TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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TestAmerica Job ID: 160-18615-1
Client Project/Site: ORNL Y-12 Outfall 200 Characterization

For:
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Authorized for release by:
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Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-18615-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

Client: Alliant Corporation

Project: ORNL Y-12 Outfall 200 Characterization

Report Number: 160-18615-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

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.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT
The samples were received on 8/12/2016 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.7º C, 0.8º C, 1.3º C and 1.8º C.

Receipt Exceptions
Two trip blanks were submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC).

1-250ml unporeserved poly for YMTFA 42 GW was received without a label. Bottle was received with another 250ml poly in the same bag and all other bottles were accounted for.

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. Client did not mark sample YMTFA 42 GW for all radiochemical analyses. Per client email, the lab was instructed to proceed.

TSS was also included in the analytical request per the sampling plan, but was not included on the COC.

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. Per client phone call on 8/18, the trip blank IDs

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Laboratory: TestAmerica St. Louis (Continued)

were changed for samples YMTFA 42 TB (160-18615-11) and YMTFA 43 TB (160-18615-12)

VOLATILE ORGANIC COMPOUNDS (GC/MS)
Samples YMTFA 9720 FB (160-18615-7), YMTFA 9720 TB (160-18615-8), YMTFA 43 GW (160-18615-9), YMTFA 42 GW (160-18615-10), YMTFA 42 TB (160-18615-11) and YMTFA 43 TB (160-18615-12) were analyzed for Volatile Organic Compounds (GC/MS) in accordance with EPA SW-846 Method 8260C. The samples were analyzed on 08/17/2016.

The following samples was analyzed at reduced volume due to high concentrations of target analytes: YMTFA 43 GW (160-18615-9), YMTFA 42 GW (160-18615-10), (160-18615-K-10 MS) and (160-18615-R-10 MSD).The reporting limits have been elevated by the appropriate factor. Due to high levels of non-target analytes in sample YMTFA 42 GW (160-18615-10) a lesser dilution was not performed.

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recovered outside control limits for the following analytes: Chloroethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

The matrix spike and/or matrix spike duplicate (MS/MSD) were outside control limits for 2-Chloroethyl vinyl ether, 1,2-Dichloroethene, Total, cis-1,2-Dichloroethene, Tetrachloroethene and Trichloroethene. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. 2-Chloroethyl vinyl ether exceeded the RPD limit.

The continuing calibration verification (CCV) recovered above the upper control limit for Vinyl chloride, Trichlorofluoromethane, Chloroethane, and 1,2-Dichloro-1,1,2,2-tetrachloroethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: (CCVIS 160-265132/5).

The continuing calibration verification (CCV) recovered outside acceptance criteria, low biased, for trans-1,4-Dichloro-2-butene, 2-Chloroethyl vinyl ether, and Acrolein. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported.(CCVIS 160-265132/5)

The following compounds did not meet the minimum relative response factor limits in the continuing calibration verification (CCV): Methyl acetate, 1,4-Dioxane, 2-Hexanone, Acetone, and n-Butanol. A low level CCV was analyzed at the base reporting limit of 1ug/L and the affected analytes were detected. Target analytes recovering above the reporting limit will be qualified and reported. (CCVIS 160-265132/5)

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

SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for semivolatile organic compounds (GC-MS) in accordance with EPA Method 625. The samples were prepared on 08/16/2016 and 08/18/2016 and analyzed on 08/23/2016 and 08/24/2016.

Analytical Batch 26068, Prep Batch 265033
Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD). An LCS/LCSD has been provided.

Elevated reporting limits are provided for the following sample due to insufficient sample provided for sample YMTFA 9720 FB (160-18615-7).

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recovered outside control limits for the following analyte: 4-Nitrophenol. This analyte was biased high in the LCS and LCSD and was not detected in the associated samples; therefore, the data have been reported.

Analytical Batch 26068, Prep Batch 265425
Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD). An LCS/LCSD has been provided.

Elevated reporting limits are provided for the following sample due to insufficient sample provided for sample YMTFA 42 GW (160-18615-10).

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Laboratory: TestAmerica St. Louis (Continued)

The laboratory control sample duplicate (LCSD) recovered outside control limits for the following analytes: 3,3'-Dichlorobenzidine and 4-Nitrophenol. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

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

CHLORINATED PESTICIDES
Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for chlorinated pesticides in accordance with EPA Method 608. The samples were prepared on 08/18/2016 and analyzed on 08/23/2016.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD). An LCS/LCSD has been provided.

The initial calibration verification (ICV) result was above the upper control limit for Toxaphene on the primary column. The ICV for Toxaphene was within the acceptable QC control limits on the secondary column. Sample results were ND on the secondary column; therefore confirmation is not needed. The secondary column results are reported. (ICV 160-259943/10)

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

POLYCHLORINATED BIPHENYLS (PCBS)
Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA Method 608. The samples were prepared on 08/18/2016 and analyzed on 08/23/2016.

Elevated reporting limits are provided for the following sample due to insufficient sample provided for sample YMTFA 42 GW (160-18615-10).

Compound DCB Decachlorobiphenyl (Surr) and the internal standard eluted outside the retention time window on the column for the following CCV: (CCVIS 160-266032/13). This retention time shift was taken into account when reviewing the samples for target compounds.

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

POLYCHLORINATED BIPHENYLS (PCBS)
Samples YMTFA70 SO 010 (160-18615-1), YMTFA69 SO 010 (160-18615-2), YMTFA67 SO 010 (160-18615-3), YMTFA62 SO 010 (160-18615-4), YMTFA61 SO 010 (160-18615-5) and YMTFA60 SO 010 (160-18615-6) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082. The samples were prepared on 08/23/2016 and analyzed on 08/24/2016.

DCB Decachlorobiphenyl (Surr) recovery for the following sample was outside control limits: (160-18571-C-1-S MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

EPA Method 8082/8082A requires a minimum of 3 peaks to be used for PCB quantitation. Due to the presence of matrix interferences in the following sample, less than 5 peaks were used for quantitation.(160-18571-C-1-Q)

The matrix spike duplicate (MSD) recovery was outside control limits for PCB-1260. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) and matrix spike (MS) recoveries were within acceptance limits. The matrix spike / matrix spike duplicate (MS/MSD) precision for PCB-1016 and PCB-1260 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample was within acceptance limits.

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

TCLP METALS (ICP)
Samples YMTFA70 SO 010 (160-18615-1), YMTFA69 SO 010 (160-18615-2), YMTFA67 SO 010 (160-18615-3), YMTFA62 SO 010 (160-18615-4), YMTFA61 SO 010 (160-18615-5) and YMTFA60 SO 010 (160-18615-6) were analyzed for TCLP metals (ICP) in accordance with EPA SW-846 Method 1311/6010C. The samples were leached on 08/18/2016, prepared on 08/23/2016 and analyzed on 08/24/2016.

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Laboratory: TestAmerica St. Louis (Continued)

The following sample(s) was diluted due to the nature of the sample matrix. Samples are high in salts: YMTFA70 SO 010 (160-18615-1), YMTFA69 SO 010 (160-18615-2), YMTFA67 SO 010 (160-18615-3), YMTFA62 SO 010 (160-18615-4), YMTFA61 SO 010 (160-18615-5), YMTFA60 SO 010 (160-18615-6), (160-18348-E-1-T MS ^), (160-18348-E-1-U MSD) and (160-18348-E-1-S SD ^). Elevated reporting limits (RLs) are provided.

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

METALS (ICPMS)
Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 08/19/2016 and analyzed on 09/01/2016.

Boron and Calcium were detected in method blank MB 160-265668/1-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.

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

TCLP MERCURY
Samples YMTFA70 SO 010 (160-18615-1), YMTFA69 SO 010 (160-18615-2), YMTFA67 SO 010 (160-18615-3), YMTFA62 SO 010 (160-18615-4), YMTFA61 SO 010 (160-18615-5) and YMTFA60 SO 010 (160-18615-6) were analyzed for TCLP mercury in accordance with EPA SW-846 Methods 1311/7470A. The samples were leached on 08/18/2016, and prepared and analyzed on 08/23/2016.

Mercury was detected in method blank LB 160-266071/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged.

The samples were re-digested/re-extracted due to the calibration curve and calibration QC expiring before analysis was able to be performed. The MS/MSD was therefore spiked after preservation. YMTFA70 SO 010 (160-18615-1), YMTFA69 SO 010 (160-18615-2), YMTFA67 SO 010 (160-18615-3), YMTFA62 SO 010 (160-18615-4), YMTFA61 SO 010 (160-18615-5) and YMTFA60 SO 010 (160-18615-6)

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

TOTAL MERCURY
Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared on 08/25/2016 and analyzed on 08/26/2016.

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

PH
Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for pH in accordance with EPA Method 150.1. The samples were analyzed on 08/12/2016.

The following samples are flagged with an "HF" flag to indicate that the hold time for this analysis is immediate and expired in the field: YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10).

The pH for the following sample fell outside of the 4 to 10 calibration range established by the pH 4,7, and 10 standards. The sample result is reportable since it is still within the pH 2-12 range described in the SOP: YMTFA 9720 FB (160-18615-7).

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

TOTAL SUSPENDED SOLIDS
Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for total suspended solids in accordance with EPA Method 160.2. The samples were analyzed on 08/17/2016.

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

1664A

Job ID: 160-18615-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for 1664A in accordance with EPA Method 1664A. The samples were prepared and analyzed on 09/01/2016.

