

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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TestAmerica Job ID: 580-79389-1

Client Project/Site: Portland Harbor Pre-Remedial Design
Revision: 2

For:

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Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Job ID: 580-79389-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE

Client: AECOM

Project: Portland Harbor Pre-Remedial Design

Report Number: 580-79389-1

REVISION 2: NOVEMBER 6, 2018

This revision was required because PCB data changed for samples PDI-SC-S203-4to6 (580-79389-2) and PDI-SC-S203-8to10 (580-79389-5) in revision 1, with no indication in the narrative of the reasons for the changes. In addition, the TCMX surrogate for 8082A PCBs for sample PDI-SC-S203-0to2 (580-79389-1) was initially reported from the batch with a failing CCV. The data has been changed to report from the batch with the passing CCV. The TCMX surrogate recovery changed from 82% to 94% for this sample.

REVISION 1: OCTOBER 15, 2018

This revision was required to revise PCB data as follows: Sample PDI-SC-S203-0to2 (580-79389-1) was reported undiluted; however, the sample should have had a 100x dilution factor applied. In addition, the narrative for sample PDI-RB-SS-180806-1100 (580-79389-24) indicates that the surrogate was out due to matrix interference. This is a rinse blank sample and this should not apply. The laboratory determined that the confirmation column was in control for this sample and it can be reported from this column, with passing surrogates.

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

Twenty-four samples were received on 8/6/2018 3:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.4° C, 3.0° C and 4.3° C.

A sample container was provided to be archived frozen at the TestAmerica Sacramento laboratory pending potential additional analyses.

This report contains results of all analyses performed by TestAmerica Seattle.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

SEMIVOLATILE ORGANIC COMPOUNDS - SELECTED ION MODE (SIM)

Samples PDI-SC-S203-0to2 (580-79389-1), PDI-SC-S203-4to6 (580-79389-2), PDI-SC-S203-12to13.8 (580-79389-3), PDI-SC-S203-2to4 (580-79389-4), PDI-SC-S203-8to10 (580-79389-5), PDI-SC-S203-10to12 (580-79389-6), PDI-SC-S257-0to2 (580-79389-7), PDI-SC-S257-2to4 (580-79389-8), PDI-SC-S257-4to6 (580-79389-9), PDI-SC-S257-6to8 (580-79389-10), PDI-SC-S257-6to8D (580-79389-11), PDI-SC-S257-8to10 (580-79389-12), PDI-SC-S257-10to12 (580-79389-13), PDI-SC-S257-12to14.2 (580-79389-14), PDI-SC-S203-6to8 (580-79389-15), PDI-SC-S254-10to12 (580-79389-16), PDI-SC-S254-0.3to2 (580-79389-17), PDI-SC-S254-14to15.4 (580-79389-18), PDI-SC-S254-2to4 (580-79389-19), PDI-SC-S254-8to10 (580-79389-20), PDI-SC-S254-4to6 (580-79389-21), PDI-SC-S254-6to8 (580-79389-22) and PDI-SC-S254-12to14 (580-79389-23) were analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with SW846 8270D_SIM. The samples were prepared on 08/08/2018 and 08/09/2018 and analyzed on 08/10/2018, 08/14/2018 and 08/15/2018.

Case Narrative

Client: AECOM
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Laboratory: TestAmerica Seattle (Continued)

Several analytes were detected in method blank MB 580-281134/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and/or re-analysis of samples were not performed.

Several analytes were detected in method blank MB 580-281228/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and/or re-analysis of samples were not performed.

Several analytes exceeded the RPD limit for the MSD of sample PDI-SC-S203-12to13.8MSD (580-79389-3) in batch 580-281583. Sample non-homogeneity is suspected.

The following samples were diluted to bring the concentration of target analytes within the calibration range: PDI-SC-S203-0to2 (580-79389-1), PDI-SC-S203-4to6 (580-79389-2), PDI-SC-S203-12to13.8 (580-79389-3), PDI-SC-S203-12to13.8 MS (580-79389-3 MS), PDI-SC-S203-12to13.8 MSD (580-79389-3 MSD), PDI-SC-S203-2to4 (580-79389-4), PDI-SC-S257-0to2 (580-79389-7), PDI-SC-S257-2to4 (580-79389-8), PDI-SC-S257-4to6 (580-79389-9), PDI-SC-S257-6to8 (580-79389-10), PDI-SC-S257-6to8D (580-79389-11), PDI-SC-S257-8to10 (580-79389-12), PDI-SC-S257-10to12 (580-79389-13), PDI-SC-S257-12to14.2 (580-79389-14), PDI-SC-S203-6to8 (580-79389-15), PDI-SC-S254-10to12 (580-79389-16), PDI-SC-S254-0.3to2 (580-79389-17), PDI-SC-S254-14to15.4 (580-79389-18), PDI-SC-S254-2to4 (580-79389-19), PDI-SC-S254-8to10 (580-79389-20), PDI-SC-S254-4to6 (580-79389-21), PDI-SC-S254-6to8 (580-79389-22), and PDI-SC-S254-12to14 (580-79389-23).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS - SELECTED ION MODE (SIM) - RINSE BLANK

Sample PDI-RB-SS-180806-1100 (580-79389-24) was analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with 8270D SIM. The sample was prepared on 08/08/2018 and analyzed on 08/14/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

POLYCHLORINATED BIPHENYLS (PCBS)

Samples PDI-SC-S203-0to2 (580-79389-1), PDI-SC-S203-4to6 (580-79389-2), PDI-SC-S203-12to13.8 (580-79389-3), PDI-SC-S203-2to4 (580-79389-4), PDI-SC-S203-8to10 (580-79389-5), PDI-SC-S203-10to12 (580-79389-6), PDI-SC-S257-0to2 (580-79389-7), PDI-SC-S257-2to4 (580-79389-8), PDI-SC-S257-4to6 (580-79389-9), PDI-SC-S257-6to8 (580-79389-10), PDI-SC-S257-6to8D (580-79389-11), PDI-SC-S257-8to10 (580-79389-12), PDI-SC-S257-10to12 (580-79389-13), PDI-SC-S257-12to14.2 (580-79389-14), PDI-SC-S203-6to8 (580-79389-15), PDI-SC-S254-10to12 (580-79389-16), PDI-SC-S254-0.3to2 (580-79389-17), PDI-SC-S254-14to15.4 (580-79389-18), PDI-SC-S254-2to4 (580-79389-19), PDI-SC-S254-8to10 (580-79389-20), PDI-SC-S254-4to6 (580-79389-21), PDI-SC-S254-6to8 (580-79389-22) and PDI-SC-S254-12to14 (580-79389-23) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA sw-846 method 8082A. The samples were prepared on 08/09/2018 and 08/12/2018 and analyzed on 08/14/2018, 08/17/2018 and 08/19/2018.

The following sample required a dilution due to the nature of the sample matrix: PDI-SC-S203-0to2 (580-79389-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Surrogate recovery for the following samples were outside control limits: **PDI-SC-S203-0to2 (580-79389-1)**, PDI-SC-S203-4to6 (580-79389-2), PDI-SC-S203-12to13.8 (580-79389-3), PDI-SC-S203-2to4 (580-79389-4), PDI-SC-S257-0to2 (580-79389-7), PDI-SC-S257-2to4 (580-79389-8), PDI-SC-S257-4to6 (580-79389-9), PDI-SC-S257-6to8 (580-79389-10), PDI-SC-S257-6to8D (580-79389-11), PDI-SC-S257-8to10 (580-79389-12), PDI-SC-S257-10to12 (580-79389-13), PDI-SC-S257-12to14.2 (580-79389-14), PDI-SC-S203-6to8 (580-79389-15), PDI-SC-S254-10to12 (580-79389-16), PDI-SC-S254-0.3to2 (580-79389-17), PDI-SC-S254-14to15.4 (580-79389-18), PDI-SC-S254-2to4 (580-79389-19), PDI-SC-S254-8to10 (580-79389-20), PDI-SC-S254-4to6 (580-79389-21), PDI-SC-S254-6to8 (580-79389-22), and PDI-SC-S254-12to14 (580-79389-23). Evidence of matrix interference is present and due to the copper cleanup; therefore, re-extraction and/or re-analysis was not performed.

Case Narrative

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Laboratory: TestAmerica Seattle (Continued)

The surrogate Tetrachloro-m-xylene recovered in the LCS associated with preparation batch 580-281382 and analytical batch 580-281783 outside the lower control limits. Since the other surrogate, DCB Decachlorobiphenyl, and the spiked Aroclors all met acceptance criteria, the data is qualified and reported. The following samples are affected: PDI-SC-S203-2to4 (580-79389-4), PDI-SC-S203-8to10 (580-79389-5), PDI-SC-S203-10to12 (580-79389-6), PDI-SC-S254-12to14 (580-79389-23) and (LCS 580-281382/2-A).

The continuing calibration verification (CCV) associated with batch 580-281357 recovered above the upper control limit for 1242. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: PDI-SC-S203-4to6 (580-79389-2), PDI-SC-S203-12to13.8 (580-79389-3), PDI-SC-S257-0to2 (580-79389-7), PDI-SC-S257-2to4 (580-79389-8), PDI-SC-S257-4to6 (580-79389-9), PDI-SC-S257-6to8 (580-79389-10), PDI-SC-S257-6to8D (580-79389-11), PDI-SC-S257-8to10 (580-79389-12), PDI-SC-S257-10to12 (580-79389-13), PDI-SC-S257-12to14.2 (580-79389-14), PDI-SC-S203-6to8 (580-79389-15), PDI-SC-S254-10to12 (580-79389-16), PDI-SC-S254-0.3to2 (580-79389-17) and PDI-SC-S254-14to15.4 (580-79389-18).

The continuing calibration verification (CCV) associated with batch 580-281357 recovered above the upper control limit for 1232, 1248, 1242, 1221 and 1254 on the confirmation column. The following samples are impacted: PDI-SC-S203-4to6 (580-79389-2), PDI-SC-S203-12to13.8 (580-79389-3), PDI-SC-S257-0to2 (580-79389-7), PDI-SC-S257-2to4 (580-79389-8), PDI-SC-S257-4to6 (580-79389-9), PDI-SC-S257-6to8 (580-79389-10), PDI-SC-S257-6to8D (580-79389-11), PDI-SC-S257-8to10 (580-79389-12), PDI-SC-S257-10to12 (580-79389-13), PDI-SC-S257-12to14.2 (580-79389-14), PDI-SC-S203-6to8 (580-79389-15), PDI-SC-S254-10to12 (580-79389-16), PDI-SC-S254-0.3to2 (580-79389-17) and PDI-SC-S254-14to15.4 (580-79389-18).

The continuing calibration verification (CCV) associated with batch 580-281358 recovered above the upper control limit for PCB-1248 and PCB-1242. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: PDI-SC-S254-2to4 (580-79389-19), PDI-SC-S254-8to10 (580-79389-20), PDI-SC-S254-4to6 (580-79389-21) and PDI-SC-S254-6to8 (580-79389-22).

The continuing calibration verification (CCV) associated with batch 580-281358 recovered above the upper control limit for **PCB-1232**, PCB-1242, PCB-1248, PCB-1221, PCB-1016, PCB-1260, PCB-1254, **Tetrachloro-m-xylene** on the confirmation column. The following samples are impacted: PDI-SC-S254-2to4 (580-79389-19), PDI-SC-S254-8to10 (580-79389-20), PDI-SC-S254-4to6 (580-79389-21) and PDI-SC-S254-6to8 (580-79389-22).

The CCB associated with analytical batch 580-281358 recovered high for Tetrachloro-m-xylene surrogate on the confirmation column. The CCV run before the CCB passed surrogate recovery. The samples do not require the CCB, therefore the data has been reported. (CCB 580-281358/35).

The continuing calibration verification (CCV) associated with batch 580-281783 recovered outside acceptance criteria, low biased, for PCB-1254. Since the CCV level is below the RL for this Aroclor and the associated samples were non-detect for this analyte, the data have been qualified and reported. The following samples are impacted: PDI-SC-S203-2to4 (580-79389-4), PDI-SC-S203-8to10 (580-79389-5), PDI-SC-S203-10to12 (580-79389-6), PDI-SC-S254-12to14 (580-79389-23), MB 580-281382/1-A and LCS 580-281382/2-A.

The continuing calibration verification (CCV) associated with batch 580-281783 recovered below the lower control limit for PCB-1221 and PCB-1254 on the confirmation column. The following samples are impacted: PDI-SC-S203-2to4 (580-79389-4), PDI-SC-S203-8to10 (580-79389-5), PDI-SC-S203-10to12 (580-79389-6), PDI-SC-S254-12to14 (580-79389-23), MB 580-281382/1-A and LCS 580-281382/2-A.

The continuing calibration verification (CCV) associated with 580-281924 recovered high and outside the control limits for PCB-1232, PCB-1242, PCB-1016 and **Tetrachloro-m-xylene** on one column. Results are confirmed on both columns and reported from the passing column. The following samples are impacted: PDI-SC-S203-0to2 (580-79389-1), (CCV 580-281924/2), (CCV 580-281924/4) and (CCVIS 580-281924/6).

The continuing calibration verification (CCV) associated with batch 580-281924 recovered above the upper control limit for PCB-1248, PCB-1221 and PCB-1254. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: PDI-SC-S203-0to2 (580-79389-1), (CCV 580-281924/3) and (CCV 580-281924/5).

The following sample is reported from the back column due to that column better meeting acceptance criteria and to be consistent with the other samples in the job, which were reported from the back column: PDI-SC-S203-4to6 (580-79389-2).

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Laboratory: TestAmerica Seattle (Continued)

The %RPD between the primary and confirmation column exceeded 40% for PCB-1248 for the following sample: PDI-SC-S203-8to10 (580-79389-5). The lower value(s) has been reported and qualified in accordance with the laboratory's SOP.

The %RPD between the primary and confirmation column exceeded 40% for 1248 for the following samples: PDI-SC-S257-6to8 (580-79389-10) and PDI-SC-S257-6to8D (580-79389-11). The lower value has been reported and qualified in accordance with the laboratory's SOP.

The %RPD between the primary and confirmation column exceeded 40% for 1260 for the following sample: PDI-SC-S257-6to8D (580-79389-11), PDI-SC-S257-10to12 (580-79389-13) and PDI-SC-S257-12to14.2 (580-79389-14). The lower value has been reported and qualified in accordance with the laboratory's SOP.

The %RPD between the primary and confirmation column exceeded 40% for 1260 for the following sample: PDI-SC-S254-6to8 (580-79389-22). The lower value has been reported and qualified in accordance with the laboratory's SOP.

The following samples appear to contain polychlorinated biphenyls (PCBs); however, due to weathering or other environmental processes, the PCBs in the sample do not closely match any of the laboratory's Aroclor standards used for instrument calibration: PDI-SC-S203-8to10 (580-79389-5), PDI-SC-S257-0to2 (580-79389-7), PDI-SC-S257-6to8 (580-79389-10), PDI-SC-S257-6to8D (580-79389-11), PDI-SC-S257-8to10 (580-79389-12), PDI-SC-S257-10to12 (580-79389-13), PDI-SC-S257-12to14.2 (580-79389-14), PDI-SC-S203-6to8 (580-79389-15), PDI-SC-S254-10to12 (580-79389-16), PDI-SC-S254-0.3to2 (580-79389-17), PDI-SC-S254-14to15.4 (580-79389-18), PDI-SC-S254-2to4 (580-79389-19), PDI-SC-S254-8to10 (580-79389-20), PDI-SC-S254-4to6 (580-79389-21), PDI-SC-S254-6to8 (580-79389-22), and PDI-SC-S254-12to14 (580-79389-23). The samples have been identified but not reported as a mixture of Aroclors. Due to the poor match with the Aroclor standard(s), there is increased qualitative and quantitative uncertainty associated with this result.

The following samples required a copper clean-up to reduce matrix interferences caused by sulfur: PDI-SC-S203-4to6 (580-79389-2), PDI-SC-S203-12to13.8 (580-79389-3), PDI-SC-S257-0to2 (580-79389-7), PDI-SC-S257-2to4 (580-79389-8), PDI-SC-S257-4to6 (580-79389-9), PDI-SC-S257-6to8 (580-79389-10), PDI-SC-S257-6to8D (580-79389-11), PDI-SC-S257-8to10 (580-79389-12), PDI-SC-S257-10to12 (580-79389-13), PDI-SC-S257-12to14.2 (580-79389-14), PDI-SC-S203-6to8 (580-79389-15), PDI-SC-S254-10to12 (580-79389-16), PDI-SC-S254-0.3to2 (580-79389-17), PDI-SC-S254-14to15.4 (580-79389-18), PDI-SC-S254-2to4 (580-79389-19), PDI-SC-S254-8to10 (580-79389-20), PDI-SC-S254-4to6 (580-79389-21) and PDI-SC-S254-6to8 (580-79389-22).

Samples PDI-SC-S203-0to2 (580-79389-1)[100X] and PDI-SC-S203-2to4 (580-79389-4)[100X] required dilution prior to analysis to bring the concentration of target analytes within the calibration range. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

POLYCHLORINATED BIPHENYLS (PCBS) - RINSE BLANK

Sample PDI-RB-SS-180806-1100 (580-79389-24) was analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082A. The sample was prepared on 08/13/2018 and analyzed on 08/29/2018.

The continuing calibration verification (CCV) associated with batch 580-282692 recovered above the upper control limit for PCB-1232, PCB-1242, PCB-1254 and PCB-1248. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: PDI-RB-SS-180806-1100 (580-79389-24), MB 580-281399/1-A, LCS 580-381339/2-A, LCSD 580-281399/3-A (CCV 580-282692/6), (CCV 580-282692/7) and (CCV 580-282692/8).

No other analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON

Samples PDI-SC-S203-0to2 (580-79389-1), PDI-SC-S203-4to6 (580-79389-2), PDI-SC-S203-12to13.8 (580-79389-3), PDI-SC-S203-2to4 (580-79389-4), PDI-SC-S203-8to10 (580-79389-5), PDI-SC-S203-10to12 (580-79389-6), PDI-SC-S257-0to2 (580-79389-7), PDI-SC-S257-2to4 (580-79389-8), PDI-SC-S257-4to6 (580-79389-9), PDI-SC-S257-6to8 (580-79389-10), PDI-SC-S257-6to8D (580-79389-11), PDI-SC-S257-8to10 (580-79389-12), PDI-SC-S257-10to12 (580-79389-13), PDI-SC-S257-12to14.2 (580-79389-14), PDI-SC-S203-6to8 (580-79389-15), PDI-SC-S254-10to12 (580-79389-16), PDI-SC-S254-0.3to2 (580-79389-17), PDI-SC-S254-14to15.4 (580-79389-18), PDI-SC-S254-2to4 (580-79389-19), PDI-SC-S254-8to10 (580-79389-20), PDI-SC-S254-4to6 (580-79389-21),

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Laboratory: TestAmerica Seattle (Continued)

PDI-SC-S254-6to8 (580-79389-22) and PDI-SC-S254-12to14 (580-79389-23) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060. The samples were analyzed on 08/15/2018 and 08/16/2018.

