411 J**
PCB-134/143	E1668	0.000124 U	**0.000400 J**	**0.0269 J**	**0.0404**	**0.00264 J**	**0.000995 J**
PCB-135/151	E1668	**0.00476**	**0.00408**	**0.312**	**0.435**	**0.0350**	**0.0126**
PCB-136	E1668	**0.00121 J**	**0.00121**	**0.112**	**0.141**	**0.0110**	**0.00375**
PCB-137	E1668	0.0000676 U	0.0000496 U	**0.00165 J**	**0.00540 J**	**0.000528 J**	0.0000668 U
PCB-139/140	E1668	0.0000810 U	**0.0000912 J**	**0.00628 J**	**0.0103 J**	**0.000739 J**	**0.000279 J**
PCB-141	E1668	**0.000910**	**0.000983**	**0.0390 J**	**0.0612**	**0.00532**	**0.00251**
PCB-142	E1668	0.000134 U	0.0000971 U	0.00293 U	0.00139 U	0.000273 U	0.000132 U
PCB-144	E1668	**0.000384 J**	**0.000404 J**	**0.0209**	**0.0304**	**0.00246**	**0.000741 J**
PCB-145	E1668	0.0000183 U	0.0000300 U	0.00000834 U	0.0000228 U	**0.000188 J**	0.0000244 U
PCB-146	E1668	**0.000635 J**	**0.000719**	**0.0370 J**	**0.0581**	**0.00543**	**0.00210**
PCB-147/149	E1668	**0.00741**	**0.00673**	**0.502**	**0.748**	**0.0590**	**0.0206**
PCB-148	E1668	**0.0000348 J**	0.0000155 U	**0.00646**	**0.00897**	**0.000661 J**	**0.000114 J**
PCB-150	E1668	**0.000128 J**	**0.000101 J**	**0.0305**	**0.0349**	**0.00406**	**0.00145 J**
PCB-152	E1668	**0.000400 J**	**0.000136 J**	**0.0269**	**0.0350**	**0.00316**	**0.000800 J**
PCB-153/168	E1668	**0.00350 J**	**0.00356**	**0.155**	**0.254**	**0.0207**	**0.00890**
PCB-154	E1668	**0.000396 J**	**0.000378 J**	**0.0260**	**0.0356**	**0.00340**	**0.00124**
PCB-155	E1668	0.00000548 U	0.00000847 U	**0.00105**	**0.00119**	**0.0000967 J**	**0.0000182 J**
PCB-156/157	E1668	**0.0000784 J**	**0.000103 J**	**0.00144 J**	**0.00298 J**	**0.000352 J**	**0.000173 J**
PCB-158	E1668	**0.000254 J**	**0.000308 J**	**0.00603 J**	**0.0146 J**	**0.000355 J**	0.0000294 U
PCB-159	E1668	**0.000201 J**	**0.000191 J**	**0.00855 J**	**0.00698**	**0.00289**	**0.00114**
PCB-161	E1668	0.0000237 U	0.0000171 U	0.000532 U	0.000248 U	0.0000478 U	0.0000236 U
PCB-162	E1668	0.0000189 U	0.0000138 U	0.000412 U	0.000197 U	0.0000373 U	0.0000185 U
PCB-164	E1668	**0.000184 J**	**0.000184 J**	**0.00854 J**	**0.0131**	**0.00118 J**	**0.000567**
PCB-165	E1668	0.0000332 U	0.0000243 U	**0.000849 J**	**0.00128**	**0.000139 J**	0.0000329 U
PCB-167	E1668	0.0000165 U	**0.0000559 J**	**0.000654 J**	**0.00152 J**	**0.000128 J**	**0.0000854 J**
PCB-169	E1668	0.0000264 U	0.0000197 U	**0.00102 J**	**0.000972**	**0.000260 J**	**0.0000838 J**
PCB-170	E1668	**0.00195**	**0.00162**	**0.0654**	**0.0774**	**0.0277**	**0.0107**
PCB-171/173	E1668	**0.00116**	**0.000906**	**0.0458**	**0.0500**	**0.0200**	**0.00811**
PCB-172	E1668	**0.000416 J**	**0.000363**	**0.0170**	**0.0207**	**0.00874**	**0.00269**
PCB-174	E1668	**0.00454**	**0.00371**	**0.200**	**0.212**	**0.0815**	**0.0329**
PCB-175	E1668	**0.000135 J**	**0.000145 J**	**0.00660**	**0.00734**	**0.00309**	**0.00109**
PCB-176	E1668	**0.00155 J**	**0.00154**	**0.0815**	**0.0833**	**0.0408**	**0.0169**
PCB-177	E1668	**0.00251**	**0.00228**	**0.111**	**0.124**	**0.0521**	**0.0200**
PCB-178	E1668	**0.00120 J**	**0.00120**	**0.0625**	**0.0704**	**0.0257**	**0.00962**
PCB-179	E1668	**0.00641**	**0.00530**	**0.351**	**0.360**	**0.172**	**0.0663**
PCB-180/193	E1668	**0.00391**	**0.00341**	**0.143**	**0.163**	**0.0555**	**0.0220**
PCB-181	E1668	0.00000990 U	0.00000576 U	**0.00133**	0.000000583 U	0.00000489 U	0.00000218 U
PCB-182	E1668	0.00000752 U	**0.0000320 J**	**0.00176**	**0.00155 J**	**0.000776 J**	0.00000166 U
PCB-183/185	E1668	**0.00232**	**0.00198**	**0.107**	**0.117**	**0.0439**	**0.0170**
PCB-184	E1668	0.0000128 U	0.00000710 U	0.00000567 U	0.000000719 U	0.00000619 U	0.00000280 U
PCB-186	E1668	0.0000159 U	0.00000934 U	0.00000713 U	0.000000925 U	0.00000787 U	0.00000350 U
PCB-187	E1668	**0.00655**	**0.00508**	**0.271**	**0.308**	**0.126**	**0.0376**
PCB-188	E1668	0.0000144 U	0.00000908 U	**0.00451**	**0.00520**	**0.00307**	**0.00133**
PCB-189	E1668	**0.0000258 J**	**0.0000187 J**	**0.000520 J**	**0.000663 J**	**0.000208**	**0.0000788 J**
PCB-190	E1668	**0.000238**	**0.000257**	**0.00938**	**0.0112**	**0.00333**	**0.00139**
PCB-191	E1668	**0.0000295 J**	**0.0000376 J**	**0.00165**	**0.00199**	**0.000583**	**0.000237**
PCB-192	E1668	0.00000332 U	0.00000192 U	0.00000146 U	0.000000194 U	0.00000160 U	0.000000722 U
PCB-194	E1668	**0.00116**	**0.00107**	**0.0157**	**0.0147**	**0.0134**	**0.00783**
PCB-195	E1668	**0.00103**	**0.00101**	**0.0152**	**0.0149**	**0.0143**	**0.00913**

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-JAR-SPME-5PAC TS-BW1A 5% PAC	TS-BW1A-JAR-SPME-5PAC-DUP TS-BW1A 5% PAC	TS-BW1A-JAR-SPME-2GAC TS-BW1A 2% GAC	TS-BW1A-JAR-SPME-2GAC-DUP TS-BW1A 2% GAC	TS-BW1A-JAR-SPME-5GAC TS-BW1A 5% GAC	TS-BW1A-JAR-SPME-5GAC-DUP TS-BW1A 5% GAC
PCB-196	E1668	**0.00130**	**0.00133**	**0.0214**	**0.0215**	**0.0210**	**0.0135**
PCB-197/200	E1668	**0.00161**	**0.00169**	**0.0268**	**0.0257**	**0.0271**	**0.0186**
PCB-198/199	E1668	**0.00297**	**0.00325**	**0.0500**	**0.0486**	**0.0462**	**0.0307**
PCB-201	E1668	**0.000665**	**0.000706**	**0.0108**	**0.0109**	**0.0112**	**0.00761**
PCB-202	E1668	**0.00176**	**0.00186**	**0.0313**	**0.0314**	**0.0307**	**0.0214**
PCB-203	E1668	**0.00199**	**0.00186**	**0.0308**	**0.0309**	**0.0315**	**0.0151**
PCB-204	E1668	0.0000161 U	0.0000138 U	0.0000614 U	0.0000839 U	0.000156 U	0.0000286 U
PCB-205	E1668	**0.0000389 J**	**0.0000325 J**	**0.000560**	**0.000580**	**0.000479**	**0.000284**
PCB-206	E1668	**0.000687**	**0.000632**	**0.00314**	**0.00325**	**0.00318**	**0.00273**
PCB-207	E1668	**0.000220**	**0.000264**	**0.00133**	**0.00144**	**0.00131**	**0.00125**
PCB-208	E1668	**0.000492**	**0.000538**	**0.00248**	**0.00272**	**0.00243**	**0.00230**
PCB-209	E1668	**0.000191**	**0.000207**	**0.000476**	**0.000736**	**0.000327**	**0.000420**
Total PCB Congener (U = 0 max limit)	Calculated	**0.140 J**	**0.137 J**	**3.99 J**	**5.86 J**	**1.17 J**	**0.541 J**

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-JAR-SPME-5BC TS-BW1A 5% Biochar	TS-BW1A-JAR-SPME-5BC-DUP TS-BW1A 5% Biochar	TS-BW1A-JAR-SPME-10BC TS-BW1A 10% Biochar	TS-BW1A-JAR-SPME-10BC-DUP TS-BW1A 10% Biochar	TS-BW1B-JAR-SPME-CTRL TS-BW1B Control	TS-BW1B-JAR-SPME-CTRL-DUP TS-BW1B Control
PCB Congeners (SPME) (ng/L)							
PCB-001	E1668	0.00296 U	0.00200 U	0.00247 U	0.00235 U	**0.662**	**0.728**
PCB-002	E1668	0.00108 U	0.000721 U	0.000915 U	0.000815 U	**0.00920 J**	**0.0112 J**
PCB-003	E1668	0.00114 U	0.000787 U	0.000980 U	0.000883 U	**0.0237 J**	**0.0238 J**
PCB-004	E1668	**0.0102 J**	**0.00424 J**	0.00290 U	0.00466 U	**3.42**	**3.36**
PCB-005	E1668	0.000486 U	0.000656 U	0.00116 U	0.00181 U	0.00194 U	0.00217 U
PCB-006	E1668	0.000340 U	**0.00127 J**	0.000782 U	0.00125 U	**0.333**	**0.365**
PCB-007	E1668	0.000394 U	0.000532 U	0.000883 U	0.00141 U	**0.0474**	**0.0447**
PCB-008	E1668	0.000303 U	0.000443 U	0.000736 U	0.00116 U	**0.326**	**0.328**
PCB-009	E1668	0.000371 U	0.000513 U	0.000842 U	0.00138 U	**0.0514**	**0.0547**
PCB-010	E1668	**0.00305 J**	0.00145 U	0.00248 U	0.00399 U	**0.201**	**0.186**
PCB-011	E1668	0.000234 U	0.000304 U	0.000512 U	0.000828 U	0.000877 U	**0.00268 J**
PCB-012/013	E1668	0.000288 U	0.000388 U	0.000666 U	0.00105 U	**0.0519**	**0.0391 J**
PCB-014	E1668	0.000254 U	0.000342 U	0.000569 U	0.000926 U	0.000972 U	0.00109 U
PCB-015	E1668	0.000224 U	0.000310 U	0.000527 U	0.000850 U	**0.0549**	**0.0607**
PCB-016	E1668	0.000552 U	0.000294 U	0.000561 U	0.000482 U	**0.125 J**	**0.116**
PCB-017	E1668	**0.00499 J**	**0.00506 J**	0.000464 U	**0.00124 J**	**1.22**	**1.29**
PCB-018/030	E1668	**0.00445 J**	**0.00745 J**	0.000330 U	**0.00135 J**	**1.43**	**1.48**
PCB-019	E1668	**0.00471 J**	**0.00361 J**	**0.00131 J**	0.000578 U	**1.02**	**1.03**
PCB-020/028	E1668	**0.00202 J**	**0.00259 J**	**0.00124 J**	**0.00107 J**	**0.975**	**1.00**
PCB-021/033	E1668	**0.00433 J**	**0.00563 J**	**0.000472 J**	**0.000650 J**	**0.501**	**0.400**
PCB-022	E1668	0.000208 U	0.000223 U	0.000242 U	0.000273 U	**0.0498**	**0.0542**
PCB-023	E1668	0.000234 U	0.000248 U	0.000278 U	0.000311 U	0.00706 U	0.00428 U
PCB-024	E1668	0.000253 U	0.000136 U	0.000262 U	0.000221 U	0.00122 U	0.000712 U
PCB-025	E1668	**0.00250 J**	**0.00294 J**	**0.000636 J**	**0.000444 J**	**0.328**	**0.279**
PCB-026/029	E1668	**0.000967 J**	**0.00120 J**	0.000248 U	0.000275 U	**0.309**	**0.302**
PCB-027	E1668	**0.00474 J**	**0.00626 J**	**0.000555 J**	**0.000578 J**	**1.64**	**1.78**
PCB-031	E1668	**0.000671 J**	**0.000923 J**	0.000192 U	**0.000452 J**	**0.261**	**0.262**
PCB-032	E1668	**0.00516 J**	**0.00734 J**	0.00125 UJ	0.000535 UJ	**2.18**	**2.19**
PCB-034	E1668	0.000202 U	0.000214 U	0.000239 U	0.000266 U	**0.0198**	**0.0199**
PCB-035	E1668	0.000138 U	0.000147 U	0.000165 U	0.000184 U	0.00418 U	0.00253 U
PCB-036	E1668	0.0000997 U	0.000108 U	0.000118 U	0.000129 U	0.00303 U	0.00185 U
PCB-037	E1668	0.000135 U	0.000138 U	0.000155 U	0.000174 U	**0.0126**	**0.0121**
PCB-038	E1668	0.000150 U	0.000160 U	0.000180 U	0.000194 U	0.00446 U	0.00273 U
PCB-039	E1668	0.000119 U	0.000122 U	0.000137 U	0.000154 U	0.00350 U	0.00213 U
PCB-040/041/071	E1668	**0.0128 J**	**0.0125 J**	0.00236 U	**0.00184 J**	**1.52**	**1.46**
PCB-042	E1668	**0.00492 J**	**0.00535 J**	0.000409 U	0.000454 U	**0.550 J**	**0.546 J**
PCB-043/073	E1668	**0.00568 J**	**0.00490 J**	0.000318 U	0.000353 U	**0.420**	**0.408**
PCB-044/047/065	E1668	**0.0946**	**0.114**	0.0205 U	**0.0176 J**	**12.8**	**12.2**
PCB-045/051	E1668	**0.127**	**0.135**	0.0202 U	**0.0163 J**	**12.4 J**	**11.3**
PCB-046	E1668	**0.00785 J**	**0.00923 J**	0.000740 U	0.000817 U	**0.688 J**	**0.658 J**
PCB-048	E1668	0.000957 U	0.00127 U	0.000365 U	0.000407 U	0.0140 U	0.00873 U
PCB-049/069	E1668	**0.0382**	**0.0395**	0.00626 UJ	**0.00605 J**	**4.05**	**3.94**
PCB-050/053	E1668	**0.0777**	**0.0812**	**0.0109 J**	**0.0114 J**	**6.31**	**6.26**
PCB-052	E1668	**0.0337**	**0.0353**	**0.00445 J**	**0.00511 J**	**2.71 J**	**2.67 J**
PCB-054	E1668	**0.0246**	**0.0251**	**0.00305 J**	**0.00192 J**	**1.53**	**1.54**
PCB-055	E1668	0.000294 U	0.000400 U	0.000116 U	0.000128 U	0.00435 U	0.00276 U
PCB-056	E1668	0.000318 U	0.000434 U	0.000126 U	0.000138 U	**0.0184 J**	**0.0182**
PCB-057	E1668	0.000302 U	0.000412 U	0.000120 U	0.000131 U	0.00472 U	**0.00445 J**
PCB-058	E1668	0.000268 U	0.000353 U	0.000105 U	0.000116 U	0.00413 U	**0.00563 J**

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-JAR-SPME-5BC TS-BW1A 5% Biochar	TS-BW1A-JAR-SPME-5BC-DUP TS-BW1A 5% Biochar	TS-BW1A-JAR-SPME-10BC TS-BW1A 10% Biochar	TS-BW1A-JAR-SPME-10BC-DUP TS-BW1A 10% Biochar	TS-BW1B-JAR-SPME-CTRL TS-BW1B Control	TS-BW1B-JAR-SPME-CTRL-DUP TS-BW1B Control
PCB-059/062/075	E1668	**0.00239 J**	0.000700 U	0.000205 U	0.000227 U	**0.248**	**0.230**
PCB-060	E1668	0.000376 U	0.000500 U	0.000146 U	0.000162 U	0.00568 U	0.00336 U
PCB-061/070/074/076	E1668	**0.00587 J**	**0.00613 J**	**0.00110 J**	**0.000762 J**	**0.340**	**0.330**
PCB-063	E1668	0.000302 U	0.000412 U	0.000120 U	0.000134 U	**0.0383 J**	**0.0356**
PCB-064	E1668	**0.000909 J**	0.000607 U	0.000181 U	0.000203 U	**0.103 J**	**0.103**
PCB-066	E1668	**0.00127 J**	**0.00146 J**	**0.000688 J**	**0.000343 J**	**0.274 J**	**0.276**
PCB-067	E1668	**0.000538 J**	0.000304 U	0.0000935 U	0.000103 U	0.00360 U	**0.00417 J**
PCB-068	E1668	0.000237 U	0.000317 U	0.0000922 U	0.000103 U	**0.0757 J**	**0.0810**
PCB-072	E1668	**0.000250 J**	0.000317 U	0.0000922 U	0.000101 U	**0.0366 J**	**0.0368**
PCB-077	E1668	0.000289 U	0.000384 U	0.000115 U	0.000125 U	0.00436 U	**0.00593**
PCB-078	E1668	0.000205 U	0.000262 U	0.0000803 U	0.0000898 U	0.00303 U	0.00193 U
PCB-079	E1668	0.000139 U	0.000191 U	0.0000555 U	0.0000595 U	**0.0129 J**	**0.00509**
PCB-080	E1668	0.000143 U	0.000184 U	0.0000566 U	0.0000620 U	0.00215 U	0.00135 U
PCB-081	E1668	0.000243 U	0.000316 U	0.0000924 U	0.000102 U	0.00356 U	0.00219 U
PCB-082	E1668	**0.00368**	**0.00331 J**	0.000146 U	**0.000572 J**	**0.0609**	**0.0612**
PCB-083/099	E1668	**0.0624**	**0.0682**	**0.0109**	**0.0103**	**1.64**	**1.55**
PCB-084	E1668	**0.0198**	**0.0189**	**0.00269 J**	**0.00212 J**	**0.352**	**0.335**
PCB-085/116/117	E1668	**0.00987**	**0.0112**	**0.00357 J**	**0.00255 J**	**0.269**	**0.271**
PCB-086/087/097/109/119/125	E1668	**0.0319**	**0.0337**	**0.00517 J**	**0.00457 J**	**0.858**	**0.836**
PCB-088/091	E1668	**0.108**	**0.112**	**0.0184**	**0.0158**	**2.36**	**2.27**
PCB-089	E1668	0.000283 U	0.000435 U	0.000195 U	0.000413 U	0.000436 U	0.000585 U
PCB-090/101/113	E1668	**0.0911**	**0.0948**	**0.0138**	**0.0143**	**2.18**	**2.19**
PCB-092	E1668	**0.0351**	**0.0383**	**0.00482**	**0.00501**	**0.849**	**0.813**
PCB-093/100	E1668	**0.0673**	**0.0695**	**0.0173 J**	**0.00760 J**	**1.59**	**1.52**
PCB-094	E1668	**0.0328**	**0.0307**	**0.00478**	**0.00464**	**0.705**	**0.677**
PCB-095	E1668	**0.118 J**	**0.125 J**	**0.0163**	**0.0166**	**2.18**	**2.06**
PCB-096	E1668	**0.0427**	**0.0448**	**0.00731 J**	**0.00568 J**	**0.735**	**0.723**
PCB-098/102	E1668	**0.0138**	**0.0154**	**0.00220 J**	0.000308 U	**0.314**	**0.319**
PCB-103	E1668	**0.0231**	**0.0241**	**0.00396 J**	**0.00302**	**0.531**	**0.507**
PCB-104	E1668	**0.0128**	**0.0144**	**0.00237 J**	**0.00149 J**	**0.220**	**0.221**
PCB-105	E1668	**0.000749 J**	**0.00107**	0.0000867 U	0.000111 U	**0.0463**	**0.0455**
PCB-106	E1668	0.000203 U	0.000241 U	0.0000765 U	0.000103 U	0.000781 U	0.000885 U
PCB-107	E1668	**0.000719 J**	**0.000843 J**	**0.000123 J**	0.0000854 U	**0.0256**	**0.0239**
PCB-108/124	E1668	0.000204 U	**0.000388 J**	0.0000765 U	0.000108 U	**0.0104**	**0.0105**
PCB-110/115	E1668	**0.0268**	**0.0276**	**0.00443**	**0.00398**	**0.754**	**0.758**
PCB-111	E1668	0.0000481 U	0.0000751 U	0.0000331 U	0.0000681 U	**0.00487**	**0.00456**
PCB-112	E1668	0.0000771 U	0.000119 U	0.0000537 U	0.000108 U	0.000113 U	0.000155 U
PCB-114	E1668	0.000220 U	0.000269 U	0.0000856 U	0.000111 U	**0.00162 J**	**0.00184 J**
PCB-118	E1668	**0.00347 J**	**0.00436 J**	**0.000762 J**	**0.00147**	**0.196**	**0.188**
PCB-120	E1668	**0.000731 J**	**0.000801**	**0.000208 J**	**0.000149 J**	**0.00964**	**0.00807**
PCB-121	E1668	**0.000315 J**	**0.000395 J**	**0.0000667 J**	0.0000807 U	**0.00946**	**0.00907**
PCB-122	E1668	0.000270 U	0.000329 U	0.000104 U	0.000136 U	**0.00341**	**0.00321 J**
PCB-123	E1668	0.000210 U	0.000240 U	0.0000736 U	0.000101 U	**0.00375**	**0.00403**
PCB-126	E1668	0.000120 U	0.000143 U	0.0000440 U	0.0000585 U	0.000462 U	0.000524 U
PCB-127	E1668	0.000106 U	0.000126 U	0.0000405 U	0.0000546 U	0.000413 U	**0.000485 J**
PCB-128/166	E1668	**0.00606**	**0.00603**	**0.00108 J**	**0.001000 J**	**0.0580 J**	**0.0571**
PCB-129/138/160/163	E1668	**0.168**	**0.173**	**0.0272**	**0.0254**	**1.46**	**1.47**
PCB-130	E1668	**0.00965**	**0.00941 J**	**0.00148**	**0.00179**	**0.0755 J**	**0.0791 J**
PCB-131	E1668	**0.00191 J**	0.00261 U	0.000211 U	0.000168 U	**0.0125 J**	**0.0138 J**
PCB-132	E1668	**0.0893 J**	**0.0884 J**	**0.0149**	**0.0129**	**0.561 J**	**0.577 J**

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-JAR-SPME-5BC TS-BW1A 5% Biochar	TS-BW1A-JAR-SPME-5BC-DUP TS-BW1A 5% Biochar	TS-BW1A-JAR-SPME-10BC TS-BW1A 10% Biochar	TS-BW1A-JAR-SPME-10BC-DUP TS-BW1A 10% Biochar	TS-BW1B-JAR-SPME-CTRL TS-BW1B Control	TS-BW1B-JAR-SPME-CTRL-DUP TS-BW1B Control
PCB-133	E1668	**0.00653 J**	**0.00643 J**	**0.00145**	**0.00151**	**0.0437 J**	**0.0432 J**
PCB-134/143	E1668	**0.0231**	**0.0199**	**0.00330**	**0.00357**	**0.133 J**	**0.134**
PCB-135/151	E1668	**0.259 J**	**0.263 J**	**0.0437**	**0.0421**	**1.65**	**1.55**
PCB-136	E1668	**0.0945 J**	**0.0922 J**	**0.0165**	**0.0153**	**0.453**	**0.437**
PCB-137	E1668	**0.00272**	**0.00236 J**	**0.000484 J**	**0.000488 J**	**0.0236 J**	**0.0223 J**
PCB-139/140	E1668	**0.00465**	**0.00464**	**0.000965 J**	**0.000897 J**	**0.0310 J**	**0.0322**
PCB-141	E1668	**0.0316 J**	**0.0323 J**	**0.00540**	**0.00530**	**0.241 J**	**0.250 J**
PCB-142	E1668	0.00129 U	0.00288 U	0.000230 U	0.000179 U	0.00477 U	0.00203 U
PCB-144	E1668	**0.0169 J**	**0.0175 J**	**0.00298**	**0.00299**	**0.114**	**0.114**
PCB-145	E1668	0.0000586 U	0.000174 U	0.000144 U	0.0000361 U	0.0000723 U	0.0000677 U
PCB-146	E1668	**0.0313 J**	**0.0318 J**	**0.00531**	**0.00478**	**0.228 J**	**0.229 J**
PCB-147/149	E1668	**0.405 J**	**0.406 J**	**0.0743**	**0.0591**	**2.64 J**	**2.54**
PCB-148	E1668	**0.00475 J**	**0.00563**	**0.00127**	**0.000875 J**	**0.0355**	**0.0366**
PCB-150	E1668	**0.0242 J**	**0.0258 J**	**0.00599 J**	**0.00423**	**0.123**	**0.121**
PCB-152	E1668	**0.0231**	**0.0215**	**0.00580**	**0.00439**	**0.135**	**0.131**
PCB-153/168	E1668	**0.131 J**	**0.140 J**	**0.0219**	**0.0196**	**1.10 J**	**1.11**
PCB-154	E1668	**0.0210 J**	**0.0222 J**	**0.00459 J**	**0.00371 J**	**0.128**	**0.129**
PCB-155	E1668	**0.000863**	**0.000971**	**0.000316 J**	**0.000215 J**	**0.00389**	**0.00352 J**
PCB-156/157	E1668	**0.00138**	**0.00145**	**0.000225 J**	**0.000249 J**	**0.0220 J**	**0.0221**
PCB-158	E1668	**0.00862**	**0.00940 J**	**0.00187 J**	**0.000717 J**	**0.0644 J**	**0.0598**
PCB-159	E1668	**0.00543 J**	**0.00623 J**	**0.00174**	**0.00161**	**0.0159 J**	**0.0132**
PCB-161	E1668	0.000228 U	0.000523 U	0.0000417 U	0.0000321 U	0.000830 U	0.000365 U
PCB-162	E1668	0.000182 U	0.000405 U	0.0000342 U	0.0000258 U	0.000656 U	0.000292 U
PCB-164	E1668	**0.00659 J**	**0.00692 J**	**0.00118**	**0.00113**	**0.0496 J**	**0.0548**
PCB-165	E1668	**0.000762**	0.000743 U	**0.000171 J**	0.0000457 U	**0.00559 J**	**0.00608 J**
PCB-167	E1668	**0.000720**	**0.000761 J**	**0.000169 J**	**0.000146 J**	**0.00968 J**	**0.0103**
PCB-169	E1668	**0.000443 J**	**0.000855 J**	0.0000446 U	0.0000339 U	**0.00242 J**	0.000415 U
PCB-170	E1668	**0.0600 J**	**0.0615 J**	**0.0146**	**0.0127**	**0.194**	**0.198**
PCB-171/173	E1668	**0.0420 J**	**0.0450 J**	**0.0110**	**0.0102**	**0.119**	**0.124**
PCB-172	E1668	**0.0151 J**	**0.0163 J**	**0.00463**	**0.00401**	**0.0440**	**0.0416**
PCB-174	E1668	**0.181 J**	**0.184 J**	**0.0489**	**0.0424**	**0.492**	**0.495**
PCB-175	E1668	**0.00629 J**	**0.00614 J**	**0.00191 J**	**0.00138 J**	**0.0170**	**0.0178**
PCB-176	E1668	**0.0805 J**	**0.0793 J**	**0.0255**	**0.0230**	**0.171**	**0.181**
PCB-177	E1668	**0.107 J**	**0.109 J**	**0.0282**	**0.0262**	**0.275**	**0.286**
PCB-178	E1668	**0.0591 J**	**0.0615 J**	**0.0157**	**0.0139**	**0.166**	**0.163**
PCB-179	E1668	**0.345 J**	**0.336 J**	**0.109**	**0.0932**	**0.738**	**0.751**
PCB-180/193	E1668	**0.132 J**	**0.136 J**	**0.0338**	**0.0276**	**0.437**	**0.440**
PCB-181	E1668	0.00000588 U	0.00000860 U	0.0000351 U	0.000000636 U	0.00000492 U	**0.00322**
PCB-182	E1668	**0.00156 J**	**0.00180**	**0.000439**	**0.000341 J**	**0.00442**	**0.00444**
PCB-183/185	E1668	**0.101 J**	**0.102 J**	**0.0267**	**0.0235**	**0.275**	**0.280**
PCB-184	E1668	0.00000797 U	0.0000113 U	0.0000450 U	0.000000878 U	0.00000651 U	0.00000377 U
PCB-186	E1668	0.00000993 U	0.0000138 U	0.0000571 U	0.00000102 U	0.00000822 U	0.00000478 U
PCB-187	E1668	**0.230 J**	**0.242 J**	**0.0719**	**0.0636**	**0.615**	**0.582**
PCB-188	E1668	**0.00494 J**	**0.00481 J**	**0.00255 J**	**0.00164 J**	**0.0121**	**0.0121**
PCB-189	E1668	**0.000465 J**	**0.000488 J**	**0.000116**	**0.0000916 J**	**0.00198**	**0.00211**
PCB-190	E1668	**0.00846 J**	**0.00884 J**	**0.00196**	**0.00173**	**0.0295**	**0.0297**
PCB-191	E1668	**0.00167 J**	**0.00156 J**	**0.000405**	**0.000337**	**0.00538**	**0.00541**
PCB-192	E1668	0.00000195 U	0.00000277 U	0.0000117 U	0.000000215 U	0.00000168 U	0.000000978 U
PCB-194	E1668	**0.0168 J**	**0.0154 J**	**0.00854**	**0.00748**	**0.0309**	**0.0301 J**
PCB-195	E1668	**0.0163**	**0.0151**	**0.00905**	**0.00776**	**0.0351**	**0.0321 J**

Table D-2

Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-JAR-SPME-5BC TS-BW1A 5% Biochar	TS-BW1A-JAR-SPME-5BC-DUP TS-BW1A 5% Biochar	TS-BW1A-JAR-SPME-10BC TS-BW1A 10% Biochar	TS-BW1A-JAR-SPME-10BC-DUP TS-BW1A 10% Biochar	TS-BW1B-JAR-SPME-CTRL TS-BW1B Control	TS-BW1B-JAR-SPME-CTRL-DUP TS-BW1B Control
PCB-196	E1668	**0.0243**	**0.0224**	**0.0145**	**0.0123**	**0.0450**	**0.0412**
PCB-197/200	E1668	**0.0310**	**0.0247**	**0.0189**	**0.0168**	**0.0496**	**0.0471**
PCB-198/199	E1668	**0.0547**	**0.0478**	**0.0322**	**0.0277**	**0.0957**	**0.0892**
PCB-201	E1668	**0.0127**	**0.0105**	**0.00840**	**0.00684**	**0.0211**	**0.0198**
PCB-202	E1668	**0.0369**	**0.0308**	**0.0228**	**0.0202**	**0.0541**	**0.0544**
PCB-203	E1668	**0.0298 J**	**0.0277 J**	**0.0184**	**0.0164**	**0.0542**	**0.0492**
PCB-204	E1668	0.0000366 U	0.0000330 U	0.0000630 U	0.0000883 U	0.0000441 U	0.0000271 U
PCB-205	E1668	**0.000643 J**	**0.000595 J**	**0.000328 J**	**0.000269 J**	**0.00127**	**0.00121 J**
PCB-206	E1668	**0.00376**	**0.00320**	**0.00313**	**0.00261**	**0.00578**	**0.00581**
PCB-207	E1668	**0.00157**	**0.00120**	**0.00141**	**0.00113**	**0.00274**	**0.00253**
PCB-208	E1668	**0.00298**	**0.00244**	**0.00278**	**0.00217**	**0.00466**	**0.00469**
PCB-209	E1668	**0.000556**	**0.000559**	**0.000491 J**	**0.000400 J**	**0.000725**	**0.000911**
Total PCB Congener (U = 0 max limit)	Calculated	**4.18 J**	**4.25 J**	**0.926 J**	**0.849 J**	**88.7 J**	**86.2 J**

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1B-JAR-SPME-1PAC TS-BW1B 1% PAC	TS-BW1B-JAR-SPME-1PAC-DUP TS-BW1B 1% PAC	TS-BW1B-JAR-SPME-2PAC TS-BW1B 2% PAC	TS-BW1B-JAR-SPME-2PAC-DUP TS-BW1B 2% PAC	TS-BW1B-JAR-SPME-5PAC TS-BW1B 5% PAC	TS-BW1B-JAR-SPME-5PAC-DUP TS-BW1B 5% PAC
PCB Congeners (SPME) (ng/L)							
PCB-001	E1668	0.00316 U	**0.188 J**	0.00535 U	0.00392 U	0.00417 U	0.00355 U
PCB-002	E1668	0.00112 U	**0.00680 J**	0.00190 U	0.00144 U	0.00152 U	0.00134 U
PCB-003	E1668	0.00124 U	**0.00952 J**	0.00204 U	0.00151 U	0.00166 U	0.00148 U
PCB-004	E1668	0.00180 U	**1.29**	0.00397 U	0.00275 U	0.00202 U	0.00260 U
PCB-005	E1668	0.000689 U	0.00276 U	0.00163 U	0.00106 U	0.000847 U	0.00102 U
PCB-006	E1668	0.000462 U	**0.216**	0.00110 U	0.000724 U	0.000579 U	0.000682 U
PCB-007	E1668	0.000532 U	**0.0264 J**	0.00126 U	0.000828 U	0.000657 U	0.000795 U
PCB-008	E1668	0.000426 U	**0.184**	0.00104 U	0.000680 U	**0.00209 J**	0.000668 U
PCB-009	E1668	0.000516 U	**0.0344**	0.00119 U	0.000785 U	0.000640 U	0.000779 U
PCB-010	E1668	0.00152 U	**0.0666 J**	0.00350 U	0.00233 U	0.00187 U	0.00225 U
PCB-011	E1668	0.000308 U	**0.00256 J**	**0.000809 J**	**0.000799 J**	0.000384 U	0.000471 U
PCB-012/013	E1668	0.000389 U	**0.0291 J**	0.000917 U	0.000626 U	0.000480 U	0.000580 U
PCB-014	E1668	0.000343 U	0.00140 U	0.000809 U	0.000533 U	0.000423 U	0.000512 U
PCB-015	E1668	0.000312 U	**0.0568**	0.000776 U	0.000493 U	0.000406 U	0.000491 U
PCB-016	E1668	0.000397 U	**0.0584**	0.0000736 U	0.000294 U	0.000593 U	0.000395 U
PCB-017	E1668	**0.00292 J**	**0.588 J**	0.0000609 U	**0.00138 J**	0.000512 U	0.000327 U
PCB-018/030	E1668	**0.00279 J**	**0.815 J**	**0.00159 J**	**0.000538 J**	**0.00144 J**	**0.000912 J**
PCB-019	E1668	**0.00384 J**	**0.443 J**	0.0000885 U	0.000361 U	**0.00113 J**	**0.00124 J**
PCB-020/028	E1668	**0.00373 J**	**0.494 J**	**0.00183 J**	**0.00217 J**	**0.00387 J**	**0.00212 J**
PCB-021/033	E1668	**0.00138 J**	**0.186 J**	0.000744 U	**0.000512 J**	0.000285 U	0.000303 U
PCB-022	E1668	**0.000447 J**	**0.0284 J**	0.000557 U	0.000274 U	0.000215 U	0.000229 U
PCB-023	E1668	0.000280 U	0.00354 U	0.000633 U	0.000311 U	0.000241 U	0.000256 U
PCB-024	E1668	0.000178 U	0.00136 U	0.0000341 U	0.000141 U	0.000282 U	0.000194 U
PCB-025	E1668	**0.000907 J**	**0.148 J**	0.000409 U	**0.000269 J**	0.000161 U	0.000172 U
PCB-026/029	E1668	**0.00124 J**	**0.196 J**	0.000560 U	0.000274 U	**0.000563 J**	0.000231 U
PCB-027	E1668	**0.00318 J**	**1.10 J**	0.0000282 U	**0.000422 J**	**0.00192 J**	0.000146 U
PCB-031	E1668	**0.000756 J**	**0.139 J**	0.000435 U	**0.000260 J**	**0.000611 J**	**0.000244 J**
PCB-032	E1668	**0.00637 J**	**0.874 J**	**0.000395 J**	**0.00326 J**	**0.00234 J**	**0.000483 J**
PCB-034	E1668	0.000239 U	**0.00978**	0.000542 U	0.000266 U	0.000208 U	0.000221 U
PCB-035	E1668	0.000171 U	0.00210 U	0.000375 U	0.000184 U	0.000142 U	0.000152 U
PCB-036	E1668	0.000122 U	0.00151 U	0.000269 U	0.000135 U	0.000104 U	0.000110 U
PCB-037	E1668	0.000162 U	**0.00809**	0.000355 U	0.000180 U	0.000139 U	0.000148 U
PCB-038	E1668	0.000182 U	0.00223 U	0.000396 U	0.000202 U	0.000155 U	0.000164 U
PCB-039	E1668	0.000143 U	0.00176 U	0.000313 U	0.000159 U	0.000123 U	0.000131 U
PCB-040/041/071	E1668	**0.00712 J**	**0.642 J**	**0.00143 J**	**0.00171 J**	**0.00346 J**	**0.00198 J**
PCB-042	E1668	**0.00307 J**	**0.267 J**	**0.000937 J**	0.000438 U	0.00112 U	0.000822 U
PCB-043/073	E1668	**0.00166 J**	**0.191 J**	0.000375 U	0.000341 U	0.000861 U	0.000626 U
PCB-044/047/065	E1668	**0.0588 J**	**5.59 J**	**0.0155 J**	**0.0149 J**	**0.0237**	**0.0122 J**
PCB-045/051	E1668	**0.0558 J**	**4.32 J**	**0.0163 J**	**0.0146 J**	**0.0148 J**	**0.00921 J**
PCB-046	E1668	**0.00294 J**	**0.315 J**	0.000876 U	0.000788 U	0.00205 U	0.00145 U
PCB-048	E1668	0.000444 U	0.00691 U	0.000435 U	0.000393 U	0.00101 U	0.000717 U
PCB-049/069	E1668	**0.0214 J**	**1.96 J**	**0.00438 J**	**0.00494 J**	**0.00635 J**	**0.00401 J**
PCB-050/053	E1668	**0.0280 J**	**2.84 J**	**0.00644 J**	**0.00721 J**	**0.00756 J**	**0.00609 J**
PCB-052	E1668	**0.0164 J**	**1.46 J**	**0.00280 J**	**0.00317 J**	**0.00511 J**	**0.00247 J**
PCB-054	E1668	**0.00630 J**	**0.532 J**	0.000136 U	**0.000677 J**	**0.00221 J**	**0.00176 J**
PCB-055	E1668	0.000138 U	0.00218 U	0.000138 U	0.000123 U	0.000317 U	0.000230 U
PCB-056	E1668	0.000150 U	**0.0118**	0.000149 U	0.000133 U	0.000337 U	0.000248 U
PCB-057	E1668	0.000143 U	0.00226 U	0.000140 U	0.000126 U	0.000327 U	0.000237 U
PCB-058	E1668	0.000127 U	0.00201 U	0.000125 U	0.000112 U	0.000288 U	0.000209 U

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1B-JAR-SPME-1PAC TS-BW1B 1% PAC	TS-BW1B-JAR-SPME-1PAC-DUP TS-BW1B 1% PAC	TS-BW1B-JAR-SPME-2PAC TS-BW1B 2% PAC	TS-BW1B-JAR-SPME-2PAC-DUP TS-BW1B 2% PAC	TS-BW1B-JAR-SPME-5PAC TS-BW1B 5% PAC	TS-BW1B-JAR-SPME-5PAC-DUP TS-BW1B 5% PAC
PCB-059/062/075	E1668	**0.00134 J**	**0.106 J**	0.000242 U	0.000219 U	0.000566 U	0.000402 U
PCB-060	E1668	0.000177 U	0.00277 U	0.000173 U	0.000157 U	0.000404 U	0.000287 U
PCB-061/070/074/076	E1668	**0.00247 J**	**0.199 J**	**0.000551 J**	**0.00106 J**	**0.000661 J**	0.000308 U
PCB-063	E1668	0.000146 U	**0.0165**	0.000143 U	0.000129 U	0.000327 U	0.000237 U
PCB-064	E1668	**0.000756 J**	**0.0629 J**	0.000218 U	0.000196 U	0.000519 U	0.000361 U
PCB-066	E1668	**0.00187 J**	**0.155 J**	**0.000916 J**	**0.000497 J**	0.000276 U	0.000199 U
PCB-067	E1668	**0.000348 J**	0.00178 U	0.000112 U	0.0000994 U	0.000257 U	0.000184 U
PCB-068	E1668	**0.000417 J**	**0.0328 J**	0.000111 U	0.0000999 U	0.000246 U	0.000183 U
PCB-072	E1668	**0.000219 J**	**0.0194 J**	0.000109 U	0.0000974 U	0.000246 U	0.000183 U
PCB-077	E1668	0.000134 U	0.00218 U	0.000133 U	0.000120 U	0.000310 U	0.000223 U
PCB-078	E1668	0.0000981 U	0.00153 U	0.0000962 U	0.0000867 U	0.000224 U	0.000158 U
PCB-079	E1668	0.0000658 U	**0.00686**	0.0000650 U	0.0000592 U	0.000150 U	0.000109 U
PCB-080	E1668	0.0000677 U	0.00107 U	0.0000668 U	0.0000599 U	0.000155 U	0.000111 U
PCB-081	E1668	0.000114 U	0.00172 U	0.000111 U	0.0000987 U	0.000259 U	0.000185 U
PCB-082	E1668	0.000244 U	**0.0372**	0.000152 U	0.000251 U	**0.000173 J**	0.000113 U
PCB-083/099	E1668	**0.0211 J**	**0.884 J**	**0.00606**	**0.00390 J**	**0.00320 J**	**0.00288 J**
PCB-084	E1668	**0.00557 J**	**0.188 J**	0.000248 U	0.000425 U	0.000207 U	**0.000582 J**
PCB-085/116/117	E1668	**0.00423 J**	**0.149 J**	**0.00158 J**	0.000179 U	**0.00190 J**	**0.00132 J**
PCB-086/087/097/109/119/125	E1668	**0.0105 J**	**0.484 J**	**0.00350 J**	**0.00176 J**	**0.00183 J**	**0.000949 J**
PCB-088/091	E1668	**0.0291 J**	**1.17 J**	**0.00677 J**	**0.00508 J**	**0.00341 J**	**0.00261 J**
PCB-089	E1668	0.000327 U	0.000489 U	0.000203 U	0.000334 U	0.000169 U	0.000148 U
PCB-090/101/113	E1668	**0.0302 J**	**1.25 J**	**0.00757**	**0.00573 J**	**0.00519 J**	**0.00382 J**
PCB-092	E1668	**0.00962 J**	**0.460 J**	**0.00272 J**	**0.00242**	**0.000611 J**	**0.00117 J**
PCB-093/100	E1668	**0.0191 J**	**0.681 J**	**0.00292 J**	**0.00255 J**	**0.00141 J**	**0.00179 J**
PCB-094	E1668	**0.00691 J**	**0.265 J**	**0.00106 J**	**0.00173 J**	**0.000582 J**	**0.000585 J**
PCB-095	E1668	**0.0288 J**	**1.33 J**	**0.00630**	**0.00480**	**0.00452**	**0.00148 J**
PCB-096	E1668	**0.00904 J**	**0.320 J**	0.000304 U	0.000502 U	0.000250 U	0.000224 U
PCB-098/102	E1668	**0.00317 J**	**0.133 J**	**0.00119 J**	0.000259 U	**0.000452 J**	**0.000341 J**
PCB-103	E1668	**0.00477 J**	**0.242 J**	**0.00146 J**	**0.00117 J**	**0.000535 J**	**0.000134 J**
PCB-104	E1668	**0.00237 J**	**0.0844 J**	**0.000779 J**	**0.000689 J**	0.000228 U	**0.000377 J**
PCB-105	E1668	**0.000677 J**	**0.0301 J**	**0.000178 J**	0.0000645 U	**0.000315 J**	0.0000636 U
PCB-106	E1668	0.0000850 U	0.00105 U	0.000107 U	0.0000593 U	0.0000732 U	0.0000578 U
PCB-107	E1668	**0.000290 J**	**0.0147 J**	0.0000884 U	0.0000493 U	0.0000613 U	**0.0000785 J**
PCB-108/124	E1668	0.0000845 U	**0.00747**	0.000108 U	0.0000597 U	0.0000737 U	0.0000581 U
PCB-110/115	E1668	**0.0112 J**	**0.462 J**	**0.00271 J**	**0.00230 J**	**0.00233 J**	**0.00182 J**
PCB-111	E1668	0.0000553 U	**0.00221**	0.0000345 U	0.0000572 U	0.0000285 U	0.0000257 U
PCB-112	E1668	0.0000898 U	0.000137 U	0.0000542 U	0.0000916 U	0.0000463 U	0.0000404 U
PCB-114	E1668	0.0000919 U	0.00111 U	0.000111 U	0.0000645 U	0.0000793 U	0.0000636 U
PCB-118	E1668	**0.00345 J**	**0.129 J**	**0.000895 J**	**0.000525 J**	**0.000881 J**	**0.000574 J**
PCB-120	E1668	**0.000216 J**	**0.00523 J**	**0.0000581 J**	0.0000425 U	0.0000210 U	0.0000190 U
PCB-121	E1668	**0.0000800 J**	**0.00478 J**	0.0000410 U	0.0000670 U	0.0000333 U	0.0000295 U
PCB-122	E1668	0.000119 U	0.00137 U	0.000148 U	0.0000801 U	0.0000998 U	0.0000791 U
PCB-123	E1668	0.0000801 U	**0.00268 J**	0.000101 U	0.0000596 U	0.0000728 U	0.0000584 U
PCB-126	E1668	0.0000509 U	0.000606 U	0.0000647 U	0.0000344 U	0.0000459 U	0.0000342 U
PCB-127	E1668	0.0000449 U	0.000552 U	0.0000564 U	0.0000315 U	0.0000388 U	0.0000308 U
PCB-128/166	E1668	**0.00158 J**	**0.0325 J**	**0.000525 J**	**0.000452 J**	**0.000213 J**	**0.000266 J**
PCB-129/138/160/163	E1668	**0.0524 J**	**0.876 J**	**0.0122**	**0.00909**	**0.00477**	**0.00352 J**
PCB-130	E1668	**0.00304 J**	**0.0456 J**	**0.000724 J**	**0.000479 J**	**0.000230 J**	0.0000928 U
PCB-131	E1668	0.000964 U	**0.00787 J**	0.000310 U	0.000115 U	0.0000465 U	0.000127 U
PCB-132	E1668	**0.0247 J**	**0.336 J**	**0.00503**	**0.00386**	**0.000943 J**	**0.000897 J**

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1B-JAR-SPME-1PAC TS-BW1B 1% PAC	TS-BW1B-JAR-SPME-1PAC-DUP TS-BW1B 1% PAC	TS-BW1B-JAR-SPME-2PAC TS-BW1B 2% PAC	TS-BW1B-JAR-SPME-2PAC-DUP TS-BW1B 2% PAC	TS-BW1B-JAR-SPME-5PAC TS-BW1B 5% PAC	TS-BW1B-JAR-SPME-5PAC-DUP TS-BW1B 5% PAC
PCB-133	E1668	**0.00212 J**	**0.0230 J**	**0.000502 J**	0.0000540 U	**0.000147 J**	0.0000603 U
PCB-134/143	E1668	**0.00621 J**	**0.0756 J**	**0.000508 J**	0.000118 U	**0.000214 J**	0.000133 U
PCB-135/151	E1668	**0.0652 J**	**0.945 J**	**0.0148 J**	**0.0102 J**	**0.00344**	**0.00283**
PCB-136	E1668	**0.0199 J**	**0.258 J**	**0.00354 J**	**0.00350**	**0.000727 J**	**0.000655 J**
PCB-137	E1668	**0.000929 J**	**0.0122 J**	**0.000199 J**	**0.0000958 J**	0.0000268 U	**0.000119 J**
PCB-139/140	E1668	**0.00148 J**	**0.0182 J**	0.000203 U	**0.000278 J**	0.0000312 U	0.0000854 U
PCB-141	E1668	**0.0102 J**	**0.140 J**	**0.00195 J**	**0.00158 J**	**0.000616 J**	**0.000364 J**
PCB-142	E1668	0.00106 U	0.00194 U	0.000344 U	0.000127 U	0.0000524 U	0.000141 U
PCB-144	E1668	**0.00510 J**	**0.0684 J**	**0.00102 J**	**0.000680 J**	**0.000101 J**	0.00000754 U
PCB-145	E1668	0.0000448 U	0.0000851 U	0.00000825 U	0.0000298 U	0.0000148 U	0.0000120 U
PCB-146	E1668	**0.00994 J**	**0.128 J**	**0.00222**	**0.00156**	**0.000624 J**	**0.000349 J**
PCB-147/149	E1668	**0.0988 J**	**1.37 J**	**0.0193**	**0.0154**	**0.00510**	**0.00378**
PCB-148	E1668	**0.00131 J**	**0.0179 J**	**0.000236 J**	**0.000118 J**	0.00000790 U	0.00000626 U
PCB-150	E1668	**0.00580 J**	**0.0579 J**	**0.00100 J**	**0.000687 J**	**0.000126 J**	0.0000109 U
PCB-152	E1668	**0.00525 J**	**0.0577 J**	**0.000522 J**	**0.000291 J**	0.0000147 U	0.0000117 U
PCB-153/168	E1668	**0.0406 J**	**0.633 J**	**0.00949**	**0.00671**	**0.00277**	**0.00217**
PCB-154	E1668	**0.00569 J**	**0.0699 J**	**0.00133 J**	**0.00111**	**0.000138 J**	**0.0000743 J**
PCB-155	E1668	**0.000157 J**	**0.00181 J**	**0.0000242 J**	0.00000907 U	0.00000445 U	0.00000355 U
PCB-156/157	E1668	**0.000669 J**	**0.0132 J**	**0.000220 J**	**0.000141 J**	**0.0000893 J**	**0.0000913 J**
PCB-158	E1668	**0.00289 J**	**0.0380 J**	**0.000718 J**	**0.000485 J**	**0.000155 J**	**0.000117 J**
PCB-159	E1668	**0.00188 J**	**0.00841 J**	**0.000453**	**0.000374**	**0.0000535 J**	0.0000174 U
PCB-161	E1668	0.000188 U	0.000353 U	0.0000588 U	0.0000227 U	0.00000925 U	0.0000253 U
PCB-162	E1668	0.000152 U	0.000281 U	0.0000485 U	0.0000181 U	0.00000724 U	0.0000201 U
PCB-164	E1668	**0.00205 J**	**0.0303 J**	**0.000467 J**	**0.000317 J**	**0.000120 J**	**0.0000447 J**
PCB-165	E1668	0.000268 U	**0.00270**	0.0000867 U	0.0000320 U	0.0000131 U	0.0000355 U
PCB-167	E1668	**0.000290 J**	**0.00607 J**	0.0000425 U	**0.0000966 J**	**0.0000355 J**	0.0000179 U
PCB-169	E1668	0.000208 U	0.000396 U	0.0000626 U	0.0000236 U	0.0000107 U	0.0000260 U
PCB-170	E1668	**0.0245 J**	**0.109 J**	**0.00668**	**0.00556**	**0.000887 J**	**0.000724**
PCB-171/173	E1668	**0.0166 J**	**0.0679 J**	**0.00391**	**0.00332**	**0.000327 J**	**0.000374 J**
PCB-172	E1668	**0.00674 J**	**0.0246 J**	**0.00166 J**	**0.00126 J**	**0.000219 J**	**0.000194 J**
PCB-174	E1668	**0.0701 J**	**0.276 J**	**0.0161**	**0.0127**	**0.00174**	**0.00141**
PCB-175	E1668	**0.00244 J**	**0.00936 J**	**0.000487 J**	**0.000397 J**	**0.0000985 J**	0.00000105 U
PCB-176	E1668	**0.0300 J**	**0.0973 J**	**0.00655**	**0.00529**	**0.000483 J**	**0.000459 J**
PCB-177	E1668	**0.0393 J**	**0.158 J**	**0.00995**	**0.00829**	**0.00101**	**0.000844**
PCB-178	E1668	**0.0215 J**	**0.0957 J**	**0.00478**	**0.00377**	**0.000427**	**0.000244 J**
PCB-179	E1668	**0.123 J**	**0.415 J**	**0.0245**	**0.0200**	**0.00165 J**	**0.00147 J**
PCB-180/193	E1668	**0.0546 J**	**0.241 J**	**0.0146**	**0.0119**	**0.00198**	**0.00164**
PCB-181	E1668	0.000000701 U	0.00000102 U	0.00000144 U	0.00000119 U	0.00000128 U	0.00000106 U
PCB-182	E1668	**0.000641 J**	**0.00200 J**	0.00000112 U	**0.000112 J**	0.000000993 U	0.000000802 U
PCB-183/185	E1668	**0.0366 J**	**0.155 J**	**0.00844**	**0.00712**	**0.000856 J**	**0.000802**
PCB-184	E1668	0.000000891 U	0.00000132 U	0.00000190 U	0.00000148 U	0.00000164 U	0.00000137 U
PCB-186	E1668	0.00000116 U	0.00000164 U	0.00000236 U	0.00000188 U	0.00000210 U	0.00000170 U
PCB-187	E1668	**0.0878 J**	**0.344 J**	**0.0213**	**0.0148**	**0.00237 J**	**0.00175 J**
PCB-188	E1668	**0.00217 J**	**0.00515 J**	**0.000546 J**	0.00000188 U	0.00000198 U	**0.0000469 J**
PCB-189	E1668	**0.000209 J**	**0.00118 J**	**0.0000724 J**	**0.0000686 J**	**0.0000165 J**	**0.0000150 J**
PCB-190	E1668	**0.00336 J**	**0.0171 J**	**0.000958**	**0.000806**	**0.000113 J**	**0.000133 J**
PCB-191	E1668	**0.000601 J**	**0.00304 J**	**0.000202**	**0.000129 J**	**0.0000279 J**	**0.0000170 J**
PCB-192	E1668	0.000000234 U	0.000000341 U	0.000000485 U	0.000000399 U	0.000000420 U	0.000000354 U
PCB-194	E1668	**0.0113**	**0.0170**	**0.00389**	**0.00347**	**0.000380**	**0.000404**
PCB-195	E1668	**0.0132**	**0.0215**	**0.00363**	**0.00335**	**0.000386**	**0.000343**

Table D-2

Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Method	Sample ID Sediment Amendment	TS-BW1B-JAR-SPME-1PAC TS-BW1B 1% PAC	TS-BW1B-JAR-SPME-1PAC-DUP TS-BW1B 1% PAC	TS-BW1B-JAR-SPME-2PAC TS-BW1B 2% PAC	TS-BW1B-JAR-SPME-2PAC-DUP TS-BW1B 2% PAC	TS-BW1B-JAR-SPME-5PAC TS-BW1B 5% PAC	TS-BW1B-JAR-SPME-5PAC-DUP TS-BW1B 5% PAC
PCB-196	E1668		**0.0178**	**0.0233**	**0.00574**	**0.00528**	**0.000467 J**	**0.000568**
PCB-197/200	E1668		**0.0223**	**0.0268**	**0.00712**	**0.00550**	**0.000611**	**0.000680**
PCB-198/199	E1668		**0.0380**	**0.0510**	**0.0130**	**0.0111**	**0.00106 J**	**0.00103**
PCB-201	E1668		**0.00961**	**0.0109**	**0.00277**	**0.00239**	**0.000284 J**	**0.000212**
PCB-202	E1668		**0.0255**	**0.0320**	**0.00693**	**0.00642**	**0.000675**	**0.000608**
PCB-203	E1668		**0.0214**	**0.0287**	**0.00766**	**0.00554**	**0.000640 J**	**0.000639**
PCB-204	E1668		0.0000297 U	0.0000485 U	0.0000855 U	0.0000179 U	0.00000722 U	0.00000917 U
PCB-205	E1668		**0.000439**	**0.000722**	**0.000144**	**0.000108 J**	**0.0000122 J**	**0.00000518 J**
PCB-206	E1668		**0.00378**	**0.00332**	**0.00168**	**0.00147**	**0.000636**	**0.000620**
PCB-207	E1668		**0.00177**	**0.00147**	**0.000781**	**0.000612**	**0.000221**	**0.000223**
PCB-208	E1668		**0.00325**	**0.00265**	**0.00121**	**0.00111**	**0.000529**	**0.000563**
PCB-209	E1668		**0.000725 J**	**0.000443 J**	**0.000315**	**0.000230**	**0.000374**	**0.000398 J**
Total PCB Congener (U = 0 max limit)	Calculated		**1.49 J**	**41.8 J**	**0.352 J**	**0.291 J**	**0.144 J**	**0.0949 J**

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1B-JAR-SPME-2GAC TS-BW1B 2% GAC	TS-BW1B-JAR-SPME-2GAC-DUP TS-BW1B 2% GAC	TS-BW1B-JAR-SPME-5GAC TS-BW1B 5% GAC	TS-BW1B-JAR-SPME-5GAC-DUP TS-BW1B 5% GAC	TS-BW1B-JAR-SPME-5BC TS-BW1B 5% Biochar	TS-BW1B-JAR-SPME-5BC-DUP TS-BW1B 5% Biochar
PCB Congeners (SPME) (ng/L)							
PCB-001	E1668	0.00373 U	0.00271 U	0.00286 U	0.00269 U	0.00270 U	0.00271 U
PCB-002	E1668	0.00132 U	0.000993 U	0.00104 U	0.000986 U	0.000925 U	0.00106 U
PCB-003	E1668	0.00138 U	0.00106 U	0.00110 U	0.000986 U	0.000991 U	0.00113 U
PCB-004	E1668	0.00309 U	0.00302 U	0.00288 U	0.00125 U	**0.00520 J**	**0.00403 J**
PCB-005	E1668	0.00117 U	0.00118 U	0.00112 U	0.000475 U	0.000808 U	0.000110 U
PCB-006	E1668	0.000788 U	0.000792 U	0.000746 U	0.000333 U	0.000547 U	0.0000762 U
PCB-007	E1668	0.000920 U	0.000925 U	0.000877 U	0.000385 U	0.000625 U	0.0000865 U
PCB-008	E1668	0.000772 U	0.000746 U	0.000702 U	0.000296 U	0.000536 U	0.0000716 U
PCB-009	E1668	0.000879 U	0.000883 U	0.000836 U	0.000363 U	0.000608 U	0.0000823 U
PCB-010	E1668	0.00258 U	0.00259 U	0.00238 U	0.00105 U	0.00178 U	0.000243 U
PCB-011	E1668	**0.00164 J**	0.000538 U	0.000508 U	**0.00130 J**	0.000364 U	0.0000499 U
PCB-012/013	E1668	0.000693 U	0.000675 U	0.000640 U	0.000281 U	0.000478 U	0.0000632 U
PCB-014	E1668	0.000592 U	0.000595 U	0.000565 U	0.000248 U	0.000421 U	0.0000557 U
PCB-015	E1668	0.000550 U	0.000552 U	0.000505 U	0.000219 U	0.000367 U	0.0000497 U
PCB-016	E1668	0.000492 U	0.000395 U	0.000412 U	0.000294 U	0.000232 U	0.000198 U
PCB-017	E1668	**0.00265 J**	**0.00389 J**	0.000341 U	0.000244 U	**0.00171 J**	0.000164 U
PCB-018/030	E1668	**0.00270 J**	0.000230 U	**0.000532 J**	**0.00153 J**	**0.00229 J**	**0.00251 J**
PCB-019	E1668	**0.000923 J**	**0.00252 J**	0.000520 U	**0.00102 J**	**0.000628 J**	0.000239 U
PCB-020/028	E1668	**0.00426 J**	**0.00314 J**	**0.000891 J**	**0.00176 J**	**0.00146 J**	**0.00125 J**
PCB-021/033	E1668	**0.00193 J**	**0.00233 J**	**0.000481 J**	0.000347 U	**0.00219 J**	**0.00323 J**
PCB-022	E1668	0.000275 U	**0.000266 J**	0.000191 U	0.000254 U	0.000194 U	0.000194 U
PCB-023	E1668	0.000302 U	0.000293 U	0.000215 U	0.000291 U	0.000219 U	0.000220 U
PCB-024	E1668	0.000231 U	0.000182 U	0.000195 U	0.000140 U	0.000108 U	0.0000912 U
PCB-025	E1668	**0.00152 J**	**0.00127 J**	0.000141 U	0.000185 U	**0.000736 J**	**0.000932 J**
PCB-026/029	E1668	**0.00172 J**	**0.00121 J**	**0.000356 J**	0.000258 U	**0.000656 J**	0.000199 U
PCB-027	E1668	**0.00423 J**	**0.00206 J**	0.000161 U	**0.00245 J**	**0.00151 J**	**0.00343 J**
PCB-031	E1668	**0.00143 J**	**0.000847 J**	0.000150 U	**0.000598 J**	**0.000279 J**	**0.000661 J**
PCB-032	E1668	**0.00669 J**	**0.00522 J**	**0.00175 J**	**0.00218 J**	**0.00247 J**	**0.00316 J**
PCB-034	E1668	0.000267 U	0.000251 U	0.000187 U	0.000249 U	0.000190 U	0.000190 U
PCB-035	E1668	0.000185 U	0.000173 U	0.000127 U	0.000172 U	0.000130 U	0.000136 U
PCB-036	E1668	0.000130 U	0.000125 U	0.0000909 U	0.000125 U	0.0000925 U	0.0000982 U
PCB-037	E1668	0.000175 U	0.000164 U	0.000119 U	0.000162 U	0.000127 U	0.000127 U
PCB-038	E1668	0.000195 U	0.000182 U	0.000138 U	0.000181 U	0.000140 U	0.000140 U
PCB-039	E1668	0.000154 U	0.000144 U	0.000105 U	0.000143 U	0.000112 U	0.000112 U
PCB-040/041/071	E1668	**0.00728 J**	**0.00798 J**	**0.00124 J**	0.000990 U	**0.00557 J**	**0.00864 J**
PCB-042	E1668	**0.00321 J**	**0.00217 J**	0.000117 U	0.00111 U	**0.00175 J**	**0.00253 J**
PCB-043/073	E1668	**0.00221 J**	**0.00451 J**	0.0000913 U	0.000854 U	**0.00322 J**	**0.00337 J**
PCB-044/047/065	E1668	**0.0556**	**0.0659**	**0.0105 J**	**0.0178 J**	**0.0508**	**0.0595**
PCB-045/051	E1668	**0.0554**	**0.0705**	**0.00880 J**	**0.0135 J**	**0.0646**	**0.0773**
PCB-046	E1668	0.00204 U	**0.00341 J**	0.000212 U	0.00192 U	**0.00420 J**	0.00125 U
PCB-048	E1668	0.00100 U	0.000410 U	0.000106 U	0.00100 U	0.000873 U	0.000619 U
PCB-049/069	E1668	**0.0203**	**0.0240**	**0.00395 J**	**0.00540 J**	**0.0167**	**0.0213**
PCB-050/053	E1668	**0.0284**	**0.0369**	**0.00506 J**	**0.00732 J**	**0.0340**	**0.0378**
PCB-052	E1668	**0.0153 J**	**0.0225 J**	**0.00320 J**	**0.00371 J**	**0.0136**	**0.0154 J**
PCB-054	E1668	**0.00845 J**	**0.0103 J**	**0.000908 J**	**0.000723 J**	**0.0143**	**0.0110 J**
PCB-055	E1668	0.000312 U	0.000131 U	0.0000323 U	0.000308 U	0.000265 U	0.000195 U
PCB-056	E1668	0.000335 U	0.000141 U	0.0000363 U	0.000334 U	0.000289 U	0.000212 U
PCB-057	E1668	0.000325 U	0.000134 U	0.0000349 U	0.000324 U	0.000275 U	0.000202 U
PCB-058	E1668	0.000284 U	0.000119 U	**0.000113 J**	0.000283 U	0.000243 U	0.000178 U

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1B-JAR-SPME-2GAC TS-BW1B 2% GAC	TS-BW1B-JAR-SPME-2GAC-DUP TS-BW1B 2% GAC	TS-BW1B-JAR-SPME-5GAC TS-BW1B 5% GAC	TS-BW1B-JAR-SPME-5GAC-DUP TS-BW1B 5% GAC	TS-BW1B-JAR-SPME-5BC TS-BW1B 5% Biochar	TS-BW1B-JAR-SPME-5BC-DUP TS-BW1B 5% Biochar
PCB-059/062/075	E1668	**0.00122 J**	**0.00174 J**	0.0000554 U	0.000561 U	**0.00117 J**	**0.00155 J**
PCB-060	E1668	0.000402 U	0.000165 U	0.0000396 U	0.000401 U	0.000336 U	0.000246 U
PCB-061/070/074/076	E1668	**0.00300 J**	**0.00454 J**	**0.000647 J**	0.000410 U	**0.00251 J**	**0.00268 J**
PCB-063	E1668	0.000325 U	0.000137 U	0.0000349 U	0.000324 U	0.000278 U	0.000205 U
PCB-064	E1668	0.000516 U	**0.000659 J**	0.0000508 U	0.000468 U	0.000418 U	**0.000349 J**
PCB-066	E1668	**0.00166 J**	**0.00217 J**	**0.000492 J**	**0.000831 J**	**0.000668 J**	**0.00103 J**
PCB-067	E1668	0.000252 U	0.000106 U	0.0000262 U	0.000252 U	0.000214 U	**0.000446 J**
PCB-068	E1668	0.000245 U	**0.00113 J**	**0.0000410 J**	0.000244 U	0.000213 U	0.000157 U
PCB-072	E1668	0.000245 U	**0.000516 J**	0.0000265 U	0.000244 U	0.000211 U	0.000155 U
PCB-077	E1668	0.000308 U	0.000127 U	0.0000329 U	0.000308 U	0.000255 U	0.000189 U
PCB-078	E1668	0.000223 U	0.0000916 U	0.0000219 U	0.000222 U	0.000185 U	0.000136 U
PCB-079	E1668	0.000147 U	**0.0000966 J**	0.0000153 U	0.000147 U	0.000126 U	0.0000932 U
PCB-080	E1668	0.000153 U	0.0000635 U	0.0000152 U	0.000151 U	0.000130 U	0.0000945 U
PCB-081	E1668	0.000238 U	0.000106 U	0.0000254 U	0.000238 U	0.000219 U	0.000157 U
PCB-082	E1668	**0.00175 J**	**0.00279**	0.000260 U	0.000166 U	0.000206 U	**0.00148 J**
PCB-083/099	E1668	**0.0294 J**	**0.0516 J**	**0.00289 J**	**0.00464 J**	**0.0270**	**0.0320**
PCB-084	E1668	**0.00776 J**	**0.0125 J**	0.000420 U	**0.000697 J**	**0.00661**	**0.00858**
PCB-085/116/117	E1668	**0.00495 J**	**0.0104 J**	0.000186 U	**0.00117 J**	**0.00474 J**	**0.00588 J**
PCB-086/087/097/109/119/125	E1668	**0.0156**	**0.0254**	**0.00249 J**	**0.00338 J**	**0.0133 J**	**0.0160**
PCB-088/091	E1668	**0.0401 J**	**0.0806 J**	**0.00431 J**	**0.00582 J**	**0.0475**	**0.0513**
PCB-089	E1668	0.000656 U	0.000622 U	0.000348 U	0.000222 U	0.000278 U	0.000348 U
PCB-090/101/113	E1668	**0.0436**	**0.0717**	**0.00566 J**	**0.00673**	**0.0358**	**0.0439**
PCB-092	E1668	**0.0176 J**	**0.0326 J**	**0.00182 J**	**0.00243 J**	**0.0146**	**0.0181**
PCB-093/100	E1668	**0.0318 J**	**0.0702 J**	**0.00302 J**	**0.00465 J**	**0.0331**	**0.0386**
PCB-094	E1668	**0.0164 J**	**0.0323 J**	**0.000601 J**	**0.00138 J**	**0.0168**	**0.0184**
PCB-095	E1668	**0.0450**	**0.0743**	**0.00443**	**0.00545 J**	**0.0354**	**0.0452**
PCB-096	E1668	**0.0171 J**	**0.0327 J**	**0.000916 J**	**0.00147 J**	**0.0194**	**0.0187 J**
PCB-098/102	E1668	**0.00578 J**	**0.0165 J**	**0.000949 J**	**0.000577 J**	**0.00515 J**	**0.00614 J**
PCB-103	E1668	**0.00825 J**	**0.0200 J**	**0.00134 J**	**0.00112 J**	**0.0117**	**0.0112**
PCB-104	E1668	**0.00629 J**	**0.0164 J**	**0.000495 J**	**0.000458 J**	**0.00693**	**0.00885**
PCB-105	E1668	**0.000637 J**	**0.000781 J**	**0.000170 J**	**0.000312 J**	**0.000346 J**	0.000174 U
PCB-106	E1668	0.000143 U	0.000266 U	0.0000673 U	0.0000396 U	0.000107 U	0.000155 U
PCB-107	E1668	0.000114 U	**0.000765 J**	0.0000553 U	0.0000332 U	**0.000391 J**	**0.000478 J**
PCB-108/124	E1668	0.000143 U	0.000268 U	0.0000666 U	0.0000399 U	0.000105 U	0.000153 U
PCB-110/115	E1668	**0.0143 J**	**0.0217 J**	**0.00182 J**	**0.00262 J**	**0.0100 J**	**0.0136 J**
PCB-111	E1668	0.000111 U	0.000112 U	0.0000591 U	0.0000376 U	0.0000473 U	0.0000594 U
PCB-112	E1668	0.000181 U	0.000182 U	0.0000954 U	0.0000606 U	0.0000757 U	0.0000941 U
PCB-114	E1668	0.000151 U	0.000282 U	0.0000734 U	0.0000431 U	0.000119 U	0.000174 U
PCB-118	E1668	**0.00232**	**0.00323**	**0.000660 J**	**0.000892**	**0.00134**	**0.00207**
PCB-120	E1668	**0.000515 J**	**0.000890**	0.0000444 U	0.0000281 U	**0.000226 J**	**0.000291 J**
PCB-121	E1668	0.000132 U	**0.000410 J**	0.0000695 U	0.0000440 U	**0.000166 J**	**0.000210 J**
PCB-122	E1668	0.000187 U	0.000354 U	0.0000912 U	0.0000539 U	0.000144 U	0.000210 U
PCB-123	E1668	0.000134 U	0.000269 U	0.0000651 U	0.0000401 U	0.000108 U	0.000162 U
PCB-126	E1668	0.0000848 U	0.000144 U	0.0000392 U	0.0000241 U	0.0000608 U	0.0000853 U
PCB-127	E1668	0.0000748 U	0.000139 U	0.0000357 U	0.0000212 U	0.0000565 U	0.0000810 U
PCB-128/166	E1668	**0.00460 J**	**0.00913 J**	**0.000310 J**	**0.000423 J**	**0.00255**	**0.00311**
PCB-129/138/160/163	E1668	**0.110 J**	**0.211 J**	**0.00989**	**0.0100**	**0.0668**	**0.0725**
PCB-130	E1668	**0.00709 J**	**0.0127 J**	**0.000473 J**	**0.000527 J**	**0.00395**	**0.00428**
PCB-131	E1668	0.00150 U	0.00126 U	0.000345 U	0.000337 U	0.000815 U	0.000892 U
PCB-132	E1668	**0.0675 J**	**0.116 J**	**0.00419**	**0.00437**	**0.0351**	**0.0364**