Analysis for Hexane Extractable Material (HEM) was performed for the following samples: YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10). Since the HEM result(s) was below the reporting limit (RL), the result(s) for Silica Gel Treated - Hexane Extractable Material (SGT-HEM) was reported as a non-detect. All HEM quality control criteria were met.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD): YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10)

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

ANIONS, ION CHROMATOGRAPHY

Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for Anions, Ion Chromatography in accordance with EPA Method 300.0. The samples were analyzed on 08/12/2016.

Analytical Batch 264674

The following samples were diluted to bring the concentrations of target analytes within the calibration range: YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10). Elevated reporting limits (RLs) are provided.

Analytical Batch 264675

The following sample was analyzed at dilution for Nitrite, due to matrix interference from Chloride in the undiluted analysis that masked the Nitrite retention time (RT): YMTFA 43 GW (160-18615-9). An elevated reporting limit (RL) is provided.

The following matrix spike (MS) recovered outside control limits for Nitrite and Orthophosphate: (160-18615-H-9 MS). Sample matrix interference is suspected, because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

TOTAL RECOVERABLE PHENOLS

Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for total recoverable phenols in accordance with EPA Method 420.4. The samples were prepared on 08/29/2016 and analyzed on 08/30/2016.

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

CYANIDE, TOTAL

Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for Cyanide, Total in accordance with EPA SW-846 Method 9012B. The samples were prepared and analyzed on 08/24/2016.

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

TOTAL ORGANIC CARBON

Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060. The samples were analyzed on 08/31/2016.

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

PERCENT SOLIDS

Samples YMTFA70 SO 010 (160-18615-1), YMTFA69 SO 010 (160-18615-2), YMTFA67 SO 010 (160-18615-3), YMTFA62 SO 010 (160-18615-4), YMTFA61 SO 010 (160-18615-5) and YMTFA60 SO 010 (160-18615-6) were analyzed for percent solids in accordance with EPA Method 160.3 MOD. The samples were analyzed on 08/18/2016.

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

ACIDITY

Job ID: 160-18615-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for acidity in accordance with SM 2310B. The samples were analyzed on 08/19/2016.

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

GROSS ALPHA AND GROSS BETA RADIOACTIVITY
Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for Gross Alpha and Gross Beta Radioactivity in accordance with USEPA Method 900.0. The samples were prepared on 08/18/2016 and analyzed on 08/22/2016.

The gross alpha detection goal was not met for the following samples due to a reduction of the sample size attributed to high residual mass: YMTFA 43 GW (160-18615-9) and (600-135279-D-1-G DU). Analytical results are reported with the detection limit achieved.

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

CESIUM 137 AND OTHER GAMMA EMITTERS (GS)
Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for Cesium 137 and Other Gamma Emitters (GS) in accordance with USEPA Method 901.1. The samples were prepared on 08/18/2016 and analyzed on 08/18/2016 and 08/19/2016.

The sample duplicate had an MDC of 20.2 with a requested limit (RL) of 20.0 pCi/L for cesium-137. The calculated result (4.656 pCi/L) is well below the RL and the replicate error ratio is 0.08 with a limit of 1. The reproducibility is valid and the sample results are not believed to be affected by this statistical anomaly. (160-18615-N-7-B DU)

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

ISOTOPIC AMERICIUM 241 (ALPHA SPECTROMETRY)
Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for Isotopic Americium 241 (Alpha Spectrometry) in accordance with A_01R. The samples were prepared on 08/17/2016 and analyzed on 08/25/2016.

The samples were cloudy with a yellow/ brown color to them so they were weighed at a reduced aliquot. We used a lab control sample and lab control sample duplicate instead of a sample duplicate due to limited sample volume: YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10).

The detection goal of 1.00 pCi/L was not met for the following sample due to a reduced aliquot attributed the presence of matrix interferences: YMTFA 42 GW (160-18615-10). Analytical results are reported with the detection limit achieved.

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

ISOTOPIC NEPTUNIUM (ALPHA SPECTROMETRY)
Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for Isotopic Neptunium (Alpha Spectrometry) in accordance with DOE A01R_Np. The samples were prepared on 08/17/2016 and analyzed on 08/25/2016 and 08/26/2016.

The samples were cloudy with a yellow/ brown color to them so they were weighed at a reduced aliquot. We used a lab control sample and lab control sample duplicate instead of a sample duplicate due to limited sample volume: YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10).

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

ISOTOPIC PLUTONIUM (ALPHA SPECTROMETRY)
Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for Isotopic Plutonium (Alpha Spectrometry) in accordance with USDOE. The samples were prepared on 08/17/2016 and analyzed on 08/24/2016 and 08/25/2016.

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Laboratory: TestAmerica St. Louis (Continued)

The samples were cloudy with a yellow/ brown color to them so they were weighed at a reduced aliquot. We used a lab control sample and lab control sample duplicate instead of a sample duplicate due to limited sample volume: YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10).

The detection goal of 1.00 pCi/L was not met for the following sample due to a reduced aliquot attributed to the presence of matrix interferences: YMTFA 42 GW (160-18615-10). Analytical results are reported with the detection limit achieved.

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

ISOTOPIC THORIUM (ALPHA SPECTROMETRY)
Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for Isotopic Thorium (Alpha Spectrometry) in accordance with DOE. The samples were prepared on 08/17/2016 and analyzed on 08/25/2016 and 08/26/2016.

The samples were cloudy with a yellow/ brown color to them so they were weighed at a reduced aliquot. We used a lab control sample and lab control sample duplicate instead of a sample duplicate due to limited sample volume: YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10).

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

ISOTOPIC URANIUM (ALPHA SPECTROMETRY)
Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for Isotopic Uranium (Alpha Spectrometry) in accordance with DOE. The samples were prepared on 08/17/2016 and analyzed on 08/25/2016.

The samples were cloudy with a yellow/ brown color to them so they were weighed at a reduced aliquot. We used a lab control sample and lab control sample duplicate instead of a sample duplicate due to limited sample volume: YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10).

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

TRITIUM
Samples YMTFA70 SO 010 (160-18615-1), YMTFA69 SO 010 (160-18615-2), YMTFA67 SO 010 (160-18615-3), YMTFA62 SO 010 (160-18615-4), YMTFA61 SO 010 (160-18615-5) and YMTFA60 SO 010 (160-18615-6) were analyzed for Tritium in accordance with DOE. The samples were prepared on 08/31/2016 and analyzed on 08/31/2016 and 09/01/2016.

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

STRONTIUM-90 (GFPC)
Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for Strontium-90 (GFPC) in accordance with EPA 905.0. The samples were prepared on 08/18/2016 and 08/26/2016 and analyzed on 08/26/2016 and 09/06/2016.

Prep Batch 160-265450
The following sample was prepared at a reduced aliquot due to sediment: YMTFA 42 GW (160-18615-10). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were used instead of a sample duplicate (DUP) to demonstrate batch precision to avoid matrix interference with homogeneity.

Prep Batch 160-266822
Insufficient sample volume was available to perform a sample duplicate (DUP) for the following sample due to re-analysis: YMTFA 9720 FB (160-18615-7). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Sample YMTFA 43 GW (160-18615-9) was prepared at a reduced aliquot due to sediment. The sample was not used as a sample duplicate (DUP) to avoid matrix interference with homogeneity. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Job ID: 160-18615-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

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

TOTAL BETA STRONTIUM(GFPC)
Samples YMTFA70 SO 010 (160-18615-1), YMTFA69 SO 010 (160-18615-2), YMTFA67 SO 010 (160-18615-3), YMTFA62 SO 010 (160-18615-4), YMTFA61 SO 010 (160-18615-5) and YMTFA60 SO 010 (160-18615-6) were analyzed for Total Beta Strontium (GFPC) in accordance with SR-03-RC. The samples were dried on 08/12/2016, prepared on 08/24/2016 and analyzed on 08/27/2016.

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

TECHNETIUM-99 (LSC)
Samples YMTFA70 SO 010 (160-18615-1), YMTFA69 SO 010 (160-18615-2), YMTFA67 SO 010 (160-18615-3), YMTFA62 SO 010 (160-18615-4), YMTFA61 SO 010 (160-18615-5) and YMTFA60 SO 010 (160-18615-6) were analyzed for Technetium-99 (LSC) in accordance with TC_02_RC. The samples were prepared on 08/18/2016 and analyzed on 08/23/2016.

Prep Batch 160-265402
The following samples, including the BKG, counted off the upper end of the quench curve parameter (tSIE): YMTFA70 SO 010 (160-18615-1), YMTFA69 SO 010 (160-18615-2), YMTFA67 SO 010 (160-18615-3), YMTFA62 SO 010 (160-18615-4), YMTFA61 SO 010 (160-18615-5), YMTFA60 SO 010 (160-18615-6), (LCS 160-265402/2-A), (MB 160-265402/1-A), and (160-18591-C-6-E DU). A small amount (10 uL) of quenching agent (nitromethane) was added to the affected vials and recounted. The recount results were within the quench curve parameter and are reported.

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

TECHNETIUM-99 (LSC)
Samples YMTFA 9720 FB (160-18615-7), YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10) were analyzed for Technetium-99 (LSC) in accordance with TC_02_RC. The samples were prepared on 08/18/2016 and analyzed on 08/23/2016.

Prep Batch 160-265415
Samples were filtered to remove sediment before being processed through Teva cartridges: YMTFA 43 GW (160-18615-9) and YMTFA 42 GW (160-18615-10).

Sample was reduced to hight amounts of sediment present and did not meet the detection goal of 3.00 pCi/L due to the reduced sample volume. The data have been qualified and reported: YMTFA 43 GW (160-18615-9).