Total Organic Carbon - Duplicates failed the recovery criteria low for the MSD of sample PDI-SC-S203-0to2MSD (580-79389-1) in batch 580-281802. Total Organic Carbon - Duplicates exceeded the RPD limit. The associated LCS/LCSD recoveries met acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON - RINSE BLANK

Sample PDI-RB-SS-180806-1100 (580-79389-24) was analyzed for total organic carbon in accordance with SM 5310B. The sample was analyzed on 08/09/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GRAIN SIZE

Samples PDI-SC-S203-0to2 (580-79389-1), PDI-SC-S203-4to6 (580-79389-2), PDI-SC-S203-12to13.8 (580-79389-3), PDI-SC-S203-2to4 (580-79389-4), PDI-SC-S203-8to10 (580-79389-5), PDI-SC-S203-10to12 (580-79389-6), PDI-SC-S257-0to2 (580-79389-7), PDI-SC-S257-2to4 (580-79389-8), PDI-SC-S257-4to6 (580-79389-9), PDI-SC-S257-6to8 (580-79389-10), PDI-SC-S257-8to10 (580-79389-12), PDI-SC-S257-10to12 (580-79389-13), PDI-SC-S257-12to14.2 (580-79389-14), PDI-SC-S203-6to8 (580-79389-15), PDI-SC-S254-10to12 (580-79389-16), PDI-SC-S254-0.3to2 (580-79389-17), PDI-SC-S254-14to15.4 (580-79389-18), PDI-SC-S254-2to4 (580-79389-19), PDI-SC-S254-8to10 (580-79389-20), PDI-SC-S254-4to6 (580-79389-21), PDI-SC-S254-6to8 (580-79389-22) and PDI-SC-S254-12to14 (580-79389-23) were analyzed for grain size in accordance with ASTM D7928/D6913. The samples were analyzed on 08/09/2018, 08/10/2018 and 08/14/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples PDI-SC-S203-0to2 (580-79389-1), PDI-SC-S203-4to6 (580-79389-2), PDI-SC-S203-12to13.8 (580-79389-3), PDI-SC-S203-2to4 (580-79389-4), PDI-SC-S203-8to10 (580-79389-5), PDI-SC-S203-10to12 (580-79389-6), PDI-SC-S257-0to2 (580-79389-7), PDI-SC-S257-2to4 (580-79389-8), PDI-SC-S257-4to6 (580-79389-9), PDI-SC-S257-6to8 (580-79389-10), PDI-SC-S257-6to8D (580-79389-11), PDI-SC-S257-8to10 (580-79389-12), PDI-SC-S257-10to12 (580-79389-13), PDI-SC-S257-12to14.2 (580-79389-14), PDI-SC-S203-6to8 (580-79389-15), PDI-SC-S254-10to12 (580-79389-16), PDI-SC-S254-0.3to2 (580-79389-17), PDI-SC-S254-14to15.4 (580-79389-18), PDI-SC-S254-2to4 (580-79389-19), PDI-SC-S254-8to10 (580-79389-20), PDI-SC-S254-4to6 (580-79389-21), PDI-SC-S254-6to8 (580-79389-22) and PDI-SC-S254-12to14 (580-79389-23) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 08/08/2018 and 08/09/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL SOLIDS @ 70C

Samples PDI-SC-S203-0to2 (580-79389-1), PDI-SC-S203-4to6 (580-79389-2), PDI-SC-S203-12to13.8 (580-79389-3), PDI-SC-S203-2to4 (580-79389-4), PDI-SC-S203-8to10 (580-79389-5), PDI-SC-S203-10to12 (580-79389-6), PDI-SC-S257-0to2 (580-79389-7), PDI-SC-S257-2to4 (580-79389-8), PDI-SC-S257-4to6 (580-79389-9), PDI-SC-S257-6to8 (580-79389-10), PDI-SC-S257-6to8D (580-79389-11), PDI-SC-S257-8to10 (580-79389-12), PDI-SC-S257-10to12 (580-79389-13), PDI-SC-S257-12to14.2 (580-79389-14), PDI-SC-S203-6to8 (580-79389-15), PDI-SC-S254-10to12 (580-79389-16), PDI-SC-S254-0.3to2 (580-79389-17), PDI-SC-S254-14to15.4 (580-79389-18), PDI-SC-S254-2to4 (580-79389-19), PDI-SC-S254-8to10 (580-79389-20), PDI-SC-S254-4to6 (580-79389-21), PDI-SC-S254-6to8 (580-79389-22) and PDI-SC-S254-12to14 (580-79389-23) were analyzed for Moisture @ 70C in accordance with Total Solids @ 70C. The samples were analyzed on 08/14/2018, 08/15/2018, 08/17/2018 and 08/30/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F2	MS/MSD RPD exceeds control limits
F4	MS/MSD RPD exceeds control limits due to sample size difference.

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S203-0to2

Lab Sample ID: 580-79389-1

Date Collected: 08/03/18 14:05

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 43.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	100	B	21	1.9	ug/Kg	☼	08/09/18 13:46	08/14/18 19:05	10
Acenaphthene	260		21	2.6	ug/Kg	☼	08/09/18 13:46	08/14/18 19:05	10
Acenaphthylene	71		21	2.1	ug/Kg	☼	08/09/18 13:46	08/14/18 19:05	10
Anthracene	310		21	2.6	ug/Kg	☼	08/09/18 13:46	08/14/18 19:05	10
Benzo[a]anthracene	480	B	21	3.2	ug/Kg	☼	08/09/18 13:46	08/14/18 19:05	10
Benzo[a]pyrene	330		21	1.7	ug/Kg	☼	08/09/18 13:46	08/14/18 19:05	10
Benzo[b]fluoranthene	550		21	2.5	ug/Kg	☼	08/09/18 13:46	08/14/18 19:05	10
Benzo[g,h,i]perylene	340	B	21	2.1	ug/Kg	☼	08/09/18 13:46	08/14/18 19:05	10
Benzo[k]fluoranthene	170		21	2.6	ug/Kg	☼	08/09/18 13:46	08/14/18 19:05	10
Chrysene	630		21	6.4	ug/Kg	☼	08/09/18 13:46	08/14/18 19:05	10
Dibenz(a,h)anthracene	73	B	21	3.1	ug/Kg	☼	08/09/18 13:46	08/14/18 19:05	10
Fluoranthene	1100		21	6.0	ug/Kg	☼	08/09/18 13:46	08/14/18 19:05	10
Fluorene	180		21	2.1	ug/Kg	☼	08/09/18 13:46	08/14/18 19:05	10
Indeno[1,2,3-cd]pyrene	360	B	21	2.6	ug/Kg	☼	08/09/18 13:46	08/14/18 19:05	10
Naphthalene	160	B	21	3.4	ug/Kg	☼	08/09/18 13:46	08/14/18 19:05	10
Phenanthrene	1100		21	2.9	ug/Kg	☼	08/09/18 13:46	08/14/18 19:05	10
Pyrene	1300		21	4.1	ug/Kg	☼	08/09/18 13:46	08/14/18 19:05	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	100		57 - 120				08/09/18 13:46	08/14/18 19:05	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		450	77	ug/Kg	☼	08/09/18 14:01	08/19/18 07:08	100
PCB-1221	ND		450	210	ug/Kg	☼	08/09/18 14:01	08/19/18 07:08	100
PCB-1232	ND		450	110	ug/Kg	☼	08/09/18 14:01	08/19/18 07:08	100
PCB-1242	ND		450	110	ug/Kg	☼	08/09/18 14:01	08/19/18 07:08	100
PCB-1248	ND		450	36	ug/Kg	☼	08/09/18 14:01	08/19/18 07:08	100
PCB-1254	ND		450	180	ug/Kg	☼	08/09/18 14:01	08/19/18 07:08	100
PCB-1260	3100		450	77	ug/Kg	☼	08/09/18 14:01	08/19/18 07:08	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	154	X	54 - 142				08/09/18 14:01	08/19/18 07:08	100
Tetrachloro-m-xylene	94		58 - 122				08/09/18 14:01	08/19/18 07:08	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	35000	F2 F1	2000	44	mg/Kg			08/15/18 15:28	1
Total Solids	43.1		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	46	H	0.10	0.10	%			08/15/18 08:15	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.8				%			08/09/18 09:26	1
Coarse Sand	0.2				%			08/09/18 09:26	1
Medium Sand	4.5				%			08/09/18 09:26	1
Fine Sand	16.3				%			08/09/18 09:26	1
Silt	51.2				%			08/09/18 09:26	1
Clay	26.9				%			08/09/18 09:26	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S203-4to6

Lab Sample ID: 580-79389-2

Date Collected: 08/03/18 14:15

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 69.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	13	B	6.4	0.58	ug/Kg	☼	08/09/18 13:46	08/14/18 19:30	5
Acenaphthene	51		6.4	0.77	ug/Kg	☼	08/09/18 13:46	08/14/18 19:30	5
Acenaphthylene	13		6.4	0.64	ug/Kg	☼	08/09/18 13:46	08/14/18 19:30	5
Anthracene	29		6.4	0.77	ug/Kg	☼	08/09/18 13:46	08/14/18 19:30	5
Benzo[a]anthracene	120	B	6.4	0.97	ug/Kg	☼	08/09/18 13:46	08/14/18 19:30	5
Benzo[a]pyrene	66		6.4	0.51	ug/Kg	☼	08/09/18 13:46	08/14/18 19:30	5
Benzo[b]fluoranthene	83		6.4	0.76	ug/Kg	☼	08/09/18 13:46	08/14/18 19:30	5
Benzo[g,h,i]perylene	54	B	6.4	0.64	ug/Kg	☼	08/09/18 13:46	08/14/18 19:30	5
Benzo[k]fluoranthene	25		6.4	0.77	ug/Kg	☼	08/09/18 13:46	08/14/18 19:30	5
Chrysene	120		6.4	1.9	ug/Kg	☼	08/09/18 13:46	08/14/18 19:30	5
Dibenz(a,h)anthracene	10	B	6.4	0.92	ug/Kg	☼	08/09/18 13:46	08/14/18 19:30	5
Fluoranthene	250		6.4	1.8	ug/Kg	☼	08/09/18 13:46	08/14/18 19:30	5
Fluorene	11		6.4	0.64	ug/Kg	☼	08/09/18 13:46	08/14/18 19:30	5
Indeno[1,2,3-cd]pyrene	56	B	6.4	0.77	ug/Kg	☼	08/09/18 13:46	08/14/18 19:30	5
Naphthalene	24	B	6.4	1.0	ug/Kg	☼	08/09/18 13:46	08/14/18 19:30	5
Phenanthrene	330		6.4	0.88	ug/Kg	☼	08/09/18 13:46	08/14/18 19:30	5
Pyrene	300		6.4	1.2	ug/Kg	☼	08/09/18 13:46	08/14/18 19:30	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	85		57 - 120				08/09/18 13:46	08/14/18 19:30	5

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.8	0.48	ug/Kg	☼	08/09/18 14:01	08/14/18 02:41	1
PCB-1221	ND		2.8	1.3	ug/Kg	☼	08/09/18 14:01	08/14/18 02:41	1
PCB-1232	ND		2.8	0.66	ug/Kg	☼	08/09/18 14:01	08/14/18 02:41	1
PCB-1242	ND		2.8	0.69	ug/Kg	☼	08/09/18 14:01	08/14/18 02:41	1
PCB-1248	ND		2.8	0.23	ug/Kg	☼	08/09/18 14:01	08/14/18 02:41	1
PCB-1254	ND		2.8	1.1	ug/Kg	☼	08/09/18 14:01	08/14/18 02:41	1
PCB-1260	170		2.8	0.48	ug/Kg	☼	08/09/18 14:01	08/14/18 02:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	75		54 - 142				08/09/18 14:01	08/14/18 02:41	1
Tetrachloro-m-xylene	44	X	58 - 122				08/09/18 14:01	08/14/18 02:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	10000		2000	44	mg/Kg			08/15/18 15:54	1
Total Solids	69.2		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	73	H	0.10	0.10	%			08/15/18 08:16	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	1.2				%			08/09/18 09:26	1
Coarse Sand	0.0				%			08/09/18 09:26	1
Medium Sand	5.5				%			08/09/18 09:26	1
Fine Sand	37.3				%			08/09/18 09:26	1
Silt	46.1				%			08/09/18 09:26	1
Clay	9.9				%			08/09/18 09:26	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S203-12to13.8

Lab Sample ID: 580-79389-3

Date Collected: 08/03/18 14:35

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 70.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.59	J F2 B	5.9	0.53	ug/Kg	☼	08/09/18 13:46	08/14/18 19:56	5
Acenaphthene	ND	F2	5.9	0.71	ug/Kg	☼	08/09/18 13:46	08/14/18 19:56	5
Acenaphthylene	ND	F2	5.9	0.59	ug/Kg	☼	08/09/18 13:46	08/14/18 19:56	5
Anthracene	ND	F2	5.9	0.71	ug/Kg	☼	08/09/18 13:46	08/14/18 19:56	5
Benzo[a]anthracene	1.5	J F2 B	5.9	0.90	ug/Kg	☼	08/09/18 13:46	08/14/18 19:56	5
Benzo[a]pyrene	ND	F2	5.9	0.47	ug/Kg	☼	08/09/18 13:46	08/14/18 19:56	5
Benzo[b]fluoranthene	2.7	J F2	5.9	0.70	ug/Kg	☼	08/09/18 13:46	08/14/18 19:56	5
Benzo[g,h,i]perylene	ND	F2	5.9	0.59	ug/Kg	☼	08/09/18 13:46	08/14/18 19:56	5
Benzo[k]fluoranthene	0.74	J F2	5.9	0.71	ug/Kg	☼	08/09/18 13:46	08/14/18 19:56	5
Chrysene	ND	F2	5.9	1.8	ug/Kg	☼	08/09/18 13:46	08/14/18 19:56	5
Dibenz(a,h)anthracene	ND	F2	5.9	0.85	ug/Kg	☼	08/09/18 13:46	08/14/18 19:56	5
Fluoranthene	1.7	J F2	5.9	1.7	ug/Kg	☼	08/09/18 13:46	08/14/18 19:56	5
Fluorene	ND	F2	5.9	0.59	ug/Kg	☼	08/09/18 13:46	08/14/18 19:56	5
Indeno[1,2,3-cd]pyrene	ND	F2	5.9	0.71	ug/Kg	☼	08/09/18 13:46	08/14/18 19:56	5
Naphthalene	1.2	J F2 B	5.9	0.94	ug/Kg	☼	08/09/18 13:46	08/14/18 19:56	5
Phenanthrene	2.1	J F2	5.9	0.81	ug/Kg	☼	08/09/18 13:46	08/14/18 19:56	5
Pyrene	2.2	J F2	5.9	1.1	ug/Kg	☼	08/09/18 13:46	08/14/18 19:56	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	88		57 - 120				08/09/18 13:46	08/14/18 19:56	5

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.7	0.46	ug/Kg	☼	08/09/18 14:01	08/14/18 02:59	1
PCB-1221	ND		2.7	1.3	ug/Kg	☼	08/09/18 14:01	08/14/18 02:59	1
PCB-1232	ND		2.7	0.64	ug/Kg	☼	08/09/18 14:01	08/14/18 02:59	1
PCB-1242	ND		2.7	0.66	ug/Kg	☼	08/09/18 14:01	08/14/18 02:59	1
PCB-1248	ND		2.7	0.22	ug/Kg	☼	08/09/18 14:01	08/14/18 02:59	1
PCB-1254	ND		2.7	1.1	ug/Kg	☼	08/09/18 14:01	08/14/18 02:59	1
PCB-1260	ND		2.7	0.46	ug/Kg	☼	08/09/18 14:01	08/14/18 02:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	54		54 - 142				08/09/18 14:01	08/14/18 02:59	1
Tetrachloro-m-xylene	51	X	58 - 122				08/09/18 14:01	08/14/18 02:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	8400		2000	44	mg/Kg			08/15/18 15:59	1
Total Solids	70.2		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	73	H	0.10	0.10	%			08/15/18 08:17	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/09/18 09:26	1
Coarse Sand	0.0				%			08/09/18 09:26	1
Medium Sand	0.1				%			08/09/18 09:26	1
Fine Sand	33.1				%			08/09/18 09:26	1
Silt	56.1				%			08/09/18 09:26	1
Clay	10.7				%			08/09/18 09:26	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S203-2to4

Lab Sample ID: 580-79389-4

Date Collected: 08/03/18 14:10

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 51.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	160	B	18	1.6	ug/Kg	☼	08/08/18 11:34	08/10/18 18:58	10
Acenaphthene	420		18	2.2	ug/Kg	☼	08/08/18 11:34	08/10/18 18:58	10
Acenaphthylene	85		18	1.8	ug/Kg	☼	08/08/18 11:34	08/10/18 18:58	10
Anthracene	260	B	18	2.2	ug/Kg	☼	08/08/18 11:34	08/10/18 18:58	10
Benzo[a]anthracene	550	B	18	2.8	ug/Kg	☼	08/08/18 11:34	08/10/18 18:58	10
Benzo[a]pyrene	530		18	1.5	ug/Kg	☼	08/08/18 11:34	08/10/18 18:58	10
Benzo[b]fluoranthene	720	B	18	2.2	ug/Kg	☼	08/08/18 11:34	08/10/18 18:58	10
Benzo[g,h,i]perylene	350		18	1.8	ug/Kg	☼	08/08/18 11:34	08/10/18 18:58	10
Benzo[k]fluoranthene	210	B	18	2.2	ug/Kg	☼	08/08/18 11:34	08/10/18 18:58	10
Chrysene	860		18	5.5	ug/Kg	☼	08/08/18 11:34	08/10/18 18:58	10
Dibenz(a,h)anthracene	94		18	2.6	ug/Kg	☼	08/08/18 11:34	08/10/18 18:58	10
Fluoranthene	1400		18	5.1	ug/Kg	☼	08/08/18 11:34	08/10/18 18:58	10
Fluorene	200		18	1.8	ug/Kg	☼	08/08/18 11:34	08/10/18 18:58	10
Indeno[1,2,3-cd]pyrene	470		18	2.2	ug/Kg	☼	08/08/18 11:34	08/10/18 18:58	10
Naphthalene	210		18	2.9	ug/Kg	☼	08/08/18 11:34	08/10/18 18:58	10
Phenanthrene	1900	B	18	2.5	ug/Kg	☼	08/08/18 11:34	08/10/18 18:58	10
Pyrene	1500		18	3.6	ug/Kg	☼	08/08/18 11:34	08/10/18 18:58	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	95		57 - 120	08/08/18 11:34	08/10/18 18:58	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		380	65	ug/Kg	☼	08/12/18 10:39	08/17/18 04:04	100
PCB-1221	ND		380	180	ug/Kg	☼	08/12/18 10:39	08/17/18 04:04	100
PCB-1232	ND		380	90	ug/Kg	☼	08/12/18 10:39	08/17/18 04:04	100
PCB-1242	ND		380	94	ug/Kg	☼	08/12/18 10:39	08/17/18 04:04	100
PCB-1248	ND		380	31	ug/Kg	☼	08/12/18 10:39	08/17/18 04:04	100
PCB-1254	ND		380	150	ug/Kg	☼	08/12/18 10:39	08/17/18 04:04	100
PCB-1260	4900		380	65	ug/Kg	☼	08/12/18 10:39	08/17/18 04:04	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	196	X	54 - 142	08/12/18 10:39	08/17/18 04:04	100
Tetrachloro-m-xylene	132	X	58 - 122	08/12/18 10:39	08/17/18 04:04	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	29000		2000	44	mg/Kg			08/15/18 16:34	1
Total Solids	51.9		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	54		0.10	0.10	%			08/17/18 08:00	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/10/18 08:42	1
Coarse Sand	0.4				%			08/10/18 08:42	1
Medium Sand	6.2				%			08/10/18 08:42	1
Fine Sand	26.3				%			08/10/18 08:42	1
Silt	42.5				%			08/10/18 08:42	1
Clay	24.6				%			08/10/18 08:42	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S203-8to10