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1B-JAR-SPME-2GAC TS-BW1B 2% GAC	TS-BW1B-JAR-SPME-2GAC-DUP TS-BW1B 2% GAC	TS-BW1B-JAR-SPME-5GAC TS-BW1B 5% GAC	TS-BW1B-JAR-SPME-5GAC-DUP TS-BW1B 5% GAC	TS-BW1B-JAR-SPME-5BC TS-BW1B 5% Biochar	TS-BW1B-JAR-SPME-5BC-DUP TS-BW1B 5% Biochar
PCB-133	E1668	**0.00611 J**	**0.0112 J**	**0.000417 J**	**0.000395 J**	**0.00341**	**0.00307**
PCB-134/143	E1668	**0.0173 J**	**0.0294 J**	0.000354 U	**0.000904 J**	**0.00788**	**0.00923**
PCB-135/151	E1668	**0.198 J**	**0.354 J**	**0.0119**	**0.0121**	**0.106**	**0.122**
PCB-136	E1668	**0.0741 J**	**0.130 J**	**0.00392**	**0.00342 J**	**0.0390**	**0.0410**
PCB-137	E1668	**0.00178 J**	**0.00387 J**	0.000197 U	**0.000281 J**	**0.00141**	**0.00141**
PCB-139/140	E1668	**0.00373 J**	**0.00593 J**	0.000234 U	0.000227 U	**0.00228**	**0.00198 J**
PCB-141	E1668	**0.0249 J**	**0.0418**	**0.00208**	**0.00166 J**	**0.0121**	**0.0144**
PCB-142	E1668	0.00174 U	0.00144 U	0.000385 U	0.000376 U	0.000900 U	0.000990 U
PCB-144	E1668	**0.0135 J**	**0.0229 J**	**0.000785 J**	**0.000785 J**	**0.00685**	**0.00843**
PCB-145	E1668	0.000325 U	0.000213 U	0.0000566 U	0.0000499 U	0.0000826 U	0.0000929 U
PCB-146	E1668	**0.0241**	**0.0380**	**0.00186**	**0.00195**	**0.0124**	**0.0138**
PCB-147/149	E1668	**0.298 J**	**0.510 J**	**0.0174**	**0.0187**	**0.155**	**0.166**
PCB-148	E1668	**0.00611**	**0.00908**	**0.000324 J**	**0.000264 J**	**0.00293**	**0.00266**
PCB-150	E1668	**0.0280**	**0.0433**	**0.00121 J**	**0.00121 J**	**0.0125**	**0.0130**
PCB-152	E1668	**0.0258 J**	**0.0454 J**	**0.000865 J**	**0.000823 J**	**0.0128**	**0.0134**
PCB-153/168	E1668	**0.0858 J**	**0.154 J**	**0.00724**	**0.00734**	**0.0522**	**0.0567**
PCB-154	E1668	**0.0189**	**0.0310**	**0.000929 J**	**0.00103 J**	**0.00945**	**0.0103**
PCB-155	E1668	**0.00130**	**0.00144 J**	0.0000167 U	**0.0000364 J**	**0.000404 J**	**0.000497 J**
PCB-156/157	E1668	**0.00107**	**0.00171**	**0.000140 J**	**0.000188 J**	**0.000641 J**	**0.000607 J**
PCB-158	E1668	**0.00695**	**0.0110**	**0.000783 J**	**0.000268 J**	**0.00398**	**0.00414**
PCB-159	E1668	**0.00564**	**0.00724**	0.0000463 U	**0.000500 J**	**0.00308**	**0.00315**
PCB-161	E1668	0.000298 U	0.000255 U	0.0000690 U	0.0000656 U	0.000162 U	0.000176 U
PCB-162	E1668	0.000238 U	0.000205 U	0.0000555 U	0.0000531 U	0.000129 U	0.000142 U
PCB-164	E1668	**0.00497 J**	**0.00898 J**	**0.000406 J**	**0.000337 J**	**0.00244**	**0.00245 J**
PCB-165	E1668	**0.000513 J**	**0.00117 J**	0.0000965 U	0.0000931 U	0.000224 U	0.000248 U
PCB-167	E1668	**0.000382 J**	**0.000945 J**	0.0000492 U	**0.0000822 J**	**0.000271 J**	**0.000325 J**
PCB-169	E1668	0.000333 U	0.000274 U	0.0000746 U	0.0000706 U	0.000172 U	0.000188 U
PCB-170	E1668	**0.0647**	**0.0886**	**0.00811**	**0.00616**	**0.0354**	**0.0355**
PCB-171/173	E1668	**0.0493**	**0.0620**	**0.00689**	**0.00493**	**0.0256**	**0.0269**
PCB-172	E1668	**0.0176**	**0.0227**	**0.00227**	**0.00171**	**0.00988**	**0.0102**
PCB-174	E1668	**0.202**	**0.244**	**0.0271**	**0.0197**	**0.107**	**0.112**
PCB-175	E1668	**0.00761**	**0.00911**	**0.00107**	**0.000724**	**0.00400**	**0.00401**
PCB-176	E1668	**0.0943**	**0.103**	**0.0152**	**0.0103**	**0.0498**	**0.0517**
PCB-177	E1668	**0.118**	**0.141**	**0.0160**	**0.0118**	**0.0615**	**0.0660**
PCB-178	E1668	**0.0656**	**0.0815**	**0.00837**	**0.00655**	**0.0356**	**0.0357**
PCB-179	E1668	**0.383**	**0.422**	**0.0557**	**0.0401**	**0.210**	**0.211**
PCB-180/193	E1668	**0.139**	**0.181**	**0.0173**	**0.0136**	**0.0757**	**0.0807**
PCB-181	E1668	0.0000493 U	**0.00169**	0.0000312 U	0.0000312 U	0.000000454 U	0.0000360 U
PCB-182	E1668	**0.00208**	**0.00219**	0.0000241 U	**0.000204 J**	**0.000990**	**0.000958 J**
PCB-183/185	E1668	**0.106**	**0.130**	**0.0134**	**0.00986**	**0.0580**	**0.0582**
PCB-184	E1668	0.0000631 U	0.0000463 U	0.0000405 U	0.0000404 U	0.000000598 U	0.0000464 U
PCB-186	E1668	0.0000794 U	0.0000578 U	0.0000508 U	0.0000505 U	0.000000756 U	0.0000589 U
PCB-187	E1668	**0.265**	**0.343**	**0.0325**	**0.0232**	**0.160**	**0.149**
PCB-188	E1668	**0.00695**	**0.00835**	**0.00141**	**0.000980**	**0.00447**	**0.00433**
PCB-189	E1668	**0.000444 J**	**0.000669 J**	**0.0000725 J**	**0.0000688 J**	**0.000269**	**0.000258**
PCB-190	E1668	**0.00849**	**0.0121**	**0.00103**	**0.000867**	**0.00495**	**0.00516**
PCB-191	E1668	**0.00163**	**0.00230**	**0.000193 J**	**0.000150 J**	**0.000885**	**0.000936 J**
PCB-192	E1668	0.0000164 U	0.0000119 U	0.0000103 U	0.0000104 U	0.000000154 U	0.0000121 U
PCB-194	E1668	**0.0193**	**0.0214**	**0.00848**	**0.00608**	**0.0126**	**0.0136**
PCB-195	E1668	**0.0208**	**0.0225**	**0.0106**	**0.00767**	**0.0133**	**0.0133**

Table D-2

Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1B-JAR-SPME-2GAC TS-BW1B 2% GAC	TS-BW1B-JAR-SPME-2GAC-DUP TS-BW1B 2% GAC	TS-BW1B-JAR-SPME-5GAC TS-BW1B 5% GAC	TS-BW1B-JAR-SPME-5GAC-DUP TS-BW1B 5% GAC	TS-BW1B-JAR-SPME-5BC TS-BW1B 5% Biochar	TS-BW1B-JAR-SPME-5BC-DUP TS-BW1B 5% Biochar
PCB-196	E1668	**0.0291**	**0.0333**	**0.0144**	**0.0110**	**0.0199**	**0.0200**
PCB-197/200	E1668	**0.0386**	**0.0388**	**0.0218**	**0.0168**	**0.0241**	**0.0239**
PCB-198/199	E1668	**0.0649**	**0.0723**	**0.0334**	**0.0253**	**0.0453**	**0.0454**
PCB-201	E1668	**0.0155**	**0.0170**	**0.00931**	**0.00718**	**0.0100**	**0.00993**
PCB-202	E1668	**0.0439**	**0.0441**	**0.0254**	**0.0198**	**0.0259**	**0.0285**
PCB-203	E1668	**0.0384**	**0.0426**	**0.0170**	**0.0120**	**0.0266**	**0.0253**
PCB-204	E1668	0.0000883 U	0.000136 U	0.0000299 U	0.0000256 U	0.0000913 U	0.0000749 U
PCB-205	E1668	**0.000763**	**0.000831**	**0.000282 J**	**0.000203 J**	**0.000491**	**0.000505**
PCB-206	E1668	**0.00495**	**0.00471**	**0.00368**	**0.00315**	**0.00259**	**0.00302**
PCB-207	E1668	**0.00230**	**0.00209**	**0.00162**	**0.00153**	**0.00104**	**0.00109**
PCB-208	E1668	**0.00421**	**0.00376**	**0.00322**	**0.00280**	**0.00187**	**0.00223**
PCB-209	E1668	**0.000817**	**0.000631**	**0.000699**	**0.000634**	**0.000240 J**	**0.000456 J**
Total PCB Congener (U = 0 max limit)	Calculated	**3.39 J**	**4.83 J**	**0.492 J**	**0.437 J**	**2.11 J**	**2.25 J**

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1B-JAR-SPME-10BC TS-BW1B 10% Biochar	TS-BW1B-JAR-SPME-10BC-DUP TS-BW1B 10% Biochar	TS-BW1A-SPIKE-JAR-SPME-CTRL TS-BW1A-SPIKED2 Control	TS-BW1A-SPIKE-JAR-SPME-CTRL-DUP TS-BW1A-SPIKED2 Control	TS-BW1A-SPIKE-JAR-SPME-1PAC TS-BW1A-SPIKED2 1% PAC	TS-BW1A-SPIKE-JAR-SPME-1PAC-DUP TS-BW1A-SPIKED2 1% PAC
PCB Congeners (SPME) (ng/L)							
PCB-001	E1668	0.00268 U	0.00312 U	**13.9**	**11.3**	0.00970 U	0.00965 U
PCB-002	E1668	0.000984 U	0.00119 U	**0.245 J**	**0.196 J**	0.00360 U	0.00343 U
PCB-003	E1668	0.00111 U	0.00132 U	**1.16**	**0.981**	0.00394 U	0.00361 U
PCB-004	E1668	0.000916 U	0.00655 U	**13.3 J**	**10.4 J**	0.0115 U	0.0108 U
PCB-005	E1668	0.000361 U	0.00254 U	**0.272 J**	**0.191 J**	0.00448 U	0.00431 U
PCB-006	E1668	0.000244 U	0.00170 U	**1.95**	**1.66**	0.00300 U	0.00291 U
PCB-007	E1668	0.000278 U	0.00194 U	**0.471**	**0.413 J**	0.00347 U	0.00333 U
PCB-008	E1668	0.000231 U	0.00161 U	**6.32**	**5.45**	**0.0116 J**	0.00277 U
PCB-009	E1668	0.000269 U	0.00189 U	**0.661 J**	**0.579**	0.00331 U	0.00324 U
PCB-010	E1668	0.000779 U	0.00551 U	**0.799 J**	**0.801 J**	0.00965 U	0.00951 U
PCB-011	E1668	0.000164 U	0.00115 U	0.0133 U	0.0213 U	0.00204 U	0.00194 U
PCB-012/013	E1668	0.000207 U	0.00146 U	**0.204 J**	**0.124 J**	0.00259 U	0.00249 U
PCB-014	E1668	0.000181 U	0.00127 U	0.0147 U	0.0237 U	0.00224 U	0.00220 U
PCB-015	E1668	0.000166 U	0.00116 U	**0.681**	**0.637**	0.00205 U	0.00206 U
PCB-016	E1668	0.000465 U	0.000163 U	**2.19 J**	**2.26**	**0.00447 J**	**0.00741 J**
PCB-017	E1668	0.000385 U	0.000135 U	**3.63**	**3.23**	**0.00370 J**	**0.00669 J**
PCB-018/030	E1668	0.000269 U	0.0000960 U	**6.18**	**5.67**	**0.0146 J**	**0.0148 J**
PCB-019	E1668	0.000558 U	0.000195 U	**1.63**	**1.55**	**0.0137 J**	0.00262 U
PCB-020/028	E1668	**0.000828 J**	**0.000251 J**	**2.83**	**2.45**	**0.00784 J**	**0.00399 J**
PCB-021/033	E1668	0.000371 U	0.000220 U	**1.98**	**1.79**	**0.00769 J**	**0.00458 J**
PCB-022	E1668	0.000274 U	0.000164 U	**0.656**	**0.607**	**0.00177 J**	0.000949 U
PCB-023	E1668	0.000311 U	0.000188 U	0.0191 U	0.0165 U	0.000893 U	0.00108 U
PCB-024	E1668	0.000214 U	0.0000745 U	**0.110 J**	**0.111 J**	0.00107 U	0.000994 U
PCB-025	E1668	0.000201 U	0.000127 U	**0.397**	**0.335**	**0.00263 J**	**0.00187 J**
PCB-026/029	E1668	0.000274 U	**0.000208 J**	**0.725**	**0.620**	**0.00166 J**	**0.00132 J**
PCB-027	E1668	**0.00136 J**	**0.000672 J**	**2.03**	**1.83**	**0.00639 J**	**0.00311 J**
PCB-031	E1668	0.000218 U	**0.000212 J**	**1.65**	**1.44**	**0.00373 J**	**0.00347 J**
PCB-032	E1668	0.000163 U	**0.000686 J**	**2.44**	**2.14**	**0.00853 J**	**0.0105 J**
PCB-034	E1668	0.000266 U	0.000164 U	**0.0277 J**	**0.0214 J**	0.000784 U	0.000920 U
PCB-035	E1668	0.000184 U	0.000111 U	0.0114 U	0.00993 U	0.000544 U	0.000641 U
PCB-036	E1668	0.000135 U	0.0000818 U	0.00820 U	0.00714 U	0.000381 U	0.000461 U
PCB-037	E1668	0.000174 U	0.000109 U	**0.164**	**0.142**	0.000517 U	0.000611 U
PCB-038	E1668	0.000195 U	0.000119 U	0.0121 U	0.0104 U	0.000563 U	0.000689 U
PCB-039	E1668	0.000153 U	0.0000961 U	0.00948 U	0.00831 U	0.000456 U	0.000539 U
PCB-040/041/071	E1668	**0.00119 J**	**0.00146 J**	**1.64**	**1.41**	**0.0172 J**	**0.0140 J**
PCB-042	E1668	0.000229 U	0.000526 U	**0.674 J**	**0.641**	**0.00617 J**	**0.00612 J**
PCB-043/073	E1668	0.000177 U	0.000408 U	**0.442**	**0.301 J**	**0.00297 J**	**0.00293 J**
PCB-044/047/065	E1668	**0.0135 J**	**0.0122 J**	**10.6**	**9.20**	**0.137**	**0.109**
PCB-045/051	E1668	**0.00968 J**	**0.00886 J**	**7.56**	**6.74**	**0.132**	**0.0930**
PCB-046	E1668	0.000417 U	0.000954 U	**0.700**	**0.646**	0.00441 U	**0.00837 J**
PCB-048	E1668	0.000207 U	0.000471 U	**0.299**	**0.233**	0.00226 U	0.00182 U
PCB-049/069	E1668	**0.00395 J**	**0.00426 J**	**3.80**	**3.25**	**0.0469**	**0.0371**
PCB-050/053	E1668	**0.00548 J**	**0.00552 J**	**5.22**	**4.32**	**0.0787**	**0.0603**
PCB-052	E1668	**0.000259 J**	**0.00296 J**	**7.46**	**6.45**	**0.0722**	**0.0663**
PCB-054	E1668	0.000240 U	**0.00209 J**	**0.897**	**0.790**	**0.0134 J**	**0.0138 J**
PCB-055	E1668	0.0000667 U	0.000148 U	0.00830 U	0.00998 U	0.000688 U	0.000569 U
PCB-056	E1668	0.0000701 U	0.000161 U	**0.116**	**0.0998**	0.000749 U	0.000615 U
PCB-057	E1668	0.0000676 U	0.000154 U	0.00878 U	0.0103 U	0.000715 U	0.000591 U
PCB-058	E1668	0.0000588 U	0.000136 U	0.00805 U	0.00953 U	0.000630 U	0.000518 U

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1B-JAR-SPME-10BC TS-BW1B 10% Biochar	TS-BW1B-JAR-SPME-10BC-DUP TS-BW1B 10% Biochar	TS-BW1A-SPIKE-JAR-SPME-CTRL TS-BW1A-SPIKED2 Control	TS-BW1A-SPIKE-JAR-SPME-CTRL-DUP TS-BW1A-SPIKED2 Control	TS-BW1A-SPIKE-JAR-SPME-1PAC TS-BW1A-SPIKED2 1% PAC	TS-BW1A-SPIKE-JAR-SPME-1PAC-DUP TS-BW1A-SPIKED2 1% PAC
PCB-059/062/075	E1668	0.000117 U	0.000264 U	**0.255**	**0.209**	**0.00329 J**	**0.00205 J**
PCB-060	E1668	0.0000834 U	0.000188 U	**0.0822**	**0.0773**	0.000871 U	0.000716 U
PCB-061/070/074/076	E1668	**0.000368 J**	0.000202 U	**0.956**	**0.825**	**0.00897 J**	**0.0112 J**
PCB-063	E1668	0.0000676 U	0.000157 U	**0.0359 J**	**0.0257 J**	0.000722 U	0.000599 U
PCB-064	E1668	0.000103 U	0.000235 U	**0.360**	**0.314**	**0.00293 J**	**0.00141 J**
PCB-066	E1668	**0.000552 J**	**0.000418 J**	**0.447**	**0.372**	**0.00339 J**	**0.00167 J**
PCB-067	E1668	0.0000525 U	0.000120 U	0.00687 U	**0.0296 J**	**0.00137 J**	0.000464 U
PCB-068	E1668	0.0000536 U	0.000120 U	**0.0594**	**0.0474 J**	0.000560 U	0.000462 U
PCB-072	E1668	0.0000511 U	0.000118 U	**0.0339**	**0.0297 J**	0.000553 U	0.000456 U
PCB-077	E1668	0.0000640 U	0.000145 U	**0.0159 J**	0.0102 U	0.000668 U	0.000549 U
PCB-078	E1668	0.0000464 U	0.000104 U	0.00602 U	0.00704 U	0.000485 U	0.000400 U
PCB-079	E1668	0.0000313 U	0.0000702 U	**0.00693 J**	**0.00955 J**	0.000327 U	**0.000436 J**
PCB-080	E1668	0.0000322 U	0.0000728 U	0.00420 U	0.00497 U	0.000337 U	0.000279 U
PCB-081	E1668	0.0000513 U	0.000119 U	0.00688 U	0.00788 U	0.000567 U	0.000462 U
PCB-082	E1668	**0.000191 J**	0.000145 U	**0.186**	**0.158**	0.00137 U	**0.00585 J**
PCB-083/099	E1668	**0.00438 J**	**0.00393 J**	**2.36**	**2.00**	**0.146**	**0.121**
PCB-084	E1668	**0.00131 J**	**0.00109 J**	**2.02**	**1.54 J**	**0.0646**	**0.0606**
PCB-085/116/117	E1668	**0.00148 J**	**0.000452 J**	**0.334**	**0.268**	**0.0135 J**	**0.0111 J**
PCB-086/087/097/109/119/125	E1668	**0.00226 J**	**0.00233 J**	**4.19**	**3.56**	**0.122**	**0.0999**
PCB-088/091	E1668	**0.00762**	**0.00659 J**	**2.08**	**1.72**	**0.104 J**	**0.0839 J**
PCB-089	E1668	0.000160 U	0.000194 U	0.00397 U	0.00353 U	0.00190 U	0.00150 U
PCB-090/101/113	E1668	**0.00691**	**0.00657 J**	**24.6**	**20.2**	**0.671**	**0.543**
PCB-092	E1668	**0.00200 J**	**0.00179 J**	**3.41**	**2.76**	**0.111**	**0.0943**
PCB-093/100	E1668	**0.00502 J**	**0.00468 J**	**1.44**	**1.16**	**0.0636 J**	**0.0659**
PCB-094	E1668	**0.00131 J**	**0.00203 J**	**0.501**	**0.415**	**0.0226 J**	**0.0185 J**
PCB-095	E1668	**0.00576**	**0.00484 J**	**39.0**	**31.9**	**1.09**	**0.968**
PCB-096	E1668	**0.00371 J**	**0.00304 J**	**0.557**	**0.500**	**0.0323**	**0.0255 J**
PCB-098/102	E1668	**0.00112 J**	**0.00135 J**	**0.310 J**	**0.287 J**	**0.0134 J**	**0.0123 J**
PCB-103	E1668	**0.00122 J**	**0.00134 J**	**0.422**	**0.370**	**0.0173 J**	**0.0175**
PCB-104	E1668	**0.000426 J**	**0.000694 J**	**0.143**	**0.128**	**0.0114 J**	**0.00896 J**
PCB-105	E1668	0.0000946 U	**0.000108 J**	**0.112**	**0.0964**	**0.00225 J**	0.00136 U
PCB-106	E1668	0.0000856 U	0.0000609 U	0.00928 U	0.00684 U	0.000688 U	0.00124 U
PCB-107	E1668	0.0000711 U	0.0000506 U	**0.0472**	**0.0354**	**0.00141 J**	**0.00107 J**
PCB-108/124	E1668	0.0000862 U	0.0000612 U	**0.0401**	**0.0331**	0.000693 U	0.00125 U
PCB-110/115	E1668	**0.00200 J**	**0.00217 J**	**5.73**	**4.97**	**0.144**	**0.123**
PCB-111	E1668	0.0000273 U	0.0000327 U	0.000679 U	0.000596 U	0.000312 U	0.000258 U
PCB-112	E1668	0.0000425 U	0.0000528 U	0.00110 U	0.000978 U	0.000512 U	0.000400 U
PCB-114	E1668	0.0000956 U	0.0000694 U	0.0107 U	0.00750 U	0.000730 U	0.00133 U
PCB-118	E1668	**0.000623 J**	**0.000485 J**	**1.04**	**0.887**	**0.0179**	**0.0135**
PCB-120	E1668	0.0000200 U	0.0000242 U	**0.0195**	0.000439 U	0.000230 U	**0.000661 J**
PCB-121	E1668	0.0000318 U	0.0000387 U	0.000792 U	0.000711 U	0.000373 U	0.000296 U
PCB-122	E1668	0.000121 U	0.0000830 U	0.0128 U	0.00930 U	0.000917 U	0.00169 U
PCB-123	E1668	0.0000836 U	0.0000601 U	**0.0108 J**	**0.0109 J**	**0.00102 J**	0.00125 U
PCB-126	E1668	0.0000474 U	0.0000347 U	0.00550 U	0.00405 U	0.000407 U	0.000751 U
PCB-127	E1668	0.0000452 U	0.0000323 U	0.00499 U	0.00371 U	0.000359 U	0.000662 U
PCB-128/166	E1668	0.000157 U	**0.00164**	**0.435**	**0.391**	**0.0441**	**0.0398**
PCB-129/138/160/163	E1668	**0.01000**	**0.0110**	**18.3**	**15.2**	**1.69**	**1.45**
PCB-130	E1668	0.000322 U	**0.000617 J**	**0.566 J**	**0.509 J**	**0.0676 J**	**0.0583 J**
PCB-131	E1668	0.000461 U	0.000226 U	**0.238 J**	**0.192**	**0.0250 J**	**0.0188 J**
PCB-132	E1668	**0.00436**	**0.00464**	**8.36 J**	**7.14**	**1.01 J**	**0.891 J**

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1B-JAR-SPME-10BC TS-BW1B 10% Biochar	TS-BW1B-JAR-SPME-10BC-DUP TS-BW1B 10% Biochar	TS-BW1A-SPIKE-JAR-SPME-CTRL TS-BW1A-SPIKED2 Control	TS-BW1A-SPIKE-JAR-SPME-CTRL-DUP TS-BW1A-SPIKED2 Control	TS-BW1A-SPIKE-JAR-SPME-1PAC TS-BW1A-SPIKED2 1% PAC	TS-BW1A-SPIKE-JAR-SPME-1PAC-DUP TS-BW1A-SPIKED2 1% PAC
PCB-133	E1668	0.000214 U	**0.000244 J**	**0.172**	**0.152**	**0.0235 J**	**0.0190 J**
PCB-134/143	E1668	0.000464 U	**0.000842 J**	**1.68**	**1.45**	**0.204**	**0.171**
PCB-135/151	E1668	**0.0132**	**0.0144**	**21.0**	**18.9**	**2.44**	**2.14**
PCB-136	E1668	**0.00480**	**0.00428 J**	**7.11**	**6.44**	**0.964**	**0.837**
PCB-137	E1668	0.000258 U	**0.000134 J**	**0.0513 J**	**0.0680**	**0.0108 J**	0.00304 U
PCB-139/140	E1668	0.000309 U	**0.000374 J**	0.0115 U	0.00951 U	0.00377 U	**0.00964**
PCB-141	E1668	**0.00181**	**0.00167 J**	**4.87**	**4.13**	**0.531 J**	**0.455 J**
PCB-142	E1668	0.000505 U	0.000247 U	0.0190 U	0.0155 U	0.00640 U	0.00595 U
PCB-144	E1668	**0.00103**	**0.00114**	**2.82**	**2.54**	**0.323**	**0.264**
PCB-145	E1668	0.0000522 U	0.0000426 U	**0.0743**	0.00341 U	0.00188 U	**0.00541 J**
PCB-146	E1668	**0.00175**	**0.00190**	**1.78**	**1.51**	**0.221 J**	**0.179 J**
PCB-147/149	E1668	**0.0198**	**0.0210**	**32.8**	**27.4**	**3.44**	**3.02**
PCB-148	E1668	0.0000273 U	**0.000284 J**	**0.0339 J**	**0.0362**	**0.00760 J**	**0.00475 J**
PCB-150	E1668	**0.00107 J**	**0.00121 J**	**0.107**	**0.102**	**0.0213**	**0.0177**
PCB-152	E1668	**0.00140 J**	**0.00134 J**	**0.0923 J**	**0.0924**	**0.0201**	**0.0146**
PCB-153/168	E1668	**0.00732**	**0.00738**	**14.1**	**11.7**	**1.31**	**1.11**
PCB-154	E1668	**0.00111**	**0.00112**	**0.193**	**0.187**	**0.0312**	**0.0235**
PCB-155	E1668	0.0000155 U	0.0000131 U	**0.00258 J**	**0.00291 J**	0.000558 U	0.000339 U
PCB-156/157	E1668	0.000106 U	**0.0000891 J**	**0.290**	**0.247**	**0.0194**	**0.0175**
PCB-158	E1668	0.000114 U	**0.000599**	**0.874**	**0.752**	**0.0904 J**	**0.0762**
PCB-159	E1668	**0.000343 J**	**0.000472**	**0.132**	**0.117**	**0.0472**	**0.0369**
PCB-161	E1668	0.0000916 U	0.0000440 U	0.00336 U	0.00272 U	0.00114 U	0.00103 U
PCB-162	E1668	0.0000717 U	0.0000346 U	0.00271 U	0.00218 U	0.000896 U	0.000815 U
PCB-164	E1668	**0.000302 J**	**0.000364 J**	**0.652**	**0.530**	**0.0723**	**0.0667**
PCB-165	E1668	0.000125 U	0.0000609 U	0.00474 U	0.00394 U	0.00158 U	0.00141 U
PCB-167	E1668	0.0000644 U	0.0000325 U	**0.102**	**0.0803**	**0.00765**	**0.00653**
PCB-169	E1668	0.0000955 U	**0.0000862 J**	0.00363 U	0.00301 U	0.00123 U	0.00109 U
PCB-170	E1668	**0.00498**	**0.00502**	**1.89**	**1.75**	**0.589**	**0.475**
PCB-171/173	E1668	**0.00381**	**0.00380**	**1.12**	**1.02**	**0.385**	**0.316**
PCB-172	E1668	**0.00145**	**0.00128**	**0.366**	**0.328**	**0.121**	**0.0923**
PCB-174	E1668	**0.0156**	**0.0165**	**4.89**	**4.49**	**1.71**	**1.35**
PCB-175	E1668	**0.000578**	**0.000510**	**0.198**	**0.171**	**0.0632**	**0.0527**
PCB-176	E1668	**0.00759**	**0.00749**	**1.78**	**1.70**	**0.669**	**0.517**
PCB-177	E1668	**0.00872**	**0.00924**	**2.50**	**2.28**	**0.843**	**0.684**
PCB-178	E1668	**0.00500**	**0.00504**	**1.05**	**0.959**	**0.362**	**0.286**
PCB-179	E1668	**0.0291**	**0.0312**	**6.33**	**5.89**	**2.30**	**1.78**
PCB-180/193	E1668	**0.0107**	**0.0122**	**4.58**	**4.17**	**1.33**	**1.07**
PCB-181	E1668	0.0000344 U	0.00000231 U	0.0000489 U	0.000715 U	0.000364 U	0.000214 U
PCB-182	E1668	**0.000122 J**	0.00000178 U	0.0000380 U	0.000558 U	**0.00514 J**	0.000168 U
PCB-183/185	E1668	**0.00746**	**0.00821**	**2.78**	**2.62**	**0.886**	**0.718**
PCB-184	E1668	0.0000445 U	0.00000299 U	0.0000633 U	0.000933 U	0.000461 U	0.000272 U
PCB-186	E1668	0.0000563 U	0.00000379 U	0.0000811 U	0.00116 U	0.000594 U	0.000354 U
PCB-187	E1668	**0.0202**	**0.0193**	**4.94**	**4.50**	**1.60**	**1.29**
PCB-188	E1668	**0.000655 J**	**0.000706 J**	**0.00805 J**	**0.00863 J**	**0.00334 J**	**0.00228 J**
PCB-189	E1668	**0.0000326 J**	**0.0000469 J**	**0.0185**	**0.0180**	**0.00456**	**0.00384**
PCB-190	E1668	**0.000766**	**0.000753**	**0.303**	**0.274**	**0.0821**	**0.0649**
PCB-191	E1668	**0.000179**	**0.000130 J**	**0.0648**	**0.0608**	**0.0191**	**0.0148**
PCB-192	E1668	0.0000114 U	0.000000769 U	0.0000164 U	0.000238 U	0.000122 U	0.0000715 U
PCB-194	E1668	**0.00356**	**0.00369**	**0.146**	**0.149**	**0.0704**	**0.0557 J**
PCB-195	E1668	**0.00382**	**0.00402**	**0.123**	**0.127**	**0.0583 J**	**0.0482 J**

Table D-2

Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1B-JAR-SPME-10BC TS-BW1B 10% Biochar	TS-BW1B-JAR-SPME-10BC-DUP TS-BW1B 10% Biochar	TS-BW1A-SPIKE-JAR-SPME-CTRL TS-BW1A-SPIKED2 Control	TS-BW1A-SPIKE-JAR-SPME-CTRL-DUP TS-BW1A-SPIKED2 Control	TS-BW1A-SPIKE-JAR-SPME-1PAC TS-BW1A-SPIKED2 1% PAC	TS-BW1A-SPIKE-JAR-SPME-1PAC-DUP TS-BW1A-SPIKED2 1% PAC
PCB-196	E1668	**0.00620**	**0.00612**	**0.200**	**0.220**	**0.0965**	**0.0762**
PCB-197/200	E1668	**0.00852**	**0.00859**	**0.171**	**0.192**	**0.0933**	**0.0696**
PCB-198/199	E1668	**0.0133**	**0.0135**	**0.419**	**0.455**	**0.209**	**0.159**
PCB-201	E1668	**0.00351**	**0.00354**	**0.0769**	**0.0841**	**0.0404**	**0.0309**
PCB-202	E1668	**0.00976**	**0.00985**	**0.185**	**0.211**	**0.101**	**0.0778**
PCB-203	E1668	**0.00778**	**0.00639**	**0.210**	**0.233**	**0.0999**	**0.0799**
PCB-204	E1668	0.0000632 U	0.00000388 U	0.0000137 U	0.000164 U	0.000108 U	0.0000832 U
PCB-205	E1668	**0.000133**	**0.000147**	**0.00583**	**0.00615**	**0.00281**	**0.00209 J**
PCB-206	E1668	**0.00189**	**0.00201**	**0.0170**	**0.0183**	**0.00945**	**0.00736**
PCB-207	E1668	**0.000830**	**0.000958**	**0.00489**	**0.00572**	**0.00285**	**0.00225**
PCB-208	E1668	**0.00163**	**0.00176**	**0.0124**	**0.0142**	**0.00790**	**0.00640**
PCB-209	E1668	**0.000271**	**0.000348**	**0.00184 J**	**0.00225**	**0.00131 J**	**0.00109 J**
Total PCB Congener (U = 0 max limit)	Calculated	**0.331 J**	**0.342 J**	**348 J**	**298 J**	**27.7 J**	**23.0 J**

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-SPIKE-JAR-SPME-2PAC TS-BW1A-SPIKED2 2% PAC	TS-BW1A-SPIKE-JAR-SPME-2PAC-DUP TS-BW1A-SPIKED2 2% PAC	TS-BW1A-SPIKE-JAR-SPME-5PAC TS-BW1A-SPIKED2 5% PAC	TS-BW1A-SPIKE-JAR-SPME-5PAC-DUP TS-BW1A-SPIKED2 5% PAC	TS-BW1A-SPIKE-JAR-SPME-2GAC TS-BW1A-SPIKED2 2% GAC	TS-BW1A-SPIKE-JAR-SPME-2GAC-DUP TS-BW1A-SPIKED2 2% GAC
PCB Congeners (SPME) (ng/L)							
PCB-001	E1668	0.00953 U	0.00612 U	0.00722 U	0.00947 U	**0.0717 J**	0.0619 U
PCB-002	E1668	0.00351 U	0.00211 U	0.00262 U	0.00351 U	0.0117 U	0.0230 U
PCB-003	E1668	0.00367 U	0.00211 U	0.00279 U	0.00368 U	0.0122 U	0.0262 U
PCB-004	E1668	0.0113 U	0.00802 U	0.0117 U	0.0172 U	**0.114 J**	0.0957 U
PCB-005	E1668	0.00452 U	0.00315 U	0.00447 U	0.00669 U	**0.0118 J**	0.0392 U
PCB-006	E1668	0.00308 U	0.00216 U	0.00302 U	0.00454 U	**0.00726 J**	0.0264 U
PCB-007	E1668	0.00352 U	0.00241 U	0.00347 U	0.00520 U	0.00213 U	0.0303 U
PCB-008	E1668	0.00295 U	0.00204 U	0.00288 U	0.00430 U	**0.00807 J**	0.0251 U
PCB-009	E1668	0.00338 U	0.00239 U	0.00332 U	0.00500 U	**0.00599 J**	0.0294 U
PCB-010	E1668	0.00996 U	0.00695 U	0.00964 U	0.0145 U	0.0458 UJ	0.0844 U
PCB-011	E1668	0.00208 U	0.00141 U	0.00205 U	0.00306 U	0.00127 U	0.0176 U
PCB-012/013	E1668	0.00262 U	0.00181 U	0.00259 U	0.00391 U	**0.00642 J**	0.0227 U
PCB-014	E1668	0.00231 U	0.00160 U	0.00224 U	0.00340 U	**0.00708 J**	0.0200 U
PCB-015	E1668	0.00217 U	0.00149 U	0.00205 U	0.00312 U	**0.00860 J**	0.0192 U
PCB-016	E1668	0.00190 U	0.00145 U	0.00159 U	0.00156 U	**0.152 J**	**0.171 J**
PCB-017	E1668	0.00158 U	0.00120 U	0.00132 U	0.00129 U	**0.282**	**0.233 J**
PCB-018/030	E1668	**0.00161 J**	**0.00261 J**	0.000931 U	0.000897 U	**0.436 J**	**0.362 J**
PCB-019	E1668	**0.00638 J**	**0.00397 J**	0.00189 U	0.00184 U	**0.155 J**	**0.156 J**
PCB-020/028	E1668	**0.00249 J**	**0.00159 J**	**0.00104 J**	**0.00251 J**	**0.0694 J**	**0.0777 J**
PCB-021/033	E1668	**0.00125 J**	**0.00222 J**	0.000544 U	0.000621 U	**0.162 J**	**0.160 J**
PCB-022	E1668	0.000567 U	0.000526 U	0.000406 U	0.000466 U	**0.0161 J**	0.0101 U
PCB-023	E1668	0.000629 U	0.000588 U	0.000466 U	0.000528 U	0.00540 U	0.0114 U
PCB-024	E1668	0.000879 U	0.000690 U	0.000739 U	0.000712 U	0.00265 U	0.00986 U
PCB-025	E1668	**0.00102 J**	**0.00147 J**	0.000294 U	0.000343 U	**0.0646 J**	**0.0546 J**
PCB-026/029	E1668	0.000563 U	0.000508 U	0.000407 U	0.000481 U	**0.0277 J**	**0.0343 J**
PCB-027	E1668	0.000727 U	0.000571 U	0.000612 U	0.000590 U	**0.148 J**	**0.139 J**
PCB-031	E1668	**0.00167 J**	0.000415 U	**0.00113 J**	**0.000578 J**	**0.0542 J**	**0.0651 J**
PCB-032	E1668	**0.00238 J**	**0.00202 J**	0.000578 U	0.000555 U	**0.125 J**	**0.143 J**
PCB-034	E1668	0.000542 U	0.000508 U	0.000386 U	0.000459 U	0.00468 U	0.00986 U
PCB-035	E1668	0.000372 U	0.000348 U	0.000276 U	0.000313 U	0.00319 U	0.00690 U
PCB-036	E1668	0.000276 U	0.000254 U	0.000203 U	0.000234 U	0.00228 U	0.00486 U
PCB-037	E1668	0.000365 U	0.000326 U	0.000255 U	0.000306 U	0.00313 U	0.00645 U
PCB-038	E1668	0.000406 U	0.000378 U	0.000295 U	0.000337 U	0.00345 U	0.00730 U
PCB-039	E1668	0.000322 U	0.000288 U	0.000225 U	0.000270 U	0.00276 U	0.00569 U
PCB-040/041/071	E1668	**0.00256 J**	**0.00472 J**	0.00155 U	0.000336 U	**0.572**	**0.576**
PCB-042	E1668	0.000828 U	0.00223 U	0.00174 U	0.000372 U	**0.241 J**	**0.313**
PCB-043/073	E1668	0.000638 U	0.00175 U	0.00135 U	0.000290 U	**0.211**	**0.169 J**
PCB-044/047/065	E1668	**0.0173 J**	**0.0368 J**	**0.00639 J**	**0.00598 J**	**4.05**	**4.08**
PCB-045/051	E1668	**0.0170 J**	**0.0334 J**	**0.00422 J**	**0.00460 J**	**3.63**	**3.66**
PCB-046	E1668	0.00148 U	0.00417 U	0.00310 U	0.000661 U	**0.335**	**0.282**
PCB-048	E1668	0.000745 U	0.00198 U	0.00157 U	0.000340 U	**0.0959 J**	**0.127**
PCB-049/069	E1668	**0.00721 J**	**0.0122 J**	**0.00202 J**	**0.00229 J**	**1.45**	**1.46**
PCB-050/053	E1668	**0.00866 J**	**0.0192 J**	**0.00221 J**	0.000442 U	**2.20**	**2.24**
PCB-052	E1668	**0.0110 J**	**0.0174**	**0.00338 J**	**0.00390 J**	**2.92**	**2.94**
PCB-054	E1668	**0.00372 J**	**0.00324 J**	**0.00137 J**	**0.00279 J**	**0.434**	**0.382 J**
PCB-055	E1668	0.000235 U	0.000643 U	0.000492 U	0.000102 U	0.00712 U	0.00734 U
PCB-056	E1668	0.000251 U	0.000701 U	0.000534 U	0.000111 U	**0.0315 J**	**0.0292 J**
PCB-057	E1668	0.000243 U	0.000669 U	0.000507 U	0.000105 U	0.00730 U	0.00735 U
PCB-058	E1668	0.000215 U	0.000589 U	0.000449 U	0.0000975 U	0.00657 U	0.00677 U

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-SPIKE-JAR-SPME-2PAC TS-BW1A-SPIKED2 2% PAC	TS-BW1A-SPIKE-JAR-SPME-2PAC-DUP TS-BW1A-SPIKED2 2% PAC	TS-BW1A-SPIKE-JAR-SPME-5PAC TS-BW1A-SPIKED2 5% PAC	TS-BW1A-SPIKE-JAR-SPME-5PAC-DUP TS-BW1A-SPIKED2 5% PAC	TS-BW1A-SPIKE-JAR-SPME-2GAC TS-BW1A-SPIKED2 2% GAC	TS-BW1A-SPIKE-JAR-SPME-2GAC-DUP TS-BW1A-SPIKED2 2% GAC
PCB-059/062/075	E1668	0.000408 U	0.00114 U	0.000875 U	0.000190 U	**0.0926 J**	**0.112 J**
PCB-060	E1668	0.000292 U	0.000816 U	0.000617 U	0.000136 U	**0.0174 J**	0.00918 U
PCB-061/070/074/076	E1668	**0.00308 J**	0.00303 U	0.00174 UJ	0.000876 UJ	**0.254**	**0.276**
PCB-063	E1668	0.000243 U	0.000676 U	0.000515 U	0.000113 U	0.00730 U	0.00735 U
PCB-064	E1668	0.000363 U	0.00103 U	0.000782 U	0.000167 U	**0.103 J**	**0.102 J**
PCB-066	E1668	**0.000604 J**	0.000560 U	0.000428 U	0.0000916 U	**0.0959**	**0.104**
PCB-067	E1668	0.000188 U	0.000526 U	0.000400 U	0.0000845 U	0.00583 U	0.00594 U
PCB-068	E1668	0.000189 U	0.000524 U	0.000396 U	0.0000870 U	**0.0139 J**	0.00597 U
PCB-072	E1668	0.000184 U	0.000518 U	0.000390 U	0.0000870 U	**0.00786 J**	**0.0128 J**
PCB-077	E1668	0.000224 U	0.000632 U	0.000473 U	0.0000979 U	0.00698 U	0.00704 U
PCB-078	E1668	0.000162 U	0.000453 U	0.000343 U	0.0000720 U	0.00500 U	0.00504 U
PCB-079	E1668	0.000110 U	0.000305 U	0.000231 U	0.0000489 U	**0.0121 J**	0.00348 U
PCB-080	E1668	0.000112 U	0.000315 U	0.000238 U	0.0000509 U	0.00350 U	0.00361 U
PCB-081	E1668	0.000192 U	0.000537 U	0.000400 U	0.0000856 U	0.00588 U	0.00592 U
PCB-082	E1668	0.000940 U	0.000955 U	0.000304 U	0.000352 U	**0.130**	0.00449 U
PCB-083/099	E1668	**0.0172 J**	**0.0319 J**	**0.00231 J**	**0.00379 J**	**1.69**	**1.83**
PCB-084	E1668	**0.00939**	**0.0181**	0.000502 U	**0.00207 J**	**1.44**	**1.55**
PCB-085/116/117	E1668	**0.00256 J**	0.000664 U	0.000218 U	0.000251 U	**0.228**	**0.230**
PCB-086/087/097/109/119/125	E1668	**0.0227 J**	**0.0308 J**	**0.00532 J**	**0.00549 J**	**2.83**	**3.05**
PCB-088/091	E1668	**0.0141 J**	**0.0269**	**0.00109 J**	**0.00296 J**	**1.53**	**1.63**
PCB-089	E1668	0.00123 U	0.00126 U	0.000408 U	0.000472 U	0.00396 U	0.00608 U
PCB-090/101/113	E1668	**0.0960**	**0.161**	**0.0217**	**0.0196 J**	**16.7**	**16.8**
PCB-092	E1668	**0.0176 J**	**0.0294 J**	**0.00262 J**	**0.00422 J**	**2.35**	**2.42**
PCB-093/100	E1668	**0.0131 J**	**0.0220**	**0.00193 J**	**0.00197 J**	**1.05**	**1.16**
PCB-094	E1668	**0.00218 J**	**0.00869**	**0.000432 J**	0.000490 U	**0.325 J**	**0.384**
PCB-095	E1668	**0.156 J**	**0.269 J**	**0.0272**	**0.0359**	**27.0**	**27.2**
PCB-096	E1668	**0.00450 J**	**0.00916 J**	0.000618 U	0.000709 U	**0.479**	**0.463**
PCB-098/102	E1668	**0.00350 J**	**0.00324 J**	0.000312 U	0.000367 U	**0.254 J**	**0.200 J**
PCB-103	E1668	**0.00386 J**	**0.00530 J**	0.000305 U	0.000351 U	**0.309**	**0.325**
PCB-104	E1668	0.00167 U	**0.00309 J**	0.000563 U	0.000639 U	**0.129**	0.00829 U
PCB-105	E1668	0.000496 U	0.000372 U	**0.000296 J**	0.000151 U	**0.0560**	**0.0537 J**
PCB-106	E1668	0.000480 U	0.000353 U	0.000167 U	0.000143 U	0.00517 U	0.00659 U
PCB-107	E1668	0.000392 U	0.000304 U	0.000137 U	0.000118 U	**0.0230 J**	**0.0284**
PCB-108/124	E1668	0.000461 U	0.000351 U	0.000166 U	0.000143 U	**0.0235**	**0.0261**
PCB-110/115	E1668	**0.0216 J**	**0.0357 J**	**0.00652 J**	**0.00587 J**	**3.81**	**3.84**
PCB-111	E1668	0.000207 U	0.000211 U	0.0000683 U	0.0000805 U	0.000677 U	0.00102 U
PCB-112	E1668	0.000330 U	0.000343 U	0.000110 U	0.000129 U	0.00110 U	0.00164 U
PCB-114	E1668	0.000523 U	0.000398 U	0.000183 U	**0.000356 J**	0.00560 U	0.00699 U
PCB-118	E1668	**0.00260 J**	**0.00418**	**0.00122 J**	**0.000817 J**	**0.552**	**0.556**
PCB-120	E1668	0.000154 U	**0.000376 J**	0.0000521 U	0.0000593 U	0.000497 U	0.000761 U
PCB-121	E1668	0.000243 U	0.000252 U	0.0000823 U	0.0000952 U	0.000790 U	0.00121 U
PCB-122	E1668	0.000640 U	0.000488 U	0.000225 U	0.000193 U	0.00681 U	0.00878 U
PCB-123	E1668	0.000454 U	0.000352 U	0.000158 U	0.000141 U	**0.00817 J**	**0.00734 J**
PCB-126	E1668	0.000268 U	0.000209 U	0.000102 U	0.0000845 U	0.00306 U	0.00406 U
PCB-127	E1668	0.000251 U	0.000184 U	0.0000888 U	0.0000760 U	0.00270 U	0.00344 U
PCB-128/166	E1668	**0.0455 J**	**0.00775 J**	**0.000950 J**	**0.00129 J**	**0.374**	**0.362**
PCB-129/138/160/163	E1668	**0.243**	**0.337**	**0.0341**	**0.0417**	**13.8**	**13.4**
PCB-130	E1668	**0.00896 J**	**0.0118 J**	0.000549 U	**0.00120 J**	**0.487**	**0.490**
PCB-131	E1668	0.00514 U	0.00523 U	0.000778 U	0.000984 U	**0.188**	**0.202**
PCB-132	E1668	**0.148 J**	**0.200 J**	**0.0177**	**0.0235**	**6.79**	**6.85**

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-SPIKE-JAR-SPME-2PAC TS-BW1A-SPIKED2 2% PAC	TS-BW1A-SPIKE-JAR-SPME-2PAC-DUP TS-BW1A-SPIKED2 2% PAC	TS-BW1A-SPIKE-JAR-SPME-5PAC TS-BW1A-SPIKED2 5% PAC	TS-BW1A-SPIKE-JAR-SPME-5PAC-DUP TS-BW1A-SPIKED2 5% PAC	TS-BW1A-SPIKE-JAR-SPME-2GAC TS-BW1A-SPIKED2 2% GAC	TS-BW1A-SPIKE-JAR-SPME-2GAC-DUP TS-BW1A-SPIKED2 2% GAC
PCB-133	E1668	**0.00353 J**	0.00239 U	0.000363 U	0.000459 U	**0.146**	**0.150**
PCB-134/143	E1668	**0.0287 J**	**0.0393 J**	**0.00272 J**	**0.00406 J**	**1.41**	**1.56**
PCB-135/151	E1668	**0.347**	**0.488**	**0.0384**	**0.0532**	**16.9**	**16.5**
PCB-136	E1668	**0.150**	**0.203**	**0.0143**	**0.0214**	**5.95**	**5.76**
PCB-137	E1668	0.00287 U	0.00291 U	0.000442 U	0.000545 U	0.00640 U	0.00737 U
PCB-139/140	E1668	0.00351 U	0.00357 U	0.000515 U	0.000657 U	**0.0639**	0.00876 U
PCB-141	E1668	**0.0750 J**	**0.102 J**	**0.00922 J**	**0.0130 J**	**3.92**	**3.95**
PCB-142	E1668	0.00561 U	0.00570 U	0.000865 U	0.00110 U	0.0125 U	0.0144 U
PCB-144	E1668	**0.0476**	**0.0611**	**0.00489**	**0.00710**	**2.28**	**2.29**
PCB-145	E1668	0.00127 U	0.000473 U	0.000112 U	**0.000317 J**	0.00222 U	0.00243 U
PCB-146	E1668	**0.0332 J**	**0.0433 J**	**0.00406**	**0.00514**	**1.42**	**1.45**
PCB-147/149	E1668	**0.507**	**0.678**	**0.0576**	**0.0756**	**26.4**	**24.7**
PCB-148	E1668	**0.00130 J**	**0.00101 J**	0.0000591 U	0.0000556 U	**0.0316**	**0.0318 J**
PCB-150	E1668	**0.00423 J**	**0.00531**	**0.000150 J**	0.0000986 U	**0.0906**	**0.0859**
PCB-152	E1668	**0.00335 J**	**0.00380 J**	0.000113 U	0.000108 U	**0.0854**	**0.0927**
PCB-153/168	E1668	**0.193**	**0.256**	**0.0244**	**0.0311**	**10.9**	**10.2**
PCB-154	E1668	**0.00477 J**	**0.00717 J**	**0.000640 J**	**0.00111 J**	**0.176**	**0.171**
PCB-155	E1668	0.000378 U	0.000142 U	0.0000340 U	0.0000314 U	0.000659 U	0.000729 U
PCB-156/157	E1668	**0.00275**	**0.00419**	**0.000725 J**	**0.000794 J**	**0.219**	**0.203**
PCB-158	E1668	**0.0180 J**	**0.0196**	**0.00223**	**0.00265**	**0.699**	**0.668**
PCB-159	E1668	**0.0167**	**0.0146**	**0.00148**	**0.00151**	**0.116**	**0.109**
PCB-161	E1668	0.00102 U	0.00101 U	0.000153 U	0.000189 U	0.00216 U	0.00262 U
PCB-162	E1668	0.000834 U	0.000770 U	0.000125 U	0.000151 U	0.00178 U	0.00203 U
PCB-164	E1668	**0.0101**	**0.0147**	**0.00148**	**0.00151**	**0.540**	**0.532**
PCB-165	E1668	0.00147 U	0.00138 U	0.000221 U	0.000272 U	0.00311 U	0.00360 U
PCB-167	E1668	**0.000783 J**	**0.00116 J**	0.000102 U	0.000134 U	**0.0719**	**0.0732**
PCB-169	E1668	0.00111 U	0.00107 U	0.000163 U	0.000205 U	0.00225 U	0.00277 U
PCB-170	E1668	**0.192**	**0.181**	**0.0198**	**0.0209**	**1.74**	**1.61**
PCB-171/173	E1668	**0.139**	**0.121**	**0.0123**	**0.0125**	**1.12**	**1.01**
PCB-172	E1668	**0.0427**	**0.0402**	**0.00432**	**0.00454**	**0.333**	**0.316**
PCB-174	E1668	**0.587**	**0.516**	**0.0461**	**0.0512**	**4.47**	**4.10**
PCB-175	E1668	**0.0246**	**0.0214**	**0.00199**	**0.00230**	**0.179**	**0.163**
PCB-176	E1668	**0.290**	**0.232**	**0.0213**	**0.0209**	**1.67**	**1.58**
PCB-177	E1668	**0.307**	**0.280**	**0.0262**	**0.0289**	**2.27**	**2.18**
PCB-178	E1668	**0.131**	**0.114**	**0.0106**	**0.0108**	**0.954**	**0.894**
PCB-179	E1668	**0.906**	**0.741**	**0.0681**	**0.0649**	**5.86**	**5.23**
PCB-180/193	E1668	**0.442**	**0.413**	**0.0400**	**0.0470**	**4.09**	**3.70**
PCB-181	E1668	0.000119 U	0.00000880 U	0.0000604 U	0.0000115 U	0.000478 U	0.000399 U
PCB-182	E1668	**0.00206 J**	0.00000687 U	0.0000466 U	0.00000865 U	0.000362 U	0.000305 U
PCB-183/185	E1668	**0.313**	**0.276**	**0.0263**	**0.0285**	**2.52**	**2.37**
PCB-184	E1668	0.000160 U	0.0000115 U	0.0000777 U	0.0000150 U	0.000614 U	0.000512 U
PCB-186	E1668	0.000202 U	0.0000144 U	0.0000988 U	0.0000189 U	0.000760 U	0.000642 U
PCB-187	E1668	**0.553**	**0.500**	**0.0451**	**0.0479**	**4.48**	**4.06**
PCB-188	E1668	**0.00201 J**	0.0000136 U	0.0000903 U	0.0000175 U	0.000747 U	0.000621 U
PCB-189	E1668	**0.00136**	**0.00144**	**0.000180 J**	**0.000193 J**	**0.0165**	**0.0160**
PCB-190	E1668	**0.0253**	**0.0248**	**0.00260**	**0.00326**	**0.268**	**0.251**
PCB-191	E1668	**0.00633**	**0.00603**	**0.000529**	**0.000623**	**0.0606**	**0.0570**
PCB-192	E1668	0.0000413 U	0.00000295 U	0.0000199 U	0.00000385 U	0.000159 U	0.000130 U
PCB-194	E1668	**0.0726 J**	**0.0428 J**	**0.00843**	**0.00663**	**0.131**	**0.130**
PCB-195	E1668	**0.0697 J**	**0.0370 J**	**0.00757**	**0.00569**	**0.107**	**0.112**

Table D-2

Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-SPIKE-JAR-SPME-2PAC TS-BW1A-SPIKED2 2% PAC	TS-BW1A-SPIKE-JAR-SPME-2PAC-DUP TS-BW1A-SPIKED2 2% PAC	TS-BW1A-SPIKE-JAR-SPME-5PAC TS-BW1A-SPIKED2 5% PAC	TS-BW1A-SPIKE-JAR-SPME-5PAC-DUP TS-BW1A-SPIKED2 5% PAC	TS-BW1A-SPIKE-JAR-SPME-2GAC TS-BW1A-SPIKED2 2% GAC	TS-BW1A-SPIKE-JAR-SPME-2GAC-DUP TS-BW1A-SPIKED2 2% GAC
PCB-196	E1668	**0.112 J**	**0.0652 J**	**0.0129**	**0.00942**	**0.190**	**0.188**
PCB-197/200	E1668	**0.120 J**	**0.0605 J**	**0.0124**	**0.00912**	**0.164**	**0.158**
PCB-198/199	E1668	**0.229 J**	**0.135 J**	**0.0242**	**0.0197**	**0.383**	**0.386**
PCB-201	E1668	**0.0546 J**	**0.0274 J**	**0.00562**	**0.00394**	**0.0767**	**0.0703**
PCB-202	E1668	**0.137 J**	**0.0635 J**	**0.0122**	**0.00918**	**0.172**	**0.167**
PCB-203	E1668	**0.109 J**	**0.0652 J**	**0.0122**	**0.0101**	**0.203**	**0.191**
PCB-204	E1668	0.0000468 U	0.00000951 U	0.0000893 U	0.0000330 U	0.000191 U	0.000234 U
PCB-205	E1668	**0.00262**	**0.00172**	**0.000301**	**0.000258**	**0.00550**	**0.00538**
PCB-206	E1668	**0.0178 J**	**0.00842 J**	**0.00380**	**0.00254**	**0.0143**	**0.0144**
PCB-207	E1668	**0.00637 J**	**0.00267 J**	**0.00139 J**	**0.000808 J**	**0.00434**	**0.00410**
PCB-208	E1668	**0.0172 J**	**0.00747 J**	**0.00378 J**	**0.00228 J**	**0.0124**	**0.0125**
PCB-209	E1668	**0.00320 J**	**0.00169 J**	**0.00136 J**	**0.000944 J**	**0.00167 J**	**0.00162 J**
Total PCB Congener (U = 0 max limit)	Calculated	**7.28 J**	**7.28 J**	**0.739 J**	**0.817 J**	**204 J**	**199 J**

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-SPIKE-JAR-SPME-5GAC TS-BW1A-SPIKED2 5% GAC	TS-BW1A-SPIKE-JAR-SPME-5GAC-DUP TS-BW1A-SPIKED2 5% GAC	TS-BW1A-SPIKE-JAR-SPME-5BC TS-BW1A-SPIKED2 5% Biochar	TS-BW1A-SPIKE-JAR-SPME-5BC-DUP TS-BW1A-SPIKED2 5% Biochar	TS-BW1A-SPIKE-JAR-SPME-10BC TS-BW1A-SPIKED2 10% Biochar	TS-BW1A-SPIKE-JAR-SPME-10BC-DUP TS-BW1A-SPIKED2 10% Biochar
PCB Congeners (SPME) (ng/L)							
PCB-001	E1668	0.0482 U	0.0491 U	0.0720 U	0.0824 U	0.0122 U	0.00931 U
PCB-002	E1668	0.0179 U	0.0183 U	0.0278 U	0.0327 U	0.00437 U	0.00329 U
PCB-003	E1668	0.0196 U	0.0216 U	0.0327 U	0.0360 U	0.00437 U	0.00345 U
PCB-004	E1668	0.0517 U	0.0358 U	0.0374 U	**0.112 J**	0.00657 U	0.0133 U
PCB-005	E1668	0.0217 U	0.0157 U	0.0155 U	0.0236 U	0.00261 U	0.00539 U
PCB-006	E1668	0.0143 U	0.0107 U	0.0105 U	0.0158 U	0.00179 U	0.00371 U
PCB-007	E1668	0.0169 U	0.0120 U	0.0118 U	0.0177 U	0.00204 U	0.00422 U
PCB-008	E1668	0.0140 U	0.00973 U	0.00958 U	0.0147 U	**0.00496 J**	0.00348 U
PCB-009	E1668	0.0158 U	0.0115 U	0.0113 U	0.0173 U	0.00201 U	0.00408 U
PCB-010	E1668	0.0459 U	0.0346 U	0.0341 U	0.0501 U	0.00575 U	0.0119 U
PCB-011	E1668	0.00946 U	0.00723 U	0.00712 U	0.0104 U	**0.00239 J**	0.00248 U
PCB-012/013	E1668	0.0123 U	0.00929 U	0.00861 U	0.0135 U	**0.00325 J**	0.00314 U
PCB-014	E1668	0.0109 U	0.00819 U	0.00759 U	0.0119 U	0.00131 U	0.00272 U
PCB-015	E1668	0.0104 U	0.00786 U	0.00728 U	0.0114 U	0.00126 U	0.00261 U
PCB-016	E1668	0.00912 U	0.0118 U	0.0104 U	0.0147 U	0.000785 U	0.00153 U
PCB-017	E1668	**0.0121 J**	0.00975 U	0.00909 U	0.0121 U	0.000650 U	0.00127 U
PCB-018/030	E1668	**0.0509 J**	0.00681 U	0.00619 U	**0.0299 J**	**0.00510 J**	**0.00239 J**
PCB-019	E1668	**0.0742 J**	0.0141 U	0.0131 U	0.0180 U	0.000971 U	0.00181 U
PCB-020/028	E1668	**0.00669 J**	0.00525 U	**0.0132 J**	0.00698 U	0.000919 U	**0.00112 J**
PCB-021/033	E1668	**0.0382 J**	0.00616 U	**0.0128 J**	0.00863 U	**0.00347 J**	**0.00189 J**
PCB-022	E1668	0.00302 U	0.00462 U	0.00329 U	0.00632 U	0.000825 U	0.000661 U
PCB-023	E1668	0.00335 U	0.00525 U	0.00387 U	0.00723 U	0.000919 U	0.000753 U
PCB-024	E1668	0.00449 U	0.00541 U	0.00492 U	0.00697 U	0.000369 U	0.000700 U
PCB-025	E1668	**0.00897 J**	0.00340 U	0.00251 U	0.00482 U	**0.000890 J**	0.000484 U
PCB-026/029	E1668	0.00298 U	**0.00717 J**	**0.00470 J**	0.00642 U	0.000825 U	**0.00101 J**
PCB-027	E1668	**0.0139 J**	0.00448 U	0.00407 U	0.00577 U	**0.000403 J**	0.000579 U
PCB-031	E1668	**0.00647 J**	0.00362 U	**0.00502 J**	0.00503 U	0.000642 U	**0.00112 J**
PCB-032	E1668	0.00331 U	0.00414 U	0.00373 U	**0.00713 J**	**0.00131 J**	**0.00341 J**
PCB-034	E1668	0.00277 U	0.00456 U	0.00321 U	0.00620 U	0.000803 U	0.000645 U
PCB-035	E1668	0.00198 U	0.00311 U	0.00229 U	0.00428 U	0.000559 U	0.000445 U
PCB-036	E1668	0.00148 U	0.00219 U	0.00162 U	0.00310 U	0.000400 U	0.000325 U
PCB-037	E1668	0.00194 U	0.00304 U	**0.00239 J**	0.00404 U	0.000533 U	0.000421 U
PCB-038	E1668	0.00207 U	0.00335 U	0.00243 U	0.00451 U	0.000583 U	0.000470 U
PCB-039	E1668	0.00171 U	0.00255 U	0.00185 U	0.00356 U	0.000470 U	0.000371 U
PCB-040/041/071	E1668	**0.106 J**	**0.0901 J**	**0.0378 J**	0.0181 U	**0.00487 J**	0.00314 U
PCB-042	E1668	**0.0466 J**	**0.0352 J**	**0.0102 J**	0.0208 U	0.00113 U	0.00366 U
PCB-043/073	E1668	0.0150 U	**0.0234 J**	**0.0163 J**	0.0158 U	0.000875 U	0.00285 U
PCB-044/047/065	E1668	**0.812**	**0.683**	**0.248**	**0.248**	**0.0350 J**	**0.0285 J**
PCB-045/051	E1668	**0.840**	**0.656**	**0.281**	**0.309**	**0.0417 J**	**0.0367 J**
PCB-046	E1668	0.0336 U	0.0231 U	0.0101 U	0.0365 U	0.00206 U	0.00649 U
PCB-048	E1668	0.0166 U	0.0115 U	0.00515 U	0.0183 U	0.00102 U	0.00317 U
PCB-049/069	E1668	**0.301**	**0.228**	**0.0930**	**0.0840 J**	**0.0133 J**	**0.0124 J**
PCB-050/053	E1668	**0.431**	**0.301 J**	**0.180 J**	**0.185**	**0.0270 J**	**0.0229 J**
PCB-052	E1668	**0.570**	**0.432**	**0.176**	**0.191**	**0.0261**	**0.0221**
PCB-054	E1668	**0.125 J**	**0.0747 J**	**0.0518 J**	**0.0491 J**	**0.00862 J**	**0.00602 J**
PCB-055	E1668	0.00547 U	0.00363 U	0.00158 U	0.00574 U	0.000321 U	0.00100 U
PCB-056	E1668	0.00589 U	0.00397 U	0.00175 U	0.00624 U	0.000346 U	0.00109 U
PCB-057	E1668	0.00563 U	0.00380 U	0.00169 U	0.00594 U	0.000334 U	0.00103 U
PCB-058	E1668	0.00497 U	0.00335 U	0.00147 U	0.00521 U	0.000290 U	0.000958 U