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

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone (314) 298-8566 Fax (314) 298-8757

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information
Client Contact: Matt Frost
Company: Alliant Corporation
Address: 320 N Cedar Bluff Road Suite 200
City: Knoxville
State, Zip: TN, 37923
Phone:
Email: mfrost@alliantcorp.com
Project Name: ORNL Y-12 Outfall 200 Characterization
Site: OUTFall 200

Sampler: R. Stout
Phone: 865-255-5540
Lab PM: Gish, Erika K
E-Mail: erika.gish@testamericainc.com
Carrier Tracking No(s):
COC No: 160-4416-2171.2
Page: Page 2 of 4
Job #:
Due Date Requested:
TAT Requested (days): by contract
PO #: 16-PO-001581
WO #:
Project #: 16005502
SSOW#:

Analysis Requested

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	A_01_R_Am_Cm, A01R_Np, A01R_Pu, A01R_Th, A01R_U, SR_03_RC_Tot_Sr, TC_02_RC (HNO3) 1-L poly	G_01_1, DOE_H3_04_RC (HNO3) 1-L poly	~~8260C - TCLP VOC~~ (HCL) 8260B	~~8151A - TCLP Herbicides~~ (2-8°C) Phenolics/TOC (H2SO4)	GA_01_R_Ra - Gamma - Radium-226/228 S 02 M (HNO3)	8082A - PCB	8270D - TCLP BNAs & Pesticides	6010C, 7470A (HNO3)	8082A - PCBs	TCLP metals	Radionuclides	Oil & Grease (HCL)	Cyanide (NaOH)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	N	N	N	N	N	N	N						
YMTFA 70 SO 010	8-11-16	0855	C	S											X	X	X				Soil
YMTFA 69 SO 010		0934													X	X	X				
YMTFA 67 SO 010		1043													X	X	X				
YMTFA 62 SO 010		1240													X	X	X				
YMTFA 61 SO 010		1330													X	X	X				
YMTFA 60 SO 010		1450													X	X	X				
~~YMTFA 9720 FB~~		~~1520~~	~~G~~	~~W~~			~~3~~	~~3~~	~~2~~		~~2~~										~~RS 8-11-16~~
YMTFA 9720 FB		1520	G	W			3	3	2	1	1	1	2	1	~~1~~ 5			1	1	2	Water (Field Blank)
YMTFA 9720 TB		1520							2												Trip Blank
YMTFA 43 GW		1300					2	2	2	1	1	1	2	1				1	1	2	
YMTFA 42 GW		1500	G	W					3	1	1	1	2	1				1	1	2	

160-18615 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	8-11-16/1700	Alliant	[signature]	8/12/16 0915	

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

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone (314) 298-8566 Fax (314) 298-8757

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Stout	Lab PM: Gish, Erika K	Carrier Tracking No(s):	COC No: 160-4416-2171.2
Client Contact: Matt Frost	Phone: 865-255-5540	E-Mail: erika.gish@testamericainc.com		Page: Page 2 of 4
Company: Alliant Corporation				Job #:
Address: 320 N Cedar Bluff Road Suite 200	Due Date Requested:			
City: Knoxville	TAT Requested (days): by contract			
State, Zip: TN, 37923				
Phone:	PO #: 16-PO-001581			
Email: mfrost@alliantcorp.com	WO #:			
Project Name: ORNL Y-12 Outfall 200 Characterization	Project #: 16005502			
Site: Outfall 200	SSOW#:			

Analysis Requested

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	A_01_R_Am_Cm, A01R_Np, A01R_Pu, A01R_Th, A01R_U, SR_03_RC_Tot_Sr, TC_02_RC (HNO3) 1-L poly	G_01_1, DOE_H3_04_RC (HNO3) 1-L poly	8260C - TCLP VOC (HCL) 8260B	8151A - TCLP Herbicides (25ml) Phenolics/TOC (H2SO4)	GA_01_R_Ra - Gamma - Radium-226/228 5 gal (HNO3)	8082A - PCB	8270D - TCLP BNAs & Pesticides	6010C, 7470A (HNO3)	8082A - PCBs	TCLP metals	Radionuclides	Oil & Grease (HCL)	Cyanide (NaOH)	Total Number of containers Acidify Anions	Special Instructions/Note:
			Preservation Code:				N	N	N	N	N	N	N	N	N						
YMTFA70 SO 010	8-11-16	0855	C	S											X	X	X				Soil
YMTFA69 SO 010		0934													X	X	X				
YMTFA67 SO 010		1043													X	X	X				
YMTFA62 SO 010		1240													X	X	X				
YMTFA61 SO 010		1330													X	X	X				
YMTFA60 SO 010		1450													X	X	X				
~~YMTFA9720 FB~~		~~1520~~	~~G~~	~~W~~			~~3~~	~~3~~	~~2~~		~~2~~										RS 8-11-16
YMTFA9720 FB		1520	G	W			3	3	2	1	1	1	2	1	~~X~~			1	1	2	Water (Field Blank)
YMTFA9720 TB		1520							2												Trip Blank
YMTFA43 GW		1300					2	2	2	1	1	1	2	1				1	1	2	
YMTFA42 GW		1500	G	W					3	1	1	1	2	1				1	1	2	

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	8-11-16/1700	Alliant	[signature]	8/12/16 0915	

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

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone (314) 298-8566 Fax (314) 298-8757

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Gish, Erika K	Carrier Tracking No(s):	COC No: 160-91341.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: erika.gish@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 160-18615-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 8/24/2016			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: ORNL Y-12 Outfall 200 Characterization	Project #: 16005502			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SM2310B	1664A/1664A_SPE	420.4/Distill_Phenol	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
YMTFA 9720 FB (160-18615-7)	8/11/16	15:20 Eastern		Water			X	X	X	3	
YMTFA 43 GW (160-18615-9)	8/11/16	13:00 Eastern		Water			X	X	X	3	
YMTFA 42 GW (160-18615-10)	8/11/16	15:00 Eastern		Water			X	X	X	3	

Possible Hazard Identification
Unconfirmed

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

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 1

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by: B	Date/Time: 8/16/17 1700	Company	Received by: Reed Pitts	Date/Time: 8-17-16 0930	Company TAD
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 0.3 IR S 0.0 RP 8-17-16		

Login Sample Receipt Checklist

Client: Alliant Corporation

Job Number: 160-18615-1

Login Number: 18615
List Number: 1
Creator: Daniels, Brian J

List Source: TestAmerica St. Louis

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.	N/A	
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.	False	TBs were received not listed on the COC.
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.	True	

Login Sample Receipt Checklist

Client: Alliant Corporation

Job Number: 160-18615-1

Login Number: 18615
List Number: 2
Creator: Pottruff, Reed W

List Source: TestAmerica Denver
List Creation: 08/17/16 01:33 PM

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?	N/A	Received project as a subcontract.
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
N	LCS, LCSD: Recovery exceeds upper or lower control limits.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
N	MS, MSD: Spike recovery is outside acceptance limits.
*	MS/MSD RPD exceeded the control limit

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
N	LCS, LCSD: Recovery exceeds upper or lower control limits.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

GC Semi VOA

Qualifier	Qualifier Description
S	Surrogate is outside control limits
*	MS/MSD RPD exceeded the control limit
N	MS, MSD: Spike recovery is outside acceptance limits.
U	Undetected at the Limit of Detection.
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

HPLC/IC

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.
N	MS, MSD: Spike recovery is outside acceptance limits.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

Rad

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Method Summary

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GC/MS)	SW846	TAL SL
625	Semivolatile Organic Compounds (GC/MS)	40CFR136A	TAL SL
608	Polychlorinated Biphenyls (PCBs) (GC)	40CFR136A	TAL SL
608	Organochlorine Pesticides in Water	40CFR136A	TAL SL
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL SL
300.0	Anions, Ion Chromatography	MCAWW	TAL SL
6010C	Metals (ICP)	SW846	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
7470A	Mercury (CVAA)	SW846	TAL SL
150.1	pH (Electrometric)	MCAWW	TAL SL
160.2	Solids, Total Suspended (TSS)	MCAWW	TAL SL
1664A	HEM and SGT-HEM	1664A	TAL DEN
420.4	Phenolics, Total Recoverable	MCAWW	TAL DEN
9012B	Cyanide, Total andor Amenable	SW846	TAL SL
9060	Organic Carbon, Total (TOC)	SW846	TAL SL
Moisture	Percent Moisture	EPA	TAL SL
SM 2310B	Acidity	SM	TAL DEN
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	TAL SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	TAL SL
905	Strontium-90 (GFPC)	EPA	TAL SL
A-01-R	Isotopic Curium and/or Americium 241 (Alpha Spectrometry)	DOE	TAL SL
A-01-R	Isotopic Neptunium (Alpha Spectrometry)	DOE	TAL SL
A-01-R	Isotopic Thorium (Alpha Spectrometry)	DOE	TAL SL
A-01-R	Isotopic Plutonium (Alpha Spectrometry)	DOE	TAL SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	TAL SL
H3-04-RC	Tritium (LSC)	DOE	TAL SL
SR-03-RC	Total Beta Strontium (GFPC)	DOE	TAL SL
TC-02-RC	Technetium-99 (LSC)	DOE	TAL SL

Protocol References:

1664A = EPA-821-98-002

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-18615-1	YMTFA70 SO 010	Solid	08/11/16 08:55	08/12/16 09:15
160-18615-2	YMTFA69 SO 010	Solid	08/11/16 09:34	08/12/16 09:15
160-18615-3	YMTFA67 SO 010	Solid	08/11/16 10:43	08/12/16 09:15
160-18615-4	YMTFA62 SO 010	Solid	08/11/16 12:40	08/12/16 09:15
160-18615-5	YMTFA61 SO 010	Solid	08/11/16 13:30	08/12/16 09:15
160-18615-6	YMTFA60 SO 010	Solid	08/11/16 14:50	08/12/16 09:15
160-18615-7	YMTFA 9720 FB	Water	08/11/16 15:20	08/12/16 09:15
160-18615-8	YMTFA 9720 TB	Water	08/11/16 15:20	08/12/16 09:15
160-18615-9	YMTFA 43 GW	Water	08/11/16 13:00	08/12/16 09:15
160-18615-10	YMTFA 42 GW	Water	08/11/16 15:00	08/12/16 09:15
160-18615-11	YMTFA 42 TB	Water	08/11/16 15:00	08/12/16 09:15
160-18615-12	YMTFA 43 TB	Water	08/11/16 00:00	08/12/16 09:15

Detection Summary

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA70 SO 010 — Lab Sample ID: 160-18615-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.98		0.63	0.19	mg/L	5		6010C	TCLP
Mercury	0.00013	J B	0.0010	0.000079	mg/L	1		7470A	TCLP

Client Sample ID: YMTFA69 SO 010 — Lab Sample ID: 160-18615-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.46	J	0.63	0.19	mg/L	5		6010C	TCLP
Mercury	0.00012	J B	0.0010	0.000079	mg/L	1		7470A	TCLP

Client Sample ID: YMTFA67 SO 010 — Lab Sample ID: 160-18615-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.91		0.63	0.19	mg/L	5		6010C	TCLP
Lead	0.045	J	0.13	0.038	mg/L	5		6010C	TCLP
Mercury	0.00012	J B	0.0010	0.000079	mg/L	1		7470A	TCLP

Client Sample ID: YMTFA62 SO 010 — Lab Sample ID: 160-18615-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.54	J	0.63	0.19	mg/L	5		6010C	TCLP
Mercury	0.00013	J B	0.0010	0.000079	mg/L	1		7470A	TCLP

Client Sample ID: YMTFA61 SO 010 — Lab Sample ID: 160-18615-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.50	J	0.63	0.19	mg/L	5		6010C	TCLP
Mercury	0.00014	J B	0.0010	0.000079	mg/L	1		7470A	TCLP

Client Sample ID: YMTFA60 SO 010 — Lab Sample ID: 160-18615-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.26	J	0.63	0.19	mg/L	5		6010C	TCLP
Mercury	0.00015	J B	0.0010	0.000079	mg/L	1		7470A	TCLP

Client Sample ID: YMTFA 9720 FB — Lab Sample ID: 160-18615-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloroform	0.11	J	1.0	0.10	ug/L	1		8260C	Total/NA
Nitrate as N	0.061		0.020	0.0070	mg/L	1		300.0	Total/NA
Boron	0.045	J B	0.10	0.021	mg/L	2		6020A	Total/NA
pH	3.7	HF	0.1	0.1	SU	1		150.1	Total/NA
Cyanide, Total	0.0043	J	0.010	0.0031	mg/L	1		9012B	Total/NA

Client Sample ID: YMTFA 9720 TB — Lab Sample ID: 160-18615-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tetrahydrofuran	6.1	J	10	0.50	ug/L	1		8260C	Total/NA

Client Sample ID: YMTFA 43 GW — Lab Sample ID: 160-18615-9

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA 43 GW (Continued) — Lab Sample ID: 160-18615-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.35	J	1.0	0.070	ug/L	1		8260C	Total/NA
1,2-Dichloroethene, Total	140		20	1.4	ug/L	10		8260C	Total/NA
Chloroform	0.14	J	1.0	0.10	ug/L	1		8260C	Total/NA
Tetrachloroethene	25		1.0	0.18	ug/L	1		8260C	Total/NA
Toluene	0.26	J	1.0	0.14	ug/L	1		8260C	Total/NA
trans-1,2-Dichloroethene	3.0		1.0	0.10	ug/L	1		8260C	Total/NA
Trichloroethene	15		1.0	0.25	ug/L	1		8260C	Total/NA
Vinyl chloride	1.6	J	2.0	0.19	ug/L	1		8260C	Total/NA
Bromide	0.30		0.25	0.025	mg/L	1		300.0	Total/NA
Nitrate as N	0.014	J	0.020	0.0070	mg/L	1		300.0	Total/NA
Fluoride	0.054	J	0.10	0.010	mg/L	1		300.0	Total/NA
Sulfate - DL	33		5.0	0.50	mg/L	10		300.0	Total/NA
Chloride - DL	23		2.0	0.20	mg/L	10		300.0	Total/NA
Aluminum	13		0.050	0.017	mg/L	2		6020A	Total/NA
Arsenic	0.0047	J	0.010	0.0012	mg/L	2		6020A	Total/NA
Barium	0.35		0.0020	0.00022	mg/L	2		6020A	Total/NA
Beryllium	0.0014		0.00050	0.00035	mg/L	2		6020A	Total/NA
Boron	0.10	B	0.10	0.021	mg/L	2		6020A	Total/NA
Cadmium	0.00047	J	0.00050	0.00010	mg/L	2		6020A	Total/NA
Calcium	200	B	0.10	0.068	mg/L	2		6020A	Total/NA
Chromium	0.019		0.010	0.0010	mg/L	2		6020A	Total/NA
Copper	0.017		0.0010	0.00068	mg/L	2		6020A	Total/NA
Iron	13		0.050	0.033	mg/L	2		6020A	Total/NA
Lead	0.026		0.0030	0.00017	mg/L	2		6020A	Total/NA
Lithium	0.028		0.0050	0.0011	mg/L	2		6020A	Total/NA
Nickel	0.019		0.0050	0.00080	mg/L	2		6020A	Total/NA
Potassium	5.3		0.10	0.042	mg/L	2		6020A	Total/NA
Selenium	0.0025	J	0.0050	0.0016	mg/L	2		6020A	Total/NA
Sodium	10		0.050	0.024	mg/L	2		6020A	Total/NA
Uranium	0.0055		0.0010	0.00023	mg/L	2		6020A	Total/NA
Zinc	0.096		0.020	0.0093	mg/L	2		6020A	Total/NA
Mercury	0.00063		0.00020	0.000060	mg/L	1		7470A	Total/NA
pH	6.8	HF	0.1	0.1	SU	1		150.1	Total/NA
Total Suspended Solids	560		4.0	4.0	mg/L	1		160.2	Total/NA
Phenols, Total	0.0079	J	0.010	0.0068	mg/L	1		420.4	Total/NA
Total Organic Carbon	2.2		1.0	0.72	mg/L	1		9060	Total/NA

Client Sample ID: YMTFA 42 GW — Lab Sample ID: 160-18615-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichloroethene, Total	230		20	1.4	ug/L	10		8260C	Total/NA
Tetrachloroethene	63		10	1.8	ug/L	10		8260C	Total/NA
trans-1,2-Dichloroethene	3.7	J	10	1.0	ug/L	10		8260C	Total/NA
Trichloroethene	48		10	2.5	ug/L	10		8260C	Total/NA
Vinyl chloride	5.3	J	20	1.9	ug/L	10		8260C	Total/NA
Di-n-butyl phthalate	1.2	J	2.3	0.23	ug/L	1		625	Total/NA
Bromide	0.32		0.25	0.025	mg/L	1		300.0	Total/NA
Nitrate as N	0.020		0.020	0.0070	mg/L	1		300.0	Total/NA
Fluoride	0.062	J	0.10	0.010	mg/L	1		300.0	Total/NA
Nitrite as N	0.071		0.020	0.0070	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA 42 GW (Continued) — Lab Sample ID: 160-18615-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate - DL	35		5.0	0.50	mg/L	10		300.0	Total/NA
Chloride - DL	23		2.0	0.20	mg/L	10		300.0	Total/NA
Aluminum	1.7		0.050	0.017	mg/L	2		6020A	Total/NA
Barium	0.10		0.0020	0.00022	mg/L	2		6020A	Total/NA
Boron	0.11	B	0.10	0.021	mg/L	2		6020A	Total/NA
Calcium	68	B	0.10	0.068	mg/L	2		6020A	Total/NA
Chromium	0.0022	J	0.010	0.0010	mg/L	2		6020A	Total/NA
Copper	0.0019		0.0010	0.00068	mg/L	2		6020A	Total/NA
Iron	1.4		0.050	0.033	mg/L	2		6020A	Total/NA
Lead	0.0012	J	0.0030	0.00017	mg/L	2		6020A	Total/NA
Lithium	0.0030	J	0.0050	0.0011	mg/L	2		6020A	Total/NA
Nickel	0.0017	J	0.0050	0.00080	mg/L	2		6020A	Total/NA
Potassium	2.7		0.10	0.042	mg/L	2		6020A	Total/NA
Sodium	12		0.050	0.024	mg/L	2		6020A	Total/NA
Uranium	0.0011		0.0010	0.00023	mg/L	2		6020A	Total/NA
pH	6.7	HF	0.1	0.1	SU	1		150.1	Total/NA
Total Suspended Solids	16		4.0	4.0	mg/L	1		160.2	Total/NA
Total Organic Carbon	1.9		1.0	0.72	mg/L	1		9060	Total/NA

Client Sample ID: YMTFA 42 TB — Lab Sample ID: 160-18615-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tetrahydrofuran	6.8	J	10	0.50	ug/L	1		8260C	Total/NA

Client Sample ID: YMTFA 43 TB — Lab Sample ID: 160-18615-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tetrahydrofuran	7.0	J	10	0.50	ug/L	1		8260C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA70 SO 010