Lab Sample ID: 580-79389-5

Date Collected: 08/03/18 14:25

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 67.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.96	J B	1.4	0.13	ug/Kg	☼	08/08/18 11:34	08/10/18 19:20	1
Acenaphthene	0.73	J	1.4	0.17	ug/Kg	☼	08/08/18 11:34	08/10/18 19:20	1
Acenaphthylene	ND		1.4	0.14	ug/Kg	☼	08/08/18 11:34	08/10/18 19:20	1
Anthracene	0.87	J B	1.4	0.17	ug/Kg	☼	08/08/18 11:34	08/10/18 19:20	1
Benzo[a]anthracene	2.0	B	1.4	0.21	ug/Kg	☼	08/08/18 11:34	08/10/18 19:20	1
Benzo[a]pyrene	1.2	J	1.4	0.11	ug/Kg	☼	08/08/18 11:34	08/10/18 19:20	1
Benzo[b]fluoranthene	3.5	B	1.4	0.17	ug/Kg	☼	08/08/18 11:34	08/10/18 19:20	1
Benzo[g,h,i]perylene	1.0	J	1.4	0.14	ug/Kg	☼	08/08/18 11:34	08/10/18 19:20	1
Benzo[k]fluoranthene	0.95	J B	1.4	0.17	ug/Kg	☼	08/08/18 11:34	08/10/18 19:20	1
Chrysene	2.0		1.4	0.42	ug/Kg	☼	08/08/18 11:34	08/10/18 19:20	1
Dibenz(a,h)anthracene	ND		1.4	0.20	ug/Kg	☼	08/08/18 11:34	08/10/18 19:20	1
Fluoranthene	2.9		1.4	0.40	ug/Kg	☼	08/08/18 11:34	08/10/18 19:20	1
Fluorene	0.96	J	1.4	0.14	ug/Kg	☼	08/08/18 11:34	08/10/18 19:20	1
Indeno[1,2,3-cd]pyrene	1.1	J	1.4	0.17	ug/Kg	☼	08/08/18 11:34	08/10/18 19:20	1
Naphthalene	0.87	J	1.4	0.23	ug/Kg	☼	08/08/18 11:34	08/10/18 19:20	1
Phenanthrene	4.7	B	1.4	0.19	ug/Kg	☼	08/08/18 11:34	08/10/18 19:20	1
Pyrene	3.4		1.4	0.27	ug/Kg	☼	08/08/18 11:34	08/10/18 19:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	79		57 - 120				08/08/18 11:34	08/10/18 19:20	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.9	0.49	ug/Kg	☼	08/12/18 10:39	08/17/18 04:21	1
PCB-1221	ND		2.9	1.4	ug/Kg	☼	08/12/18 10:39	08/17/18 04:21	1
PCB-1232	ND		2.9	0.67	ug/Kg	☼	08/12/18 10:39	08/17/18 04:21	1
PCB-1242	ND		2.9	0.70	ug/Kg	☼	08/12/18 10:39	08/17/18 04:21	1
PCB-1248	ND		2.9	0.23	ug/Kg	☼	08/12/18 10:39	08/17/18 04:21	1
PCB-1254	ND		2.9	1.1	ug/Kg	☼	08/12/18 10:39	08/17/18 04:21	1
PCB-1260	2.9		2.9	0.49	ug/Kg	☼	08/12/18 10:39	08/17/18 04:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	61		54 - 142				08/12/18 10:39	08/17/18 04:21	1
Tetrachloro-m-xylene	61		58 - 122				08/12/18 10:39	08/17/18 04:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	9600		2000	44	mg/Kg			08/15/18 16:39	1
Total Solids	67.8		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	69		0.10	0.10	%			08/17/18 08:02	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/10/18 08:42	1
Coarse Sand	0.0				%			08/10/18 08:42	1
Medium Sand	0.2				%			08/10/18 08:42	1
Fine Sand	29.1				%			08/10/18 08:42	1
Silt	57.8				%			08/10/18 08:42	1
Clay	12.9				%			08/10/18 08:42	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S203-10to12

Lab Sample ID: 580-79389-6

Date Collected: 08/03/18 14:30

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 68.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.92	J B	1.4	0.13	ug/Kg	☼	08/08/18 11:34	08/10/18 19:42	1
Acenaphthene	0.44	J	1.4	0.17	ug/Kg	☼	08/08/18 11:34	08/10/18 19:42	1
Acenaphthylene	ND		1.4	0.14	ug/Kg	☼	08/08/18 11:34	08/10/18 19:42	1
Anthracene	0.43	J B	1.4	0.17	ug/Kg	☼	08/08/18 11:34	08/10/18 19:42	1
Benzo[a]anthracene	1.4	B	1.4	0.22	ug/Kg	☼	08/08/18 11:34	08/10/18 19:42	1
Benzo[a]pyrene	0.60	J	1.4	0.11	ug/Kg	☼	08/08/18 11:34	08/10/18 19:42	1
Benzo[b]fluoranthene	2.9	B	1.4	0.17	ug/Kg	☼	08/08/18 11:34	08/10/18 19:42	1
Benzo[g,h,i]perylene	1.0	J	1.4	0.14	ug/Kg	☼	08/08/18 11:34	08/10/18 19:42	1
Benzo[k]fluoranthene	0.82	J B	1.4	0.17	ug/Kg	☼	08/08/18 11:34	08/10/18 19:42	1
Chrysene	1.2	J	1.4	0.43	ug/Kg	☼	08/08/18 11:34	08/10/18 19:42	1
Dibenz(a,h)anthracene	ND		1.4	0.21	ug/Kg	☼	08/08/18 11:34	08/10/18 19:42	1
Fluoranthene	1.2	J	1.4	0.40	ug/Kg	☼	08/08/18 11:34	08/10/18 19:42	1
Fluorene	0.63	J	1.4	0.14	ug/Kg	☼	08/08/18 11:34	08/10/18 19:42	1
Indeno[1,2,3-cd]pyrene	1.0	J	1.4	0.17	ug/Kg	☼	08/08/18 11:34	08/10/18 19:42	1
Naphthalene	0.69	J	1.4	0.23	ug/Kg	☼	08/08/18 11:34	08/10/18 19:42	1
Phenanthrene	2.4	B	1.4	0.20	ug/Kg	☼	08/08/18 11:34	08/10/18 19:42	1
Pyrene	1.7		1.4	0.28	ug/Kg	☼	08/08/18 11:34	08/10/18 19:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	89		57 - 120	08/08/18 11:34	08/10/18 19:42	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.9	0.50	ug/Kg	☼	08/12/18 10:39	08/17/18 04:39	1
PCB-1221	ND		2.9	1.4	ug/Kg	☼	08/12/18 10:39	08/17/18 04:39	1
PCB-1232	ND		2.9	0.69	ug/Kg	☼	08/12/18 10:39	08/17/18 04:39	1
PCB-1242	ND		2.9	0.72	ug/Kg	☼	08/12/18 10:39	08/17/18 04:39	1
PCB-1248	ND		2.9	0.23	ug/Kg	☼	08/12/18 10:39	08/17/18 04:39	1
PCB-1254	ND		2.9	1.2	ug/Kg	☼	08/12/18 10:39	08/17/18 04:39	1
PCB-1260	ND		2.9	0.50	ug/Kg	☼	08/12/18 10:39	08/17/18 04:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	66		54 - 142	08/12/18 10:39	08/17/18 04:39	1
Tetrachloro-m-xylene	67		58 - 122	08/12/18 10:39	08/17/18 04:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	9200		2000	44	mg/Kg			08/15/18 16:45	1
Total Solids	68.1		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	70		0.10	0.10	%			08/17/18 08:03	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/10/18 08:42	1
Coarse Sand	0.0				%			08/10/18 08:42	1
Medium Sand	0.2				%			08/10/18 08:42	1
Fine Sand	32.4				%			08/10/18 08:42	1
Silt	57.4				%			08/10/18 08:42	1
Clay	10.0				%			08/10/18 08:42	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S257-0to2

Lab Sample ID: 580-79389-7

Date Collected: 08/06/18 09:40

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 54.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	17	B	17	1.5	ug/Kg	☼	08/09/18 13:46	08/14/18 21:15	10
Acenaphthene	16	J	17	2.0	ug/Kg	☼	08/09/18 13:46	08/14/18 21:15	10
Acenaphthylene	19		17	1.7	ug/Kg	☼	08/09/18 13:46	08/14/18 21:15	10
Anthracene	31		17	2.0	ug/Kg	☼	08/09/18 13:46	08/14/18 21:15	10
Benzo[a]anthracene	53	B	17	2.5	ug/Kg	☼	08/09/18 13:46	08/14/18 21:15	10
Benzo[a]pyrene	50		17	1.3	ug/Kg	☼	08/09/18 13:46	08/14/18 21:15	10
Benzo[b]fluoranthene	73		17	2.0	ug/Kg	☼	08/09/18 13:46	08/14/18 21:15	10
Benzo[g,h,i]perylene	67	B	17	1.7	ug/Kg	☼	08/09/18 13:46	08/14/18 21:15	10
Benzo[k]fluoranthene	24		17	2.0	ug/Kg	☼	08/09/18 13:46	08/14/18 21:15	10
Chrysene	75		17	5.0	ug/Kg	☼	08/09/18 13:46	08/14/18 21:15	10
Dibenz(a,h)anthracene	8.8	J B	17	2.4	ug/Kg	☼	08/09/18 13:46	08/14/18 21:15	10
Fluoranthene	190		17	4.7	ug/Kg	☼	08/09/18 13:46	08/14/18 21:15	10
Fluorene	22		17	1.7	ug/Kg	☼	08/09/18 13:46	08/14/18 21:15	10
Indeno[1,2,3-cd]pyrene	65	B	17	2.0	ug/Kg	☼	08/09/18 13:46	08/14/18 21:15	10
Naphthalene	27	B	17	2.7	ug/Kg	☼	08/09/18 13:46	08/14/18 21:15	10
Phenanthrene	160		17	2.3	ug/Kg	☼	08/09/18 13:46	08/14/18 21:15	10
Pyrene	200		17	3.3	ug/Kg	☼	08/09/18 13:46	08/14/18 21:15	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	89		57 - 120	08/09/18 13:46	08/14/18 21:15	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.5	0.60	ug/Kg	☼	08/09/18 14:01	08/14/18 03:16	1
PCB-1221	ND		3.5	1.7	ug/Kg	☼	08/09/18 14:01	08/14/18 03:16	1
PCB-1232	ND		3.5	0.83	ug/Kg	☼	08/09/18 14:01	08/14/18 03:16	1
PCB-1242	ND		3.5	0.86	ug/Kg	☼	08/09/18 14:01	08/14/18 03:16	1
PCB-1248	ND		3.5	0.28	ug/Kg	☼	08/09/18 14:01	08/14/18 03:16	1
PCB-1254	19		3.5	1.4	ug/Kg	☼	08/09/18 14:01	08/14/18 03:16	1
PCB-1260	ND		3.5	0.60	ug/Kg	☼	08/09/18 14:01	08/14/18 03:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	57		54 - 142	08/09/18 14:01	08/14/18 03:16	1
Tetrachloro-m-xylene	53	X	58 - 122	08/09/18 14:01	08/14/18 03:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	33000		2000	44	mg/Kg			08/15/18 16:50	1
Total Solids	54.7		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	55		0.10	0.10	%			08/17/18 08:04	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/10/18 08:42	1
Coarse Sand	0.0				%			08/10/18 08:42	1
Medium Sand	0.6				%			08/10/18 08:42	1
Fine Sand	18.0				%			08/10/18 08:42	1
Silt	70.3				%			08/10/18 08:42	1
Clay	11.1				%			08/10/18 08:42	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S257-2to4

Lab Sample ID: 580-79389-8

Date Collected: 08/06/18 09:45

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 57.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	48	B	15	1.4	ug/Kg	☼	08/09/18 13:46	08/14/18 21:41	10
Acenaphthene	32		15	1.8	ug/Kg	☼	08/09/18 13:46	08/14/18 21:41	10
Acenaphthylene	34		15	1.5	ug/Kg	☼	08/09/18 13:46	08/14/18 21:41	10
Anthracene	46		15	1.8	ug/Kg	☼	08/09/18 13:46	08/14/18 21:41	10
Benzo[a]anthracene	130	B	15	2.3	ug/Kg	☼	08/09/18 13:46	08/14/18 21:41	10
Benzo[a]pyrene	120		15	1.2	ug/Kg	☼	08/09/18 13:46	08/14/18 21:41	10
Benzo[b]fluoranthene	160		15	1.8	ug/Kg	☼	08/09/18 13:46	08/14/18 21:41	10
Benzo[g,h,i]perylene	140	B	15	1.5	ug/Kg	☼	08/09/18 13:46	08/14/18 21:41	10
Benzo[k]fluoranthene	46		15	1.8	ug/Kg	☼	08/09/18 13:46	08/14/18 21:41	10
Chrysene	160		15	4.6	ug/Kg	☼	08/09/18 13:46	08/14/18 21:41	10
Dibenz(a,h)anthracene	19	B	15	2.2	ug/Kg	☼	08/09/18 13:46	08/14/18 21:41	10
Fluoranthene	320		15	4.3	ug/Kg	☼	08/09/18 13:46	08/14/18 21:41	10
Fluorene	47		15	1.5	ug/Kg	☼	08/09/18 13:46	08/14/18 21:41	10
Indeno[1,2,3-cd]pyrene	130	B	15	1.8	ug/Kg	☼	08/09/18 13:46	08/14/18 21:41	10
Naphthalene	59	B	15	2.5	ug/Kg	☼	08/09/18 13:46	08/14/18 21:41	10
Phenanthrene	270		15	2.1	ug/Kg	☼	08/09/18 13:46	08/14/18 21:41	10
Pyrene	390		15	3.0	ug/Kg	☼	08/09/18 13:46	08/14/18 21:41	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	106		57 - 120				08/09/18 13:46	08/14/18 21:41	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.4	0.58	ug/Kg	☼	08/09/18 14:01	08/14/18 03:34	1
PCB-1221	ND		3.4	1.6	ug/Kg	☼	08/09/18 14:01	08/14/18 03:34	1
PCB-1232	ND		3.4	0.80	ug/Kg	☼	08/09/18 14:01	08/14/18 03:34	1
PCB-1242	ND		3.4	0.83	ug/Kg	☼	08/09/18 14:01	08/14/18 03:34	1
PCB-1248	ND		3.4	0.27	ug/Kg	☼	08/09/18 14:01	08/14/18 03:34	1
PCB-1254	ND		3.4	1.3	ug/Kg	☼	08/09/18 14:01	08/14/18 03:34	1
PCB-1260	40		3.4	0.58	ug/Kg	☼	08/09/18 14:01	08/14/18 03:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	93		54 - 142				08/09/18 14:01	08/14/18 03:34	1
Tetrachloro-m-xylene	41	X	58 - 122				08/09/18 14:01	08/14/18 03:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	39000		2000	44	mg/Kg			08/15/18 16:56	1
Total Solids	57.4		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	59		0.10	0.10	%			08/17/18 08:05	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/10/18 08:42	1
Coarse Sand	0.1				%			08/10/18 08:42	1
Medium Sand	0.4				%			08/10/18 08:42	1
Fine Sand	15.0				%			08/10/18 08:42	1
Silt	69.8				%			08/10/18 08:42	1
Clay	14.7				%			08/10/18 08:42	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S257-4to6

Lab Sample ID: 580-79389-9

Date Collected: 08/06/18 09:50

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 57.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	180	B	17	1.5	ug/Kg	☼	08/09/18 13:46	08/14/18 22:07	10
Acenaphthene	48		17	2.0	ug/Kg	☼	08/09/18 13:46	08/14/18 22:07	10
Acenaphthylene	49		17	1.7	ug/Kg	☼	08/09/18 13:46	08/14/18 22:07	10
Anthracene	100		17	2.0	ug/Kg	☼	08/09/18 13:46	08/14/18 22:07	10
Benzo[a]anthracene	180	B	17	2.5	ug/Kg	☼	08/09/18 13:46	08/14/18 22:07	10
Benzo[a]pyrene	120		17	1.3	ug/Kg	☼	08/09/18 13:46	08/14/18 22:07	10
Benzo[b]fluoranthene	170		17	2.0	ug/Kg	☼	08/09/18 13:46	08/14/18 22:07	10
Benzo[g,h,i]perylene	130	B	17	1.7	ug/Kg	☼	08/09/18 13:46	08/14/18 22:07	10
Benzo[k]fluoranthene	48		17	2.0	ug/Kg	☼	08/09/18 13:46	08/14/18 22:07	10
Chrysene	210		17	5.0	ug/Kg	☼	08/09/18 13:46	08/14/18 22:07	10
Dibenz(a,h)anthracene	21	B	17	2.4	ug/Kg	☼	08/09/18 13:46	08/14/18 22:07	10
Fluoranthene	360		17	4.7	ug/Kg	☼	08/09/18 13:46	08/14/18 22:07	10
Fluorene	83		17	1.7	ug/Kg	☼	08/09/18 13:46	08/14/18 22:07	10
Indeno[1,2,3-cd]pyrene	130	B	17	2.0	ug/Kg	☼	08/09/18 13:46	08/14/18 22:07	10
Naphthalene	100	B	17	2.7	ug/Kg	☼	08/09/18 13:46	08/14/18 22:07	10
Phenanthrene	410		17	2.3	ug/Kg	☼	08/09/18 13:46	08/14/18 22:07	10
Pyrene	420		17	3.2	ug/Kg	☼	08/09/18 13:46	08/14/18 22:07	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	82		57 - 120	08/09/18 13:46	08/14/18 22:07	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.4	0.58	ug/Kg	☼	08/09/18 14:01	08/14/18 03:52	1
PCB-1221	ND		3.4	1.6	ug/Kg	☼	08/09/18 14:01	08/14/18 03:52	1
PCB-1232	ND		3.4	0.80	ug/Kg	☼	08/09/18 14:01	08/14/18 03:52	1
PCB-1242	ND		3.4	0.83	ug/Kg	☼	08/09/18 14:01	08/14/18 03:52	1
PCB-1248	ND		3.4	0.27	ug/Kg	☼	08/09/18 14:01	08/14/18 03:52	1
PCB-1254	ND		3.4	1.3	ug/Kg	☼	08/09/18 14:01	08/14/18 03:52	1
PCB-1260	220		3.4	0.58	ug/Kg	☼	08/09/18 14:01	08/14/18 03:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	85		54 - 142	08/09/18 14:01	08/14/18 03:52	1
Tetrachloro-m-xylene	43	X	58 - 122	08/09/18 14:01	08/14/18 03:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	46000		2000	44	mg/Kg			08/15/18 17:02	1
Total Solids	57.6		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	59		0.10	0.10	%			08/17/18 08:06	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	2.0				%			08/10/18 08:42	1
Coarse Sand	0.3				%			08/10/18 08:42	1
Medium Sand	0.2				%			08/10/18 08:42	1
Fine Sand	23.0				%			08/10/18 08:42	1
Silt	58.5				%			08/10/18 08:42	1
Clay	16.0				%			08/10/18 08:42	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S257-6to8

Lab Sample ID: 580-79389-10

Date Collected: 08/06/18 09:55

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 58.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	48	B	16	1.4	ug/Kg	☼	08/09/18 13:46	08/14/18 22:33	10
Acenaphthene	44		16	1.9	ug/Kg	☼	08/09/18 13:46	08/14/18 22:33	10
Acenaphthylene	19		16	1.6	ug/Kg	☼	08/09/18 13:46	08/14/18 22:33	10
Anthracene	55		16	1.9	ug/Kg	☼	08/09/18 13:46	08/14/18 22:33	10
Benzo[a]anthracene	100	B	16	2.4	ug/Kg	☼	08/09/18 13:46	08/14/18 22:33	10
Benzo[a]pyrene	68		16	1.3	ug/Kg	☼	08/09/18 13:46	08/14/18 22:33	10
Benzo[b]fluoranthene	99		16	1.9	ug/Kg	☼	08/09/18 13:46	08/14/18 22:33	10
Benzo[g,h,i]perylene	76	B	16	1.6	ug/Kg	☼	08/09/18 13:46	08/14/18 22:33	10
Benzo[k]fluoranthene	33		16	1.9	ug/Kg	☼	08/09/18 13:46	08/14/18 22:33	10
Chrysene	110		16	4.7	ug/Kg	☼	08/09/18 13:46	08/14/18 22:33	10
Dibenz(a,h)anthracene	11	J B	16	2.3	ug/Kg	☼	08/09/18 13:46	08/14/18 22:33	10
Fluoranthene	230		16	4.4	ug/Kg	☼	08/09/18 13:46	08/14/18 22:33	10
Fluorene	39		16	1.6	ug/Kg	☼	08/09/18 13:46	08/14/18 22:33	10
Indeno[1,2,3-cd]pyrene	79	B	16	1.9	ug/Kg	☼	08/09/18 13:46	08/14/18 22:33	10
Naphthalene	56	B	16	2.5	ug/Kg	☼	08/09/18 13:46	08/14/18 22:33	10
Phenanthrene	230		16	2.2	ug/Kg	☼	08/09/18 13:46	08/14/18 22:33	10
Pyrene	260		16	3.0	ug/Kg	☼	08/09/18 13:46	08/14/18 22:33	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	94		57 - 120	08/09/18 13:46	08/14/18 22:33	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.4	0.57	ug/Kg	☼	08/09/18 14:01	08/14/18 04:10	1
PCB-1221	ND		3.4	1.6	ug/Kg	☼	08/09/18 14:01	08/14/18 04:10	1
PCB-1232	ND		3.4	0.79	ug/Kg	☼	08/09/18 14:01	08/14/18 04:10	1
PCB-1242	ND		3.4	0.83	ug/Kg	☼	08/09/18 14:01	08/14/18 04:10	1
PCB-1248	13		3.4	0.27	ug/Kg	☼	08/09/18 14:01	08/14/18 04:10	1
PCB-1254	ND		3.4	1.3	ug/Kg	☼	08/09/18 14:01	08/14/18 04:10	1
PCB-1260	18		3.4	0.57	ug/Kg	☼	08/09/18 14:01	08/14/18 04:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	78		54 - 142	08/09/18 14:01	08/14/18 04:10	1
Tetrachloro-m-xylene	50	X	58 - 122	08/09/18 14:01	08/14/18 04:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	43000		2000	44	mg/Kg			08/15/18 17:08	1
Total Solids	58.1		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	57		0.10	0.10	%			08/17/18 08:07	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.9				%			08/10/18 08:42	1
Coarse Sand	0.9				%			08/10/18 08:42	1
Medium Sand	0.2				%			08/10/18 08:42	1
Fine Sand	17.5				%			08/10/18 08:42	1
Silt	65.6				%			08/10/18 08:42	1
Clay	14.9				%			08/10/18 08:42	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S257-6to8D