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-SPIKE-JAR-SPME-5GAC TS-BW1A-SPIKED2 5% GAC	TS-BW1A-SPIKE-JAR-SPME-5GAC-DUP TS-BW1A-SPIKED2 5% GAC	TS-BW1A-SPIKE-JAR-SPME-5BC TS-BW1A-SPIKED2 5% Biochar	TS-BW1A-SPIKE-JAR-SPME-5BC-DUP TS-BW1A-SPIKED2 5% Biochar	TS-BW1A-SPIKE-JAR-SPME-10BC TS-BW1A-SPIKED2 10% Biochar	TS-BW1A-SPIKE-JAR-SPME-10BC-DUP TS-BW1A-SPIKED2 10% Biochar
PCB-059/062/075	E1668	0.00963 U	0.00638 U	0.00279 U	0.0101 U	0.000564 U	0.00175 U
PCB-060	E1668	0.00688 U	0.00456 U	0.00200 U	0.00724 U	0.000403 U	0.00125 U
PCB-061/070/074/076	E1668	**0.0589 J**	**0.0570 J**	**0.0306 J**	0.00775 U	0.00212 UJ	0.00133 U
PCB-063	E1668	0.00570 U	0.00380 U	0.00169 U	0.00602 U	0.000334 U	0.00103 U
PCB-064	E1668	0.00858 U	0.00579 U	0.00256 U	0.00908 U	0.000506 U	0.00164 U
PCB-066	E1668	0.00474 U	0.00315 U	0.00138 U	0.00496 U	0.000279 U	0.000900 U
PCB-067	E1668	0.00439 U	**0.0112 J**	0.00131 U	0.00462 U	0.000259 U	0.000831 U
PCB-068	E1668	0.00442 U	0.00296 U	0.00128 U	0.00462 U	0.000258 U	0.000793 U
PCB-072	E1668	0.00436 U	0.00290 U	0.00128 U	0.00456 U	0.000258 U	0.000793 U
PCB-077	E1668	0.00547 U	0.00357 U	0.00160 U	0.00555 U	0.000316 U	0.00103 U
PCB-078	E1668	0.00381 U	0.00255 U	0.00111 U	0.00402 U	0.000224 U	0.000707 U
PCB-079	E1668	**0.00372 J**	**0.00419 J**	0.000781 U	0.00274 U	0.000150 U	0.000480 U
PCB-080	E1668	0.00267 U	0.00179 U	0.000766 U	0.00280 U	0.000155 U	0.000500 U
PCB-081	E1668	0.00427 U	0.00295 U	0.00128 U	0.00463 U	0.000258 U	0.000792 U
PCB-082	E1668	**0.0570 J**	**0.0700**	**0.0117 J**	**0.0138 J**	**0.00177 J**	0.000831 U
PCB-083/099	E1668	**1.03**	**1.05**	**0.128 J**	**0.225 J**	**0.0781**	**0.0671**
PCB-084	E1668	**0.778**	**0.695**	**0.212 J**	**0.308**	**0.0343**	**0.0290**
PCB-085/116/117	E1668	**0.117**	**0.102 J**	**0.0302 J**	**0.0413 J**	**0.00508 J**	**0.00505 J**
PCB-086/087/097/109/119/125	E1668	**1.48**	**1.38**	**0.304**	**0.427**	**0.0480**	**0.0429**
PCB-088/091	E1668	**0.893**	**0.836**	**0.299**	**0.335**	**0.0403 J**	**0.0355 J**
PCB-089	E1668	0.00631 U	0.00919 U	0.00434 U	0.00787 U	0.000984 U	0.00118 U
PCB-090/101/113	E1668	**8.83**	**8.00**	**1.87**	**2.66**	**0.282**	**0.252**
PCB-092	E1668	**1.30**	**1.23**	**0.327**	**0.463**	**0.0497**	**0.0409 J**
PCB-093/100	E1668	**0.634**	**0.685**	**0.250**	**0.280**	**0.0381**	**0.0281**
PCB-094	E1668	**0.223**	**0.211**	**0.0877**	**0.104**	**0.0134**	**0.0128**
PCB-095	E1668	**13.5**	**12.2**	**3.59**	**5.03**	**0.552**	**0.497**
PCB-096	E1668	**0.230**	**0.235**	**0.114**	**0.0982 J**	**0.0190**	**0.0157 J**
PCB-098/102	E1668	**0.167**	**0.154 J**	**0.0343 J**	**0.0607 J**	**0.00789 J**	**0.00882 J**
PCB-103	E1668	**0.178**	**0.181**	**0.0660**	**0.0793**	**0.00980 J**	**0.00730 J**
PCB-104	E1668	**0.0638 J**	0.0125 U	**0.0343 J**	**0.0515 J**	**0.00741 J**	**0.00565 J**
PCB-105	E1668	**0.0176 J**	**0.0196**	0.00429 U	0.00402 U	0.000583 U	0.000700 U
PCB-106	E1668	0.00327 U	0.00445 U	0.00383 U	0.00356 U	0.000514 U	0.000660 U
PCB-107	E1668	**0.0127**	**0.0127 J**	0.00331 U	0.00284 U	0.000444 U	0.000546 U
PCB-108/124	E1668	**0.0137 J**	**0.0113 J**	0.00378 U	**0.00449 J**	0.000538 U	0.000641 U
PCB-110/115	E1668	**1.87**	**1.71**	**0.318**	**0.460**	**0.0568**	**0.0539**
PCB-111	E1668	0.00108 U	0.00156 U	0.000745 U	0.00134 U	0.000170 U	0.000195 U
PCB-112	E1668	0.00171 U	0.00249 U	0.00118 U	0.00212 U	0.000270 U	0.000311 U
PCB-114	E1668	0.00347 U	0.00463 U	0.00402 U	0.00375 U	0.000557 U	0.000727 U
PCB-118	E1668	**0.217**	**0.189**	**0.0244**	**0.0191 J**	**0.00200 J**	**0.00268 J**
PCB-120	E1668	0.000796 U	**0.0101**	**0.00174 J**	**0.00320 J**	**0.000711 J**	0.000145 U
PCB-121	E1668	0.00128 U	0.00184 U	0.000876 U	0.00156 U	0.000200 U	0.000228 U
PCB-122	E1668	0.00464 U	0.00584 U	0.00520 U	0.00465 U	0.000704 U	0.000880 U
PCB-123	E1668	**0.00442 J**	**0.00564 J**	0.00377 U	0.00333 U	0.000527 U	0.000647 U
PCB-126	E1668	0.00194 U	0.00263 U	0.00259 U	0.00211 U	0.000320 U	0.000374 U
PCB-127	E1668	0.00185 U	0.00232 U	0.00200 U	0.00186 U	0.000283 U	0.000345 U
PCB-128/166	E1668	**0.285**	**0.306**	**0.120**	**0.150**	**0.0193 J**	**0.0181**
PCB-129/138/160/163	E1668	**9.94**	**9.90**	**4.31**	**5.67**	**0.762**	**0.660**
PCB-130	E1668	**0.390**	**0.378 J**	**0.168 J**	**0.215 J**	**0.0290 J**	**0.0256 J**
PCB-131	E1668	**0.173**	**0.177**	**0.0776 J**	**0.109 J**	**0.0114 J**	**0.0112 J**
PCB-132	E1668	**5.26**	**5.36**	**2.73 J**	**3.42 J**	**0.553 J**	**0.468 J**

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-SPIKE-JAR-SPME-5GAC TS-BW1A-SPIKED2 5% GAC	TS-BW1A-SPIKE-JAR-SPME-5GAC-DUP TS-BW1A-SPIKED2 5% GAC	TS-BW1A-SPIKE-JAR-SPME-5BC TS-BW1A-SPIKED2 5% Biochar	TS-BW1A-SPIKE-JAR-SPME-5BC-DUP TS-BW1A-SPIKED2 5% Biochar	TS-BW1A-SPIKE-JAR-SPME-10BC TS-BW1A-SPIKED2 10% Biochar	TS-BW1A-SPIKE-JAR-SPME-10BC-DUP TS-BW1A-SPIKED2 10% Biochar
PCB-133	E1668	**0.120**	**0.121**	**0.0638 J**	**0.0794 J**	**0.0126 J**	**0.0109 J**
PCB-134/143	E1668	**1.15**	**1.24**	**0.595**	**0.728**	**0.124 J**	**0.106**
PCB-135/151	E1668	**12.3**	**12.0**	**6.29**	**8.49**	**1.57**	**1.35**
PCB-136	E1668	**4.35**	**4.21**	**2.76**	**3.45**	**0.751**	**0.647**
PCB-137	E1668	0.00604 U	0.00691 U	0.00937 U	0.00937 U	0.00436 U	0.00314 U
PCB-139/140	E1668	0.00717 U	0.00835 U	0.0110 U	0.0111 U	0.00508 U	0.00362 U
PCB-141	E1668	**2.99**	**3.05**	**1.39 J**	**1.75 J**	**0.260 J**	**0.207 J**
PCB-142	E1668	0.0118 U	0.0135 U	0.0183 U	0.0183 U	0.00853 U	0.00614 U
PCB-144	E1668	**1.69**	**1.64**	**0.848**	**1.13**	**0.188**	**0.165**
PCB-145	E1668	0.00470 U	0.00410 U	**0.0198 J**	0.00174 U	0.000736 U	0.00137 U
PCB-146	E1668	**1.10**	**1.10**	**0.535**	**0.681**	**0.111 J**	**0.0912 J**
PCB-147/149	E1668	**19.4**	**21.1**	**10.4**	**12.9**	**2.22**	**1.84**
PCB-148	E1668	**0.0226**	0.00216 U	**0.0127 J**	0.000929 U	**0.00515**	0.000729 U
PCB-150	E1668	**0.0747**	**0.0653 J**	**0.0423 J**	**0.0589**	**0.0175**	**0.0167**
PCB-152	E1668	**0.0658**	**0.0631**	**0.0561**	**0.0463**	**0.0170**	**0.0119**
PCB-153/168	E1668	**7.73**	**7.57**	**3.50**	**4.57**	**0.677**	**0.535**
PCB-154	E1668	**0.136**	**0.119**	**0.0808**	**0.0830 J**	**0.0179 J**	**0.0175**
PCB-155	E1668	0.00140 U	0.00123 U	0.00147 U	0.000517 U	0.000224 U	0.000422 U
PCB-156/157	E1668	**0.149**	**0.143**	**0.0388**	**0.0520**	**0.00541 J**	**0.00532**
PCB-158	E1668	**0.516**	**0.489**	**0.210**	**0.284**	**0.0439 J**	**0.0372 J**
PCB-159	E1668	**0.108**	**0.0869**	**0.0855**	**0.0856**	**0.0415 J**	**0.0305**
PCB-161	E1668	0.00206 U	0.00243 U	0.00326 U	0.00326 U	0.00151 U	0.00108 U
PCB-162	E1668	0.00170 U	0.00197 U	0.00264 U	0.00264 U	0.00123 U	0.000859 U
PCB-164	E1668	**0.418**	**0.401**	**0.173**	**0.247**	**0.0342 J**	**0.0285**
PCB-165	E1668	0.00300 U	0.00341 U	0.00463 U	0.00463 U	0.00218 U	0.00151 U
PCB-167	E1668	**0.0480**	**0.0534**	**0.0161**	**0.0226**	**0.00217 J**	**0.00205**
PCB-169	E1668	0.00225 U	0.00268 U	0.00364 U	0.00364 U	**0.00236 J**	0.00115 U
PCB-170	E1668	**1.53**	**1.26**	**1.17**	**1.10**	**0.419**	**0.308**
PCB-171/173	E1668	**0.957**	**0.778**	**0.807**	**0.766**	**0.333**	**0.257**
PCB-172	E1668	**0.295**	**0.235**	**0.245**	**0.238**	**0.102**	**0.0712**
PCB-174	E1668	**3.87**	**3.11**	**3.27**	**3.06**	**1.41**	**1.13**
PCB-175	E1668	**0.162**	**0.128**	**0.135**	**0.126**	**0.0561**	**0.0425**
PCB-176	E1668	**1.53**	**1.21**	**1.45**	**1.21**	**0.673**	**0.513**
PCB-177	E1668	**2.06**	**1.66**	**1.74**	**1.63**	**0.731**	**0.546**
PCB-178	E1668	**0.841**	**0.682**	**0.719**	**0.672**	**0.313**	**0.241**
PCB-179	E1668	**5.19**	**4.14**	**4.76**	**4.08**	**2.47**	**1.80**
PCB-180/193	E1668	**3.43**	**2.76**	**2.66**	**2.66**	**1.08**	**0.790**
PCB-181	E1668	0.000224 U	0.000539 U	0.000459 U	0.0000388 U	0.000151 U	0.000277 U
PCB-182	E1668	0.000169 U	0.000421 U	0.000355 U	0.0000305 U	0.000117 U	0.000212 U
PCB-183/185	E1668	**2.19**	**1.80**	**1.86**	**1.78**	**0.786**	**0.586**
PCB-184	E1668	0.000281 U	0.000698 U	0.000599 U	0.0000511 U	0.000192 U	0.000354 U
PCB-186	E1668	0.000368 U	0.000876 U	0.000764 U	0.0000641 U	0.000244 U	0.000446 U
PCB-187	E1668	**3.77**	**3.02**	**3.24**	**3.06**	**1.42**	**1.09**
PCB-188	E1668	0.000337 U	0.000820 U	0.000732 U	0.0000582 U	0.000241 U	0.000434 U
PCB-189	E1668	**0.0136**	**0.0115**	**0.00841 J**	**0.00842**	**0.00267**	**0.00172 J**
PCB-190	E1668	**0.230**	**0.189**	**0.167**	**0.172**	**0.0582**	**0.0428**
PCB-191	E1668	**0.0526**	**0.0453**	**0.0402**	**0.0369**	**0.0136**	**0.0114**
PCB-192	E1668	0.0000732 U	0.000180 U	0.000156 U	0.0000130 U	0.0000513 U	0.0000912 U
PCB-194	E1668	**0.139**	**0.100**	**0.163**	**0.101**	**0.0760**	**0.0555**
PCB-195	E1668	**0.123**	**0.0848**	**0.147 J**	**0.0835 J**	**0.0668**	**0.0479**

Table D-2

Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Chemical	Sample ID Sediment Amendment Method	TS-BW1A-SPIKE-JAR-SPME-5GAC TS-BW1A-SPIKED2 5% GAC	TS-BW1A-SPIKE-JAR-SPME-5GAC-DUP TS-BW1A-SPIKED2 5% GAC	TS-BW1A-SPIKE-JAR-SPME-5BC TS-BW1A-SPIKED2 5% Biochar	TS-BW1A-SPIKE-JAR-SPME-5BC-DUP TS-BW1A-SPIKED2 5% Biochar	TS-BW1A-SPIKE-JAR-SPME-10BC TS-BW1A-SPIKED2 10% Biochar	TS-BW1A-SPIKE-JAR-SPME-10BC-DUP TS-BW1A-SPIKED2 10% Biochar
PCB-196	E1668	**0.203**	**0.134**	**0.250**	**0.151**	**0.117**	**0.0893**
PCB-197/200	E1668	**0.178**	**0.111**	**0.233 J**	**0.130 J**	**0.115**	**0.0896**
PCB-198/199	E1668	**0.419**	**0.274**	**0.490**	**0.308**	**0.243**	**0.183**
PCB-201	E1668	**0.0768**	**0.0498**	**0.109 J**	**0.0561 J**	**0.0520**	**0.0387**
PCB-202	E1668	**0.185**	**0.124**	**0.250 J**	**0.135 J**	**0.127**	**0.0966**
PCB-203	E1668	**0.210**	**0.137**	**0.257**	**0.161**	**0.120**	**0.0926**
PCB-204	E1668	0.000294 U	0.000132 U	0.000206 U	0.0000350 U	0.0000671 U	0.0000964 U
PCB-205	E1668	**0.00598**	**0.00417**	**0.00631 J**	**0.00332 J**	**0.00297**	**0.00222**
PCB-206	E1668	**0.0156**	**0.0105**	**0.0248 J**	**0.00850 J**	**0.0120**	**0.00906**
PCB-207	E1668	**0.00461**	**0.00360**	**0.00654 J**	**0.00273 J**	**0.00404**	**0.00274**
PCB-208	E1668	**0.0136**	**0.00855**	**0.0203 J**	**0.00900 J**	**0.0109**	**0.00816**
PCB-209	E1668	**0.00204**	**0.00117 J**	**0.00389 J**	**0.00174 J**	**0.00189**	**0.00148**
Total PCB Congener (U = 0 max limit)	Calculated	**131 J**	**123 J**	**67.6 J**	**77.9 J**	**19.7 J**	**15.7 J**

Table D-2
Summary of Backwater Sediment Amendment Jar Testing SPME PCB Results

Notes:
Bold: Detected result
J: Estimated value
ng/L: nanograms per liter
SPME: solid-phase microextraction
U: Compound analyzed for, but not detected above detection limit
UJ: Compound analyzed for, but not detected above estimated detection limit

Table D-3

Summary of Sediment Porewater PCB Results for Isotherm and Kinetic Testing

Chemical	Sample ID / Method	TS-PW1	TS-PW2	TS-PW1-SPIKED	TS-PW2-SPIKED
Conventional Parameters (porewater) (mg/L)					
Total suspended solids	SM2540D	4.4 U	4.4 U	--	--
Total organic carbon	SW9060A	**6.9**	**2.8**	--	--
Conventional Parameters, Dissolved (porewater) (mg/L)					
Dissolved organic carbon	SM5310C	**8.3**	**3.1**	--	--
PCB Congeners (porewater) (ng/L)					
PCB-001	E1668	0.22 U	0.16 U	**4.1 J**	**4.3 J**
PCB-002	E1668	0.028 U	0.025 U	**1.0 J**	**0.89 J**
PCB-003	E1668	0.076 U	0.059 U	**1.2 J**	**0.97 J**
PCB-004	E1668	0.25 U	0.19 U	**1700 J**	**1800 J**
PCB-005	E1668	0.018 U	0.0092 UJ	0.051 UJ	0.16 UJ
PCB-006	E1668	0.083 U	0.058 U	**0.79 J**	**0.91 J**
PCB-007	E1668	0.030 U	0.019 U	**0.45 J**	0.15 UJ
PCB-008	E1668	0.32 U	0.22 U	**2.6 J**	**2.8 J**
PCB-009	E1668	0.048 U	0.031 U	**0.68 J**	0.14 UJ
PCB-010	E1668	0.024 U	0.013 U	**2000 J**	**2000 J**
PCB-011	E1668	0.048 U	0.047 U	**2.2 J**	**2.1 J**
PCB-012/013	E1668	0.028 U	0.016 U	**0.36 J**	0.15 UJ
PCB-014	E1668	0.0027 U	0.0012 U	0.049 UJ	0.15 UJ
PCB-015	E1668	0.094 U	0.055 U	**1.2 J**	**1.2 J**
PCB-016	E1668	0.10 U	0.065 U	**1.9 J**	**1.9 J**
PCB-017	E1668	0.15 U	0.087 UJ	**1.1 J**	0.12 UJ
PCB-018/030	E1668	0.00042 U	0.19 U	**4.9 J**	**5.7 J**
PCB-019	E1668	0.085 U	0.052 U	**1500 J**	**1600 J**
PCB-020/028	E1668	0.30 U	0.15 U	**3.3 J**	**3.4 J**
PCB-021/033	E1668	0.21 U	0.096 U	**3.3 J**	**3.4 J**
PCB-022	E1668	0.089 U	0.042 U	**1.1 J**	**1.1 J**
PCB-023	E1668	0.0044 U	0.0013 U	0.076 UJ	0.18 UJ
PCB-024	E1668	0.0090 U	0.0033 UJ	0.023 UJ	0.083 UJ
PCB-025	E1668	0.039 U	0.015 U	**0.34 J**	**0.34 J**
PCB-026/029	E1668	0.14 U	0.048 U	**6.1 J**	**6.0 J**
PCB-027	E1668	0.030 U	0.018 U	0.022 UJ	0.083 UJ
PCB-031	E1668	0.42 U	0.17 U	**5.0 J**	**4.9 J**
PCB-032	E1668	0.099 U	0.053 U	**0.81 J**	0.077 UJ
PCB-034	E1668	0.0047 U	0.0014 U	0.079 UJ	0.19 UJ
PCB-035	E1668	0.021 U	0.0060 U	**0.55 J**	**0.69 J**
PCB-036	E1668	0.0037 U	0.0011 U	0.062 UJ	0.15 UJ
PCB-037	E1668	0.064 U	0.025 U	**0.83 J**	**0.96 J**
PCB-038	E1668	0.0041 U	0.0012 U	0.072 UJ	0.17 UJ
PCB-039	E1668	0.0042 U	0.0013 U	0.074 UJ	0.17 UJ
PCB-040/041/071	E1668	0.56 U	0.17 U	**5.0 J**	**5.7 J**
PCB-042	E1668	0.27 U	0.074 U	**2.7 J**	**3.3 J**
PCB-043/073	E1668	0.00047 U	0.047 U	**3.3 J**	0.59 UJ
PCB-044/047/065	E1668	3.5 U	0.96 U	**370 J**	**400 J**
PCB-045/051	E1668	**0.41**	0.17 U	**2.5 J**	0.74 UJ
PCB-046	E1668	0.052 U	0.021 U	0.45 UJ	0.86 UJ
PCB-048	E1668	0.22 U	0.077 U	**1.9 J**	**2.0 J**
PCB-049/069	E1668	1.9 U	0.54 U	**13 J**	**16 J**
PCB-050/053	E1668	0.37 U	0.14 U	**1.9 J**	0.70 UJ
PCB-052	E1668	9.2 U	2.6 U	**340 J**	**390 J**
PCB-054	E1668	**0.051**	**0.031 J**	**390 J**	**430 J**
PCB-055	E1668	0.00036 U	0.0096 UJ	0.24 UJ	0.45 UJ

Table D-3
Summary of Sediment Porewater PCB Results for Isotherm and Kinetic Testing

Chemical	Sample ID / Method	TS-PW1	TS-PW2	TS-PW1-SPIKED	TS-PW2-SPIKED
PCB-056	E1668	0.47 U	0.10 U	**6.1 J**	**6.8 J**
PCB-057	E1668	0.00040 U	0.00051 U	0.28 UJ	0.53 UJ
PCB-058	E1668	0.00036 U	0.00046 U	0.25 UJ	0.47 UJ
PCB-059/062/075	E1668	0.10 U	0.033 U	0.30 UJ	0.57 UJ
PCB-060	E1668	0.24 U	0.059 U	**3.0 J**	**3.4 J**
PCB-061/070/074/076	E1668	5.3 U	1.1 U	**420 J**	**450 J**
PCB-063	E1668	0.067 U	0.018 U	0.28 UJ	0.54 UJ
PCB-064	E1668	0.97 U	0.24 U	**8.9 J**	**9.8 J**
PCB-066	E1668	1.3 U	0.28 U	**14 J**	**15 J**
PCB-067	E1668	0.071 U	0.023 U	0.23 UJ	0.44 UJ
PCB-068	E1668	0.00039 U	**0.0065 J**	0.27 UJ	0.50 UJ
PCB-072	E1668	0.00039 U	**0.0049 J**	0.26 UJ	0.50 UJ
PCB-077	E1668	0.049 U	0.017 U	0.32 UJ	0.59 UJ
PCB-078	E1668	0.00041 U	0.00052 U	0.28 UJ	0.52 UJ
PCB-079	E1668	0.057 U	0.014 U	**7.7 J**	**8.2 J**
PCB-080	E1668	0.00037 U	0.00047 U	0.25 UJ	0.48 UJ
PCB-081	E1668	0.00047 U	0.00061 U	0.32 UJ	0.60 UJ
PCB-082	E1668	0.93 U	0.21 U	**13 J**	**15 J**
PCB-083/099	E1668	4.4 U	1.1 U	**61 J**	**63 J**
PCB-084	E1668	3.3 U	0.82 U	**34 J**	**37 J**
PCB-085/116/117	E1668	1.4 U	0.31 U	**20 J**	**21 J**
PCB-086/087/097/109/119/125	E1668	2.3 U	1.7 U	**230 J**	**230 J**
PCB-088/091	E1668	1.5 U	0.34 U	**15 J**	**15 J**
PCB-089	E1668	0.086 U	0.025 U	**1.0 J**	0.32 UJ
PCB-090/101/113	E1668	13 U	5.7 U	**190 J**	**200 J**
PCB-092	E1668	2.2 U	0.88 U	**28 J**	**31 J**
PCB-093/100	E1668	**0.37**	0.13 U	**0.82 J**	0.33 UJ
PCB-094	E1668	0.0012 U	0.014 UJ	**0.54 J**	0.38 UJ
PCB-095	E1668	14 U	5.5 U	**140 J**	**150 J**
PCB-096	E1668	0.071 U	0.021 U	**0.50 J**	0.22 UJ
PCB-098/102	E1668	0.31 U	0.082 UJ	**2.7 J**	**2.6 J**
PCB-103	E1668	0.086 U	0.028 U	**0.48 J**	0.32 UJ
PCB-104	E1668	0.00081 U	**0.012 J**	**0.28 J**	0.25 UJ
PCB-105	E1668	2.2 U	0.50 U	**45 J**	**45 J**
PCB-106	E1668	0.012 U	0.0057 U	0.26 UJ	0.51 UJ
PCB-107	E1668	0.41 U	0.078 U	**7.1 J**	**5.6 J**
PCB-108/124	E1668	0.27 U	0.068 U	**5.3 J**	**5.5 J**
PCB-110/115	E1668	9.0 U	2.9 U	**150 J**	**160 J**
PCB-111	E1668	0.00072 U	0.0011 U	0.044 UJ	0.23 UJ
PCB-112	E1668	0.00060 U	0.00091 U	0.036 UJ	0.19 UJ
PCB-114	E1668	0.17 U	0.036 UJ	**3.2 J**	**2.8 J**
PCB-118	E1668	5.9 U	1.6 U	**120 J**	**120 J**
PCB-120	E1668	0.00058 U	0.00089 U	0.035 UJ	0.18 UJ
PCB-121	E1668	0.00065 U	0.0010 U	0.040 UJ	0.21 UJ
PCB-122	E1668	0.088 U	0.020 U	**1.6 J**	**1.1 J**
PCB-123	E1668	0.013 U	0.019 UJ	**1.8 J**	**1.7 J**
PCB-126	E1668	0.014 U	0.0055 U	0.30 UJ	0.57 UJ
PCB-127	E1668	0.012 U	0.0056 U	0.27 UJ	0.51 UJ
PCB-128/166	E1668	1.1 U	0.59 U	**38 J**	**33 J**
PCB-129/138/160/163	E1668	9.3 U	6.3 U	**360 J**	**280 J**
PCB-130	E1668	0.58 U	0.32 U	**17 J**	**16 J**
PCB-131	E1668	0.18 U	0.066 UJ	**3.7 J**	**3.5 J**

Table D-3
Summary of Sediment Porewater PCB Results for Isotherm and Kinetic Testing

Chemical	Sample ID / Method	TS-PW1	TS-PW2	TS-PW1-SPIKED	TS-PW2-SPIKED
PCB-132	E1668	3.7 U	2.4 U	**94 J**	**78 J**
PCB-133	E1668	0.13 U	0.084 U	**3.1 J**	**2.7 J**
PCB-134/143	E1668	0.0097 U	0.47 U	**14 J**	**13 J**
PCB-135/151	E1668	4.9 U	4.1 U	**120 J**	**120 J**
PCB-136	E1668	2.5 U	1.7 U	**43 J**	**42 J**
PCB-137	E1668	0.42 U	0.11 UJ	**10 J**	**7.5 J**
PCB-139/140	E1668	0.17 U	0.040 UJ	**3.2 J**	**3.0 J**
PCB-141	E1668	2.4 U	2.1 U	**80 J**	**69 J**
PCB-142	E1668	0.0095 U	0.0096 U	0.51 UJ	0.71 UJ
PCB-144	E1668	0.77 U	0.62 U	**21 J**	**21 J**
PCB-145	E1668	0.015 U	0.00035 U	**0.14 J**	0.10 UJ
PCB-146	E1668	1.3 U	0.92 U	**39 J**	**32 J**
PCB-147/149	E1668	9.1 U	7.0 U	**250 J**	**210 J**
PCB-148	E1668	**0.021 J**	**0.0062 J**	**0.12 J**	0.14 UJ
PCB-150	E1668	0.019 U	0.0052 UJ	**0.15 J**	0.11 UJ
PCB-152	E1668	0.014 U	0.0041 UJ	**0.15 J**	**0.18 J**
PCB-153/168	E1668	7.7 U	6.2 U	**290 J**	**240 J**
PCB-154	E1668	**0.12**	**0.038 J**	**1.5 J**	**1.3 J**
PCB-155	E1668	**0.0088 J**	**0.0034 J**	0.022 UJ	0.12 UJ
PCB-156/157	E1668	0.86 U	0.44 U	**40 J**	**33 J**
PCB-158	E1668	1.0 U	0.68 U	**37 J**	**32 J**
PCB-159	E1668	0.082 U	0.11 U	**5.7 J**	**4.9 J**
PCB-161	E1668	0.0058 U	0.0059 U	0.30 UJ	0.42 UJ
PCB-162	E1668	0.0060 U	0.0061 U	0.33 UJ	0.47 UJ
PCB-164	E1668	0.64 U	0.46 U	**22 J**	**20 J**
PCB-165	E1668	0.0072 U	0.0073 U	0.39 UJ	0.56 UJ
PCB-167	E1668	0.25 U	0.16 U	**12 J**	**11 J**
PCB-169	E1668	0.0050 U	0.0055 U	0.33 UJ	0.46 UJ
PCB-170	E1668	1.7 U	1.9 U	**140 J**	**120 J**
PCB-171/173	E1668	0.69 U	0.78 U	**42 J**	**36 J**
PCB-172	E1668	0.35 U	0.40 U	**25 J**	**21 J**
PCB-174	E1668	2.3 U	2.7 U	**140 J**	**120 J**
PCB-175	E1668	0.12 U	0.13 U	**6.7 J**	**5.8 J**
PCB-176	E1668	0.46 U	0.48 U	**22 J**	**18 J**
PCB-177	E1668	1.2 U	1.4 U	**73 J**	**61 J**
PCB-178	E1668	0.53 U	0.58 U	**27 J**	**23 J**
PCB-179	E1668	1.3 U	1.4 U	**53 J**	**44 J**
PCB-180/193	E1668	4.1 U	4.8 U	**330 J**	**260 J**
PCB-181	E1668	0.00024 U	0.00052 U	**1.1 J**	**1.1 J**
PCB-182	E1668	**0.020 J**	0.00049 U	0.00054 UJ	0.089 UJ
PCB-183/185	E1668	1.7 U	2.0 U	**100 J**	**85 J**
PCB-184	E1668	0.00019 U	0.00042 U	0.00043 UJ	0.071 UJ
PCB-186	E1668	0.00017 U	0.00037 U	0.00039 UJ	0.064 UJ
PCB-187	E1668	2.6 U	3.0 U	**150 J**	**120 J**
PCB-188	E1668	0.00019 U	**0.0020 J**	0.00046 UJ	0.078 UJ
PCB-189	E1668	0.056 U	0.063 U	**5.8 J**	**4.6 J**
PCB-190	E1668	0.36 U	0.41 U	**30 J**	**26 J**
PCB-191	E1668	0.097 U	0.11 U	**7.1 J**	**6.2 J**
PCB-192	E1668	0.00018 U	0.00040 U	0.00045 UJ	0.075 UJ
PCB-194	E1668	0.46 U	0.64 U	**61 J**	**46 J**
PCB-195	E1668	0.28 U	0.34 U	**25 J**	**19 J**
PCB-196	E1668	0.43 U	0.55 U	**40 J**	**30 J**

Table D-3

Summary of Sediment Porewater PCB Results for Isotherm and Kinetic Testing

Chemical	Sample ID / Method	TS-PW1	TS-PW2	TS-PW1-SPIKED	TS-PW2-SPIKED
PCB-197/200	E1668	0.038 UJ	0.24 U	**13 J**	**11 J**
PCB-198/199	E1668	0.76 U	0.99 U	**70 J**	**52 J**
PCB-201	E1668	0.17 U	0.21 U	**12 J**	**8.3 J**
PCB-202	E1668	0.21 U	0.25 U	**13 J**	**10 J**
PCB-203	E1668	0.48 U	0.58 U	**43 J**	**32 J**
PCB-204	E1668	**0.0023 J**	0.00043 U	0.0048 UJ	0.15 UJ
PCB-205	E1668	0.031 U	0.042 U	**3.6 J**	**2.6 J**
PCB-206	E1668	0.13 U	0.19 U	**21 J**	**16 J**
PCB-207	E1668	0.031 U	0.038 U	**2.5 J**	**2.0 J**
PCB-208	E1668	0.055 U	0.071 U	**5.9 J**	**4.9 J**
PCB-209	E1668	0.019 U	0.025 U	**3.6 J**	**2.7 J**
Total PCB Congener (U = 0 max limit)	Calculated	**1.0 J**	**0.10 J**	**11000 J**	**11000 J**

Notes:

Bold: Detected result

J: Estimated value

mg/L: milligrams per liter

ng/L: nanograms per liter

U: Compound analyzed for, but not detected above detection limit

UJ: Compound analyzed for, but not detected above estimated detection limit

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW1-CTRL-2-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-3-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-4-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-5-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-6-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-7-20251203 TS-PW1 Control
PCB Congeners (SPME) (ng/samp)							
PCB-001	E1668	**0.0052 J**	**0.013 J**	**0.028 J**	**0.087 J**	**0.17 J**	**0.27 J**
PCB-002	E1668	0.0036 UJ	0.0049 UJ	0.014 UJ	0.017 UJ	0.031 UJ	0.075 UJ
PCB-003	E1668	**0.0054 J**	**0.012 J**	0.016 UJ	0.019 UJ	**0.054 J**	**0.14 J**
PCB-004	E1668	**19 J**	**44 J**	**94 J**	**170 J**	**340 J**	**670 J**
PCB-005	E1668	0.0092 UJ	0.012 UJ	0.024 UJ	0.039 UJ	0.059 UJ	0.12 UJ
PCB-006	E1668	0.0075 UJ	0.0096 UJ	0.020 UJ	0.032 UJ	**0.39 J**	0.095 UJ
PCB-007	E1668	0.0088 UJ	0.011 UJ	0.023 UJ	0.037 UJ	0.056 UJ	0.11 UJ
PCB-008	E1668	**0.057 J**	**0.12 J**	**0.29 J**	**0.51 J**	**1.1 J**	**2.0 J**
PCB-009	E1668	0.0083 UJ	0.011 UJ	0.022 UJ	0.035 UJ	0.053 UJ	0.11 UJ
PCB-010	E1668	**20 J**	**48 J**	**110 J**	**200 J**	**370 J**	**770 J**
PCB-011	E1668	0.0080 UJ	0.010 UJ	0.021 UJ	0.034 UJ	0.051 UJ	0.10 UJ
PCB-012/013	E1668	0.0090 UJ	0.011 UJ	0.024 UJ	0.038 UJ	0.057 UJ	0.11 UJ
PCB-014	E1668	0.0089 UJ	0.011 UJ	0.023 UJ	0.038 UJ	0.057 UJ	0.11 UJ
PCB-015	E1668	**0.039 J**	**0.061 J**	0.024 UJ	0.038 UJ	0.058 UJ	0.12 UJ
PCB-016	E1668	**0.047 J**	**0.10 J**	0.019 UJ	**0.42 J**	**1.0 J**	**1.5 J**
PCB-017	E1668	**0.054 J**	**0.078 J**	0.019 UJ	0.023 UJ	**0.75 J**	**1.5 J**
PCB-018/030	E1668	**0.10 J**	**0.25 J**	**0.49 J**	**0.80 J**	**2.1 J**	**3.1 J**
PCB-019	E1668	**25 J**	**61 J**	**130 J**	**230 J**	**470 J**	**940 J**
PCB-020/028	E1668	**0.092 J**	**0.17 J**	**0.38 J**	**0.63 J**	**1.4 J**	**2.4 J**
PCB-021/033	E1668	**0.053 J**	**0.099 J**	**0.23 J**	**0.36 J**	**0.94 J**	**1.3 J**
PCB-022	E1668	**0.028 J**	**0.056 J**	**0.089 J**	**0.18 J**	**0.50 J**	**0.69 J**
PCB-023	E1668	0.016 UJ	0.017 UJ	0.042 UJ	0.11 UJ	0.18 UJ	0.27 UJ
PCB-024	E1668	0.0022 UJ	0.0033 UJ	0.013 UJ	0.016 UJ	0.038 UJ	0.050 UJ
PCB-025	E1668	0.013 UJ	**0.021 J**	**0.042 J**	0.089 UJ	**0.15 J**	0.22 UJ
PCB-026/029	E1668	**0.45 J**	**0.78 J**	**1.3 J**	**2.6 J**	**4.2 J**	**7.6 J**
PCB-027	E1668	0.0022 UJ	**0.054 J**	0.013 UJ	0.016 UJ	0.038 UJ	0.050 UJ
PCB-031	E1668	**0.14 J**	**0.32 J**	**0.60 J**	**1.1 J**	**2.5 J**	**3.9 J**
PCB-032	E1668	**0.033 J**	**0.070 J**	0.012 UJ	**0.25 J**	**0.56 J**	**1.0 J**
PCB-034	E1668	0.016 UJ	0.017 UJ	0.043 UJ	0.11 UJ	0.18 UJ	0.28 UJ
PCB-035	E1668	0.016 UJ	0.017 UJ	0.042 UJ	0.11 UJ	0.18 UJ	0.27 UJ
PCB-036	E1668	0.013 UJ	0.014 UJ	0.034 UJ	0.090 UJ	0.14 UJ	0.22 UJ
PCB-037	E1668	**0.080 J**	0.016 UJ	0.041 UJ	0.11 UJ	**1.1 J**	0.26 UJ
PCB-038	E1668	0.015 UJ	0.016 UJ	0.039 UJ	0.10 UJ	0.17 UJ	0.25 UJ
PCB-039	E1668	0.015 UJ	0.016 UJ	0.041 UJ	0.11 UJ	0.17 UJ	0.26 UJ
PCB-040/041/071	E1668	**0.17 J**	**0.45 J**	**0.90 J**	**2.1 J**	**4.1 J**	**7.3 J**
PCB-042	E1668	0.042 UJ	0.060 UJ	0.14 UJ	0.19 UJ	0.53 UJ	**4.8 J**
PCB-043/073	E1668	0.032 UJ	**0.79 J**	**1.5 J**	**3.0 J**	**2.9 J**	0.48 UJ
PCB-044/047/065	E1668	**32 J**	**76 J**	**160 J**	**290 J**	**530 J**	**1100 J**
PCB-045/051	E1668	**0.085 J**	**0.11 J**	**0.27 J**	**0.52 J**	**1.1 J**	**1.9 J**
PCB-046	E1668	**0.075 J**	**0.10 J**	0.16 UJ	**0.28 J**	0.58 UJ	**1.2 J**
PCB-048	E1668	0.039 UJ	0.056 UJ	0.13 UJ	0.18 UJ	0.49 UJ	0.60 UJ
PCB-049/069	E1668	**0.65 J**	**1.4 J**	**2.8 J**	**6.0 J**	**12 J**	**21 J**
PCB-050/053	E1668	**0.096 J**	**0.17 J**	**0.29 J**	**0.51 J**	**1.4 J**	**2.4 J**
PCB-052	E1668	**64 J**	**110 J**	**200 J**	**400 J**	**640 J**	**1200 J**
PCB-054	E1668	**76 J**	**150 J**	**250 J**	**450 J**	**820 J**	**1600 J**
PCB-055	E1668	0.025 UJ	0.035 UJ	0.084 UJ	0.11 UJ	0.31 UJ	0.37 UJ
PCB-056	E1668	**0.26 J**	**0.60 J**	**1.3 J**	**2.1 J**	**4.7 J**	**8.4 J**
PCB-057	E1668	0.029 UJ	0.041 UJ	0.098 UJ	0.13 UJ	0.36 UJ	0.44 UJ
PCB-058	E1668	0.025 UJ	0.036 UJ	0.087 UJ	0.12 UJ	0.32 UJ	0.39 UJ

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW1-CTRL-2-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-3-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-4-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-5-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-6-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-7-20251203 TS-PW1 Control
PCB-059/062/075	E1668	0.031 UJ	0.044 UJ	0.11 UJ	0.14 UJ	0.39 UJ	0.47 UJ
PCB-060	E1668	0.031 UJ	0.044 UJ	**0.70 J**	0.14 UJ	**3.5 J**	**4.2 J**
PCB-061/070/074/076	E1668	**87 J**	**310 J**	**410 J**	**530 J**	**1000 J**	**1900 J**
PCB-063	E1668	0.029 UJ	0.042 UJ	0.099 UJ	0.13 UJ	0.37 UJ	0.45 UJ
PCB-064	E1668	**0.26 J**	**0.67 J**	**1.4 J**	**2.8 J**	**6.1 J**	**9.4 J**
PCB-066	E1668	**0.56 J**	**2.0 J**	**3.9 J**	**5.2 J**	**13 J**	**26 J**
PCB-067	E1668	0.024 UJ	0.034 UJ	0.082 UJ	0.11 UJ	0.30 UJ	0.37 UJ
PCB-068	E1668	0.027 UJ	0.039 UJ	0.093 UJ	0.13 UJ	0.34 UJ	0.42 UJ
PCB-072	E1668	0.027 UJ	0.038 UJ	0.092 UJ	0.12 UJ	0.34 UJ	0.41 UJ
PCB-077	E1668	0.032 UJ	0.045 UJ	0.11 UJ	0.15 UJ	0.39 UJ	0.49 UJ
PCB-078	E1668	0.028 UJ	0.041 UJ	0.097 UJ	0.13 UJ	0.36 UJ	0.43 UJ
PCB-079	E1668	**3.7 J**	**5.0 J**	**7.8 J**	**12 J**	**16 J**	**23 J**
PCB-080	E1668	0.026 UJ	0.037 UJ	0.089 UJ	0.12 UJ	0.33 UJ	0.40 UJ
PCB-081	E1668	0.033 UJ	0.047 UJ	0.11 UJ	0.15 UJ	0.42 UJ	0.50 UJ
PCB-082	E1668	**0.49 J**	**1.2 J**	**2.7 J**	**4.3 J**	**11 J**	**18 J**
PCB-083/099	E1668	**2.4 J**	**5.5 J**	**12 J**	**23 J**	**51 J**	**82 J**
PCB-084	E1668	**1.2 J**	**2.9 J**	**6.1 J**	**12 J**	**30 J**	**48 J**
PCB-085/116/117	E1668	**0.75 J**	**1.9 J**	**3.9 J**	**7.2 J**	**18 J**	**26 J**
PCB-086/087/097/109/119/125	E1668	**96 J**	**140 J**	**210 J**	**310 J**	**450 J**	**650 J**
PCB-088/091	E1668	**0.57 J**	**1.4 J**	**2.8 J**	**5.3 J**	**13 J**	**21 J**
PCB-089	E1668	0.0069 UJ	**0.088 J**	**0.20 J**	**0.32 J**	**0.75 J**	**1.3 J**
PCB-090/101/113	E1668	**160 J**	**240 J**	**370 J**	**500 J**	**750 J**	**1200 J**
PCB-092	E1668	**1.1 J**	**2.5 J**	**5.2 J**	**10 J**	**25 J**	**38 J**
PCB-093/100	E1668	**0.043 J**	**0.10 J**	**0.28 J**	**0.34 J**	0.086 UJ	0.19 UJ
PCB-094	E1668	**0.11 J**	**0.13 J**	**0.27 J**	**0.36 J**	**0.55 J**	**1.3 J**
PCB-095	E1668	**5.2 J**	**12 J**	**25 J**	**50 J**	**120 J**	**190 J**
PCB-096	E1668	**0.018 J**	**0.049 J**	**0.094 J**	**0.18 J**	**0.55 J**	**0.78 J**
PCB-098/102	E1668	**0.088 J**	**0.23 J**	**0.38 J**	**0.87 J**	**2.4 J**	**3.5 J**
PCB-103	E1668	0.0070 UJ	**0.044 J**	**0.12 J**	**0.15 J**	**0.40 J**	**0.65 J**
PCB-104	E1668	**0.057 J**	**0.12 J**	**0.24 J**	**0.35 J**	**0.61 J**	**1.2 J**
PCB-105	E1668	**1.5 J**	**3.3 J**	**7.0 J**	**13 J**	**32 J**	**53 J**
PCB-106	E1668	**0.11 J**	**0.14 J**	**0.27 J**	**0.30 J**	0.27 UJ	**0.52 J**
PCB-107	E1668	**0.22 J**	**0.46 J**	**1.1 J**	**1.9 J**	**4.7 J**	**6.9 J**
PCB-108/124	E1668	**0.17 J**	**0.41 J**	**0.84 J**	**1.7 J**	**3.8 J**	**5.9 J**
PCB-110/115	E1668	**4.8 J**	**12 J**	**24 J**	**48 J**	**110 J**	**180 J**
PCB-111	E1668	0.0050 UJ	0.012 UJ	0.028 UJ	0.038 UJ	0.060 UJ	0.13 UJ
PCB-112	E1668	0.0042 UJ	0.010 UJ	0.023 UJ	0.032 UJ	0.050 UJ	0.11 UJ
PCB-114	E1668	**0.10 J**	**0.26 J**	**0.62 J**	**0.90 J**	**2.3 J**	**3.3 J**
PCB-118	E1668	**4.0 J**	**9.0 J**	**19 J**	**36 J**	**84 J**	**130 J**
PCB-120	E1668	0.0040 UJ	0.0095 UJ	0.022 UJ	0.030 UJ	0.048 UJ	0.10 UJ
PCB-121	E1668	0.0046 UJ	0.011 UJ	0.025 UJ	0.035 UJ	0.055 UJ	0.12 UJ
PCB-122	E1668	0.033 UJ	**0.13 J**	**0.26 J**	**0.70 J**	**1.4 J**	**2.4 J**
PCB-123	E1668	**0.066 J**	**0.18 J**	**0.26 J**	**0.47 J**	**1.3 J**	**2.4 J**
PCB-126	E1668	0.024 UJ	0.033 UJ	0.069 UJ	0.093 UJ	0.28 UJ	0.50 UJ
PCB-127	E1668	0.025 UJ	0.034 UJ	0.072 UJ	0.094 UJ	0.27 UJ	0.51 UJ
PCB-128/166	E1668	**0.70 J**	**1.7 J**	**3.5 J**	**6.9 J**	**17 J**	**27 J**
PCB-129/138/160/163	E1668	**7.6 J**	**18 J**	**38 J**	**73 J**	**180 J**	**280 J**
PCB-130	E1668	**0.41 J**	**0.90 J**	**2.0 J**	**4.0 J**	**10 J**	**15 J**
PCB-131	E1668	**0.11 J**	**0.20 J**	**0.49 J**	**0.94 J**	**2.2 J**	**3.1 J**
PCB-132	E1668	**2.1 J**	**5.5 J**	**12 J**	**23 J**	**53 J**	**86 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW1-CTRL-2-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-3-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-4-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-5-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-6-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-7-20251203 TS-PW1 Control
PCB-133	E1668	**0.075 J**	**0.19 J**	**0.44 J**	**0.87 J**	**1.7 J**	**2.8 J**
PCB-134/143	E1668	**0.33 J**	**0.94 J**	**2.0 J**	**3.9 J**	**9.4 J**	**15 J**
PCB-135/151	E1668	**3.4 J**	**8.3 J**	**17 J**	**35 J**	**84 J**	**130 J**
PCB-136	E1668	**1.4 J**	**3.4 J**	**6.8 J**	**14 J**	**34 J**	**51 J**
PCB-137	E1668	**0.27 J**	**0.57 J**	**1.1 J**	**2.2 J**	**5.7 J**	**5.6 J**
PCB-139/140	E1668	**0.055 J**	**0.15 J**	**0.43 J**	**0.69 J**	**1.8 J**	**2.8 J**
PCB-141	E1668	**1.9 J**	**4.4 J**	**9.5 J**	**18 J**	**45 J**	**68 J**
PCB-142	E1668	0.022 UJ	0.037 UJ	0.11 UJ	0.11 UJ	0.29 UJ	0.42 UJ
PCB-144	E1668	**0.54 J**	**1.4 J**	**3.1 J**	**5.8 J**	**15 J**	**22 J**
PCB-145	E1668	0.0047 UJ	0.0066 UJ	0.0018 UJ	0.013 UJ	0.016 UJ	0.072 UJ
PCB-146	E1668	**1.1 J**	**2.6 J**	**4.9 J**	**9.2 J**	**21 J**	**33 J**
PCB-147/149	E1668	**5.7 J**	**14 J**	**30 J**	**62 J**	**140 J**	**230 J**
PCB-148	E1668	0.0068 UJ	0.0094 UJ	0.0025 UJ	0.019 UJ	0.023 UJ	0.10 UJ
PCB-150	E1668	0.0050 UJ	0.0069 UJ	0.0019 UJ	0.014 UJ	0.017 UJ	0.075 UJ
PCB-152	E1668	0.0044 UJ	**0.010 J**	0.0016 UJ	**0.056 J**	**0.092 J**	**0.073 J**
PCB-153/168	E1668	**6.0 J**	**14 J**	**30 J**	**59 J**	**140 J**	**220 J**
PCB-154	E1668	**0.034 J**	**0.11 J**	**0.13 J**	**0.30 J**	**0.98 J**	**1.5 J**
PCB-155	E1668	0.0055 UJ	0.0075 UJ	0.0020 UJ	0.016 UJ	0.018 UJ	0.082 UJ
PCB-156/157	E1668	**0.83 J**	**2.0 J**	**4.3 J**	**8.2 J**	**20 J**	**31 J**
PCB-158	E1668	**0.80 J**	**1.9 J**	**4.1 J**	**7.7 J**	**19 J**	**30 J**
PCB-159	E1668	**0.13 J**	**0.23 J**	**0.58 J**	**1.0 J**	**2.7 J**	**4.6 J**
PCB-161	E1668	0.013 UJ	0.022 UJ	0.063 UJ	0.067 UJ	0.17 UJ	0.25 UJ
PCB-162	E1668	0.015 UJ	**0.038 J**	0.071 UJ	0.075 UJ	**0.43 J**	0.27 UJ
PCB-164	E1668	**0.44 J**	**1.2 J**	**2.5 J**	**4.9 J**	**11 J**	**19 J**
PCB-165	E1668	0.017 UJ	0.029 UJ	0.084 UJ	0.089 UJ	0.23 UJ	0.33 UJ
PCB-167	E1668	**0.23 J**	**0.59 J**	**1.2 J**	**2.2 J**	**5.3 J**	**8.7 J**
PCB-169	E1668	0.012 UJ	0.020 UJ	0.061 UJ	**0.23 J**	**0.36 J**	0.23 UJ
PCB-170	E1668	**2.6 J**	**6.4 J**	**14 J**	**27 J**	**60 J**	**97 J**
PCB-171/173	E1668	**0.89 J**	**2.1 J**	**4.4 J**	**8.4 J**	**19 J**	**32 J**
PCB-172	E1668	**0.58 J**	**1.2 J**	**2.3 J**	**4.9 J**	**11 J**	**18 J**
PCB-174	E1668	**2.9 J**	**6.5 J**	**14 J**	**28 J**	**64 J**	**100 J**
PCB-175	E1668	**2.4 J**	**3.6 J**	**5.7 J**	**8.1 J**	**12 J**	**19 J**
PCB-176	E1668	**0.40 J**	**0.98 J**	**2.1 J**	**4.3 J**	**9.9 J**	**16 J**
PCB-177	E1668	**1.6 J**	**3.5 J**	**7.3 J**	**15 J**	**34 J**	**54 J**
PCB-178	E1668	**0.62 J**	**1.3 J**	**2.6 J**	**5.3 J**	**13 J**	**21 J**
PCB-179	E1668	**1.1 J**	**2.7 J**	**5.5 J**	**12 J**	**26 J**	**43 J**
PCB-180/193	E1668	**6.5 J**	**14 J**	**30 J**	**60 J**	**140 J**	**220 J**
PCB-181	E1668	0.00048 UJ	0.0071 UJ	0.0028 UJ	0.0082 UJ	0.0027 UJ	**0.89 J**
PCB-182	E1668	0.00044 UJ	0.0066 UJ	0.0026 UJ	0.0076 UJ	0.0025 UJ	**0.72 J**
PCB-183/185	E1668	**2.0 J**	**4.8 J**	**10 J**	**21 J**	**45 J**	**75 J**
PCB-184	E1668	0.00036 UJ	0.0053 UJ	0.0021 UJ	0.0061 UJ	0.0020 UJ	0.0071 UJ
PCB-186	E1668	0.00032 UJ	0.0048 UJ	0.0019 UJ	0.0055 UJ	0.0018 UJ	0.0064 UJ
PCB-187	E1668	**3.0 J**	**6.9 J**	**15 J**	**29 J**	**66 J**	**110 J**
PCB-188	E1668	0.00040 UJ	0.0059 UJ	0.0022 UJ	0.0067 UJ	0.0022 UJ	0.0078 UJ
PCB-189	E1668	**0.099 J**	**0.23 J**	**0.52 J**	**0.89 J**	**2.2 J**	**3.6 J**
PCB-190	E1668	**0.66 J**	**1.4 J**	**2.9 J**	**6.0 J**	**14 J**	**22 J**
PCB-191	E1668	**0.11 J**	**0.36 J**	**0.72 J**	**1.5 J**	**3.3 J**	**5.0 J**
PCB-192	E1668	0.00037 UJ	0.0056 UJ	0.0022 UJ	0.0064 UJ	0.0021 UJ	0.0074 UJ
PCB-194	E1668	**0.99 J**	**2.4 J**	**4.8 J**	**9.2 J**	**21 J**	**35 J**
PCB-195	E1668	**0.39 J**	**1.0 J**	**2.1 J**	**3.9 J**	**8.7 J**	**15 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW1-CTRL-2-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-3-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-4-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-5-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-6-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-7-20251203 TS-PW1 Control
PCB-196	E1668	**0.74 J**	**1.7 J**	**3.5 J**	**6.5 J**	**17 J**	**27 J**
PCB-197	E1668	--	--	--	--	--	--
PCB-197/200	E1668	**0.25 J**	**0.61 J**	**1.1 J**	**2.3 J**	**5.3 J**	**8.6 J**
PCB-198/199	E1668	**1.3 J**	**3.1 J**	**5.9 J**	**11 J**	**28 J**	**45 J**
PCB-200	E1668	--	--	--	--	--	--
PCB-201	E1668	**0.21 J**	**0.48 J**	**0.98 J**	**1.9 J**	**4.8 J**	**7.5 J**
PCB-202	E1668	**0.22 J**	**0.57 J**	**1.1 J**	**2.2 J**	**5.1 J**	**8.3 J**
PCB-203	E1668	**0.72 J**	**1.9 J**	**3.6 J**	**6.6 J**	**17 J**	**26 J**
PCB-204	E1668	0.0027 UJ	0.0055 UJ	0.0073 UJ	0.010 UJ	0.027 UJ	0.035 UJ
PCB-205	E1668	**0.055 J**	**0.14 J**	**0.26 J**	**0.57 J**	**1.3 J**	**2.3 J**
PCB-206	E1668	**0.31 J**	**0.61 J**	**1.3 J**	**2.2 J**	**5.4 J**	**11 J**
PCB-207	E1668	0.014 UJ	**0.069 J**	**0.13 J**	**0.27 J**	**0.65 J**	**1.0 J**
PCB-208	E1668	**0.092 J**	**0.18 J**	**0.38 J**	**0.67 J**	**1.6 J**	**2.6 J**
PCB-209	E1668	**0.032 J**	**0.039 J**	**0.081 J**	**0.13 J**	**0.39 J**	**0.63 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW1-CTRL-8-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-9-20251203 TS-PW1 Control	Isotherm-PW1-GAC-2-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-3-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-4-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-5-20251203 TS-PW1 GAC
PCB Congeners (SPME) (ng/samp)							
PCB-001	E1668	**0.29 J**	**0.68 J**	0.0027 UJ	0.0019 UJ	0.0025 UJ	0.0018 UJ
PCB-002	E1668	0.082 UJ	0.21 UJ	0.0031 UJ	0.0022 UJ	0.0028 UJ	0.0021 UJ
PCB-003	E1668	**0.16 J**	**0.33 J**	0.0034 UJ	0.0023 UJ	0.0029 UJ	0.0023 UJ
PCB-004	E1668	**800 J**	**1500 J**	0.0036 UJ	0.0029 UJ	**0.011 J**	**0.033 J**
PCB-005	E1668	0.18 UJ	0.17 UJ	0.0032 UJ	0.0027 UJ	0.0055 UJ	0.0043 UJ
PCB-006	E1668	0.14 UJ	0.14 UJ	0.0026 UJ	0.0022 UJ	0.0045 UJ	0.0036 UJ
PCB-007	E1668	0.17 UJ	0.16 UJ	0.0031 UJ	0.0025 UJ	0.0052 UJ	0.0042 UJ
PCB-008	E1668	**2.5 J**	**4.9 J**	0.0025 UJ	0.0021 UJ	0.0043 UJ	0.0034 UJ
PCB-009	E1668	0.16 UJ	0.15 UJ	0.0029 UJ	0.0024 UJ	0.0049 UJ	0.0039 UJ
PCB-010	E1668	**960 J**	**1800 J**	0.0032 UJ	0.0026 UJ	**0.015 J**	**0.033 J**
PCB-011	E1668	0.15 UJ	0.15 UJ	0.0028 UJ	0.0023 UJ	0.0047 UJ	0.0038 UJ
PCB-012/013	E1668	0.17 UJ	0.16 UJ	0.0031 UJ	0.0026 UJ	0.0053 UJ	0.0042 UJ
PCB-014	E1668	0.17 UJ	0.16 UJ	0.0031 UJ	0.0026 UJ	0.0053 UJ	0.0042 UJ
PCB-015	E1668	0.18 UJ	**2.0 J**	0.0030 UJ	0.0025 UJ	0.0052 UJ	0.0040 UJ
PCB-016	E1668	**1.7 J**	**3.4 J**	0.00054 UJ	0.00043 UJ	0.0022 UJ	0.0019 UJ
PCB-017	E1668	**1.4 J**	**2.9 J**	0.00054 UJ	0.00044 UJ	0.0022 UJ	0.0020 UJ
PCB-018/030	E1668	**4.6 J**	**7.3 J**	0.00038 UJ	0.00030 UJ	0.0015 UJ	0.0014 UJ
PCB-019	E1668	**1100 J**	**2100 J**	0.00049 UJ	**0.0076 J**	**0.022 J**	**0.093 J**
PCB-020/028	E1668	**3.3 J**	**5.8 J**	0.0035 UJ	0.0050 UJ	0.0054 UJ	0.0035 UJ
PCB-021/033	E1668	**2.2 J**	**3.8 J**	0.0034 UJ	0.0049 UJ	0.0053 UJ	0.0034 UJ
PCB-022	E1668	**1.1 J**	**1.7 J**	0.0032 UJ	0.0046 UJ	0.0050 UJ	0.0032 UJ
PCB-023	E1668	0.30 UJ	0.56 UJ	0.0036 UJ	0.0051 UJ	0.0055 UJ	0.0036 UJ
PCB-024	E1668	0.10 UJ	**0.24 J**	0.00037 UJ	0.00030 UJ	0.0015 UJ	0.0013 UJ
PCB-025	E1668	**0.31 J**	**0.62 J**	0.0029 UJ	0.0041 UJ	0.0045 UJ	0.0029 UJ
PCB-026/029	E1668	**15 J**	**24 J**	0.0038 UJ	0.0054 UJ	0.0059 UJ	0.0038 UJ
PCB-027	E1668	0.10 UJ	**1.7 J**	0.00037 UJ	0.00030 UJ	0.0015 UJ	0.0013 UJ
PCB-031	E1668	**5.9 J**	**11 J**	0.0031 UJ	0.0044 UJ	0.0047 UJ	0.0031 UJ
PCB-032	E1668	**1.1 J**	**2.6 J**	0.00035 UJ	0.00028 UJ	0.0014 UJ	0.0012 UJ
PCB-034	E1668	0.31 UJ	0.59 UJ	0.0037 UJ	0.0053 UJ	0.0057 UJ	0.0037 UJ
PCB-035	E1668	0.31 UJ	0.57 UJ	0.0036 UJ	0.0051 UJ	0.0055 UJ	0.0036 UJ
PCB-036	E1668	0.25 UJ	0.46 UJ	0.0029 UJ	0.0042 UJ	0.0045 UJ	0.0029 UJ
PCB-037	E1668	0.30 UJ	0.55 UJ	0.0035 UJ	0.0050 UJ	0.0054 UJ	0.0035 UJ
PCB-038	E1668	0.29 UJ	0.53 UJ	0.0034 UJ	0.0048 UJ	0.0052 UJ	0.0034 UJ
PCB-039	E1668	0.30 UJ	0.55 UJ	0.0035 UJ	0.0050 UJ	0.0054 UJ	0.0035 UJ
PCB-040/041/071	E1668	**9.5 J**	**17 J**	0.0085 UJ	0.010 UJ	0.0078 UJ	0.010 UJ
PCB-042	E1668	0.90 UJ	2.0 UJ	0.0091 UJ	0.011 UJ	0.0084 UJ	0.011 UJ
PCB-043/073	E1668	**15 J**	**29 J**	0.0069 UJ	0.0084 UJ	0.0063 UJ	0.0084 UJ
PCB-044/047/065	E1668	**1400 J**	**2800 J**	**0.037 J**	0.0093 UJ	**0.062 J**	**0.29 J**
PCB-045/051	E1668	**3.0 J**	**5.6 J**	0.0088 UJ	0.011 UJ	0.0081 UJ	0.011 UJ
PCB-046	E1668	**1.8 J**	**3.2 J**	0.010 UJ	0.012 UJ	0.0093 UJ	0.012 UJ
PCB-048	E1668	0.84 UJ	1.8 UJ	0.0085 UJ	0.010 UJ	0.0078 UJ	0.010 UJ
PCB-049/069	E1668	**28 J**	**62 J**	0.0071 UJ	0.0086 UJ	0.0065 UJ	0.0086 UJ
PCB-050/053	E1668	**2.8 J**	**5.6 J**	0.0082 UJ	0.010 UJ	0.0075 UJ	0.010 UJ
PCB-052	E1668	**2300 J**	**4300 J**	**0.096 J**	**0.015 J**	**0.099 J**	**0.51 J**
PCB-054	E1668	**2200 J**	**5200 J**	**0.31 J**	**0.17 J**	**0.45 J**	**1.7 J**
PCB-055	E1668	0.53 UJ	1.2 UJ	0.0054 UJ	0.0065 UJ	0.0049 UJ	0.0065 UJ
PCB-056	E1668	**11 J**	**25 J**	0.0058 UJ	0.0071 UJ	0.0053 UJ	0.0071 UJ
PCB-057	E1668	0.62 UJ	1.4 UJ	0.0063 UJ	0.0077 UJ	0.0058 UJ	0.0076 UJ
PCB-058	E1668	0.55 UJ	1.2 UJ	0.0056 UJ	0.0068 UJ	0.0051 UJ	0.0067 UJ