Date Collected: 08/11/16 08:55
Date Received: 08/12/16 09:15

Lab Sample ID: 160-18615-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0095	U	0.033	0.0095	mg/Kg		08/23/16 10:23	08/24/16 18:20	1
PCB-1221	0.0095	U	0.033	0.0095	mg/Kg		08/23/16 10:23	08/24/16 18:20	1
PCB-1232	0.0095	U	0.033	0.0095	mg/Kg		08/23/16 10:23	08/24/16 18:20	1
PCB-1242	0.0095	U	0.033	0.0095	mg/Kg		08/23/16 10:23	08/24/16 18:20	1
PCB-1248	0.0095	U	0.033	0.0095	mg/Kg		08/23/16 10:23	08/24/16 18:20	1
PCB-1254	0.0079	U	0.033	0.0079	mg/Kg		08/23/16 10:23	08/24/16 18:20	1
PCB-1260	0.0079	U	0.033	0.0079	mg/Kg		08/23/16 10:23	08/24/16 18:20	1
PCB-1262	0.0079	U	0.033	0.0079	mg/Kg		08/23/16 10:23	08/24/16 18:20	1
Polychlorinated biphenyls, Total	0.0079	U	0.033	0.0079	mg/Kg		08/23/16 10:23	08/24/16 18:20	1
PCB-1268	0.0079	U	0.033	0.0079	mg/Kg		08/23/16 10:23	08/24/16 18:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*79*		*23 - 146*	*08/23/16 10:23*	*08/24/16 18:20*	*1*

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.050	U	0.13	0.050	mg/L		08/23/16 15:14	08/24/16 18:10	5
Barium	**0.98**		0.63	0.19	mg/L		08/23/16 15:14	08/24/16 18:10	5
Cadmium	0.019	U	0.063	0.019	mg/L		08/23/16 15:14	08/24/16 18:10	5
Chromium	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:10	5
Lead	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:10	5
Selenium	0.063	U	0.19	0.063	mg/L		08/23/16 15:14	08/24/16 18:10	5
Silver	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:10	5

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00013**	**J B**	0.0010	0.000079	mg/L		08/23/16 10:50	08/23/16 19:53	1

Method: H3-04-RC - Tritium (LSC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	0.00407	U	0.223	0.223	1.00	0.393	pCi/g	08/31/16 09:24	08/31/16 23:44	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium 89/90	0.0482	U	0.128	0.128	3.00	0.219	pCi/g	08/24/16 22:35	08/27/16 12:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*85.8*		*40 - 110*	*08/24/16 22:35*	*08/27/16 12:48*	*1*

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium-99	-0.138	U	0.258	0.258	1.00	0.454	pCi/g	08/18/16 09:45	08/23/16 18:30	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tc-99m	*94.4*		*30 - 110*	*08/18/16 09:45*	*08/23/16 18:30*	*1*

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA69 SO 010

Date Collected: 08/11/16 09:34
Date Received: 08/12/16 09:15

Lab Sample ID: 160-18615-2

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 18:43	1
PCB-1221	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 18:43	1
PCB-1232	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 18:43	1
PCB-1242	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 18:43	1
PCB-1248	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 18:43	1
PCB-1254	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 18:43	1
PCB-1260	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 18:43	1
PCB-1262	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 18:43	1
Polychlorinated biphenyls, Total	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 18:43	1
PCB-1268	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 18:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*83*		*23 - 146*	*08/23/16 10:23*	*08/24/16 18:43*	*1*

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.050	U	0.13	0.050	mg/L		08/23/16 15:14	08/24/16 18:15	5
Barium	**0.46**	**J**	0.63	0.19	mg/L		08/23/16 15:14	08/24/16 18:15	5
Cadmium	0.019	U	0.063	0.019	mg/L		08/23/16 15:14	08/24/16 18:15	5
Chromium	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:15	5
Lead	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:15	5
Selenium	0.063	U	0.19	0.063	mg/L		08/23/16 15:14	08/24/16 18:15	5
Silver	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:15	5

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00012**	**J B**	0.0010	0.000079	mg/L		08/23/16 10:50	08/23/16 19:55	1

Method: H3-04-RC - Tritium (LSC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	0.0381	U	0.240	0.240	1.00	0.425	pCi/g	08/31/16 09:24	09/01/16 00:30	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium 89/90	0.0632	U	0.104	0.104	3.00	0.177	pCi/g	08/24/16 22:35	08/27/16 12:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*80.7*		*40 - 110*	*08/24/16 22:35*	*08/27/16 12:48*	*1*

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium-99	-0.0247	U	0.292	0.292	1.00	0.504	pCi/g	08/18/16 09:45	08/23/16 19:05	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tc-99m	*85.1*		*30 - 110*	*08/18/16 09:45*	*08/23/16 19:05*	*1*

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA67 SO 010

Date Collected: 08/11/16 10:43
Date Received: 08/12/16 09:15

Lab Sample ID: 160-18615-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0095	U	0.033	0.0095	mg/Kg		08/23/16 10:23	08/24/16 19:50	1
PCB-1221	0.0095	U	0.033	0.0095	mg/Kg		08/23/16 10:23	08/24/16 19:50	1
PCB-1232	0.0095	U	0.033	0.0095	mg/Kg		08/23/16 10:23	08/24/16 19:50	1
PCB-1242	0.0095	U	0.033	0.0095	mg/Kg		08/23/16 10:23	08/24/16 19:50	1
PCB-1248	0.0095	U	0.033	0.0095	mg/Kg		08/23/16 10:23	08/24/16 19:50	1
PCB-1254	0.0079	U	0.033	0.0079	mg/Kg		08/23/16 10:23	08/24/16 19:50	1
PCB-1260	0.0079	U	0.033	0.0079	mg/Kg		08/23/16 10:23	08/24/16 19:50	1
PCB-1262	0.0079	U	0.033	0.0079	mg/Kg		08/23/16 10:23	08/24/16 19:50	1
Polychlorinated biphenyls, Total	0.0079	U	0.033	0.0079	mg/Kg		08/23/16 10:23	08/24/16 19:50	1
PCB-1268	0.0079	U	0.033	0.0079	mg/Kg		08/23/16 10:23	08/24/16 19:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*58*		*23 - 146*	*08/23/16 10:23*	*08/24/16 19:50*	*1*

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.050	U	0.13	0.050	mg/L		08/23/16 15:14	08/24/16 18:20	5
Barium	**0.91**		0.63	0.19	mg/L		08/23/16 15:14	08/24/16 18:20	5
Cadmium	0.019	U	0.063	0.019	mg/L		08/23/16 15:14	08/24/16 18:20	5
Chromium	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:20	5
Lead	**0.045**	**J**	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:20	5
Selenium	0.063	U	0.19	0.063	mg/L		08/23/16 15:14	08/24/16 18:20	5
Silver	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:20	5

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00012**	**J B**	0.0010	0.000079	mg/L		08/23/16 10:50	08/23/16 19:57	1

Method: H3-04-RC - Tritium (LSC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-0.201	U	0.198	0.199	1.00	0.391	pCi/g	08/31/16 09:24	09/01/16 01:15	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium 89/90	-0.0408	U	0.110	0.110	3.00	0.204	pCi/g	08/24/16 22:35	08/27/16 12:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*83.1*		*40 - 110*	*08/24/16 22:35*	*08/27/16 12:48*	*1*

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium-99	-0.208	U	0.239	0.240	1.00	0.426	pCi/g	08/18/16 09:45	08/23/16 19:39	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tc-99m	*99.1*		*30 - 110*	*08/18/16 09:45*	*08/23/16 19:39*	*1*

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA62 SO 010

Date Collected: 08/11/16 12:40
Date Received: 08/12/16 09:15

Lab Sample ID: 160-18615-4

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 20:13	1
PCB-1221	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 20:13	1
PCB-1232	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 20:13	1
PCB-1242	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 20:13	1
PCB-1248	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 20:13	1
PCB-1254	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 20:13	1
PCB-1260	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 20:13	1
PCB-1262	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 20:13	1
Polychlorinated biphenyls, Total	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 20:13	1
PCB-1268	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 20:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*72*		*23 - 146*	*08/23/16 10:23*	*08/24/16 20:13*	*1*

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.050	U	0.13	0.050	mg/L		08/23/16 15:14	08/24/16 18:24	5
Barium	**0.54**	**J**	0.63	0.19	mg/L		08/23/16 15:14	08/24/16 18:24	5
Cadmium	0.019	U	0.063	0.019	mg/L		08/23/16 15:14	08/24/16 18:24	5
Chromium	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:24	5
Lead	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:24	5
Selenium	0.063	U	0.19	0.063	mg/L		08/23/16 15:14	08/24/16 18:24	5
Silver	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:24	5

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00013**	**J B**	0.0010	0.000079	mg/L		08/23/16 10:50	08/23/16 19:59	1

Method: H3-04-RC - Tritium (LSC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	0.121	U	0.241	0.241	1.00	0.405	pCi/g	08/31/16 09:24	09/01/16 01:38	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium 89/90	**0.280**		0.127	0.128	3.00	0.181	pCi/g	08/24/16 22:35	08/27/16 12:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*86.8*		*40 - 110*	*08/24/16 22:35*	*08/27/16 12:48*	*1*

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium-99	-0.130	U	0.263	0.263	1.00	0.461	pCi/g	08/18/16 09:45	08/23/16 20:13	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tc-99m	*93.4*		*30 - 110*	*08/18/16 09:45*	*08/23/16 20:13*	*1*