Lab Sample ID: 580-79389-11

Date Collected: 08/06/18 09:55

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 57.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	66	B	14	1.3	ug/Kg	☼	08/09/18 13:46	08/14/18 22:59	10
Acenaphthene	45		14	1.7	ug/Kg	☼	08/09/18 13:46	08/14/18 22:59	10
Acenaphthylene	36		14	1.4	ug/Kg	☼	08/09/18 13:46	08/14/18 22:59	10
Anthracene	61		14	1.7	ug/Kg	☼	08/09/18 13:46	08/14/18 22:59	10
Benzo[a]anthracene	140	B	14	2.1	ug/Kg	☼	08/09/18 13:46	08/14/18 22:59	10
Benzo[a]pyrene	91		14	1.1	ug/Kg	☼	08/09/18 13:46	08/14/18 22:59	10
Benzo[b]fluoranthene	140		14	1.6	ug/Kg	☼	08/09/18 13:46	08/14/18 22:59	10
Benzo[g,h,i]perylene	99	B	14	1.4	ug/Kg	☼	08/09/18 13:46	08/14/18 22:59	10
Benzo[k]fluoranthene	38		14	1.7	ug/Kg	☼	08/09/18 13:46	08/14/18 22:59	10
Chrysene	150		14	4.2	ug/Kg	☼	08/09/18 13:46	08/14/18 22:59	10
Dibenz(a,h)anthracene	15	B	14	2.0	ug/Kg	☼	08/09/18 13:46	08/14/18 22:59	10
Fluoranthene	280		14	3.9	ug/Kg	☼	08/09/18 13:46	08/14/18 22:59	10
Fluorene	48		14	1.4	ug/Kg	☼	08/09/18 13:46	08/14/18 22:59	10
Indeno[1,2,3-cd]pyrene	98	B	14	1.7	ug/Kg	☼	08/09/18 13:46	08/14/18 22:59	10
Naphthalene	76	B	14	2.2	ug/Kg	☼	08/09/18 13:46	08/14/18 22:59	10
Phenanthrene	260		14	1.9	ug/Kg	☼	08/09/18 13:46	08/14/18 22:59	10
Pyrene	330		14	2.7	ug/Kg	☼	08/09/18 13:46	08/14/18 22:59	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	91		57 - 120	08/09/18 13:46	08/14/18 22:59	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.4	0.58	ug/Kg	☼	08/09/18 14:01	08/14/18 04:27	1
PCB-1221	ND		3.4	1.6	ug/Kg	☼	08/09/18 14:01	08/14/18 04:27	1
PCB-1232	ND		3.4	0.80	ug/Kg	☼	08/09/18 14:01	08/14/18 04:27	1
PCB-1242	ND		3.4	0.83	ug/Kg	☼	08/09/18 14:01	08/14/18 04:27	1
PCB-1248	5.5		3.4	0.27	ug/Kg	☼	08/09/18 14:01	08/14/18 04:27	1
PCB-1254	ND		3.4	1.3	ug/Kg	☼	08/09/18 14:01	08/14/18 04:27	1
PCB-1260	6.2		3.4	0.58	ug/Kg	☼	08/09/18 14:01	08/14/18 04:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	68		54 - 142	08/09/18 14:01	08/14/18 04:27	1
Tetrachloro-m-xylene	49	X	58 - 122	08/09/18 14:01	08/14/18 04:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	42000		2000	44	mg/Kg			08/15/18 17:15	1
Total Solids	57.1		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	59	H	0.10	0.10	%			08/30/18 16:24	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S257-8to10

Lab Sample ID: 580-79389-12

Date Collected: 08/06/18 10:00

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 61.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	230	B	15	1.4	ug/Kg	☼	08/09/18 13:46	08/14/18 23:25	10
Acenaphthene	170		15	1.8	ug/Kg	☼	08/09/18 13:46	08/14/18 23:25	10
Acenaphthylene	110		15	1.5	ug/Kg	☼	08/09/18 13:46	08/14/18 23:25	10
Anthracene	240		15	1.8	ug/Kg	☼	08/09/18 13:46	08/14/18 23:25	10
Benzo[a]anthracene	250	B	15	2.3	ug/Kg	☼	08/09/18 13:46	08/14/18 23:25	10
Benzo[a]pyrene	250		15	1.2	ug/Kg	☼	08/09/18 13:46	08/14/18 23:25	10
Benzo[b]fluoranthene	300		15	1.8	ug/Kg	☼	08/09/18 13:46	08/14/18 23:25	10
Benzo[g,h,i]perylene	320	B	15	1.5	ug/Kg	☼	08/09/18 13:46	08/14/18 23:25	10
Benzo[k]fluoranthene	88		15	1.8	ug/Kg	☼	08/09/18 13:46	08/14/18 23:25	10
Chrysene	300		15	4.5	ug/Kg	☼	08/09/18 13:46	08/14/18 23:25	10
Dibenz(a,h)anthracene	31	B	15	2.2	ug/Kg	☼	08/09/18 13:46	08/14/18 23:25	10
Fluoranthene	910		15	4.2	ug/Kg	☼	08/09/18 13:46	08/14/18 23:25	10
Fluorene	170		15	1.5	ug/Kg	☼	08/09/18 13:46	08/14/18 23:25	10
Indeno[1,2,3-cd]pyrene	230	B	15	1.8	ug/Kg	☼	08/09/18 13:46	08/14/18 23:25	10
Naphthalene	450	B	15	2.4	ug/Kg	☼	08/09/18 13:46	08/14/18 23:25	10
Phenanthrene	960		15	2.1	ug/Kg	☼	08/09/18 13:46	08/14/18 23:25	10
Pyrene	1100		15	2.9	ug/Kg	☼	08/09/18 13:46	08/14/18 23:25	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	85		57 - 120	08/09/18 13:46	08/14/18 23:25	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.2	0.55	ug/Kg	☼	08/09/18 14:01	08/14/18 04:45	1
PCB-1221	ND		3.2	1.5	ug/Kg	☼	08/09/18 14:01	08/14/18 04:45	1
PCB-1232	ND		3.2	0.75	ug/Kg	☼	08/09/18 14:01	08/14/18 04:45	1
PCB-1242	ND		3.2	0.79	ug/Kg	☼	08/09/18 14:01	08/14/18 04:45	1
PCB-1248	ND		3.2	0.26	ug/Kg	☼	08/09/18 14:01	08/14/18 04:45	1
PCB-1254	ND		3.2	1.3	ug/Kg	☼	08/09/18 14:01	08/14/18 04:45	1
PCB-1260	11		3.2	0.55	ug/Kg	☼	08/09/18 14:01	08/14/18 04:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	81		54 - 142	08/09/18 14:01	08/14/18 04:45	1
Tetrachloro-m-xylene	42	X	58 - 122	08/09/18 14:01	08/14/18 04:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	50000		2000	44	mg/Kg			08/15/18 17:22	1
Total Solids	61.0		0.1	0.1	%			08/09/18 09:18	1
Total Solids @ 70°C	61		0.10	0.10	%			08/17/18 08:08	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	1.4				%			08/10/18 08:42	1
Coarse Sand	0.7				%			08/10/18 08:42	1
Medium Sand	0.2				%			08/10/18 08:42	1
Fine Sand	11.0				%			08/10/18 08:42	1
Silt	75.1				%			08/10/18 08:42	1
Clay	11.7				%			08/10/18 08:42	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S257-10to12

Lab Sample ID: 580-79389-13

Date Collected: 08/06/18 10:05

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 63.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	74	B	14	1.3	ug/Kg	☼	08/09/18 13:46	08/14/18 23:52	10
Acenaphthene	64		14	1.7	ug/Kg	☼	08/09/18 13:46	08/14/18 23:52	10
Acenaphthylene	57		14	1.4	ug/Kg	☼	08/09/18 13:46	08/14/18 23:52	10
Anthracene	77		14	1.7	ug/Kg	☼	08/09/18 13:46	08/14/18 23:52	10
Benzo[a]anthracene	97	B	14	2.2	ug/Kg	☼	08/09/18 13:46	08/14/18 23:52	10
Benzo[a]pyrene	88		14	1.1	ug/Kg	☼	08/09/18 13:46	08/14/18 23:52	10
Benzo[b]fluoranthene	110		14	1.7	ug/Kg	☼	08/09/18 13:46	08/14/18 23:52	10
Benzo[g,h,i]perylene	120	B	14	1.4	ug/Kg	☼	08/09/18 13:46	08/14/18 23:52	10
Benzo[k]fluoranthene	33		14	1.7	ug/Kg	☼	08/09/18 13:46	08/14/18 23:52	10
Chrysene	110		14	4.3	ug/Kg	☼	08/09/18 13:46	08/14/18 23:52	10
Dibenz(a,h)anthracene	14	B	14	2.1	ug/Kg	☼	08/09/18 13:46	08/14/18 23:52	10
Fluoranthene	290		14	4.0	ug/Kg	☼	08/09/18 13:46	08/14/18 23:52	10
Fluorene	61		14	1.4	ug/Kg	☼	08/09/18 13:46	08/14/18 23:52	10
Indeno[1,2,3-cd]pyrene	110	B	14	1.7	ug/Kg	☼	08/09/18 13:46	08/14/18 23:52	10
Naphthalene	150	B	14	2.3	ug/Kg	☼	08/09/18 13:46	08/14/18 23:52	10
Phenanthrene	310		14	2.0	ug/Kg	☼	08/09/18 13:46	08/14/18 23:52	10
Pyrene	370		14	2.8	ug/Kg	☼	08/09/18 13:46	08/14/18 23:52	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	89		57 - 120				08/09/18 13:46	08/14/18 23:52	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.1	0.52	ug/Kg	☼	08/09/18 14:01	08/14/18 05:02	1
PCB-1221	ND		3.1	1.5	ug/Kg	☼	08/09/18 14:01	08/14/18 05:02	1
PCB-1232	ND		3.1	0.72	ug/Kg	☼	08/09/18 14:01	08/14/18 05:02	1
PCB-1242	ND		3.1	0.75	ug/Kg	☼	08/09/18 14:01	08/14/18 05:02	1
PCB-1248	ND		3.1	0.24	ug/Kg	☼	08/09/18 14:01	08/14/18 05:02	1
PCB-1254	ND		3.1	1.2	ug/Kg	☼	08/09/18 14:01	08/14/18 05:02	1
PCB-1260	5.1		3.1	0.52	ug/Kg	☼	08/09/18 14:01	08/14/18 05:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	63		54 - 142				08/09/18 14:01	08/14/18 05:02	1
Tetrachloro-m-xylene	37	X	58 - 122				08/09/18 14:01	08/14/18 05:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	39000		2000	44	mg/Kg			08/15/18 17:28	1
Total Solids	63.5		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	64		0.10	0.10	%			08/17/18 08:09	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	3.4				%			08/10/18 08:42	1
Coarse Sand	0.5				%			08/10/18 08:42	1
Medium Sand	0.1				%			08/10/18 08:42	1
Fine Sand	24.2				%			08/10/18 08:42	1
Silt	61.4				%			08/10/18 08:42	1
Clay	10.3				%			08/10/18 08:42	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S257-12to14.2

Lab Sample ID: 580-79389-14

Date Collected: 08/06/18 10:10

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 60.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	120	B	15	1.4	ug/Kg	☼	08/09/18 13:46	08/15/18 00:18	10
Acenaphthene	94		15	1.9	ug/Kg	☼	08/09/18 13:46	08/15/18 00:18	10
Acenaphthylene	61		15	1.5	ug/Kg	☼	08/09/18 13:46	08/15/18 00:18	10
Anthracene	91		15	1.9	ug/Kg	☼	08/09/18 13:46	08/15/18 00:18	10
Benzo[a]anthracene	110	B	15	2.3	ug/Kg	☼	08/09/18 13:46	08/15/18 00:18	10
Benzo[a]pyrene	82		15	1.2	ug/Kg	☼	08/09/18 13:46	08/15/18 00:18	10
Benzo[b]fluoranthene	110		15	1.8	ug/Kg	☼	08/09/18 13:46	08/15/18 00:18	10
Benzo[g,h,i]perylene	120	B	15	1.5	ug/Kg	☼	08/09/18 13:46	08/15/18 00:18	10
Benzo[k]fluoranthene	34		15	1.9	ug/Kg	☼	08/09/18 13:46	08/15/18 00:18	10
Chrysene	150		15	4.6	ug/Kg	☼	08/09/18 13:46	08/15/18 00:18	10
Dibenz(a,h)anthracene	14	J B	15	2.2	ug/Kg	☼	08/09/18 13:46	08/15/18 00:18	10
Fluoranthene	330		15	4.3	ug/Kg	☼	08/09/18 13:46	08/15/18 00:18	10
Fluorene	72		15	1.5	ug/Kg	☼	08/09/18 13:46	08/15/18 00:18	10
Indeno[1,2,3-cd]pyrene	110	B	15	1.9	ug/Kg	☼	08/09/18 13:46	08/15/18 00:18	10
Naphthalene	210	B	15	2.5	ug/Kg	☼	08/09/18 13:46	08/15/18 00:18	10
Phenanthrene	460		15	2.1	ug/Kg	☼	08/09/18 13:46	08/15/18 00:18	10
Pyrene	430		15	3.0	ug/Kg	☼	08/09/18 13:46	08/15/18 00:18	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	85		57 - 120				08/09/18 13:46	08/15/18 00:18	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.2	0.54	ug/Kg	☼	08/09/18 14:01	08/14/18 05:20	1
PCB-1221	ND		3.2	1.5	ug/Kg	☼	08/09/18 14:01	08/14/18 05:20	1
PCB-1232	ND		3.2	0.74	ug/Kg	☼	08/09/18 14:01	08/14/18 05:20	1
PCB-1242	ND		3.2	0.77	ug/Kg	☼	08/09/18 14:01	08/14/18 05:20	1
PCB-1248	ND		3.2	0.25	ug/Kg	☼	08/09/18 14:01	08/14/18 05:20	1
PCB-1254	ND		3.2	1.2	ug/Kg	☼	08/09/18 14:01	08/14/18 05:20	1
PCB-1260	9.3		3.2	0.54	ug/Kg	☼	08/09/18 14:01	08/14/18 05:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	63		54 - 142				08/09/18 14:01	08/14/18 05:20	1
Tetrachloro-m-xylene	36	X	58 - 122				08/09/18 14:01	08/14/18 05:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	43000		2000	44	mg/Kg			08/16/18 16:12	1
Total Solids	60.7		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	61		0.10	0.10	%			08/17/18 08:10	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/10/18 08:42	1
Coarse Sand	0.3				%			08/10/18 08:42	1
Medium Sand	0.1				%			08/10/18 08:42	1
Fine Sand	14.8				%			08/10/18 08:42	1
Silt	69.7				%			08/10/18 08:42	1
Clay	15.1				%			08/10/18 08:42	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S203-6to8

Lab Sample ID: 580-79389-15

Date Collected: 08/03/18 14:20

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 67.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	1.1	J B	6.5	0.59	ug/Kg	☼	08/09/18 13:46	08/15/18 00:44	5
Acenaphthene	1.7	J	6.5	0.78	ug/Kg	☼	08/09/18 13:46	08/15/18 00:44	5
Acenaphthylene	ND		6.5	0.65	ug/Kg	☼	08/09/18 13:46	08/15/18 00:44	5
Anthracene	1.1	J	6.5	0.78	ug/Kg	☼	08/09/18 13:46	08/15/18 00:44	5
Benzo[a]anthracene	3.1	J B	6.5	0.99	ug/Kg	☼	08/09/18 13:46	08/15/18 00:44	5
Benzo[a]pyrene	ND		6.5	0.52	ug/Kg	☼	08/09/18 13:46	08/15/18 00:44	5
Benzo[b]fluoranthene	3.9	J	6.5	0.77	ug/Kg	☼	08/09/18 13:46	08/15/18 00:44	5
Benzo[g,h,i]perylene	1.8	J B	6.5	0.65	ug/Kg	☼	08/09/18 13:46	08/15/18 00:44	5
Benzo[k]fluoranthene	0.94	J	6.5	0.78	ug/Kg	☼	08/09/18 13:46	08/15/18 00:44	5
Chrysene	3.0	J	6.5	2.0	ug/Kg	☼	08/09/18 13:46	08/15/18 00:44	5
Dibenz(a,h)anthracene	ND		6.5	0.94	ug/Kg	☼	08/09/18 13:46	08/15/18 00:44	5
Fluoranthene	6.0	J	6.5	1.8	ug/Kg	☼	08/09/18 13:46	08/15/18 00:44	5
Fluorene	0.86	J	6.5	0.65	ug/Kg	☼	08/09/18 13:46	08/15/18 00:44	5
Indeno[1,2,3-cd]pyrene	2.4	J B	6.5	0.78	ug/Kg	☼	08/09/18 13:46	08/15/18 00:44	5
Naphthalene	2.1	J B	6.5	1.0	ug/Kg	☼	08/09/18 13:46	08/15/18 00:44	5
Phenanthrene	9.8		6.5	0.90	ug/Kg	☼	08/09/18 13:46	08/15/18 00:44	5
Pyrene	7.5		6.5	1.3	ug/Kg	☼	08/09/18 13:46	08/15/18 00:44	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	82		57 - 120				08/09/18 13:46	08/15/18 00:44	5

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.9	0.50	ug/Kg	☼	08/09/18 14:01	08/14/18 05:38	1
PCB-1221	ND		2.9	1.4	ug/Kg	☼	08/09/18 14:01	08/14/18 05:38	1
PCB-1232	ND		2.9	0.68	ug/Kg	☼	08/09/18 14:01	08/14/18 05:38	1
PCB-1242	ND		2.9	0.71	ug/Kg	☼	08/09/18 14:01	08/14/18 05:38	1
PCB-1248	ND		2.9	0.23	ug/Kg	☼	08/09/18 14:01	08/14/18 05:38	1
PCB-1254	ND		2.9	1.2	ug/Kg	☼	08/09/18 14:01	08/14/18 05:38	1
PCB-1260	3.1		2.9	0.50	ug/Kg	☼	08/09/18 14:01	08/14/18 05:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	54		54 - 142				08/09/18 14:01	08/14/18 05:38	1
Tetrachloro-m-xylene	49	X	58 - 122				08/09/18 14:01	08/14/18 05:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	11000		2000	44	mg/Kg			08/16/18 16:46	1
Total Solids	67.6		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	67		0.10	0.10	%			08/17/18 08:11	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/10/18 08:42	1
Coarse Sand	0.1				%			08/10/18 08:42	1
Medium Sand	0.6				%			08/10/18 08:42	1
Fine Sand	33.3				%			08/10/18 08:42	1
Silt	51.9				%			08/10/18 08:42	1
Clay	14.1				%			08/10/18 08:42	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S254-10to12