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW1-CTRL-8-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-9-20251203 TS-PW1 Control	Isotherm-PW1-GAC-2-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-3-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-4-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-5-20251203 TS-PW1 GAC
PCB-059/062/075	E1668	0.67 UJ	1.5 UJ	0.0068 UJ	0.0083 UJ	0.0062 UJ	0.0082 UJ
PCB-060	E1668	**5.1 J**	**15 J**	0.0068 UJ	0.0082 UJ	0.0062 UJ	0.0082 UJ
PCB-061/070/074/076	E1668	**3200 J**	**7600 J**	**0.13 J**	**0.032 J**	**0.14 J**	**0.35 J**
PCB-063	E1668	0.63 UJ	1.4 UJ	0.0064 UJ	0.0077 UJ	0.0058 UJ	0.0077 UJ
PCB-064	E1668	**14 J**	**28 J**	0.0061 UJ	0.0074 UJ	0.0056 UJ	0.0074 UJ
PCB-066	E1668	**31 J**	**71 J**	0.0056 UJ	0.0069 UJ	0.0052 UJ	0.0068 UJ
PCB-067	E1668	0.52 UJ	1.1 UJ	0.0053 UJ	0.0064 UJ	0.0048 UJ	0.0064 UJ
PCB-068	E1668	0.59 UJ	1.3 UJ	0.0059 UJ	0.0072 UJ	0.0054 UJ	0.0072 UJ
PCB-072	E1668	0.58 UJ	1.3 UJ	0.0059 UJ	0.0071 UJ	0.0054 UJ	0.0071 UJ
PCB-077	E1668	0.67 UJ	1.5 UJ	0.0070 UJ	0.0084 UJ	0.0064 UJ	0.0085 UJ
PCB-078	E1668	0.61 UJ	1.3 UJ	0.0062 UJ	0.0075 UJ	0.0057 UJ	0.0075 UJ
PCB-079	E1668	**34 J**	**49 J**	**0.12 J**	**0.012 J**	**0.11 J**	**0.32 J**
PCB-080	E1668	0.56 UJ	1.2 UJ	0.0057 UJ	0.0069 UJ	0.0052 UJ	0.0069 UJ
PCB-081	E1668	0.72 UJ	1.5 UJ	0.0071 UJ	0.0087 UJ	0.0066 UJ	0.0086 UJ
PCB-082	E1668	**22 J**	**47 J**	0.0072 UJ	0.0037 UJ	0.015 UJ	**0.14 J**
PCB-083/099	E1668	**100 J**	**210 J**	**0.088 J**	0.0037 UJ	**0.15 J**	**0.77 J**
PCB-084	E1668	**59 J**	**120 J**	0.0085 UJ	0.0043 UJ	**0.029 J**	**0.35 J**
PCB-085/116/117	E1668	**35 J**	**69 J**	0.0063 UJ	**0.0074 J**	0.013 UJ	**0.20 J**
PCB-086/087/097/109/119/125	E1668	**880 J**	**1300 J**	**3.6 J**	**0.47 J**	**3.1 J**	**9.8 J**
PCB-088/091	E1668	**27 J**	**60 J**	0.0076 UJ	0.0039 UJ	0.016 UJ	0.037 UJ
PCB-089	E1668	**1.6 J**	**3.4 J**	0.0074 UJ	0.0037 UJ	0.015 UJ	0.036 UJ
PCB-090/101/113	E1668	**1500 J**	**2300 J**	**6.8 J**	**0.76 J**	**6.3 J**	**18 J**
PCB-092	E1668	**47 J**	**99 J**	**0.052 J**	0.0040 UJ	**0.070 J**	**0.37 J**
PCB-093/100	E1668	**1.6 J**	**2.9 J**	0.0076 UJ	0.0039 UJ	0.016 UJ	0.037 UJ
PCB-094	E1668	**2.0 J**	**2.7 J**	0.0087 UJ	0.0044 UJ	0.018 UJ	0.042 UJ
PCB-095	E1668	**240 J**	**500 J**	**0.11 J**	**0.010 J**	**0.22 J**	**1.4 J**
PCB-096	E1668	**0.94 J**	**1.6 J**	0.0052 UJ	0.0026 UJ	0.011 UJ	0.025 UJ
PCB-098/102	E1668	**4.7 J**	**9.0 J**	0.0064 UJ	0.0033 UJ	0.013 UJ	**0.033 J**
PCB-103	E1668	**0.78 J**	**1.3 J**	0.0075 UJ	0.0038 UJ	0.015 UJ	0.036 UJ
PCB-104	E1668	**1.9 J**	**4.0 J**	0.0058 UJ	0.0030 UJ	0.012 UJ	**0.031 J**
PCB-105	E1668	**66 J**	**140 J**	0.013 UJ	0.017 UJ	**0.041 J**	**0.12 J**
PCB-106	E1668	**0.80 J**	**1.0 J**	0.012 UJ	0.016 UJ	0.013 UJ	0.0079 UJ
PCB-107	E1668	**9.1 J**	**19 J**	0.011 UJ	0.015 UJ	0.013 UJ	**0.033 J**
PCB-108/124	E1668	**7.4 J**	**16 J**	0.014 UJ	0.018 UJ	0.016 UJ	0.0092 UJ
PCB-110/115	E1668	**230 J**	**480 J**	**0.12 J**	**0.023 J**	**0.16 J**	**0.87 J**
PCB-111	E1668	0.17 UJ	0.15 UJ	0.0053 UJ	0.0027 UJ	0.011 UJ	0.026 UJ
PCB-112	E1668	0.14 UJ	0.12 UJ	**0.0090 J**	0.0023 UJ	0.0091 UJ	0.022 UJ
PCB-114	E1668	**4.5 J**	**10 J**	0.012 UJ	0.018 UJ	0.015 UJ	0.0087 UJ
PCB-118	E1668	**170 J**	**380 J**	**0.061 J**	0.017 UJ	**0.18 J**	**0.53 J**
PCB-120	E1668	0.13 UJ	0.12 UJ	0.0042 UJ	0.0021 UJ	0.0087 UJ	0.020 UJ
PCB-121	E1668	0.15 UJ	0.14 UJ	0.0049 UJ	0.0025 UJ	0.010 UJ	0.024 UJ
PCB-122	E1668	**3.0 J**	**5.9 J**	0.016 UJ	0.021 UJ	0.018 UJ	0.011 UJ
PCB-123	E1668	**2.3 J**	**5.4 J**	0.015 UJ	0.019 UJ	0.016 UJ	0.0095 UJ
PCB-126	E1668	0.53 UJ	0.87 UJ	0.012 UJ	0.015 UJ	0.013 UJ	0.0078 UJ
PCB-127	E1668	0.58 UJ	0.87 UJ	0.012 UJ	0.016 UJ	0.014 UJ	0.0080 UJ
PCB-128/166	E1668	**43 J**	**75 J**	**0.15 J**	**0.063 J**	**0.29 J**	**0.55 J**
PCB-129/138/160/163	E1668	**370 J**	**780 J**	**0.85 J**	**0.71 J**	**3.1 J**	**6.5 J**
PCB-130	E1668	**20 J**	**43 J**	**0.058 J**	0.0043 UJ	**0.15 J**	**0.45 J**
PCB-131	E1668	**4.8 J**	**10 J**	0.016 UJ	0.0039 UJ	0.027 UJ	**0.068 J**
PCB-132	E1668	**120 J**	**240 J**	**0.30 J**	**0.23 J**	**1.2 J**	**2.7 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW1-CTRL-8-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-9-20251203 TS-PW1 Control	Isotherm-PW1-GAC-2-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-3-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-4-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-5-20251203 TS-PW1 GAC
PCB-133	E1668	**3.7 J**	**7.6 J**	0.013 UJ	**0.0063 J**	**0.046 J**	**0.12 J**
PCB-134/143	E1668	**20 J**	**43 J**	**0.022 J**	**0.034 J**	**0.21 J**	**0.41 J**
PCB-135/151	E1668	**160 J**	**340 J**	**0.51 J**	**0.40 J**	**1.7 J**	**4.4 J**
PCB-136	E1668	**68 J**	**140 J**	**0.24 J**	**0.23 J**	**0.93 J**	**2.3 J**
PCB-137	E1668	**10 J**	**22 J**	**0.065 J**	**0.035 J**	**0.12 J**	**0.24 J**
PCB-139/140	E1668	**3.6 J**	**7.4 J**	0.013 UJ	0.0031 UJ	0.022 UJ	**0.070 J**
PCB-141	E1668	**91 J**	**190 J**	**0.19 J**	**0.22 J**	**0.86 J**	**1.9 J**
PCB-142	E1668	0.66 UJ	0.87 UJ	0.015 UJ	0.0037 UJ	0.026 UJ	0.039 UJ
PCB-144	E1668	**29 J**	**58 J**	**0.027 J**	**0.034 J**	**0.34 J**	**0.61 J**
PCB-145	E1668	0.13 UJ	0.061 UJ	0.00094 UJ	0.00089 UJ	0.00036 UJ	0.0012 UJ
PCB-146	E1668	**44 J**	**89 J**	**0.15 J**	**0.088 J**	**0.46 J**	**1.0 J**
PCB-147/149	E1668	**300 J**	**630 J**	**0.81 J**	**0.73 J**	**3.3 J**	**7.7 J**
PCB-148	E1668	0.18 UJ	0.088 UJ	0.0013 UJ	0.0013 UJ	0.00051 UJ	0.0017 UJ
PCB-150	E1668	0.13 UJ	0.064 UJ	0.00099 UJ	0.00094 UJ	0.00038 UJ	0.0012 UJ
PCB-152	E1668	**0.18 J**	**0.29 J**	0.00087 UJ	0.00082 UJ	0.00033 UJ	0.0011 UJ
PCB-153/168	E1668	**290 J**	**620 J**	**0.81 J**	**0.62 J**	**2.8 J**	**6.1 J**
PCB-154	E1668	**1.8 J**	**2.9 J**	0.0012 UJ	0.0012 UJ	**0.027 J**	**0.054 J**
PCB-155	E1668	0.15 UJ	0.070 UJ	0.0011 UJ	0.0010 UJ	0.00041 UJ	0.0013 UJ
PCB-156/157	E1668	**43 J**	**84 J**	**0.092 J**	**0.049 J**	**0.28 J**	**0.54 J**
PCB-158	E1668	**40 J**	**84 J**	**0.065 J**	**0.055 J**	**0.33 J**	**0.70 J**
PCB-159	E1668	**4.7 J**	**11 J**	**0.016 J**	**0.015 J**	0.015 UJ	**0.051 J**
PCB-161	E1668	0.39 UJ	0.51 UJ	0.0089 UJ	0.0022 UJ	0.015 UJ	0.023 UJ
PCB-162	E1668	0.43 UJ	**1.2 J**	0.0099 UJ	0.0024 UJ	0.017 UJ	0.026 UJ
PCB-164	E1668	**24 J**	**51 J**	**0.047 J**	**0.023 J**	**0.16 J**	**0.44 J**
PCB-165	E1668	0.51 UJ	0.68 UJ	0.012 UJ	0.0029 UJ	0.020 UJ	0.030 UJ
PCB-167	E1668	**12 J**	**25 J**	0.0096 UJ	**0.010 J**	**0.11 J**	**0.16 J**
PCB-169	E1668	0.35 UJ	0.49 UJ	0.0082 UJ	0.0019 UJ	0.015 UJ	0.020 UJ
PCB-170	E1668	**130 J**	**270 J**	**0.71 J**	**0.87 J**	**2.9 J**	**5.5 J**
PCB-171/173	E1668	**42 J**	**84 J**	**0.19 J**	**0.38 J**	**1.1 J**	**2.1 J**
PCB-172	E1668	**24 J**	**47 J**	**0.20 J**	**0.088 J**	**0.63 J**	**1.3 J**
PCB-174	E1668	**140 J**	**270 J**	**0.81 J**	**1.3 J**	**3.5 J**	**6.4 J**
PCB-175	E1668	**24 J**	**36 J**	**0.71 J**	**0.52 J**	**1.4 J**	**1.9 J**
PCB-176	E1668	**20 J**	**42 J**	**0.17 J**	**0.20 J**	**0.60 J**	**1.1 J**
PCB-177	E1668	**73 J**	**150 J**	**0.36 J**	**0.58 J**	**1.9 J**	**3.6 J**
PCB-178	E1668	**27 J**	**53 J**	**0.13 J**	**0.20 J**	**0.64 J**	**1.2 J**
PCB-179	E1668	**54 J**	**110 J**	**0.35 J**	**0.63 J**	**1.6 J**	**2.9 J**
PCB-180/193	E1668	**290 J**	**590 J**	**1.8 J**	**2.0 J**	**7.0 J**	**13 J**
PCB-181	E1668	0.018 UJ	**1.7 J**	0.00045 UJ	0.00055 UJ	0.00038 UJ	0.00075 UJ
PCB-182	E1668	0.016 UJ	0.051 UJ	0.00042 UJ	0.00052 UJ	0.00036 UJ	0.00070 UJ
PCB-183/185	E1668	**96 J**	**200 J**	**0.62 J**	**0.76 J**	**2.6 J**	**4.8 J**
PCB-184	E1668	0.013 UJ	0.041 UJ	0.00034 UJ	0.00041 UJ	0.00029 UJ	0.00056 UJ
PCB-186	E1668	0.012 UJ	0.037 UJ	0.00031 UJ	0.00037 UJ	0.00026 UJ	0.00051 UJ
PCB-187	E1668	**140 J**	**280 J**	**1.2 J**	**1.4 J**	**3.9 J**	**8.7 J**
PCB-188	E1668	0.015 UJ	0.046 UJ	0.00039 UJ	0.00048 UJ	0.00032 UJ	0.00066 UJ
PCB-189	E1668	**4.8 J**	**9.0 J**	**0.016 J**	0.013 UJ	**0.10 J**	**0.17 J**
PCB-190	E1668	**30 J**	**61 J**	**0.15 J**	**0.19 J**	**0.55 J**	**1.3 J**
PCB-191	E1668	**7.1 J**	**14 J**	**0.048 J**	**0.021 J**	**0.16 J**	**0.29 J**
PCB-192	E1668	0.014 UJ	0.043 UJ	0.00036 UJ	0.00044 UJ	0.00030 UJ	0.00059 UJ
PCB-194	E1668	**43 J**	**92 J**	**0.55 J**	**0.43 J**	**1.7 J**	**3.2 J**
PCB-195	E1668	**19 J**	**40 J**	**0.17 J**	**0.17 J**	**0.76 J**	**1.3 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW1-CTRL-8-20251203 TS-PW1 Control	Isotherm-PW1-CTRL-9-20251203 TS-PW1 Control	Isotherm-PW1-GAC-2-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-3-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-4-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-5-20251203 TS-PW1 GAC
PCB-196	E1668	**35 J**	**70 J**	**0.41 J**	**0.39 J**	**1.4 J**	**3.0 J**
PCB-197	E1668	--	--	--	--	--	--
PCB-197/200	E1668	**12 J**	**23 J**	**0.18 J**	**0.18 J**	**0.64 J**	**0.98 J**
PCB-198/199	E1668	**62 J**	**130 J**	**0.62 J**	**0.82 J**	**2.5 J**	**5.1 J**
PCB-200	E1668	--	--	--	--	--	--
PCB-201	E1668	**9.1 J**	**20 J**	**0.094 J**	**0.12 J**	**0.46 J**	**0.91 J**
PCB-202	E1668	**11 J**	**23 J**	**0.12 J**	**0.14 J**	**0.48 J**	**0.94 J**
PCB-203	E1668	**36 J**	**76 J**	**0.62 J**	**0.59 J**	**1.7 J**	**3.5 J**
PCB-204	E1668	0.020 UJ	0.053 UJ	0.0012 UJ	0.0028 UJ	0.010 UJ	0.0076 UJ
PCB-205	E1668	**2.4 J**	**5.6 J**	**0.027 J**	0.0034 UJ	**0.11 J**	**0.19 J**
PCB-206	E1668	**12 J**	**22 J**	**0.21 J**	**0.20 J**	**0.71 J**	**1.2 J**
PCB-207	E1668	**1.0 J**	**2.8 J**	0.024 UJ	0.013 UJ	**0.073 J**	**0.13 J**
PCB-208	E1668	**3.1 J**	**7.0 J**	0.024 UJ	**0.097 J**	**0.20 J**	**0.42 J**
PCB-209	E1668	**0.93 J**	**2.0 J**	**0.012 J**	**0.020 J**	**0.071 J**	**0.15 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW1-GAC-6-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-7-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-8-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-9-20251203 TS-PW1 GAC	Isotherm-PW1-PAC-2-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-3-20251203 TS-PW1 PAC
PCB Congeners (SPME) (ng/samp)							
PCB-001	E1668	0.0072 UJ	0.0080 UJ	0.0015 UJ	0.0017 UJ	0.0015 UJ	0.0017 UJ
PCB-002	E1668	0.0081 UJ	0.0095 UJ	0.0017 UJ	0.0020 UJ	0.0018 UJ	0.0020 UJ
PCB-003	E1668	0.0085 UJ	0.011 UJ	0.0018 UJ	0.0022 UJ	0.0019 UJ	0.0021 UJ
PCB-004	E1668	**4.4 J**	**11 J**	**0.32 J**	**0.42 J**	0.0017 UJ	0.0042 UJ
PCB-005	E1668	0.032 UJ	0.052 UJ	0.0066 UJ	0.0078 UJ	0.0016 UJ	0.0038 UJ
PCB-006	E1668	0.027 UJ	0.043 UJ	0.0054 UJ	0.0064 UJ	0.0013 UJ	0.0031 UJ
PCB-007	E1668	0.031 UJ	0.050 UJ	0.0063 UJ	0.0075 UJ	0.0015 UJ	0.0036 UJ
PCB-008	E1668	0.026 UJ	0.041 UJ	0.0052 UJ	0.0062 UJ	0.0013 UJ	0.0030 UJ
PCB-009	E1668	0.029 UJ	0.047 UJ	0.0060 UJ	0.0071 UJ	0.0015 UJ	0.0034 UJ
PCB-010	E1668	**4.2 J**	**12 J**	**0.31 J**	**0.43 J**	0.0016 UJ	0.0037 UJ
PCB-011	E1668	0.028 UJ	0.045 UJ	0.0058 UJ	0.0068 UJ	0.0014 UJ	0.0033 UJ
PCB-012/013	E1668	0.032 UJ	0.051 UJ	0.0065 UJ	0.0076 UJ	0.0016 UJ	0.0037 UJ
PCB-014	E1668	0.031 UJ	0.051 UJ	0.0064 UJ	0.0076 UJ	0.0016 UJ	0.0037 UJ
PCB-015	E1668	0.032 UJ	0.051 UJ	0.0062 UJ	0.0073 UJ	0.0015 UJ	0.0036 UJ
PCB-016	E1668	0.013 UJ	0.016 UJ	0.0031 UJ	0.0032 UJ	0.0024 UJ	0.00052 UJ
PCB-017	E1668	0.013 UJ	0.016 UJ	0.0032 UJ	0.0033 UJ	0.0024 UJ	0.00052 UJ
PCB-018/030	E1668	**0.16 J**	**0.31 J**	**0.0052 J**	0.0023 UJ	0.0017 UJ	0.00036 UJ
PCB-019	E1668	**39 J**	**100 J**	**0.53 J**	**0.75 J**	**0.0079 J**	0.00047 UJ
PCB-020/028	E1668	**0.032 J**	0.086 UJ	0.0036 UJ	0.0026 UJ	0.0025 UJ	0.0024 UJ
PCB-021/033	E1668	0.024 UJ	0.084 UJ	0.0035 UJ	0.0025 UJ	0.0024 UJ	0.0023 UJ
PCB-022	E1668	0.022 UJ	0.079 UJ	0.0033 UJ	0.0024 UJ	0.0023 UJ	0.0022 UJ
PCB-023	E1668	0.025 UJ	0.088 UJ	0.0037 UJ	0.0026 UJ	0.0025 UJ	0.0024 UJ
PCB-024	E1668	0.0088 UJ	0.011 UJ	0.0022 UJ	0.0022 UJ	0.0016 UJ	0.00036 UJ
PCB-025	E1668	0.020 UJ	0.071 UJ	0.0030 UJ	0.0021 UJ	0.0020 UJ	0.0020 UJ
PCB-026/029	E1668	**0.17 J**	**0.40 J**	**0.0056 J**	0.0028 UJ	0.0027 UJ	0.0026 UJ
PCB-027	E1668	0.0087 UJ	0.011 UJ	0.0022 UJ	0.0022 UJ	0.0016 UJ	0.00036 UJ
PCB-031	E1668	**0.066 J**	**0.11 J**	0.0032 UJ	0.0023 UJ	0.0022 UJ	0.0021 UJ
PCB-032	E1668	0.0081 UJ	0.010 UJ	**0.0025 J**	0.0021 UJ	0.0015 UJ	**0.00064 J**
PCB-034	E1668	0.026 UJ	0.091 UJ	0.0038 UJ	0.0027 UJ	0.0026 UJ	0.0025 UJ
PCB-035	E1668	0.025 UJ	0.089 UJ	0.0037 UJ	0.0027 UJ	0.0025 UJ	0.0025 UJ
PCB-036	E1668	0.020 UJ	0.072 UJ	0.0030 UJ	0.0022 UJ	0.0021 UJ	0.0020 UJ
PCB-037	E1668	0.024 UJ	0.086 UJ	0.0036 UJ	0.0026 UJ	0.0025 UJ	0.0024 UJ
PCB-038	E1668	0.023 UJ	0.083 UJ	0.0035 UJ	0.0025 UJ	0.0024 UJ	0.0023 UJ
PCB-039	E1668	0.024 UJ	0.086 UJ	0.0036 UJ	0.0026 UJ	0.0025 UJ	0.0024 UJ
PCB-040/041/071	E1668	**0.49 J**	**0.98 J**	0.043 UJ	0.028 UJ	0.0032 UJ	0.0053 UJ
PCB-042	E1668	0.099 UJ	0.16 UJ	0.046 UJ	0.030 UJ	0.0034 UJ	0.0057 UJ
PCB-043/073	E1668	0.075 UJ	**2.1 J**	0.035 UJ	**0.026 J**	0.0026 UJ	0.0043 UJ
PCB-044/047/065	E1668	**70 J**	**170 J**	**2.9 J**	**1.1 J**	**0.021 J**	**0.0086 J**
PCB-045/051	E1668	0.096 UJ	0.16 UJ	0.045 UJ	0.029 UJ	0.0033 UJ	0.0055 UJ
PCB-046	E1668	**0.14 J**	0.18 UJ	0.051 UJ	0.034 UJ	0.0038 UJ	0.0063 UJ
PCB-048	E1668	0.093 UJ	0.15 UJ	0.043 UJ	0.028 UJ	0.0032 UJ	0.0053 UJ
PCB-049/069	E1668	**1.8 J**	**3.7 J**	**0.072 J**	**0.042 J**	0.0026 UJ	0.0044 UJ
PCB-050/053	E1668	**0.28 J**	**0.48 J**	0.042 UJ	0.027 UJ	0.0031 UJ	0.0051 UJ
PCB-052	E1668	**94 J**	**200 J**	**6.3 J**	**1.9 J**	**0.017 J**	**0.0092 J**
PCB-054	E1668	**250 J**	**590 J**	**15 J**	**9.0 J**	**0.050 J**	**0.039 J**
PCB-055	E1668	0.058 UJ	0.096 UJ	0.027 UJ	0.018 UJ	0.0020 UJ	0.0034 UJ
PCB-056	E1668	**0.27 J**	**0.74 J**	0.029 UJ	0.019 UJ	0.0022 UJ	0.0036 UJ
PCB-057	E1668	0.069 UJ	0.11 UJ	0.032 UJ	0.021 UJ	0.0023 UJ	0.0039 UJ
PCB-058	E1668	0.061 UJ	0.099 UJ	0.028 UJ	0.018 UJ	0.0021 UJ	0.0035 UJ

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW1-GAC-6-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-7-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-8-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-9-20251203 TS-PW1 GAC	Isotherm-PW1-PAC-2-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-3-20251203 TS-PW1 PAC
PCB-059/062/075	E1668	0.074 UJ	0.12 UJ	0.034 UJ	0.023 UJ	0.0025 UJ	0.0042 UJ
PCB-060	E1668	0.074 UJ	0.12 UJ	0.034 UJ	0.023 UJ	0.0025 UJ	0.0042 UJ
PCB-061/070/074/076	E1668	**76 J**	**190 J**	**4.6 J**	**2.0 J**	**0.025 J**	**0.015 J**
PCB-063	E1668	0.069 UJ	0.11 UJ	0.032 UJ	0.021 UJ	0.0024 UJ	0.0040 UJ
PCB-064	E1668	**0.81 J**	**1.3 J**	0.031 UJ	0.020 UJ	0.0023 UJ	0.0038 UJ
PCB-066	E1668	**1.0 J**	**1.8 J**	0.029 UJ	**0.083 J**	0.0021 UJ	0.0035 UJ
PCB-067	E1668	0.057 UJ	0.094 UJ	0.027 UJ	0.017 UJ	0.0020 UJ	0.0033 UJ
PCB-068	E1668	0.065 UJ	0.11 UJ	0.030 UJ	0.020 UJ	0.0022 UJ	0.0037 UJ
PCB-072	E1668	0.064 UJ	0.11 UJ	0.030 UJ	0.020 UJ	0.0022 UJ	0.0037 UJ
PCB-077	E1668	0.074 UJ	0.12 UJ	0.034 UJ	0.022 UJ	0.0026 UJ	0.0043 UJ
PCB-078	E1668	0.067 UJ	0.11 UJ	0.031 UJ	0.021 UJ	0.0023 UJ	0.0039 UJ
PCB-079	E1668	**3.4 J**	**5.8 J**	**2.0 J**	**0.93 J**	0.0018 UJ	0.0030 UJ
PCB-080	E1668	0.062 UJ	0.10 UJ	0.029 UJ	0.019 UJ	0.0021 UJ	0.0036 UJ
PCB-081	E1668	0.079 UJ	0.13 UJ	0.037 UJ	0.024 UJ	0.0026 UJ	0.0045 UJ
PCB-082	E1668	**2.2 J**	**4.4 J**	**0.94 J**	**0.61 J**	0.0025 UJ	0.0035 UJ
PCB-083/099	E1668	**11 J**	**22 J**	**6.5 J**	**5.6 J**	0.0025 UJ	0.0035 UJ
PCB-084	E1668	**6.9 J**	**13 J**	**2.8 J**	**1.4 J**	0.0029 UJ	0.0041 UJ
PCB-085/116/117	E1668	**3.3 J**	**6.4 J**	**1.8 J**	**1.3 J**	**0.052 J**	**0.019 J**
PCB-086/087/097/109/119/125	E1668	**96 J**	**170 J**	**55 J**	**29 J**	**0.046 J**	**0.040 J**
PCB-088/091	E1668	**3.1 J**	**5.6 J**	**1.6 J**	**1.2 J**	0.0026 UJ	0.0036 UJ
PCB-089	E1668	**0.20 J**	**0.36 J**	**0.097 J**	**0.054 J**	0.0026 UJ	0.0035 UJ
PCB-090/101/113	E1668	**160 J**	**320 J**	**100 J**	**59 J**	**0.062 J**	**0.072 J**
PCB-092	E1668	**5.5 J**	**10 J**	**3.0 J**	**2.2 J**	0.0027 UJ	0.0037 UJ
PCB-093/100	E1668	0.050 UJ	0.053 UJ	**0.078 J**	**0.11 J**	0.0027 UJ	0.0037 UJ
PCB-094	E1668	**0.23 J**	**0.30 J**	**0.11 J**	**0.087 J**	**0.0061 J**	0.0042 UJ
PCB-095	E1668	**28 J**	**53 J**	**12 J**	**6.8 J**	0.0026 UJ	0.0036 UJ
PCB-096	E1668	**0.17 J**	**0.26 J**	**0.097 J**	**0.055 J**	0.0018 UJ	0.0025 UJ
PCB-098/102	E1668	**0.55 J**	**1.1 J**	**0.33 J**	**0.27 J**	0.0022 UJ	0.0031 UJ
PCB-103	E1668	0.049 UJ	0.052 UJ	**0.059 J**	**0.050 J**	0.0026 UJ	0.0036 UJ
PCB-104	E1668	**0.19 J**	**0.35 J**	**0.23 J**	**0.23 J**	0.0020 UJ	0.0028 UJ
PCB-105	E1668	**4.0 J**	**8.9 J**	**1.2 J**	**1.1 J**	0.0052 UJ	0.0062 UJ
PCB-106	E1668	**0.059 J**	0.15 UJ	0.040 UJ	0.041 UJ	0.0048 UJ	0.0055 UJ
PCB-107	E1668	**0.66 J**	**1.4 J**	**0.34 J**	**0.26 J**	0.0046 UJ	0.0053 UJ
PCB-108/124	E1668	**0.62 J**	**1.3 J**	**0.32 J**	**0.23 J**	0.0055 UJ	0.0064 UJ
PCB-110/115	E1668	**21 J**	**44 J**	**8.7 J**	**5.3 J**	0.0016 UJ	0.0022 UJ
PCB-111	E1668	0.035 UJ	0.037 UJ	0.010 UJ	0.0097 UJ	0.0018 UJ	0.0025 UJ
PCB-112	E1668	0.029 UJ	0.031 UJ	0.0087 UJ	0.0081 UJ	0.0015 UJ	0.0021 UJ
PCB-114	E1668	**0.27 J**	**0.65 J**	**0.12 J**	**0.11 J**	0.0053 UJ	0.0061 UJ
PCB-118	E1668	**12 J**	**26 J**	**4.6 J**	**4.2 J**	0.0053 UJ	0.0059 UJ
PCB-120	E1668	0.027 UJ	0.029 UJ	0.0082 UJ	0.0077 UJ	0.0015 UJ	0.0020 UJ
PCB-121	E1668	0.032 UJ	0.034 UJ	0.0095 UJ	0.0088 UJ	0.0017 UJ	0.0023 UJ
PCB-122	E1668	**0.23 J**	**0.48 J**	**0.094 J**	**0.069 J**	0.0065 UJ	0.0075 UJ
PCB-123	E1668	**0.24 J**	**0.34 J**	**0.12 J**	**0.16 J**	0.0060 UJ	0.0067 UJ
PCB-126	E1668	0.056 UJ	0.14 UJ	0.039 UJ	**0.066 J**	0.0047 UJ	0.0055 UJ
PCB-127	E1668	0.059 UJ	0.15 UJ	0.041 UJ	**0.14 J**	0.0048 UJ	0.0056 UJ
PCB-128/166	E1668	**4.8 J**	**9.8 J**	**5.8 J**	**8.9 J**	0.0028 UJ	0.0033 UJ
PCB-129/138/160/163	E1668	**54 J**	**100 J**	**60 J**	**98 J**	**0.039 J**	**0.036 J**
PCB-130	E1668	**3.0 J**	**5.6 J**	**3.4 J**	**5.2 J**	0.0044 UJ	0.0051 UJ
PCB-131	E1668	**0.63 J**	**1.4 J**	**0.79 J**	**1.1 J**	0.0040 UJ	0.0046 UJ
PCB-132	E1668	**17 J**	**32 J**	**21 J**	**33 J**	**0.0087 J**	**0.0074 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW1-GAC-6-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-7-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-8-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-9-20251203 TS-PW1 GAC	Isotherm-PW1-PAC-2-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-3-20251203 TS-PW1 PAC
PCB-133	E1668	**0.61 J**	**1.1 J**	**0.64 J**	**1.1 J**	0.0033 UJ	0.0039 UJ
PCB-134/143	E1668	**2.9 J**	**5.8 J**	**3.5 J**	**5.9 J**	0.0038 UJ	0.0044 UJ
PCB-135/151	E1668	**26 J**	**47 J**	**33 J**	**52 J**	**0.014 J**	0.0020 UJ
PCB-136	E1668	**11 J**	**21 J**	**16 J**	**26 J**	**0.011 J**	**0.010 J**
PCB-137	E1668	**1.8 J**	**2.9 J**	**2.2 J**	**3.6 J**	0.0038 UJ	0.0044 UJ
PCB-139/140	E1668	**0.55 J**	**0.87 J**	**0.75 J**	**1.2 J**	0.0032 UJ	0.0037 UJ
PCB-141	E1668	**13 J**	**25 J**	**16 J**	**26 J**	0.0035 UJ	**0.0083 J**
PCB-142	E1668	0.16 UJ	0.37 UJ	0.14 UJ	0.18 UJ	0.0038 UJ	0.0044 UJ
PCB-144	E1668	**4.5 J**	**8.4 J**	**5.7 J**	**8.9 J**	0.0039 UJ	0.0021 UJ
PCB-145	E1668	0.0045 UJ	0.0031 UJ	0.0063 UJ	**0.092 J**	0.0026 UJ	0.0014 UJ
PCB-146	E1668	**7.3 J**	**13 J**	**8.2 J**	**13 J**	0.0029 UJ	0.0034 UJ
PCB-147/149	E1668	**46 J**	**84 J**	**57 J**	**99 J**	**0.022 J**	**0.028 J**
PCB-148	E1668	0.0064 UJ	0.0045 UJ	0.0091 UJ	0.011 UJ	0.0037 UJ	0.0020 UJ
PCB-150	E1668	**0.032 J**	0.0033 UJ	**0.061 J**	**0.074 J**	0.0027 UJ	0.0015 UJ
PCB-152	E1668	0.0041 UJ	0.0029 UJ	**0.054 J**	**0.081 J**	0.0024 UJ	0.0013 UJ
PCB-153/168	E1668	**48 J**	**87 J**	**55 J**	**90 J**	**0.030 J**	**0.013 J**
PCB-154	E1668	**0.32 J**	**0.64 J**	**0.45 J**	**0.68 J**	0.0034 UJ	0.0018 UJ
PCB-155	E1668	0.0051 UJ	0.0036 UJ	0.0073 UJ	0.0084 UJ	0.0030 UJ	0.0016 UJ
PCB-156/157	E1668	**4.9 J**	**9.5 J**	**5.0 J**	**8.2 J**	0.0032 UJ	0.0036 UJ
PCB-158	E1668	**5.5 J**	**10 J**	**6.1 J**	**9.3 J**	0.0025 UJ	0.0029 UJ
PCB-159	E1668	**1.3 J**	**2.1 J**	**2.1 J**	**3.9 J**	0.0022 UJ	0.0025 UJ
PCB-161	E1668	0.093 UJ	0.22 UJ	0.085 UJ	0.11 UJ	0.0022 UJ	0.0026 UJ
PCB-162	E1668	0.10 UJ	0.24 UJ	0.095 UJ	0.12 UJ	0.0025 UJ	0.0029 UJ
PCB-164	E1668	**3.3 J**	**6.8 J**	**3.7 J**	**6.0 J**	0.0023 UJ	0.0027 UJ
PCB-165	E1668	0.12 UJ	0.29 UJ	0.11 UJ	0.14 UJ	0.0030 UJ	0.0034 UJ
PCB-167	E1668	**1.6 J**	**3.0 J**	**1.7 J**	**2.7 J**	0.0024 UJ	0.0029 UJ
PCB-169	E1668	**0.19 J**	**0.32 J**	**0.26 J**	**0.40 J**	0.0020 UJ	0.0023 UJ
PCB-170	E1668	**33 J**	**54 J**	**49 J**	**78 J**	**0.048 J**	**0.0099 J**
PCB-171/173	E1668	**11 J**	**18 J**	**18 J**	**29 J**	0.0027 UJ	**0.0076 J**
PCB-172	E1668	**6.2 J**	**10 J**	**9.8 J**	**15 J**	0.0027 UJ	**0.019 J**
PCB-174	E1668	**33 J**	**55 J**	**55 J**	**98 J**	**0.042 J**	**0.045 J**
PCB-175	E1668	**6.8 J**	**10 J**	**10 J**	**13 J**	**0.018 J**	**0.022 J**
PCB-176	E1668	**5.3 J**	**8.5 J**	**8.9 J**	**16 J**	0.0020 UJ	**0.0054 J**
PCB-177	E1668	**18 J**	**30 J**	**30 J**	**51 J**	0.0024 UJ	**0.033 J**
PCB-178	E1668	**6.5 J**	**11 J**	**11 J**	**18 J**	0.0026 UJ	0.0024 UJ
PCB-179	E1668	**13 J**	**22 J**	**24 J**	**45 J**	**0.033 J**	**0.020 J**
PCB-180/193	E1668	**79 J**	**130 J**	**130 J**	**200 J**	**0.11 J**	**0.10 J**
PCB-181	E1668	0.00055 UJ	0.0095 UJ	0.0085 UJ	**0.77 J**	0.0023 UJ	0.0022 UJ
PCB-182	E1668	0.00051 UJ	0.0089 UJ	0.0079 UJ	0.0079 UJ	0.0022 UJ	0.0020 UJ
PCB-183/185	E1668	**26 J**	**40 J**	**40 J**	**67 J**	0.045 U	0.044 U
PCB-184	E1668	0.00041 UJ	0.0071 UJ	0.0064 UJ	0.0063 UJ	0.0017 UJ	0.0016 UJ
PCB-186	E1668	0.00037 UJ	0.0064 UJ	0.0057 UJ	0.0057 UJ	0.0016 UJ	0.0015 UJ
PCB-187	E1668	**37 J**	**60 J**	**60 J**	**100 J**	**0.063 J**	**0.061 J**
PCB-188	E1668	0.00047 UJ	0.0080 UJ	**0.020 J**	0.0073 UJ	0.0020 UJ	0.0019 UJ
PCB-189	E1668	**1.1 J**	**1.9 J**	**1.4 J**	**2.3 J**	0.0051 UJ	0.0052 UJ
PCB-190	E1668	**7.3 J**	**12 J**	**10 J**	**16 J**	0.0020 UJ	**0.0031 J**
PCB-191	E1668	**1.8 J**	**3.0 J**	**2.8 J**	**4.3 J**	**0.023 J**	0.0019 UJ
PCB-192	E1668	0.00043 UJ	0.0075 UJ	0.0067 UJ	0.0066 UJ	0.0018 UJ	0.0017 UJ
PCB-194	E1668	**16 J**	**26 J**	**23 J**	**33 J**	**0.015 J**	**0.041 J**
PCB-195	E1668	**7.0 J**	**11 J**	**10 J**	**15 J**	**0.0055 J**	**0.0035 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW1-GAC-6-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-7-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-8-20251203 TS-PW1 GAC	Isotherm-PW1-GAC-9-20251203 TS-PW1 GAC	Isotherm-PW1-PAC-2-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-3-20251203 TS-PW1 PAC
PCB-196	E1668	**12 J**	**20 J**	**20 J**	**30 J**	**0.028 J**	0.0027 UJ
PCB-197	E1668	--	--	--	--	0.0021 UJ	0.0020 UJ
PCB-197/200	E1668	**4.2 J**	**6.7 J**	**7.1 J**	**11 J**	--	--
PCB-198/199	E1668	**21 J**	**34 J**	**35 J**	**53 J**	**0.027 J**	**0.051 J**
PCB-200	E1668	--	--	--	--	0.0021 UJ	0.0020 UJ
PCB-201	E1668	**3.3 J**	**5.8 J**	**5.8 J**	**9.0 J**	0.0024 UJ	**0.0046 J**
PCB-202	E1668	**3.8 J**	**6.2 J**	**6.5 J**	**11 J**	0.0020 UJ	**0.0052 J**
PCB-203	E1668	**13 J**	**21 J**	**21 J**	**30 J**	**0.041 J**	**0.052 J**
PCB-204	E1668	0.016 UJ	0.016 UJ	0.0056 UJ	0.0077 UJ	0.0020 UJ	0.0019 UJ
PCB-205	E1668	**0.96 J**	**1.6 J**	**1.4 J**	**1.9 J**	0.0023 UJ	0.0018 UJ
PCB-206	E1668	**4.8 J**	**7.6 J**	**7.3 J**	**11 J**	0.015 UJ	0.023 UJ
PCB-207	E1668	**0.63 J**	**0.93 J**	**0.88 J**	**1.5 J**	0.014 UJ	0.020 UJ
PCB-208	E1668	**1.4 J**	**2.5 J**	**2.4 J**	**3.7 J**	0.014 UJ	0.020 UJ
PCB-209	E1668	**0.41 J**	**0.55 J**	**0.74 J**	**1.5 J**	0.00050 UJ	**0.0022 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW1-PAC-4-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-5-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-6-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-7-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-8-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-9-20251203 TS-PW1 PAC
PCB Congeners (SPME) (ng/samp)							
PCB-001	E1668	0.00082 UJ	0.0018 UJ	0.0012 UJ	0.0017 UJ	0.0014 UJ	0.0011 UJ
PCB-002	E1668	0.00095 UJ	0.0020 UJ	0.0014 UJ	0.0020 UJ	0.0016 UJ	0.0013 UJ
PCB-003	E1668	0.0010 UJ	0.0020 UJ	0.0015 UJ	0.0022 UJ	0.0017 UJ	0.0013 UJ
PCB-004	E1668	**0.0063 J**	0.0031 UJ	**0.022 J**	**0.033 J**	**0.046 J**	**0.070 J**
PCB-005	E1668	0.0025 UJ	0.0027 UJ	0.0044 UJ	0.0047 UJ	0.0040 UJ	0.0027 UJ
PCB-006	E1668	0.0020 UJ	0.0022 UJ	0.0036 UJ	0.0038 UJ	0.0033 UJ	0.0022 UJ
PCB-007	E1668	0.0024 UJ	0.0025 UJ	0.0042 UJ	0.0045 UJ	0.0038 UJ	0.0026 UJ
PCB-008	E1668	0.0020 UJ	0.0021 UJ	0.0035 UJ	0.0037 UJ	0.0032 UJ	0.0021 UJ
PCB-009	E1668	0.0023 UJ	0.0024 UJ	0.0039 UJ	0.0042 UJ	0.0036 UJ	0.0024 UJ
PCB-010	E1668	0.0025 UJ	0.0026 UJ	**0.024 J**	**0.020 J**	**0.042 J**	**0.067 J**
PCB-011	E1668	0.0022 UJ	0.0023 UJ	0.0038 UJ	0.0041 UJ	0.0035 UJ	0.0023 UJ
PCB-012/013	E1668	0.0024 UJ	0.0026 UJ	0.0043 UJ	0.0046 UJ	0.0039 UJ	0.0026 UJ
PCB-014	E1668	0.0024 UJ	0.0026 UJ	0.0042 UJ	0.0045 UJ	0.0039 UJ	0.0026 UJ
PCB-015	E1668	0.0023 UJ	0.0024 UJ	0.0041 UJ	0.0044 UJ	0.0038 UJ	0.0026 UJ
PCB-016	E1668	0.0016 UJ	0.0018 UJ	0.0021 UJ	0.00046 UJ	0.00050 UJ	0.00093 UJ
PCB-017	E1668	0.0016 UJ	0.0018 UJ	0.0021 UJ	0.00046 UJ	0.00050 UJ	0.00094 UJ
PCB-018/030	E1668	0.0011 UJ	0.0012 UJ	0.0014 UJ	0.00032 UJ	0.00035 UJ	0.00065 UJ
PCB-019	E1668	**0.0064 J**	**0.010 J**	**0.032 J**	**0.060 J**	**0.13 J**	**0.12 J**
PCB-020/028	E1668	0.0020 UJ	0.0023 UJ	0.0015 UJ	0.0028 UJ	0.0026 UJ	0.0023 UJ
PCB-021/033	E1668	0.0019 UJ	0.0023 UJ	0.0015 UJ	0.0027 UJ	0.0025 UJ	0.0022 UJ
PCB-022	E1668	0.0018 UJ	0.0021 UJ	0.0014 UJ	0.0026 UJ	0.0024 UJ	0.0021 UJ
PCB-023	E1668	0.0020 UJ	0.0023 UJ	0.0016 UJ	0.0028 UJ	0.0026 UJ	0.0023 UJ
PCB-024	E1668	0.0011 UJ	0.0012 UJ	0.0014 UJ	0.00031 UJ	0.00034 UJ	0.00064 UJ
PCB-025	E1668	0.0016 UJ	0.0019 UJ	0.0013 UJ	0.0023 UJ	0.0021 UJ	0.0019 UJ
PCB-026/029	E1668	0.0021 UJ	0.0025 UJ	0.0017 UJ	0.0030 UJ	0.0028 UJ	0.0025 UJ
PCB-027	E1668	0.0011 UJ	0.0012 UJ	0.0014 UJ	0.00031 UJ	0.00034 UJ	0.00064 UJ
PCB-031	E1668	0.0017 UJ	0.0020 UJ	0.0014 UJ	0.0024 UJ	0.0022 UJ	0.0020 UJ
PCB-032	E1668	0.0010 UJ	0.0011 UJ	0.0013 UJ	0.00029 UJ	0.00032 UJ	0.00060 UJ
PCB-034	E1668	0.0021 UJ	0.0024 UJ	0.0016 UJ	0.0030 UJ	0.0027 UJ	0.0024 UJ
PCB-035	E1668	0.0020 UJ	0.0024 UJ	0.0016 UJ	0.0029 UJ	0.0026 UJ	0.0024 UJ
PCB-036	E1668	0.0017 UJ	0.0019 UJ	0.0013 UJ	0.0023 UJ	0.0021 UJ	0.0019 UJ
PCB-037	E1668	0.0020 UJ	0.0023 UJ	0.0015 UJ	0.0028 UJ	0.0026 UJ	0.0023 UJ
PCB-038	E1668	0.0019 UJ	0.0022 UJ	0.0015 UJ	0.0027 UJ	0.0025 UJ	0.0022 UJ
PCB-039	E1668	0.0020 UJ	0.0023 UJ	0.0015 UJ	0.0028 UJ	0.0026 UJ	0.0023 UJ
PCB-040/041/071	E1668	0.0039 UJ	0.0042 UJ	0.0088 UJ	0.0021 UJ	0.0011 UJ	0.0033 UJ
PCB-042	E1668	0.0041 UJ	0.0045 UJ	0.0094 UJ	0.0023 UJ	0.0012 UJ	0.0036 UJ
PCB-043/073	E1668	0.0031 UJ	0.0034 UJ	0.0072 UJ	0.0017 UJ	0.00091 UJ	0.0027 UJ
PCB-044/047/065	E1668	0.0034 UJ	**0.014 J**	**0.035 J**	**0.071 J**	**0.11 J**	**0.14 J**
PCB-045/051	E1668	0.0040 UJ	0.0043 UJ	0.0091 UJ	0.0022 UJ	0.0012 UJ	0.0034 UJ
PCB-046	E1668	0.0046 UJ	0.0050 UJ	0.010 UJ	0.0025 UJ	0.0013 UJ	0.0039 UJ
PCB-048	E1668	0.0039 UJ	0.0042 UJ	0.0088 UJ	0.0021 UJ	0.0011 UJ	0.0033 UJ
PCB-049/069	E1668	0.0032 UJ	0.0035 UJ	0.0073 UJ	0.0018 UJ	0.00093 UJ	0.0028 UJ
PCB-050/053	E1668	0.0037 UJ	0.0040 UJ	0.0085 UJ	0.0021 UJ	0.0011 UJ	0.0032 UJ
PCB-052	E1668	**0.0098 J**	**0.011 J**	**0.042 J**	**0.063 J**	**0.18 J**	**0.19 J**
PCB-054	E1668	**0.055 J**	**0.087 J**	**0.16 J**	**0.43 J**	**1.1 J**	**1.3 J**
PCB-055	E1668	0.0024 UJ	0.0026 UJ	0.0055 UJ	0.0013 UJ	0.00070 UJ	0.0021 UJ
PCB-056	E1668	0.0026 UJ	0.0029 UJ	0.0060 UJ	0.0015 UJ	0.00076 UJ	0.0023 UJ
PCB-057	E1668	0.0029 UJ	0.0031 UJ	0.0065 UJ	0.0016 UJ	0.00082 UJ	0.0025 UJ
PCB-058	E1668	0.0025 UJ	0.0027 UJ	0.0057 UJ	0.0014 UJ	0.00073 UJ	0.0022 UJ

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW1-PAC-4-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-5-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-6-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-7-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-8-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-9-20251203 TS-PW1 PAC
PCB-059/062/075	E1668	0.0031 UJ	0.0033 UJ	0.0070 UJ	0.0017 UJ	0.00089 UJ	0.0026 UJ
PCB-060	E1668	0.0031 UJ	0.0033 UJ	0.0070 UJ	0.0017 UJ	0.00089 UJ	0.0026 UJ
PCB-061/070/074/076	E1668	**0.011 J**	**0.011 J**	**0.049 J**	**0.060 J**	**0.14 J**	**0.22 J**
PCB-063	E1668	0.0029 UJ	0.0031 UJ	0.0066 UJ	0.0016 UJ	0.00083 UJ	0.0025 UJ
PCB-064	E1668	0.0027 UJ	0.0030 UJ	0.0063 UJ	0.0015 UJ	0.00079 UJ	0.0024 UJ
PCB-066	E1668	0.0026 UJ	0.0028 UJ	0.0058 UJ	0.0014 UJ	0.00074 UJ	0.0022 UJ
PCB-067	E1668	0.0024 UJ	0.0026 UJ	0.0054 UJ	0.0013 UJ	0.00069 UJ	0.0020 UJ
PCB-068	E1668	0.0027 UJ	0.0029 UJ	0.0061 UJ	0.0015 UJ	0.00078 UJ	0.0023 UJ
PCB-072	E1668	0.0027 UJ	0.0029 UJ	0.0061 UJ	0.0015 UJ	0.00077 UJ	0.0023 UJ
PCB-077	E1668	0.0031 UJ	0.0034 UJ	0.0071 UJ	0.0017 UJ	0.00090 UJ	0.0026 UJ
PCB-078	E1668	0.0028 UJ	0.0030 UJ	0.0064 UJ	0.0015 UJ	0.00081 UJ	0.0024 UJ
PCB-079	E1668	0.0022 UJ	0.0024 UJ	0.0050 UJ	0.0012 UJ	**0.0080 J**	0.0019 UJ
PCB-080	E1668	0.0026 UJ	0.0028 UJ	0.0059 UJ	0.0014 UJ	0.00074 UJ	0.0022 UJ
PCB-081	E1668	0.0033 UJ	0.0035 UJ	0.0075 UJ	0.0018 UJ	0.00095 UJ	0.0029 UJ
PCB-082	E1668	0.0023 UJ	0.0020 UJ	0.0022 UJ	0.0022 UJ	0.0048 UJ	0.0048 UJ
PCB-083/099	E1668	0.0023 UJ	0.0021 UJ	0.0022 UJ	**0.0081 J**	**0.028 J**	**0.053 J**
PCB-084	E1668	0.0027 UJ	0.0024 UJ	0.0026 UJ	0.0026 UJ	**0.021 J**	**0.020 J**
PCB-085/116/117	E1668	0.0020 UJ	**0.012 J**	**0.0078 J**	**0.013 J**	**0.0079 J**	0.0043 UJ
PCB-086/087/097/109/119/125	E1668	**0.041 J**	**0.026 J**	**0.054 J**	**0.17 J**	**0.33 J**	**0.33 J**
PCB-088/091	E1668	0.0024 UJ	0.0021 UJ	0.0023 UJ	0.0023 UJ	0.0051 UJ	**0.012 J**
PCB-089	E1668	0.0023 UJ	0.0021 UJ	0.0023 UJ	0.0023 UJ	0.0049 UJ	0.0049 UJ
PCB-090/101/113	E1668	**0.062 J**	**0.075 J**	**0.087 J**	**0.34 J**	**0.48 J**	**0.55 J**
PCB-092	E1668	0.0024 UJ	0.0022 UJ	0.0024 UJ	0.0024 UJ	**0.017 J**	**0.022 J**
PCB-093/100	E1668	0.0024 UJ	0.0021 UJ	0.0023 UJ	0.0024 UJ	0.0051 UJ	0.0051 UJ
PCB-094	E1668	0.0027 UJ	0.0024 UJ	0.0027 UJ	0.0027 UJ	0.0058 UJ	0.0058 UJ
PCB-095	E1668	0.0024 UJ	0.0021 UJ	**0.018 J**	**0.034 J**	**0.071 J**	**0.089 J**
PCB-096	E1668	0.0016 UJ	0.0014 UJ	0.0016 UJ	0.0016 UJ	0.0035 UJ	0.0035 UJ
PCB-098/102	E1668	0.0020 UJ	0.0018 UJ	0.0020 UJ	0.0020 UJ	0.0043 UJ	0.0043 UJ
PCB-103	E1668	0.0023 UJ	0.0021 UJ	0.0023 UJ	0.0023 UJ	0.0050 UJ	0.0050 UJ
PCB-104	E1668	0.0018 UJ	0.0016 UJ	0.0018 UJ	0.0018 UJ	0.0039 UJ	0.0039 UJ
PCB-105	E1668	0.0045 UJ	0.0064 UJ	0.0048 UJ	0.0045 UJ	0.0039 UJ	0.0065 UJ
PCB-106	E1668	0.0041 UJ	0.0058 UJ	0.0044 UJ	0.0041 UJ	0.0035 UJ	0.0060 UJ
PCB-107	E1668	0.0039 UJ	0.0056 UJ	0.0042 UJ	0.0039 UJ	0.0034 UJ	0.0058 UJ
PCB-108/124	E1668	0.0047 UJ	0.0067 UJ	0.0050 UJ	0.0047 UJ	0.0041 UJ	0.0070 UJ
PCB-110/115	E1668	0.0015 UJ	0.0013 UJ	**0.0043 J**	**0.017 J**	**0.047 J**	**0.051 J**
PCB-111	E1668	0.0017 UJ	0.0015 UJ	0.0016 UJ	0.0016 UJ	0.0035 UJ	0.0036 UJ
PCB-112	E1668	0.0014 UJ	0.0012 UJ	0.0014 UJ	0.0014 UJ	0.0030 UJ	0.0030 UJ
PCB-114	E1668	0.0045 UJ	0.0065 UJ	0.0050 UJ	0.0046 UJ	0.0039 UJ	0.0068 UJ
PCB-118	E1668	0.0045 UJ	0.0066 UJ	0.0048 UJ	**0.013 J**	**0.023 J**	**0.063 J**
PCB-120	E1668	0.0013 UJ	0.0012 UJ	0.0013 UJ	0.0013 UJ	0.0028 UJ	0.0028 UJ
PCB-121	E1668	0.0015 UJ	0.0014 UJ	0.0015 UJ	0.0015 UJ	0.0032 UJ	0.0033 UJ
PCB-122	E1668	0.0055 UJ	0.0079 UJ	0.0059 UJ	0.0055 UJ	0.0048 UJ	0.0082 UJ
PCB-123	E1668	0.0050 UJ	0.0069 UJ	0.0053 UJ	0.0050 UJ	0.0045 UJ	0.0076 UJ
PCB-126	E1668	0.0039 UJ	0.0057 UJ	0.0042 UJ	0.0040 UJ	0.0034 UJ	0.0058 UJ
PCB-127	E1668	0.0041 UJ	0.0059 UJ	0.0044 UJ	0.0041 UJ	0.0036 UJ	0.0061 UJ
PCB-128/166	E1668	**0.0039 J**	**0.0035 J**	0.0042 UJ	**0.038 J**	**0.068 J**	**0.099 J**
PCB-129/138/160/163	E1668	**0.043 J**	**0.043 J**	**0.044 J**	**0.35 J**	**0.72 J**	**1.1 J**
PCB-130	E1668	0.0020 UJ	0.0022 UJ	0.0065 UJ	**0.020 J**	**0.033 J**	**0.043 J**
PCB-131	E1668	0.0018 UJ	0.0020 UJ	0.0058 UJ	0.0040 UJ	0.0068 UJ	**0.015 J**
PCB-132	E1668	**0.012 J**	**0.012 J**	**0.030 J**	**0.16 J**	**0.32 J**	**0.46 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW1-PAC-4-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-5-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-6-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-7-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-8-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-9-20251203 TS-PW1 PAC
PCB-133	E1668	0.0015 UJ	0.0017 UJ	0.0049 UJ	0.0033 UJ	0.0058 UJ	0.012 UJ
PCB-134/143	E1668	**0.0036 J**	**0.0023 J**	0.0056 UJ	**0.035 J**	**0.046 J**	**0.10 J**
PCB-135/151	E1668	**0.021 J**	**0.017 J**	**0.063 J**	**0.31 J**	**0.35 J**	**0.74 J**
PCB-136	E1668	**0.019 J**	**0.024 J**	**0.047 J**	**0.16 J**	**0.24 J**	**0.38 J**
PCB-137	E1668	0.0017 UJ	0.0019 UJ	0.0055 UJ	0.0038 UJ	**0.017 J**	**0.058 J**
PCB-139/140	E1668	0.0014 UJ	0.0016 UJ	0.0047 UJ	**0.0083 J**	0.0056 UJ	**0.014 J**
PCB-141	E1668	**0.0045 J**	**0.012 J**	**0.0091 J**	**0.10 J**	**0.19 J**	**0.33 J**
PCB-142	E1668	0.0017 UJ	0.0019 UJ	0.0056 UJ	0.0038 UJ	0.0066 UJ	0.013 UJ
PCB-144	E1668	0.0016 UJ	**0.012 J**	**0.0075 J**	**0.018 J**	**0.056 J**	**0.077 J**
PCB-145	E1668	0.0010 UJ	0.00041 UJ	0.00031 UJ	0.00041 UJ	0.00091 UJ	0.0017 UJ
PCB-146	E1668	0.0013 UJ	0.0015 UJ	**0.0075 J**	**0.044 J**	**0.10 J**	**0.16 J**
PCB-147/149	E1668	**0.052 J**	**0.059 J**	**0.086 J**	**0.50 J**	**0.84 J**	**1.2 J**
PCB-148	E1668	0.0015 UJ	0.00059 UJ	0.00045 UJ	0.00059 UJ	0.0013 UJ	0.0024 UJ
PCB-150	E1668	0.0011 UJ	0.00043 UJ	0.00033 UJ	0.00043 UJ	0.00096 UJ	0.0017 UJ
PCB-152	E1668	0.00095 UJ	0.00038 UJ	0.00029 UJ	0.00038 UJ	0.00084 UJ	0.0015 UJ
PCB-153/168	E1668	**0.038 J**	**0.043 J**	**0.037 J**	**0.33 J**	**0.63 J**	**0.98 J**
PCB-154	E1668	0.0013 UJ	0.00054 UJ	0.00041 UJ	0.00054 UJ	0.0012 UJ	**0.011 J**
PCB-155	E1668	0.0012 UJ	0.00047 UJ	0.00036 UJ	0.00047 UJ	0.0010 UJ	0.0019 UJ
PCB-156/157	E1668	0.0015 UJ	0.0016 UJ	0.0047 UJ	**0.0087 J**	**0.050 J**	**0.078 J**
PCB-158	E1668	0.0011 UJ	**0.0033 J**	**0.0041 J**	**0.036 J**	**0.058 J**	**0.11 J**
PCB-159	E1668	0.00098 UJ	**0.0056 J**	**0.0068 J**	**0.027 J**	**0.031 J**	**0.055 J**
PCB-161	E1668	0.0010 UJ	0.0011 UJ	0.0033 UJ	0.0022 UJ	0.0039 UJ	0.0078 UJ
PCB-162	E1668	0.0011 UJ	0.0012 UJ	0.0037 UJ	0.0025 UJ	0.0043 UJ	0.0087 UJ
PCB-164	E1668	0.0010 UJ	**0.0018 J**	**0.0037 J**	**0.019 J**	**0.056 J**	**0.044 J**
PCB-165	E1668	0.0013 UJ	0.0015 UJ	0.0043 UJ	0.0030 UJ	0.0051 UJ	0.010 UJ
PCB-167	E1668	0.0011 UJ	0.0012 UJ	0.0035 UJ	0.0024 UJ	0.0041 UJ	**0.028 J**
PCB-169	E1668	0.00090 UJ	0.00098 UJ	0.0029 UJ	0.0020 UJ	0.0034 UJ	0.0072 UJ
PCB-170	E1668	**0.039 J**	**0.081 J**	**0.043 J**	**0.33 J**	**0.51 J**	**1.0 J**
PCB-171/173	E1668	**0.029 J**	**0.029 J**	**0.038 J**	**0.17 J**	**0.21 J**	**0.47 J**
PCB-172	E1668	0.00034 UJ	**0.019 J**	0.00021 UJ	**0.068 J**	**0.10 J**	**0.22 J**
PCB-174	E1668	**0.081 J**	**0.14 J**	**0.16 J**	**0.67 J**	**0.80 J**	**1.7 J**
PCB-175	E1668	**0.028 J**	**0.014 J**	**0.030 J**	**0.096 J**	**0.17 J**	**0.23 J**
PCB-176	E1668	**0.018 J**	**0.033 J**	**0.051 J**	**0.16 J**	**0.19 J**	**0.36 J**
PCB-177	E1668	**0.031 J**	**0.048 J**	**0.070 J**	**0.35 J**	**0.38 J**	**0.83 J**
PCB-178	E1668	**0.0075 J**	**0.013 J**	**0.027 J**	**0.13 J**	**0.19 J**	**0.36 J**
PCB-179	E1668	**0.064 J**	**0.060 J**	**0.14 J**	**0.43 J**	**0.61 J**	**1.0 J**
PCB-180/193	E1668	**0.11 J**	**0.20 J**	**0.12 J**	**0.92 J**	**1.2 J**	**2.8 J**
PCB-181	E1668	0.00029 UJ	0.00026 UJ	0.00018 UJ	0.0021 UJ	0.0047 UJ	0.00022 UJ
PCB-182	E1668	0.00027 UJ	0.00024 UJ	0.00017 UJ	0.0019 UJ	0.0044 UJ	0.00020 UJ
PCB-183/185	E1668	**0.061 J**	**0.085 J**	**0.10 J**	**0.49 J**	**0.51 J**	**1.1 J**
PCB-184	E1668	0.00022 UJ	0.00020 UJ	0.00014 UJ	0.0015 UJ	0.0035 UJ	0.00016 UJ
PCB-186	E1668	0.00020 UJ	0.00018 UJ	0.00012 UJ	0.0014 UJ	0.0032 UJ	0.00015 UJ
PCB-187	E1668	**0.079 J**	**0.13 J**	**0.17 J**	**0.79 J**	**0.92 J**	**1.7 J**
PCB-188	E1668	0.00025 UJ	0.00022 UJ	0.00016 UJ	0.0018 UJ	0.0038 UJ	0.00019 UJ
PCB-189	E1668	0.0021 UJ	0.0023 UJ	0.0021 UJ	0.0022 UJ	**0.018 J**	**0.017 J**
PCB-190	E1668	**0.012 J**	**0.010 J**	**0.0055 J**	**0.052 J**	**0.11 J**	**0.23 J**
PCB-191	E1668	**0.0045 J**	**0.0069 J**	0.00016 UJ	**0.020 J**	**0.017 J**	**0.066 J**
PCB-192	E1668	0.00023 UJ	0.00021 UJ	0.00014 UJ	0.0016 UJ	0.0037 UJ	0.00017 UJ
PCB-194	E1668	**0.045 J**	**0.050 J**	**0.033 J**	**0.22 J**	**0.29 J**	**0.54 J**
PCB-195	E1668	**0.010 J**	**0.029 J**	**0.028 J**	**0.12 J**	**0.15 J**	**0.29 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW1-PAC-4-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-5-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-6-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-7-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-8-20251203 TS-PW1 PAC	Isotherm-PW1-PAC-9-20251203 TS-PW1 PAC
PCB-196	E1668	**0.033 J**	**0.050 J**	**0.049 J**	**0.27 J**	**0.26 J**	**0.71 J**
PCB-197	E1668	0.00047 UJ	--	--	--	--	--
PCB-197/200	E1668	--	**0.018 J**	**0.050 J**	**0.12 J**	**0.13 J**	**0.31 J**
PCB-198/199	E1668	**0.058 J**	**0.099 J**	**0.13 J**	**0.50 J**	**0.57 J**	**1.2 J**
PCB-200	E1668	0.00047 UJ	--	--	--	--	--
PCB-201	E1668	**0.014 J**	**0.015 J**	**0.042 J**	**0.12 J**	**0.12 J**	**0.24 J**
PCB-202	E1668	**0.016 J**	**0.024 J**	**0.055 J**	**0.14 J**	**0.18 J**	**0.29 J**
PCB-203	E1668	**0.040 J**	**0.079 J**	**0.046 J**	**0.30 J**	**0.32 J**	**0.62 J**
PCB-204	E1668	0.00045 UJ	0.00074 UJ	0.0020 UJ	0.0017 UJ	0.00085 UJ	0.0038 UJ
PCB-205	E1668	0.0016 UJ	0.0016 UJ	0.0015 UJ	0.0017 UJ	**0.014 J**	**0.028 J**
PCB-206	E1668	**0.034 J**	**0.062 J**	0.019 UJ	**0.13 J**	**0.13 J**	**0.27 J**
PCB-207	E1668	0.0075 UJ	0.0086 UJ	0.016 UJ	0.011 UJ	0.015 UJ	0.017 UJ
PCB-208	E1668	0.0077 UJ	0.0088 UJ	0.017 UJ	**0.060 J**	**0.083 J**	**0.11 J**
PCB-209	E1668	**0.00094 J**	**0.00083 J**	**0.017 J**	**0.041 J**	**0.039 J**	**0.056 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW2-CTRL-2-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-3-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-4-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-5-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-6-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-7-20251204 TS-PW2 Control
PCB Congeners (SPME) (ng/samp)							
PCB-001	E1668	**0.0087 J**	**0.024 J**	**0.044 J**	**0.075 J**	**0.21 J**	**0.23 J**
PCB-002	E1668	0.0035 UJ	0.0046 UJ	0.0078 UJ	0.029 UJ	0.032 UJ	0.079 UJ
PCB-003	E1668	0.0037 UJ	0.0048 UJ	**0.020 J**	0.031 UJ	0.035 UJ	0.089 UJ
PCB-004	E1668	**19 J**	**46 J**	**91 J**	**160 J**	**330 J**	**640 J**
PCB-005	E1668	0.018 UJ	0.014 UJ	0.022 UJ	0.079 UJ	0.092 UJ	0.18 UJ
PCB-006	E1668	0.014 UJ	0.011 UJ	0.018 UJ	0.065 UJ	0.075 UJ	0.15 UJ
PCB-007	E1668	0.017 UJ	0.013 UJ	0.021 UJ	0.075 UJ	0.088 UJ	0.17 UJ
PCB-008	E1668	0.014 UJ	0.011 UJ	0.017 UJ	0.062 UJ	0.073 UJ	0.14 UJ
PCB-009	E1668	0.016 UJ	0.012 UJ	0.020 UJ	0.071 UJ	0.083 UJ	0.16 UJ
PCB-010	E1668	**21 J**	**50 J**	**100 J**	**210 J**	**400 J**	**690 J**
PCB-011	E1668	0.015 UJ	0.012 UJ	0.019 UJ	0.069 UJ	0.080 UJ	0.16 UJ
PCB-012/013	E1668	0.017 UJ	0.013 UJ	0.022 UJ	0.077 UJ	0.090 UJ	0.18 UJ
PCB-014	E1668	0.017 UJ	0.013 UJ	0.021 UJ	0.076 UJ	0.089 UJ	0.18 UJ
PCB-015	E1668	0.016 UJ	0.013 UJ	0.021 UJ	0.077 UJ	0.094 UJ	0.18 UJ
PCB-016	E1668	0.014 UJ	0.0073 UJ	0.013 UJ	0.035 UJ	0.086 UJ	0.12 UJ
PCB-017	E1668	0.014 UJ	0.0074 UJ	0.013 UJ	0.035 UJ	0.086 UJ	0.12 UJ
PCB-018/030	E1668	**0.16 J**	**0.24 J**	**0.52 J**	**1.0 J**	**2.1 J**	**3.5 J**
PCB-019	E1668	**27 J**	**62 J**	**130 J**	**240 J**	**500 J**	**990 J**
PCB-020/028	E1668	**0.088 J**	**0.18 J**	**0.35 J**	**0.65 J**	**1.6 J**	**2.5 J**
PCB-021/033	E1668	0.016 UJ	**0.10 J**	0.035 UJ	**0.39 J**	**0.95 J**	**1.7 J**
PCB-022	E1668	**0.026 J**	**0.044 J**	0.033 UJ	**0.21 J**	**0.51 J**	**0.89 J**
PCB-023	E1668	0.017 UJ	0.026 UJ	0.036 UJ	0.089 UJ	0.16 UJ	0.32 UJ
PCB-024	E1668	0.0094 UJ	0.0050 UJ	0.0091 UJ	0.024 UJ	0.059 UJ	0.081 UJ
PCB-025	E1668	0.014 UJ	0.021 UJ	0.030 UJ	0.072 UJ	0.13 UJ	**0.34 J**
PCB-026/029	E1668	**0.43 J**	**0.73 J**	**1.3 J**	**2.5 J**	**4.3 J**	**7.4 J**
PCB-027	E1668	0.0093 UJ	0.0050 UJ	0.0091 UJ	0.024 UJ	0.059 UJ	0.081 UJ
PCB-031	E1668	**0.13 J**	**0.30 J**	**0.53 J**	**1.2 J**	**2.4 J**	**3.4 J**
PCB-032	E1668	0.0087 UJ	0.0047 UJ	0.0085 UJ	0.022 UJ	0.055 UJ	0.075 UJ
PCB-034	E1668	0.018 UJ	0.027 UJ	0.038 UJ	0.092 UJ	0.17 UJ	0.33 UJ
PCB-035	E1668	0.017 UJ	0.027 UJ	0.037 UJ	0.090 UJ	0.16 UJ	0.32 UJ
PCB-036	E1668	0.014 UJ	0.022 UJ	0.030 UJ	0.073 UJ	0.13 UJ	0.26 UJ
PCB-037	E1668	0.017 UJ	0.026 UJ	0.036 UJ	0.087 UJ	0.16 UJ	0.31 UJ
PCB-038	E1668	0.016 UJ	0.025 UJ	0.034 UJ	0.084 UJ	0.15 UJ	0.30 UJ
PCB-039	E1668	0.017 UJ	0.026 UJ	0.036 UJ	0.087 UJ	0.16 UJ	0.31 UJ
PCB-040/041/071	E1668	0.047 UJ	0.073 UJ	0.15 UJ	**1.8 J**	0.52 UJ	**7.4 J**
PCB-042	E1668	0.050 UJ	0.079 UJ	0.16 UJ	0.19 UJ	0.55 UJ	1.0 UJ
PCB-043/073	E1668	0.038 UJ	0.060 UJ	0.12 UJ	0.15 UJ	0.42 UJ	0.80 UJ
PCB-044/047/065	E1668	**32 J**	**75 J**	**140 J**	**270 J**	**560 J**	**1100 J**
PCB-045/051	E1668	0.049 UJ	0.076 UJ	0.16 UJ	0.19 UJ	0.54 UJ	1.0 UJ
PCB-046	E1668	0.056 UJ	0.087 UJ	0.18 UJ	0.21 UJ	0.62 UJ	1.2 UJ
PCB-048	E1668	0.047 UJ	0.073 UJ	0.15 UJ	0.18 UJ	0.52 UJ	0.98 UJ
PCB-049/069	E1668	**0.56 J**	**1.2 J**	**2.4 J**	**5.1 J**	**12 J**	**20 J**
PCB-050/053	E1668	0.045 UJ	0.071 UJ	0.15 UJ	0.17 UJ	0.50 UJ	0.94 UJ
PCB-052	E1668	**61 J**	**110 J**	**180 J**	**370 J**	**680 J**	**1100 J**
PCB-054	E1668	**76 J**	**150 J**	**250 J**	**450 J**	**860 J**	**1600 J**
PCB-055	E1668	0.030 UJ	0.046 UJ	0.095 UJ	0.11 UJ	0.33 UJ	0.62 UJ
PCB-056	E1668	**0.29 J**	**0.64 J**	**1.1 J**	**2.0 J**	**4.7 J**	**9.2 J**
PCB-057	E1668	0.035 UJ	0.054 UJ	0.11 UJ	0.13 UJ	0.38 UJ	0.72 UJ
PCB-058	E1668	0.031 UJ	0.048 UJ	0.098 UJ	0.12 UJ	0.34 UJ	0.64 UJ