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA61 SO 010

Date Collected: 08/11/16 13:30
Date Received: 08/12/16 09:15

Lab Sample ID: 160-18615-5

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0095	U	0.033	0.0095	mg/Kg		08/23/16 10:23	08/24/16 20:35	1
PCB-1221	0.0095	U	0.033	0.0095	mg/Kg		08/23/16 10:23	08/24/16 20:35	1
PCB-1232	0.0095	U	0.033	0.0095	mg/Kg		08/23/16 10:23	08/24/16 20:35	1
PCB-1242	0.0095	U	0.033	0.0095	mg/Kg		08/23/16 10:23	08/24/16 20:35	1
PCB-1248	0.0095	U	0.033	0.0095	mg/Kg		08/23/16 10:23	08/24/16 20:35	1
PCB-1254	0.0079	U	0.033	0.0079	mg/Kg		08/23/16 10:23	08/24/16 20:35	1
PCB-1260	0.0079	U	0.033	0.0079	mg/Kg		08/23/16 10:23	08/24/16 20:35	1
PCB-1262	0.0079	U	0.033	0.0079	mg/Kg		08/23/16 10:23	08/24/16 20:35	1
Polychlorinated biphenyls, Total	0.0079	U	0.033	0.0079	mg/Kg		08/23/16 10:23	08/24/16 20:35	1
PCB-1268	0.0079	U	0.033	0.0079	mg/Kg		08/23/16 10:23	08/24/16 20:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*76*		*23 - 146*	*08/23/16 10:23*	*08/24/16 20:35*	*1*

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.050	U	0.13	0.050	mg/L		08/23/16 15:14	08/24/16 18:29	5
Barium	**0.50**	**J**	0.63	0.19	mg/L		08/23/16 15:14	08/24/16 18:29	5
Cadmium	0.019	U	0.063	0.019	mg/L		08/23/16 15:14	08/24/16 18:29	5
Chromium	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:29	5
Lead	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:29	5
Selenium	0.063	U	0.19	0.063	mg/L		08/23/16 15:14	08/24/16 18:29	5
Silver	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:29	5

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00014**	**J B**	0.0010	0.000079	mg/L		08/23/16 10:50	08/23/16 20:01	1

Method: H3-04-RC - Tritium (LSC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-0.0390	U	0.225	0.225	1.00	0.405	pCi/g	08/31/16 09:24	09/01/16 02:00	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium 89/90	-0.0225	U	0.107	0.107	3.00	0.197	pCi/g	08/24/16 22:35	08/27/16 12:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*81.6*		*40 - 110*	*08/24/16 22:35*	*08/27/16 12:48*	*1*

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium-99	-0.0963	U	0.282	0.282	1.00	0.491	pCi/g	08/18/16 09:45	08/23/16 20:47	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tc-99m	*86.7*		*30 - 110*	*08/18/16 09:45*	*08/23/16 20:47*	*1*

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA60 SO 010

Date Collected: 08/11/16 14:50
Date Received: 08/12/16 09:15

Lab Sample ID: 160-18615-6

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 20:58	1
PCB-1221	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 20:58	1
PCB-1232	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 20:58	1
PCB-1242	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 20:58	1
PCB-1248	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 20:58	1
PCB-1254	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 20:58	1
PCB-1260	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 20:58	1
PCB-1262	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 20:58	1
Polychlorinated biphenyls, Total	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 20:58	1
PCB-1268	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 20:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*57*		*23 - 146*	*08/23/16 10:23*	*08/24/16 20:58*	*1*

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.050	U	0.13	0.050	mg/L		08/23/16 15:14	08/24/16 18:34	5
Barium	**0.26**	**J**	0.63	0.19	mg/L		08/23/16 15:14	08/24/16 18:34	5
Cadmium	0.019	U	0.063	0.019	mg/L		08/23/16 15:14	08/24/16 18:34	5
Chromium	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:34	5
Lead	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:34	5
Selenium	0.063	U	0.19	0.063	mg/L		08/23/16 15:14	08/24/16 18:34	5
Silver	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:34	5

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00015**	**J B**	0.0010	0.000079	mg/L		08/23/16 10:50	08/23/16 20:03	1

Method: H3-04-RC - Tritium (LSC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	0.0356	U	0.237	0.237	1.00	0.414	pCi/g	08/31/16 09:24	09/01/16 02:23	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium 89/90	-0.0349	U	0.101	0.101	3.00	0.188	pCi/g	08/24/16 22:35	08/27/16 12:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*84.0*		*40 - 110*	*08/24/16 22:35*	*08/27/16 12:48*	*1*

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium-99	-0.216	U	0.261	0.262	1.00	0.464	pCi/g	08/18/16 09:45	08/23/16 21:22	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tc-99m	*91.2*		*30 - 110*	*08/18/16 09:45*	*08/23/16 21:22*	*1*

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA 9720 FB

Date Collected: 08/11/16 15:20
Date Received: 08/12/16 09:15

Lab Sample ID: 160-18615-7

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.17	U	1.0	0.17	ug/L			08/17/16 16:33	1
1,1,2,2-Tetrachloroethane	0.10	U	1.0	0.10	ug/L			08/17/16 16:33	1
1,1,2-Trichloroethane	0.13	U	1.0	0.13	ug/L			08/17/16 16:33	1
1,1-Dichloroethane	0.070	U	1.0	0.070	ug/L			08/17/16 16:33	1
1,1-Dichloroethene	0.10	U	1.0	0.10	ug/L			08/17/16 16:33	1
1,2-Dichloroethane	0.22	U	1.0	0.22	ug/L			08/17/16 16:33	1
1,2-Dichloroethene, Total	0.14	U	2.0	0.14	ug/L			08/17/16 16:33	1
1,2-Dichloropropane	0.10	U	1.0	0.10	ug/L			08/17/16 16:33	1
2-Chloroethyl vinyl ether	0.24	U	2.0	0.24	ug/L			08/17/16 16:33	1
Acrolein	2.8	U	10	2.8	ug/L			08/17/16 16:33	1
Acrylonitrile	0.73	U	10	0.73	ug/L			08/17/16 16:33	1
Benzene	0.10	U	1.0	0.10	ug/L			08/17/16 16:33	1
Bromoform	0.17	U	1.0	0.17	ug/L			08/17/16 16:33	1
Bromomethane	0.25	U	2.0	0.25	ug/L			08/17/16 16:33	1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L			08/17/16 16:33	1
Chlorobenzene	0.11	U	1.0	0.11	ug/L			08/17/16 16:33	1
Chloroethane	0.16	U N	2.0	0.16	ug/L			08/17/16 16:33	1
Chloroform	**0.11**	**J**	1.0	0.10	ug/L			08/17/16 16:33	1
Chloromethane	0.10	U	2.0	0.10	ug/L			08/17/16 16:33	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			08/17/16 16:33	1
Dibromochloromethane	0.14	U	1.0	0.14	ug/L			08/17/16 16:33	1
Dichlorobromomethane	0.14	U	1.0	0.14	ug/L			08/17/16 16:33	1
Dichlorodifluoromethane	0.14	U	2.0	0.14	ug/L			08/17/16 16:33	1
Ethylbenzene	0.12	U	1.0	0.12	ug/L			08/17/16 16:33	1
Methylene Chloride	0.27	U	1.0	0.27	ug/L			08/17/16 16:33	1
Tetrachloroethene	0.18	U	1.0	0.18	ug/L			08/17/16 16:33	1
Toluene	0.14	U	1.0	0.14	ug/L			08/17/16 16:33	1
trans-1,2-Dichloroethene	0.10	U	1.0	0.10	ug/L			08/17/16 16:33	1
trans-1,3-Dichloropropene	0.10	U	1.0	0.10	ug/L			08/17/16 16:33	1
Trichloroethene	0.25	U	1.0	0.25	ug/L			08/17/16 16:33	1
Trichlorofluoromethane	0.11	U	1.0	0.11	ug/L			08/17/16 16:33	1
Vinyl chloride	0.19	U	2.0	0.19	ug/L			08/17/16 16:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*75 - 129*		*08/17/16 16:33*	*1*
4-Bromofluorobenzene (Surr)	*111*		*81 - 130*		*08/17/16 16:33*	*1*
Dibromofluoromethane (Surr)	*107*		*81 - 124*		*08/17/16 16:33*	*1*
Toluene-d8 (Surr)	*107*		*87 - 128*		*08/17/16 16:33*	*1*

Method: 625 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Acenaphthylene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Anthracene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Azobenzene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Benzo[a]anthracene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Benzo[b]fluoranthene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Benzo[k]fluoranthene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Benzo[g,h,i]perylene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Benzo[a]pyrene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1