Lab Sample ID: 580-79389-16

Date Collected: 08/06/18 12:15

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 57.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	120	B	15	1.3	ug/Kg	☼	08/09/18 13:46	08/15/18 01:10	10
Acenaphthene	61		15	1.8	ug/Kg	☼	08/09/18 13:46	08/15/18 01:10	10
Acenaphthylene	43		15	1.5	ug/Kg	☼	08/09/18 13:46	08/15/18 01:10	10
Anthracene	74		15	1.8	ug/Kg	☼	08/09/18 13:46	08/15/18 01:10	10
Benzo[a]anthracene	140	B	15	2.2	ug/Kg	☼	08/09/18 13:46	08/15/18 01:10	10
Benzo[a]pyrene	110		15	1.2	ug/Kg	☼	08/09/18 13:46	08/15/18 01:10	10
Benzo[b]fluoranthene	160		15	1.7	ug/Kg	☼	08/09/18 13:46	08/15/18 01:10	10
Benzo[g,h,i]perylene	120	B	15	1.5	ug/Kg	☼	08/09/18 13:46	08/15/18 01:10	10
Benzo[k]fluoranthene	44		15	1.8	ug/Kg	☼	08/09/18 13:46	08/15/18 01:10	10
Chrysene	170		15	4.4	ug/Kg	☼	08/09/18 13:46	08/15/18 01:10	10
Dibenz(a,h)anthracene	20	B	15	2.1	ug/Kg	☼	08/09/18 13:46	08/15/18 01:10	10
Fluoranthene	330		15	4.1	ug/Kg	☼	08/09/18 13:46	08/15/18 01:10	10
Fluorene	61		15	1.5	ug/Kg	☼	08/09/18 13:46	08/15/18 01:10	10
Indeno[1,2,3-cd]pyrene	130	B	15	1.8	ug/Kg	☼	08/09/18 13:46	08/15/18 01:10	10
Naphthalene	140	B	15	2.4	ug/Kg	☼	08/09/18 13:46	08/15/18 01:10	10
Phenanthrene	330		15	2.0	ug/Kg	☼	08/09/18 13:46	08/15/18 01:10	10
Pyrene	380		15	2.9	ug/Kg	☼	08/09/18 13:46	08/15/18 01:10	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	93		57 - 120	08/09/18 13:46	08/15/18 01:10	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.4	0.58	ug/Kg	☼	08/09/18 14:01	08/14/18 05:55	1
PCB-1221	ND		3.4	1.6	ug/Kg	☼	08/09/18 14:01	08/14/18 05:55	1
PCB-1232	ND		3.4	0.80	ug/Kg	☼	08/09/18 14:01	08/14/18 05:55	1
PCB-1242	ND		3.4	0.84	ug/Kg	☼	08/09/18 14:01	08/14/18 05:55	1
PCB-1248	ND		3.4	0.27	ug/Kg	☼	08/09/18 14:01	08/14/18 05:55	1
PCB-1254	ND		3.4	1.3	ug/Kg	☼	08/09/18 14:01	08/14/18 05:55	1
PCB-1260	41		3.4	0.58	ug/Kg	☼	08/09/18 14:01	08/14/18 05:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	65		54 - 142	08/09/18 14:01	08/14/18 05:55	1
Tetrachloro-m-xylene	36	X	58 - 122	08/09/18 14:01	08/14/18 05:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	36000		2000	44	mg/Kg			08/16/18 16:51	1
Total Solids	57.9		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	60		0.10	0.10	%			08/17/18 08:12	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/10/18 08:42	1
Coarse Sand	0.9				%			08/10/18 08:42	1
Medium Sand	0.3				%			08/10/18 08:42	1
Fine Sand	27.4				%			08/10/18 08:42	1
Silt	59.2				%			08/10/18 08:42	1
Clay	12.2				%			08/10/18 08:42	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S254-0.3to2

Lab Sample ID: 580-79389-17

Date Collected: 08/06/18 11:50

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 53.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	110	B	17	1.6	ug/Kg	☼	08/09/18 13:46	08/15/18 01:36	10
Acenaphthene	82		17	2.1	ug/Kg	☼	08/09/18 13:46	08/15/18 01:36	10
Acenaphthylene	44		17	1.7	ug/Kg	☼	08/09/18 13:46	08/15/18 01:36	10
Anthracene	89		17	2.1	ug/Kg	☼	08/09/18 13:46	08/15/18 01:36	10
Benzo[a]anthracene	180	B	17	2.6	ug/Kg	☼	08/09/18 13:46	08/15/18 01:36	10
Benzo[a]pyrene	120		17	1.4	ug/Kg	☼	08/09/18 13:46	08/15/18 01:36	10
Benzo[b]fluoranthene	170		17	2.0	ug/Kg	☼	08/09/18 13:46	08/15/18 01:36	10
Benzo[g,h,i]perylene	120	B	17	1.7	ug/Kg	☼	08/09/18 13:46	08/15/18 01:36	10
Benzo[k]fluoranthene	49		17	2.1	ug/Kg	☼	08/09/18 13:46	08/15/18 01:36	10
Chrysene	200		17	5.2	ug/Kg	☼	08/09/18 13:46	08/15/18 01:36	10
Dibenz(a,h)anthracene	19	B	17	2.5	ug/Kg	☼	08/09/18 13:46	08/15/18 01:36	10
Fluoranthene	360		17	4.8	ug/Kg	☼	08/09/18 13:46	08/15/18 01:36	10
Fluorene	58		17	1.7	ug/Kg	☼	08/09/18 13:46	08/15/18 01:36	10
Indeno[1,2,3-cd]pyrene	120	B	17	2.1	ug/Kg	☼	08/09/18 13:46	08/15/18 01:36	10
Naphthalene	84	B	17	2.8	ug/Kg	☼	08/09/18 13:46	08/15/18 01:36	10
Phenanthrene	350		17	2.4	ug/Kg	☼	08/09/18 13:46	08/15/18 01:36	10
Pyrene	410		17	3.3	ug/Kg	☼	08/09/18 13:46	08/15/18 01:36	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	85		57 - 120				08/09/18 13:46	08/15/18 01:36	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.7	0.63	ug/Kg	☼	08/09/18 14:01	08/14/18 06:13	1
PCB-1221	ND		3.7	1.8	ug/Kg	☼	08/09/18 14:01	08/14/18 06:13	1
PCB-1232	ND		3.7	0.87	ug/Kg	☼	08/09/18 14:01	08/14/18 06:13	1
PCB-1242	ND		3.7	0.91	ug/Kg	☼	08/09/18 14:01	08/14/18 06:13	1
PCB-1248	ND		3.7	0.30	ug/Kg	☼	08/09/18 14:01	08/14/18 06:13	1
PCB-1254	ND		3.7	1.5	ug/Kg	☼	08/09/18 14:01	08/14/18 06:13	1
PCB-1260	160		3.7	0.63	ug/Kg	☼	08/09/18 14:01	08/14/18 06:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	70		54 - 142				08/09/18 14:01	08/14/18 06:13	1
Tetrachloro-m-xylene	49	X	58 - 122				08/09/18 14:01	08/14/18 06:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	51000		2000	44	mg/Kg			08/16/18 16:57	1
Total Solids	53.1		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	54		0.10	0.10	%			08/17/18 08:13	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/10/18 08:42	1
Coarse Sand	0.0				%			08/10/18 08:42	1
Medium Sand	0.2				%			08/10/18 08:42	1
Fine Sand	27.8				%			08/10/18 08:42	1
Silt	56.6				%			08/10/18 08:42	1
Clay	15.4				%			08/10/18 08:42	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S254-14to15.4

Lab Sample ID: 580-79389-18

Date Collected: 08/06/18 12:25

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 60.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	130	B	16	1.4	ug/Kg	☼	08/09/18 13:46	08/15/18 02:02	10
Acenaphthene	87		16	1.9	ug/Kg	☼	08/09/18 13:46	08/15/18 02:02	10
Acenaphthylene	76		16	1.6	ug/Kg	☼	08/09/18 13:46	08/15/18 02:02	10
Anthracene	100		16	1.9	ug/Kg	☼	08/09/18 13:46	08/15/18 02:02	10
Benzo[a]anthracene	170	B	16	2.4	ug/Kg	☼	08/09/18 13:46	08/15/18 02:02	10
Benzo[a]pyrene	120		16	1.2	ug/Kg	☼	08/09/18 13:46	08/15/18 02:02	10
Benzo[b]fluoranthene	150		16	1.8	ug/Kg	☼	08/09/18 13:46	08/15/18 02:02	10
Benzo[g,h,i]perylene	130	B	16	1.6	ug/Kg	☼	08/09/18 13:46	08/15/18 02:02	10
Benzo[k]fluoranthene	44		16	1.9	ug/Kg	☼	08/09/18 13:46	08/15/18 02:02	10
Chrysene	180		16	4.7	ug/Kg	☼	08/09/18 13:46	08/15/18 02:02	10
Dibenz(a,h)anthracene	18	B	16	2.2	ug/Kg	☼	08/09/18 13:46	08/15/18 02:02	10
Fluoranthene	410		16	4.4	ug/Kg	☼	08/09/18 13:46	08/15/18 02:02	10
Fluorene	80		16	1.6	ug/Kg	☼	08/09/18 13:46	08/15/18 02:02	10
Indeno[1,2,3-cd]pyrene	120	B	16	1.9	ug/Kg	☼	08/09/18 13:46	08/15/18 02:02	10
Naphthalene	240	B	16	2.5	ug/Kg	☼	08/09/18 13:46	08/15/18 02:02	10
Phenanthrene	430		16	2.1	ug/Kg	☼	08/09/18 13:46	08/15/18 02:02	10
Pyrene	500		16	3.0	ug/Kg	☼	08/09/18 13:46	08/15/18 02:02	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	87		57 - 120				08/09/18 13:46	08/15/18 02:02	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.2	0.55	ug/Kg	☼	08/09/18 14:01	08/14/18 06:31	1
PCB-1221	ND		3.2	1.5	ug/Kg	☼	08/09/18 14:01	08/14/18 06:31	1
PCB-1232	ND		3.2	0.76	ug/Kg	☼	08/09/18 14:01	08/14/18 06:31	1
PCB-1242	ND		3.2	0.79	ug/Kg	☼	08/09/18 14:01	08/14/18 06:31	1
PCB-1248	ND		3.2	0.26	ug/Kg	☼	08/09/18 14:01	08/14/18 06:31	1
PCB-1254	ND		3.2	1.3	ug/Kg	☼	08/09/18 14:01	08/14/18 06:31	1
PCB-1260	8.5		3.2	0.55	ug/Kg	☼	08/09/18 14:01	08/14/18 06:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	69		54 - 142				08/09/18 14:01	08/14/18 06:31	1
Tetrachloro-m-xylene	40	X	58 - 122				08/09/18 14:01	08/14/18 06:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	44000		2000	44	mg/Kg			08/16/18 17:04	1
Total Solids	60.6		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	62		0.10	0.10	%			08/17/18 08:14	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	1.5				%			08/10/18 08:42	1
Coarse Sand	0.5				%			08/10/18 08:42	1
Medium Sand	0.3				%			08/10/18 08:42	1
Fine Sand	27.6				%			08/10/18 08:42	1
Silt	59.8				%			08/10/18 08:42	1
Clay	10.3				%			08/10/18 08:42	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S254-2to4

Lab Sample ID: 580-79389-19

Date Collected: 08/06/18 11:55

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 52.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	130	B	17	1.5	ug/Kg	☼	08/09/18 13:46	08/15/18 02:28	10
Acenaphthene	73		17	2.0	ug/Kg	☼	08/09/18 13:46	08/15/18 02:28	10
Acenaphthylene	44		17	1.7	ug/Kg	☼	08/09/18 13:46	08/15/18 02:28	10
Anthracene	82		17	2.0	ug/Kg	☼	08/09/18 13:46	08/15/18 02:28	10
Benzo[a]anthracene	210	B	17	2.6	ug/Kg	☼	08/09/18 13:46	08/15/18 02:28	10
Benzo[a]pyrene	160		17	1.3	ug/Kg	☼	08/09/18 13:46	08/15/18 02:28	10
Benzo[b]fluoranthene	230		17	2.0	ug/Kg	☼	08/09/18 13:46	08/15/18 02:28	10
Benzo[g,h,i]perylene	170	B	17	1.7	ug/Kg	☼	08/09/18 13:46	08/15/18 02:28	10
Benzo[k]fluoranthene	68		17	2.0	ug/Kg	☼	08/09/18 13:46	08/15/18 02:28	10
Chrysene	220		17	5.0	ug/Kg	☼	08/09/18 13:46	08/15/18 02:28	10
Dibenz(a,h)anthracene	24	B	17	2.4	ug/Kg	☼	08/09/18 13:46	08/15/18 02:28	10
Fluoranthene	480		17	4.7	ug/Kg	☼	08/09/18 13:46	08/15/18 02:28	10
Fluorene	71		17	1.7	ug/Kg	☼	08/09/18 13:46	08/15/18 02:28	10
Indeno[1,2,3-cd]pyrene	160	B	17	2.0	ug/Kg	☼	08/09/18 13:46	08/15/18 02:28	10
Naphthalene	100	B	17	2.7	ug/Kg	☼	08/09/18 13:46	08/15/18 02:28	10
Phenanthrene	430		17	2.3	ug/Kg	☼	08/09/18 13:46	08/15/18 02:28	10
Pyrene	550		17	3.3	ug/Kg	☼	08/09/18 13:46	08/15/18 02:28	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	104		57 - 120	08/09/18 13:46	08/15/18 02:28	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.6	0.62	ug/Kg	☼	08/09/18 14:01	08/14/18 09:10	1
PCB-1221	ND		3.6	1.7	ug/Kg	☼	08/09/18 14:01	08/14/18 09:10	1
PCB-1232	ND		3.6	0.86	ug/Kg	☼	08/09/18 14:01	08/14/18 09:10	1
PCB-1242	ND		3.6	0.89	ug/Kg	☼	08/09/18 14:01	08/14/18 09:10	1
PCB-1248	ND		3.6	0.29	ug/Kg	☼	08/09/18 14:01	08/14/18 09:10	1
PCB-1254	ND		3.6	1.4	ug/Kg	☼	08/09/18 14:01	08/14/18 09:10	1
PCB-1260	78		3.6	0.62	ug/Kg	☼	08/09/18 14:01	08/14/18 09:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	82		54 - 142	08/09/18 14:01	08/14/18 09:10	1
Tetrachloro-m-xylene	50	X	58 - 122	08/09/18 14:01	08/14/18 09:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	52000		2000	44	mg/Kg			08/16/18 17:10	1
Total Solids	52.4		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	54		0.10	0.10	%			08/17/18 08:15	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/10/18 08:42	1
Coarse Sand	0.7				%			08/10/18 08:42	1
Medium Sand	0.2				%			08/10/18 08:42	1
Fine Sand	18.9				%			08/10/18 08:42	1
Silt	64.0				%			08/10/18 08:42	1
Clay	16.1				%			08/10/18 08:42	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S254-8to10

Lab Sample ID: 580-79389-20

Date Collected: 08/06/18 12:10

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 57.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	130	B	16	1.4	ug/Kg	☼	08/09/18 13:46	08/15/18 02:54	10
Acenaphthene	64		16	1.9	ug/Kg	☼	08/09/18 13:46	08/15/18 02:54	10
Acenaphthylene	45		16	1.6	ug/Kg	☼	08/09/18 13:46	08/15/18 02:54	10
Anthracene	90		16	1.9	ug/Kg	☼	08/09/18 13:46	08/15/18 02:54	10
Benzo[a]anthracene	180	B	16	2.4	ug/Kg	☼	08/09/18 13:46	08/15/18 02:54	10
Benzo[a]pyrene	120		16	1.3	ug/Kg	☼	08/09/18 13:46	08/15/18 02:54	10
Benzo[b]fluoranthene	180		16	1.9	ug/Kg	☼	08/09/18 13:46	08/15/18 02:54	10
Benzo[g,h,i]perylene	110	B	16	1.6	ug/Kg	☼	08/09/18 13:46	08/15/18 02:54	10
Benzo[k]fluoranthene	51		16	1.9	ug/Kg	☼	08/09/18 13:46	08/15/18 02:54	10
Chrysene	190		16	4.7	ug/Kg	☼	08/09/18 13:46	08/15/18 02:54	10
Dibenz(a,h)anthracene	20	B	16	2.3	ug/Kg	☼	08/09/18 13:46	08/15/18 02:54	10
Fluoranthene	400		16	4.4	ug/Kg	☼	08/09/18 13:46	08/15/18 02:54	10
Fluorene	74		16	1.6	ug/Kg	☼	08/09/18 13:46	08/15/18 02:54	10
Indeno[1,2,3-cd]pyrene	93	B	16	1.9	ug/Kg	☼	08/09/18 13:46	08/15/18 02:54	10
Naphthalene	92	B	16	2.5	ug/Kg	☼	08/09/18 13:46	08/15/18 02:54	10
Phenanthrene	390		16	2.2	ug/Kg	☼	08/09/18 13:46	08/15/18 02:54	10
Pyrene	450		16	3.1	ug/Kg	☼	08/09/18 13:46	08/15/18 02:54	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	81		57 - 120				08/09/18 13:46	08/15/18 02:54	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.4	0.58	ug/Kg	☼	08/09/18 14:01	08/14/18 09:27	1
PCB-1221	ND		3.4	1.6	ug/Kg	☼	08/09/18 14:01	08/14/18 09:27	1
PCB-1232	ND		3.4	0.80	ug/Kg	☼	08/09/18 14:01	08/14/18 09:27	1
PCB-1242	ND		3.4	0.83	ug/Kg	☼	08/09/18 14:01	08/14/18 09:27	1
PCB-1248	ND		3.4	0.27	ug/Kg	☼	08/09/18 14:01	08/14/18 09:27	1
PCB-1254	ND		3.4	1.3	ug/Kg	☼	08/09/18 14:01	08/14/18 09:27	1
PCB-1260	55		3.4	0.58	ug/Kg	☼	08/09/18 14:01	08/14/18 09:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	81		54 - 142				08/09/18 14:01	08/14/18 09:27	1
Tetrachloro-m-xylene	44	X	58 - 122				08/09/18 14:01	08/14/18 09:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	48000		2000	44	mg/Kg			08/16/18 17:16	1
Total Solids	57.4		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	58		0.10	0.10	%			08/17/18 08:16	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/10/18 08:42	1
Coarse Sand	1.0				%			08/10/18 08:42	1
Medium Sand	0.3				%			08/10/18 08:42	1
Fine Sand	21.6				%			08/10/18 08:42	1
Silt	65.2				%			08/10/18 08:42	1
Clay	12.0				%			08/10/18 08:42	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S254-4to6

Lab Sample ID: 580-79389-21

Date Collected: 08/06/18 12:00

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 57.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	140	B	17	1.5	ug/Kg	☼	08/09/18 13:46	08/15/18 03:20	10
Acenaphthene	92		17	2.0	ug/Kg	☼	08/09/18 13:46	08/15/18 03:20	10
Acenaphthylene	43		17	1.7	ug/Kg	☼	08/09/18 13:46	08/15/18 03:20	10
Anthracene	83		17	2.0	ug/Kg	☼	08/09/18 13:46	08/15/18 03:20	10
Benzo[a]anthracene	180	B	17	2.5	ug/Kg	☼	08/09/18 13:46	08/15/18 03:20	10
Benzo[a]pyrene	120		17	1.3	ug/Kg	☼	08/09/18 13:46	08/15/18 03:20	10
Benzo[b]fluoranthene	180		17	2.0	ug/Kg	☼	08/09/18 13:46	08/15/18 03:20	10
Benzo[g,h,i]perylene	130	B	17	1.7	ug/Kg	☼	08/09/18 13:46	08/15/18 03:20	10
Benzo[k]fluoranthene	51		17	2.0	ug/Kg	☼	08/09/18 13:46	08/15/18 03:20	10
Chrysene	190		17	5.0	ug/Kg	☼	08/09/18 13:46	08/15/18 03:20	10
Dibenz(a,h)anthracene	19	B	17	2.4	ug/Kg	☼	08/09/18 13:46	08/15/18 03:20	10
Fluoranthene	380		17	4.6	ug/Kg	☼	08/09/18 13:46	08/15/18 03:20	10
Fluorene	68		17	1.7	ug/Kg	☼	08/09/18 13:46	08/15/18 03:20	10
Indeno[1,2,3-cd]pyrene	100	B	17	2.0	ug/Kg	☼	08/09/18 13:46	08/15/18 03:20	10
Naphthalene	110	B	17	2.6	ug/Kg	☼	08/09/18 13:46	08/15/18 03:20	10
Phenanthrene	380		17	2.3	ug/Kg	☼	08/09/18 13:46	08/15/18 03:20	10
Pyrene	460		17	3.2	ug/Kg	☼	08/09/18 13:46	08/15/18 03:20	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	91		57 - 120				08/09/18 13:46	08/15/18 03:20	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.4	0.59	ug/Kg	☼	08/09/18 14:01	08/14/18 09:45	1
PCB-1221	ND		3.4	1.6	ug/Kg	☼	08/09/18 14:01	08/14/18 09:45	1
PCB-1232	ND		3.4	0.81	ug/Kg	☼	08/09/18 14:01	08/14/18 09:45	1
PCB-1242	ND		3.4	0.84	ug/Kg	☼	08/09/18 14:01	08/14/18 09:45	1
PCB-1248	ND		3.4	0.28	ug/Kg	☼	08/09/18 14:01	08/14/18 09:45	1
PCB-1254	ND		3.4	1.4	ug/Kg	☼	08/09/18 14:01	08/14/18 09:45	1
PCB-1260	58		3.4	0.59	ug/Kg	☼	08/09/18 14:01	08/14/18 09:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	83		54 - 142				08/09/18 14:01	08/14/18 09:45	1
Tetrachloro-m-xylene	50	X	58 - 122				08/09/18 14:01	08/14/18 09:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	42000		2000	44	mg/Kg			08/16/18 17:22	1
Total Solids	57.1		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	57		0.10	0.10	%			08/17/18 08:17	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/10/18 08:42	1
Coarse Sand	0.0				%			08/10/18 08:42	1
Medium Sand	0.1				%			08/10/18 08:42	1
Fine Sand	23.5				%			08/10/18 08:42	1
Silt	59.0				%			08/10/18 08:42	1
Clay	17.4				%			08/10/18 08:42	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S254-6to8