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW2-CTRL-2-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-3-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-4-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-5-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-6-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-7-20251204 TS-PW2 Control
PCB-059/062/075	E1668	0.038 UJ	0.058 UJ	0.12 UJ	0.14 UJ	0.41 UJ	0.78 UJ
PCB-060	E1668	0.037 UJ	0.058 UJ	0.12 UJ	0.14 UJ	0.41 UJ	0.78 UJ
PCB-061/070/074/076	E1668	**78 J**	**310 J**	**400 J**	**380 J**	**1000 J**	**1800 J**
PCB-063	E1668	0.035 UJ	0.055 UJ	0.11 UJ	0.13 UJ	0.39 UJ	0.73 UJ
PCB-064	E1668	**0.28 J**	**0.63 J**	**1.2 J**	**2.7 J**	**6.8 J**	**11 J**
PCB-066	E1668	**0.78 J**	**2.2 J**	**3.0 J**	**4.9 J**	**13 J**	**25 J**
PCB-067	E1668	0.029 UJ	0.045 UJ	0.093 UJ	0.11 UJ	0.32 UJ	0.60 UJ
PCB-068	E1668	0.033 UJ	0.051 UJ	0.11 UJ	0.12 UJ	0.36 UJ	0.68 UJ
PCB-072	E1668	0.032 UJ	0.051 UJ	0.10 UJ	0.12 UJ	0.36 UJ	0.67 UJ
PCB-077	E1668	0.038 UJ	0.059 UJ	0.12 UJ	0.14 UJ	0.43 UJ	0.79 UJ
PCB-078	E1668	0.034 UJ	0.053 UJ	0.11 UJ	0.13 UJ	0.38 UJ	0.71 UJ
PCB-079	E1668	**3.3 J**	**4.6 J**	**6.3 J**	**9.9 J**	**14 J**	**19 J**
PCB-080	E1668	0.031 UJ	0.049 UJ	0.10 UJ	0.12 UJ	0.35 UJ	0.65 UJ
PCB-081	E1668	0.040 UJ	0.063 UJ	0.13 UJ	0.15 UJ	0.43 UJ	0.83 UJ
PCB-082	E1668	**0.45 J**	**1.5 J**	**2.2 J**	**4.2 J**	**10 J**	**19 J**
PCB-083/099	E1668	**2.2 J**	**5.7 J**	**11 J**	**22 J**	**45 J**	**78 J**
PCB-084	E1668	**1.2 J**	**3.1 J**	**5.8 J**	**12 J**	**26 J**	**46 J**
PCB-085/116/117	E1668	**0.85 J**	**1.9 J**	**3.6 J**	**7.4 J**	**16 J**	**26 J**
PCB-086/087/097/109/119/125	E1668	**100 J**	**140 J**	**200 J**	**310 J**	**430 J**	**600 J**
PCB-088/091	E1668	**0.55 J**	**1.4 J**	**2.6 J**	**5.3 J**	**12 J**	**19 J**
PCB-089	E1668	0.025 UJ	0.018 UJ	0.035 UJ	0.085 UJ	0.17 UJ	0.26 UJ
PCB-090/101/113	E1668	**170 J**	**230 J**	**360 J**	**510 J**	**700 J**	**1100 J**
PCB-092	E1668	**1.1 J**	**2.5 J**	**5.3 J**	**11 J**	**22 J**	**37 J**
PCB-093/100	E1668	0.026 UJ	0.019 UJ	0.036 UJ	0.088 UJ	0.18 UJ	0.27 UJ
PCB-094	E1668	0.030 UJ	0.021 UJ	0.041 UJ	0.10 UJ	0.21 UJ	0.30 UJ
PCB-095	E1668	**5.0 J**	**12 J**	**25 J**	**51 J**	**110 J**	**190 J**
PCB-096	E1668	0.018 UJ	0.013 UJ	0.024 UJ	0.059 UJ	0.12 UJ	0.18 UJ
PCB-098/102	E1668	0.022 UJ	0.016 UJ	0.030 UJ	**0.97 J**	**1.7 J**	**3.3 J**
PCB-103	E1668	0.026 UJ	0.018 UJ	0.035 UJ	0.086 UJ	0.18 UJ	0.26 UJ
PCB-104	E1668	0.020 UJ	0.014 UJ	0.027 UJ	0.067 UJ	0.14 UJ	0.20 UJ
PCB-105	E1668	**1.3 J**	**3.2 J**	**6.0 J**	**13 J**	**31 J**	**50 J**
PCB-106	E1668	0.023 UJ	**0.13 J**	0.071 UJ	0.24 UJ	0.25 UJ	0.44 UJ
PCB-107	E1668	**0.24 J**	**0.49 J**	**0.86 J**	**1.9 J**	**4.4 J**	**6.6 J**
PCB-108/124	E1668	**0.21 J**	**0.42 J**	**0.82 J**	**1.5 J**	**3.5 J**	**5.8 J**
PCB-110/115	E1668	**5.1 J**	**12 J**	**24 J**	**49 J**	**110 J**	**180 J**
PCB-111	E1668	0.018 UJ	0.013 UJ	0.025 UJ	0.061 UJ	0.13 UJ	0.19 UJ
PCB-112	E1668	0.015 UJ	0.011 UJ	0.021 UJ	0.051 UJ	0.10 UJ	0.16 UJ
PCB-114	E1668	**0.14 J**	**0.27 J**	**0.47 J**	**1.1 J**	**2.1 J**	**3.6 J**
PCB-118	E1668	**3.6 J**	**9.0 J**	**17 J**	**35 J**	**80 J**	**130 J**
PCB-120	E1668	0.015 UJ	0.010 UJ	0.020 UJ	0.048 UJ	0.10 UJ	0.15 UJ
PCB-121	E1668	0.017 UJ	0.012 UJ	0.023 UJ	0.056 UJ	0.11 UJ	0.17 UJ
PCB-122	E1668	0.031 UJ	**0.15 J**	**0.29 J**	**0.62 J**	**1.0 J**	0.60 UJ
PCB-123	E1668	0.029 UJ	**0.15 J**	**0.29 J**	**0.49 J**	**1.8 J**	**2.3 J**
PCB-126	E1668	0.022 UJ	0.032 UJ	0.071 UJ	0.24 UJ	0.26 UJ	0.45 UJ
PCB-127	E1668	0.023 UJ	0.033 UJ	0.072 UJ	0.24 UJ	0.26 UJ	0.45 UJ
PCB-128/166	E1668	**0.67 J**	**1.7 J**	**3.2 J**	**6.9 J**	**20 J**	**27 J**
PCB-129/138/160/163	E1668	**6.8 J**	**17 J**	**34 J**	**71 J**	**170 J**	**270 J**
PCB-130	E1668	**0.33 J**	**0.88 J**	**1.8 J**	**3.8 J**	**8.8 J**	**14 J**
PCB-131	E1668	**0.11 J**	**0.20 J**	**0.39 J**	**0.84 J**	**2.2 J**	**2.6 J**
PCB-132	E1668	**2.1 J**	**5.3 J**	**10 J**	**21 J**	**53 J**	**84 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW2-CTRL-2-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-3-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-4-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-5-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-6-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-7-20251204 TS-PW2 Control
PCB-133	E1668	**0.066 J**	**0.16 J**	**0.35 J**	**0.68 J**	**1.8 J**	**2.8 J**
PCB-134/143	E1668	**0.33 J**	**0.96 J**	**1.5 J**	**3.7 J**	**9.2 J**	**16 J**
PCB-135/151	E1668	**3.4 J**	**8.2 J**	**16 J**	**33 J**	**78 J**	**120 J**
PCB-136	E1668	**1.4 J**	**3.3 J**	**6.1 J**	**14 J**	**33 J**	**51 J**
PCB-137	E1668	**0.18 J**	**0.52 J**	**1.0 J**	**1.8 J**	**5.2 J**	**6.2 J**
PCB-139/140	E1668	**0.073 J**	**0.19 J**	**0.30 J**	**0.74 J**	**1.6 J**	**2.3 J**
PCB-141	E1668	**1.7 J**	**4.4 J**	**8.5 J**	**18 J**	**42 J**	**69 J**
PCB-142	E1668	0.019 UJ	0.032 UJ	0.068 UJ	0.13 UJ	0.34 UJ	0.50 UJ
PCB-144	E1668	**0.51 J**	**1.4 J**	**2.7 J**	**5.6 J**	**11 J**	**20 J**
PCB-145	E1668	0.0049 UJ	**0.0053 J**	0.012 UJ	0.019 UJ	**0.20 J**	0.17 UJ
PCB-146	E1668	**1.2 J**	**2.5 J**	**4.5 J**	**8.9 J**	**20 J**	**32 J**
PCB-147/149	E1668	**5.5 J**	**14 J**	**25 J**	**56 J**	**140 J**	**220 J**
PCB-148	E1668	0.0070 UJ	0.0030 UJ	0.017 UJ	0.027 UJ	0.019 UJ	0.24 UJ
PCB-150	E1668	0.0051 UJ	0.0022 UJ	0.013 UJ	0.020 UJ	0.014 UJ	0.17 UJ
PCB-152	E1668	0.0045 UJ	0.0019 UJ	0.011 UJ	**0.049 J**	0.012 UJ	0.15 UJ
PCB-153/168	E1668	**5.5 J**	**14 J**	**27 J**	**57 J**	**130 J**	**220 J**
PCB-154	E1668	0.0064 UJ	**0.10 J**	**0.19 J**	**0.42 J**	**0.94 J**	**1.8 J**
PCB-155	E1668	0.0056 UJ	0.0024 UJ	0.014 UJ	0.022 UJ	0.015 UJ	0.19 UJ
PCB-156/157	E1668	**0.78 J**	**1.9 J**	**3.7 J**	**8.0 J**	**18 J**	**30 J**
PCB-158	E1668	**0.72 J**	**1.9 J**	**3.5 J**	**7.6 J**	**18 J**	**30 J**
PCB-159	E1668	**0.095 J**	0.018 UJ	**0.48 J**	0.076 UJ	**2.2 J**	0.29 UJ
PCB-161	E1668	0.011 UJ	0.019 UJ	0.040 UJ	0.078 UJ	0.20 UJ	0.30 UJ
PCB-162	E1668	0.012 UJ	0.021 UJ	0.044 UJ	0.087 UJ	0.22 UJ	0.33 UJ
PCB-164	E1668	**0.49 J**	**1.0 J**	**2.2 J**	**4.9 J**	**12 J**	**18 J**
PCB-165	E1668	0.015 UJ	0.025 UJ	0.053 UJ	0.10 UJ	0.27 UJ	0.39 UJ
PCB-167	E1668	**0.22 J**	**0.58 J**	**1.0 J**	**2.4 J**	**5.2 J**	**9.1 J**
PCB-169	E1668	0.010 UJ	0.018 UJ	0.037 UJ	0.072 UJ	0.20 UJ	0.28 UJ
PCB-170	E1668	**2.5 J**	**6.0 J**	**12 J**	**24 J**	**57 J**	**110 J**
PCB-171/173	E1668	**0.84 J**	**2.0 J**	**3.9 J**	**7.6 J**	**19 J**	**32 J**
PCB-172	E1668	**0.36 J**	**1.2 J**	**2.2 J**	**4.5 J**	**11 J**	**19 J**
PCB-174	E1668	**2.6 J**	**6.4 J**	**12 J**	**26 J**	**61 J**	**110 J**
PCB-175	E1668	**2.4 J**	**3.4 J**	**5.3 J**	**7.8 J**	**12 J**	**19 J**
PCB-176	E1668	**0.39 J**	**0.96 J**	**1.9 J**	**3.7 J**	**9.5 J**	**15 J**
PCB-177	E1668	**1.3 J**	**3.5 J**	**6.7 J**	**14 J**	**33 J**	**56 J**
PCB-178	E1668	**0.46 J**	**1.2 J**	**2.6 J**	**5.1 J**	**12 J**	**21 J**
PCB-179	E1668	**1.1 J**	**2.6 J**	**5.0 J**	**10 J**	**26 J**	**42 J**
PCB-180/193	E1668	**5.9 J**	**14 J**	**28 J**	**56 J**	**130 J**	**230 J**
PCB-181	E1668	0.0010 UJ	0.0025 UJ	0.017 UJ	0.017 UJ	0.018 UJ	0.0066 UJ
PCB-182	E1668	0.00096 UJ	0.0023 UJ	0.016 UJ	0.016 UJ	0.017 UJ	0.0062 UJ
PCB-183/185	E1668	**1.9 J**	**4.6 J**	**9.1 J**	**19 J**	**45 J**	**76 J**
PCB-184	E1668	0.00077 UJ	0.0019 UJ	0.013 UJ	0.012 UJ	0.014 UJ	0.0050 UJ
PCB-186	E1668	0.00070 UJ	0.0017 UJ	0.011 UJ	0.011 UJ	0.012 UJ	0.0045 UJ
PCB-187	E1668	**2.7 J**	**6.8 J**	**13 J**	**27 J**	**65 J**	**110 J**
PCB-188	E1668	0.00086 UJ	0.0021 UJ	0.014 UJ	0.014 UJ	0.015 UJ	0.0053 UJ
PCB-189	E1668	**0.090 J**	**0.21 J**	**0.42 J**	**0.83 J**	**2.2 J**	**2.9 J**
PCB-190	E1668	**0.54 J**	**1.5 J**	**2.7 J**	**5.6 J**	**13 J**	**22 J**
PCB-191	E1668	**0.15 J**	**0.27 J**	**0.67 J**	**1.4 J**	**3.1 J**	**6.0 J**
PCB-192	E1668	0.00081 UJ	0.0020 UJ	0.013 UJ	0.013 UJ	0.014 UJ	0.0052 UJ
PCB-194	E1668	**0.93 J**	**2.2 J**	**4.3 J**	**8.6 J**	**20 J**	**34 J**
PCB-195	E1668	**0.34 J**	**0.90 J**	**1.8 J**	**3.7 J**	**8.5 J**	**15 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW2-CTRL-2-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-3-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-4-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-5-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-6-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-7-20251204 TS-PW2 Control
PCB-196	E1668	**0.74 J**	**1.6 J**	**3.1 J**	**6.4 J**	**16 J**	**27 J**
PCB-197	E1668	--	--	--	--	--	--
PCB-197/200	E1668	**0.21 J**	**0.54 J**	**1.1 J**	**2.1 J**	**5.1 J**	**8.5 J**
PCB-198/199	E1668	**1.1 J**	**2.8 J**	**5.5 J**	**11 J**	**28 J**	**47 J**
PCB-200	E1668	--	--	--	--	--	--
PCB-201	E1668	**0.18 J**	**0.44 J**	**0.82 J**	**2.1 J**	**4.5 J**	**6.7 J**
PCB-202	E1668	**0.20 J**	**0.47 J**	**1.0 J**	**2.0 J**	**5.1 J**	**9.3 J**
PCB-203	E1668	**0.70 J**	**1.7 J**	**3.3 J**	**6.3 J**	**16 J**	**28 J**
PCB-204	E1668	0.0030 UJ	0.00056 UJ	0.0097 UJ	0.026 UJ	0.0088 UJ	0.030 UJ
PCB-205	E1668	**0.044 J**	**0.12 J**	**0.26 J**	**0.55 J**	**1.4 J**	**2.3 J**
PCB-206	E1668	**0.22 J**	**0.53 J**	**1.2 J**	**2.1 J**	**6.4 J**	**11 J**
PCB-207	E1668	0.023 UJ	**0.067 J**	**0.12 J**	**0.18 J**	**0.74 J**	**1.3 J**
PCB-208	E1668	0.023 UJ	**0.13 J**	**0.31 J**	**0.68 J**	**1.5 J**	**3.0 J**
PCB-209	E1668	**0.014 J**	**0.039 J**	**0.097 J**	**0.13 J**	**0.52 J**	**1.1 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW2-CTRL-8-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-9-20251204 TS-PW2 Control	Isotherm-PW2-GAC-2-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-3-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-4-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-5-20251204 TS-PW2 GAC
PCB Congeners (SPME) (ng/samp)							
PCB-001	E1668	**0.90 J**	0.12 UJ	0.0023 UJ	0.0019 UJ	0.0016 UJ	0.0021 UJ
PCB-002	E1668	0.15 UJ	0.14 UJ	0.0027 UJ	0.0022 UJ	0.0018 UJ	0.0024 UJ
PCB-003	E1668	**0.39 J**	0.15 UJ	0.0029 UJ	0.0024 UJ	0.0019 UJ	0.0026 UJ
PCB-004	E1668	**1400 J**	**780 J**	**0.085 J**	**0.024 J**	**0.025 J**	0.0046 UJ
PCB-005	E1668	0.31 UJ	0.37 UJ	0.011 UJ	0.0039 UJ	0.0067 UJ	0.0042 UJ
PCB-006	E1668	0.25 UJ	0.30 UJ	0.0086 UJ	0.0032 UJ	0.0055 UJ	0.0034 UJ
PCB-007	E1668	0.29 UJ	0.36 UJ	0.010 UJ	0.0037 UJ	0.0064 UJ	0.0040 UJ
PCB-008	E1668	**4.6 J**	**2.5 J**	0.0083 UJ	0.0031 UJ	0.0053 UJ	0.0033 UJ
PCB-009	E1668	0.28 UJ	0.34 UJ	0.0095 UJ	0.0035 UJ	0.0061 UJ	0.0038 UJ
PCB-010	E1668	**1800 J**	**960 J**	**0.072 J**	**0.029 J**	**0.032 J**	0.0041 UJ
PCB-011	E1668	0.27 UJ	0.32 UJ	0.0092 UJ	0.0034 UJ	0.0058 UJ	0.0037 UJ
PCB-012/013	E1668	0.30 UJ	0.36 UJ	0.010 UJ	0.0038 UJ	0.0066 UJ	0.0041 UJ
PCB-014	E1668	0.30 UJ	0.36 UJ	0.010 UJ	0.0038 UJ	0.0065 UJ	0.0041 UJ
PCB-015	E1668	**1.7 J**	0.42 UJ	0.0098 UJ	0.0036 UJ	0.0062 UJ	0.0040 UJ
PCB-016	E1668	**4.3 J**	0.19 UJ	0.0054 UJ	0.0037 UJ	0.0027 UJ	0.0017 UJ
PCB-017	E1668	**3.2 J**	**2.1 J**	0.0054 UJ	0.0037 UJ	0.0028 UJ	0.0017 UJ
PCB-018/030	E1668	**8.9 J**	**4.8 J**	0.0037 UJ	0.0026 UJ	**0.0038 J**	0.0012 UJ
PCB-019	E1668	**2100 J**	**1300 J**	**0.40 J**	**0.20 J**	**0.20 J**	**0.073 J**
PCB-020/028	E1668	**6.0 J**	**3.1 J**	0.0073 UJ	0.0054 UJ	0.0058 UJ	0.0075 UJ
PCB-021/033	E1668	**3.7 J**	**1.9 J**	0.0071 UJ	0.0052 UJ	0.0057 UJ	0.0073 UJ
PCB-022	E1668	**1.6 J**	**0.87 J**	0.0067 UJ	0.0049 UJ	0.0053 UJ	0.0069 UJ
PCB-023	E1668	0.65 UJ	0.34 UJ	0.0074 UJ	0.0055 UJ	0.0059 UJ	0.0076 UJ
PCB-024	E1668	0.10 UJ	0.13 UJ	0.0037 UJ	0.0026 UJ	0.0019 UJ	0.0012 UJ
PCB-025	E1668	**0.61 J**	0.28 UJ	0.0060 UJ	0.0044 UJ	0.0048 UJ	0.0062 UJ
PCB-026/029	E1668	**23 J**	**15 J**	0.0080 UJ	0.0058 UJ	0.0063 UJ	0.0081 UJ
PCB-027	E1668	0.10 UJ	0.13 UJ	0.0037 UJ	0.0025 UJ	0.0019 UJ	0.0012 UJ
PCB-031	E1668	**9.9 J**	**5.6 J**	0.0064 UJ	0.0047 UJ	0.0051 UJ	0.0065 UJ
PCB-032	E1668	**2.6 J**	**1.3 J**	0.0034 UJ	**0.0070 J**	0.0018 UJ	**0.0032 J**
PCB-034	E1668	0.67 UJ	0.36 UJ	0.0077 UJ	0.0057 UJ	0.0061 UJ	0.0079 UJ
PCB-035	E1668	0.66 UJ	0.35 UJ	0.0075 UJ	0.0055 UJ	0.0060 UJ	0.0077 UJ
PCB-036	E1668	0.53 UJ	0.28 UJ	0.0061 UJ	0.0045 UJ	0.0049 UJ	0.0063 UJ
PCB-037	E1668	0.64 UJ	**0.58 J**	0.0073 UJ	**0.014 J**	0.0058 UJ	0.0075 UJ
PCB-038	E1668	0.61 UJ	0.32 UJ	0.0070 UJ	0.0052 UJ	0.0056 UJ	0.0072 UJ
PCB-039	E1668	0.64 UJ	0.34 UJ	0.0073 UJ	0.0053 UJ	0.0058 UJ	0.0074 UJ
PCB-040/041/071	E1668	**19 J**	1.7 UJ	0.026 UJ	0.024 UJ	0.039 UJ	0.035 UJ
PCB-042	E1668	2.1 UJ	1.8 UJ	**0.076 J**	0.026 UJ	0.041 UJ	0.037 UJ
PCB-043/073	E1668	**13 J**	**23 J**	**0.095 J**	**0.067 J**	**0.11 J**	**0.033 J**
PCB-044/047/065	E1668	**2700 J**	**1500 J**	**4.2 J**	**5.2 J**	**7.4 J**	**2.5 J**
PCB-045/051	E1668	**4.9 J**	**2.9 J**	0.027 UJ	0.025 UJ	**0.041 J**	0.036 UJ
PCB-046	E1668	**4.2 J**	2.0 UJ	0.030 UJ	0.029 UJ	0.046 UJ	0.041 UJ
PCB-048	E1668	2.0 UJ	1.7 UJ	0.026 UJ	0.024 UJ	0.039 UJ	0.035 UJ
PCB-049/069	E1668	**59 J**	**33 J**	**0.11 J**	**0.13 J**	**0.15 J**	**0.043 J**
PCB-050/053	E1668	**5.7 J**	**3.3 J**	0.025 UJ	0.023 UJ	0.037 UJ	0.033 UJ
PCB-052	E1668	**3900 J**	**2400 J**	**8.1 J**	**8.4 J**	**11 J**	**4.2 J**
PCB-054	E1668	**4800 J**	**2900 J**	**12 J**	**14 J**	**17 J**	**4.1 J**
PCB-055	E1668	1.3 UJ	1.1 UJ	0.016 UJ	0.015 UJ	0.024 UJ	0.022 UJ
PCB-056	E1668	**22 J**	**15 J**	0.018 UJ	0.017 UJ	0.026 UJ	0.024 UJ
PCB-057	E1668	1.5 UJ	1.2 UJ	0.019 UJ	0.018 UJ	0.028 UJ	0.026 UJ
PCB-058	E1668	1.3 UJ	1.1 UJ	0.017 UJ	0.016 UJ	0.025 UJ	0.023 UJ

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW2-CTRL-8-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-9-20251204 TS-PW2 Control	Isotherm-PW2-GAC-2-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-3-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-4-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-5-20251204 TS-PW2 GAC
PCB-059/062/075	E1668	1.6 UJ	1.3 UJ	0.020 UJ	0.019 UJ	0.031 UJ	0.028 UJ
PCB-060	E1668	1.6 UJ	1.3 UJ	0.020 UJ	0.019 UJ	0.031 UJ	0.028 UJ
PCB-061/070/074/076	E1668	**6600 J**	**3300 J**	**7.4 J**	**16 J**	**15 J**	**3.8 J**
PCB-063	E1668	1.5 UJ	1.2 UJ	0.019 UJ	0.018 UJ	0.029 UJ	0.026 UJ
PCB-064	E1668	**28 J**	**14 J**	0.018 UJ	**0.052 J**	**0.049 J**	0.025 UJ
PCB-066	E1668	**58 J**	**38 J**	0.017 UJ	**0.094 J**	**0.090 J**	0.023 UJ
PCB-067	E1668	1.2 UJ	1.0 UJ	0.016 UJ	0.015 UJ	0.024 UJ	0.021 UJ
PCB-068	E1668	1.4 UJ	1.2 UJ	0.018 UJ	0.017 UJ	0.027 UJ	0.024 UJ
PCB-072	E1668	1.4 UJ	1.2 UJ	0.018 UJ	0.017 UJ	0.027 UJ	0.024 UJ
PCB-077	E1668	**4.4 J**	1.4 UJ	0.021 UJ	0.020 UJ	0.031 UJ	0.028 UJ
PCB-078	E1668	1.5 UJ	1.2 UJ	0.019 UJ	0.018 UJ	0.028 UJ	0.025 UJ
PCB-079	E1668	**36 J**	**27 J**	**1.1 J**	**1.3 J**	**1.5 J**	**1.2 J**
PCB-080	E1668	1.3 UJ	1.1 UJ	0.017 UJ	0.016 UJ	0.026 UJ	0.023 UJ
PCB-081	E1668	1.8 UJ	1.4 UJ	0.022 UJ	0.020 UJ	0.033 UJ	0.030 UJ
PCB-082	E1668	**47 J**	**30 J**	**0.27 J**	**0.39 J**	**0.47 J**	**0.58 J**
PCB-083/099	E1668	**200 J**	**120 J**	**0.90 J**	**1.7 J**	**2.7 J**	**2.7 J**
PCB-084	E1668	**120 J**	**66 J**	**0.42 J**	**0.75 J**	**1.2 J**	**1.0 J**
PCB-085/116/117	E1668	**66 J**	**41 J**	**0.40 J**	**0.67 J**	**0.77 J**	**0.85 J**
PCB-086/087/097/109/119/125	E1668	**1300 J**	**940 J**	**33 J**	**39 J**	**47 J**	**37 J**
PCB-088/091	E1668	**56 J**	**30 J**	**0.19 J**	**0.37 J**	**0.59 J**	**0.61 J**
PCB-089	E1668	0.26 UJ	0.77 UJ	0.030 UJ	0.020 UJ	**0.052 J**	**0.057 J**
PCB-090/101/113	E1668	**2300 J**	**1600 J**	**52 J**	**66 J**	**85 J**	**63 J**
PCB-092	E1668	**98 J**	**55 J**	**0.36 J**	**0.65 J**	**1.1 J**	**1.2 J**
PCB-093/100	E1668	**5.7 J**	**2.5 J**	0.031 UJ	**0.041 J**	**0.059 J**	0.026 UJ
PCB-094	E1668	**2.8 J**	0.92 UJ	0.035 UJ	**0.064 J**	**0.068 J**	**0.047 J**
PCB-095	E1668	**490 J**	**270 J**	**1.5 J**	**3.0 J**	**5.0 J**	**4.7 J**
PCB-096	E1668	**1.5 J**	**1.6 J**	0.021 UJ	0.014 UJ	**0.031 J**	**0.019 J**
PCB-098/102	E1668	**7.4 J**	**3.6 J**	0.026 UJ	**0.094 J**	**0.083 J**	**0.11 J**
PCB-103	E1668	**1.8 J**	0.79 UJ	0.030 UJ	0.020 UJ	0.018 UJ	0.026 UJ
PCB-104	E1668	**4.2 J**	**2.1 J**	0.024 UJ	**0.043 J**	**0.075 J**	**0.078 J**
PCB-105	E1668	**130 J**	**67 J**	**0.33 J**	**0.60 J**	**0.85 J**	**0.91 J**
PCB-106	E1668	1.1 UJ	0.99 UJ	**0.036 J**	**0.037 J**	**0.039 J**	0.030 UJ
PCB-107	E1668	**19 J**	**8.7 J**	**0.054 J**	**0.097 J**	**0.16 J**	**0.17 J**
PCB-108/124	E1668	**17 J**	**7.4 J**	**0.058 J**	**0.10 J**	**0.15 J**	**0.14 J**
PCB-110/115	E1668	**480 J**	**260 J**	**1.5 J**	**2.8 J**	**4.3 J**	**4.3 J**
PCB-111	E1668	0.19 UJ	0.56 UJ	0.022 UJ	0.014 UJ	0.013 UJ	0.018 UJ
PCB-112	E1668	0.16 UJ	0.47 UJ	0.018 UJ	0.012 UJ	0.011 UJ	0.015 UJ
PCB-114	E1668	**9.9 J**	**4.6 J**	**0.042 J**	**0.054 J**	**0.084 J**	0.035 UJ
PCB-118	E1668	**350 J**	**190 J**	**0.89 J**	**1.8 J**	**2.7 J**	**2.7 J**
PCB-120	E1668	0.15 UJ	0.44 UJ	0.017 UJ	0.011 UJ	0.010 UJ	0.014 UJ
PCB-121	E1668	0.17 UJ	0.51 UJ	0.020 UJ	0.013 UJ	0.012 UJ	0.017 UJ
PCB-122	E1668	**5.8 J**	**2.6 J**	0.020 UJ	0.025 UJ	0.024 UJ	0.041 UJ
PCB-123	E1668	**5.3 J**	**2.5 J**	**0.025 J**	**0.033 J**	**0.051 J**	**0.068 J**
PCB-126	E1668	1.1 UJ	0.97 UJ	0.014 UJ	0.018 UJ	0.017 UJ	0.029 UJ
PCB-127	E1668	1.1 UJ	1.0 UJ	0.015 UJ	0.018 UJ	0.018 UJ	0.031 UJ
PCB-128/166	E1668	**75 J**	**36 J**	**0.32 J**	**0.75 J**	**1.2 J**	**1.7 J**
PCB-129/138/160/163	E1668	**780 J**	**380 J**	**2.9 J**	**7.5 J**	**12 J**	**17 J**
PCB-130	E1668	**43 J**	**21 J**	**0.15 J**	**0.40 J**	**0.71 J**	**0.96 J**
PCB-131	E1668	**11 J**	**4.0 J**	0.025 UJ	**0.097 J**	**0.17 J**	**0.22 J**
PCB-132	E1668	**230 J**	**120 J**	**1.0 J**	**2.4 J**	**4.0 J**	**6.0 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW2-CTRL-8-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-9-20251204 TS-PW2 Control	Isotherm-PW2-GAC-2-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-3-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-4-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-5-20251204 TS-PW2 GAC
PCB-133	E1668	**8.1 J**	**4.0 J**	**0.037 J**	**0.081 J**	**0.12 J**	**0.17 J**
PCB-134/143	E1668	**42 J**	**20 J**	**0.18 J**	**0.37 J**	**0.75 J**	**1.0 J**
PCB-135/151	E1668	**350 J**	**170 J**	**1.4 J**	**3.5 J**	**6.0 J**	**8.7 J**
PCB-136	E1668	**150 J**	**76 J**	**0.71 J**	**1.6 J**	**2.7 J**	**4.0 J**
PCB-137	E1668	**20 J**	**12 J**	**0.13 J**	**0.24 J**	**0.37 J**	**0.52 J**
PCB-139/140	E1668	**8.9 J**	**3.8 J**	0.020 UJ	**0.093 J**	**0.12 J**	**0.18 J**
PCB-141	E1668	**190 J**	**93 J**	**0.73 J**	**1.8 J**	**3.1 J**	**4.3 J**
PCB-142	E1668	1.2 UJ	0.86 UJ	0.024 UJ	0.027 UJ	0.037 UJ	0.067 UJ
PCB-144	E1668	**59 J**	**25 J**	**0.31 J**	**0.70 J**	**1.1 J**	**1.4 J**
PCB-145	E1668	0.24 UJ	0.28 UJ	0.017 UJ	0.013 UJ	0.010 UJ	0.011 UJ
PCB-146	E1668	**90 J**	**43 J**	**0.47 J**	**1.1 J**	**1.8 J**	**2.2 J**
PCB-147/149	E1668	**620 J**	**310 J**	**2.5 J**	**6.4 J**	**11 J**	**16 J**
PCB-148	E1668	0.34 UJ	0.41 UJ	0.024 UJ	0.019 UJ	0.015 UJ	0.016 UJ
PCB-150	E1668	0.25 UJ	0.30 UJ	0.018 UJ	0.014 UJ	0.011 UJ	0.012 UJ
PCB-152	E1668	0.22 UJ	0.26 UJ	0.015 UJ	0.012 UJ	0.0093 UJ	0.010 UJ
PCB-153/168	E1668	**610 J**	**290 J**	**2.3 J**	**6.0 J**	**10 J**	**14 J**
PCB-154	E1668	**3.6 J**	**2.4 J**	0.022 UJ	**0.055 J**	**0.096 J**	**0.12 J**
PCB-155	E1668	0.27 UJ	0.32 UJ	0.019 UJ	0.015 UJ	0.012 UJ	0.013 UJ
PCB-156/157	E1668	**84 J**	**42 J**	**0.28 J**	**0.73 J**	**1.1 J**	**1.6 J**
PCB-158	E1668	**84 J**	**39 J**	**0.32 J**	**0.80 J**	**1.3 J**	**1.7 J**
PCB-159	E1668	**9.5 J**	**3.9 J**	**0.041 J**	**0.14 J**	**0.26 J**	**0.37 J**
PCB-161	E1668	0.70 UJ	0.51 UJ	0.014 UJ	0.016 UJ	0.021 UJ	0.039 UJ
PCB-162	E1668	0.78 UJ	0.56 UJ	0.015 UJ	0.017 UJ	0.024 UJ	0.044 UJ
PCB-164	E1668	**51 J**	**26 J**	**0.19 J**	**0.44 J**	**0.79 J**	**1.1 J**
PCB-165	E1668	0.93 UJ	0.67 UJ	0.018 UJ	0.021 UJ	0.028 UJ	0.052 UJ
PCB-167	E1668	**27 J**	**13 J**	**0.086 J**	**0.23 J**	**0.35 J**	**0.49 J**
PCB-169	E1668	0.60 UJ	0.44 UJ	0.013 UJ	0.014 UJ	0.020 UJ	0.035 UJ
PCB-170	E1668	**250 J**	**130 J**	**1.4 J**	**3.5 J**	**5.7 J**	**9.7 J**
PCB-171/173	E1668	**82 J**	**43 J**	**0.49 J**	**1.2 J**	**2.0 J**	**3.4 J**
PCB-172	E1668	**48 J**	**25 J**	**0.29 J**	**0.67 J**	**1.2 J**	**1.7 J**
PCB-174	E1668	**280 J**	**140 J**	**1.5 J**	**3.9 J**	**6.3 J**	**11 J**
PCB-175	E1668	**40 J**	**23 J**	**1.3 J**	**2.0 J**	**2.7 J**	**2.9 J**
PCB-176	E1668	**41 J**	**19 J**	**0.23 J**	**0.61 J**	**0.98 J**	**1.8 J**
PCB-177	E1668	**150 J**	**74 J**	**0.80 J**	**2.0 J**	**3.4 J**	**5.6 J**
PCB-178	E1668	**55 J**	**28 J**	**0.28 J**	**0.73 J**	**1.3 J**	**2.0 J**
PCB-179	E1668	**110 J**	**56 J**	**0.60 J**	**1.6 J**	**2.7 J**	**4.7 J**
PCB-180/193	E1668	**610 J**	**300 J**	**3.2 J**	**8.0 J**	**13 J**	**21 J**
PCB-181	E1668	0.0099 UJ	0.0096 UJ	0.020 UJ	0.014 UJ	**0.061 J**	0.011 UJ
PCB-182	E1668	0.0093 UJ	0.0089 UJ	0.019 UJ	0.013 UJ	0.011 UJ	0.0099 UJ
PCB-183/185	E1668	**200 J**	**97 J**	**1.0 J**	**2.7 J**	**4.5 J**	**7.4 J**
PCB-184	E1668	0.0075 UJ	0.0072 UJ	0.015 UJ	0.010 UJ	0.0090 UJ	0.0080 UJ
PCB-186	E1668	0.0067 UJ	0.0065 UJ	0.014 UJ	0.0094 UJ	0.0081 UJ	0.0072 UJ
PCB-187	E1668	**290 J**	**140 J**	**1.5 J**	**4.0 J**	**6.7 J**	**11 J**
PCB-188	E1668	0.0096 UJ	0.0076 UJ	0.017 UJ	0.012 UJ	0.010 UJ	0.0091 UJ
PCB-189	E1668	**9.2 J**	**4.3 J**	**0.057 J**	**0.11 J**	**0.18 J**	**0.30 J**
PCB-190	E1668	**61 J**	**26 J**	**0.32 J**	**0.74 J**	**1.3 J**	**2.0 J**
PCB-191	E1668	**16 J**	**7.6 J**	**0.092 J**	**0.22 J**	**0.34 J**	**0.46 J**
PCB-192	E1668	0.0078 UJ	0.0075 UJ	0.016 UJ	0.011 UJ	0.0094 UJ	0.0084 UJ
PCB-194	E1668	**87 J**	**48 J**	**0.65 J**	**1.4 J**	**2.6 J**	**4.3 J**
PCB-195	E1668	**37 J**	**20 J**	**0.29 J**	**0.59 J**	**1.1 J**	**1.9 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW2-CTRL-8-20251204 TS-PW2 Control	Isotherm-PW2-CTRL-9-20251204 TS-PW2 Control	Isotherm-PW2-GAC-2-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-3-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-4-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-5-20251204 TS-PW2 GAC
PCB-196	E1668	**72 J**	**43 J**	**0.42 J**	**1.1 J**	**1.8 J**	**3.4 J**
PCB-197	E1668	--	--	--	--	--	--
PCB-197/200	E1668	**23 J**	**13 J**	**0.15 J**	**0.42 J**	**0.72 J**	**1.2 J**
PCB-198/199	E1668	**120 J**	**69 J**	**0.83 J**	**1.9 J**	**3.6 J**	**5.8 J**
PCB-200	E1668	--	--	--	--	--	--
PCB-201	E1668	**19 J**	**10 J**	**0.13 J**	**0.33 J**	**0.61 J**	**1.0 J**
PCB-202	E1668	**20 J**	**12 J**	**0.17 J**	**0.38 J**	**0.64 J**	**1.1 J**
PCB-203	E1668	**77 J**	**43 J**	**0.54 J**	**1.1 J**	**2.1 J**	**3.5 J**
PCB-204	E1668	0.11 UJ	0.12 UJ	0.0076 UJ	0.0048 UJ	0.0053 UJ	0.0041 UJ
PCB-205	E1668	**5.7 J**	**3.4 J**	**0.045 J**	**0.081 J**	**0.13 J**	**0.25 J**
PCB-206	E1668	**23 J**	**14 J**	**0.17 J**	**0.40 J**	**0.74 J**	**1.4 J**
PCB-207	E1668	**2.4 J**	**2.2 J**	0.020 UJ	**0.059 J**	**0.11 J**	**0.18 J**
PCB-208	E1668	**7.6 J**	**4.2 J**	**0.058 J**	**0.13 J**	**0.18 J**	**0.42 J**
PCB-209	E1668	**1.6 J**	**1.1 J**	**0.012 J**	**0.034 J**	**0.080 J**	**0.18 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW2-GAC-6-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-7-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-8-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-9-20251204 TS-PW2 GAC	Isotherm-PW2-PAC-2-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-3-20251204 TS-PW2 PAC
PCB Congeners (SPME) (ng/samp)							
PCB-001	E1668	0.0035 UJ	0.0050 UJ	0.0086 UJ	0.0016 UJ	0.0016 UJ	0.0021 UJ
PCB-002	E1668	0.0040 UJ	0.0057 UJ	0.010 UJ	0.0019 UJ	0.0019 UJ	0.0025 UJ
PCB-003	E1668	0.0042 UJ	0.0060 UJ	0.011 UJ	0.0021 UJ	0.0020 UJ	0.0026 UJ
PCB-004	E1668	**0.59 J**	**0.22 J**	**0.29 J**	**0.29 J**	0.0055 UJ	0.0059 UJ
PCB-005	E1668	0.023 UJ	0.011 UJ	0.026 UJ	0.0075 UJ	0.0051 UJ	0.0053 UJ
PCB-006	E1668	0.018 UJ	0.0092 UJ	0.022 UJ	0.0062 UJ	0.0042 UJ	0.0043 UJ
PCB-007	E1668	0.022 UJ	0.011 UJ	0.025 UJ	0.0072 UJ	0.0049 UJ	0.0050 UJ
PCB-008	E1668	0.018 UJ	0.0089 UJ	0.021 UJ	0.0060 UJ	0.0040 UJ	0.0041 UJ
PCB-009	E1668	0.020 UJ	0.010 UJ	0.024 UJ	0.0068 UJ	0.0046 UJ	0.0047 UJ
PCB-010	E1668	**0.56 J**	**0.28 J**	**0.37 J**	**0.30 J**	0.0050 UJ	0.0052 UJ
PCB-011	E1668	0.020 UJ	0.0098 UJ	0.023 UJ	0.0065 UJ	0.0044 UJ	0.0046 UJ
PCB-012/013	E1668	0.022 UJ	0.011 UJ	0.026 UJ	0.0073 UJ	0.0050 UJ	0.0051 UJ
PCB-014	E1668	0.022 UJ	0.011 UJ	0.025 UJ	0.0073 UJ	0.0049 UJ	0.0051 UJ
PCB-015	E1668	0.021 UJ	0.011 UJ	0.024 UJ	0.0071 UJ	0.0049 UJ	0.0049 UJ
PCB-016	E1668	0.013 UJ	0.017 UJ	0.033 UJ	0.0059 UJ	0.0028 UJ	0.0021 UJ
PCB-017	E1668	0.013 UJ	0.017 UJ	0.033 UJ	0.0059 UJ	0.0028 UJ	0.0021 UJ
PCB-018/030	E1668	**0.13 J**	**0.12 J**	**0.11 J**	**0.020 J**	0.0020 UJ	0.0015 UJ
PCB-019	E1668	**20 J**	**13 J**	**15 J**	**0.75 J**	0.0025 UJ	0.0019 UJ
PCB-020/028	E1668	**0.086 J**	0.039 UJ	0.060 UJ	0.017 UJ	0.0024 UJ	0.0033 UJ
PCB-021/033	E1668	0.046 UJ	0.039 UJ	0.058 UJ	0.017 UJ	0.0024 UJ	0.0032 UJ
PCB-022	E1668	0.043 UJ	0.036 UJ	0.055 UJ	0.016 UJ	0.0022 UJ	0.0030 UJ
PCB-023	E1668	0.048 UJ	0.040 UJ	0.061 UJ	0.017 UJ	0.0025 UJ	0.0033 UJ
PCB-024	E1668	0.0088 UJ	0.012 UJ	0.023 UJ	0.0041 UJ	0.0020 UJ	0.0014 UJ
PCB-025	E1668	0.039 UJ	0.033 UJ	0.049 UJ	0.014 UJ	0.0020 UJ	0.0027 UJ
PCB-026/029	E1668	**0.30 J**	**0.21 J**	**0.39 J**	**0.019 J**	0.0027 UJ	0.0036 UJ
PCB-027	E1668	0.0088 UJ	0.012 UJ	0.022 UJ	0.0041 UJ	0.0019 UJ	0.0014 UJ
PCB-031	E1668	**0.13 J**	**0.10 J**	**0.13 J**	0.015 UJ	0.0021 UJ	0.0029 UJ
PCB-032	E1668	0.0082 UJ	**0.045 J**	0.021 UJ	0.0038 UJ	0.0018 UJ	0.0013 UJ
PCB-034	E1668	0.050 UJ	0.042 UJ	0.063 UJ	0.018 UJ	0.0026 UJ	0.0035 UJ
PCB-035	E1668	0.048 UJ	0.041 UJ	0.061 UJ	0.017 UJ	0.0025 UJ	0.0034 UJ
PCB-036	E1668	0.040 UJ	0.033 UJ	0.050 UJ	0.014 UJ	0.0020 UJ	0.0027 UJ
PCB-037	E1668	0.047 UJ	0.039 UJ	0.060 UJ	0.017 UJ	0.0024 UJ	0.0033 UJ
PCB-038	E1668	0.045 UJ	0.038 UJ	0.057 UJ	0.016 UJ	0.0024 UJ	0.0032 UJ
PCB-039	E1668	0.047 UJ	0.039 UJ	0.059 UJ	0.017 UJ	0.0024 UJ	0.0033 UJ
PCB-040/041/071	E1668	0.11 UJ	0.15 UJ	0.21 UJ	0.12 UJ	0.0060 UJ	0.010 UJ
PCB-042	E1668	0.12 UJ	0.16 UJ	0.23 UJ	0.13 UJ	0.0065 UJ	0.011 UJ
PCB-043/073	E1668	0.091 UJ	0.12 UJ	0.17 UJ	**0.37 J**	0.0049 UJ	0.0084 UJ
PCB-044/047/065	E1668	**140 J**	**160 J**	**190 J**	**20 J**	0.0054 UJ	0.0093 UJ
PCB-045/051	E1668	0.12 UJ	0.15 UJ	0.22 UJ	0.13 UJ	0.0062 UJ	0.011 UJ
PCB-046	E1668	0.13 UJ	0.18 UJ	0.25 UJ	0.15 UJ	0.0072 UJ	0.012 UJ
PCB-048	E1668	0.11 UJ	0.15 UJ	0.21 UJ	0.12 UJ	0.0060 UJ	0.010 UJ
PCB-049/069	E1668	**3.5 J**	**3.5 J**	**4.8 J**	**0.67 J**	0.0050 UJ	0.0086 UJ
PCB-050/053	E1668	0.11 UJ	0.14 UJ	0.20 UJ	0.12 UJ	0.0058 UJ	0.010 UJ
PCB-052	E1668	**170 J**	**180 J**	**340 J**	**37 J**	0.0054 UJ	0.0093 UJ
PCB-054	E1668	**250 J**	**270 J**	**470 J**	**31 J**	0.0016 UJ	**0.038 J**
PCB-055	E1668	0.071 UJ	0.094 UJ	0.13 UJ	0.079 UJ	0.0038 UJ	0.0065 UJ
PCB-056	E1668	**0.94 J**	**0.92 J**	**1.2 J**	0.085 UJ	0.0041 UJ	0.0071 UJ
PCB-057	E1668	0.083 UJ	0.11 UJ	0.16 UJ	0.092 UJ	0.0045 UJ	0.0077 UJ
PCB-058	E1668	0.073 UJ	0.097 UJ	0.14 UJ	0.081 UJ	0.0039 UJ	0.0068 UJ

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW2-GAC-6-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-7-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-8-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-9-20251204 TS-PW2 GAC	Isotherm-PW2-PAC-2-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-3-20251204 TS-PW2 PAC
PCB-059/062/075	E1668	0.089 UJ	0.12 UJ	0.17 UJ	0.099 UJ	0.0048 UJ	0.0083 UJ
PCB-060	E1668	0.089 UJ	0.12 UJ	0.17 UJ	0.099 UJ	0.0048 UJ	0.0083 UJ
PCB-061/070/074/076	E1668	**230 J**	**240 J**	**390 J**	**87 J**	**0.056 J**	**0.046 J**
PCB-063	E1668	0.084 UJ	0.11 UJ	0.16 UJ	0.093 UJ	0.0045 UJ	0.0078 UJ
PCB-064	E1668	**1.5 J**	**1.4 J**	**1.9 J**	**0.22 J**	0.0043 UJ	0.0074 UJ
PCB-066	E1668	**2.5 J**	**2.6 J**	**3.8 J**	**0.51 J**	0.0040 UJ	0.0069 UJ
PCB-067	E1668	0.069 UJ	0.092 UJ	0.13 UJ	0.077 UJ	0.0037 UJ	0.0064 UJ
PCB-068	E1668	0.078 UJ	0.10 UJ	0.15 UJ	0.087 UJ	0.0042 UJ	0.0072 UJ
PCB-072	E1668	0.077 UJ	0.10 UJ	0.15 UJ	0.086 UJ	0.0042 UJ	0.0072 UJ
PCB-077	E1668	0.090 UJ	0.12 UJ	0.17 UJ	0.10 UJ	0.0049 UJ	0.0082 UJ
PCB-078	E1668	0.082 UJ	0.11 UJ	0.15 UJ	0.091 UJ	0.0044 UJ	0.0076 UJ
PCB-079	E1668	**7.4 J**	**7.4 J**	**11 J**	**7.9 J**	0.0035 UJ	0.0059 UJ
PCB-080	E1668	0.075 UJ	0.10 UJ	0.14 UJ	0.083 UJ	0.0040 UJ	0.0069 UJ
PCB-081	E1668	0.095 UJ	0.13 UJ	0.18 UJ	0.11 UJ	0.0051 UJ	0.0090 UJ
PCB-082	E1668	**5.6 J**	**5.9 J**	**8.7 J**	**6.9 J**	0.0059 UJ	0.0031 UJ
PCB-083/099	E1668	**25 J**	**29 J**	**39 J**	**41 J**	0.0060 UJ	0.0031 UJ
PCB-084	E1668	**13 J**	**16 J**	**22 J**	**15 J**	0.0069 UJ	0.0036 UJ
PCB-085/116/117	E1668	**8.3 J**	**9.3 J**	**13 J**	**13 J**	**0.010 J**	0.0027 UJ
PCB-086/087/097/109/119/125	E1668	**230 J**	**230 J**	**340 J**	**260 J**	**0.070 J**	**0.030 J**
PCB-088/091	E1668	**6.5 J**	**7.6 J**	**10 J**	**9.3 J**	0.0062 UJ	0.0032 UJ
PCB-089	E1668	0.023 UJ	0.037 UJ	0.069 UJ	**0.57 J**	0.0060 UJ	0.0031 UJ
PCB-090/101/113	E1668	**380 J**	**430 J**	**570 J**	**500 J**	**0.14 J**	**0.070 J**
PCB-092	E1668	**11 J**	**14 J**	**18 J**	**17 J**	0.0063 UJ	0.0033 UJ
PCB-093/100	E1668	0.023 UJ	0.038 UJ	0.071 UJ	**0.54 J**	0.0062 UJ	0.0033 UJ
PCB-094	E1668	0.027 UJ	0.044 UJ	0.081 UJ	**0.46 J**	0.0071 UJ	0.0037 UJ
PCB-095	E1668	**56 J**	**66 J**	**91 J**	**65 J**	0.0062 UJ	0.0033 UJ
PCB-096	E1668	0.016 UJ	0.026 UJ	0.048 UJ	**0.26 J**	0.0042 UJ	0.0022 UJ
PCB-098/102	E1668	**1.2 J**	**1.5 J**	**1.8 J**	**1.7 J**	0.0052 UJ	0.0028 UJ
PCB-103	E1668	0.023 UJ	0.038 UJ	0.070 UJ	**0.29 J**	0.0061 UJ	0.0032 UJ
PCB-104	E1668	0.018 UJ	0.029 UJ	0.054 UJ	**0.88 J**	0.0047 UJ	0.0025 UJ
PCB-105	E1668	**12 J**	**14 J**	**18 J**	**16 J**	0.0087 UJ	**0.0053 J**
PCB-106	E1668	0.12 UJ	0.15 UJ	0.15 UJ	0.17 UJ	0.0079 UJ	0.0032 UJ
PCB-107	E1668	**1.9 J**	**2.2 J**	**2.9 J**	**2.9 J**	0.0075 UJ	0.0030 UJ
PCB-108/124	E1668	**1.6 J**	**2.0 J**	**2.3 J**	**2.4 J**	0.0091 UJ	0.0037 UJ
PCB-110/115	E1668	**51 J**	**59 J**	**78 J**	**67 J**	**0.0080 J**	0.0020 UJ
PCB-111	E1668	0.016 UJ	0.027 UJ	0.050 UJ	0.019 UJ	0.0043 UJ	0.0023 UJ
PCB-112	E1668	0.014 UJ	0.022 UJ	0.041 UJ	0.016 UJ	0.0036 UJ	0.0019 UJ
PCB-114	E1668	**0.95 J**	**1.2 J**	**1.4 J**	**1.4 J**	0.0089 UJ	0.0036 UJ
PCB-118	E1668	**33 J**	**39 J**	**48 J**	**51 J**	0.0085 UJ	**0.012 J**
PCB-120	E1668	0.013 UJ	0.021 UJ	0.039 UJ	0.015 UJ	0.0034 UJ	0.0018 UJ
PCB-121	E1668	0.015 UJ	0.024 UJ	0.045 UJ	0.017 UJ	0.0040 UJ	0.0021 UJ
PCB-122	E1668	**0.54 J**	**0.61 J**	**0.88 J**	**0.84 J**	0.011 UJ	**0.0078 J**
PCB-123	E1668	**0.47 J**	**0.64 J**	**0.86 J**	**1.0 J**	0.0094 UJ	0.0039 UJ
PCB-126	E1668	0.12 UJ	0.15 UJ	0.15 UJ	0.17 UJ	0.0080 UJ	**0.0035 J**
PCB-127	E1668	0.12 UJ	0.15 UJ	0.15 UJ	**0.30 J**	0.0080 UJ	0.0032 UJ
PCB-128/166	E1668	**11 J**	**14 J**	**16 J**	**28 J**	**0.012 J**	**0.0064 J**
PCB-129/138/160/163	E1668	**100 J**	**140 J**	**160 J**	**290 J**	**0.070 J**	**0.018 J**
PCB-130	E1668	**5.8 J**	**7.4 J**	**8.2 J**	**15 J**	**0.0070 J**	0.0039 UJ
PCB-131	E1668	**1.3 J**	**1.6 J**	**2.1 J**	**3.5 J**	0.0048 UJ	0.0035 UJ
PCB-132	E1668	**34 J**	**44 J**	**54 J**	**96 J**	0.0045 UJ	**0.014 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW2-GAC-6-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-7-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-8-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-9-20251204 TS-PW2 GAC	Isotherm-PW2-PAC-2-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-3-20251204 TS-PW2 PAC
PCB-133	E1668	**1.1 J**	**1.3 J**	**1.6 J**	**2.7 J**	0.0040 UJ	0.0030 UJ
PCB-134/143	E1668	**6.0 J**	**7.5 J**	**9.5 J**	**16 J**	0.0046 UJ	0.0034 UJ
PCB-135/151	E1668	**50 J**	**66 J**	**78 J**	**140 J**	**0.0076 J**	0.0035 UJ
PCB-136	E1668	**22 J**	**29 J**	**36 J**	**63 J**	0.0080 UJ	0.0028 UJ
PCB-137	E1668	**3.2 J**	**4.4 J**	**3.9 J**	**8.5 J**	0.0045 UJ	0.0033 UJ
PCB-139/140	E1668	**1.1 J**	**1.5 J**	**1.6 J**	**3.0 J**	**0.011 J**	0.0028 UJ
PCB-141	E1668	**26 J**	**35 J**	**39 J**	**68 J**	0.0042 UJ	**0.012 J**
PCB-142	E1668	0.17 UJ	0.26 UJ	0.29 UJ	0.20 UJ	0.0046 UJ	0.0034 UJ
PCB-144	E1668	**8.3 J**	**11 J**	**13 J**	**23 J**	0.0049 UJ	0.0038 UJ
PCB-145	E1668	0.013 UJ	0.019 UJ	0.036 UJ	0.013 UJ	0.0032 UJ	0.0025 UJ
PCB-146	E1668	**12 J**	**16 J**	**18 J**	**32 J**	0.0035 UJ	0.0026 UJ
PCB-147/149	E1668	**86 J**	**100 J**	**140 J**	**260 J**	**0.030 J**	**0.025 J**
PCB-148	E1668	0.019 UJ	0.027 UJ	0.052 UJ	0.019 UJ	0.0046 UJ	0.0035 UJ
PCB-150	E1668	0.014 UJ	0.020 UJ	0.038 UJ	**0.16 J**	0.0034 UJ	0.0026 UJ
PCB-152	E1668	0.012 UJ	0.018 UJ	0.033 UJ	**0.19 J**	**0.0046 J**	0.0023 UJ
PCB-153/168	E1668	**84 J**	**110 J**	**120 J**	**240 J**	**0.060 J**	**0.021 J**
PCB-154	E1668	**0.59 J**	**0.82 J**	**0.87 J**	**1.7 J**	0.0042 UJ	0.0032 UJ
PCB-155	E1668	0.015 UJ	0.022 UJ	0.042 UJ	0.015 UJ	0.0037 UJ	0.0028 UJ
PCB-156/157	E1668	**10 J**	**13 J**	**14 J**	**25 J**	**0.017 J**	0.0028 UJ
PCB-158	E1668	**11 J**	**14 J**	**16 J**	**28 J**	**0.0067 J**	**0.0038 J**
PCB-159	E1668	**1.7 J**	**2.3 J**	**2.7 J**	**5.5 J**	**0.0026 J**	0.0019 UJ
PCB-161	E1668	0.10 UJ	0.16 UJ	0.17 UJ	0.12 UJ	0.0027 UJ	0.0020 UJ
PCB-162	E1668	0.11 UJ	0.17 UJ	0.19 UJ	0.13 UJ	0.0030 UJ	0.0022 UJ
PCB-164	E1668	**6.9 J**	**8.6 J**	**10 J**	**18 J**	**0.0098 J**	0.0020 UJ
PCB-165	E1668	0.13 UJ	0.21 UJ	0.22 UJ	0.16 UJ	0.0036 UJ	0.0026 UJ
PCB-167	E1668	**3.0 J**	**4.0 J**	**4.4 J**	**7.2 J**	0.0027 UJ	0.0020 UJ
PCB-169	E1668	0.092 UJ	0.14 UJ	0.16 UJ	0.11 UJ	0.0025 UJ	0.0019 UJ
PCB-170	E1668	**42 J**	**59 J**	**64 J**	**120 J**	**0.059 J**	**0.039 J**
PCB-171/173	E1668	**14 J**	**20 J**	**22 J**	**43 J**	**0.030 J**	0.0019 UJ
PCB-172	E1668	**7.5 J**	**11 J**	**12 J**	**21 J**	0.0054 UJ	**0.0045 J**
PCB-174	E1668	**45 J**	**66 J**	**72 J**	**140 J**	**0.059 J**	**0.034 J**
PCB-175	E1668	**8.4 J**	**11 J**	**12 J**	**19 J**	**0.018 J**	**0.0057 J**
PCB-176	E1668	**7.0 J**	**10 J**	**11 J**	**23 J**	0.0040 UJ	0.0014 UJ
PCB-177	E1668	**24 J**	**35 J**	**38 J**	**75 J**	**0.040 J**	**0.021 J**
PCB-178	E1668	**9.1 J**	**13 J**	**14 J**	**27 J**	0.0053 UJ	0.0019 UJ
PCB-179	E1668	**19 J**	**28 J**	**30 J**	**64 J**	**0.022 J**	**0.0079 J**
PCB-180/193	E1668	**97 J**	**140 J**	**150 J**	**290 J**	**0.14 J**	**0.072 J**
PCB-181	E1668	0.00037 UJ	0.0070 UJ	0.030 UJ	**1.1 J**	0.0047 UJ	**0.0039 J**
PCB-182	E1668	0.00034 UJ	0.0066 UJ	0.028 UJ	0.0069 UJ	0.0044 UJ	0.0016 UJ
PCB-183/185	E1668	**32 J**	**45 J**	**50 J**	**98 J**	0.0050 UJ	0.0018 UJ
PCB-184	E1668	0.00028 UJ	0.0053 UJ	0.022 UJ	0.0055 UJ	0.0035 UJ	0.0012 UJ
PCB-186	E1668	0.00025 UJ	0.0048 UJ	0.020 UJ	0.0050 UJ	0.0032 UJ	0.0011 UJ
PCB-187	E1668	**47 J**	**68 J**	**74 J**	**150 J**	**0.029 J**	**0.029 J**
PCB-188	E1668	0.00031 UJ	0.0059 UJ	0.025 UJ	0.0063 UJ	0.0039 UJ	0.0014 UJ
PCB-189	E1668	**1.5 J**	**1.9 J**	**2.0 J**	**3.7 J**	0.0063 UJ	0.0024 UJ
PCB-190	E1668	**9.3 J**	**13 J**	**14 J**	**25 J**	**0.024 J**	0.0014 UJ
PCB-191	E1668	**2.3 J**	**3.2 J**	**3.5 J**	**6.3 J**	**0.017 J**	0.0015 UJ
PCB-192	E1668	0.00029 UJ	0.0055 UJ	0.023 UJ	0.0058 UJ	0.0037 UJ	0.0013 UJ
PCB-194	E1668	**15 J**	**22 J**	**27 J**	**47 J**	**0.018 J**	**0.017 J**
PCB-195	E1668	**6.5 J**	**9.7 J**	**12 J**	**22 J**	**0.010 J**	0.0022 UJ

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW2-GAC-6-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-7-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-8-20251204 TS-PW2 GAC	Isotherm-PW2-GAC-9-20251204 TS-PW2 GAC	Isotherm-PW2-PAC-2-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-3-20251204 TS-PW2 PAC
PCB-196	E1668	**12 J**	**18 J**	**22 J**	**37 J**	**0.014 J**	**0.018 J**
PCB-197	E1668	--	--	--	--	0.0029 UJ	0.0022 UJ
PCB-197/200	E1668	**4.1 J**	**6.2 J**	**7.8 J**	**13 J**	--	--
PCB-198/199	E1668	**21 J**	**32 J**	**38 J**	**65 J**	**0.031 J**	0.0026 UJ
PCB-200	E1668	--	--	--	--	0.0029 UJ	0.0022 UJ
PCB-201	E1668	**3.3 J**	**5.2 J**	**6.4 J**	**11 J**	0.0032 UJ	0.0024 UJ
PCB-202	E1668	**3.8 J**	**5.9 J**	**7.0 J**	**13 J**	**0.0088 J**	0.0021 UJ
PCB-203	E1668	**12 J**	**19 J**	**23 J**	**38 J**	0.0032 UJ	**0.017 J**
PCB-204	E1668	0.0095 UJ	0.0055 UJ	0.043 UJ	0.0056 UJ	0.0027 UJ	0.0021 UJ
PCB-205	E1668	**0.94 J**	**1.3 J**	**1.6 J**	**2.8 J**	0.0014 UJ	0.0017 UJ
PCB-206	E1668	**4.2 J**	**5.9 J**	**8.2 J**	**15 J**	0.016 UJ	0.0075 UJ
PCB-207	E1668	**0.47 J**	**0.71 J**	**1.0 J**	**1.8 J**	0.014 UJ	0.0066 UJ
PCB-208	E1668	**1.2 J**	**1.8 J**	**2.5 J**	**4.5 J**	0.014 UJ	0.0068 UJ
PCB-209	E1668	**0.34 J**	**0.53 J**	**0.65 J**	**1.8 J**	0.00072 UJ	0.00035 UJ

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW2-PAC-4-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-5-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-6-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-7-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-8-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-9-20251204 TS-PW2 PAC
PCB Congeners (SPME) (ng/samp)							
PCB-001	E1668	0.0015 UJ	0.0020 UJ	0.0017 UJ	0.0023 UJ	0.0018 UJ	0.0020 UJ
PCB-002	E1668	0.0017 UJ	0.0023 UJ	0.0020 UJ	0.0025 UJ	0.0021 UJ	0.0023 UJ
PCB-003	E1668	0.0017 UJ	0.0025 UJ	0.0021 UJ	0.0026 UJ	0.0023 UJ	0.0024 UJ
PCB-004	E1668	0.0045 UJ	0.0040 UJ	0.0050 UJ	0.0050 UJ	**0.021 J**	**0.084 J**
PCB-005	E1668	0.0039 UJ	0.0036 UJ	0.0045 UJ	0.0046 UJ	0.0051 UJ	0.0069 UJ
PCB-006	E1668	0.0032 UJ	0.0029 UJ	0.0037 UJ	0.0037 UJ	0.0042 UJ	0.0057 UJ
PCB-007	E1668	0.0038 UJ	0.0034 UJ	0.0043 UJ	0.0044 UJ	0.0049 UJ	0.0066 UJ
PCB-008	E1668	0.0031 UJ	0.0028 UJ	0.0036 UJ	0.0036 UJ	0.0040 UJ	0.0055 UJ
PCB-009	E1668	0.0036 UJ	0.0032 UJ	0.0041 UJ	0.0041 UJ	0.0046 UJ	0.0063 UJ
PCB-010	E1668	0.0039 UJ	**0.0091 J**	**0.013 J**	**0.016 J**	**0.023 J**	**0.089 J**
PCB-011	E1668	0.0034 UJ	0.0031 UJ	0.0039 UJ	**0.014 J**	0.0044 UJ	0.0060 UJ
PCB-012/013	E1668	0.0038 UJ	0.0035 UJ	0.0044 UJ	0.0045 UJ	0.0050 UJ	0.0068 UJ
PCB-014	E1668	0.0038 UJ	0.0035 UJ	0.0043 UJ	0.0044 UJ	0.0049 UJ	0.0067 UJ
PCB-015	E1668	0.0036 UJ	0.0033 UJ	0.0042 UJ	0.0043 UJ	0.0048 UJ	0.0066 UJ
PCB-016	E1668	0.0034 UJ	0.0027 UJ	0.0038 UJ	0.0027 UJ	0.0047 UJ	0.0036 UJ
PCB-017	E1668	0.0035 UJ	0.0028 UJ	0.0038 UJ	0.0027 UJ	0.0047 UJ	0.0036 UJ
PCB-018/030	E1668	0.0024 UJ	0.0019 UJ	0.0026 UJ	0.0018 UJ	0.0033 UJ	0.0025 UJ
PCB-019	E1668	0.0031 UJ	0.0025 UJ	0.015 U	**0.030 J**	**0.050 J**	**0.099 J**
PCB-020/028	E1668	0.0033 UJ	0.0029 UJ	0.0032 UJ	0.0030 UJ	0.0029 UJ	0.0035 UJ
PCB-021/033	E1668	0.0033 UJ	0.0028 UJ	0.0031 UJ	0.0030 UJ	0.0028 UJ	0.0034 UJ
PCB-022	E1668	0.0031 UJ	0.0027 UJ	0.0029 UJ	0.0028 UJ	0.0027 UJ	0.0032 UJ
PCB-023	E1668	0.0034 UJ	0.0030 UJ	0.0033 UJ	0.0031 UJ	0.0029 UJ	0.0035 UJ
PCB-024	E1668	0.0024 UJ	0.0019 UJ	0.0026 UJ	0.0018 UJ	0.0033 UJ	0.0025 UJ
PCB-025	E1668	0.0028 UJ	0.0024 UJ	0.0026 UJ	0.0025 UJ	0.0024 UJ	0.0029 UJ
PCB-026/029	E1668	0.0036 UJ	0.0032 UJ	0.0035 UJ	0.0033 UJ	**0.0044 J**	0.0038 UJ
PCB-027	E1668	0.0024 UJ	0.0019 UJ	0.0026 UJ	0.0018 UJ	0.0032 UJ	0.0025 UJ
PCB-031	E1668	0.0029 UJ	0.0025 UJ	0.0028 UJ	0.0027 UJ	0.0025 UJ	0.0030 UJ
PCB-032	E1668	0.0022 UJ	0.0018 UJ	0.0024 UJ	0.0017 UJ	0.0030 UJ	0.0023 UJ
PCB-034	E1668	0.0035 UJ	0.0031 UJ	0.0034 UJ	0.0032 UJ	0.0031 UJ	0.0037 UJ
PCB-035	E1668	0.0034 UJ	0.0030 UJ	0.0033 UJ	0.0031 UJ	0.0030 UJ	0.0036 UJ
PCB-036	E1668	0.0028 UJ	0.0024 UJ	0.0027 UJ	0.0025 UJ	0.0024 UJ	0.0029 UJ
PCB-037	E1668	0.0033 UJ	0.0029 UJ	0.0032 UJ	0.0030 UJ	0.0029 UJ	0.0035 UJ
PCB-038	E1668	0.0032 UJ	0.0028 UJ	0.0031 UJ	0.0029 UJ	0.0028 UJ	0.0033 UJ
PCB-039	E1668	0.0033 UJ	0.0029 UJ	0.0032 UJ	0.0030 UJ	0.0029 UJ	0.0035 UJ
PCB-040/041/071	E1668	0.0020 UJ	0.014 UJ	0.014 UJ	0.023 UJ	0.012 UJ	0.012 UJ
PCB-042	E1668	0.0022 UJ	0.015 UJ	0.015 UJ	0.025 UJ	0.013 UJ	0.013 UJ
PCB-043/073	E1668	0.0016 UJ	0.011 UJ	0.011 UJ	0.019 UJ	0.010 UJ	0.0099 UJ
PCB-044/047/065	E1668	0.0018 UJ	0.012 UJ	0.012 UJ	**0.059 J**	**0.088 J**	**0.17 J**
PCB-045/051	E1668	0.0021 UJ	0.014 UJ	0.014 UJ	0.024 UJ	0.013 UJ	0.013 UJ
PCB-046	E1668	0.0024 UJ	0.017 UJ	0.016 UJ	0.027 UJ	0.015 UJ	0.015 UJ
PCB-048	E1668	0.0020 UJ	0.014 UJ	0.014 UJ	0.023 UJ	0.012 UJ	0.012 UJ
PCB-049/069	E1668	0.0017 UJ	0.012 UJ	0.012 UJ	0.019 UJ	0.010 UJ	0.010 UJ
PCB-050/053	E1668	0.0020 UJ	0.013 UJ	0.013 UJ	0.022 UJ	0.012 UJ	0.012 UJ
PCB-052	E1668	**0.016 J**	0.012 UJ	**0.040 J**	0.020 UJ	**0.16 J**	**0.24 J**
PCB-054	E1668	**0.027 J**	**0.039 J**	**0.15 J**	**0.16 J**	**0.44 J**	**0.44 J**
PCB-055	E1668	0.0013 UJ	0.0087 UJ	0.0087 UJ	0.014 UJ	0.0077 UJ	0.0077 UJ
PCB-056	E1668	0.0014 UJ	0.0095 UJ	0.0095 UJ	0.016 UJ	0.0084 UJ	0.0083 UJ
PCB-057	E1668	0.0015 UJ	0.010 UJ	0.010 UJ	0.017 UJ	0.0091 UJ	0.0090 UJ
PCB-058	E1668	0.0013 UJ	0.0091 UJ	0.0090 UJ	0.015 UJ	0.0080 UJ	0.0080 UJ