Client Sample ID: YMTFA 9720 FB

Lab Sample ID: 160-18615-7

Date Collected: 08/11/16 15:20

Matrix: Water

Date Received: 08/12/16 09:15

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzidine	5.0	U	25	5.0	ug/L		08/16/16 11:15	08/23/16 22:58	1
Bis(2-chloroethoxy)methane	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Bis(2-chloroethyl)ether	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Bis(2-ethylhexyl) phthalate	0.47	U	2.5	0.47	ug/L		08/16/16 11:15	08/23/16 22:58	1
4-Bromophenyl phenyl ether	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Butyl benzyl phthalate	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
4-Chloro-3-methylphenol	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
2-Chloronaphthalene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
2-Chlorophenol	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
4-Chlorophenyl phenyl ether	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Chrysene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Dibenz(a,h)anthracene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Di-n-butyl phthalate	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
1,2-Dichlorobenzene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
1,3-Dichlorobenzene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
1,4-Dichlorobenzene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
3,3'-Dichlorobenzidine	0.32	U	13	0.32	ug/L		08/16/16 11:15	08/23/16 22:58	1
2,4-Dichlorophenol	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Diethyl phthalate	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
2,4-Dimethylphenol	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Dimethyl phthalate	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
4,6-Dinitro-2-methylphenol	0.32	U	13	0.32	ug/L		08/16/16 11:15	08/23/16 22:58	1
2,4-Dinitrophenol	0.50	U	13	0.50	ug/L		08/16/16 11:15	08/23/16 22:58	1
2,4-Dinitrotoluene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
2,6-Dinitrotoluene	0.54	U	2.5	0.54	ug/L		08/16/16 11:15	08/23/16 22:58	1
Di-n-octyl phthalate	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Fluoranthene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Fluorene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Hexachlorobenzene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Hexachlorobutadiene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Hexachlorocyclopentadiene	0.25	U	13	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Hexachloroethane	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Indeno[1,2,3-cd]pyrene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Isophorone	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Naphthalene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Nitrobenzene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
N-Nitrosodimethylamine	0.50	U	2.5	0.50	ug/L		08/16/16 11:15	08/23/16 22:58	1
2-Nitrophenol	0.38	U	2.5	0.38	ug/L		08/16/16 11:15	08/23/16 22:58	1
4-Nitrophenol	0.50	U N	13	0.50	ug/L		08/16/16 11:15	08/23/16 22:58	1
N-Nitrosodiphenylamine	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
N-Nitrosodi-n-propylamine	0.38	U	2.5	0.38	ug/L		08/16/16 11:15	08/23/16 22:58	1
2,2'-oxybis[1-chloropropane]	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Pentachlorophenol	0.32	U	13	0.32	ug/L		08/16/16 11:15	08/23/16 22:58	1
Phenanthrene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
Phenol	0.50	U	2.5	0.50	ug/L		08/16/16 11:15	08/23/16 22:58	1
Pyrene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
1,2,4-Trichlorobenzene	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1
2,4,6-Trichlorophenol	0.25	U	2.5	0.25	ug/L		08/16/16 11:15	08/23/16 22:58	1

Client Sample ID: YMTFA 9720 FB

Lab Sample ID: 160-18615-7
Date Collected: 08/11/16 15:20
Matrix: Water
Date Received: 08/12/16 09:15

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorophenol (Surr)	39		23 - 82	08/16/16 11:15	08/23/16 22:58	1
Phenol-d5 (Surr)	29		14 - 68	08/16/16 11:15	08/23/16 22:58	1
Nitrobenzene-d5 (Surr)	72		36 - 98	08/16/16 11:15	08/23/16 22:58	1
2,4,6-Tribromophenol (Surr)	68		41 - 109	08/16/16 11:15	08/23/16 22:58	1
Terphenyl-d14 (Surr)	81		43 - 107	08/16/16 11:15	08/23/16 22:58	1
2-Fluorobiphenyl (Surr)	70		31 - 103	08/16/16 11:15	08/23/16 22:58	1

Method: 608 - Organochlorine Pesticides in Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 14:19	1
alpha-BHC	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 14:19	1
beta-BHC	0.013	U	0.050	0.013	ug/L		08/18/16 12:14	08/23/16 14:19	1
delta-BHC	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 14:19	1
gamma-BHC (Lindane)	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 14:19	1
4,4'-DDD	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 14:19	1
4,4'-DDE	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 14:19	1
4,4'-DDT	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 14:19	1
Dieldrin	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 14:19	1
Endosulfan I	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 14:19	1
Endosulfan II	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 14:19	1
Endosulfan sulfate	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 14:19	1
Endrin	0.017	U	0.050	0.017	ug/L		08/18/16 12:14	08/23/16 14:19	1
Endrin aldehyde	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 14:19	1
Heptachlor	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 14:19	1
Heptachlor epoxide	0.017	U	0.050	0.017	ug/L		08/18/16 12:14	08/23/16 14:19	1
Toxaphene	0.27	U	2.0	0.27	ug/L		08/18/16 12:14	08/23/16 14:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	44		40 - 130	08/18/16 12:14	08/23/16 14:19	1
Tetrachloro-m-xylene	89		63 - 115	08/18/16 12:14	08/23/16 14:19	1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	1.0	0.35	ug/L		08/18/16 12:09	08/23/16 17:38	1
PCB-1221	0.35	U	1.0	0.35	ug/L		08/18/16 12:09	08/23/16 17:38	1
PCB-1232	0.35	U	1.0	0.35	ug/L		08/18/16 12:09	08/23/16 17:38	1
PCB-1242	0.35	U	1.0	0.35	ug/L		08/18/16 12:09	08/23/16 17:38	1
PCB-1248	0.35	U	1.0	0.35	ug/L		08/18/16 12:09	08/23/16 17:38	1
PCB-1254	0.22	U	1.0	0.22	ug/L		08/18/16 12:09	08/23/16 17:38	1
PCB-1260	0.22	U	1.0	0.22	ug/L		08/18/16 12:09	08/23/16 17:38	1
Polychlorinated biphenyls, Total	0.22	U	1.0	0.22	ug/L		08/18/16 12:09	08/23/16 17:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	97		24 - 126	08/18/16 12:09	08/23/16 17:38	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	0.025	U	0.25	0.025	mg/L			08/12/16 18:18	1
Nitrate as N	**0.061**		0.020	0.0070	mg/L			08/12/16 18:18	1
Fluoride	0.010	U	0.10	0.010	mg/L			08/12/16 18:18	1
Nitrite as N	0.0070	U	0.020	0.0070	mg/L			08/12/16 18:18	1

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA 9720 FB

Date Collected: 08/11/16 15:20
Date Received: 08/12/16 09:15

Lab Sample ID: 160-18615-7

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Orthophosphate	0.26	U	0.50	0.26	mg/L			08/12/16 18:18	1
Sulfate	0.050	U	0.50	0.050	mg/L			08/12/16 18:18	1
Chloride	0.020	U	0.20	0.020	mg/L			08/12/16 18:18	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.017	U	0.050	0.017	mg/L		08/19/16 12:22	09/01/16 04:48	2
Antimony	0.0017	U	0.0050	0.0017	mg/L		08/19/16 12:22	09/01/16 04:48	2
Arsenic	0.0012	U	0.010	0.0012	mg/L		08/19/16 12:22	09/01/16 04:48	2
Barium	0.00022	U	0.0020	0.00022	mg/L		08/19/16 12:22	09/01/16 04:48	2
Beryllium	0.00035	U	0.00050	0.00035	mg/L		08/19/16 12:22	09/01/16 04:48	2
Boron	**0.045**	**J B**	0.10	0.021	mg/L		08/19/16 12:22	09/01/16 04:48	2
Cadmium	0.00010	U	0.00050	0.00010	mg/L		08/19/16 12:22	09/01/16 04:48	2
Calcium	0.068	U	0.10	0.068	mg/L		08/19/16 12:22	09/01/16 04:48	2
Chromium	0.0010	U	0.010	0.0010	mg/L		08/19/16 12:22	09/01/16 04:48	2
Copper	0.00068	U	0.0010	0.00068	mg/L		08/19/16 12:22	09/01/16 04:48	2
Iron	0.033	U	0.050	0.033	mg/L		08/19/16 12:22	09/01/16 04:48	2
Lead	0.00017	U	0.0030	0.00017	mg/L		08/19/16 12:22	09/01/16 04:48	2
Lithium	0.0011	U	0.0050	0.0011	mg/L		08/19/16 12:22	09/01/16 04:48	2
Nickel	0.00080	U	0.0050	0.00080	mg/L		08/19/16 12:22	09/01/16 04:48	2
Potassium	0.042	U	0.10	0.042	mg/L		08/19/16 12:22	09/01/16 04:48	2
Selenium	0.0016	U	0.0050	0.0016	mg/L		08/19/16 12:22	09/01/16 04:48	2
Silver	0.00082	U	0.0020	0.00082	mg/L		08/19/16 12:22	09/01/16 04:48	2
Sodium	0.024	U	0.050	0.024	mg/L		08/19/16 12:22	09/01/16 04:48	2
Uranium	0.00023	U	0.0010	0.00023	mg/L		08/19/16 12:22	09/01/16 04:48	2
Zinc	0.0093	U	0.020	0.0093	mg/L		08/19/16 12:22	09/01/16 04:48	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000060	U	0.00020	0.000060	mg/L		08/25/16 16:00	08/26/16 10:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**3.7**	**HF**	0.1	0.1	SU			08/12/16 18:36	1
Total Suspended Solids	4.0	U	4.0	4.0	mg/L			08/17/16 09:25	1
HEM	1.6	U	4.9	1.6	mg/L		09/01/16 09:39	09/01/16 14:38	1
SGT-HEM	2.7	U	5.9	2.7	mg/L		09/01/16 09:39	09/01/16 14:38	1
Phenols, Total	0.0068	U	0.010	0.0068	mg/L		08/29/16 11:52	08/30/16 10:58	1
Cyanide, Total	**0.0043**	**J**	0.010	0.0031	mg/L		08/24/16 17:45	08/24/16 20:03	1
Total Organic Carbon	0.72	U	1.0	0.72	mg/L			08/31/16 16:53	1
Acidity	2.0	U	10	2.0	mg/L			08/19/16 16:12	1

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.249	U	0.558	0.559	3.00	0.998	pCi/L	08/18/16 09:05	08/22/16 07:44	1
Gross Beta	0.578	U	0.562	0.565	4.00	0.905	pCi/L	08/18/16 09:05	08/22/16 07:44	1