Lab Sample ID: 580-79389-22

Date Collected: 08/06/18 12:05

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 56.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	44	B	17	1.6	ug/Kg	☼	08/09/18 13:46	08/15/18 03:46	10
Acenaphthene	32		17	2.1	ug/Kg	☼	08/09/18 13:46	08/15/18 03:46	10
Acenaphthylene	31		17	1.7	ug/Kg	☼	08/09/18 13:46	08/15/18 03:46	10
Anthracene	43		17	2.1	ug/Kg	☼	08/09/18 13:46	08/15/18 03:46	10
Benzo[a]anthracene	150	B	17	2.7	ug/Kg	☼	08/09/18 13:46	08/15/18 03:46	10
Benzo[a]pyrene	87		17	1.4	ug/Kg	☼	08/09/18 13:46	08/15/18 03:46	10
Benzo[b]fluoranthene	140		17	2.1	ug/Kg	☼	08/09/18 13:46	08/15/18 03:46	10
Benzo[g,h,i]perylene	85	B	17	1.7	ug/Kg	☼	08/09/18 13:46	08/15/18 03:46	10
Benzo[k]fluoranthene	39		17	2.1	ug/Kg	☼	08/09/18 13:46	08/15/18 03:46	10
Chrysene	150		17	5.2	ug/Kg	☼	08/09/18 13:46	08/15/18 03:46	10
Dibenz(a,h)anthracene	15	J B	17	2.5	ug/Kg	☼	08/09/18 13:46	08/15/18 03:46	10
Fluoranthene	290		17	4.9	ug/Kg	☼	08/09/18 13:46	08/15/18 03:46	10
Fluorene	34		17	1.7	ug/Kg	☼	08/09/18 13:46	08/15/18 03:46	10
Indeno[1,2,3-cd]pyrene	88	B	17	2.1	ug/Kg	☼	08/09/18 13:46	08/15/18 03:46	10
Naphthalene	55	B	17	2.8	ug/Kg	☼	08/09/18 13:46	08/15/18 03:46	10
Phenanthrene	190		17	2.4	ug/Kg	☼	08/09/18 13:46	08/15/18 03:46	10
Pyrene	320		17	3.4	ug/Kg	☼	08/09/18 13:46	08/15/18 03:46	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	87		57 - 120				08/09/18 13:46	08/15/18 03:46	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.4	0.58	ug/Kg	☼	08/09/18 14:01	08/14/18 10:03	1
PCB-1221	ND		3.4	1.6	ug/Kg	☼	08/09/18 14:01	08/14/18 10:03	1
PCB-1232	ND		3.4	0.81	ug/Kg	☼	08/09/18 14:01	08/14/18 10:03	1
PCB-1242	ND		3.4	0.84	ug/Kg	☼	08/09/18 14:01	08/14/18 10:03	1
PCB-1248	ND		3.4	0.27	ug/Kg	☼	08/09/18 14:01	08/14/18 10:03	1
PCB-1254	ND		3.4	1.4	ug/Kg	☼	08/09/18 14:01	08/14/18 10:03	1
PCB-1260	11		3.4	0.58	ug/Kg	☼	08/09/18 14:01	08/14/18 10:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	69		54 - 142				08/09/18 14:01	08/14/18 10:03	1
Tetrachloro-m-xylene	52	X	58 - 122				08/09/18 14:01	08/14/18 10:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	42000		2000	44	mg/Kg			08/16/18 17:29	1
Total Solids	56.5		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	56	H	0.10	0.10	%			08/14/18 08:19	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/14/18 08:19	1
Coarse Sand	1.7				%			08/14/18 08:19	1
Medium Sand	0.1				%			08/14/18 08:19	1
Fine Sand	15.4				%			08/14/18 08:19	1
Silt	67.5				%			08/14/18 08:19	1
Clay	15.3				%			08/14/18 08:19	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S254-12to14

Lab Sample ID: 580-79389-23

Date Collected: 08/06/18 12:20

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 59.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	150	B	16	1.5	ug/Kg	☼	08/09/18 13:46	08/15/18 04:12	10
Acenaphthene	140		16	2.0	ug/Kg	☼	08/09/18 13:46	08/15/18 04:12	10
Acenaphthylene	77		16	1.6	ug/Kg	☼	08/09/18 13:46	08/15/18 04:12	10
Anthracene	95		16	2.0	ug/Kg	☼	08/09/18 13:46	08/15/18 04:12	10
Benzo[a]anthracene	130	B	16	2.5	ug/Kg	☼	08/09/18 13:46	08/15/18 04:12	10
Benzo[a]pyrene	96		16	1.3	ug/Kg	☼	08/09/18 13:46	08/15/18 04:12	10
Benzo[b]fluoranthene	120		16	1.9	ug/Kg	☼	08/09/18 13:46	08/15/18 04:12	10
Benzo[g,h,i]perylene	120	B	16	1.6	ug/Kg	☼	08/09/18 13:46	08/15/18 04:12	10
Benzo[k]fluoranthene	35		16	2.0	ug/Kg	☼	08/09/18 13:46	08/15/18 04:12	10
Chrysene	140		16	4.9	ug/Kg	☼	08/09/18 13:46	08/15/18 04:12	10
Dibenz(a,h)anthracene	13	J B	16	2.4	ug/Kg	☼	08/09/18 13:46	08/15/18 04:12	10
Fluoranthene	400		16	4.6	ug/Kg	☼	08/09/18 13:46	08/15/18 04:12	10
Fluorene	110		16	1.6	ug/Kg	☼	08/09/18 13:46	08/15/18 04:12	10
Indeno[1,2,3-cd]pyrene	110	B	16	2.0	ug/Kg	☼	08/09/18 13:46	08/15/18 04:12	10
Naphthalene	310	B	16	2.6	ug/Kg	☼	08/09/18 13:46	08/15/18 04:12	10
Phenanthrene	470		16	2.3	ug/Kg	☼	08/09/18 13:46	08/15/18 04:12	10
Pyrene	500		16	3.2	ug/Kg	☼	08/09/18 13:46	08/15/18 04:12	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	78		57 - 120	08/09/18 13:46	08/15/18 04:12	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.3	0.57	ug/Kg	☼	08/12/18 10:39	08/17/18 04:57	1
PCB-1221	ND		3.3	1.6	ug/Kg	☼	08/12/18 10:39	08/17/18 04:57	1
PCB-1232	ND		3.3	0.78	ug/Kg	☼	08/12/18 10:39	08/17/18 04:57	1
PCB-1242	ND		3.3	0.81	ug/Kg	☼	08/12/18 10:39	08/17/18 04:57	1
PCB-1248	ND		3.3	0.27	ug/Kg	☼	08/12/18 10:39	08/17/18 04:57	1
PCB-1254	ND		3.3	1.3	ug/Kg	☼	08/12/18 10:39	08/17/18 04:57	1
PCB-1260	19		3.3	0.57	ug/Kg	☼	08/12/18 10:39	08/17/18 04:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	53	X	54 - 142	08/12/18 10:39	08/17/18 04:57	1
Tetrachloro-m-xylene	53	X	58 - 122	08/12/18 10:39	08/17/18 04:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	46000		2000	44	mg/Kg			08/16/18 17:35	1
Total Solids	59.3		0.1	0.1	%			08/08/18 09:22	1
Total Solids @ 70°C	60	H	0.10	0.10	%			08/14/18 08:19	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/14/18 08:19	1
Coarse Sand	1.2				%			08/14/18 08:19	1
Medium Sand	0.3				%			08/14/18 08:19	1
Fine Sand	26.4				%			08/14/18 08:19	1
Silt	62.8				%			08/14/18 08:19	1
Clay	9.3				%			08/14/18 08:19	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-RB-SS-180806-1100

Lab Sample ID: 580-79389-24

Date Collected: 08/06/18 11:00

Matrix: Water

Date Received: 08/06/18 15:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.10	0.018	ug/L		08/08/18 10:13	08/14/18 02:33	1
2-Methylnaphthalene	ND		0.10	0.020	ug/L		08/08/18 10:13	08/14/18 02:33	1
Acenaphthylene	ND		0.20	0.045	ug/L		08/08/18 10:13	08/14/18 02:33	1
Acenaphthene	ND		0.10	0.0061	ug/L		08/08/18 10:13	08/14/18 02:33	1
Fluorene	ND		0.10	0.013	ug/L		08/08/18 10:13	08/14/18 02:33	1
Phenanthrene	ND		0.10	0.019	ug/L		08/08/18 10:13	08/14/18 02:33	1
Anthracene	ND		0.10	0.0072	ug/L		08/08/18 10:13	08/14/18 02:33	1
Fluoranthene	ND		0.10	0.013	ug/L		08/08/18 10:13	08/14/18 02:33	1
Pyrene	ND		0.10	0.0092	ug/L		08/08/18 10:13	08/14/18 02:33	1
Benzo[a]anthracene	ND		0.10	0.0061	ug/L		08/08/18 10:13	08/14/18 02:33	1
Chrysene	ND		0.10	0.0061	ug/L		08/08/18 10:13	08/14/18 02:33	1
Benzo[b]fluoranthene	ND		0.10	0.0061	ug/L		08/08/18 10:13	08/14/18 02:33	1
Benzo[k]fluoranthene	ND		0.10	0.013	ug/L		08/08/18 10:13	08/14/18 02:33	1
Benzo[a]pyrene	ND		0.10	0.036	ug/L		08/08/18 10:13	08/14/18 02:33	1
Indeno[1,2,3-cd]pyrene	ND		0.10	0.0061	ug/L		08/08/18 10:13	08/14/18 02:33	1
Dibenz(a,h)anthracene	ND		0.10	0.0061	ug/L		08/08/18 10:13	08/14/18 02:33	1
Benzo[g,h,i]perylene	ND		0.20	0.078	ug/L		08/08/18 10:13	08/14/18 02:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	95		54 - 120	08/08/18 10:13	08/14/18 02:33	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.46	0.062	ug/L		08/13/18 09:26	08/29/18 04:17	1
PCB-1221	ND		0.46	0.076	ug/L		08/13/18 09:26	08/29/18 04:17	1
PCB-1232	ND		0.46	0.064	ug/L		08/13/18 09:26	08/29/18 04:17	1
PCB-1242	ND		0.46	0.060	ug/L		08/13/18 09:26	08/29/18 04:17	1
PCB-1248	ND		0.46	0.053	ug/L		08/13/18 09:26	08/29/18 04:17	1
PCB-1254	ND		0.46	0.076	ug/L		08/13/18 09:26	08/29/18 04:17	1
PCB-1260	ND		0.46	0.062	ug/L		08/13/18 09:26	08/29/18 04:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	43		38 - 140	08/13/18 09:26	08/29/18 04:17	1
Tetrachloro-m-xylene	82		40 - 120	08/13/18 09:26	08/29/18 04:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.21	J	1.0	0.19	mg/L			08/09/18 12:29	1

QC Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

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

Lab Sample ID: MB 580-281120/1-A
Matrix: Water
Analysis Batch: 281479

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 281120

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		0.10	0.020	ug/L		08/08/18 10:13	08/14/18 01:26	1
Acenaphthylene	ND		0.20	0.044	ug/L		08/08/18 10:13	08/14/18 01:26	1
Acenaphthene	ND		0.10	0.0060	ug/L		08/08/18 10:13	08/14/18 01:26	1
Anthracene	ND		0.10	0.0070	ug/L		08/08/18 10:13	08/14/18 01:26	1
Benzo[a]anthracene	ND		0.10	0.0060	ug/L		08/08/18 10:13	08/14/18 01:26	1
Chrysene	ND		0.10	0.0060	ug/L		08/08/18 10:13	08/14/18 01:26	1
Fluoranthene	ND		0.10	0.013	ug/L		08/08/18 10:13	08/14/18 01:26	1
Benzo[b]fluoranthene	ND		0.10	0.0060	ug/L		08/08/18 10:13	08/14/18 01:26	1
Fluorene	ND		0.10	0.013	ug/L		08/08/18 10:13	08/14/18 01:26	1
Benzo[k]fluoranthene	ND		0.10	0.013	ug/L		08/08/18 10:13	08/14/18 01:26	1
Benzo[a]pyrene	ND		0.10	0.035	ug/L		08/08/18 10:13	08/14/18 01:26	1
Naphthalene	ND		0.10	0.018	ug/L		08/08/18 10:13	08/14/18 01:26	1
Indeno[1,2,3-cd]pyrene	ND		0.10	0.0060	ug/L		08/08/18 10:13	08/14/18 01:26	1
Phenanthrene	ND		0.10	0.019	ug/L		08/08/18 10:13	08/14/18 01:26	1
Dibenz(a,h)anthracene	ND		0.10	0.0060	ug/L		08/08/18 10:13	08/14/18 01:26	1
Pyrene	ND		0.10	0.0090	ug/L		08/08/18 10:13	08/14/18 01:26	1
Benzo[g,h,i]perylene	ND		0.20	0.076	ug/L		08/08/18 10:13	08/14/18 01:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	95		54 - 120	08/08/18 10:13	08/14/18 01:26	1

Lab Sample ID: LCS 580-281120/2-A
Matrix: Water
Analysis Batch: 281479

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 281120

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Rec. Limits
2-Methylnaphthalene	2.00	1.49		ug/L		74	53 - 120
Acenaphthylene	2.00	1.53		ug/L		76	33 - 130
Acenaphthene	2.00	1.60		ug/L		80	64 - 120
Anthracene	2.00	1.47		ug/L		74	46 - 127
Benzo[a]anthracene	2.00	1.78		ug/L		89	70 - 120
Chrysene	2.00	1.91		ug/L		95	65 - 120
Fluoranthene	2.00	1.71		ug/L		85	72 - 120
Benzo[b]fluoranthene	2.00	2.01		ug/L		100	57 - 132
Fluorene	2.00	1.65		ug/L		82	67 - 120
Benzo[k]fluoranthene	2.00	1.86		ug/L		93	61 - 132
Benzo[a]pyrene	2.00	1.76		ug/L		88	23 - 141
Naphthalene	2.00	1.49		ug/L		74	58 - 120
Indeno[1,2,3-cd]pyrene	2.00	2.10		ug/L		105	53 - 133
Phenanthrene	2.00	1.57		ug/L		78	69 - 120
Dibenz(a,h)anthracene	2.00	2.08		ug/L		104	57 - 132
Pyrene	2.00	1.70		ug/L		85	57 - 133
Benzo[g,h,i]perylene	2.00	1.74		ug/L		87	52 - 129

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	87		54 - 120

TestAmerica Seattle

QC Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

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

Lab Sample ID: LCSD 580-281120/3-A
Matrix: Water
Analysis Batch: 281479

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 281120

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Methylnaphthalene	2.00	1.45		ug/L		73	53 - 120	2	23
Acenaphthylene	2.00	1.56		ug/L		78	33 - 130	2	34
Acenaphthene	2.00	1.62		ug/L		81	64 - 120	1	20
Anthracene	2.00	1.41		ug/L		71	46 - 127	4	19
Benzo[a]anthracene	2.00	1.79		ug/L		90	70 - 120	1	17
Chrysene	2.00	1.96		ug/L		98	65 - 120	3	19
Fluoranthene	2.00	1.76		ug/L		88	72 - 120	3	21
Benzo[b]fluoranthene	2.00	2.07		ug/L		103	57 - 132	3	25
Fluorene	2.00	1.66		ug/L		83	67 - 120	1	20
Benzo[k]fluoranthene	2.00	1.89		ug/L		95	61 - 132	1	22
Benzo[a]pyrene	2.00	1.64		ug/L		82	23 - 141	7	35
Naphthalene	2.00	1.46		ug/L		73	58 - 120	2	23
Indeno[1,2,3-cd]pyrene	2.00	2.11		ug/L		105	53 - 133	1	25
Phenanthrene	2.00	1.61		ug/L		80	69 - 120	2	21
Dibenz(a,h)anthracene	2.00	2.10		ug/L		105	57 - 132	1	24
Pyrene	2.00	1.74		ug/L		87	57 - 133	2	21
Benzo[g,h,i]perylene	2.00	1.76		ug/L		88	52 - 129	1	24

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Terphenyl-d14	82		54 - 120

Lab Sample ID: MB 580-281134/1-A
Matrix: Solid
Analysis Batch: 281321

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 281134

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.161	J	1.0	0.090	ug/Kg		08/08/18 11:34	08/10/18 13:10	1
Acenaphthylene	ND		1.0	0.10	ug/Kg		08/08/18 11:34	08/10/18 13:10	1
Acenaphthene	ND		1.0	0.12	ug/Kg		08/08/18 11:34	08/10/18 13:10	1
Anthracene	0.147	J	1.0	0.12	ug/Kg		08/08/18 11:34	08/10/18 13:10	1
Benzo[a]anthracene	0.325	J	1.0	0.15	ug/Kg		08/08/18 11:34	08/10/18 13:10	1
Chrysene	ND		1.0	0.30	ug/Kg		08/08/18 11:34	08/10/18 13:10	1
Fluoranthene	ND		1.0	0.28	ug/Kg		08/08/18 11:34	08/10/18 13:10	1
Benzo[b]fluoranthene	0.129	J	1.0	0.12	ug/Kg		08/08/18 11:34	08/10/18 13:10	1
Fluorene	ND		1.0	0.10	ug/Kg		08/08/18 11:34	08/10/18 13:10	1
Benzo[k]fluoranthene	0.195	J	1.0	0.12	ug/Kg		08/08/18 11:34	08/10/18 13:10	1
Benzo[a]pyrene	ND		1.0	0.080	ug/Kg		08/08/18 11:34	08/10/18 13:10	1
Naphthalene	ND		1.0	0.16	ug/Kg		08/08/18 11:34	08/10/18 13:10	1
Indeno[1,2,3-cd]pyrene	ND		1.0	0.12	ug/Kg		08/08/18 11:34	08/10/18 13:10	1
Phenanthrene	0.298	J	1.0	0.14	ug/Kg		08/08/18 11:34	08/10/18 13:10	1
Dibenz(a,h)anthracene	ND		1.0	0.14	ug/Kg		08/08/18 11:34	08/10/18 13:10	1
Pyrene	ND		1.0	0.19	ug/Kg		08/08/18 11:34	08/10/18 13:10	1
Benzo[g,h,i]perylene	ND		1.0	0.10	ug/Kg		08/08/18 11:34	08/10/18 13:10	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	106		57 - 120	08/08/18 11:34	08/10/18 13:10	1