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW2-PAC-4-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-5-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-6-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-7-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-8-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-9-20251204 TS-PW2 PAC
PCB-059/062/075	E1668	0.0016 UJ	0.011 UJ	0.011 UJ	0.018 UJ	0.0098 UJ	0.0097 UJ
PCB-060	E1668	0.0016 UJ	0.011 UJ	0.011 UJ	0.018 UJ	0.0097 UJ	0.0097 UJ
PCB-061/070/074/076	E1668	**0.073 J**	**0.031 J**	**0.044 J**	**0.047 J**	**0.14 J**	**0.57 J**
PCB-063	E1668	0.0015 UJ	0.010 UJ	0.010 UJ	0.017 UJ	0.0092 UJ	0.0091 UJ
PCB-064	E1668	0.0014 UJ	0.0099 UJ	0.0099 UJ	0.016 UJ	0.0087 UJ	0.0087 UJ
PCB-066	E1668	0.0013 UJ	0.0092 UJ	0.0092 UJ	0.015 UJ	0.0081 UJ	0.0081 UJ
PCB-067	E1668	0.0012 UJ	0.0086 UJ	0.0085 UJ	0.014 UJ	0.0075 UJ	0.0075 UJ
PCB-068	E1668	0.0014 UJ	0.0097 UJ	0.0097 UJ	0.016 UJ	0.0085 UJ	0.0085 UJ
PCB-072	E1668	0.0014 UJ	0.0096 UJ	0.0095 UJ	0.016 UJ	0.0084 UJ	0.0084 UJ
PCB-077	E1668	0.0016 UJ	0.011 UJ	0.011 UJ	0.018 UJ	0.0098 UJ	0.0097 UJ
PCB-078	E1668	0.0015 UJ	0.010 UJ	0.010 UJ	0.017 UJ	0.0089 UJ	0.0089 UJ
PCB-079	E1668	0.0012 UJ	0.0079 UJ	0.0079 UJ	0.013 UJ	0.0070 UJ	0.0070 UJ
PCB-080	E1668	0.0014 UJ	0.0093 UJ	0.0092 UJ	0.015 UJ	0.0082 UJ	0.0082 UJ
PCB-081	E1668	0.0018 UJ	0.012 UJ	0.012 UJ	0.020 UJ	0.010 UJ	0.011 UJ
PCB-082	E1668	**0.0079 J**	0.0045 UJ	0.0050 UJ	0.0067 UJ	0.0079 UJ	0.0057 UJ
PCB-083/099	E1668	0.0053 UJ	0.0045 UJ	0.0051 UJ	0.0068 UJ	**0.028 J**	**0.047 J**
PCB-084	E1668	0.0061 UJ	0.0053 UJ	0.0059 UJ	0.0078 UJ	0.0093 UJ	**0.015 J**
PCB-085/116/117	E1668	**0.0079 J**	0.0039 UJ	0.0044 UJ	0.0058 UJ	0.0069 UJ	0.0050 UJ
PCB-086/087/097/109/119/125	E1668	**0.057 J**	**0.059 J**	**0.12 J**	**0.11 J**	**0.23 J**	**0.27 J**
PCB-088/091	E1668	0.0055 UJ	0.0047 UJ	0.0053 UJ	0.0070 UJ	0.0083 UJ	0.0060 UJ
PCB-089	E1668	0.0053 UJ	0.0046 UJ	0.0051 UJ	0.0068 UJ	0.0080 UJ	0.0058 UJ
PCB-090/101/113	E1668	**0.11 J**	**0.14 J**	**0.17 J**	**0.25 J**	**0.33 J**	**0.42 J**
PCB-092	E1668	0.0056 UJ	0.0048 UJ	0.0054 UJ	0.0072 UJ	0.0085 UJ	**0.023 J**
PCB-093/100	E1668	0.0055 UJ	0.0047 UJ	0.0053 UJ	0.0070 UJ	0.0083 UJ	0.0060 UJ
PCB-094	E1668	0.0063 UJ	0.0054 UJ	0.0061 UJ	0.0080 UJ	0.0095 UJ	0.0069 UJ
PCB-095	E1668	0.0055 UJ	**0.0051 J**	0.0053 UJ	**0.013 J**	**0.030 J**	**0.083 J**
PCB-096	E1668	0.0037 UJ	0.0032 UJ	0.0036 UJ	0.0048 UJ	0.0056 UJ	0.0041 UJ
PCB-098/102	E1668	0.0047 UJ	0.0040 UJ	0.0045 UJ	0.0059 UJ	0.0070 UJ	0.0051 UJ
PCB-103	E1668	0.0054 UJ	0.0046 UJ	0.0052 UJ	0.0069 UJ	0.0082 UJ	0.0059 UJ
PCB-104	E1668	0.0042 UJ	0.0036 UJ	0.0041 UJ	0.0054 UJ	0.0063 UJ	0.0046 UJ
PCB-105	E1668	0.0066 UJ	0.0056 UJ	0.0052 UJ	0.0081 UJ	0.011 UJ	**0.026 J**
PCB-106	E1668	0.0059 UJ	0.0050 UJ	0.0047 UJ	0.0074 UJ	0.010 UJ	0.0052 UJ
PCB-107	E1668	0.0056 UJ	0.0048 UJ	0.0045 UJ	0.0071 UJ	0.010 UJ	0.0049 UJ
PCB-108/124	E1668	0.0068 UJ	0.0058 UJ	0.0055 UJ	0.0085 UJ	0.012 UJ	0.0060 UJ
PCB-110/115	E1668	0.0034 UJ	**0.0033 J**	**0.013 J**	**0.022 J**	**0.050 J**	**0.068 J**
PCB-111	E1668	0.0038 UJ	0.0033 UJ	0.0037 UJ	0.0049 UJ	0.0058 UJ	0.0042 UJ
PCB-112	E1668	**0.0047 J**	0.0027 UJ	0.0031 UJ	0.0041 UJ	0.0048 UJ	0.0035 UJ
PCB-114	E1668	0.0065 UJ	0.0057 UJ	0.0053 UJ	0.0084 UJ	0.011 UJ	0.0058 UJ
PCB-118	E1668	0.0064 UJ	0.0054 UJ	**0.011 J**	**0.015 J**	0.011 UJ	**0.072 J**
PCB-120	E1668	0.0031 UJ	0.0026 UJ	0.0029 UJ	0.0039 UJ	0.0046 UJ	0.0033 UJ
PCB-121	E1668	0.0035 UJ	0.0030 UJ	0.0034 UJ	0.0045 UJ	0.0053 UJ	0.0038 UJ
PCB-122	E1668	0.0080 UJ	0.0068 UJ	0.0064 UJ	0.010 UJ	0.014 UJ	0.0070 UJ
PCB-123	E1668	0.0071 UJ	0.0061 UJ	0.0057 UJ	0.0090 UJ	0.013 UJ	0.0062 UJ
PCB-126	E1668	0.0059 UJ	0.0049 UJ	0.0047 UJ	0.0072 UJ	0.010 UJ	0.0050 UJ
PCB-127	E1668	0.0060 UJ	0.0051 UJ	0.0048 UJ	0.0075 UJ	0.011 UJ	0.0052 UJ
PCB-128/166	E1668	0.0049 UJ	**0.0070 J**	**0.016 J**	**0.024 J**	**0.026 J**	**0.039 J**
PCB-129/138/160/163	E1668	**0.066 J**	**0.12 J**	**0.20 J**	**0.42 J**	**0.37 J**	**0.57 J**
PCB-130	E1668	0.0076 UJ	0.0079 UJ	**0.015 J**	**0.030 J**	**0.030 J**	**0.037 J**
PCB-131	E1668	0.0068 UJ	0.0070 UJ	0.0037 UJ	0.0050 UJ	0.0044 UJ	**0.0063 J**
PCB-132	E1668	**0.014 J**	**0.053 J**	**0.080 J**	**0.15 J**	**0.16 J**	**0.21 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW2-PAC-4-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-5-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-6-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-7-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-8-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-9-20251204 TS-PW2 PAC
PCB-133	E1668	0.0058 UJ	0.0060 UJ	0.0031 UJ	0.0042 UJ	0.0037 UJ	0.0041 UJ
PCB-134/143	E1668	0.0066 UJ	0.0068 UJ	0.0036 UJ	0.0048 UJ	**0.032 J**	0.0047 UJ
PCB-135/151	E1668	**0.022 J**	**0.054 J**	**0.11 J**	**0.17 J**	**0.23 J**	**0.34 J**
PCB-136	E1668	**0.0095 J**	**0.024 J**	**0.060 J**	**0.11 J**	**0.15 J**	**0.19 J**
PCB-137	E1668	0.0065 UJ	0.0067 UJ	**0.0062 J**	**0.027 J**	0.0042 UJ	**0.0062 J**
PCB-139/140	E1668	0.0055 UJ	0.0057 UJ	0.0030 UJ	0.0040 UJ	**0.011 J**	**0.0063 J**
PCB-141	E1668	**0.0085 J**	**0.025 J**	**0.055 J**	**0.11 J**	**0.11 J**	**0.17 J**
PCB-142	E1668	0.0065 UJ	0.0068 UJ	0.0035 UJ	0.0048 UJ	0.0042 UJ	0.0047 UJ
PCB-144	E1668	0.0036 UJ	0.0013 UJ	**0.024 J**	**0.027 J**	**0.045 J**	**0.039 J**
PCB-145	E1668	0.0023 UJ	0.00085 UJ	0.0030 UJ	0.0018 UJ	0.0012 UJ	0.0011 UJ
PCB-146	E1668	0.0051 UJ	**0.013 J**	**0.027 J**	**0.032 J**	**0.061 J**	**0.079 J**
PCB-147/149	E1668	**0.039 J**	**0.095 J**	**0.19 J**	**0.36 J**	**0.47 J**	**0.64 J**
PCB-148	E1668	0.0034 UJ	0.0012 UJ	0.0043 UJ	0.0026 UJ	0.0018 UJ	0.0016 UJ
PCB-150	E1668	0.0025 UJ	0.00089 UJ	0.0032 UJ	0.0019 UJ	0.0013 UJ	0.0011 UJ
PCB-152	E1668	0.0022 UJ	0.00078 UJ	0.0028 UJ	0.0017 UJ	0.0011 UJ	0.0010 UJ
PCB-153/168	E1668	**0.028 J**	**0.093 J**	**0.17 J**	**0.38 J**	**0.30 J**	**0.55 J**
PCB-154	E1668	0.0031 UJ	0.0011 UJ	0.0040 UJ	0.0024 UJ	0.0016 UJ	0.0014 UJ
PCB-155	E1668	0.0027 UJ	0.00097 UJ	0.0035 UJ	0.0021 UJ	0.0014 UJ	0.0012 UJ
PCB-156/157	E1668	0.0056 UJ	0.0057 UJ	**0.0065 J**	**0.025 J**	**0.018 J**	**0.029 J**
PCB-158	E1668	0.0042 UJ	**0.0062 J**	**0.018 J**	**0.052 J**	**0.033 J**	**0.057 J**
PCB-159	E1668	0.0037 UJ	0.0038 UJ	0.0020 UJ	**0.023 J**	0.0024 UJ	**0.036 J**
PCB-161	E1668	0.0038 UJ	0.0040 UJ	0.0021 UJ	0.0028 UJ	0.0025 UJ	0.0027 UJ
PCB-162	E1668	0.0043 UJ	0.0044 UJ	0.0023 UJ	0.0031 UJ	0.0028 UJ	0.0030 UJ
PCB-164	E1668	0.0040 UJ	**0.0088 J**	**0.017 J**	**0.017 J**	**0.019 J**	**0.041 J**
PCB-165	E1668	0.0051 UJ	0.0053 UJ	0.0028 UJ	0.0037 UJ	0.0033 UJ	0.0036 UJ
PCB-167	E1668	0.0039 UJ	0.0041 UJ	0.0021 UJ	**0.0052 J**	**0.0037 J**	0.0028 UJ
PCB-169	E1668	0.0035 UJ	0.0036 UJ	0.0019 UJ	0.0026 UJ	0.0023 UJ	0.0026 UJ
PCB-170	E1668	**0.016 J**	**0.14 J**	**0.19 J**	**0.62 J**	**0.51 J**	**0.77 J**
PCB-171/173	E1668	**0.019 J**	**0.057 J**	**0.078 J**	**0.25 J**	**0.19 J**	**0.32 J**
PCB-172	E1668	0.0038 UJ	**0.026 J**	**0.044 J**	**0.091 J**	**0.076 J**	**0.11 J**
PCB-174	E1668	**0.048 J**	**0.22 J**	**0.24 J**	**0.66 J**	**0.79 J**	**1.2 J**
PCB-175	E1668	0.0038 UJ	**0.056 J**	**0.046 J**	**0.12 J**	**0.11 J**	**0.13 J**
PCB-176	E1668	0.0028 UJ	**0.042 J**	**0.050 J**	**0.12 J**	**0.16 J**	**0.24 J**
PCB-177	E1668	**0.023 J**	**0.097 J**	**0.11 J**	**0.39 J**	**0.42 J**	**0.61 J**
PCB-178	E1668	**0.017 J**	**0.022 J**	**0.053 J**	**0.12 J**	**0.17 J**	**0.21 J**
PCB-179	E1668	**0.021 J**	**0.089 J**	**0.14 J**	**0.38 J**	**0.40 J**	**0.68 J**
PCB-180/193	E1668	**0.070 J**	**0.37 J**	**0.44 J**	**1.3 J**	**1.1 J**	**1.8 J**
PCB-181	E1668	0.0033 UJ	0.0039 UJ	0.00024 UJ	0.0029 UJ	0.00035 UJ	**0.011 J**
PCB-182	E1668	0.0031 UJ	0.0037 UJ	0.00023 UJ	0.0027 UJ	0.00033 UJ	0.00024 UJ
PCB-183/185	E1668	0.0035 UJ	**0.16 J**	**0.17 J**	**0.47 J**	**0.44 J**	**0.82 J**
PCB-184	E1668	0.0025 UJ	0.0030 UJ	0.00018 UJ	0.0022 UJ	0.00026 UJ	0.00019 UJ
PCB-186	E1668	0.0023 UJ	0.0027 UJ	0.00016 UJ	0.0020 UJ	0.00024 UJ	0.00017 UJ
PCB-187	E1668	**0.044 J**	**0.21 J**	**0.26 J**	**0.70 J**	**0.74 J**	**1.1 J**
PCB-188	E1668	0.0028 UJ	0.0034 UJ	0.00020 UJ	0.0024 UJ	0.00029 UJ	0.00022 UJ
PCB-189	E1668	0.0030 UJ	0.0038 UJ	0.0056 UJ	**0.013 J**	**0.0058 J**	**0.012 J**
PCB-190	E1668	0.0028 UJ	**0.028 J**	**0.025 J**	**0.11 J**	**0.087 J**	**0.13 J**
PCB-191	E1668	0.0029 UJ	0.0034 UJ	0.00021 UJ	**0.029 J**	**0.021 J**	**0.026 J**
PCB-192	E1668	0.0026 UJ	0.0031 UJ	0.00019 UJ	0.0023 UJ	0.00028 UJ	0.00020 UJ
PCB-194	E1668	**0.015 J**	**0.089 J**	**0.098 J**	**0.32 J**	**0.31 J**	**0.50 J**
PCB-195	E1668	0.0027 UJ	**0.042 J**	**0.049 J**	**0.17 J**	**0.17 J**	**0.28 J**

Table D-4

Summary of Isotherm Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Isotherm-PW2-PAC-4-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-5-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-6-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-7-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-8-20251204 TS-PW2 PAC	Isotherm-PW2-PAC-9-20251204 TS-PW2 PAC
PCB-196	E1668	0.0023 UJ	**0.095 J**	**0.088 J**	**0.29 J**	**0.31 J**	**0.49 J**
PCB-197	E1668	0.0017 UJ	--	--	--	--	--
PCB-197/200	E1668	--	**0.035 J**	**0.040 J**	**0.12 J**	**0.13 J**	**0.23 J**
PCB-198/199	E1668	**0.055 J**	**0.19 J**	**0.22 J**	**0.47 J**	**0.59 J**	**0.90 J**
PCB-200	E1668	0.0017 UJ	--	--	--	--	--
PCB-201	E1668	0.0019 UJ	**0.020 J**	**0.031 J**	**0.079 J**	**0.14 J**	**0.18 J**
PCB-202	E1668	0.0016 UJ	**0.046 J**	**0.049 J**	**0.13 J**	**0.12 J**	**0.20 J**
PCB-203	E1668	**0.012 J**	**0.068 J**	**0.083 J**	**0.28 J**	**0.24 J**	**0.48 J**
PCB-204	E1668	0.0016 UJ	0.0011 UJ	0.0011 UJ	0.00071 UJ	0.00078 UJ	0.00038 UJ
PCB-205	E1668	0.0021 UJ	0.0016 UJ	0.0016 UJ	**0.018 J**	0.0020 UJ	**0.022 J**
PCB-206	E1668	0.015 UJ	**0.047 J**	**0.054 J**	**0.16 J**	**0.15 J**	**0.28 J**
PCB-207	E1668	0.013 UJ	0.018 UJ	0.019 UJ	0.0081 UJ	0.011 UJ	**0.047 J**
PCB-208	E1668	0.013 UJ	0.018 UJ	0.019 UJ	**0.072 J**	**0.065 J**	**0.13 J**
PCB-209	E1668	0.00034 UJ	0.00047 UJ	**0.0058 J**	**0.013 J**	**0.028 J**	**0.080 J**

Table D-4
Summary of Isotherm Testing SPME PCB Mass Results

Notes:
Bold: Detected result
J: Estimated value
ng/sample: nanograms per sample
SPME: solid-phase microextraction
U: Compound analyzed for, but not detected above detection limit
UJ: Compound analyzed for, but not detected above estimated detection limit

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-MB-20251010 Method Blank None	Kinetics-PW1-CTRL-1-20251010 TS-PW1 Control	Kinetics-PW1-CTRL-2-20251014 TS-PW1 Control	Kinetics-PW1-CTRL-3-20251021 TS-PW1 Control	Kinetics-PW1-CTRL-4-20251028 TS-PW1 Control	Kinetics-PW1-CTRL-5-20251104 TS-PW1 Control	Kinetics-PW1-CTRL-6-20251118 TS-PW1 Control
PCB Congeners (SPME) (ng/samp)								
PCB-001	E1668	0.00084 UJ	**0.081 J**	0.049 UJ	**0.16 J**	**0.071 J**	0.10 UJ	**0.092 J**
PCB-002	E1668	0.0011 UJ	0.018 UJ	0.022 UJ	0.024 UJ	0.024 UJ	0.036 UJ	0.015 UJ
PCB-003	E1668	0.0013 UJ	**0.028 J**	0.028 UJ	**0.030 J**	0.030 UJ	0.050 UJ	**0.050 J**
PCB-004	E1668	0.014 UJ	**200 J**	**190 J**	**210 J**	**190 J**	**180 J**	**190 J**
PCB-005	E1668	0.0020 UJ	0.015 UJ	0.019 UJ	0.017 UJ	0.027 UJ	0.042 UJ	0.032 UJ
PCB-006	E1668	0.0017 UJ	0.013 UJ	0.015 UJ	0.014 UJ	0.022 UJ	0.034 UJ	0.026 UJ
PCB-007	E1668	0.0019 UJ	0.015 UJ	0.018 UJ	0.017 UJ	0.026 UJ	0.040 UJ	0.030 UJ
PCB-008	E1668	0.0016 UJ	0.012 UJ	**0.35 J**	**0.33 J**	**0.39 J**	0.033 UJ	0.025 UJ
PCB-009	E1668	0.0018 UJ	0.014 UJ	0.017 UJ	0.016 UJ	0.024 UJ	0.038 UJ	0.029 UJ
PCB-010	E1668	0.016 UJ	**260 J**	**240 J**	**270 J**	**250 J**	**260 J**	**220 J**
PCB-011	E1668	0.0059 UJ	0.013 UJ	0.016 UJ	0.015 UJ	0.023 UJ	0.037 UJ	0.027 UJ
PCB-012/013	E1668	0.0020 UJ	0.015 UJ	0.018 UJ	0.017 UJ	0.026 UJ	0.041 UJ	0.031 UJ
PCB-014	E1668	0.0020 UJ	0.015 UJ	0.018 UJ	0.017 UJ	0.026 UJ	0.041 UJ	0.031 UJ
PCB-015	E1668	0.0022 UJ	0.017 UJ	0.023 UJ	0.020 UJ	0.034 UJ	0.059 UJ	0.030 UJ
PCB-016	E1668	0.0012 UJ	**0.28 J**	0.0069 UJ	**0.31 J**	0.016 UJ	0.010 UJ	0.015 UJ
PCB-017	E1668	0.0012 UJ	**0.21 J**	0.0069 UJ	0.030 UJ	0.016 UJ	0.010 UJ	0.015 UJ
PCB-018/030	E1668	0.00082 UJ	**0.51 J**	**0.58 J**	**0.55 J**	**0.48 J**	**0.49 J**	**0.42 J**
PCB-019	E1668	0.0066 UJ	**260 J**	**260 J**	**280 J**	**250 J**	**250 J**	**260 J**
PCB-020/028	E1668	0.00095 UJ	**0.58 J**	**0.64 J**	**0.53 J**	**0.51 J**	**0.49 J**	**0.45 J**
PCB-021/033	E1668	0.00093 UJ	**0.41 J**	**0.47 J**	**0.34 J**	**0.33 J**	**0.37 J**	**0.31 J**
PCB-022	E1668	0.00088 UJ	**0.19 J**	**0.22 J**	**0.18 J**	**0.17 J**	**0.23 J**	**0.17 J**
PCB-023	E1668	0.00097 UJ	0.043 UJ	0.028 UJ	0.035 UJ	0.085 UJ	0.054 UJ	0.029 UJ
PCB-024	E1668	0.00081 UJ	0.0055 UJ	0.0047 UJ	0.021 UJ	0.011 UJ	0.0071 UJ	0.010 UJ
PCB-025	E1668	0.00079 UJ	0.035 UJ	**0.054 J**	**0.056 J**	0.069 UJ	0.044 UJ	0.024 UJ
PCB-026/029	E1668	0.0010 UJ	**0.61 J**	**0.69 J**	**0.60 J**	**0.57 J**	**0.49 J**	**0.48 J**
PCB-027	E1668	0.00081 UJ	0.0055 UJ	0.0047 UJ	0.021 UJ	0.011 UJ	0.0071 UJ	0.010 UJ
PCB-031	E1668	0.00084 UJ	**0.81 J**	**0.84 J**	**0.69 J**	**0.69 J**	**0.71 J**	**0.65 J**
PCB-032	E1668	0.00075 UJ	0.0051 UJ	0.0044 UJ	0.019 UJ	0.010 UJ	0.0066 UJ	0.0093 UJ
PCB-034	E1668	0.0010 UJ	0.045 UJ	0.029 UJ	0.036 UJ	0.088 UJ	0.056 UJ	0.031 UJ
PCB-035	E1668	0.00098 UJ	0.043 UJ	0.029 UJ	**0.050 J**	0.085 UJ	0.055 UJ	0.030 UJ
PCB-036	E1668	0.00080 UJ	0.035 UJ	0.023 UJ	0.029 UJ	0.070 UJ	0.045 UJ	0.024 UJ
PCB-037	E1668	0.00095 UJ	**0.28 J**	0.028 UJ	**0.24 J**	**0.26 J**	**0.24 J**	0.029 UJ
PCB-038	E1668	0.00092 UJ	0.041 UJ	0.027 UJ	0.033 UJ	0.080 UJ	0.051 UJ	0.028 UJ
PCB-039	E1668	0.00095 UJ	0.042 UJ	0.028 UJ	0.034 UJ	0.083 UJ	0.053 UJ	0.029 UJ
PCB-040/041/071	E1668	0.0029 UJ	**1.3 J**	**1.2 J**	**1.2 J**	**1.2 J**	**1.3 J**	**0.88 J**
PCB-042	E1668	0.0031 UJ	**0.90 J**	**0.87 J**	**0.69 J**	**0.99 J**	0.20 UJ	**0.60 J**
PCB-043/073	E1668	0.0023 UJ	0.067 UJ	0.064 UJ	**1.3 J**	0.089 UJ	0.15 UJ	0.12 UJ
PCB-044/047/065	E1668	**0.010 J**	**84 J**	**84 J**	**90 J**	**93 J**	**90 J**	**69 J**
PCB-045/051	E1668	0.0030 UJ	**0.41 J**	**0.41 J**	**0.46 J**	**0.50 J**	**0.55 J**	0.16 UJ
PCB-046	E1668	0.0034 UJ	0.098 UJ	**0.13 J**	0.14 UJ	**0.16 J**	0.22 UJ	0.18 UJ
PCB-048	E1668	0.0029 UJ	0.083 UJ	0.079 UJ	**0.39 J**	**0.52 J**	0.19 UJ	0.15 UJ
PCB-049/069	E1668	0.0024 UJ	**3.4 J**	**3.2 J**	**3.5 J**	**3.6 J**	**3.6 J**	**2.7 J**
PCB-050/053	E1668	0.0028 UJ	**0.41 J**	**0.38 J**	**0.38 J**	**0.39 J**	**0.39 J**	0.15 UJ
PCB-052	E1668	0.0026 UJ	**80 J**	**80 J**	**83 J**	**86 J**	**86 J**	**67 J**
PCB-054	E1668	0.0033 UJ	**83 J**	**82 J**	**87 J**	**81 J**	**79 J**	**78 J**
PCB-055	E1668	0.0018 UJ	0.052 UJ	0.049 UJ	0.074 UJ	0.069 UJ	0.12 UJ	0.095 UJ
PCB-056	E1668	0.0020 UJ	**1.5 J**	**1.4 J**	**1.2 J**	**1.2 J**	**1.6 J**	**1.3 J**
PCB-057	E1668	0.0021 UJ	0.061 UJ	0.058 UJ	0.086 UJ	0.081 UJ	0.14 UJ	0.11 UJ
PCB-058	E1668	0.0019 UJ	0.054 UJ	0.051 UJ	0.076 UJ	0.072 UJ	0.12 UJ	0.099 UJ

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-MB-20251010 Method Blank None	Kinetics-PW1-CTRL-1-20251010 TS-PW1 Control	Kinetics-PW1-CTRL-2-20251014 TS-PW1 Control	Kinetics-PW1-CTRL-3-20251021 TS-PW1 Control	Kinetics-PW1-CTRL-4-20251028 TS-PW1 Control	Kinetics-PW1-CTRL-5-20251104 TS-PW1 Control	Kinetics-PW1-CTRL-6-20251118 TS-PW1 Control
PCB-059/062/075	E1668	0.0023 UJ	0.066 UJ	0.063 UJ	**0.45 J**	0.087 UJ	0.15 UJ	0.12 UJ
PCB-060	E1668	0.0023 UJ	**0.75 J**	**0.69 J**	**0.59 J**	**0.63 J**	**0.80 J**	**0.62 J**
PCB-061/070/074/076	E1668	0.011 UJ	**93 J**	**92 J**	**98 J**	**96 J**	**96 J**	**81 J**
PCB-063	E1668	0.0021 UJ	0.062 UJ	0.059 UJ	0.087 UJ	0.082 UJ	0.14 UJ	0.11 UJ
PCB-064	E1668	0.0020 UJ	**2.1 J**	**2.0 J**	**2.1 J**	**2.3 J**	**2.2 J**	**1.7 J**
PCB-066	E1668	0.0019 UJ	**3.9 J**	**3.8 J**	**3.7 J**	**3.4 J**	**4.6 J**	**3.2 J**
PCB-067	E1668	0.0018 UJ	0.051 UJ	0.048 UJ	0.072 UJ	0.068 UJ	0.11 UJ	0.093 UJ
PCB-068	E1668	0.0020 UJ	0.058 UJ	0.055 UJ	0.081 UJ	0.077 UJ	0.13 UJ	0.11 UJ
PCB-072	E1668	0.0020 UJ	0.057 UJ	0.054 UJ	0.081 UJ	0.076 UJ	0.13 UJ	0.10 UJ
PCB-077	E1668	0.0023 UJ	0.068 UJ	0.065 UJ	0.097 UJ	0.091 UJ	0.16 UJ	0.12 UJ
PCB-078	E1668	0.0021 UJ	0.060 UJ	0.057 UJ	0.085 UJ	0.080 UJ	0.14 UJ	0.11 UJ
PCB-079	E1668	0.0016 UJ	**2.1 J**	**2.3 J**	**1.9 J**	**2.5 J**	**2.7 J**	**1.7 J**
PCB-080	E1668	0.0019 UJ	0.055 UJ	0.052 UJ	0.078 UJ	0.073 UJ	0.12 UJ	0.10 UJ
PCB-081	E1668	0.0024 UJ	0.069 UJ	0.065 UJ	0.096 UJ	0.091 UJ	0.15 UJ	0.13 UJ
PCB-082	E1668	0.0023 UJ	**2.8 J**	**3.0 J**	**3.2 J**	**3.1 J**	**3.2 J**	**2.9 J**
PCB-083/099	E1668	0.0023 UJ	**13 J**	**13 J**	**14 J**	**12 J**	**13 J**	**13 J**
PCB-084	E1668	0.0027 UJ	**7.8 J**	**7.7 J**	**8.2 J**	**7.3 J**	**7.6 J**	**7.4 J**
PCB-085/116/117	E1668	0.0020 UJ	**4.1 J**	**4.2 J**	**4.5 J**	**4.0 J**	**4.3 J**	**4.5 J**
PCB-086/087/097/109/119/125	E1668	0.0020 UJ	**47 J**	**47 J**	**51 J**	**45 J**	**48 J**	**50 J**
PCB-088/091	E1668	0.0024 UJ	**3.3 J**	**3.1 J**	**3.6 J**	**3.2 J**	**3.2 J**	**3.1 J**
PCB-089	E1668	0.0023 UJ	**0.20 J**	**0.19 J**	**0.16 J**	0.015 UJ	0.034 UJ	0.037 UJ
PCB-090/101/113	E1668	0.0046 UJ	**39 J**	**38 J**	**43 J**	**37 J**	**40 J**	**41 J**
PCB-092	E1668	0.0025 UJ	**6.1 J**	**5.8 J**	**6.2 J**	**5.6 J**	**5.7 J**	**6.4 J**
PCB-093/100	E1668	0.0024 UJ	0.016 UJ	0.018 UJ	**0.22 J**	**0.27 J**	**0.48 J**	**0.29 J**
PCB-094	E1668	0.0027 UJ	**0.065 J**	**0.081 J**	**0.099 J**	**0.11 J**	0.041 UJ	0.044 UJ
PCB-095	E1668	0.0024 UJ	**31 J**	**28 J**	**31 J**	**29 J**	**30 J**	**29 J**
PCB-096	E1668	0.0016 UJ	**0.12 J**	**0.12 J**	**0.14 J**	**0.13 J**	**0.12 J**	0.026 UJ
PCB-098/102	E1668	0.0020 UJ	**0.59 J**	**0.64 J**	**0.79 J**	**0.62 J**	**0.68 J**	**0.52 J**
PCB-103	E1668	0.0024 UJ	**0.10 J**	**0.089 J**	**0.11 J**	**0.089 J**	0.035 UJ	0.038 UJ
PCB-104	E1668	0.0018 UJ	**0.049 J**	**0.055 J**	**0.040 J**	0.012 UJ	**0.036 J**	0.029 UJ
PCB-105	E1668	0.0017 UJ	**10 J**	**11 J**	**11 J**	**11 J**	**11 J**	**10 J**
PCB-106	E1668	0.0015 UJ	0.071 UJ	0.083 UJ	0.12 UJ	0.15 UJ	0.11 UJ	0.13 UJ
PCB-107	E1668	0.0014 UJ	**1.4 J**	**1.5 J**	**1.4 J**	**1.6 J**	**1.5 J**	**1.2 J**
PCB-108/124	E1668	0.0017 UJ	**1.1 J**	**1.3 J**	**1.3 J**	**1.3 J**	**1.3 J**	**1.3 J**
PCB-110/115	E1668	0.0015 UJ	**30 J**	**29 J**	**33 J**	**30 J**	**30 J**	**32 J**
PCB-111	E1668	0.0017 UJ	0.011 UJ	0.013 UJ	0.023 UJ	0.011 UJ	0.025 UJ	0.027 UJ
PCB-112	E1668	0.0014 UJ	0.0091 UJ	0.011 UJ	0.019 UJ	0.0092 UJ	0.021 UJ	0.022 UJ
PCB-114	E1668	0.0016 UJ	**0.80 J**	**0.80 J**	**0.72 J**	**0.63 J**	**0.87 J**	**0.59 J**
PCB-118	E1668	0.0016 UJ	**27 J**	**29 J**	**28 J**	**30 J**	**28 J**	**28 J**
PCB-120	E1668	0.0013 UJ	0.0086 UJ	0.010 UJ	0.018 UJ	0.0087 UJ	0.020 UJ	0.021 UJ
PCB-121	E1668	0.0015 UJ	0.010 UJ	0.012 UJ	0.021 UJ	0.010 UJ	0.023 UJ	0.025 UJ
PCB-122	E1668	0.0020 UJ	**0.43 J**	**0.51 J**	**0.44 J**	**0.51 J**	0.15 UJ	**0.37 J**
PCB-123	E1668	0.0017 UJ	**0.56 J**	**0.60 J**	**0.36 J**	**0.38 J**	**0.46 J**	**0.51 J**
PCB-126	E1668	0.0016 UJ	0.075 UJ	0.088 UJ	0.13 UJ	0.17 UJ	0.13 UJ	0.14 UJ
PCB-127	E1668	0.0015 UJ	0.072 UJ	0.085 UJ	0.12 UJ	0.15 UJ	0.11 UJ	0.14 UJ
PCB-128/166	E1668	0.0012 UJ	**7.0 J**	**9.1 J**	**11 J**	**10 J**	**11 J**	**8.9 J**
PCB-129/138/160/163	E1668	0.0078 UJ	**64 J**	**81 J**	**91 J**	**88 J**	**84 J**	**77 J**
PCB-130	E1668	0.0019 UJ	**3.3 J**	**4.6 J**	**4.8 J**	**4.6 J**	**4.6 J**	**3.8 J**
PCB-131	E1668	0.0017 UJ	**0.92 J**	**1.1 J**	**1.1 J**	**0.93 J**	**1.0 J**	**0.84 J**
PCB-132	E1668	0.0016 UJ	**21 J**	**24 J**	**26 J**	**25 J**	**24 J**	**20 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-MB-20251010 Method Blank None	Kinetics-PW1-CTRL-1-20251010 TS-PW1 Control	Kinetics-PW1-CTRL-2-20251014 TS-PW1 Control	Kinetics-PW1-CTRL-3-20251021 TS-PW1 Control	Kinetics-PW1-CTRL-4-20251028 TS-PW1 Control	Kinetics-PW1-CTRL-5-20251104 TS-PW1 Control	Kinetics-PW1-CTRL-6-20251118 TS-PW1 Control
PCB-133	E1668	0.0014 UJ	**0.62 J**	**0.84 J**	**0.89 J**	**0.84 J**	**0.92 J**	**0.78 J**
PCB-134/143	E1668	0.0016 UJ	**3.6 J**	**4.3 J**	**4.7 J**	**4.3 J**	**4.7 J**	**3.4 J**
PCB-135/151	E1668	0.0021 UJ	**23 J**	**30 J**	**28 J**	**27 J**	**27 J**	**28 J**
PCB-136	E1668	0.0016 UJ	**9.5 J**	**11 J**	**10 J**	**9.4 J**	**9.7 J**	**9.6 J**
PCB-137	E1668	0.0016 UJ	**1.9 J**	**2.6 J**	**2.6 J**	**1.8 J**	**2.4 J**	**1.3 J**
PCB-139/140	E1668	0.0014 UJ	**0.63 J**	**0.79 J**	**0.77 J**	**0.85 J**	**0.77 J**	**0.76 J**
PCB-141	E1668	0.0021 UJ	**16 J**	**20 J**	**22 J**	**22 J**	**21 J**	**19 J**
PCB-142	E1668	0.0016 UJ	0.041 UJ	0.072 UJ	0.11 UJ	0.13 UJ	0.20 UJ	0.19 UJ
PCB-144	E1668	0.0022 UJ	**4.1 J**	**5.3 J**	**4.6 J**	**4.4 J**	**4.6 J**	**5.2 J**
PCB-145	E1668	0.0014 UJ	**0.051 J**	0.0020 UJ	**0.039 J**	0.015 UJ	0.0082 UJ	0.012 UJ
PCB-146	E1668	0.0013 UJ	**6.9 J**	**9.2 J**	**9.8 J**	**9.3 J**	**9.5 J**	**8.4 J**
PCB-147/149	E1668	0.0013 UJ	**49 J**	**59 J**	**65 J**	**62 J**	**58 J**	**55 J**
PCB-148	E1668	0.0021 UJ	0.00067 UJ	0.0029 UJ	0.0031 UJ	0.022 UJ	0.012 UJ	0.017 UJ
PCB-150	E1668	0.0015 UJ	0.00049 UJ	0.0021 UJ	**0.031 J**	0.016 UJ	**0.036 J**	0.012 UJ
PCB-152	E1668	0.0013 UJ	0.00043 UJ	0.0019 UJ	**0.019 J**	0.014 UJ	0.0076 UJ	0.011 UJ
PCB-153/168	E1668	0.0023 UJ	**50 J**	**64 J**	**75 J**	**71 J**	**68 J**	**63 J**
PCB-154	E1668	0.0019 UJ	**0.18 J**	**0.33 J**	**0.42 J**	**0.31 J**	**0.37 J**	**0.26 J**
PCB-155	E1668	0.0017 UJ	0.00054 UJ	0.0023 UJ	0.0025 UJ	0.017 UJ	0.0095 UJ	0.014 UJ
PCB-156/157	E1668	0.0021 UJ	**6.0 J**	**8.8 J**	**9.4 J**	**9.3 J**	**9.2 J**	**9.0 J**
PCB-158	E1668	0.0011 UJ	**6.9 J**	**8.7 J**	**9.6 J**	**9.0 J**	**9.3 J**	**8.0 J**
PCB-159	E1668	0.00092 UJ	**0.84 J**	**1.3 J**	**1.9 J**	**1.8 J**	**1.7 J**	**1.3 J**
PCB-161	E1668	0.0011 UJ	0.024 UJ	0.042 UJ	0.067 UJ	0.076 UJ	0.12 UJ	0.11 UJ
PCB-162	E1668	0.0011 UJ	0.027 UJ	0.047 UJ	**0.11 J**	0.085 UJ	0.13 UJ	0.13 UJ
PCB-164	E1668	0.00099 UJ	**4.2 J**	**5.1 J**	**5.8 J**	**5.5 J**	**5.2 J**	**5.2 J**
PCB-165	E1668	0.0013 UJ	0.032 UJ	0.056 UJ	0.089 UJ	0.10 UJ	0.16 UJ	0.15 UJ
PCB-167	E1668	0.00094 UJ	**1.7 J**	**2.6 J**	**2.7 J**	**2.8 J**	**2.7 J**	**2.8 J**
PCB-169	E1668	0.00092 UJ	0.024 UJ	0.042 UJ	0.073 UJ	0.083 UJ	0.13 UJ	0.11 UJ
PCB-170	E1668	0.00058 UJ	**13 J**	**24 J**	**35 J**	**34 J**	**34 J**	**34 J**
PCB-171/173	E1668	0.00053 UJ	**4.8 J**	**7.7 J**	**11 J**	**11 J**	**10 J**	**10 J**
PCB-172	E1668	0.00053 UJ	**2.4 J**	**3.8 J**	**6.1 J**	**5.5 J**	**5.7 J**	**6.7 J**
PCB-174	E1668	0.0022 UJ	**17 J**	**27 J**	**36 J**	**35 J**	**33 J**	**34 J**
PCB-175	E1668	0.00052 UJ	**0.79 J**	**1.2 J**	**1.5 J**	**1.7 J**	**1.4 J**	**1.7 J**
PCB-176	E1668	0.00039 UJ	**2.7 J**	**4.1 J**	**5.2 J**	**5.2 J**	**5.0 J**	**5.0 J**
PCB-177	E1668	0.00048 UJ	**8.7 J**	**14 J**	**19 J**	**19 J**	**17 J**	**19 J**
PCB-178	E1668	0.00052 UJ	**3.3 J**	**5.3 J**	**6.9 J**	**6.8 J**	**6.6 J**	**6.8 J**
PCB-179	E1668	0.00034 UJ	**7.5 J**	**11 J**	**14 J**	**13 J**	**13 J**	**13 J**
PCB-180/193	E1668	0.0024 UJ	**28 J**	**49 J**	**74 J**	**72 J**	**71 J**	**80 J**
PCB-181	E1668	0.00046 UJ	0.0055 UJ	0.00016 UJ	**0.24 J**	0.00066 UJ	0.00064 UJ	0.0039 UJ
PCB-182	E1668	0.00043 UJ	0.0051 UJ	0.00015 UJ	**0.25 J**	0.00061 UJ	0.00060 UJ	0.0036 UJ
PCB-183/185	E1668	0.0066 UJ	**11 J**	**18 J**	**25 J**	**25 J**	**24 J**	**25 J**
PCB-184	E1668	0.00034 UJ	0.0041 UJ	0.00012 UJ	0.00028 UJ	0.00049 UJ	0.00048 UJ	0.0029 UJ
PCB-186	E1668	0.00031 UJ	0.0037 UJ	0.00011 UJ	0.00025 UJ	0.00044 UJ	0.00043 UJ	0.0026 UJ
PCB-187	E1668	0.00042 UJ	**17 J**	**27 J**	**40 J**	**38 J**	**35 J**	**38 J**
PCB-188	E1668	0.00036 UJ	0.0044 UJ	0.00013 UJ	0.00029 UJ	0.00051 UJ	0.00051 UJ	0.0032 UJ
PCB-189	E1668	0.00092 UJ	**0.48 J**	**0.79 J**	**1.2 J**	**1.2 J**	**1.2 J**	**1.4 J**
PCB-190	E1668	0.00039 UJ	**2.7 J**	**5.0 J**	**6.7 J**	**6.4 J**	**6.7 J**	**7.5 J**
PCB-191	E1668	0.00040 UJ	**0.70 J**	**1.4 J**	**1.6 J**	**1.6 J**	**1.9 J**	**1.5 J**
PCB-192	E1668	0.00036 UJ	0.0043 UJ	0.00013 UJ	0.00029 UJ	0.00052 UJ	0.00050 UJ	0.0031 UJ
PCB-194	E1668	0.00053 UJ	**2.3 J**	**4.5 J**	**9.6 J**	**9.8 J**	**12 J**	**13 J**
PCB-195	E1668	0.00060 UJ	**1.2 J**	**2.5 J**	**4.6 J**	**4.6 J**	**5.1 J**	**5.6 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-MB-20251010 Method Blank None	Kinetics-PW1-CTRL-1-20251010 TS-PW1 Control	Kinetics-PW1-CTRL-2-20251014 TS-PW1 Control	Kinetics-PW1-CTRL-3-20251021 TS-PW1 Control	Kinetics-PW1-CTRL-4-20251028 TS-PW1 Control	Kinetics-PW1-CTRL-5-20251104 TS-PW1 Control	Kinetics-PW1-CTRL-6-20251118 TS-PW1 Control
PCB-196	E1668	0.00045 UJ	**1.8 J**	**3.5 J**	**7.1 J**	**7.0 J**	**7.9 J**	**10 J**
PCB-197	E1668	0.00032 UJ	--	--	--	--	--	--
PCB-197/200	E1668	--	**0.75 J**	**1.3 J**	**2.5 J**	**2.4 J**	**2.4 J**	**3.6 J**
PCB-198/199	E1668	0.00039 UJ	**3.4 J**	**6.7 J**	**12 J**	**13 J**	**14 J**	**17 J**
PCB-200	E1668	0.00032 UJ	--	--	--	--	--	--
PCB-201	E1668	0.00036 UJ	**0.54 J**	**1.1 J**	**2.0 J**	**1.9 J**	**1.9 J**	**2.9 J**
PCB-202	E1668	0.00031 UJ	**0.70 J**	**1.4 J**	**2.6 J**	**2.6 J**	**2.6 J**	**3.0 J**
PCB-203	E1668	0.00036 UJ	**1.8 J**	**3.4 J**	**7.2 J**	**7.2 J**	**8.3 J**	**11 J**
PCB-204	E1668	0.00031 UJ	0.00057 UJ	0.0078 UJ	0.017 UJ	0.0014 UJ	0.0080 UJ	0.0056 UJ
PCB-205	E1668	0.00047 UJ	**0.18 J**	**0.33 J**	**0.58 J**	**0.63 J**	**0.71 J**	**0.76 J**
PCB-206	E1668	0.0035 UJ	**0.36 J**	**0.77 J**	**1.7 J**	**1.6 J**	**2.4 J**	**4.3 J**
PCB-207	E1668	0.0029 UJ	**0.065 J**	**0.13 J**	**0.18 J**	**0.16 J**	**0.23 J**	**0.45 J**
PCB-208	E1668	0.0028 UJ	**0.13 J**	**0.24 J**	**0.53 J**	**0.54 J**	**0.67 J**	**1.3 J**
PCB-209	E1668	0.00079 UJ	**0.017 J**	**0.053 J**	**0.093 J**	**0.12 J**	**0.13 J**	**0.59 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW1-CTRL-7-20251202 TS-PW1 Control	Kinetics-PW1-CTRL-8-20251230 TS-PW1 Control	Kinetics-PW1-GAC-1-20251010 TS-PW1 GAC	Kinetics-PW1-GAC-2-20251014 TS-PW1 GAC	Kinetics-PW1-GAC-3-20251021 TS-PW1 GAC	Kinetics-PW1-GAC-4-20251028 TS-PW1 GAC	Kinetics-PW1-GAC-5-20251104 TS-PW1 GAC
PCB Congeners (SPME) (ng/samp)								
PCB-001	E1668	**0.060 J**	**0.057 J**	**0.079 J**	0.018 UJ	0.0049 UJ	0.0046 UJ	0.053 UJ
PCB-002	E1668	0.013 UJ	0.019 UJ	0.019 UJ	0.022 UJ	0.0060 UJ	0.0058 UJ	0.0040 UJ
PCB-003	E1668	0.015 UJ	**0.033 J**	**0.026 J**	0.027 UJ	0.0071 UJ	0.0069 UJ	0.0050 UJ
PCB-004	E1668	**190 J**	**180 J**	**240 J**	**160 J**	**62 J**	**29 J**	**19 J**
PCB-005	E1668	0.014 UJ	0.028 UJ	0.014 UJ	0.012 UJ	0.0064 UJ	0.012 UJ	0.019 UJ
PCB-006	E1668	0.011 UJ	0.023 UJ	0.012 UJ	0.0099 UJ	0.0052 UJ	0.010 UJ	0.015 UJ
PCB-007	E1668	0.013 UJ	0.027 UJ	0.014 UJ	0.012 UJ	0.0061 UJ	0.012 UJ	0.018 UJ
PCB-008	E1668	0.011 UJ	**0.32 J**	**0.45 J**	**0.30 J**	**0.092 J**	0.0098 UJ	0.10 UJ
PCB-009	E1668	0.012 UJ	0.025 UJ	0.013 UJ	0.011 UJ	0.0058 UJ	0.011 UJ	0.017 UJ
PCB-010	E1668	**230 J**	**210 J**	**320 J**	**210 J**	**74 J**	**35 J**	**23 J**
PCB-011	E1668	0.012 UJ	0.024 UJ	0.012 UJ	0.011 UJ	0.0055 UJ	0.011 UJ	0.016 UJ
PCB-012/013	E1668	0.013 UJ	0.027 UJ	0.014 UJ	0.012 UJ	0.0062 UJ	0.012 UJ	0.018 UJ
PCB-014	E1668	0.013 UJ	0.027 UJ	0.014 UJ	0.012 UJ	0.0062 UJ	0.012 UJ	0.018 UJ
PCB-015	E1668	0.014 UJ	0.027 UJ	**0.17 J**	0.013 UJ	0.0069 UJ	0.014 UJ	0.023 UJ
PCB-016	E1668	0.032 UJ	**0.38 J**	**0.39 J**	**0.31 J**	**0.20 J**	**0.12 J**	**0.12 J**
PCB-017	E1668	0.032 UJ	0.014 UJ	**0.26 J**	**0.22 J**	**0.14 J**	**0.10 J**	0.0068 UJ
PCB-018/030	E1668	**0.51 J**	**0.53 J**	**0.70 J**	**0.61 J**	**0.40 J**	**0.19 J**	**0.22 J**
PCB-019	E1668	**260 J**	**250 J**	**350 J**	**280 J**	**190 J**	**130 J**	**120 J**
PCB-020/028	E1668	**0.44 J**	**0.51 J**	**0.69 J**	**0.53 J**	**0.28 J**	**0.22 J**	**0.17 J**
PCB-021/033	E1668	**0.34 J**	**0.33 J**	**0.47 J**	**0.41 J**	**0.20 J**	**0.15 J**	**0.12 J**
PCB-022	E1668	**0.14 J**	**0.15 J**	**0.22 J**	**0.15 J**	**0.10 J**	**0.062 J**	**0.047 J**
PCB-023	E1668	0.029 UJ	0.037 UJ	0.040 UJ	0.038 UJ	0.020 UJ	0.024 UJ	0.038 UJ
PCB-024	E1668	0.022 UJ	0.0094 UJ	0.0019 UJ	0.0043 UJ	0.0028 UJ	0.0051 UJ	0.0046 UJ
PCB-025	E1668	0.024 UJ	**0.053 J**	**0.063 J**	**0.053 J**	**0.028 J**	**0.030 J**	0.031 UJ
PCB-026/029	E1668	**0.51 J**	**0.52 J**	**0.71 J**	**0.59 J**	**0.29 J**	**0.28 J**	**0.21 J**
PCB-027	E1668	0.022 UJ	0.0094 UJ	0.0019 UJ	**0.11 J**	**0.042 J**	**0.053 J**	0.0046 UJ
PCB-031	E1668	**0.62 J**	**0.68 J**	**0.94 J**	**0.77 J**	**0.39 J**	**0.36 J**	**0.25 J**
PCB-032	E1668	0.020 UJ	**0.17 J**	**0.18 J**	**0.13 J**	**0.12 J**	0.0047 UJ	**0.092 J**
PCB-034	E1668	0.030 UJ	0.038 UJ	0.042 UJ	0.039 UJ	0.020 UJ	0.025 UJ	0.040 UJ
PCB-035	E1668	0.030 UJ	0.037 UJ	0.040 UJ	0.038 UJ	0.020 UJ	0.024 UJ	0.039 UJ
PCB-036	E1668	0.024 UJ	0.030 UJ	0.033 UJ	0.031 UJ	0.016 UJ	0.019 UJ	0.031 UJ
PCB-037	E1668	0.029 UJ	**0.20 J**	**0.31 J**	**0.26 J**	**0.13 J**	**0.11 J**	0.037 UJ
PCB-038	E1668	0.028 UJ	0.035 UJ	0.038 UJ	0.036 UJ	0.018 UJ	0.022 UJ	0.036 UJ
PCB-039	E1668	0.029 UJ	0.036 UJ	0.039 UJ	0.037 UJ	0.019 UJ	0.023 UJ	0.037 UJ
PCB-040/041/071	E1668	**1.1 J**	**1.2 J**	**1.3 J**	**1.2 J**	**1.1 J**	**0.99 J**	**0.83 J**
PCB-042	E1668	**0.53 J**	**0.72 J**	**1.0 J**	**0.84 J**	**0.69 J**	**0.71 J**	**0.67 J**
PCB-043/073	E1668	**0.82 J**	0.11 UJ	0.065 UJ	**0.88 J**	**0.47 J**	0.081 UJ	**0.87 J**
PCB-044/047/065	E1668	**72 J**	**69 J**	**94 J**	**85 J**	**72 J**	**63 J**	**63 J**
PCB-045/051	E1668	**0.41 J**	**0.29 J**	**0.50 J**	**0.47 J**	**0.44 J**	**0.34 J**	**0.39 J**
PCB-046	E1668	0.069 UJ	0.16 UJ	**0.15 J**	0.094 UJ	**0.12 J**	0.12 UJ	0.10 UJ
PCB-048	E1668	**0.30 J**	**0.24 J**	**0.45 J**	**0.38 J**	**0.41 J**	**0.34 J**	**0.30 J**
PCB-049/069	E1668	**2.8 J**	**2.6 J**	**4.1 J**	**3.6 J**	**3.2 J**	**2.9 J**	**2.7 J**
PCB-050/053	E1668	**0.33 J**	**0.34 J**	**0.44 J**	**0.41 J**	**0.36 J**	**0.32 J**	**0.30 J**
PCB-052	E1668	**67 J**	**66 J**	**95 J**	**85 J**	**73 J**	**66 J**	**65 J**
PCB-054	E1668	**85 J**	**75 J**	**110 J**	**100 J**	**88 J**	**76 J**	**78 J**
PCB-055	E1668	0.037 UJ	0.083 UJ	0.050 UJ	0.050 UJ	0.034 UJ	0.063 UJ	0.056 UJ
PCB-056	E1668	**1.2 J**	**1.2 J**	**1.4 J**	**1.3 J**	**1.1 J**	**0.95 J**	**0.84 J**
PCB-057	E1668	0.043 UJ	0.097 UJ	0.059 UJ	0.058 UJ	0.040 UJ	0.074 UJ	0.065 UJ
PCB-058	E1668	0.038 UJ	0.086 UJ	0.052 UJ	0.051 UJ	0.035 UJ	0.065 UJ	0.058 UJ

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW1-CTRL-7-20251202 TS-PW1 Control	Kinetics-PW1-CTRL-8-20251230 TS-PW1 Control	Kinetics-PW1-GAC-1-20251010 TS-PW1 GAC	Kinetics-PW1-GAC-2-20251014 TS-PW1 GAC	Kinetics-PW1-GAC-3-20251021 TS-PW1 GAC	Kinetics-PW1-GAC-4-20251028 TS-PW1 GAC	Kinetics-PW1-GAC-5-20251104 TS-PW1 GAC
PCB-059/062/075	E1668	0.046 UJ	0.10 UJ	0.063 UJ	0.063 UJ	**0.34 J**	0.080 UJ	0.070 UJ
PCB-060	E1668	**0.56 J**	**0.52 J**	**0.76 J**	**0.66 J**	**0.55 J**	**0.51 J**	**0.48 J**
PCB-061/070/074/076	E1668	**83 J**	**81 J**	**97 J**	**92 J**	**79 J**	**68 J**	**63 J**
PCB-063	E1668	0.044 UJ	0.098 UJ	**0.15 J**	0.059 UJ	**0.12 J**	0.075 UJ	0.066 UJ
PCB-064	E1668	**1.8 J**	**1.6 J**	**2.3 J**	**2.0 J**	**1.7 J**	**1.6 J**	**1.5 J**
PCB-066	E1668	**2.8 J**	**2.8 J**	**3.6 J**	**3.4 J**	**2.8 J**	**2.7 J**	**2.9 J**
PCB-067	E1668	0.036 UJ	0.081 UJ	0.049 UJ	0.049 UJ	0.033 UJ	0.062 UJ	0.054 UJ
PCB-068	E1668	0.041 UJ	0.091 UJ	0.055 UJ	0.055 UJ	0.038 UJ	0.070 UJ	0.061 UJ
PCB-072	E1668	0.040 UJ	0.090 UJ	0.055 UJ	0.054 UJ	0.037 UJ	0.069 UJ	0.061 UJ
PCB-077	E1668	0.047 UJ	0.11 UJ	0.065 UJ	0.066 UJ	0.044 UJ	0.084 UJ	0.075 UJ
PCB-078	E1668	0.042 UJ	0.095 UJ	0.058 UJ	0.057 UJ	0.039 UJ	0.073 UJ	0.064 UJ
PCB-079	E1668	**2.0 J**	**1.5 J**	**2.2 J**	**2.5 J**	**1.7 J**	**2.3 J**	**1.8 J**
PCB-080	E1668	0.039 UJ	0.088 UJ	0.053 UJ	0.053 UJ	0.036 UJ	0.067 UJ	0.059 UJ
PCB-081	E1668	0.049 UJ	0.11 UJ	0.066 UJ	0.065 UJ	0.046 UJ	0.082 UJ	0.071 UJ
PCB-082	E1668	**3.4 J**	**3.1 J**	**3.4 J**	**3.3 J**	**3.0 J**	**3.1 J**	**2.6 J**
PCB-083/099	E1668	**14 J**	**14 J**	**14 J**	**15 J**	**15 J**	**14 J**	**13 J**
PCB-084	E1668	**7.9 J**	**7.9 J**	**8.5 J**	**8.4 J**	**8.4 J**	**7.5 J**	**7.4 J**
PCB-085/116/117	E1668	**5.4 J**	**5.1 J**	**4.7 J**	**4.9 J**	**4.8 J**	**4.2 J**	**3.9 J**
PCB-086/087/097/109/119/125	E1668	**54 J**	**54 J**	**54 J**	**53 J**	**55 J**	**52 J**	**46 J**
PCB-088/091	E1668	**3.5 J**	**3.4 J**	**3.7 J**	**3.6 J**	**3.7 J**	**3.5 J**	**3.2 J**
PCB-089	E1668	**0.27 J**	**0.27 J**	**0.26 J**	**0.24 J**	**0.26 J**	**0.25 J**	**0.27 J**
PCB-090/101/113	E1668	**45 J**	**44 J**	**45 J**	**45 J**	**45 J**	**43 J**	**40 J**
PCB-092	E1668	**6.9 J**	**6.9 J**	**6.7 J**	**6.9 J**	**7.1 J**	**6.6 J**	**5.7 J**
PCB-093/100	E1668	0.027 UJ	**0.40 J**	**0.31 J**	**0.50 J**	**0.22 J**	0.0097 UJ	**0.32 J**
PCB-094	E1668	0.030 UJ	**0.10 J**	0.013 UJ	**0.11 J**	**0.11 J**	**0.11 J**	**0.081 J**
PCB-095	E1668	**32 J**	**31 J**	**35 J**	**33 J**	**35 J**	**32 J**	**29 J**
PCB-096	E1668	0.018 UJ	**0.12 J**	0.0080 UJ	**0.12 J**	**0.14 J**	**0.13 J**	**0.13 J**
PCB-098/102	E1668	**0.59 J**	**0.56 J**	**0.81 J**	**0.85 J**	**0.79 J**	**0.67 J**	**0.74 J**
PCB-103	E1668	0.026 UJ	0.061 UJ	0.012 UJ	**0.13 J**	**0.11 J**	**0.11 J**	**0.089 J**
PCB-104	E1668	0.020 UJ	0.048 UJ	0.0090 UJ	**0.071 J**	**0.063 J**	**0.058 J**	**0.063 J**
PCB-105	E1668	**11 J**	**11 J**	**11 J**	**11 J**	**9.8 J**	**10 J**	**8.9 J**
PCB-106	E1668	0.12 UJ	0.068 UJ	0.055 UJ	0.090 UJ	0.060 UJ	0.13 UJ	0.070 UJ
PCB-107	E1668	**1.5 J**	**1.4 J**	**1.6 J**	**1.7 J**	**1.5 J**	**1.4 J**	**1.4 J**
PCB-108/124	E1668	**1.2 J**	**1.3 J**	**1.2 J**	**1.4 J**	**1.2 J**	**1.2 J**	**1.2 J**
PCB-110/115	E1668	**36 J**	**35 J**	**34 J**	**33 J**	**32 J**	**31 J**	**28 J**
PCB-111	E1668	0.019 UJ	0.043 UJ	0.0082 UJ	0.0097 UJ	0.0071 UJ	0.0068 UJ	0.0076 UJ
PCB-112	E1668	0.016 UJ	0.036 UJ	0.0068 UJ	0.0081 UJ	0.0059 UJ	0.0056 UJ	0.0064 UJ
PCB-114	E1668	**0.76 J**	**0.81 J**	**0.77 J**	**0.83 J**	**0.73 J**	**0.77 J**	**0.67 J**
PCB-118	E1668	**29 J**	**28 J**	**29 J**	**30 J**	**27 J**	**27 J**	**26 J**
PCB-120	E1668	0.015 UJ	0.035 UJ	0.0065 UJ	0.0077 UJ	0.0056 UJ	0.0054 UJ	0.0061 UJ
PCB-121	E1668	0.017 UJ	0.040 UJ	0.0075 UJ	0.0089 UJ	0.0065 UJ	0.0062 UJ	0.0070 UJ
PCB-122	E1668	**0.35 J**	**0.40 J**	**0.51 J**	**0.48 J**	**0.48 J**	**0.44 J**	**0.53 J**
PCB-123	E1668	**0.35 J**	**0.49 J**	**0.42 J**	**0.45 J**	**0.42 J**	**0.50 J**	**0.36 J**
PCB-126	E1668	0.12 UJ	0.068 UJ	0.058 UJ	0.095 UJ	0.065 UJ	0.14 UJ	0.077 UJ
PCB-127	E1668	0.13 UJ	**0.099 J**	0.056 UJ	0.091 UJ	**0.089 J**	0.13 UJ	0.071 UJ
PCB-128/166	E1668	**7.8 J**	**7.0 J**	**6.9 J**	**9.1 J**	**9.5 J**	**9.5 J**	**9.5 J**
PCB-129/138/160/163	E1668	**75 J**	**74 J**	**63 J**	**80 J**	**77 J**	**85 J**	**82 J**
PCB-130	E1668	**3.8 J**	**3.9 J**	**3.3 J**	**4.4 J**	**4.4 J**	**4.6 J**	**4.4 J**
PCB-131	E1668	**0.80 J**	**0.63 J**	**0.95 J**	**1.1 J**	**0.97 J**	**1.1 J**	**0.89 J**
PCB-132	E1668	**20 J**	**20 J**	**22 J**	**25 J**	**23 J**	**26 J**	**25 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW1-CTRL-7-20251202 TS-PW1 Control	Kinetics-PW1-CTRL-8-20251230 TS-PW1 Control	Kinetics-PW1-GAC-1-20251010 TS-PW1 GAC	Kinetics-PW1-GAC-2-20251014 TS-PW1 GAC	Kinetics-PW1-GAC-3-20251021 TS-PW1 GAC	Kinetics-PW1-GAC-4-20251028 TS-PW1 GAC	Kinetics-PW1-GAC-5-20251104 TS-PW1 GAC
PCB-133	E1668	**0.81 J**	**0.67 J**	**0.66 J**	**0.85 J**	**0.75 J**	**0.80 J**	**0.78 J**
PCB-134/143	E1668	**3.3 J**	**3.5 J**	**4.2 J**	**4.5 J**	**4.2 J**	**4.9 J**	**4.4 J**
PCB-135/151	E1668	**28 J**	**29 J**	**26 J**	**30 J**	**28 J**	**30 J**	**28 J**
PCB-136	E1668	**9.9 J**	**10 J**	**11 J**	**11 J**	**12 J**	**12 J**	**11 J**
PCB-137	E1668	**2.0 J**	**1.9 J**	**2.0 J**	**2.4 J**	**2.4 J**	**2.5 J**	**2.3 J**
PCB-139/140	E1668	**0.69 J**	**0.61 J**	**0.72 J**	**0.80 J**	**0.79 J**	**0.79 J**	**0.78 J**
PCB-141	E1668	**18 J**	**18 J**	**16 J**	**20 J**	**20 J**	**21 J**	**20 J**
PCB-142	E1668	0.12 UJ	0.11 UJ	0.051 UJ	0.052 UJ	0.062 UJ	0.11 UJ	0.11 UJ
PCB-144	E1668	**5.2 J**	**5.2 J**	**4.4 J**	**5.2 J**	**4.9 J**	**5.4 J**	**4.7 J**
PCB-145	E1668	0.0061 UJ	**0.061 J**	**0.033 J**	**0.038 J**	0.0030 UJ	0.0013 UJ	**0.071 J**
PCB-146	E1668	**8.1 J**	**8.1 J**	**6.9 J**	**9.0 J**	**9.1 J**	**9.6 J**	**9.0 J**
PCB-147/149	E1668	**52 J**	**51 J**	**53 J**	**62 J**	**59 J**	**63 J**	**60 J**
PCB-148	E1668	0.0088 UJ	0.016 UJ	0.00086 UJ	0.0052 UJ	0.0043 UJ	0.0019 UJ	0.0039 UJ
PCB-150	E1668	0.0064 UJ	**0.030 J**	0.00062 UJ	0.0038 UJ	**0.031 J**	**0.023 J**	0.0028 UJ
PCB-152	E1668	0.0056 UJ	**0.035 J**	0.00055 UJ	**0.031 J**	**0.027 J**	**0.042 J**	**0.031 J**
PCB-153/168	E1668	**60 J**	**60 J**	**49 J**	**65 J**	**67 J**	**70 J**	**68 J**
PCB-154	E1668	**0.26 J**	**0.39 J**	**0.33 J**	**0.40 J**	**0.34 J**	**0.43 J**	**0.52 J**
PCB-155	E1668	0.0070 UJ	0.013 UJ	0.00068 UJ	0.0042 UJ	0.0034 UJ	0.0015 UJ	0.0031 UJ
PCB-156/157	E1668	**9.3 J**	**8.9 J**	**5.9 J**	**8.3 J**	**8.7 J**	**8.4 J**	**8.3 J**
PCB-158	E1668	**7.9 J**	**8.1 J**	**6.8 J**	**8.9 J**	**8.6 J**	**8.7 J**	**8.6 J**
PCB-159	E1668	**1.6 J**	**1.5 J**	**0.83 J**	**1.4 J**	**1.5 J**	**1.6 J**	**1.8 J**
PCB-161	E1668	0.073 UJ	0.062 UJ	0.030 UJ	0.031 UJ	0.036 UJ	0.066 UJ	0.064 UJ
PCB-162	E1668	0.082 UJ	0.069 UJ	0.034 UJ	0.034 UJ	0.041 UJ	0.073 UJ	0.072 UJ
PCB-164	E1668	**4.8 J**	**4.9 J**	**4.1 J**	**5.1 J**	**5.0 J**	**5.2 J**	**5.1 J**
PCB-165	E1668	0.097 UJ	0.082 UJ	0.040 UJ	0.041 UJ	0.048 UJ	0.087 UJ	0.085 UJ
PCB-167	E1668	**2.8 J**	**2.8 J**	**1.7 J**	**2.4 J**	**2.5 J**	**2.5 J**	**2.5 J**
PCB-169	E1668	**0.27 J**	**0.26 J**	0.030 UJ	0.032 UJ	0.035 UJ	**0.26 J**	0.066 UJ
PCB-170	E1668	**34 J**	**34 J**	**13 J**	**23 J**	**32 J**	**31 J**	**32 J**
PCB-171/173	E1668	**11 J**	**11 J**	**4.3 J**	**7.4 J**	**11 J**	**9.2 J**	**9.7 J**
PCB-172	E1668	**7.6 J**	**6.5 J**	**2.1 J**	**3.8 J**	**5.8 J**	**5.2 J**	**5.6 J**
PCB-174	E1668	**34 J**	**34 J**	**16 J**	**26 J**	**36 J**	**31 J**	**32 J**
PCB-175	E1668	**1.6 J**	**1.6 J**	**0.71 J**	**1.2 J**	**1.7 J**	**1.4 J**	**1.6 J**
PCB-176	E1668	**4.8 J**	**4.9 J**	**2.6 J**	**4.0 J**	**5.3 J**	**4.9 J**	**4.8 J**
PCB-177	E1668	**18 J**	**18 J**	**8.2 J**	**13 J**	**19 J**	**16 J**	**17 J**
PCB-178	E1668	**6.3 J**	**6.2 J**	**3.1 J**	**5.1 J**	**6.7 J**	**6.2 J**	**6.3 J**
PCB-179	E1668	**13 J**	**13 J**	**7.4 J**	**11 J**	**13 J**	**13 J**	**13 J**
PCB-180/193	E1668	**82 J**	**78 J**	**25 J**	**46 J**	**73 J**	**70 J**	**70 J**
PCB-181	E1668	0.0076 UJ	0.0046 UJ	0.00022 UJ	0.00019 UJ	**0.26 J**	**0.30 J**	0.00024 UJ
PCB-182	E1668	0.0071 UJ	0.0043 UJ	0.00020 UJ	0.00018 UJ	**0.23 J**	0.0013 UJ	**0.21 J**
PCB-183/185	E1668	**25 J**	**25 J**	**9.8 J**	**17 J**	**26 J**	**21 J**	**23 J**
PCB-184	E1668	0.0057 UJ	0.0035 UJ	0.00016 UJ	0.00015 UJ	0.0030 UJ	0.0011 UJ	0.00018 UJ
PCB-186	E1668	0.0052 UJ	0.0031 UJ	0.00015 UJ	0.00013 UJ	0.0027 UJ	0.00097 UJ	0.00016 UJ
PCB-187	E1668	**46 J**	**36 J**	**16 J**	**26 J**	**38 J**	**33 J**	**35 J**
PCB-188	E1668	0.0064 UJ	0.0039 UJ	0.00017 UJ	0.00016 UJ	0.0033 UJ	0.0011 UJ	0.00019 UJ
PCB-189	E1668	**1.3 J**	**1.3 J**	**0.39 J**	**0.80 J**	**0.99 J**	**1.2 J**	**1.2 J**
PCB-190	E1668	**8.1 J**	**8.1 J**	**2.6 J**	**4.6 J**	**7.0 J**	**5.9 J**	**6.3 J**
PCB-191	E1668	**1.9 J**	**1.8 J**	**0.67 J**	**1.1 J**	**1.7 J**	**1.7 J**	**1.7 J**
PCB-192	E1668	0.0060 UJ	0.0036 UJ	0.00017 UJ	0.00015 UJ	0.0031 UJ	0.0011 UJ	0.00019 UJ
PCB-194	E1668	**13 J**	**13 J**	**2.0 J**	**4.2 J**	**8.5 J**	**9.7 J**	**12 J**
PCB-195	E1668	**5.5 J**	**5.4 J**	**1.0 J**	**2.1 J**	**4.2 J**	**4.7 J**	**5.5 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW1-CTRL-7-20251202 TS-PW1 Control	Kinetics-PW1-CTRL-8-20251230 TS-PW1 Control	Kinetics-PW1-GAC-1-20251010 TS-PW1 GAC	Kinetics-PW1-GAC-2-20251014 TS-PW1 GAC	Kinetics-PW1-GAC-3-20251021 TS-PW1 GAC	Kinetics-PW1-GAC-4-20251028 TS-PW1 GAC	Kinetics-PW1-GAC-5-20251104 TS-PW1 GAC
PCB-196	E1668	**9.9 J**	**10 J**	**1.5 J**	**3.2 J**	**6.9 J**	**7.1 J**	**8.5 J**
PCB-197	E1668	--	--	--	--	--	--	--
PCB-197/200	E1668	**3.3 J**	**3.2 J**	**0.57 J**	**1.2 J**	**2.3 J**	**2.7 J**	**2.8 J**
PCB-198/199	E1668	**18 J**	**18 J**	**2.9 J**	**6.0 J**	**12 J**	**13 J**	**15 J**
PCB-200	E1668	--	--	--	--	--	--	--
PCB-201	E1668	**2.7 J**	**2.7 J**	**0.45 J**	**0.97 J**	**2.0 J**	**2.1 J**	**2.4 J**
PCB-202	E1668	**3.1 J**	**3.0 J**	**0.67 J**	**1.2 J**	**2.4 J**	**2.6 J**	**2.9 J**
PCB-203	E1668	**13 J**	**11 J**	**1.4 J**	**3.1 J**	**7.0 J**	**7.4 J**	**8.7 J**
PCB-204	E1668	0.041 UJ	0.012 UJ	0.00053 UJ	0.0024 UJ	0.0029 UJ	0.0034 UJ	0.0031 UJ
PCB-205	E1668	**0.72 J**	**0.82 J**	**0.10 J**	**0.26 J**	**0.55 J**	**0.61 J**	**0.74 J**
PCB-206	E1668	**3.3 J**	**4.2 J**	**0.28 J**	**0.66 J**	**1.5 J**	**1.7 J**	**2.5 J**
PCB-207	E1668	**0.36 J**	**0.44 J**	0.0092 UJ	**0.054 J**	**0.18 J**	**0.23 J**	**0.28 J**
PCB-208	E1668	**1.0 J**	**1.2 J**	**0.071 J**	**0.20 J**	**0.48 J**	**0.54 J**	**0.77 J**
PCB-209	E1668	**0.24 J**	**0.32 J**	**0.0036 J**	**0.028 J**	**0.10 J**	**0.11 J**	**0.12 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW1-GAC-6-20251118 TS-PW1 GAC	Kinetics-PW1-GAC-7-20251202 TS-PW1 GAC	Kinetics-PW1-GAC-8-20251230 TS-PW1 GAC	Kinetics-PW1-PAC-1-20251010 TS-PW1 PAC	Kinetics-PW1-PAC-2-20251014 TS-PW1 PAC	Kinetics-PW1-PAC-3-20251021 TS-PW1 PAC	Kinetics-PW1-PAC-4-20251028 TS-PW1 PAC
PCB Congeners (SPME) (ng/samp)								
PCB-001	E1668	0.0020 UJ	0.0017 UJ	0.0023 UJ	**0.025 J**	0.0010 UJ	0.00096 UJ	0.0013 UJ
PCB-002	E1668	0.0023 UJ	0.0020 UJ	0.0027 UJ	0.0014 UJ	0.0012 UJ	0.0012 UJ	0.0016 UJ
PCB-003	E1668	0.0024 UJ	0.0022 UJ	0.0029 UJ	**0.0067 J**	0.0014 UJ	0.0014 UJ	0.0020 UJ
PCB-004	E1668	**1.4 J**	**2.8 J**	**0.84 J**	**0.26 J**	**0.25 J**	**0.051 J**	**0.12 J**
PCB-005	E1668	0.016 UJ	0.0099 UJ	0.0091 UJ	0.0054 UJ	0.0051 UJ	0.0031 UJ	0.0056 UJ
PCB-006	E1668	0.013 UJ	0.0081 UJ	0.0074 UJ	0.0044 UJ	0.0041 UJ	0.0026 UJ	0.0045 UJ
PCB-007	E1668	0.015 UJ	0.0094 UJ	0.0087 UJ	0.0052 UJ	0.0048 UJ	0.0030 UJ	0.0053 UJ
PCB-008	E1668	0.012 UJ	0.0078 UJ	0.0072 UJ	**0.026 J**	0.0040 UJ	0.0025 UJ	0.0044 UJ
PCB-009	E1668	0.014 UJ	0.0089 UJ	0.0082 UJ	0.0049 UJ	0.0046 UJ	0.0028 UJ	0.0050 UJ
PCB-010	E1668	**1.3 J**	**2.7 J**	**0.81 J**	**0.23 J**	**0.28 J**	**0.050 J**	**0.15 J**
PCB-011	E1668	0.014 UJ	0.0086 UJ	0.0079 UJ	0.0047 UJ	0.0044 UJ	0.0027 UJ	0.0048 UJ
PCB-012/013	E1668	0.015 UJ	0.0096 UJ	0.0089 UJ	0.0053 UJ	0.0049 UJ	0.0031 UJ	0.0054 UJ
PCB-014	E1668	0.015 UJ	0.0096 UJ	0.0088 UJ	0.0052 UJ	0.0049 UJ	0.0030 UJ	0.0054 UJ
PCB-015	E1668	0.014 UJ	0.0093 UJ	0.0085 UJ	0.0057 UJ	0.0056 UJ	0.0032 UJ	0.0063 UJ
PCB-016	E1668	0.0083 UJ	0.018 UJ	0.0078 UJ	0.0025 UJ	0.00095 UJ	0.00093 UJ	0.0022 UJ
PCB-017	E1668	0.0083 UJ	0.018 UJ	0.0079 UJ	0.0025 UJ	0.00095 UJ	0.00093 UJ	0.0022 UJ
PCB-018/030	E1668	0.0058 UJ	0.013 UJ	0.0055 UJ	0.0017 UJ	0.00066 UJ	0.00065 UJ	0.0015 UJ
PCB-019	E1668	**18 J**	**34 J**	**6.6 J**	**0.75 J**	**0.30 J**	**0.095 J**	**0.13 J**
PCB-020/028	E1668	**0.017 J**	**0.022 J**	**0.0053 J**	0.0019 UJ	0.0014 UJ	0.0012 UJ	0.0023 UJ
PCB-021/033	E1668	**0.029 J**	**0.019 J**	0.0050 UJ	0.0019 UJ	0.0014 UJ	0.0012 UJ	0.0022 UJ
PCB-022	E1668	0.0091 UJ	0.0099 UJ	0.0047 UJ	0.0018 UJ	0.0013 UJ	0.0012 UJ	0.0021 UJ
PCB-023	E1668	0.010 UJ	0.011 UJ	0.0053 UJ	0.0020 UJ	0.0015 UJ	0.0013 UJ	0.0023 UJ
PCB-024	E1668	0.0057 UJ	0.013 UJ	0.0054 UJ	0.0017 UJ	0.00065 UJ	0.00064 UJ	0.0015 UJ
PCB-025	E1668	0.0082 UJ	0.0089 UJ	0.0043 UJ	0.0016 UJ	0.0012 UJ	0.0010 UJ	0.0019 UJ
PCB-026/029	E1668	**0.034 J**	**0.037 J**	0.0056 UJ	0.0021 UJ	0.0016 UJ	0.0014 UJ	0.0025 UJ
PCB-027	E1668	0.0057 UJ	0.013 UJ	0.0054 UJ	0.0017 UJ	0.00065 UJ	**0.0014 J**	0.0015 UJ
PCB-031	E1668	**0.044 J**	**0.045 J**	**0.0092 J**	0.0017 UJ	0.0013 UJ	0.0011 UJ	0.0020 UJ
PCB-032	E1668	0.0053 UJ	0.012 UJ	0.0050 UJ	0.0016 UJ	0.00061 UJ	0.00059 UJ	0.0014 UJ
PCB-034	E1668	0.010 UJ	0.011 UJ	0.0055 UJ	0.0020 UJ	0.0015 UJ	0.0013 UJ	0.0024 UJ
PCB-035	E1668	0.010 UJ	0.011 UJ	0.0053 UJ	0.0020 UJ	0.0015 UJ	0.0013 UJ	0.0023 UJ
PCB-036	E1668	0.0083 UJ	0.0090 UJ	0.0043 UJ	0.0016 UJ	0.0012 UJ	0.0010 UJ	0.0019 UJ
PCB-037	E1668	0.0099 UJ	0.011 UJ	0.0051 UJ	0.0019 UJ	0.0014 UJ	0.0012 UJ	0.0023 UJ
PCB-038	E1668	0.0095 UJ	0.010 UJ	0.0050 UJ	0.0019 UJ	0.0014 UJ	0.0012 UJ	0.0022 UJ
PCB-039	E1668	0.0099 UJ	0.011 UJ	0.0051 UJ	0.0019 UJ	0.0014 UJ	0.0012 UJ	0.0022 UJ
PCB-040/041/071	E1668	**0.38 J**	**0.45 J**	**0.13 J**	0.0062 UJ	0.0040 UJ	0.0021 UJ	0.0045 UJ
PCB-042	E1668	0.087 UJ	**0.20 J**	**0.081 J**	0.0066 UJ	0.0043 UJ	0.0023 UJ	0.0048 UJ
PCB-043/073	E1668	0.066 UJ	**0.39 J**	**0.071 J**	0.0050 UJ	0.0033 UJ	0.0017 UJ	0.0037 UJ
PCB-044/047/065	E1668	**24 J**	**29 J**	**10 J**	**0.43 J**	**0.25 J**	**0.038 J**	**0.059 J**
PCB-045/051	E1668	**0.17 J**	**0.20 J**	**0.072 J**	0.0064 UJ	0.0042 UJ	0.0022 UJ	0.0047 UJ
PCB-046	E1668	0.096 UJ	0.066 UJ	0.049 UJ	0.0073 UJ	0.0048 UJ	0.0025 UJ	0.0054 UJ
PCB-048	E1668	0.081 UJ	0.055 UJ	**0.061 J**	0.0062 UJ	0.0040 UJ	0.0021 UJ	0.0045 UJ
PCB-049/069	E1668	**1.2 J**	**1.3 J**	**0.55 J**	**0.013 J**	**0.0087 J**	0.0018 UJ	0.0038 UJ
PCB-050/053	E1668	**0.12 J**	**0.19 J**	**0.080 J**	0.0059 UJ	0.0039 UJ	0.0021 UJ	0.0044 UJ
PCB-052	E1668	**27 J**	**32 J**	**12 J**	**0.44 J**	**0.28 J**	**0.031 J**	**0.044 J**
PCB-054	E1668	**45 J**	**59 J**	**27 J**	**1.2 J**	**0.53 J**	**0.11 J**	**0.093 J**
PCB-055	E1668	0.051 UJ	0.035 UJ	0.026 UJ	0.0039 UJ	0.0025 UJ	0.0013 UJ	0.0028 UJ
PCB-056	E1668	**0.34 J**	**0.36 J**	**0.11 J**	0.0042 UJ	0.0028 UJ	0.0015 UJ	0.0031 UJ
PCB-057	E1668	0.060 UJ	0.041 UJ	0.030 UJ	0.0045 UJ	0.0030 UJ	0.0016 UJ	0.0033 UJ
PCB-058	E1668	0.053 UJ	0.036 UJ	0.027 UJ	0.0040 UJ	0.0026 UJ	0.0014 UJ	0.0029 UJ