TestAmerica Seattle

QC Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

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

Lab Sample ID: LCS 580-281134/2-A
Matrix: Solid
Analysis Batch: 281321

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 281134

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2-Methylnaphthalene	200	177		ug/Kg		89	68 - 120
Acenaphthylene	200	178		ug/Kg		89	68 - 120
Acenaphthene	200	182		ug/Kg		91	68 - 120
Anthracene	200	174		ug/Kg		87	73 - 125
Benzo[a]anthracene	200	190		ug/Kg		95	66 - 120
Chrysene	200	219		ug/Kg		109	69 - 120
Fluoranthene	200	181		ug/Kg		91	74 - 125
Benzo[b]fluoranthene	200	195		ug/Kg		97	63 - 121
Fluorene	200	184		ug/Kg		92	73 - 120
Benzo[k]fluoranthene	200	225		ug/Kg		112	63 - 123
Benzo[a]pyrene	200	215		ug/Kg		108	72 - 124
Naphthalene	200	170		ug/Kg		85	70 - 120
Indeno[1,2,3-cd]pyrene	200	217		ug/Kg		108	65 - 121
Phenanthrene	200	170		ug/Kg		85	73 - 120
Dibenz(a,h)anthracene	200	218		ug/Kg		109	70 - 125
Pyrene	200	179		ug/Kg		90	70 - 120
Benzo[g,h,i]perylene	200	196		ug/Kg		98	63 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	87		57 - 120

Lab Sample ID: MB 580-281228/1-A
Matrix: Solid
Analysis Batch: 281583

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 281228

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.201	J	1.0	0.090	ug/Kg		08/09/18 13:46	08/14/18 18:12	1
Acenaphthylene	ND		1.0	0.10	ug/Kg		08/09/18 13:46	08/14/18 18:12	1
Acenaphthene	ND		1.0	0.12	ug/Kg		08/09/18 13:46	08/14/18 18:12	1
Anthracene	ND		1.0	0.12	ug/Kg		08/09/18 13:46	08/14/18 18:12	1
Benzo[a]anthracene	0.156	J	1.0	0.15	ug/Kg		08/09/18 13:46	08/14/18 18:12	1
Chrysene	ND		1.0	0.30	ug/Kg		08/09/18 13:46	08/14/18 18:12	1
Fluoranthene	ND		1.0	0.28	ug/Kg		08/09/18 13:46	08/14/18 18:12	1
Benzo[b]fluoranthene	ND		1.0	0.12	ug/Kg		08/09/18 13:46	08/14/18 18:12	1
Fluorene	ND		1.0	0.10	ug/Kg		08/09/18 13:46	08/14/18 18:12	1
Benzo[k]fluoranthene	ND		1.0	0.12	ug/Kg		08/09/18 13:46	08/14/18 18:12	1
Benzo[a]pyrene	ND		1.0	0.080	ug/Kg		08/09/18 13:46	08/14/18 18:12	1
Naphthalene	0.239	J	1.0	0.16	ug/Kg		08/09/18 13:46	08/14/18 18:12	1
Indeno[1,2,3-cd]pyrene	0.302	J	1.0	0.12	ug/Kg		08/09/18 13:46	08/14/18 18:12	1
Phenanthrene	ND		1.0	0.14	ug/Kg		08/09/18 13:46	08/14/18 18:12	1
Dibenz(a,h)anthracene	0.204	J	1.0	0.14	ug/Kg		08/09/18 13:46	08/14/18 18:12	1
Pyrene	ND		1.0	0.19	ug/Kg		08/09/18 13:46	08/14/18 18:12	1
Benzo[g,h,i]perylene	0.189	J	1.0	0.10	ug/Kg		08/09/18 13:46	08/14/18 18:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	81		57 - 120	08/09/18 13:46	08/14/18 18:12	1

TestAmerica Seattle

QC Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

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

Lab Sample ID: LCS 580-281228/2-A
Matrix: Solid
Analysis Batch: 281974

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 281228

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2-Methylnaphthalene	200	216		ug/Kg		108	68 - 120
Acenaphthylene	200	192		ug/Kg		96	68 - 120
Acenaphthene	200	202		ug/Kg		101	68 - 120
Anthracene	200	218		ug/Kg		109	73 - 125
Benzo[a]anthracene	200	227		ug/Kg		114	66 - 120
Chrysene	200	203		ug/Kg		101	69 - 120
Fluoranthene	200	226		ug/Kg		113	74 - 125
Benzo[b]fluoranthene	200	213		ug/Kg		106	63 - 121
Fluorene	200	212		ug/Kg		106	73 - 120
Benzo[k]fluoranthene	200	219		ug/Kg		109	63 - 123
Benzo[a]pyrene	200	207		ug/Kg		103	72 - 124
Naphthalene	200	195		ug/Kg		98	70 - 120
Indeno[1,2,3-cd]pyrene	200	200		ug/Kg		100	65 - 121
Phenanthrene	200	201		ug/Kg		100	73 - 120
Dibenz(a,h)anthracene	200	214		ug/Kg		107	70 - 125
Pyrene	200	223		ug/Kg		111	70 - 120
Benzo[g,h,i]perylene	200	214		ug/Kg		107	63 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	102		57 - 120

Lab Sample ID: 580-79389-3 MS
Matrix: Solid
Analysis Batch: 281583

Client Sample ID: PDI-SC-S203-12to13.8
Prep Type: Total/NA
Prep Batch: 281228

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
2-Methylnaphthalene	0.59	J F2 B	231	220		ug/Kg	☼	95	68 - 120
Acenaphthylene	ND	F2	231	206		ug/Kg	☼	89	68 - 120
Acenaphthene	ND	F2	231	222		ug/Kg	☼	96	68 - 120
Anthracene	ND	F2	231	242		ug/Kg	☼	105	73 - 125
Benzo[a]anthracene	1.5	J F2 B	231	249		ug/Kg	☼	107	66 - 120
Chrysene	ND	F2	231	233		ug/Kg	☼	101	69 - 120
Fluoranthene	1.7	J F2	231	243		ug/Kg	☼	105	74 - 125
Benzo[b]fluoranthene	2.7	J F2	231	219		ug/Kg	☼	93	63 - 121
Fluorene	ND	F2	231	226		ug/Kg	☼	98	73 - 120
Benzo[k]fluoranthene	0.74	J F2	231	217		ug/Kg	☼	93	63 - 123
Benzo[a]pyrene	ND	F2	231	209		ug/Kg	☼	90	72 - 124
Naphthalene	1.2	J F2 B	231	187		ug/Kg	☼	81	70 - 120
Indeno[1,2,3-cd]pyrene	ND	F2	231	240		ug/Kg	☼	104	65 - 121
Phenanthrene	2.1	J F2	231	225		ug/Kg	☼	96	73 - 120
Dibenz(a,h)anthracene	ND	F2	231	255		ug/Kg	☼	111	70 - 125
Pyrene	2.2	J F2	231	243		ug/Kg	☼	104	70 - 120
Benzo[g,h,i]perylene	ND	F2	231	241		ug/Kg	☼	104	63 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
Terphenyl-d14	87		57 - 120

TestAmerica Seattle

QC Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

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

Lab Sample ID: 580-79389-3 MSD

Matrix: Solid

Analysis Batch: 281583

Client Sample ID: PDI-SC-S203-12to13.8

Prep Type: Total/NA

Prep Batch: 281228

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
2-Methylnaphthalene	0.59	J F2 B	259	261	F4	ug/Kg	☼	101	68 - 120	17	12
Acenaphthylene	ND	F2	259	239	F4	ug/Kg	☼	92	68 - 120	15	12
Acenaphthene	ND	F2	259	258	F4	ug/Kg	☼	100	68 - 120	15	12
Anthracene	ND	F2	259	288	F4	ug/Kg	☼	111	73 - 125	17	12
Benzo[a]anthracene	1.5	J F2 B	259	303	F4	ug/Kg	☼	116	66 - 120	20	14
Chrysene	ND	F2	259	284	F4	ug/Kg	☼	109	69 - 120	20	10
Fluoranthene	1.7	J F2	259	289	F4	ug/Kg	☼	111	74 - 125	17	13
Benzo[b]fluoranthene	2.7	J F2	259	263	F4	ug/Kg	☼	101	63 - 121	18	10
Fluorene	ND	F2	259	267	F4	ug/Kg	☼	103	73 - 120	16	13
Benzo[k]fluoranthene	0.74	J F2	259	267	F4	ug/Kg	☼	103	63 - 123	21	15
Benzo[a]pyrene	ND	F2	259	259	F4	ug/Kg	☼	100	72 - 124	21	12
Naphthalene	1.2	J F2 B	259	230	F4	ug/Kg	☼	88	70 - 120	20	12
Indeno[1,2,3-cd]pyrene	ND	F2	259	299	F4	ug/Kg	☼	115	65 - 121	22	15
Phenanthrene	2.1	J F2	259	268	F4	ug/Kg	☼	103	73 - 120	18	11
Dibenz(a,h)anthracene	ND	F2	259	309	F4	ug/Kg	☼	119	70 - 125	19	13
Pyrene	2.2	J F2	259	292	F4	ug/Kg	☼	112	70 - 120	18	12
Benzo[g,h,i]perylene	ND	F2	259	300	F4	ug/Kg	☼	116	63 - 120	22	14

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Terphenyl-d14	92		57 - 120

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 580-281230/1-A

Matrix: Solid

Analysis Batch: 281357

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 281230

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.0	0.34	ug/Kg		08/09/18 14:01	08/14/18 00:55	1
PCB-1221	ND		2.0	0.95	ug/Kg		08/09/18 14:01	08/14/18 00:55	1
PCB-1232	ND		2.0	0.47	ug/Kg		08/09/18 14:01	08/14/18 00:55	1
PCB-1242	ND		2.0	0.49	ug/Kg		08/09/18 14:01	08/14/18 00:55	1
PCB-1248	ND		2.0	0.16	ug/Kg		08/09/18 14:01	08/14/18 00:55	1
PCB-1254	ND		2.0	0.79	ug/Kg		08/09/18 14:01	08/14/18 00:55	1
PCB-1260	ND		2.0	0.34	ug/Kg		08/09/18 14:01	08/14/18 00:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	103		54 - 142	08/09/18 14:01	08/14/18 00:55	1
Tetrachloro-m-xylene	85		58 - 122	08/09/18 14:01	08/14/18 00:55	1

Lab Sample ID: LCS 580-281230/2-A

Matrix: Solid

Analysis Batch: 281357

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 281230

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
PCB-1016	10.0	9.63		ug/Kg		96	64 - 120
PCB-1260	10.0	8.93		ug/Kg		89	63 - 130

TestAmerica Seattle

QC Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 580-281230/2-A
Matrix: Solid
Analysis Batch: 281357

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 281230

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	108		54 - 142
Tetrachloro-m-xylene	81		58 - 122

Lab Sample ID: MB 580-281382/1-A
Matrix: Solid
Analysis Batch: 281783

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 281382

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.0	0.34	ug/Kg		08/12/18 10:39	08/17/18 03:28	1
PCB-1221	ND		2.0	0.95	ug/Kg		08/12/18 10:39	08/17/18 03:28	1
PCB-1232	ND		2.0	0.47	ug/Kg		08/12/18 10:39	08/17/18 03:28	1
PCB-1242	ND		2.0	0.49	ug/Kg		08/12/18 10:39	08/17/18 03:28	1
PCB-1248	ND		2.0	0.16	ug/Kg		08/12/18 10:39	08/17/18 03:28	1
PCB-1254	ND		2.0	0.79	ug/Kg		08/12/18 10:39	08/17/18 03:28	1
PCB-1260	ND		2.0	0.34	ug/Kg		08/12/18 10:39	08/17/18 03:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	82		54 - 142	08/12/18 10:39	08/17/18 03:28	1
Tetrachloro-m-xylene	71		58 - 122	08/12/18 10:39	08/17/18 03:28	1

Lab Sample ID: LCS 580-281382/2-A
Matrix: Solid
Analysis Batch: 281783

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 281382

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
PCB-1016	10.0	7.99		ug/Kg		80	64 - 120
PCB-1260	10.0	7.57		ug/Kg		76	63 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	79		54 - 142
Tetrachloro-m-xylene	56	X	58 - 122

Lab Sample ID: MB 580-281399/1-A
Matrix: Water
Analysis Batch: 282692

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 281399

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.45	0.061	ug/L		08/13/18 09:26	08/29/18 03:27	1
PCB-1221	ND		0.45	0.075	ug/L		08/13/18 09:26	08/29/18 03:27	1
PCB-1232	ND		0.45	0.063	ug/L		08/13/18 09:26	08/29/18 03:27	1
PCB-1242	ND		0.45	0.059	ug/L		08/13/18 09:26	08/29/18 03:27	1
PCB-1248	ND		0.45	0.052	ug/L		08/13/18 09:26	08/29/18 03:27	1
PCB-1254	ND		0.45	0.075	ug/L		08/13/18 09:26	08/29/18 03:27	1
PCB-1260	ND		0.45	0.061	ug/L		08/13/18 09:26	08/29/18 03:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	79		38 - 140	08/13/18 09:26	08/29/18 03:27	1

TestAmerica Seattle

QC Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 580-281399/1-A
Matrix: Water
Analysis Batch: 282692

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 281399

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene	92		40 - 120	08/13/18 09:26	08/29/18 03:27	1

Lab Sample ID: LCS 580-281399/2-A
Matrix: Water
Analysis Batch: 282692

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 281399

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
							Limits	RPD
PCB-1016	1.00	0.884		ug/L		88	50 - 121	
PCB-1260	1.00	0.853		ug/L		85	55 - 132	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	86		38 - 140
Tetrachloro-m-xylene	85		40 - 120

Lab Sample ID: LCSD 580-281399/3-A
Matrix: Water
Analysis Batch: 282692

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 281399

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD	Limit
							Limits	RPD		
PCB-1016	1.00	0.870		ug/L		87	50 - 121	2	25	
PCB-1260	1.00	0.849		ug/L		85	55 - 132	0	22	

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	80		38 - 140
Tetrachloro-m-xylene	88		40 - 120

Method: 9060_PSEP - TOC (Puget Sound)

Lab Sample ID: MB 580-281802/5
Matrix: Solid
Analysis Batch: 281802

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Organic Carbon - Duplicates	ND		2000	44	mg/Kg			08/15/18 15:19	1

Lab Sample ID: LCS 580-281802/6
Matrix: Solid
Analysis Batch: 281802

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
							Limits	RPD
Total Organic Carbon - Duplicates	4270	6300		mg/Kg		147	68 - 149	

TestAmerica Seattle

QC Sample Results

Client: AECOM
 Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Method: 9060_PSEP - TOC (Puget Sound) (Continued)

Lab Sample ID: LCSD 580-281802/7
Matrix: Solid
Analysis Batch: 281802

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	4270	5370		mg/Kg		126	68 - 149	16	32

Lab Sample ID: 580-79389-1 MS
Matrix: Solid
Analysis Batch: 281802

Client Sample ID: PDI-SC-S203-0to2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	35000	F2 F1	120000	166000		mg/Kg		109	68 - 149		

Lab Sample ID: 580-79389-1 MSD
Matrix: Solid
Analysis Batch: 281802

Client Sample ID: PDI-SC-S203-0to2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	35000	F2 F1	120000	115000	F1 F2	mg/Kg		66	68 - 149	36	32

Lab Sample ID: 580-79389-1 DU
Matrix: Solid
Analysis Batch: 281802

Client Sample ID: PDI-SC-S203-0to2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	35000	F2 F1		43200		mg/Kg				20	50

Lab Sample ID: 580-79389-1 TRL
Matrix: Solid
Analysis Batch: 281802

Client Sample ID: PDI-SC-S203-0to2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	TRL Result	TRL Qualifier	Unit	D	%Rec	%Rec. Limits	RSD	RSD Limit
Total Organic Carbon - Duplicates	35000	F2 F1		34800		mg/Kg				12	20

Lab Sample ID: MB 580-281803/3
Matrix: Solid
Analysis Batch: 281803

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	ND		2000	44	mg/Kg			08/16/18 16:03	1

Lab Sample ID: LCS 580-281803/4
Matrix: Solid
Analysis Batch: 281803

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	4270	4460		mg/Kg		104	68 - 149		

TestAmerica Seattle

QC Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Method: 9060_PSEP - TOC (Puget Sound) (Continued)

Lab Sample ID: LCSD 580-281803/5
Matrix: Solid
Analysis Batch: 281803

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	4270	4360		mg/Kg		102	68 - 149	2	32

Lab Sample ID: 580-79389-14 MS
Matrix: Solid
Analysis Batch: 281803

Client Sample ID: PDI-SC-S257-12to14.2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	43000		120000	171000		mg/Kg		106	68 - 149		

Lab Sample ID: 580-79389-14 MSD
Matrix: Solid
Analysis Batch: 281803

Client Sample ID: PDI-SC-S257-12to14.2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	43000		120000	165000		mg/Kg		102	68 - 149	3	32

Lab Sample ID: 580-79389-14 DU
Matrix: Solid
Analysis Batch: 281803

Client Sample ID: PDI-SC-S257-12to14.2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon - Duplicates	43000		42200		mg/Kg		1	50

Lab Sample ID: 580-79389-14 TRL
Matrix: Solid
Analysis Batch: 281803

Client Sample ID: PDI-SC-S257-12to14.2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	TRL Result	TRL Qualifier	Unit	D	RSD	RSD Limit
Total Organic Carbon - Duplicates	43000		42800		mg/Kg		0.8	20

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-79389-1 DU
Matrix: Solid
Analysis Batch: 281108

Client Sample ID: PDI-SC-S203-0to2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids	43.1		43.3		%		0.5	20

Lab Sample ID: 580-79389-12 DU
Matrix: Solid
Analysis Batch: 281200

Client Sample ID: PDI-SC-S257-8to10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids	61.0		60.0		%		2	20

TestAmerica Seattle

QC Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Method: Moisture 70C - Percent Moisture, 70 C

Lab Sample ID: 580-79389-4 DU
Matrix: Solid
Analysis Batch: 281685

Client Sample ID: PDI-SC-S203-2to4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids @ 70°C	54		54		%		0.2	20

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 580-281287/22
Matrix: Water
Analysis Batch: 281287

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.19	mg/L			08/09/18 12:29	1

Lab Sample ID: MB 580-281287/3
Matrix: Water
Analysis Batch: 281287

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.19	mg/L			08/09/18 12:29	1

Lab Sample ID: LCS 580-281287/23
Matrix: Water
Analysis Batch: 281287

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.75		mg/L		97	85 - 115

Lab Sample ID: LCS 580-281287/4
Matrix: Water
Analysis Batch: 281287

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.54		mg/L		95	85 - 115

Method: D7928/D6913 - ASTM D7928/D6913

Lab Sample ID: 580-79389-4 DU
Matrix: Solid
Analysis Batch: 281283

Client Sample ID: PDI-SC-S203-2to4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Gravel	0.0		0.0		%		NC	20
Coarse Sand	0.4		0.4		%		0	20
Medium Sand	6.2		6.3		%		2	20
Fine Sand	26.3		26.1		%		0.8	20
Silt	42.5		43.7		%		3	20
Clay	24.6		23.5		%		5	20

TestAmerica Seattle

Lab Chronicle

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S203-0to2

Date Collected: 08/03/18 14:05

Date Received: 08/06/18 15:00

Lab Sample ID: 580-79389-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281802	08/15/18 15:28	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282784	08/15/18 08:15	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281204	08/09/18 09:26	JKM	TAL SEA

Client Sample ID: PDI-SC-S203-0to2

Date Collected: 08/03/18 14:05

Date Received: 08/06/18 15:00

Lab Sample ID: 580-79389-1

Matrix: Solid

Percent Solids: 43.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281583	08/14/18 19:05	W1T	TAL SEA
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		100	281924	08/19/18 07:08	APR	TAL SEA

Client Sample ID: PDI-SC-S203-4to6

Date Collected: 08/03/18 14:15

Date Received: 08/06/18 15:00

Lab Sample ID: 580-79389-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281802	08/15/18 15:54	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282784	08/15/18 08:16	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281204	08/09/18 09:26	JKM	TAL SEA

Client Sample ID: PDI-SC-S203-4to6

Date Collected: 08/03/18 14:15

Date Received: 08/06/18 15:00

Lab Sample ID: 580-79389-2

Matrix: Solid

Percent Solids: 69.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		5	281583	08/14/18 19:30	W1T	TAL SEA
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		1	281357	08/14/18 02:41	CSC	TAL SEA

Client Sample ID: PDI-SC-S203-12to13.8

Date Collected: 08/03/18 14:35

Date Received: 08/06/18 15:00

Lab Sample ID: 580-79389-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281802	08/15/18 15:59	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: AECOM