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW1-GAC-6-20251118 TS-PW1 GAC	Kinetics-PW1-GAC-7-20251202 TS-PW1 GAC	Kinetics-PW1-GAC-8-20251230 TS-PW1 GAC	Kinetics-PW1-PAC-1-20251010 TS-PW1 PAC	Kinetics-PW1-PAC-2-20251014 TS-PW1 PAC	Kinetics-PW1-PAC-3-20251021 TS-PW1 PAC	Kinetics-PW1-PAC-4-20251028 TS-PW1 PAC
PCB-059/062/075	E1668	0.064 UJ	0.044 UJ	0.033 UJ	0.0049 UJ	0.0032 UJ	0.0017 UJ	0.0036 UJ
PCB-060	E1668	**0.17 J**	**0.14 J**	**0.062 J**	0.0049 UJ	0.0032 UJ	0.0017 UJ	0.0036 UJ
PCB-061/070/074/076	E1668	**28 J**	**28 J**	**9.5 J**	**0.24 J**	**0.20 J**	**0.037 J**	**0.062 J**
PCB-063	E1668	0.060 UJ	0.041 UJ	0.031 UJ	0.0046 UJ	0.0030 UJ	0.0016 UJ	0.0034 UJ
PCB-064	E1668	**0.52 J**	**0.68 J**	**0.26 J**	0.0044 UJ	0.0029 UJ	0.0015 UJ	0.0032 UJ
PCB-066	E1668	**0.95 J**	**0.94 J**	**0.33 J**	**0.0070 J**	0.0027 UJ	0.0014 UJ	0.0030 UJ
PCB-067	E1668	0.050 UJ	0.034 UJ	0.025 UJ	0.0038 UJ	0.0025 UJ	0.0013 UJ	0.0028 UJ
PCB-068	E1668	0.056 UJ	0.039 UJ	0.029 UJ	0.0043 UJ	0.0028 UJ	0.0015 UJ	0.0031 UJ
PCB-072	E1668	0.056 UJ	0.038 UJ	0.028 UJ	0.0042 UJ	0.0028 UJ	0.0015 UJ	0.0031 UJ
PCB-077	E1668	0.065 UJ	0.045 UJ	0.033 UJ	0.0050 UJ	0.0033 UJ	0.0018 UJ	0.0037 UJ
PCB-078	E1668	0.059 UJ	0.040 UJ	0.030 UJ	0.0045 UJ	0.0029 UJ	0.0016 UJ	0.0033 UJ
PCB-079	E1668	**1.4 J**	**1.6 J**	**0.74 J**	**0.014 J**	**0.012 J**	**0.0051 J**	0.0026 UJ
PCB-080	E1668	0.054 UJ	0.037 UJ	0.027 UJ	0.0041 UJ	0.0027 UJ	0.0014 UJ	0.0030 UJ
PCB-081	E1668	**0.36 J**	0.046 UJ	0.035 UJ	0.0052 UJ	0.0034 UJ	0.0018 UJ	0.0038 UJ
PCB-082	E1668	**1.9 J**	**2.3 J**	**1.4 J**	**0.021 J**	**0.024 J**	0.0030 UJ	0.0048 UJ
PCB-083/099	E1668	**12 J**	**12 J**	**8.4 J**	**0.097 J**	**0.067 J**	**0.063 J**	**0.039 J**
PCB-084	E1668	**5.9 J**	**6.5 J**	**4.2 J**	**0.082 J**	**0.064 J**	**0.020 J**	**0.016 J**
PCB-085/116/117	E1668	**3.4 J**	**5.2 J**	**2.5 J**	**0.033 J**	**0.016 J**	**0.015 J**	**0.024 J**
PCB-086/087/097/109/119/125	E1668	**40 J**	**43 J**	**29 J**	**0.39 J**	**0.30 J**	**0.17 J**	**0.15 J**
PCB-088/091	E1668	**2.7 J**	**2.8 J**	**1.9 J**	**0.024 J**	**0.039 J**	0.0031 UJ	0.0051 UJ
PCB-089	E1668	0.027 UJ	0.059 UJ	0.019 UJ	0.0057 UJ	0.0046 UJ	0.0030 UJ	0.0049 UJ
PCB-090/101/113	E1668	**34 J**	**36 J**	**24 J**	**0.31 J**	**0.24 J**	**0.16 J**	**0.12 J**
PCB-092	E1668	**5.4 J**	**5.5 J**	**3.9 J**	**0.014 J**	**0.034 J**	**0.017 J**	0.0052 UJ
PCB-093/100	E1668	0.028 UJ	0.062 UJ	**0.22 J**	0.0059 UJ	0.0047 UJ	0.0031 UJ	0.0051 UJ
PCB-094	E1668	0.032 UJ	0.070 UJ	**0.043 J**	0.0067 UJ	0.0054 UJ	0.0036 UJ	0.0058 UJ
PCB-095	E1668	**24 J**	**26 J**	**17 J**	**0.27 J**	**0.26 J**	**0.13 J**	**0.065 J**
PCB-096	E1668	0.019 UJ	0.042 UJ	**0.072 J**	0.0040 UJ	0.0032 UJ	0.0021 UJ	0.0035 UJ
PCB-098/102	E1668	**0.48 J**	**0.66 J**	**0.35 J**	0.0049 UJ	**0.0041 J**	**0.0048 J**	0.0043 UJ
PCB-103	E1668	0.028 UJ	0.060 UJ	**0.075 J**	0.0057 UJ	0.0046 UJ	0.0031 UJ	0.0050 UJ
PCB-104	E1668	0.022 UJ	0.047 UJ	**0.043 J**	0.0045 UJ	0.0036 UJ	0.0024 UJ	0.0039 UJ
PCB-105	E1668	**6.7 J**	**6.9 J**	**3.6 J**	**0.038 J**	**0.039 J**	**0.025 J**	**0.019 J**
PCB-106	E1668	0.093 UJ	0.072 UJ	0.037 UJ	0.0038 UJ	0.0041 UJ	0.0028 UJ	0.0046 UJ
PCB-107	E1668	**0.90 J**	**1.0 J**	**0.67 J**	**0.011 J**	**0.0058 J**	0.0026 UJ	0.0044 UJ
PCB-108/124	E1668	**0.88 J**	**0.84 J**	**0.57 J**	0.0044 UJ	0.0048 UJ	0.0042 UJ	0.0053 UJ
PCB-110/115	E1668	**24 J**	**25 J**	**15 J**	**0.24 J**	**0.14 J**	**0.095 J**	**0.060 J**
PCB-111	E1668	0.020 UJ	0.043 UJ	0.014 UJ	0.0041 UJ	0.0033 UJ	0.0022 UJ	0.0035 UJ
PCB-112	E1668	0.016 UJ	0.036 UJ	0.012 UJ	0.0034 UJ	0.0028 UJ	0.0018 UJ	0.0030 UJ
PCB-114	E1668	**0.56 J**	**0.47 J**	**0.29 J**	0.0042 UJ	0.0052 UJ	**0.0060 J**	0.0048 UJ
PCB-118	E1668	**19 J**	**20 J**	**12 J**	**0.13 J**	**0.11 J**	**0.061 J**	**0.051 J**
PCB-120	E1668	0.016 UJ	0.034 UJ	0.011 UJ	0.0032 UJ	0.0026 UJ	0.0017 UJ	0.0028 UJ
PCB-121	E1668	0.018 UJ	0.039 UJ	0.013 UJ	0.0037 UJ	0.0030 UJ	0.0020 UJ	0.0032 UJ
PCB-122	E1668	**0.28 J**	**0.29 J**	**0.18 J**	0.0051 UJ	0.0056 UJ	0.0037 UJ	0.0062 UJ
PCB-123	E1668	**0.29 J**	**0.37 J**	**0.23 J**	0.0043 UJ	0.0050 UJ	0.0033 UJ	**0.016 J**
PCB-126	E1668	0.093 UJ	0.070 UJ	0.037 UJ	0.0039 UJ	0.0042 UJ	0.0029 UJ	0.0049 UJ
PCB-127	E1668	0.094 UJ	0.073 UJ	**0.060 J**	0.0038 UJ	0.0042 UJ	0.0028 UJ	0.0046 UJ
PCB-128/166	E1668	**6.3 J**	**8.2 J**	**5.3 J**	**0.065 J**	**0.085 J**	**0.048 J**	**0.091 J**
PCB-129/138/160/163	E1668	**66 J**	**72 J**	**56 J**	**0.65 J**	**0.75 J**	**0.56 J**	**0.49 J**
PCB-130	E1668	**3.6 J**	**3.7 J**	**3.0 J**	**0.027 J**	**0.049 J**	**0.036 J**	**0.033 J**
PCB-131	E1668	**0.70 J**	**0.81 J**	**0.66 J**	0.0079 UJ	0.011 UJ	0.014 UJ	0.010 UJ
PCB-132	E1668	**19 J**	**20 J**	**17 J**	**0.26 J**	**0.29 J**	**0.24 J**	**0.20 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW1-GAC-6-20251118 TS-PW1 GAC	Kinetics-PW1-GAC-7-20251202 TS-PW1 GAC	Kinetics-PW1-GAC-8-20251230 TS-PW1 GAC	Kinetics-PW1-PAC-1-20251010 TS-PW1 PAC	Kinetics-PW1-PAC-2-20251014 TS-PW1 PAC	Kinetics-PW1-PAC-3-20251021 TS-PW1 PAC	Kinetics-PW1-PAC-4-20251028 TS-PW1 PAC
PCB-133	E1668	**0.63 J**	**1.3 J**	**0.59 J**	0.0066 UJ	0.0091 UJ	0.012 UJ	0.0086 UJ
PCB-134/143	E1668	**3.1 J**	**3.3 J**	**2.9 J**	**0.062 J**	0.010 UJ	**0.052 J**	**0.048 J**
PCB-135/151	E1668	**27 J**	**30 J**	**25 J**	**0.36 J**	**0.34 J**	**0.31 J**	**0.25 J**
PCB-136	E1668	**10 J**	**12 J**	**9.6 J**	**0.20 J**	**0.20 J**	**0.18 J**	**0.14 J**
PCB-137	E1668	**1.4 J**	**2.1 J**	**1.8 J**	**0.026 J**	**0.019 J**	0.013 UJ	**0.019 J**
PCB-139/140	E1668	**0.65 J**	**0.66 J**	**0.49 J**	0.0064 UJ	0.0088 UJ	0.011 UJ	0.0082 UJ
PCB-141	E1668	**16 J**	**17 J**	**14 J**	**0.16 J**	**0.23 J**	**0.15 J**	**0.14 J**
PCB-142	E1668	0.11 UJ	0.083 UJ	0.078 UJ	0.0075 UJ	0.010 UJ	0.013 UJ	0.0097 UJ
PCB-144	E1668	**4.6 J**	**5.1 J**	**4.6 J**	**0.060 J**	**0.054 J**	**0.067 J**	**0.038 J**
PCB-145	E1668	**0.038 J**	0.0063 UJ	0.0028 UJ	0.0011 UJ	0.00086 UJ	0.0020 UJ	0.0017 UJ
PCB-146	E1668	**7.3 J**	**7.9 J**	**6.5 J**	**0.080 J**	**0.097 J**	**0.066 J**	**0.058 J**
PCB-147/149	E1668	**46 J**	**55 J**	**44 J**	**0.75 J**	**0.79 J**	**0.62 J**	**0.54 J**
PCB-148	E1668	0.0013 UJ	0.0090 UJ	0.0041 UJ	0.0016 UJ	0.0012 UJ	0.0028 UJ	0.0025 UJ
PCB-150	E1668	0.00097 UJ	0.0066 UJ	**0.019 J**	0.0011 UJ	0.00090 UJ	0.0021 UJ	0.0018 UJ
PCB-152	E1668	0.00085 UJ	0.0058 UJ	**0.035 J**	0.0010 UJ	0.00079 UJ	0.0018 UJ	0.0016 UJ
PCB-153/168	E1668	**54 J**	**59 J**	**48 J**	**0.54 J**	**0.64 J**	**0.49 J**	**0.47 J**
PCB-154	E1668	**0.29 J**	**0.41 J**	**0.31 J**	0.0014 UJ	**0.0043 J**	0.0026 UJ	0.0023 UJ
PCB-155	E1668	0.0011 UJ	0.0072 UJ	0.0033 UJ	0.0012 UJ	0.00099 UJ	0.0022 UJ	0.0020 UJ
PCB-156/157	E1668	**7.4 J**	**7.9 J**	**5.8 J**	**0.047 J**	**0.041 J**	**0.035 J**	**0.038 J**
PCB-158	E1668	**6.8 J**	**7.5 J**	**6.0 J**	**0.059 J**	**0.078 J**	**0.056 J**	**0.049 J**
PCB-159	E1668	**1.3 J**	0.047 UJ	0.044 UJ	**0.027 J**	0.0059 UJ	**0.023 J**	**0.035 J**
PCB-161	E1668	0.064 UJ	0.049 UJ	0.046 UJ	0.0044 UJ	0.0061 UJ	0.0077 UJ	0.0057 UJ
PCB-162	E1668	0.072 UJ	0.054 UJ	0.051 UJ	0.0049 UJ	0.0068 UJ	0.0086 UJ	0.0064 UJ
PCB-164	E1668	**4.4 J**	**4.3 J**	**3.6 J**	**0.045 J**	**0.053 J**	**0.040 J**	**0.039 J**
PCB-165	E1668	0.085 UJ	0.065 UJ	0.060 UJ	0.0059 UJ	0.0081 UJ	0.010 UJ	0.0076 UJ
PCB-167	E1668	**2.2 J**	**2.4 J**	**1.8 J**	**0.014 J**	**0.0091 J**	0.0075 UJ	**0.012 J**
PCB-169	E1668	0.062 UJ	**0.21 J**	0.042 UJ	0.0045 UJ	0.0069 UJ	0.0075 UJ	0.0058 UJ
PCB-170	E1668	**30 J**	**34 J**	**29 J**	**0.29 J**	**0.39 J**	**0.38 J**	**0.42 J**
PCB-171/173	E1668	**10 J**	**9.9 J**	**9.9 J**	**0.13 J**	**0.16 J**	**0.16 J**	**0.15 J**
PCB-172	E1668	**5.6 J**	**8.6 J**	**5.4 J**	**0.057 J**	**0.085 J**	**0.10 J**	**0.068 J**
PCB-174	E1668	**33 J**	**32 J**	**30 J**	**0.50 J**	**0.60 J**	**0.64 J**	**0.59 J**
PCB-175	E1668	**1.5 J**	**1.6 J**	**1.5 J**	**0.017 J**	**0.028 J**	**0.031 J**	**0.018 J**
PCB-176	E1668	**5.0 J**	**4.7 J**	**4.6 J**	**0.086 J**	**0.13 J**	**0.14 J**	**0.11 J**
PCB-177	E1668	**18 J**	**17 J**	**16 J**	**0.22 J**	**0.31 J**	**0.31 J**	**0.27 J**
PCB-178	E1668	**6.1 J**	**6.4 J**	**5.8 J**	**0.10 J**	**0.14 J**	**0.14 J**	**0.14 J**
PCB-179	E1668	**13 J**	**13 J**	**12 J**	**0.28 J**	**0.34 J**	**0.37 J**	**0.34 J**
PCB-180/193	E1668	**74 J**	**73 J**	**68 J**	**0.71 J**	**0.87 J**	**0.92 J**	**0.88 J**
PCB-181	E1668	0.00054 UJ	0.0027 UJ	**0.25 J**	0.00075 UJ	0.000081 UJ	0.0063 UJ	0.00019 UJ
PCB-182	E1668	0.00051 UJ	0.0025 UJ	0.0057 UJ	0.00070 UJ	0.000075 UJ	0.0039 UJ	0.00018 UJ
PCB-183/185	E1668	**24 J**	**23 J**	**22 J**	**0.34 J**	**0.43 J**	**0.44 J**	**0.40 J**
PCB-184	E1668	0.00041 UJ	0.0020 UJ	0.0046 UJ	0.00056 UJ	0.000060 UJ	0.0032 UJ	0.00014 UJ
PCB-186	E1668	0.00037 UJ	0.0018 UJ	0.0041 UJ	0.00051 UJ	0.000055 UJ	0.0029 UJ	0.00013 UJ
PCB-187	E1668	**35 J**	**55 J**	**32 J**	**0.49 J**	**0.63 J**	**0.67 J**	**0.59 J**
PCB-188	E1668	0.00048 UJ	0.0023 UJ	0.0052 UJ	0.00060 UJ	0.000063 UJ	0.0034 UJ	0.00015 UJ
PCB-189	E1668	**1.1 J**	**1.1 J**	**1.0 J**	**0.0064 J**	**0.013 J**	**0.0097 J**	**0.015 J**
PCB-190	E1668	**7.0 J**	**7.6 J**	**6.6 J**	**0.051 J**	**0.051 J**	**0.056 J**	**0.079 J**
PCB-191	E1668	**1.8 J**	**1.6 J**	**1.6 J**	**0.014 J**	0.000070 UJ	**0.020 J**	**0.025 J**
PCB-192	E1668	0.00043 UJ	0.0021 UJ	0.0048 UJ	0.00059 UJ	0.000063 UJ	0.0033 UJ	0.00015 UJ
PCB-194	E1668	**11 J**	**14 J**	**12 J**	**0.16 J**	**0.21 J**	**0.18 J**	**0.23 J**
PCB-195	E1668	**5.0 J**	**5.7 J**	**5.1 J**	**0.090 J**	**0.094 J**	**0.11 J**	**0.11 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW1-GAC-6-20251118 TS-PW1 GAC	Kinetics-PW1-GAC-7-20251202 TS-PW1 GAC	Kinetics-PW1-GAC-8-20251230 TS-PW1 GAC	Kinetics-PW1-PAC-1-20251010 TS-PW1 PAC	Kinetics-PW1-PAC-2-20251014 TS-PW1 PAC	Kinetics-PW1-PAC-3-20251021 TS-PW1 PAC	Kinetics-PW1-PAC-4-20251028 TS-PW1 PAC
PCB-196	E1668	**8.1 J**	**11 J**	**9.2 J**	**0.14 J**	**0.19 J**	**0.21 J**	**0.19 J**
PCB-197	E1668	--	--	--	--	--	--	--
PCB-197/200	E1668	**2.9 J**	**3.5 J**	**3.4 J**	**0.058 J**	**0.080 J**	**0.11 J**	**0.095 J**
PCB-198/199	E1668	**15 J**	**19 J**	**17 J**	**0.26 J**	**0.29 J**	**0.36 J**	**0.34 J**
PCB-200	E1668	--	--	--	--	--	--	--
PCB-201	E1668	**2.4 J**	**3.0 J**	**2.6 J**	**0.065 J**	**0.062 J**	**0.095 J**	**0.073 J**
PCB-202	E1668	**2.7 J**	**3.1 J**	**3.1 J**	**0.076 J**	**0.086 J**	**0.099 J**	**0.088 J**
PCB-203	E1668	**8.6 J**	**17 J**	**9.9 J**	**0.11 J**	**0.17 J**	**0.18 J**	**0.16 J**
PCB-204	E1668	0.0016 UJ	0.028 UJ	0.0072 UJ	0.00073 UJ	0.0013 UJ	0.0012 UJ	0.0011 UJ
PCB-205	E1668	**0.72 J**	**0.82 J**	**0.78 J**	**0.0047 J**	**0.0082 J**	0.011 UJ	**0.0052 J**
PCB-206	E1668	**2.8 J**	**4.3 J**	**4.3 J**	**0.054 J**	**0.074 J**	**0.086 J**	**0.10 J**
PCB-207	E1668	**0.34 J**	**0.45 J**	**0.50 J**	0.0045 UJ	0.0053 UJ	0.0073 UJ	0.0095 UJ
PCB-208	E1668	**0.92 J**	**1.3 J**	**1.2 J**	**0.033 J**	**0.030 J**	**0.026 J**	**0.045 J**
PCB-209	E1668	**0.19 J**	**0.44 J**	**0.47 J**	**0.013 J**	**0.013 J**	**0.013 J**	0.00040 UJ

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW1-PAC-5-20251104 TS-PW1 PAC	Kinetics-PW1-PAC-6-20251118 TS-PW1 PAC	Kinetics-PW1-PAC-7-20251202 TS-PW1 PAC	Kinetics-PW1-PAC-8-20251230 TS-PW1 PAC	Kinetics-PW2-CTRL-1-20251010 TS-PW2 Control	Kinetics-PW2-CTRL-2-20251014 TS-PW2 Control	Kinetics-PW2-CTRL-3-20251021 TS-PW2 Control
PCB Congeners (SPME) (ng/samp)								
PCB-001	E1668	0.043 UJ	0.0029 UJ	0.0013 UJ	0.0012 UJ	**0.060 J**	0.072 UJ	**0.25 J**
PCB-002	E1668	0.0024 UJ	0.0035 UJ	0.0016 UJ	0.0014 UJ	0.019 UJ	0.020 UJ	0.021 UJ
PCB-003	E1668	**0.0077 J**	0.0038 UJ	0.0017 UJ	0.0015 UJ	**0.035 J**	0.024 UJ	**0.036 J**
PCB-004	E1668	0.27 U	0.010 UJ	0.0045 UJ	**0.022 J**	**250 J**	**250 J**	**250 J**
PCB-005	E1668	0.0053 UJ	0.0092 UJ	0.0040 UJ	0.0074 UJ	0.013 UJ	0.011 UJ	0.017 UJ
PCB-006	E1668	0.0043 UJ	0.0076 UJ	0.0033 UJ	0.0061 UJ	0.011 UJ	0.0090 UJ	0.014 UJ
PCB-007	E1668	0.0051 UJ	0.0088 UJ	0.0039 UJ	0.0071 UJ	0.013 UJ	0.011 UJ	0.016 UJ
PCB-008	E1668	0.042 UJ	0.0073 UJ	0.0032 UJ	0.0059 UJ	**0.42 J**	0.0088 UJ	**0.39 J**
PCB-009	E1668	0.0048 UJ	0.0083 UJ	0.0036 UJ	0.0067 UJ	0.012 UJ	0.010 UJ	0.015 UJ
PCB-010	E1668	**0.15 J**	0.0091 UJ	0.0040 UJ	**0.017 J**	**320 J**	**330 J**	**320 J**
PCB-011	E1668	0.0046 UJ	0.0080 UJ	0.0035 UJ	0.0064 UJ	0.012 UJ	0.0096 UJ	0.014 UJ
PCB-012/013	E1668	0.0052 UJ	0.0090 UJ	0.0039 UJ	0.0072 UJ	0.013 UJ	0.011 UJ	0.016 UJ
PCB-014	E1668	0.0051 UJ	0.0089 UJ	0.0039 UJ	0.0072 UJ	0.013 UJ	0.011 UJ	0.016 UJ
PCB-015	E1668	0.0064 UJ	0.0085 UJ	0.0037 UJ	0.0070 UJ	**0.20 J**	0.014 UJ	**0.21 J**
PCB-016	E1668	0.0041 UJ	0.0044 UJ	0.0035 UJ	0.0017 UJ	0.0051 UJ	0.0075 UJ	**0.41 J**
PCB-017	E1668	0.0041 UJ	0.0044 UJ	0.0035 UJ	0.0017 UJ	0.0051 UJ	0.0075 UJ	**0.34 J**
PCB-018/030	E1668	0.0029 UJ	0.0030 UJ	0.0024 UJ	0.0012 UJ	**0.63 J**	**0.70 J**	**0.69 J**
PCB-019	E1668	**0.17 J**	**0.023 J**	**0.0061 J**	**0.022 J**	**320 J**	**310 J**	**330 J**
PCB-020/028	E1668	0.0042 UJ	0.0053 UJ	0.0021 UJ	0.0028 UJ	**0.76 J**	**0.81 J**	**0.72 J**
PCB-021/033	E1668	0.0041 UJ	0.0052 UJ	0.0020 UJ	0.0028 UJ	**0.58 J**	**0.55 J**	**0.43 J**
PCB-022	E1668	0.0039 UJ	0.0049 UJ	0.0019 UJ	0.0026 UJ	**0.26 J**	**0.27 J**	**0.22 J**
PCB-023	E1668	0.0043 UJ	0.0054 UJ	0.0021 UJ	0.0029 UJ	0.028 UJ	0.035 UJ	0.032 UJ
PCB-024	E1668	0.0028 UJ	0.0030 UJ	0.0024 UJ	0.0012 UJ	0.0035 UJ	0.0052 UJ	0.0092 UJ
PCB-025	E1668	0.0035 UJ	0.0044 UJ	0.0017 UJ	0.0023 UJ	**0.084 J**	**0.095 J**	**0.054 J**
PCB-026/029	E1668	0.0046 UJ	0.0058 UJ	0.0022 UJ	0.0031 UJ	**0.85 J**	**0.81 J**	**0.73 J**
PCB-027	E1668	0.0028 UJ	0.0030 UJ	0.0024 UJ	0.0012 UJ	0.0035 UJ	0.0051 UJ	0.0091 UJ
PCB-031	E1668	0.0037 UJ	0.0047 UJ	0.0018 UJ	0.0025 UJ	**1.0 J**	**1.1 J**	**0.89 J**
PCB-032	E1668	0.0026 UJ	0.0028 UJ	**0.0038 J**	0.0011 UJ	0.0033 UJ	0.0048 UJ	**0.19 J**
PCB-034	E1668	0.0044 UJ	0.0056 UJ	0.0022 UJ	0.0030 UJ	0.029 UJ	0.036 UJ	0.033 UJ
PCB-035	E1668	0.0043 UJ	0.0055 UJ	0.0021 UJ	0.0029 UJ	0.028 UJ	0.035 UJ	**0.084 J**
PCB-036	E1668	0.0035 UJ	0.0045 UJ	0.0017 UJ	0.0024 UJ	0.023 UJ	0.029 UJ	0.026 UJ
PCB-037	E1668	0.0042 UJ	0.0053 UJ	0.0021 UJ	0.0028 UJ	**0.36 J**	0.034 UJ	**0.36 J**
PCB-038	E1668	0.0040 UJ	0.0051 UJ	0.0020 UJ	0.0027 UJ	0.026 UJ	0.033 UJ	0.030 UJ
PCB-039	E1668	0.0042 UJ	0.0053 UJ	0.0021 UJ	0.0028 UJ	0.027 UJ	0.034 UJ	0.031 UJ
PCB-040/041/071	E1668	0.0052 UJ	0.0041 UJ	0.012 UJ	0.0014 UJ	**1.5 J**	**1.7 J**	**1.6 J**
PCB-042	E1668	0.0056 UJ	0.0043 UJ	0.013 UJ	0.0015 UJ	**1.2 J**	**1.0 J**	**1.1 J**
PCB-043/073	E1668	0.0043 UJ	0.0033 UJ	0.0099 UJ	0.0011 UJ	0.083 UJ	0.063 UJ	0.091 UJ
PCB-044/047/065	E1668	**0.046 J**	0.0036 UJ	0.011 UJ	**0.011 J**	**110 J**	**110 J**	**120 J**
PCB-045/051	E1668	0.0054 UJ	0.0042 UJ	0.013 UJ	0.0014 UJ	**0.59 J**	**0.62 J**	**0.62 J**
PCB-046	E1668	0.0062 UJ	0.0048 UJ	0.014 UJ	0.0016 UJ	**0.22 J**	**0.18 J**	**0.14 J**
PCB-048	E1668	0.0052 UJ	0.0041 UJ	0.012 UJ	0.0014 UJ	0.10 UJ	0.078 UJ	**0.51 J**
PCB-049/069	E1668	0.0043 UJ	0.0034 UJ	0.010 UJ	0.0011 UJ	**4.7 J**	**4.8 J**	**4.8 J**
PCB-050/053	E1668	0.0050 UJ	0.0039 UJ	0.012 UJ	0.0013 UJ	**0.55 J**	**0.56 J**	**0.57 J**
PCB-052	E1668	**0.029 J**	0.0036 UJ	0.011 UJ	0.0012 UJ	**110 J**	**110 J**	**110 J**
PCB-054	E1668	**0.12 J**	**0.0039 J**	**0.038 J**	**0.033 J**	**110 J**	**120 J**	**120 J**
PCB-055	E1668	0.0033 UJ	0.0026 UJ	0.0077 UJ	0.00087 UJ	0.064 UJ	0.049 UJ	0.071 UJ
PCB-056	E1668	0.0036 UJ	0.0028 UJ	0.0083 UJ	0.00094 UJ	**2.0 J**	**1.9 J**	**1.9 J**
PCB-057	E1668	0.0039 UJ	0.0030 UJ	0.0090 UJ	0.0010 UJ	0.076 UJ	0.058 UJ	0.083 UJ
PCB-058	E1668	0.0034 UJ	0.0026 UJ	0.0079 UJ	0.00090 UJ	0.067 UJ	0.051 UJ	0.073 UJ

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW1-PAC-5-20251104 TS-PW1 PAC	Kinetics-PW1-PAC-6-20251118 TS-PW1 PAC	Kinetics-PW1-PAC-7-20251202 TS-PW1 PAC	Kinetics-PW1-PAC-8-20251230 TS-PW1 PAC	Kinetics-PW2-CTRL-1-20251010 TS-PW2 Control	Kinetics-PW2-CTRL-2-20251014 TS-PW2 Control	Kinetics-PW2-CTRL-3-20251021 TS-PW2 Control
PCB-059/062/075	E1668	0.0042 UJ	0.0032 UJ	0.0097 UJ	0.0011 UJ	0.081 UJ	0.062 UJ	**0.53 J**
PCB-060	E1668	0.0042 UJ	0.0032 UJ	0.0097 UJ	0.0011 UJ	**1.2 J**	**1.0 J**	**0.82 J**
PCB-061/070/074/076	E1668	**0.072 J**	0.0028 UJ	0.0084 UJ	**0.015 J**	**130 J**	**120 J**	**130 J**
PCB-063	E1668	0.0039 UJ	0.0030 UJ	0.0091 UJ	0.0010 UJ	0.076 UJ	0.058 UJ	0.084 UJ
PCB-064	E1668	0.0037 UJ	0.0029 UJ	0.0087 UJ	0.00098 UJ	**2.8 J**	**2.8 J**	**2.7 J**
PCB-066	E1668	0.0035 UJ	0.0027 UJ	0.0081 UJ	0.00091 UJ	**5.2 J**	**4.8 J**	**4.7 J**
PCB-067	E1668	0.0032 UJ	0.0025 UJ	0.0075 UJ	0.00085 UJ	0.063 UJ	0.048 UJ	0.069 UJ
PCB-068	E1668	0.0036 UJ	0.0028 UJ	0.0085 UJ	0.00096 UJ	0.071 UJ	0.054 UJ	0.078 UJ
PCB-072	E1668	0.0036 UJ	0.0028 UJ	0.0084 UJ	0.00095 UJ	0.070 UJ	0.054 UJ	0.077 UJ
PCB-077	E1668	0.0044 UJ	0.0032 UJ	0.010 UJ	0.0011 UJ	0.086 UJ	0.066 UJ	0.095 UJ
PCB-078	E1668	0.0038 UJ	0.0029 UJ	0.0089 UJ	0.0010 UJ	0.074 UJ	0.057 UJ	0.082 UJ
PCB-079	E1668	0.0030 UJ	0.0023 UJ	0.0070 UJ	0.00079 UJ	**2.6 J**	**2.6 J**	**2.2 J**
PCB-080	E1668	0.0035 UJ	0.0027 UJ	0.0081 UJ	0.00092 UJ	0.068 UJ	0.052 UJ	0.075 UJ
PCB-081	E1668	0.0043 UJ	0.0036 UJ	0.010 UJ	0.0012 UJ	0.084 UJ	0.063 UJ	0.091 UJ
PCB-082	E1668	0.0034 UJ	0.0045 UJ	0.0026 UJ	0.0081 UJ	**3.9 J**	**3.9 J**	**4.3 J**
PCB-083/099	E1668	**0.015 J**	0.0046 UJ	0.0026 UJ	0.0083 UJ	**16 J**	**16 J**	**18 J**
PCB-084	E1668	**0.0062 J**	0.0053 UJ	0.0030 UJ	0.0096 UJ	**11 J**	**9.7 J**	**11 J**
PCB-085/116/117	E1668	0.0030 UJ	0.0040 UJ	**0.12 J**	0.0071 UJ	**5.4 J**	**5.4 J**	**5.7 J**
PCB-086/087/097/109/119/125	E1668	**0.090 J**	**0.0090 J**	**0.013 J**	0.0071 UJ	**58 J**	**59 J**	**65 J**
PCB-088/091	E1668	0.0036 UJ	0.0047 UJ	0.0027 UJ	0.0086 UJ	**4.2 J**	**4.0 J**	**4.6 J**
PCB-089	E1668	0.0034 UJ	0.0046 UJ	0.0026 UJ	0.0083 UJ	0.0081 UJ	**0.30 J**	**0.35 J**
PCB-090/101/113	E1668	**0.090 J**	**0.019 J**	0.015 UJ	0.0075 UJ	**51 J**	**50 J**	**56 J**
PCB-092	E1668	**0.019 J**	0.0049 UJ	0.0028 UJ	0.0088 UJ	**7.6 J**	**7.7 J**	**8.5 J**
PCB-093/100	E1668	0.0036 UJ	0.0048 UJ	0.0027 UJ	0.0086 UJ	0.0084 UJ	0.016 UJ	**0.32 J**
PCB-094	E1668	0.0041 UJ	0.0054 UJ	0.0031 UJ	0.0098 UJ	0.0096 UJ	**0.13 J**	**0.080 J**
PCB-095	E1668	**0.051 J**	0.0048 UJ	**0.0090 J**	0.0086 UJ	**41 J**	**40 J**	**43 J**
PCB-096	E1668	0.0024 UJ	0.0032 UJ	0.0019 UJ	0.0058 UJ	**0.14 J**	**0.12 J**	**0.20 J**
PCB-098/102	E1668	0.0030 UJ	0.0040 UJ	0.0023 UJ	0.0073 UJ	**0.92 J**	**0.91 J**	**0.83 J**
PCB-103	E1668	0.0035 UJ	0.0047 UJ	0.0027 UJ	0.0084 UJ	0.0082 UJ	**0.11 J**	**0.13 J**
PCB-104	E1668	0.0027 UJ	0.0036 UJ	0.0021 UJ	0.0066 UJ	**0.076 J**	**0.051 J**	**0.094 J**
PCB-105	E1668	0.011 UJ	0.0096 UJ	0.0072 UJ	0.0058 UJ	**13 J**	**13 J**	**13 J**
PCB-106	E1668	0.0094 UJ	0.0085 UJ	0.0064 UJ	0.0051 UJ	0.071 UJ	0.11 UJ	0.094 UJ
PCB-107	E1668	0.0090 UJ	0.0082 UJ	0.0061 UJ	0.0049 UJ	**1.8 J**	**1.7 J**	**1.9 J**
PCB-108/124	E1668	0.011 UJ	0.0099 UJ	0.0074 UJ	0.0059 UJ	**1.3 J**	**1.6 J**	**1.5 J**
PCB-110/115	E1668	**0.066 J**	**0.0075 J**	**0.016 J**	0.0052 UJ	**39 J**	**40 J**	**44 J**
PCB-111	E1668	0.0025 UJ	0.0033 UJ	0.0019 UJ	0.0060 UJ	0.0059 UJ	0.011 UJ	0.011 UJ
PCB-112	E1668	0.0021 UJ	0.0028 UJ	0.0016 UJ	0.0050 UJ	0.0049 UJ	0.0092 UJ	0.0094 UJ
PCB-114	E1668	0.010 UJ	0.0095 UJ	0.0072 UJ	0.0056 UJ	**0.91 J**	**1.0 J**	**1.0 J**
PCB-118	E1668	**0.026 J**	**0.018 J**	0.0071 UJ	**0.016 J**	**33 J**	**35 J**	**35 J**
PCB-120	E1668	0.0020 UJ	0.0026 UJ	0.0015 UJ	0.0048 UJ	0.0047 UJ	**0.14 J**	0.0090 UJ
PCB-121	E1668	0.0023 UJ	0.0030 UJ	0.0017 UJ	0.0055 UJ	0.0054 UJ	0.010 UJ	0.010 UJ
PCB-122	E1668	0.013 UJ	0.012 UJ	0.0087 UJ	0.0069 UJ	**0.54 J**	0.14 UJ	**0.56 J**
PCB-123	E1668	0.011 UJ	0.010 UJ	0.0078 UJ	0.0063 UJ	**0.37 J**	**0.61 J**	**0.46 J**
PCB-126	E1668	0.010 UJ	0.0083 UJ	0.0061 UJ	0.0050 UJ	0.073 UJ	0.11 UJ	0.10 UJ
PCB-127	E1668	0.0095 UJ	0.0087 UJ	0.0065 UJ	0.0052 UJ	0.071 UJ	0.11 UJ	0.095 UJ
PCB-128/166	E1668	**0.084 J**	**0.0096 J**	**0.018 J**	0.0027 UJ	**7.8 J**	**9.4 J**	**12 J**
PCB-129/138/160/163	E1668	**0.50 J**	**0.22 J**	**0.16 J**	**0.083 J**	**68 J**	**86 J**	**94 J**
PCB-130	E1668	**0.040 J**	0.013 UJ	0.0050 UJ	0.0042 UJ	**3.6 J**	**5.1 J**	**4.9 J**
PCB-131	E1668	0.0065 UJ	0.012 UJ	0.0045 UJ	0.0037 UJ	**1.1 J**	**1.1 J**	**0.89 J**
PCB-132	E1668	**0.22 J**	**0.078 J**	**0.078 J**	**0.021 J**	**23 J**	**27 J**	**28 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW1-PAC-5-20251104 TS-PW1 PAC	Kinetics-PW1-PAC-6-20251118 TS-PW1 PAC	Kinetics-PW1-PAC-7-20251202 TS-PW1 PAC	Kinetics-PW1-PAC-8-20251230 TS-PW1 PAC	Kinetics-PW2-CTRL-1-20251010 TS-PW2 Control	Kinetics-PW2-CTRL-2-20251014 TS-PW2 Control	Kinetics-PW2-CTRL-3-20251021 TS-PW2 Control
PCB-133	E1668	**0.0091 J**	0.010 UJ	0.0038 UJ	**0.0035 J**	**0.71 J**	**0.94 J**	**0.94 J**
PCB-134/143	E1668	**0.034 J**	0.012 UJ	0.0043 UJ	**0.0054 J**	**4.1 J**	**4.8 J**	**5.0 J**
PCB-135/151	E1668	**0.28 J**	**0.11 J**	**0.068 J**	**0.060 J**	**27 J**	**30 J**	**32 J**
PCB-136	E1668	**0.13 J**	**0.046 J**	**0.027 J**	**0.023 J**	**11 J**	**11 J**	**12 J**
PCB-137	E1668	0.0062 UJ	0.011 UJ	0.0043 UJ	0.0036 UJ	**1.9 J**	**2.5 J**	**1.9 J**
PCB-139/140	E1668	0.0053 UJ	0.0096 UJ	0.0036 UJ	0.0030 UJ	**0.71 J**	**0.94 J**	**0.95 J**
PCB-141	E1668	**0.14 J**	**0.066 J**	**0.048 J**	**0.018 J**	**17 J**	**22 J**	**23 J**
PCB-142	E1668	0.0063 UJ	0.011 UJ	0.0043 UJ	0.0036 UJ	0.058 UJ	0.059 UJ	0.098 UJ
PCB-144	E1668	**0.020 J**	0.0028 UJ	**0.0052 J**	0.0044 UJ	**4.6 J**	**5.3 J**	**5.6 J**
PCB-145	E1668	0.0011 UJ	0.0018 UJ	0.00081 UJ	0.0029 UJ	0.0039 UJ	0.0036 UJ	**0.057 J**
PCB-146	E1668	**0.069 J**	**0.019 J**	**0.022 J**	**0.012 J**	**7.0 J**	**9.8 J**	**10 J**
PCB-147/149	E1668	**0.56 J**	**0.23 J**	**0.20 J**	**0.072 J**	**54 J**	**64 J**	**68 J**
PCB-148	E1668	0.0015 UJ	0.0026 UJ	0.0012 UJ	0.0041 UJ	0.0057 UJ	0.0052 UJ	0.0030 UJ
PCB-150	E1668	0.0011 UJ	0.0019 UJ	0.00085 UJ	0.0030 UJ	0.0041 UJ	**0.039 J**	0.0022 UJ
PCB-152	E1668	0.00098 UJ	0.0017 UJ	0.00075 UJ	0.0026 UJ	**0.028 J**	0.0033 UJ	0.0019 UJ
PCB-153/168	E1668	**0.46 J**	**0.25 J**	**0.16 J**	**0.081 J**	**50 J**	**70 J**	**75 J**
PCB-154	E1668	0.0014 UJ	0.0024 UJ	0.0011 UJ	0.0038 UJ	**0.31 J**	0.0047 UJ	**0.36 J**
PCB-155	E1668	0.0012 UJ	0.0021 UJ	0.00093 UJ	0.0033 UJ	0.0045 UJ	0.0041 UJ	0.0024 UJ
PCB-156/157	E1668	**0.027 J**	0.0093 UJ	**0.0095 J**	**0.0070 J**	**6.7 J**	**8.7 J**	**9.7 J**
PCB-158	E1668	**0.043 J**	0.0074 UJ	**0.0058 J**	**0.014 J**	**7.5 J**	**9.5 J**	**9.8 J**
PCB-159	E1668	**0.030 J**	0.0065 UJ	0.0024 UJ	0.0020 UJ	**0.92 J**	**1.4 J**	**2.0 J**
PCB-161	E1668	0.0037 UJ	0.0067 UJ	0.0025 UJ	0.0021 UJ	0.034 UJ	0.035 UJ	0.058 UJ
PCB-162	E1668	0.0041 UJ	0.0074 UJ	0.0028 UJ	0.0023 UJ	0.038 UJ	**0.12 J**	**0.17 J**
PCB-164	E1668	**0.043 J**	0.0070 UJ	**0.0086 J**	**0.0035 J**	**4.5 J**	**5.5 J**	**5.9 J**
PCB-165	E1668	0.0049 UJ	0.0089 UJ	0.0033 UJ	0.0028 UJ	0.045 UJ	0.046 UJ	0.076 UJ
PCB-167	E1668	0.0036 UJ	0.0070 UJ	0.0028 UJ	0.0021 UJ	**1.9 J**	**2.6 J**	**2.8 J**
PCB-169	E1668	0.0038 UJ	0.0064 UJ	0.0022 UJ	0.0020 UJ	0.035 UJ	0.036 UJ	0.060 UJ
PCB-170	E1668	**0.44 J**	**0.37 J**	**0.29 J**	**0.22 J**	**14 J**	**24 J**	**33 J**
PCB-171/173	E1668	**0.22 J**	**0.21 J**	**0.12 J**	**0.080 J**	**5.2 J**	**7.8 J**	**10 J**
PCB-172	E1668	**0.11 J**	**0.018 J**	**0.029 J**	**0.030 J**	**2.4 J**	**4.0 J**	**6.2 J**
PCB-174	E1668	**0.66 J**	**0.49 J**	**0.49 J**	**0.32 J**	**18 J**	**27 J**	**35 J**
PCB-175	E1668	**0.015 J**	**0.012 J**	**0.015 J**	**0.016 J**	**0.79 J**	**1.2 J**	**1.6 J**
PCB-176	E1668	**0.14 J**	**0.12 J**	**0.11 J**	**0.089 J**	**2.8 J**	**4.1 J**	**4.9 J**
PCB-177	E1668	**0.29 J**	**0.33 J**	**0.24 J**	**0.14 J**	**9.3 J**	**14 J**	**18 J**
PCB-178	E1668	**0.14 J**	**0.13 J**	**0.094 J**	**0.063 J**	**3.4 J**	**5.5 J**	**6.8 J**
PCB-179	E1668	**0.34 J**	**0.29 J**	**0.29 J**	**0.21 J**	**7.9 J**	**11 J**	**13 J**
PCB-180/193	E1668	**1.1 J**	**0.95 J**	**0.75 J**	**0.44 J**	**29 J**	**48 J**	**72 J**
PCB-181	E1668	0.0024 UJ	0.00057 UJ	0.0035 UJ	0.0024 UJ	0.00037 UJ	0.00015 UJ	0.00049 UJ
PCB-182	E1668	0.0022 UJ	0.00053 UJ	0.0033 UJ	0.0023 UJ	0.00034 UJ	0.00014 UJ	0.00046 UJ
PCB-183/185	E1668	**0.50 J**	**0.40 J**	**0.28 J**	**0.24 J**	**11 J**	**18 J**	**24 J**
PCB-184	E1668	0.0018 UJ	0.00042 UJ	0.0026 UJ	0.0018 UJ	0.00027 UJ	0.00011 UJ	0.00037 UJ
PCB-186	E1668	0.0016 UJ	0.00038 UJ	0.0024 UJ	0.0017 UJ	0.00025 UJ	0.000099 UJ	0.00033 UJ
PCB-187	E1668	**0.77 J**	**0.64 J**	**0.74 J**	**0.32 J**	**17 J**	**28 J**	**39 J**
PCB-188	E1668	0.0019 UJ	0.00048 UJ	0.0030 UJ	0.0020 UJ	0.00029 UJ	0.00012 UJ	0.00038 UJ
PCB-189	E1668	0.0035 UJ	0.0044 UJ	0.0021 UJ	0.0045 UJ	**0.44 J**	**0.85 J**	**1.0 J**
PCB-190	E1668	**0.089 J**	**0.048 J**	**0.053 J**	**0.040 J**	**3.0 J**	**4.8 J**	**6.4 J**
PCB-191	E1668	0.0021 UJ	0.00049 UJ	**0.016 J**	0.0021 UJ	**0.80 J**	**1.2 J**	**1.6 J**
PCB-192	E1668	0.0019 UJ	0.00045 UJ	0.0028 UJ	0.0019 UJ	0.00029 UJ	0.00012 UJ	0.00039 UJ
PCB-194	E1668	**0.26 J**	**0.22 J**	**0.21 J**	**0.15 J**	**2.5 J**	**4.6 J**	**8.1 J**
PCB-195	E1668	**0.13 J**	**0.14 J**	**0.10 J**	**0.059 J**	**1.3 J**	**2.4 J**	**3.9 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW1-PAC-5-20251104 TS-PW1 PAC	Kinetics-PW1-PAC-6-20251118 TS-PW1 PAC	Kinetics-PW1-PAC-7-20251202 TS-PW1 PAC	Kinetics-PW1-PAC-8-20251230 TS-PW1 PAC	Kinetics-PW2-CTRL-1-20251010 TS-PW2 Control	Kinetics-PW2-CTRL-2-20251014 TS-PW2 Control	Kinetics-PW2-CTRL-3-20251021 TS-PW2 Control
PCB-196	E1668	**0.19 J**	**0.19 J**	**0.17 J**	**0.18 J**	**1.9 J**	**3.4 J**	**5.8 J**
PCB-197	E1668	--	0.00067 UJ	--	--	--	--	--
PCB-197/200	E1668	**0.12 J**	--	**0.12 J**	**0.093 J**	**0.80 J**	**1.4 J**	**2.1 J**
PCB-198/199	E1668	**0.35 J**	**0.41 J**	**0.39 J**	**0.26 J**	**3.8 J**	**6.5 J**	**11 J**
PCB-200	E1668	--	0.00067 UJ	--	--	--	--	--
PCB-201	E1668	**0.075 J**	0.00075 UJ	**0.090 J**	**0.049 J**	**0.64 J**	**1.1 J**	**1.9 J**
PCB-202	E1668	**0.12 J**	**0.11 J**	**0.11 J**	**0.093 J**	**0.75 J**	**1.4 J**	**2.3 J**
PCB-203	E1668	**0.22 J**	**0.19 J**	**0.28 J**	**0.16 J**	**2.0 J**	**3.5 J**	**6.6 J**
PCB-204	E1668	0.00039 UJ	0.00064 UJ	0.00091 UJ	0.0022 UJ	**0.012 J**	0.0057 UJ	0.0092 UJ
PCB-205	E1668	**0.0042 J**	0.0020 UJ	0.0024 UJ	0.0034 UJ	**0.18 J**	**0.31 J**	**0.44 J**
PCB-206	E1668	**0.094 J**	0.016 UJ	0.022 UJ	**0.10 J**	**0.48 J**	**0.73 J**	**1.3 J**
PCB-207	E1668	0.013 UJ	0.013 UJ	0.019 UJ	0.012 UJ	**0.065 J**	**0.073 J**	**0.17 J**
PCB-208	E1668	**0.042 J**	0.012 UJ	0.019 UJ	**0.043 J**	**0.16 J**	**0.23 J**	**0.41 J**
PCB-209	E1668	**0.0034 J**	0.00070 UJ	**0.018 J**	**0.017 J**	**0.044 J**	**0.042 J**	**0.079 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW2-CTRL-4-20251028 TS-PW2 Control	Kinetics-PW2-CTRL-5-20251104 TS-PW2 Control	Kinetics-PW2-CTRL-6-20251118 TS-PW2 Control	Kinetics-PW2-CTRL-7-20251202 TS-PW2 Control	Kinetics-PW2-CTRL-8-20251230 TS-PW2 Control	Kinetics-PW2-GAC-1-20251010 TS-PW2 GAC	Kinetics-PW2-GAC-2-20251014 TS-PW2 GAC
PCB Congeners (SPME) (ng/samp)								
PCB-001	E1668	**0.077 J**	0.10 UJ	0.047 UJ	0.012 UJ	**0.072 J**	**0.084 J**	0.026 UJ
PCB-002	E1668	0.034 UJ	0.024 UJ	0.055 UJ	0.014 UJ	0.012 UJ	0.023 UJ	0.017 UJ
PCB-003	E1668	0.045 UJ	0.033 UJ	0.059 UJ	**0.040 J**	**0.038 J**	0.028 UJ	0.022 UJ
PCB-004	E1668	**250 J**	**240 J**	**240 J**	**230 J**	**220 J**	**270 J**	**180 J**
PCB-005	E1668	0.046 UJ	0.026 UJ	0.080 UJ	0.028 UJ	0.027 UJ	0.020 UJ	0.017 UJ
PCB-006	E1668	0.038 UJ	0.021 UJ	0.065 UJ	0.023 UJ	0.022 UJ	0.016 UJ	0.014 UJ
PCB-007	E1668	0.044 UJ	0.024 UJ	0.076 UJ	0.027 UJ	0.026 UJ	0.019 UJ	0.016 UJ
PCB-008	E1668	**0.49 J**	**0.43 J**	0.063 UJ	0.022 UJ	**0.42 J**	0.016 UJ	0.013 UJ
PCB-009	E1668	0.042 UJ	0.023 UJ	0.072 UJ	0.025 UJ	0.024 UJ	0.018 UJ	0.015 UJ
PCB-010	E1668	**340 J**	**320 J**	**270 J**	**270 J**	**260 J**	**360 J**	**230 J**
PCB-011	E1668	0.040 UJ	0.022 UJ	0.069 UJ	0.024 UJ	0.023 UJ	0.017 UJ	0.015 UJ
PCB-012/013	E1668	0.045 UJ	0.025 UJ	0.078 UJ	0.027 UJ	0.026 UJ	0.019 UJ	0.017 UJ
PCB-014	E1668	0.045 UJ	0.025 UJ	0.077 UJ	0.027 UJ	0.026 UJ	0.019 UJ	0.016 UJ
PCB-015	E1668	0.060 UJ	0.035 UJ	0.076 UJ	0.027 UJ	0.027 UJ	0.024 UJ	0.020 UJ
PCB-016	E1668	0.011 UJ	0.0082 UJ	0.041 UJ	0.053 UJ	**0.41 J**	0.0083 UJ	0.0069 UJ
PCB-017	E1668	0.012 UJ	0.0083 UJ	0.041 UJ	0.053 UJ	0.025 UJ	0.0084 UJ	0.0070 UJ
PCB-018/030	E1668	**0.71 J**	**0.59 J**	0.028 UJ	**0.46 J**	**0.52 J**	**0.76 J**	**0.69 J**
PCB-019	E1668	**330 J**	**330 J**	**330 J**	**290 J**	**300 J**	**380 J**	**310 J**
PCB-020/028	E1668	**0.72 J**	**0.73 J**	**0.61 J**	**0.58 J**	**0.53 J**	**0.81 J**	**0.72 J**
PCB-021/033	E1668	**0.58 J**	**0.54 J**	**0.38 J**	**0.45 J**	**0.38 J**	**0.63 J**	**0.54 J**
PCB-022	E1668	**0.28 J**	**0.24 J**	**0.19 J**	**0.20 J**	**0.22 J**	**0.26 J**	**0.23 J**
PCB-023	E1668	0.076 UJ	0.061 UJ	0.082 UJ	0.044 UJ	0.039 UJ	0.091 UJ	0.037 UJ
PCB-024	E1668	0.0079 UJ	0.0057 UJ	0.028 UJ	0.037 UJ	0.017 UJ	0.0057 UJ	0.0048 UJ
PCB-025	E1668	0.062 UJ	0.049 UJ	0.067 UJ	0.036 UJ	**0.081 J**	0.074 UJ	**0.082 J**
PCB-026/029	E1668	**0.85 J**	**0.79 J**	**0.69 J**	**0.65 J**	**0.53 J**	**0.96 J**	**0.80 J**
PCB-027	E1668	0.0079 UJ	0.0057 UJ	0.028 UJ	0.036 UJ	0.017 UJ	0.0057 UJ	0.0047 UJ
PCB-031	E1668	**1.1 J**	**1.1 J**	**0.83 J**	**0.81 J**	**0.83 J**	**1.2 J**	**1.0 J**
PCB-032	E1668	0.0073 UJ	0.0053 UJ	0.026 UJ	0.034 UJ	**0.19 J**	0.0053 UJ	0.0044 UJ
PCB-034	E1668	0.079 UJ	0.063 UJ	0.085 UJ	0.046 UJ	0.040 UJ	0.094 UJ	0.038 UJ
PCB-035	E1668	0.077 UJ	0.061 UJ	0.083 UJ	0.045 UJ	0.039 UJ	0.092 UJ	0.037 UJ
PCB-036	E1668	0.063 UJ	0.050 UJ	0.068 UJ	0.036 UJ	0.032 UJ	0.075 UJ	0.030 UJ
PCB-037	E1668	**0.38 J**	**0.33 J**	**0.32 J**	0.043 UJ	**0.27 J**	0.089 UJ	**0.35 J**
PCB-038	E1668	0.072 UJ	0.057 UJ	0.078 UJ	0.042 UJ	0.037 UJ	0.086 UJ	0.035 UJ
PCB-039	E1668	0.074 UJ	0.059 UJ	0.080 UJ	0.043 UJ	0.038 UJ	0.089 UJ	0.036 UJ
PCB-040/041/071	E1668	**1.8 J**	**1.7 J**	**1.2 J**	**1.3 J**	**1.2 J**	**2.1 J**	**1.6 J**
PCB-042	E1668	**1.0 J**	0.23 UJ	**1.1 J**	**0.72 J**	0.10 UJ	**1.1 J**	**1.0 J**
PCB-043/073	E1668	0.23 UJ	0.17 UJ	0.21 UJ	0.088 UJ	**1.1 J**	0.081 UJ	0.072 UJ
PCB-044/047/065	E1668	**120 J**	**120 J**	**97 J**	**96 J**	**87 J**	**120 J**	**120 J**
PCB-045/051	E1668	**0.65 J**	**0.62 J**	**0.52 J**	**0.50 J**	**0.42 J**	**0.68 J**	**0.62 J**
PCB-046	E1668	0.33 UJ	0.25 UJ	0.30 UJ	0.13 UJ	**0.19 J**	0.12 UJ	**0.18 J**
PCB-048	E1668	0.28 UJ	0.21 UJ	0.26 UJ	0.11 UJ	0.096 UJ	0.10 UJ	0.088 UJ
PCB-049/069	E1668	**4.7 J**	**4.9 J**	**4.1 J**	**3.7 J**	**3.6 J**	**5.5 J**	**4.9 J**
PCB-050/053	E1668	**0.67 J**	**0.55 J**	**0.42 J**	**0.41 J**	**0.40 J**	**0.62 J**	**0.60 J**
PCB-052	E1668	**120 J**	**120 J**	**95 J**	**92 J**	**85 J**	**130 J**	**120 J**
PCB-054	E1668	**120 J**	**110 J**	**100 J**	**100 J**	**91 J**	**140 J**	**130 J**
PCB-055	E1668	0.18 UJ	0.13 UJ	0.16 UJ	0.068 UJ	0.061 UJ	0.063 UJ	0.056 UJ
PCB-056	E1668	**2.1 J**	**1.8 J**	**1.7 J**	**1.6 J**	**1.6 J**	**1.9 J**	**1.8 J**
PCB-057	E1668	0.21 UJ	0.16 UJ	0.19 UJ	0.080 UJ	0.071 UJ	0.074 UJ	0.065 UJ
PCB-058	E1668	0.18 UJ	0.14 UJ	0.17 UJ	0.071 UJ	0.063 UJ	0.065 UJ	0.058 UJ

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW2-CTRL-4-20251028 TS-PW2 Control	Kinetics-PW2-CTRL-5-20251104 TS-PW2 Control	Kinetics-PW2-CTRL-6-20251118 TS-PW2 Control	Kinetics-PW2-CTRL-7-20251202 TS-PW2 Control	Kinetics-PW2-CTRL-8-20251230 TS-PW2 Control	Kinetics-PW2-GAC-1-20251010 TS-PW2 GAC	Kinetics-PW2-GAC-2-20251014 TS-PW2 GAC
PCB-059/062/075	E1668	0.22 UJ	0.17 UJ	0.20 UJ	0.086 UJ	0.077 UJ	0.079 UJ	0.070 UJ
PCB-060	E1668	**1.0 J**	**0.91 J**	**0.65 J**	**0.84 J**	**0.79 J**	**1.1 J**	**0.95 J**
PCB-061/070/074/076	E1668	**140 J**	**130 J**	**120 J**	**110 J**	**110 J**	**130 J**	**120 J**
PCB-063	E1668	0.21 UJ	0.16 UJ	0.19 UJ	0.081 UJ	0.072 UJ	0.075 UJ	0.066 UJ
PCB-064	E1668	**2.8 J**	**2.9 J**	**2.4 J**	**2.1 J**	**2.2 J**	**3.1 J**	**2.8 J**
PCB-066	E1668	**5.3 J**	**5.6 J**	**4.1 J**	**3.8 J**	**4.0 J**	**5.1 J**	**5.0 J**
PCB-067	E1668	0.17 UJ	0.13 UJ	0.16 UJ	0.067 UJ	0.059 UJ	0.061 UJ	0.054 UJ
PCB-068	E1668	0.20 UJ	0.15 UJ	0.18 UJ	0.075 UJ	0.067 UJ	0.069 UJ	0.062 UJ
PCB-072	E1668	0.19 UJ	0.15 UJ	0.18 UJ	0.075 UJ	0.066 UJ	0.069 UJ	0.061 UJ
PCB-077	E1668	0.24 UJ	0.18 UJ	0.20 UJ	0.087 UJ	0.079 UJ	0.082 UJ	0.073 UJ
PCB-078	E1668	0.20 UJ	0.15 UJ	0.19 UJ	0.079 UJ	0.070 UJ	0.073 UJ	0.064 UJ
PCB-079	E1668	**3.0 J**	**3.1 J**	**4.2 J**	**2.6 J**	**1.7 J**	**2.4 J**	**2.7 J**
PCB-080	E1668	0.19 UJ	0.14 UJ	0.17 UJ	0.072 UJ	0.064 UJ	0.067 UJ	0.059 UJ
PCB-081	E1668	0.22 UJ	0.18 UJ	0.22 UJ	0.093 UJ	0.080 UJ	0.083 UJ	0.073 UJ
PCB-082	E1668	**4.2 J**	**3.9 J**	**3.9 J**	**3.2 J**	**4.5 J**	**3.7 J**	**3.9 J**
PCB-083/099	E1668	**17 J**	**17 J**	**19 J**	**17 J**	**18 J**	**15 J**	**17 J**
PCB-084	E1668	**11 J**	**11 J**	**11 J**	**11 J**	**10 J**	**10 J**	**10 J**
PCB-085/116/117	E1668	**5.0 J**	**5.4 J**	**6.3 J**	**6.8 J**	**6.3 J**	**4.7 J**	**5.4 J**
PCB-086/087/097/109/119/125	E1668	**63 J**	**62 J**	**67 J**	**64 J**	**64 J**	**54 J**	**59 J**
PCB-088/091	E1668	**4.5 J**	**4.3 J**	**4.5 J**	**4.3 J**	**4.0 J**	**4.1 J**	**4.4 J**
PCB-089	E1668	**0.31 J**	0.021 UJ	**0.38 J**	0.052 UJ	**0.35 J**	0.017 UJ	**0.28 J**
PCB-090/101/113	E1668	**54 J**	**53 J**	**60 J**	**55 J**	**55 J**	**47 J**	**53 J**
PCB-092	E1668	**8.4 J**	**8.0 J**	**8.3 J**	**8.4 J**	**8.8 J**	**7.4 J**	**7.9 J**
PCB-093/100	E1668	0.066 UJ	0.022 UJ	**0.35 J**	0.054 UJ	**0.60 J**	**0.40 J**	0.0089 UJ
PCB-094	E1668	0.075 UJ	0.025 UJ	0.16 UJ	0.061 UJ	**0.085 J**	0.020 UJ	**0.13 J**
PCB-095	E1668	**44 J**	**43 J**	**45 J**	**40 J**	**41 J**	**41 J**	**43 J**
PCB-096	E1668	**0.14 J**	0.015 UJ	**0.10 J**	0.036 UJ	**0.14 J**	**0.14 J**	**0.16 J**
PCB-098/102	E1668	**0.61 J**	**0.81 J**	**0.70 J**	**0.79 J**	**0.69 J**	**0.88 J**	**0.83 J**
PCB-103	E1668	**0.12 J**	0.022 UJ	0.13 UJ	0.052 UJ	**0.13 J**	0.017 UJ	**0.14 J**
PCB-104	E1668	0.050 UJ	0.017 UJ	0.10 UJ	0.041 UJ	**0.053 J**	**0.087 J**	**0.069 J**
PCB-105	E1668	**13 J**	**13 J**	**13 J**	**13 J**	**13 J**	**12 J**	**13 J**
PCB-106	E1668	0.18 UJ	0.15 UJ	0.16 UJ	0.11 UJ	0.11 UJ	0.071 UJ	0.092 UJ
PCB-107	E1668	**1.8 J**	**1.8 J**	**1.9 J**	**1.8 J**	**1.7 J**	**1.7 J**	**1.7 J**
PCB-108/124	E1668	**1.7 J**	**1.5 J**	**1.5 J**	**1.5 J**	**1.3 J**	**1.4 J**	**1.5 J**
PCB-110/115	E1668	**41 J**	**41 J**	**46 J**	**45 J**	**44 J**	**35 J**	**39 J**
PCB-111	E1668	0.046 UJ	0.015 UJ	0.096 UJ	0.037 UJ	0.044 UJ	0.012 UJ	0.0062 UJ
PCB-112	E1668	0.038 UJ	0.013 UJ	0.080 UJ	0.031 UJ	0.037 UJ	0.010 UJ	0.0052 UJ
PCB-114	E1668	**1.2 J**	**1.1 J**	**0.95 J**	**0.84 J**	**0.93 J**	**0.94 J**	**1.1 J**
PCB-118	E1668	**38 J**	**35 J**	**33 J**	**35 J**	**33 J**	**31 J**	**34 J**
PCB-120	E1668	0.036 UJ	0.012 UJ	0.076 UJ	0.030 UJ	0.035 UJ	0.0095 UJ	0.0049 UJ
PCB-121	E1668	0.042 UJ	0.014 UJ	0.088 UJ	0.034 UJ	0.040 UJ	0.011 UJ	0.0056 UJ
PCB-122	E1668	**0.61 J**	**0.61 J**	**0.71 J**	**0.58 J**	**0.46 J**	**0.61 J**	**0.59 J**
PCB-123	E1668	**0.86 J**	**0.67 J**	**0.31 J**	**0.48 J**	**0.49 J**	**0.37 J**	**0.47 J**
PCB-126	E1668	0.19 UJ	0.17 UJ	0.15 UJ	0.11 UJ	0.10 UJ	0.078 UJ	0.10 UJ
PCB-127	E1668	0.18 UJ	0.15 UJ	0.16 UJ	0.11 UJ	0.11 UJ	0.072 UJ	0.093 UJ
PCB-128/166	E1668	**11 J**	**11 J**	**11 J**	**8.0 J**	**7.2 J**	**6.8 J**	**9.0 J**
PCB-129/138/160/163	E1668	**95 J**	**92 J**	**79 J**	**79 J**	**79 J**	**65 J**	**83 J**
PCB-130	E1668	**4.8 J**	**4.7 J**	**4.4 J**	**3.9 J**	**4.1 J**	**3.7 J**	**4.5 J**
PCB-131	E1668	**1.3 J**	**1.1 J**	**0.80 J**	**0.84 J**	**0.98 J**	**0.93 J**	**1.0 J**
PCB-132	E1668	**28 J**	**27 J**	**22 J**	**22 J**	**22 J**	**22 J**	**25 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW2-CTRL-4-20251028 TS-PW2 Control	Kinetics-PW2-CTRL-5-20251104 TS-PW2 Control	Kinetics-PW2-CTRL-6-20251118 TS-PW2 Control	Kinetics-PW2-CTRL-7-20251202 TS-PW2 Control	Kinetics-PW2-CTRL-8-20251230 TS-PW2 Control	Kinetics-PW2-GAC-1-20251010 TS-PW2 GAC	Kinetics-PW2-GAC-2-20251014 TS-PW2 GAC
PCB-133	E1668	**0.92 J**	**0.92 J**	**0.55 J**	**0.82 J**	**0.74 J**	**0.70 J**	**0.84 J**
PCB-134/143	E1668	**5.2 J**	**4.6 J**	**3.5 J**	**3.7 J**	**3.4 J**	**4.2 J**	**4.8 J**
PCB-135/151	E1668	**30 J**	**32 J**	**31 J**	**32 J**	**32 J**	**27 J**	**30 J**
PCB-136	E1668	**12 J**	**12 J**	**11 J**	**12 J**	**12 J**	**11 J**	**12 J**
PCB-137	E1668	**2.3 J**	**2.1 J**	**2.1 J**	**2.2 J**	**2.2 J**	**1.8 J**	**2.7 J**
PCB-139/140	E1668	**0.84 J**	**0.89 J**	**0.72 J**	**0.75 J**	**0.75 J**	**0.74 J**	**0.94 J**
PCB-141	E1668	**24 J**	**23 J**	**19 J**	**20 J**	**19 J**	**17 J**	**21 J**
PCB-142	E1668	0.15 UJ	0.14 UJ	0.34 UJ	0.15 UJ	0.15 UJ	0.054 UJ	0.064 UJ
PCB-144	E1668	**5.3 J**	**5.6 J**	**5.0 J**	**5.5 J**	**5.4 J**	**4.5 J**	**5.2 J**
PCB-145	E1668	0.0032 UJ	0.0012 UJ	**0.034 J**	**0.032 J**	0.030 UJ	**0.028 J**	0.0081 UJ
PCB-146	E1668	**10 J**	**10 J**	**8.4 J**	**8.7 J**	**8.6 J**	**6.8 J**	**9.3 J**
PCB-147/149	E1668	**69 J**	**66 J**	**56 J**	**56 J**	**55 J**	**50 J**	**65 J**
PCB-148	E1668	0.0046 UJ	0.0017 UJ	0.039 UJ	0.022 UJ	0.043 UJ	0.0073 UJ	0.012 UJ
PCB-150	E1668	0.0033 UJ	0.0013 UJ	0.029 UJ	0.016 UJ	0.032 UJ	0.0053 UJ	**0.035 J**
PCB-152	E1668	0.0029 UJ	0.0011 UJ	0.025 UJ	0.014 UJ	**0.045 J**	0.0047 UJ	0.0075 UJ
PCB-153/168	E1668	**76 J**	**74 J**	**65 J**	**63 J**	**64 J**	**50 J**	**67 J**
PCB-154	E1668	**0.30 J**	**0.42 J**	**0.34 J**	**0.40 J**	**0.47 J**	**0.35 J**	0.011 UJ
PCB-155	E1668	0.0036 UJ	0.0014 UJ	0.031 UJ	0.018 UJ	0.035 UJ	0.0058 UJ	0.0094 UJ
PCB-156/157	E1668	**9.9 J**	**9.5 J**	**9.6 J**	**9.6 J**	**9.4 J**	**5.6 J**	**8.4 J**
PCB-158	E1668	**10 J**	**10 J**	**8.7 J**	**8.6 J**	**8.8 J**	**7.0 J**	**9.0 J**
PCB-159	E1668	**2.0 J**	**1.7 J**	**2.4 J**	**1.5 J**	**1.4 J**	**0.83 J**	**1.4 J**
PCB-161	E1668	0.090 UJ	0.085 UJ	0.20 UJ	0.090 UJ	0.087 UJ	0.032 UJ	0.038 UJ
PCB-162	E1668	0.10 UJ	0.094 UJ	0.22 UJ	0.10 UJ	0.097 UJ	0.035 UJ	0.042 UJ
PCB-164	E1668	**6.0 J**	**5.9 J**	**5.3 J**	**5.0 J**	**5.2 J**	**4.4 J**	**5.4 J**
PCB-165	E1668	0.12 UJ	0.11 UJ	0.26 UJ	0.12 UJ	0.12 UJ	0.042 UJ	0.050 UJ
PCB-167	E1668	**3.0 J**	**2.8 J**	**2.6 J**	**2.9 J**	**2.9 J**	**1.6 J**	**2.5 J**
PCB-169	E1668	0.093 UJ	**0.33 J**	**0.45 J**	**0.35 J**	0.077 UJ	0.031 UJ	0.038 UJ
PCB-170	E1668	**34 J**	**35 J**	**32 J**	**34 J**	**34 J**	**12 J**	**24 J**
PCB-171/173	E1668	**10 J**	**10 J**	**11 J**	**10 J**	**10 J**	**4.0 J**	**8.3 J**
PCB-172	E1668	**5.6 J**	**6.3 J**	**6.3 J**	**7.8 J**	**6.1 J**	**2.0 J**	**4.1 J**
PCB-174	E1668	**35 J**	**34 J**	**34 J**	**34 J**	**33 J**	**15 J**	**28 J**
PCB-175	E1668	**1.7 J**	**1.5 J**	**1.2 J**	**1.4 J**	**1.6 J**	**0.66 J**	**1.3 J**
PCB-176	E1668	**5.3 J**	**5.0 J**	**4.7 J**	**4.7 J**	**4.6 J**	**2.4 J**	**4.3 J**
PCB-177	E1668	**18 J**	**18 J**	**19 J**	**18 J**	**18 J**	**7.6 J**	**14 J**
PCB-178	E1668	**7.0 J**	**7.0 J**	**6.5 J**	**6.1 J**	**6.8 J**	**3.1 J**	**5.4 J**
PCB-179	E1668	**13 J**	**13 J**	**13 J**	**13 J**	**12 J**	**6.8 J**	**12 J**
PCB-180/193	E1668	**72 J**	**75 J**	**79 J**	**80 J**	**78 J**	**24 J**	**50 J**
PCB-181	E1668	0.00098 UJ	0.00046 UJ	0.0020 UJ	0.016 UJ	0.022 UJ	0.00022 UJ	**0.21 J**
PCB-182	E1668	0.00092 UJ	0.00043 UJ	0.0019 UJ	0.015 UJ	0.020 UJ	0.00020 UJ	0.0066 UJ
PCB-183/185	E1668	**25 J**	**24 J**	**25 J**	**24 J**	**25 J**	**9.2 J**	**19 J**
PCB-184	E1668	0.00073 UJ	0.00035 UJ	0.0015 UJ	0.012 UJ	0.016 UJ	0.00016 UJ	0.0053 UJ
PCB-186	E1668	0.00066 UJ	0.00031 UJ	0.0014 UJ	0.011 UJ	0.015 UJ	0.00015 UJ	0.0048 UJ
PCB-187	E1668	**38 J**	**36 J**	**37 J**	**49 J**	**35 J**	**15 J**	**28 J**
PCB-188	E1668	0.00078 UJ	0.00037 UJ	0.0018 UJ	0.013 UJ	0.018 UJ	0.00017 UJ	0.0056 UJ
PCB-189	E1668	**1.4 J**	**1.2 J**	**1.4 J**	**1.3 J**	**1.3 J**	**0.39 J**	**0.87 J**
PCB-190	E1668	**6.6 J**	**7.0 J**	**7.6 J**	**7.9 J**	**7.9 J**	**2.5 J**	**4.9 J**
PCB-191	E1668	**1.9 J**	**1.9 J**	**1.7 J**	**1.9 J**	**2.0 J**	**0.61 J**	**1.4 J**
PCB-192	E1668	0.00077 UJ	0.00036 UJ	0.0016 UJ	0.012 UJ	0.017 UJ	0.00017 UJ	0.0056 UJ
PCB-194	E1668	**10 J**	**11 J**	**13 J**	**13 J**	**13 J**	**2.1 J**	**5.8 J**
PCB-195	E1668	**4.7 J**	**5.2 J**	**5.5 J**	**5.4 J**	**5.2 J**	**1.2 J**	**2.6 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW2-CTRL-4-20251028 TS-PW2 Control	Kinetics-PW2-CTRL-5-20251104 TS-PW2 Control	Kinetics-PW2-CTRL-6-20251118 TS-PW2 Control	Kinetics-PW2-CTRL-7-20251202 TS-PW2 Control	Kinetics-PW2-CTRL-8-20251230 TS-PW2 Control	Kinetics-PW2-GAC-1-20251010 TS-PW2 GAC	Kinetics-PW2-GAC-2-20251014 TS-PW2 GAC
PCB-196	E1668	**7.1 J**	**8.6 J**	**9.3 J**	**11 J**	**10 J**	**1.5 J**	**3.7 J**
PCB-197	E1668	--	--	--	--	--	--	--
PCB-197/200	E1668	**2.7 J**	**2.9 J**	**3.3 J**	**3.7 J**	**3.4 J**	**0.65 J**	**1.6 J**
PCB-198/199	E1668	**13 J**	**15 J**	**17 J**	**18 J**	**17 J**	**3.1 J**	**7.3 J**
PCB-200	E1668	--	--	--	--	--	--	--
PCB-201	E1668	**2.0 J**	**2.3 J**	**2.9 J**	**3.0 J**	**2.8 J**	**0.43 J**	**1.2 J**
PCB-202	E1668	**2.6 J**	**2.7 J**	**2.8 J**	**3.1 J**	**2.9 J**	**0.61 J**	**1.5 J**
PCB-203	E1668	**7.4 J**	**8.6 J**	**9.7 J**	**15 J**	**11 J**	**1.6 J**	**3.8 J**
PCB-204	E1668	0.0021 UJ	0.0013 UJ	0.032 UJ	0.051 UJ	0.0063 UJ	0.0058 UJ	0.0073 UJ
PCB-205	E1668	**0.70 J**	**0.73 J**	**0.70 J**	**0.83 J**	**0.83 J**	**0.14 J**	**0.34 J**
PCB-206	E1668	**1.8 J**	**2.3 J**	**3.4 J**	**4.3 J**	**4.2 J**	**0.38 J**	**0.89 J**
PCB-207	E1668	**0.13 J**	**0.24 J**	0.14 UJ	**0.46 J**	**0.52 J**	0.019 UJ	**0.14 J**
PCB-208	E1668	**0.55 J**	**0.70 J**	**0.73 J**	**1.2 J**	**1.1 J**	**0.13 J**	**0.28 J**
PCB-209	E1668	**0.065 J**	**0.12 J**	**0.14 J**	**0.50 J**	**0.52 J**	**0.016 J**	**0.049 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW2-GAC-3-20251021 TS-PW2 GAC	Kinetics-PW2-GAC-4-20251028 TS-PW2 GAC	Kinetics-PW2-GAC-5-20251104 TS-PW2 GAC	Kinetics-PW2-GAC-6-20251118 TS-PW2 GAC	Kinetics-PW2-GAC-7-20251202 TS-PW2 GAC	Kinetics-PW2-GAC-8-20251230 TS-PW2 GAC	Kinetics-PW2-PAC-1-20251010 TS-PW2 PAC
PCB Congeners (SPME) (ng/samp)								
PCB-001	E1668	**0.032 J**	0.015 UJ	0.051 UJ	0.0029 UJ	0.0014 UJ	0.0016 UJ	**0.023 J**
PCB-002	E1668	0.0073 UJ	0.020 UJ	0.0046 UJ	0.0034 UJ	0.0017 UJ	0.0018 UJ	0.00083 UJ
PCB-003	E1668	0.0084 UJ	0.025 UJ	0.0057 UJ	0.0037 UJ	0.0018 UJ	0.0019 UJ	**0.0051 J**
PCB-004	E1668	**69 J**	**65 J**	**14 J**	**2.2 J**	**1.3 J**	**0.78 J**	**0.096 J**
PCB-005	E1668	0.0095 UJ	0.027 UJ	0.012 UJ	0.017 UJ	0.0089 UJ	0.011 UJ	0.0030 UJ
PCB-006	E1668	0.0078 UJ	0.022 UJ	0.010 UJ	0.014 UJ	0.0073 UJ	0.0091 UJ	0.0025 UJ
PCB-007	E1668	0.0091 UJ	0.026 UJ	0.012 UJ	0.016 UJ	0.0085 UJ	0.011 UJ	0.0029 UJ
PCB-008	E1668	**0.15 J**	0.021 UJ	0.076 UJ	0.013 UJ	0.0070 UJ	0.0088 UJ	**0.028 J**
PCB-009	E1668	0.0086 UJ	0.024 UJ	0.011 UJ	0.015 UJ	0.0080 UJ	0.010 UJ	0.0027 UJ
PCB-010	E1668	**83 J**	**80 J**	**18 J**	**2.1 J**	**1.2 J**	**0.74 J**	0.057 UJ
PCB-011	E1668	0.0083 UJ	0.023 UJ	0.011 UJ	0.015 UJ	0.0077 UJ	0.0097 UJ	0.0026 UJ
PCB-012/013	E1668	0.0093 UJ	0.026 UJ	0.012 UJ	0.016 UJ	0.0087 UJ	0.011 UJ	0.0030 UJ
PCB-014	E1668	0.0092 UJ	0.026 UJ	0.012 UJ	0.016 UJ	0.0086 UJ	0.011 UJ	0.0029 UJ
PCB-015	E1668	0.010 UJ	0.034 UJ	0.016 UJ	0.015 UJ	0.0086 UJ	0.010 UJ	0.0032 UJ
PCB-016	E1668	**0.21 J**	0.018 UJ	0.0040 UJ	0.010 UJ	0.019 UJ	0.0097 UJ	0.0014 UJ
PCB-017	E1668	**0.17 J**	0.018 UJ	0.0040 UJ	0.010 UJ	0.019 UJ	0.0098 UJ	0.0014 UJ
PCB-018/030	E1668	**0.47 J**	**0.40 J**	**0.24 J**	0.0073 UJ	0.013 UJ	0.0068 UJ	0.00098 UJ
PCB-019	E1668	**210 J**	**210 J**	**96 J**	**25 J**	**11 J**	**10 J**	**0.097 J**
PCB-020/028	E1668	**0.37 J**	**0.41 J**	**0.23 J**	0.016 UJ	0.010 UJ	**0.0087 J**	**0.0015 J**
PCB-021/033	E1668	**0.21 J**	**0.30 J**	**0.15 J**	0.015 UJ	0.010 UJ	0.0077 UJ	0.0014 UJ
PCB-022	E1668	**0.12 J**	**0.10 J**	**0.063 J**	0.014 UJ	0.0094 UJ	0.0073 UJ	0.0013 UJ
PCB-023	E1668	0.026 UJ	0.045 UJ	0.034 UJ	0.016 UJ	0.010 UJ	0.0080 UJ	0.0015 UJ
PCB-024	E1668	0.0034 UJ	0.013 UJ	0.0028 UJ	0.0072 UJ	0.013 UJ	0.0067 UJ	0.00097 UJ
PCB-025	E1668	0.021 UJ	0.036 UJ	0.028 UJ	0.013 UJ	0.0084 UJ	0.0065 UJ	0.0012 UJ
PCB-026/029	E1668	**0.44 J**	**0.48 J**	**0.26 J**	**0.039 J**	0.011 UJ	**0.015 J**	0.0016 UJ
PCB-027	E1668	0.0033 UJ	0.013 UJ	0.0028 UJ	0.0072 UJ	0.013 UJ	0.0067 UJ	0.00097 UJ
PCB-031	E1668	**0.56 J**	**0.57 J**	**0.32 J**	**0.049 J**	0.011 UJ	**0.012 J**	0.0013 UJ
PCB-032	E1668	**0.14 J**	0.012 UJ	0.0026 UJ	0.0067 UJ	0.012 UJ	0.0062 UJ	**0.0024 J**
PCB-034	E1668	0.027 UJ	0.047 UJ	0.036 UJ	0.017 UJ	0.011 UJ	0.0084 UJ	0.0015 UJ
PCB-035	E1668	**0.029 J**	0.045 UJ	0.035 UJ	0.016 UJ	0.010 UJ	0.0081 UJ	0.0015 UJ
PCB-036	E1668	0.022 UJ	0.037 UJ	0.028 UJ	0.013 UJ	0.0085 UJ	0.0066 UJ	0.0012 UJ
PCB-037	E1668	0.026 UJ	**0.24 J**	0.034 UJ	0.016 UJ	0.010 UJ	0.0079 UJ	0.0014 UJ
PCB-038	E1668	0.025 UJ	0.042 UJ	0.032 UJ	0.015 UJ	0.0098 UJ	0.0076 UJ	0.0014 UJ
PCB-039	E1668	0.026 UJ	0.044 UJ	0.033 UJ	0.016 UJ	0.010 UJ	0.0079 UJ	0.0014 UJ
PCB-040/041/071	E1668	**1.3 J**	**1.3 J**	**0.88 J**	**0.43 J**	**0.21 J**	**0.31 J**	0.0026 UJ
PCB-042	E1668	**0.92 J**	**0.99 J**	**0.62 J**	**0.21 J**	**0.096 J**	**0.16 J**	0.0027 UJ
PCB-043/073	E1668	**1.2 J**	0.11 UJ	0.059 UJ	0.069 UJ	0.038 UJ	**0.34 J**	0.0021 UJ
PCB-044/047/065	E1668	**98 J**	**110 J**	**75 J**	**31 J**	**17 J**	**19 J**	**0.089 J**
PCB-045/051	E1668	**0.53 J**	**0.65 J**	**0.45 J**	**0.22 J**	**0.15 J**	**0.12 J**	0.0026 UJ
PCB-046	E1668	0.075 UJ	**0.18 J**	0.086 UJ	0.10 UJ	0.055 UJ	0.061 UJ	0.0030 UJ
PCB-048	E1668	0.063 UJ	**0.44 J**	0.072 UJ	0.085 UJ	0.047 UJ	**0.088 J**	0.0025 UJ
PCB-049/069	E1668	**4.1 J**	**4.6 J**	**3.3 J**	**1.5 J**	**0.80 J**	**0.95 J**	**0.0057 J**
PCB-050/053	E1668	**0.49 J**	**0.51 J**	**0.38 J**	**0.19 J**	**0.095 J**	**0.11 J**	0.0025 UJ
PCB-052	E1668	**98 J**	**110 J**	**79 J**	**35 J**	**19 J**	**22 J**	**0.082 J**
PCB-054	E1668	**120 J**	**120 J**	**91 J**	**56 J**	**42 J**	**40 J**	**0.20 J**
PCB-055	E1668	0.040 UJ	0.087 UJ	0.046 UJ	0.053 UJ	0.029 UJ	0.032 UJ	0.0016 UJ
PCB-056	E1668	**1.3 J**	**1.4 J**	**1.0 J**	**0.45 J**	**0.16 J**	**0.23 J**	0.0017 UJ
PCB-057	E1668	0.047 UJ	0.10 UJ	0.053 UJ	0.063 UJ	0.034 UJ	0.038 UJ	0.0019 UJ
PCB-058	E1668	0.041 UJ	0.090 UJ	0.047 UJ	0.055 UJ	0.030 UJ	0.033 UJ	0.0017 UJ

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW2-GAC-3-20251021 TS-PW2 GAC	Kinetics-PW2-GAC-4-20251028 TS-PW2 GAC	Kinetics-PW2-GAC-5-20251104 TS-PW2 GAC	Kinetics-PW2-GAC-6-20251118 TS-PW2 GAC	Kinetics-PW2-GAC-7-20251202 TS-PW2 GAC	Kinetics-PW2-GAC-8-20251230 TS-PW2 GAC	Kinetics-PW2-PAC-1-20251010 TS-PW2 PAC
PCB-059/062/075	E1668	0.050 UJ	0.11 UJ	0.058 UJ	0.068 UJ	0.037 UJ	0.041 UJ	0.0020 UJ
PCB-060	E1668	**0.64 J**	**0.68 J**	**0.44 J**	**0.20 J**	0.037 UJ	**0.092 J**	0.0020 UJ
PCB-061/070/074/076	E1668	**100 J**	**110 J**	**76 J**	**34 J**	**17 J**	**20 J**	0.051 UJ
PCB-063	E1668	0.047 UJ	0.10 UJ	0.054 UJ	0.064 UJ	0.035 UJ	0.038 UJ	0.0019 UJ
PCB-064	E1668	**2.3 J**	**2.5 J**	**1.7 J**	**0.77 J**	**0.38 J**	**0.46 J**	**0.0026 J**
PCB-066	E1668	**3.6 J**	**3.7 J**	**2.7 J**	**1.1 J**	**0.51 J**	**0.64 J**	**0.0038 J**
PCB-067	E1668	0.039 UJ	0.085 UJ	0.045 UJ	0.052 UJ	0.029 UJ	0.031 UJ	0.0016 UJ
PCB-068	E1668	0.044 UJ	0.096 UJ	0.050 UJ	0.059 UJ	0.032 UJ	0.035 UJ	0.0018 UJ
PCB-072	E1668	0.044 UJ	0.095 UJ	0.050 UJ	0.059 UJ	0.032 UJ	0.035 UJ	0.0018 UJ
PCB-077	E1668	0.054 UJ	0.11 UJ	0.062 UJ	0.068 UJ	0.037 UJ	0.041 UJ	0.0021 UJ
PCB-078	E1668	0.046 UJ	0.10 UJ	0.053 UJ	0.062 UJ	0.034 UJ	0.037 UJ	0.0019 UJ
PCB-079	E1668	**1.7 J**	**2.8 J**	**2.6 J**	**1.4 J**	**1.4 J**	**1.0 J**	**0.0043 J**
PCB-080	E1668	0.042 UJ	0.092 UJ	0.048 UJ	0.057 UJ	0.031 UJ	0.034 UJ	0.0017 UJ
PCB-081	E1668	0.051 UJ	0.12 UJ	0.058 UJ	0.072 UJ	0.040 UJ	0.043 UJ	0.0022 UJ
PCB-082	E1668	**3.6 J**	**3.7 J**	**3.3 J**	**2.5 J**	**2.2 J**	**2.1 J**	0.0032 UJ
PCB-083/099	E1668	**16 J**	**16 J**	**14 J**	**12 J**	**11 J**	**11 J**	**0.015 J**
PCB-084	E1668	**10 J**	**11 J**	**8.6 J**	**6.9 J**	**5.9 J**	**6.3 J**	**0.020 J**
PCB-085/116/117	E1668	**5.5 J**	**4.8 J**	**4.7 J**	**3.8 J**	**4.0 J**	**3.7 J**	**0.0054 J**
PCB-086/087/097/109/119/125	E1668	**61 J**	**59 J**	**54 J**	**43 J**	**39 J**	**39 J**	**0.10 J**
PCB-088/091	E1668	**4.6 J**	**4.6 J**	**3.7 J**	**3.1 J**	**2.7 J**	**2.8 J**	**0.011 J**
PCB-089	E1668	**0.27 J**	**0.29 J**	**0.29 J**	0.027 UJ	**0.20 J**	0.015 UJ	0.0032 UJ
PCB-090/101/113	E1668	**54 J**	**52 J**	**47 J**	**37 J**	**33 J**	**33 J**	**0.079 J**
PCB-092	E1668	**7.8 J**	**7.8 J**	**6.8 J**	**6.0 J**	**5.1 J**	**5.1 J**	0.0034 UJ
PCB-093/100	E1668	**0.26 J**	0.031 UJ	0.020 UJ	**0.21 J**	**0.18 J**	**0.34 J**	0.0033 UJ
PCB-094	E1668	**0.14 J**	**0.12 J**	**0.079 J**	**0.081 J**	**0.075 J**	**0.092 J**	0.0038 UJ
PCB-095	E1668	**44 J**	**43 J**	**36 J**	**29 J**	**25 J**	**26 J**	**0.063 J**
PCB-096	E1668	**0.16 J**	**0.13 J**	**0.16 J**	**0.12 J**	**0.10 J**	**0.13 J**	0.0023 UJ
PCB-098/102	E1668	**0.95 J**	**0.86 J**	**0.82 J**	**0.33 J**	**0.56 J**	**0.50 J**	0.0028 UJ
PCB-103	E1668	**0.16 J**	**0.16 J**	**0.13 J**	**0.087 J**	**0.12 J**	**0.11 J**	0.0033 UJ
PCB-104	E1668	**0.074 J**	**0.066 J**	**0.058 J**	**0.066 J**	**0.060 J**	**0.056 J**	0.0026 UJ
PCB-105	E1668	**11 J**	**12 J**	**9.9 J**	**7.3 J**	**5.3 J**	**5.9 J**	0.0046 UJ
PCB-106	E1668	0.075 UJ	0.11 UJ	0.12 UJ	0.086 UJ	0.045 UJ	0.051 UJ	0.0040 UJ
PCB-107	E1668	**1.5 J**	**1.7 J**	**1.5 J**	**1.2 J**	**0.84 J**	**0.93 J**	0.0038 UJ
PCB-108/124	E1668	**1.3 J**	**1.4 J**	**1.2 J**	**0.95 J**	**0.75 J**	**0.79 J**	0.0046 UJ
PCB-110/115	E1668	**39 J**	**39 J**	**34 J**	**26 J**	**22 J**	**23 J**	**0.054 J**
PCB-111	E1668	0.0087 UJ	0.022 UJ	0.014 UJ	0.020 UJ	0.014 UJ	0.011 UJ	0.0023 UJ
PCB-112	E1668	0.0073 UJ	0.018 UJ	0.012 UJ	0.017 UJ	0.012 UJ	0.0092 UJ	0.0019 UJ
PCB-114	E1668	**0.85 J**	**0.97 J**	**0.68 J**	**0.45 J**	**0.35 J**	**0.48 J**	0.0045 UJ
PCB-118	E1668	**30 J**	**32 J**	**28 J**	**20 J**	**15 J**	**17 J**	**0.030 J**
PCB-120	E1668	0.0069 UJ	0.017 UJ	0.011 UJ	0.016 UJ	0.011 UJ	0.0088 UJ	0.0019 UJ
PCB-121	E1668	0.0080 UJ	0.020 UJ	0.013 UJ	0.018 UJ	0.013 UJ	0.010 UJ	0.0021 UJ
PCB-122	E1668	**0.46 J**	**0.44 J**	**0.34 J**	**0.21 J**	**0.14 J**	**0.28 J**	0.0054 UJ
PCB-123	E1668	**0.42 J**	**0.48 J**	**0.49 J**	**0.26 J**	**0.27 J**	**0.24 J**	0.0046 UJ
PCB-126	E1668	0.083 UJ	0.14 UJ	0.14 UJ	0.084 UJ	0.042 UJ	0.051 UJ	0.0044 UJ
PCB-127	E1668	0.076 UJ	0.11 UJ	0.13 UJ	0.087 UJ	0.046 UJ	0.051 UJ	0.0041 UJ
PCB-128/166	E1668	**10 J**	**10 J**	**8.7 J**	**6.4 J**	**5.9 J**	**5.9 J**	**0.012 J**
PCB-129/138/160/163	E1668	**87 J**	**92 J**	**78 J**	**67 J**	**58 J**	**61 J**	**0.16 J**
PCB-130	E1668	**4.4 J**	**4.9 J**	**4.2 J**	**3.6 J**	**3.1 J**	**3.3 J**	**0.0056 J**
PCB-131	E1668	**1.1 J**	**1.3 J**	**1.1 J**	**0.62 J**	**0.61 J**	**0.71 J**	0.0013 UJ
PCB-132	E1668	**26 J**	**28 J**	**24 J**	**19 J**	**17 J**	**18 J**	**0.070 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW2-GAC-3-20251021 TS-PW2 GAC	Kinetics-PW2-GAC-4-20251028 TS-PW2 GAC	Kinetics-PW2-GAC-5-20251104 TS-PW2 GAC	Kinetics-PW2-GAC-6-20251118 TS-PW2 GAC	Kinetics-PW2-GAC-7-20251202 TS-PW2 GAC	Kinetics-PW2-GAC-8-20251230 TS-PW2 GAC	Kinetics-PW2-PAC-1-20251010 TS-PW2 PAC
PCB-133	E1668	**0.89 J**	**0.97 J**	**0.85 J**	**0.55 J**	**0.76 J**	**0.58 J**	0.0011 UJ
PCB-134/143	E1668	**4.4 J**	**5.0 J**	**4.4 J**	**3.0 J**	**2.7 J**	**3.1 J**	0.0046 UJ
PCB-135/151	E1668	**34 J**	**32 J**	**31 J**	**29 J**	**28 J**	**27 J**	**0.075 J**
PCB-136	E1668	**13 J**	**12 J**	**12 J**	**11 J**	**11 J**	**11 J**	**0.035 J**
PCB-137	E1668	**2.0 J**	**2.4 J**	**2.1 J**	**1.9 J**	**1.7 J**	**2.1 J**	0.0012 UJ
PCB-139/140	E1668	**0.90 J**	**0.89 J**	**0.79 J**	**0.75 J**	**0.53 J**	**0.65 J**	**0.0022 J**
PCB-141	E1668	**21 J**	**23 J**	**19 J**	**17 J**	**14 J**	**15 J**	**0.037 J**
PCB-142	E1668	0.080 UJ	0.17 UJ	0.13 UJ	0.14 UJ	0.099 UJ	0.084 UJ	0.0013 UJ
PCB-144	E1668	**5.7 J**	**5.5 J**	**5.2 J**	**5.1 J**	**4.9 J**	**4.8 J**	**0.0079 J**
PCB-145	E1668	**0.075 J**	0.022 UJ	0.053 UJ	0.0037 UJ	**0.035 J**	**0.030 J**	0.00074 UJ
PCB-146	E1668	**9.5 J**	**10 J**	**8.8 J**	**7.1 J**	**6.6 J**	**7.0 J**	**0.016 J**
PCB-147/149	E1668	**66 J**	**71 J**	**61 J**	**50 J**	**44 J**	**49 J**	**0.18 J**
PCB-148	E1668	0.00096 UJ	0.032 UJ	0.0047 UJ	0.0054 UJ	0.014 UJ	0.017 UJ	0.0011 UJ
PCB-150	E1668	**0.039 J**	0.023 UJ	0.0034 UJ	0.0039 UJ	0.010 UJ	**0.021 J**	0.00078 UJ
PCB-152	E1668	**0.029 J**	0.020 UJ	0.0030 UJ	0.0034 UJ	0.0091 UJ	**0.027 J**	0.00069 UJ
PCB-153/168	E1668	**71 J**	**74 J**	**65 J**	**54 J**	**48 J**	**51 J**	**0.14 J**
PCB-154	E1668	**0.50 J**	**0.42 J**	**0.47 J**	**0.28 J**	**0.24 J**	**0.33 J**	0.00098 UJ
PCB-155	E1668	0.00077 UJ	0.025 UJ	0.0038 UJ	0.0043 UJ	0.011 UJ	0.013 UJ	0.00085 UJ
PCB-156/157	E1668	**8.6 J**	**8.9 J**	**7.7 J**	**7.4 J**	**6.4 J**	**6.6 J**	0.0067 UJ
PCB-158	E1668	**9.0 J**	**9.5 J**	**8.0 J**	**6.9 J**	**6.0 J**	**6.5 J**	**0.012 J**
PCB-159	E1668	**1.5 J**	**1.7 J**	**1.6 J**	0.082 UJ	**1.3 J**	**1.1 J**	0.00072 UJ
PCB-161	E1668	0.047 UJ	0.10 UJ	0.079 UJ	0.085 UJ	0.058 UJ	0.050 UJ	0.00074 UJ
PCB-162	E1668	0.052 UJ	0.11 UJ	0.088 UJ	0.095 UJ	0.065 UJ	0.055 UJ	0.00082 UJ
PCB-164	E1668	**5.5 J**	**5.8 J**	**4.9 J**	**4.1 J**	**3.7 J**	**3.8 J**	**0.0059 J**
PCB-165	E1668	0.062 UJ	0.13 UJ	0.10 UJ	0.11 UJ	0.077 UJ	0.066 UJ	0.00098 UJ
PCB-167	E1668	**2.6 J**	**2.7 J**	**2.5 J**	**2.2 J**	**2.0 J**	**2.0 J**	0.00073 UJ
PCB-169	E1668	0.047 UJ	0.10 UJ	**0.31 J**	0.080 UJ	0.053 UJ	0.044 UJ	0.00074 UJ
PCB-170	E1668	**31 J**	**31 J**	**30 J**	**30 J**	**29 J**	**30 J**	**0.073 J**
PCB-171/173	E1668	**9.7 J**	**9.1 J**	**9.3 J**	**11 J**	**9.5 J**	**9.4 J**	**0.016 J**
PCB-172	E1668	**6.0 J**	**5.3 J**	**5.4 J**	**5.5 J**	**6.7 J**	**5.2 J**	**0.012 J**
PCB-174	E1668	**32 J**	**32 J**	**30 J**	**32 J**	**30 J**	**29 J**	**0.087 J**
PCB-175	E1668	**1.4 J**	**1.5 J**	**1.4 J**	**1.5 J**	**1.4 J**	**1.4 J**	**0.0014 J**
PCB-176	E1668	**4.8 J**	**4.6 J**	**4.6 J**	**4.8 J**	**4.3 J**	**4.5 J**	**0.016 J**
PCB-177	E1668	**17 J**	**16 J**	**16 J**	**17 J**	**17 J**	**16 J**	**0.041 J**
PCB-178	E1668	**6.3 J**	**6.5 J**	**6.0 J**	**6.2 J**	**5.9 J**	**5.8 J**	**0.011 J**
PCB-179	E1668	**13 J**	**13 J**	**12 J**	**13 J**	**12 J**	**12 J**	**0.052 J**
PCB-180/193	E1668	**68 J**	**66 J**	**66 J**	**72 J**	**69 J**	**67 J**	**0.13 J**
PCB-181	E1668	0.00023 UJ	0.00074 UJ	0.00031 UJ	0.00057 UJ	0.0077 UJ	0.0014 UJ	0.000082 UJ
PCB-182	E1668	0.00021 UJ	0.00069 UJ	0.00029 UJ	0.00053 UJ	0.0072 UJ	**0.21 J**	0.000077 UJ
PCB-183/185	E1668	**23 J**	**22 J**	**22 J**	**24 J**	**22 J**	**22 J**	**0.073 J**
PCB-184	E1668	0.00017 UJ	0.00055 UJ	0.00024 UJ	0.00043 UJ	0.0057 UJ	0.0010 UJ	0.000061 UJ
PCB-186	E1668	0.00015 UJ	0.00050 UJ	0.00021 UJ	0.00038 UJ	0.0052 UJ	0.00094 UJ	0.000055 UJ
PCB-187	E1668	**36 J**	**34 J**	**32 J**	**34 J**	**41 J**	**32 J**	**0.096 J**
PCB-188	E1668	0.00018 UJ	0.00059 UJ	0.00025 UJ	0.00049 UJ	0.0068 UJ	0.0011 UJ	0.000065 UJ
PCB-189	E1668	**1.0 J**	**1.2 J**	**1.1 J**	**1.1 J**	**1.0 J**	**1.0 J**	**0.0020 J**
PCB-190	E1668	**6.3 J**	**6.3 J**	**6.0 J**	**6.8 J**	**6.7 J**	**6.5 J**	**0.0096 J**
PCB-191	E1668	**1.6 J**	**1.7 J**	**1.5 J**	**1.7 J**	**1.7 J**	**1.6 J**	0.000071 UJ
PCB-192	E1668	0.00018 UJ	0.00058 UJ	0.00025 UJ	0.00045 UJ	0.0060 UJ	0.0011 UJ	0.000065 UJ
PCB-194	E1668	**9.2 J**	**10 J**	**10 J**	**12 J**	**12 J**	**12 J**	**0.040 J**
PCB-195	E1668	**4.1 J**	**4.9 J**	**4.7 J**	**5.2 J**	**5.3 J**	**5.1 J**	**0.016 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW2-GAC-3-20251021 TS-PW2 GAC	Kinetics-PW2-GAC-4-20251028 TS-PW2 GAC	Kinetics-PW2-GAC-5-20251104 TS-PW2 GAC	Kinetics-PW2-GAC-6-20251118 TS-PW2 GAC	Kinetics-PW2-GAC-7-20251202 TS-PW2 GAC	Kinetics-PW2-GAC-8-20251230 TS-PW2 GAC	Kinetics-PW2-PAC-1-20251010 TS-PW2 PAC
PCB-196	E1668	**6.9 J**	**7.1 J**	**7.3 J**	**8.6 J**	**9.4 J**	**9.0 J**	**0.020 J**
PCB-197	E1668	--	--	--	--	--	--	--
PCB-197/200	E1668	**2.5 J**	**2.5 J**	**2.6 J**	**3.1 J**	**3.2 J**	**2.9 J**	**0.0078 J**
PCB-198/199	E1668	**13 J**	**13 J**	**13 J**	**15 J**	**16 J**	**15 J**	**0.055 J**
PCB-200	E1668	--	--	--	--	--	--	--
PCB-201	E1668	**2.1 J**	**2.1 J**	**2.0 J**	**2.6 J**	**2.6 J**	**2.6 J**	**0.013 J**
PCB-202	E1668	**2.5 J**	**2.4 J**	**2.5 J**	**3.0 J**	**2.8 J**	**2.7 J**	**0.0070 J**
PCB-203	E1668	**7.9 J**	**7.8 J**	**7.2 J**	**9.2 J**	**12 J**	**9.3 J**	**0.014 J**
PCB-204	E1668	0.014 UJ	0.0020 UJ	0.0027 UJ	0.0020 UJ	0.046 UJ	0.010 UJ	0.00061 UJ
PCB-205	E1668	**0.56 J**	**0.66 J**	**0.63 J**	**0.76 J**	**0.73 J**	**0.74 J**	0.0012 UJ
PCB-206	E1668	**1.6 J**	**2.0 J**	**2.0 J**	**3.3 J**	**4.0 J**	**3.8 J**	**0.024 J**
PCB-207	E1668	**0.21 J**	**0.20 J**	**0.28 J**	**0.42 J**	**0.48 J**	**0.43 J**	0.0082 UJ
PCB-208	E1668	**0.52 J**	**0.66 J**	**0.58 J**	**0.94 J**	**1.1 J**	**1.1 J**	0.0080 UJ
PCB-209	E1668	**0.088 J**	**0.12 J**	**0.14 J**	**0.31 J**	**0.39 J**	**0.35 J**	**0.0019 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW2-PAC-2-20251014 TS-PW2 PAC	Kinetics-PW2-PAC-3-20251021 TS-PW2 PAC	Kinetics-PW2-PAC-4-20251028 TS-PW2 PAC	Kinetics-PW2-PAC-5-20251104 TS-PW2 PAC	Kinetics-PW2-PAC-6-20251118 TS-PW2 PAC	Kinetics-PW2-PAC-7-20251202 TS-PW2 PAC	Kinetics-PW2-PAC-8-20251230 TS-PW2 PAC
PCB Congeners (SPME) (ng/samp)								
PCB-001	E1668	0.00078 UJ	0.00083 UJ	0.0014 UJ	0.052 UJ	0.0023 UJ	0.0011 UJ	0.0021 UJ
PCB-002	E1668	0.00097 UJ	0.00099 UJ	0.0018 UJ	0.0019 UJ	0.0026 UJ	0.0013 UJ	0.0023 UJ
PCB-003	E1668	0.0012 UJ	0.0011 UJ	0.0022 UJ	0.0077 UJ	0.0028 UJ	0.0014 UJ	0.0024 UJ
PCB-004	E1668	**0.11 J**	**0.015 J**	**0.047 J**	0.24 UJ	0.0031 UJ	**0.0093 J**	0.0058 UJ
PCB-005	E1668	0.0035 UJ	0.0020 UJ	0.0045 UJ	0.0091 UJ	0.0028 UJ	0.0019 UJ	0.0053 UJ
PCB-006	E1668	0.0029 UJ	0.0016 UJ	0.0037 UJ	0.0074 UJ	0.0023 UJ	**0.0057 J**	0.0043 UJ
PCB-007	E1668	0.0033 UJ	0.0019 UJ	0.0043 UJ	0.0086 UJ	0.0027 UJ	0.0019 UJ	0.0050 UJ
PCB-008	E1668	0.0028 UJ	0.0016 UJ	0.0035 UJ	0.054 UJ	0.0022 UJ	0.0015 UJ	0.0042 UJ
PCB-009	E1668	0.0032 UJ	0.0018 UJ	0.0040 UJ	0.0082 UJ	0.0026 UJ	0.0017 UJ	0.0048 UJ
PCB-010	E1668	**0.14 J**	**0.028 J**	**0.050 J**	**0.18 J**	0.0028 UJ	**0.016 J**	0.0052 UJ
PCB-011	E1668	0.0030 UJ	0.0017 UJ	0.0039 UJ	0.0079 UJ	0.0025 UJ	0.0017 UJ	0.0046 UJ
PCB-012/013	E1668	0.0034 UJ	**0.0024 J**	0.0044 UJ	0.0088 UJ	0.0028 UJ	0.0019 UJ	0.0051 UJ
PCB-014	E1668	0.0034 UJ	0.0019 UJ	0.0043 UJ	0.0088 UJ	0.0027 UJ	0.0019 UJ	0.0051 UJ
PCB-015	E1668	0.0038 UJ	0.0020 UJ	0.0051 UJ	0.010 UJ	0.0026 UJ	0.0018 UJ	0.0050 UJ
PCB-016	E1668	0.0024 UJ	0.0018 UJ	0.0024 UJ	0.0023 UJ	0.00059 UJ	0.00090 UJ	0.0023 UJ
PCB-017	E1668	0.0024 UJ	0.0018 UJ	0.0024 UJ	0.0023 UJ	0.00060 UJ	0.00090 UJ	0.0023 UJ
PCB-018/030	E1668	0.0017 UJ	0.0012 UJ	0.0017 UJ	0.0016 UJ	0.00041 UJ	0.00062 UJ	0.0016 UJ
PCB-019	E1668	**0.12 J**	**0.034 J**	**0.046 J**	**0.16 J**	**0.0025 J**	**0.026 J**	**0.0080 J**
PCB-020/028	E1668	0.0012 UJ	0.0013 UJ	0.0026 UJ	0.0032 UJ	0.0040 UJ	0.0022 UJ	0.0045 UJ
PCB-021/033	E1668	0.0011 UJ	0.0013 UJ	0.0026 UJ	0.0032 UJ	0.0040 UJ	0.0022 UJ	0.0044 UJ
PCB-022	E1668	0.0011 UJ	0.0012 UJ	0.0024 UJ	0.0030 UJ	0.0037 UJ	0.0021 UJ	0.0041 UJ
PCB-023	E1668	0.0012 UJ	0.0013 UJ	0.0027 UJ	0.0033 UJ	0.0041 UJ	0.0023 UJ	0.0046 UJ
PCB-024	E1668	0.0017 UJ	0.0012 UJ	0.0017 UJ	0.0016 UJ	0.00041 UJ	0.00062 UJ	0.0016 UJ
PCB-025	E1668	0.00096 UJ	0.0011 UJ	0.0022 UJ	0.0027 UJ	0.0033 UJ	0.0018 UJ	0.0037 UJ
PCB-026/029	E1668	0.0013 UJ	0.0014 UJ	0.0029 UJ	0.0035 UJ	0.0044 UJ	0.0024 UJ	0.0049 UJ
PCB-027	E1668	0.0016 UJ	0.0012 UJ	0.0016 UJ	0.0016 UJ	0.00041 UJ	0.00062 UJ	0.0016 UJ
PCB-031	E1668	0.0010 UJ	0.0011 UJ	0.0023 UJ	0.0028 UJ	0.0035 UJ	0.0020 UJ	0.0039 UJ
PCB-032	E1668	0.0017 UJ	0.0011 UJ	0.0015 UJ	0.0015 UJ	0.00038 UJ	**0.0042 J**	0.0015 UJ
PCB-034	E1668	0.0012 UJ	0.0014 UJ	0.0028 UJ	0.0034 UJ	0.0043 UJ	0.0024 UJ	0.0047 UJ
PCB-035	E1668	0.0012 UJ	0.0013 UJ	0.0027 UJ	0.0033 UJ	0.0042 UJ	0.0023 UJ	0.0046 UJ
PCB-036	E1668	0.00098 UJ	0.0011 UJ	0.0022 UJ	0.0027 UJ	0.0034 UJ	0.0019 UJ	0.0038 UJ
PCB-037	E1668	0.0012 UJ	0.0013 UJ	0.0026 UJ	0.0032 UJ	0.0040 UJ	0.0022 UJ	0.0045 UJ
PCB-038	E1668	0.0011 UJ	0.0012 UJ	0.0025 UJ	0.0031 UJ	0.0039 UJ	0.0021 UJ	0.0043 UJ
PCB-039	E1668	0.0012 UJ	0.0013 UJ	0.0026 UJ	0.0032 UJ	0.0040 UJ	0.0022 UJ	0.0045 UJ
PCB-040/041/071	E1668	0.0016 UJ	0.0029 UJ	0.0021 UJ	0.0019 UJ	0.0042 UJ	0.0058 UJ	0.0027 UJ
PCB-042	E1668	0.0017 UJ	0.0032 UJ	0.0023 UJ	0.0021 UJ	0.0045 UJ	0.0062 UJ	0.0029 UJ
PCB-043/073	E1668	0.0013 UJ	0.0024 UJ	0.0017 UJ	0.0016 UJ	0.0034 UJ	0.0047 UJ	0.0022 UJ
PCB-044/047/065	E1668	**0.11 J**	**0.027 J**	0.024 U	**0.077 J**	0.0038 UJ	0.0052 UJ	**0.013 J**
PCB-045/051	E1668	0.0016 UJ	0.0030 UJ	0.0022 UJ	0.0020 UJ	0.0044 UJ	0.0060 UJ	0.0028 UJ
PCB-046	E1668	0.0019 UJ	0.0035 UJ	0.0025 UJ	0.0023 UJ	0.0050 UJ	0.0069 UJ	0.0032 UJ
PCB-048	E1668	0.0016 UJ	0.0029 UJ	0.0021 UJ	0.0019 UJ	0.0042 UJ	0.0058 UJ	0.0027 UJ
PCB-049/069	E1668	0.0013 UJ	0.0024 UJ	0.0018 UJ	0.0016 UJ	0.0035 UJ	0.0048 UJ	0.0022 UJ
PCB-050/053	E1668	0.0015 UJ	0.0028 UJ	0.0020 UJ	0.0019 UJ	0.0041 UJ	0.0056 UJ	0.0026 UJ
PCB-052	E1668	**0.082 J**	**0.027 J**	**0.033 J**	0.054 UJ	0.0037 UJ	0.0052 UJ	**0.0045 J**
PCB-054	E1668	**0.15 J**	**0.027 J**	**0.014 J**	0.047 UJ	0.0019 UJ	**0.017 J**	0.00086 UJ
PCB-055	E1668	0.00098 UJ	0.0019 UJ	0.0013 UJ	0.0012 UJ	0.0026 UJ	0.0037 UJ	0.0017 UJ
PCB-056	E1668	0.0011 UJ	0.0020 UJ	0.0014 UJ	0.0013 UJ	0.0029 UJ	0.0040 UJ	0.0018 UJ
PCB-057	E1668	0.0012 UJ	0.0022 UJ	0.0016 UJ	0.0014 UJ	0.0031 UJ	0.0043 UJ	0.0020 UJ
PCB-058	E1668	0.0010 UJ	0.0019 UJ	0.0014 UJ	0.0013 UJ	0.0027 UJ	0.0038 UJ	0.0018 UJ

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW2-PAC-2-20251014 TS-PW2 PAC	Kinetics-PW2-PAC-3-20251021 TS-PW2 PAC	Kinetics-PW2-PAC-4-20251028 TS-PW2 PAC	Kinetics-PW2-PAC-5-20251104 TS-PW2 PAC	Kinetics-PW2-PAC-6-20251118 TS-PW2 PAC	Kinetics-PW2-PAC-7-20251202 TS-PW2 PAC	Kinetics-PW2-PAC-8-20251230 TS-PW2 PAC
PCB-059/062/075	E1668	0.0012 UJ	0.0023 UJ	0.0017 UJ	0.0015 UJ	0.0034 UJ	0.0046 UJ	0.0021 UJ
PCB-060	E1668	0.0012 UJ	0.0023 UJ	0.0017 UJ	0.0015 UJ	0.0033 UJ	0.0046 UJ	0.0021 UJ
PCB-061/070/074/076	E1668	**0.098 J**	**0.041 J**	**0.041 J**	**0.080 J**	**0.0046 J**	0.0040 UJ	**0.0093 J**
PCB-063	E1668	0.0012 UJ	**0.0041 J**	0.0016 UJ	0.0015 UJ	0.0031 UJ	0.0043 UJ	0.0020 UJ
PCB-064	E1668	0.0011 UJ	0.0021 UJ	0.0015 UJ	0.0014 UJ	0.0030 UJ	0.0041 UJ	0.0019 UJ
PCB-066	E1668	0.0010 UJ	0.0019 UJ	0.0014 UJ	0.0013 UJ	0.0028 UJ	0.0038 UJ	0.0018 UJ
PCB-067	E1668	0.00096 UJ	0.0018 UJ	0.0013 UJ	0.0012 UJ	0.0026 UJ	0.0036 UJ	0.0017 UJ
PCB-068	E1668	0.0011 UJ	0.0021 UJ	0.0015 UJ	0.0014 UJ	0.0029 UJ	0.0041 UJ	0.0019 UJ
PCB-072	E1668	0.0011 UJ	0.0020 UJ	0.0015 UJ	0.0013 UJ	0.0029 UJ	0.0040 UJ	0.0019 UJ
PCB-077	E1668	**0.0027 J**	0.0024 UJ	0.0017 UJ	0.0016 UJ	0.0034 UJ	0.0047 UJ	0.0021 UJ
PCB-078	E1668	0.0011 UJ	0.0021 UJ	0.0015 UJ	0.0014 UJ	0.0031 UJ	0.0042 UJ	0.0020 UJ
PCB-079	E1668	**0.0028 J**	0.0017 UJ	0.0012 UJ	0.0012 UJ	0.0024 UJ	0.0033 UJ	0.0015 UJ
PCB-080	E1668	0.0010 UJ	0.0020 UJ	0.0014 UJ	0.0013 UJ	0.0028 UJ	0.0039 UJ	0.0018 UJ
PCB-081	E1668	0.0013 UJ	0.0024 UJ	0.0018 UJ	0.0016 UJ	0.0036 UJ	0.0050 UJ	0.0023 UJ
PCB-082	E1668	0.0023 UJ	0.0028 UJ	0.0048 UJ	0.0031 UJ	0.0045 UJ	0.0023 UJ	0.0039 UJ
PCB-083/099	E1668	**0.031 J**	**0.019 J**	0.0049 UJ	0.016 UJ	0.0046 UJ	0.0023 UJ	0.0040 UJ
PCB-084	E1668	**0.031 J**	**0.014 J**	0.0056 UJ	0.0071 UJ	0.0053 UJ	0.0027 UJ	0.0046 UJ
PCB-085/116/117	E1668	**0.017 J**	**0.0051 J**	**0.0072 J**	0.0056 UJ	**0.0043 J**	**0.045 J**	0.0034 UJ
PCB-086/087/097/109/119/125	E1668	**0.15 J**	**0.071 J**	**0.081 J**	0.063 UJ	0.0039 UJ	**0.021 J**	0.0034 UJ
PCB-088/091	E1668	**0.013 J**	**0.0044 J**	0.0050 UJ	0.0033 UJ	0.0047 UJ	0.0024 UJ	0.0041 UJ
PCB-089	E1668	0.0023 UJ	0.0029 UJ	0.0049 UJ	0.0032 UJ	0.0046 UJ	0.0024 UJ	0.0040 UJ
PCB-090/101/113	E1668	**0.10 J**	**0.077 J**	**0.034 J**	**0.043 J**	0.0042 UJ	0.016 UJ	0.0036 UJ
PCB-092	E1668	**0.012 J**	**0.0096 J**	0.0052 UJ	0.0034 UJ	0.0049 UJ	0.0025 UJ	0.0042 UJ
PCB-093/100	E1668	**0.0052 J**	0.0030 UJ	0.0051 UJ	0.0033 UJ	0.0048 UJ	0.0024 UJ	0.0041 UJ
PCB-094	E1668	0.0028 UJ	0.0034 UJ	0.0058 UJ	0.0038 UJ	0.0054 UJ	0.0028 UJ	0.0047 UJ
PCB-095	E1668	**0.11 J**	**0.042 J**	**0.040 J**	0.047 UJ	0.0047 UJ	0.0024 UJ	0.0041 UJ
PCB-096	E1668	0.0017 UJ	0.0020 UJ	0.0034 UJ	0.0022 UJ	0.0032 UJ	0.0017 UJ	0.0028 UJ
PCB-098/102	E1668	0.0021 UJ	**0.027 J**	0.0043 UJ	0.0028 UJ	0.0040 UJ	0.0021 UJ	0.0035 UJ
PCB-103	E1668	0.0024 UJ	0.0029 UJ	0.0050 UJ	0.0032 UJ	0.0047 UJ	0.0024 UJ	0.0040 UJ
PCB-104	E1668	0.0019 UJ	0.0023 UJ	0.0039 UJ	0.0025 UJ	0.0036 UJ	**0.0025 J**	0.0031 UJ
PCB-105	E1668	**0.024 J**	0.0041 UJ	0.0069 UJ	0.0083 UJ	0.0084 UJ	0.0045 UJ	0.0050 UJ
PCB-106	E1668	0.0019 UJ	0.0037 UJ	0.0062 UJ	0.0060 UJ	0.0075 UJ	0.0042 UJ	0.0045 UJ
PCB-107	E1668	0.0018 UJ	0.0035 UJ	0.0059 UJ	0.0057 UJ	0.0072 UJ	0.0040 UJ	0.0043 UJ
PCB-108/124	E1668	**0.0049 J**	0.0042 UJ	0.0072 UJ	0.0069 UJ	0.0086 UJ	0.0048 UJ	0.0052 UJ
PCB-110/115	E1668	**0.087 J**	**0.042 J**	**0.035 J**	0.033 UJ	**0.0094 J**	0.0015 UJ	0.0025 UJ
PCB-111	E1668	0.0017 UJ	0.0021 UJ	0.0035 UJ	0.0023 UJ	0.0033 UJ	0.0017 UJ	0.0029 UJ
PCB-112	E1668	0.0014 UJ	0.0017 UJ	0.0029 UJ	0.0019 UJ	0.0028 UJ	0.0014 UJ	0.0024 UJ
PCB-114	E1668	0.0021 UJ	0.0038 UJ	0.0067 UJ	0.0062 UJ	0.0085 UJ	0.0048 UJ	0.0050 UJ
PCB-118	E1668	**0.048 J**	**0.020 J**	**0.028 J**	0.036 UJ	0.0085 UJ	0.0046 UJ	**0.0068 J**
PCB-120	E1668	0.0013 UJ	0.0017 UJ	0.0028 UJ	0.0018 UJ	0.0026 UJ	0.0014 UJ	0.0023 UJ
PCB-121	E1668	0.0016 UJ	0.0019 UJ	0.0032 UJ	0.0021 UJ	0.0030 UJ	0.0016 UJ	0.0026 UJ
PCB-122	E1668	0.0026 UJ	0.0049 UJ	0.0084 UJ	0.0081 UJ	0.010 UJ	0.0056 UJ	0.0061 UJ
PCB-123	E1668	0.0022 UJ	0.0043 UJ	0.0075 UJ	0.0068 UJ	0.0094 UJ	0.0053 UJ	0.0054 UJ
PCB-126	E1668	0.0020 UJ	0.0039 UJ	0.0067 UJ	0.0066 UJ	0.0067 UJ	0.0039 UJ	0.0045 UJ
PCB-127	E1668	0.0019 UJ	0.0037 UJ	0.0063 UJ	0.0060 UJ	0.0076 UJ	0.0042 UJ	0.0045 UJ
PCB-128/166	E1668	**0.017 J**	**0.033 J**	**0.013 J**	**0.026 J**	0.00039 UJ	0.0022 UJ	0.0023 UJ
PCB-129/138/160/163	E1668	**0.28 J**	**0.22 J**	**0.26 J**	0.21 UJ	**0.11 J**	**0.037 J**	**0.026 J**
PCB-130	E1668	**0.013 J**	0.0054 UJ	**0.019 J**	**0.017 J**	0.00061 UJ	0.0034 UJ	0.0036 UJ
PCB-131	E1668	**0.0082 J**	0.0048 UJ	0.0031 UJ	0.0043 UJ	0.00055 UJ	0.0031 UJ	0.0032 UJ
PCB-132	E1668	**0.12 J**	0.10 UJ	**0.081 J**	0.093 UJ	**0.012 J**	**0.0055 J**	0.0030 UJ

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW2-PAC-2-20251014 TS-PW2 PAC	Kinetics-PW2-PAC-3-20251021 TS-PW2 PAC	Kinetics-PW2-PAC-4-20251028 TS-PW2 PAC	Kinetics-PW2-PAC-5-20251104 TS-PW2 PAC	Kinetics-PW2-PAC-6-20251118 TS-PW2 PAC	Kinetics-PW2-PAC-7-20251202 TS-PW2 PAC	Kinetics-PW2-PAC-8-20251230 TS-PW2 PAC
PCB-133	E1668	0.0045 UJ	**0.010 J**	0.0026 UJ	0.0036 UJ	0.00046 UJ	0.0026 UJ	0.0027 UJ
PCB-134/143	E1668	**0.018 J**	0.0047 UJ	0.0030 UJ	0.0042 UJ	0.00053 UJ	0.0030 UJ	0.0031 UJ
PCB-135/151	E1668	**0.14 J**	**0.10 J**	**0.086 J**	0.071 UJ	**0.0023 J**	**0.020 J**	0.0034 UJ
PCB-136	E1668	**0.053 J**	**0.048 J**	**0.050 J**	0.043 UJ	0.0011 UJ	0.0016 UJ	0.0027 UJ
PCB-137	E1668	0.0050 UJ	**0.0067 J**	**0.0077 J**	0.0041 UJ	0.00052 UJ	0.0029 UJ	0.0031 UJ
PCB-139/140	E1668	0.0043 UJ	0.0039 UJ	0.0025 UJ	0.0035 UJ	0.00044 UJ	0.0025 UJ	0.0026 UJ
PCB-141	E1668	**0.068 J**	**0.050 J**	**0.079 J**	0.058 UJ	**0.022 J**	0.0027 UJ	0.0028 UJ
PCB-142	E1668	0.0051 UJ	0.0046 UJ	0.0030 UJ	0.0041 UJ	0.00052 UJ	0.0029 UJ	0.0031 UJ
PCB-144	E1668	**0.0090 J**	**0.011 J**	**0.0091 J**	0.0076 UJ	0.0015 UJ	**0.0060 J**	0.0036 UJ
PCB-145	E1668	0.00030 UJ	0.00093 UJ	0.00079 UJ	0.0017 UJ	0.00098 UJ	0.0014 UJ	0.0024 UJ
PCB-146	E1668	**0.039 J**	**0.020 J**	**0.024 J**	**0.023 J**	**0.0017 J**	0.0023 UJ	0.0024 UJ
PCB-147/149	E1668	**0.27 J**	**0.21 J**	**0.20 J**	**0.16 J**	**0.086 J**	**0.026 J**	**0.022 J**
PCB-148	E1668	0.00043 UJ	0.0013 UJ	0.0011 UJ	0.0024 UJ	0.0014 UJ	0.0021 UJ	0.0034 UJ
PCB-150	E1668	0.00032 UJ	0.00098 UJ	0.00084 UJ	0.0018 UJ	0.0010 UJ	0.0015 UJ	0.0025 UJ
PCB-152	E1668	0.00028 UJ	0.00086 UJ	0.00073 UJ	0.0016 UJ	0.00090 UJ	0.0013 UJ	0.0022 UJ
PCB-153/168	E1668	**0.22 J**	**0.16 J**	**0.17 J**	**0.19 J**	**0.11 J**	**0.026 J**	**0.027 J**
PCB-154	E1668	0.00040 UJ	0.0012 UJ	0.0010 UJ	0.0022 UJ	0.0013 UJ	0.0019 UJ	0.0031 UJ
PCB-155	E1668	0.00035 UJ	0.0011 UJ	0.00091 UJ	0.0019 UJ	0.0011 UJ	0.0016 UJ	0.0027 UJ
PCB-156/157	E1668	**0.018 J**	0.014 UJ	**0.025 J**	0.0061 UJ	**0.0014 J**	0.0025 UJ	**0.0046 J**
PCB-158	E1668	**0.032 J**	**0.016 J**	**0.039 J**	0.0027 UJ	**0.010 J**	0.0019 UJ	0.0020 UJ
PCB-159	E1668	**0.010 J**	0.0030 UJ	0.0017 UJ	0.0023 UJ	0.00030 UJ	0.0017 UJ	0.0018 UJ
PCB-161	E1668	0.0030 UJ	0.0027 UJ	0.0017 UJ	0.0024 UJ	0.00031 UJ	0.0017 UJ	0.0018 UJ
PCB-162	E1668	0.0033 UJ	0.0030 UJ	0.0019 UJ	0.0027 UJ	0.00034 UJ	0.0019 UJ	0.0020 UJ
PCB-164	E1668	**0.016 J**	**0.0077 J**	**0.017 J**	0.016 UJ	0.00032 UJ	**0.0052 J**	0.0019 UJ
PCB-165	E1668	0.0039 UJ	0.0036 UJ	0.0023 UJ	0.0032 UJ	0.00041 UJ	0.0023 UJ	0.0024 UJ
PCB-167	E1668	**0.0086 J**	0.0027 UJ	**0.010 J**	0.0024 UJ	0.00030 UJ	0.0018 UJ	0.0019 UJ
PCB-169	E1668	0.0030 UJ	0.0028 UJ	0.0018 UJ	0.0025 UJ	0.00030 UJ	0.0016 UJ	0.0017 UJ
PCB-170	E1668	**0.14 J**	**0.089 J**	**0.17 J**	**0.17 J**	**0.089 J**	**0.061 J**	**0.049 J**
PCB-171/173	E1668	**0.040 J**	0.030 UJ	**0.066 J**	**0.089 J**	**0.049 J**	**0.0097 J**	**0.021 J**
PCB-172	E1668	**0.025 J**	**0.013 J**	**0.025 J**	0.016 UJ	0.00063 UJ	**0.0060 J**	0.0026 UJ
PCB-174	E1668	**0.18 J**	**0.13 J**	**0.22 J**	**0.17 J**	**0.16 J**	**0.055 J**	**0.076 J**
PCB-175	E1668	**0.0079 J**	**0.0047 J**	0.0013 UJ	0.0063 UJ	0.00061 UJ	0.00081 UJ	0.0026 UJ
PCB-176	E1668	**0.031 J**	**0.026 J**	**0.030 J**	0.00045 UJ	**0.014 J**	**0.011 J**	**0.015 J**
PCB-177	E1668	**0.086 J**	**0.079 J**	**0.10 J**	**0.11 J**	**0.075 J**	**0.045 J**	**0.034 J**
PCB-178	E1668	**0.026 J**	**0.015 J**	**0.013 J**	0.038 UJ	**0.014 J**	**0.012 J**	**0.024 J**
PCB-179	E1668	**0.090 J**	**0.064 J**	**0.082 J**	**0.078 J**	**0.088 J**	**0.032 J**	**0.038 J**
PCB-180/193	E1668	**0.31 J**	**0.23 J**	**0.34 J**	**0.32 J**	**0.26 J**	**0.14 J**	**0.17 J**
PCB-181	E1668	0.000075 UJ	0.00085 UJ	0.0011 UJ	0.00053 UJ	0.00054 UJ	0.00071 UJ	0.0023 UJ
PCB-182	E1668	0.000070 UJ	0.00080 UJ	0.0011 UJ	0.00050 UJ	0.00051 UJ	0.00067 UJ	0.0021 UJ
PCB-183/185	E1668	**0.11 J**	**0.090 J**	**0.15 J**	**0.13 J**	**0.091 J**	0.041 UJ	**0.076 J**
PCB-184	E1668	0.000056 UJ	0.00064 UJ	0.00085 UJ	0.00040 UJ	0.00041 UJ	0.00054 UJ	0.0017 UJ
PCB-186	E1668	0.000051 UJ	0.00058 UJ	0.00077 UJ	0.00036 UJ	0.00037 UJ	0.00048 UJ	0.0015 UJ
PCB-187	E1668	**0.19 J**	**0.17 J**	**0.20 J**	**0.20 J**	**0.14 J**	**0.085 J**	**0.074 J**
PCB-188	E1668	0.000059 UJ	0.00065 UJ	0.00089 UJ	0.00042 UJ	0.00045 UJ	0.00062 UJ	0.0019 UJ
PCB-189	E1668	**0.0032 J**	0.0013 UJ	**0.0039 J**	0.0031 UJ	0.0033 UJ	0.0031 UJ	0.0042 UJ
PCB-190	E1668	**0.020 J**	**0.0050 J**	**0.014 J**	**0.014 J**	0.00046 UJ	**0.012 J**	**0.0082 J**
PCB-191	E1668	**0.0035 J**	**0.0015 J**	0.00099 UJ	0.00046 UJ	0.00047 UJ	0.00062 UJ	0.0020 UJ
PCB-192	E1668	0.000059 UJ	0.00067 UJ	0.00089 UJ	0.00042 UJ	0.00043 UJ	0.00056 UJ	0.0018 UJ
PCB-194	E1668	**0.052 J**	**0.066 J**	**0.088 J**	**0.087 J**	**0.060 J**	**0.052 J**	**0.052 J**
PCB-195	E1668	**0.026 J**	**0.023 J**	**0.019 J**	0.034 UJ	**0.013 J**	**0.020 J**	**0.014 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Chemical	Sample ID Porewater Amendment Method	Kinetics-PW2-PAC-2-20251014 TS-PW2 PAC	Kinetics-PW2-PAC-3-20251021 TS-PW2 PAC	Kinetics-PW2-PAC-4-20251028 TS-PW2 PAC	Kinetics-PW2-PAC-5-20251104 TS-PW2 PAC	Kinetics-PW2-PAC-6-20251118 TS-PW2 PAC	Kinetics-PW2-PAC-7-20251202 TS-PW2 PAC	Kinetics-PW2-PAC-8-20251230 TS-PW2 PAC
PCB-196	E1668	**0.053 J**	**0.050 J**	**0.049 J**	0.051 UJ	**0.039 J**	**0.034 J**	**0.041 J**
PCB-197	E1668	--	--	--	0.00080 UJ	0.00090 UJ	0.00062 UJ	--
PCB-197/200	E1668	**0.025 J**	**0.012 J**	**0.015 J**	--	--	--	**0.014 J**
PCB-198/199	E1668	**0.078 J**	**0.061 J**	**0.078 J**	0.096 UJ	**0.080 J**	**0.065 J**	**0.086 J**
PCB-200	E1668	--	--	--	--	0.00090 UJ	0.00062 UJ	--
PCB-201	E1668	**0.012 J**	**0.013 J**	0.0015 UJ	0.00090 UJ	**0.017 J**	**0.0087 J**	**0.019 J**
PCB-202	E1668	**0.019 J**	0.00058 UJ	**0.012 J**	0.022 UJ	**0.039 J**	**0.012 J**	**0.017 J**
PCB-203	E1668	**0.040 J**	**0.067 J**	**0.063 J**	0.067 UJ	**0.057 J**	**0.046 J**	**0.050 J**
PCB-204	E1668	0.00051 UJ	0.00057 UJ	0.0013 UJ	0.00076 UJ	0.00085 UJ	0.00059 UJ	0.0016 UJ
PCB-205	E1668	**0.0028 J**	0.0031 UJ	0.0029 UJ	0.0019 UJ	0.0013 UJ	0.0026 UJ	0.0017 UJ
PCB-206	E1668	**0.016 J**	**0.020 J**	**0.041 J**	0.015 UJ	0.011 UJ	**0.043 J**	0.018 UJ
PCB-207	E1668	0.0040 UJ	0.0065 UJ	0.011 UJ	0.013 UJ	0.0098 UJ	0.0092 UJ	0.016 UJ
PCB-208	E1668	0.0039 UJ	0.0065 UJ	0.011 UJ	0.012 UJ	0.0099 UJ	0.0093 UJ	0.016 UJ
PCB-209	E1668	**0.0077 J**	**0.0039 J**	0.00034 UJ	0.00046 UJ	**0.0041 J**	**0.0067 J**	**0.0033 J**

Table D-5
Summary of Kinetic Testing SPME PCB Mass Results

Notes:
Bold: Detected result
J: Estimated value
ng/sample: nanograms per sample
SPME: solid-phase microextraction
U: Compound analyzed for, but not detected above detection limit
UJ: Compound analyzed for, but not detected above estimated detection limit