TestAmerica Job ID: 580-79389-1

Project/Site: Portland Harbor Pre-Remedial Design

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture 70C		1	282784	08/15/18 08:17	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281204	08/09/18 09:26	JKM	TAL SEA

Client Sample ID: PDI-SC-S203-12to13.8

Lab Sample ID: 580-79389-3

Date Collected: 08/03/18 14:35

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 70.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		5	281583	08/14/18 19:56	W1T	TAL SEA
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		1	281357	08/14/18 02:59	CSC	TAL SEA

Client Sample ID: PDI-SC-S203-2to4

Lab Sample ID: 580-79389-4

Date Collected: 08/03/18 14:10

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281802	08/15/18 16:34	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281685	08/17/18 08:00	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281283	08/10/18 08:42	JKM	TAL SEA

Client Sample ID: PDI-SC-S203-2to4

Lab Sample ID: 580-79389-4

Date Collected: 08/03/18 14:10

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 51.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281134	08/08/18 11:34	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281321	08/10/18 18:58	ERZ	TAL SEA
Total/NA	Prep	3550B			281382	08/12/18 10:39	KMS	TAL SEA
Total/NA	Analysis	8082A		100	281783	08/17/18 04:04	CSC	TAL SEA

Client Sample ID: PDI-SC-S203-8to10

Lab Sample ID: 580-79389-5

Date Collected: 08/03/18 14:25

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281802	08/15/18 16:39	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281685	08/17/18 08:02	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281283	08/10/18 08:42	JKM	TAL SEA

Lab Chronicle

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S203-8to10

Lab Sample ID: 580-79389-5

Date Collected: 08/03/18 14:25

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 67.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281134	08/08/18 11:34	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		1	281321	08/10/18 19:20	ERZ	TAL SEA
Total/NA	Prep	3550B			281382	08/12/18 10:39	KMS	TAL SEA
Total/NA	Analysis	8082A		1	281783	08/17/18 04:21	CSC	TAL SEA

Client Sample ID: PDI-SC-S203-10to12

Lab Sample ID: 580-79389-6

Date Collected: 08/03/18 14:30

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281802	08/15/18 16:45	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281685	08/17/18 08:03	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281283	08/10/18 08:42	JKM	TAL SEA

Client Sample ID: PDI-SC-S203-10to12

Lab Sample ID: 580-79389-6

Date Collected: 08/03/18 14:30

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 68.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281134	08/08/18 11:34	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		1	281321	08/10/18 19:42	ERZ	TAL SEA
Total/NA	Prep	3550B			281382	08/12/18 10:39	KMS	TAL SEA
Total/NA	Analysis	8082A		1	281783	08/17/18 04:39	CSC	TAL SEA

Client Sample ID: PDI-SC-S257-0to2

Lab Sample ID: 580-79389-7

Date Collected: 08/06/18 09:40

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281802	08/15/18 16:50	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281685	08/17/18 08:04	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281283	08/10/18 08:42	JKM	TAL SEA

Client Sample ID: PDI-SC-S257-0to2

Lab Sample ID: 580-79389-7

Date Collected: 08/06/18 09:40

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 54.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281583	08/14/18 21:15	W1T	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S257-0to2

Lab Sample ID: 580-79389-7

Date Collected: 08/06/18 09:40

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 54.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		1	281357	08/14/18 03:16	CSC	TAL SEA

Client Sample ID: PDI-SC-S257-2to4

Lab Sample ID: 580-79389-8

Date Collected: 08/06/18 09:45

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281802	08/15/18 16:56	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281685	08/17/18 08:05	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281283	08/10/18 08:42	JKM	TAL SEA

Client Sample ID: PDI-SC-S257-2to4

Lab Sample ID: 580-79389-8

Date Collected: 08/06/18 09:45

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 57.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281583	08/14/18 21:41	W1T	TAL SEA
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		1	281357	08/14/18 03:34	CSC	TAL SEA

Client Sample ID: PDI-SC-S257-4to6

Lab Sample ID: 580-79389-9

Date Collected: 08/06/18 09:50

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281802	08/15/18 17:02	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281685	08/17/18 08:06	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281283	08/10/18 08:42	JKM	TAL SEA

Client Sample ID: PDI-SC-S257-4to6

Lab Sample ID: 580-79389-9

Date Collected: 08/06/18 09:50

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 57.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281583	08/14/18 22:07	W1T	TAL SEA
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		1	281357	08/14/18 03:52	CSC	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S257-6to8

Lab Sample ID: 580-79389-10

Date Collected: 08/06/18 09:55

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281802	08/15/18 17:08	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281685	08/17/18 08:07	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281283	08/10/18 08:42	JKM	TAL SEA

Client Sample ID: PDI-SC-S257-6to8

Lab Sample ID: 580-79389-10

Date Collected: 08/06/18 09:55

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 58.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281583	08/14/18 22:33	W1T	TAL SEA
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		1	281357	08/14/18 04:10	CSC	TAL SEA

Client Sample ID: PDI-SC-S257-6to8D

Lab Sample ID: 580-79389-11

Date Collected: 08/06/18 09:55

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281802	08/15/18 17:15	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282895	08/30/18 16:24	A1K	TAL SEA

Client Sample ID: PDI-SC-S257-6to8D

Lab Sample ID: 580-79389-11

Date Collected: 08/06/18 09:55

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 57.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281583	08/14/18 22:59	W1T	TAL SEA
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		1	281357	08/14/18 04:27	CSC	TAL SEA

Client Sample ID: PDI-SC-S257-8to10

Lab Sample ID: 580-79389-12

Date Collected: 08/06/18 10:00

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281802	08/15/18 17:22	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281200	08/09/18 09:18	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281685	08/17/18 08:08	A1K	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S257-8to10

Lab Sample ID: 580-79389-12

Date Collected: 08/06/18 10:00

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D7928/D6913		1	281283	08/10/18 08:42	JKM	TAL SEA

Client Sample ID: PDI-SC-S257-8to10

Lab Sample ID: 580-79389-12

Date Collected: 08/06/18 10:00

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 61.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281583	08/14/18 23:25	W1T	TAL SEA
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		1	281357	08/14/18 04:45	CSC	TAL SEA

Client Sample ID: PDI-SC-S257-10to12

Lab Sample ID: 580-79389-13

Date Collected: 08/06/18 10:05

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281802	08/15/18 17:28	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281685	08/17/18 08:09	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281283	08/10/18 08:42	JKM	TAL SEA

Client Sample ID: PDI-SC-S257-10to12

Lab Sample ID: 580-79389-13

Date Collected: 08/06/18 10:05

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 63.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281583	08/14/18 23:52	W1T	TAL SEA
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		1	281357	08/14/18 05:02	CSC	TAL SEA

Client Sample ID: PDI-SC-S257-12to14.2

Lab Sample ID: 580-79389-14

Date Collected: 08/06/18 10:10

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281803	08/16/18 16:12	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281685	08/17/18 08:10	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281283	08/10/18 08:42	JKM	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S257-12to14.2

Lab Sample ID: 580-79389-14

Date Collected: 08/06/18 10:10

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 60.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281583	08/15/18 00:18	W1T	TAL SEA
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		1	281357	08/14/18 05:20	CSC	TAL SEA

Client Sample ID: PDI-SC-S203-6to8

Lab Sample ID: 580-79389-15

Date Collected: 08/03/18 14:20

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281803	08/16/18 16:46	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281685	08/17/18 08:11	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281283	08/10/18 08:42	JKM	TAL SEA

Client Sample ID: PDI-SC-S203-6to8

Lab Sample ID: 580-79389-15

Date Collected: 08/03/18 14:20

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 67.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		5	281583	08/15/18 00:44	W1T	TAL SEA
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		1	281357	08/14/18 05:38	CSC	TAL SEA

Client Sample ID: PDI-SC-S254-10to12

Lab Sample ID: 580-79389-16

Date Collected: 08/06/18 12:15

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281803	08/16/18 16:51	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281685	08/17/18 08:12	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281283	08/10/18 08:42	JKM	TAL SEA

Client Sample ID: PDI-SC-S254-10to12

Lab Sample ID: 580-79389-16

Date Collected: 08/06/18 12:15

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 57.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281583	08/15/18 01:10	W1T	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S254-10to12

Lab Sample ID: 580-79389-16

Date Collected: 08/06/18 12:15

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 57.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		1	281357	08/14/18 05:55	CSC	TAL SEA

Client Sample ID: PDI-SC-S254-0.3to2

Lab Sample ID: 580-79389-17

Date Collected: 08/06/18 11:50

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281803	08/16/18 16:57	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281685	08/17/18 08:13	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281283	08/10/18 08:42	JKM	TAL SEA

Client Sample ID: PDI-SC-S254-0.3to2

Lab Sample ID: 580-79389-17

Date Collected: 08/06/18 11:50

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 53.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281583	08/15/18 01:36	W1T	TAL SEA
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		1	281357	08/14/18 06:13	CSC	TAL SEA

Client Sample ID: PDI-SC-S254-14to15.4

Lab Sample ID: 580-79389-18

Date Collected: 08/06/18 12:25

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281803	08/16/18 17:04	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281685	08/17/18 08:14	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281283	08/10/18 08:42	JKM	TAL SEA

Client Sample ID: PDI-SC-S254-14to15.4

Lab Sample ID: 580-79389-18

Date Collected: 08/06/18 12:25

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 60.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281583	08/15/18 02:02	W1T	TAL SEA
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		1	281357	08/14/18 06:31	CSC	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S254-2to4

Lab Sample ID: 580-79389-19

Date Collected: 08/06/18 11:55

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281803	08/16/18 17:10	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281685	08/17/18 08:15	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281283	08/10/18 08:42	JKM	TAL SEA

Client Sample ID: PDI-SC-S254-2to4

Lab Sample ID: 580-79389-19

Date Collected: 08/06/18 11:55

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 52.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281583	08/15/18 02:28	W1T	TAL SEA
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		1	281358	08/14/18 09:10	CSC	TAL SEA

Client Sample ID: PDI-SC-S254-8to10

Lab Sample ID: 580-79389-20

Date Collected: 08/06/18 12:10

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281803	08/16/18 17:16	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281685	08/17/18 08:16	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281283	08/10/18 08:42	JKM	TAL SEA

Client Sample ID: PDI-SC-S254-8to10

Lab Sample ID: 580-79389-20

Date Collected: 08/06/18 12:10

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 57.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281583	08/15/18 02:54	W1T	TAL SEA
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		1	281358	08/14/18 09:27	CSC	TAL SEA

Client Sample ID: PDI-SC-S254-4to6

Lab Sample ID: 580-79389-21

Date Collected: 08/06/18 12:00

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281803	08/16/18 17:22	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S254-4to6

Lab Sample ID: 580-79389-21

Date Collected: 08/06/18 12:00

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture 70C		1	281685	08/17/18 08:17	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281283	08/10/18 08:42	JKM	TAL SEA

Client Sample ID: PDI-SC-S254-4to6

Lab Sample ID: 580-79389-21

Date Collected: 08/06/18 12:00

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 57.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281583	08/15/18 03:20	W1T	TAL SEA
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		1	281358	08/14/18 09:45	CSC	TAL SEA

Client Sample ID: PDI-SC-S254-6to8

Lab Sample ID: 580-79389-22

Date Collected: 08/06/18 12:05

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281803	08/16/18 17:29	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282689	08/14/18 08:19	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281490	08/14/18 08:19	JKM	TAL SEA

Client Sample ID: PDI-SC-S254-6to8

Lab Sample ID: 580-79389-22

Date Collected: 08/06/18 12:05

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 56.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281583	08/15/18 03:46	W1T	TAL SEA
Total/NA	Prep	3550B			281230	08/09/18 14:01	TTN	TAL SEA
Total/NA	Analysis	8082A		1	281358	08/14/18 10:03	CSC	TAL SEA

Client Sample ID: PDI-SC-S254-12to14

Lab Sample ID: 580-79389-23

Date Collected: 08/06/18 12:20

Matrix: Solid

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281803	08/16/18 17:35	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281108	08/08/18 09:22	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282689	08/14/18 08:19	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281490	08/14/18 08:19	JKM	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: AECOM
 Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79389-1

Client Sample ID: PDI-SC-S254-12to14

Lab Sample ID: 580-79389-23

Date Collected: 08/06/18 12:20

Matrix: Solid

Date Received: 08/06/18 15:00

Percent Solids: 59.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281228	08/09/18 13:46	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281583	08/15/18 04:12	W1T	TAL SEA
Total/NA	Prep	3550B			281382	08/12/18 10:39	KMS	TAL SEA
Total/NA	Analysis	8082A		1	281783	08/17/18 04:57	CSC	TAL SEA

Client Sample ID: PDI-RB-SS-180806-1100

Lab Sample ID: 580-79389-24

Date Collected: 08/06/18 11:00

Matrix: Water

Date Received: 08/06/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			281120	08/08/18 10:13	JSM	TAL SEA
Total/NA	Analysis	8270D SIM		1	281479	08/14/18 02:33	TL1	TAL SEA
Total/NA	Prep	3510C			281399	08/13/18 09:26	JCM	TAL SEA
Total/NA	Analysis	8082A		1	282692	08/29/18 04:17	JES	TAL SEA
Total/NA	Analysis	SM 5310B		1	281287	08/09/18 12:29	ASJ	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: AECOM

TestAmerica Job ID: 580-79389-1

Project/Site: Portland Harbor Pre-Remedial Design

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-19
ANAB	DoD ELAP		L2236	01-19-19
ANAB	ISO/IEC 17025		L2236	01-19-19
California	State Program	9	2901	11-05-18
Montana (UST)	State Program	8	N/A	04-30-20
Nevada	State Program	9	WA000502019-1	07-31-19
Oregon	NELAP	10	WA100007	11-05-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-19

Sample Summary

Client: AECOM

TestAmerica Job ID: 580-79389-1

Project/Site: Portland Harbor Pre-Remedial Design

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-79389-1	PDI-SC-S203-0to2	Solid	08/03/18 14:05	08/06/18 15:00
580-79389-2	PDI-SC-S203-4to6	Solid	08/03/18 14:15	08/06/18 15:00
580-79389-3	PDI-SC-S203-12to13.8	Solid	08/03/18 14:35	08/06/18 15:00
580-79389-4	PDI-SC-S203-2to4	Solid	08/03/18 14:10	08/06/18 15:00
580-79389-5	PDI-SC-S203-8to10	Solid	08/03/18 14:25	08/06/18 15:00
580-79389-6	PDI-SC-S203-10to12	Solid	08/03/18 14:30	08/06/18 15:00
580-79389-7	PDI-SC-S257-0to2	Solid	08/06/18 09:40	08/06/18 15:00
580-79389-8	PDI-SC-S257-2to4	Solid	08/06/18 09:45	08/06/18 15:00
580-79389-9	PDI-SC-S257-4to6	Solid	08/06/18 09:50	08/06/18 15:00
580-79389-10	PDI-SC-S257-6to8	Solid	08/06/18 09:55	08/06/18 15:00
580-79389-11	PDI-SC-S257-6to8D	Solid	08/06/18 09:55	08/06/18 15:00
580-79389-12	PDI-SC-S257-8to10	Solid	08/06/18 10:00	08/06/18 15:00
580-79389-13	PDI-SC-S257-10to12	Solid	08/06/18 10:05	08/06/18 15:00
580-79389-14	PDI-SC-S257-12to14.2	Solid	08/06/18 10:10	08/06/18 15:00
580-79389-15	PDI-SC-S203-6to8	Solid	08/03/18 14:20	08/06/18 15:00
580-79389-16	PDI-SC-S254-10to12	Solid	08/06/18 12:15	08/06/18 15:00
580-79389-17	PDI-SC-S254-0.3to2	Solid	08/06/18 11:50	08/06/18 15:00
580-79389-18	PDI-SC-S254-14to15.4	Solid	08/06/18 12:25	08/06/18 15:00
580-79389-19	PDI-SC-S254-2to4	Solid	08/06/18 11:55	08/06/18 15:00
580-79389-20	PDI-SC-S254-8to10	Solid	08/06/18 12:10	08/06/18 15:00
580-79389-21	PDI-SC-S254-4to6	Solid	08/06/18 12:00	08/06/18 15:00
580-79389-22	PDI-SC-S254-6to8	Solid	08/06/18 12:05	08/06/18 15:00
580-79389-23	PDI-SC-S254-12to14	Solid	08/06/18 12:20	08/06/18 15:00
580-79389-24	PDI-RB-SS-180806-1100	Water	08/06/18 11:00	08/06/18 15:00

TestAmerica Seattle

**SUBSURFACE SEDIMENT
CHAIN OF CUSTODY**

TestAmerica-Seattle
5755 5th-Street-East
Tacoma, WA 98424-1317
Ph: 253-922-2310 Fax: 253-922-5047

Client Contact
AECOM
11111 3rd Ave Suite 1600
Seattle, WA 98101
Phone: (206) 438-2700 Fax: 1+(866) 495-5288
Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
Portland, OR

Project #: 60566335 Study: Subsurface Sediment
Sample Type:

Project Contact: Amy Dahl / Chelsey Cook
Tel: (206) 438-2261 / (206) 438-2010
Analysis Turnaround Time
Calendar (C) or Work Days (W) - W
 21 days
 Other

Site Contact: Jennifer Ray
Laboratory Contact: Elaine-Walker
Date: 8/6/18
Carrier: Courier
COC No. 1 of pages

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction			Sample Specific Notes:
							PCDDs 1613B	Archive	Grain size ASTM D7928/D6913	
PDI-SC-S203 - 0 to 2	8/3/2018	14:05	SC		ED	4	X	X	X	
PDI-SC-S203 - 4 to 6	8/3/2018	14:15	SC		ED	4	X	X	X	
PDI-SC-S203 - 12 to 13.8	8/3/2018	14:35	SC		ED	4	X	X	X	
PDI-SC-S203 - 2 to 4	8/3/2018	14:10	SC		ED	4	X	X	X	
PDI-SC-S203 - 8 to 10	8/3/2018	14:25	SC		ED	4	X	X	X	
PDI-SC-S203 - 10 to 12	8/3/2018	14:30	SC		ED	4	X	X	X	
PDI-SC-S257 - 0 to 2	8/6/2018	9:40	SC		ED	4	X	X	X	
PDI-SC-S257 - 2 to 4	8/6/2018	9:45	SC		ED	5	X	X	X	
PDI-SC-S257 - 4 to 6	8/6/2018	9:50	SC		ED	4	X	X	X	
PDI-SC-S257 - 6 to 8	8/6/2018	9:55	SC		ED	4	X	X	X	
PDI-SC-S257 - 6 to 8D	8/6/2018	9:55	SC		ED	3	X	X	X	
PDI-SC-S257 - 8 to 10	8/6/2018	10:00	SC		ED	4	X	X	X	



580-79389 Chain of Custody

Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Col
Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid
Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)

Special Instructions/QC Requirements & Comments: **Separate reports for each lab**

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
<i>[Signature]</i>	AECOM	8/6/18 1415	<i>[Signature]</i>	M.E.	8/16/18 1415
<i>[Signature]</i>	M.E.	8/16/18 1500	<i>[Signature]</i>	TAPOR	8/16/18 1500

24 ~~8/6/18~~ 8/16/18
3:00
4:03



SUBSURFACE SEDIMENT CHAIN OF CUSTODY

TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 Ph: 253-922-2310 Fax: 253-922-5047	Client Contact AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1+(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566335 Study: Subsurface Sediment Sample Type:	Project Contact: Amy Dahl / Chelsey Cook Tel: (206) 438-2261 / (206) 438-2010 Analysis Turnaround Time Calendar (C) or Work Days (W) <u>W</u> <input checked="" type="checkbox"/> 21 days <input type="checkbox"/> Other	Date: 8/6/18 Carrier: Courier COC No. 1 of pages	Laboratory Contact: Elaine-Walker Atterberg Limits ASTM D318 Total Solids 8082A, 8270D-SIM, 9060, 1603 PCB Analyzers, PAHs, Total Organic Carbon, Grain size ASTM D7928/D6913 Archive PCD/Fs 1613B Fraction																																																																																																								
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Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Col Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid Fractions: D = Dissolved, PRT = Particulate, T = Total (unfiltered)																																																																																																												
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24th 8/6/18



Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-79389-1

Login Number: 79389

List Source: TestAmerica Seattle

List Number: 1

Creator: Antonson, Angeline D

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