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA 9720 FB

Date Collected: 08/11/16 15:20
Date Received: 08/12/16 09:15

Lab Sample ID: 160-18615-7
Matrix: Water

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	3.19	U	6.43	6.44	20.0	11.1	pCi/L	08/18/16 16:27	08/18/16 23:54	1
Cobalt-60	-3.52	U	10.9	10.9		14.9	pCi/L	08/18/16 16:27	08/18/16 23:54	1

Method: 905 - Strontium-90 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.0958	U	0.223	0.223	3.00	0.385	pCi/L	08/26/16 20:08	09/06/16 16:12	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*80.4*		*40 - 110*	*08/26/16 20:08*	*09/06/16 16:12*	*1*
Y Carrier	*93.8*		*40 - 110*	*08/26/16 20:08*	*09/06/16 16:12*	*1*

Method: A-01-R - Isotopic Curium and/or Americium 241 (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Americium-241	0.0337	U	0.0798	0.0799	1.00	0.167	pCi/L	08/17/16 11:22	08/25/16 11:19	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Americium-243	*53.7*		*30 - 110*	*08/17/16 11:22*	*08/25/16 11:19*	*1*

Method: A-01-R - Isotopic Neptunium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Neptunium-237	0.0349	U	0.0493	0.0494	1.00	0.0523	pCi/L	08/17/16 11:30	08/26/16 18:57	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Neptunium-239	*88.5*		*30 - 110*	*08/17/16 11:30*	*08/26/16 18:57*	*1*

Method: A-01-R - Isotopic Plutonium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Plutonium-238	0.0526	U	0.0992	0.0993	1.00	0.182	pCi/L	08/17/16 11:22	08/25/16 11:23	1
Plutonium-239/240	0.000	U	0.0393	0.0393	1.00	0.117	pCi/L	08/17/16 11:22	08/25/16 11:23	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Pu-242 (T)	*81.7*		*30 - 110*	*08/17/16 11:22*	*08/25/16 11:23*	*1*

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.00114	U	0.0730	0.0730	1.00	0.168	pCi/L	08/17/16 11:30	08/25/16 20:40	1
Thorium-230	**0.193**		0.112	0.113	1.00	0.0538	pCi/L	08/17/16 11:30	08/25/16 20:40	1
Thorium-232	-0.00805	U	0.0114	0.0114	1.00	0.0902	pCi/L	08/17/16 11:30	08/25/16 20:40	1

Client Sample ID: YMTFA 9720 FB

Lab Sample ID: 160-18615-7
Date Collected: 08/11/16 15:20
Matrix: Water
Date Received: 08/12/16 09:15

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Thorium-229	94.9		30 - 110	08/17/16 11:30	08/25/16 20:40	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	0.00894	U	0.0379	0.0379	1.00	0.100	pCi/L	08/17/16 11:22	08/25/16 11:23	1
Uranium-235/236	-0.00556	U	0.0111	0.0111	1.00	0.108	pCi/L	08/17/16 11:22	08/25/16 11:23	1
Uranium-238	0.0357	U	0.0505	0.0506	1.00	0.0535	pCi/L	08/17/16 11:22	08/25/16 11:23	1

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Uranium-232	80.5		30 - 110	08/17/16 11:22	08/25/16 11:23	1

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium-99	-0.113	U	1.04	1.04	3.00	1.78	pCi/L	08/18/16 10:47	08/23/16 00:33	1

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tc-99m	104		30 - 110	08/18/16 10:47	08/23/16 00:33	1

Client Sample ID: YMTFA 9720 TB

Lab Sample ID: 160-18615-8
Date Collected: 08/11/16 15:20
Matrix: Water
Date Received: 08/12/16 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.12	U	1.0	0.12	ug/L			08/17/16 16:57	1
1,1,1-Trichloroethane	0.17	U	1.0	0.17	ug/L			08/17/16 16:57	1
1,1,2,2-Tetrachloroethane	0.10	U	1.0	0.10	ug/L			08/17/16 16:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.10	U	1.0	0.10	ug/L			08/17/16 16:57	1
1,1,2-Trichloroethane	0.13	U	1.0	0.13	ug/L			08/17/16 16:57	1
1,1-Dichloroethene	0.10	U	1.0	0.10	ug/L			08/17/16 16:57	1
1,1-Dichloroethane	0.070	U	1.0	0.070	ug/L			08/17/16 16:57	1
1,1-Dichloropropene	0.10	U	1.0	0.10	ug/L			08/17/16 16:57	1
1,2,3-Trichlorobenzene	0.17	U	1.0	0.17	ug/L			08/17/16 16:57	1
1,2,3-Trichloropropane	0.18	U	1.0	0.18	ug/L			08/17/16 16:57	1
1,2,4-Trichlorobenzene	0.10	U	1.0	0.10	ug/L			08/17/16 16:57	1
1,2,4-Trimethylbenzene	0.17	U	1.0	0.17	ug/L			08/17/16 16:57	1
1,2-Dibromo-3-Chloropropane	0.41	U	1.0	0.41	ug/L			08/17/16 16:57	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.18	U	4.0	0.18	ug/L			08/17/16 16:57	1
1,2-Dichlorobenzene	0.10	U	1.0	0.10	ug/L			08/17/16 16:57	1
1,2-Dichloroethane	0.22	U	1.0	0.22	ug/L			08/17/16 16:57	1
1,2-Dichloroethene, Total	0.14	U	2.0	0.14	ug/L			08/17/16 16:57	1
1,2-Dichloropropane	0.10	U	1.0	0.10	ug/L			08/17/16 16:57	1
1,3,5-Trimethylbenzene	0.16	U	1.0	0.16	ug/L			08/17/16 16:57	1
1,3-Dichlorobenzene	0.11	U	1.0	0.11	ug/L			08/17/16 16:57	1
1,3-Dichloropropane	0.10	U	1.0	0.10	ug/L			08/17/16 16:57	1
1,4-Dichlorobenzene	0.10	U	1.0	0.10	ug/L			08/17/16 16:57	1
1,4-Dioxane	11	U	80	11	ug/L			08/17/16 16:57	1

Client Sample ID: YMTFA 9720 TB

Lab Sample ID: 160-18615-8

Date Collected: 08/11/16 15:20

Matrix: Water

Date Received: 08/12/16 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			08/17/16 16:57	1
2-Butanone (MEK)	0.47	U	5.0	0.47	ug/L			08/17/16 16:57	1
2-Chloro-1,3-butadiene	0.16	U	1.0	0.16	ug/L			08/17/16 16:57	1
2-Chloroethyl vinyl ether	0.24	U	2.0	0.24	ug/L			08/17/16 16:57	1
2-Chlorotoluene	0.15	U	1.0	0.15	ug/L			08/17/16 16:57	1
2-Hexanone	0.25	U	5.0	0.25	ug/L			08/17/16 16:57	1
2-Nitropropane	0.40	U	10	0.40	ug/L			08/17/16 16:57	1
Allyl chloride	0.10	U	2.0	0.10	ug/L			08/17/16 16:57	1
4-Chlorotoluene	0.15	U	1.0	0.15	ug/L			08/17/16 16:57	1
4-Isopropyltoluene	0.17	U	1.0	0.17	ug/L			08/17/16 16:57	1
4-Methyl-2-pentanone (MIBK)	0.22	U	5.0	0.22	ug/L			08/17/16 16:57	1
Acetone	0.55	U	2.0	0.55	ug/L			08/17/16 16:57	1
Acetonitrile	3.7	U	10	3.7	ug/L			08/17/16 16:57	1
Acrolein	2.8	U	10	2.8	ug/L			08/17/16 16:57	1
Acrylonitrile	0.73	U	10	0.73	ug/L			08/17/16 16:57	1
Benzene	0.10	U	1.0	0.10	ug/L			08/17/16 16:57	1
Bromobenzene	0.12	U	1.0	0.12	ug/L			08/17/16 16:57	1
Bromoform	0.17	U	1.0	0.17	ug/L			08/17/16 16:57	1
Bromomethane	0.25	U	2.0	0.25	ug/L			08/17/16 16:57	1
Carbon disulfide	0.10	U	1.0	0.10	ug/L			08/17/16 16:57	1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L			08/17/16 16:57	1
Chlorobenzene	0.11	U	1.0	0.11	ug/L			08/17/16 16:57	1
Bromochloromethane	0.14	U	1.0	0.14	ug/L			08/17/16 16:57	1
Dibromochloromethane	0.14	U	1.0	0.14	ug/L			08/17/16 16:57	1
Chloroethane	0.16	U N	2.0	0.16	ug/L			08/17/16 16:57	1
Chloroform	0.10	U	1.0	0.10	ug/L			08/17/16 16:57	1
Chloromethane	0.10	U	2.0	0.10	ug/L			08/17/16 16:57	1
cis-1,2-Dichloroethene	0.10	U	1.0	0.10	ug/L			08/17/16 16:57	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			08/17/16 16:57	1
Cyclohexane	0.14	U	1.0	0.14	ug/L			08/17/16 16:57	1
Cyclohexanone	5.8	U	20	5.8	ug/L			08/17/16 16:57	1
Dibromomethane	0.21	U	1.0	0.21	ug/L			08/17/16 16:57	1
Dichlorobromomethane	0.14	U	1.0	0.14	ug/L			08/17/16 16:57	1
Dichlorodifluoromethane	0.14	U	2.0	0.14	ug/L			08/17/16 16:57	1
Ethyl acetate	0.18	U	2.0	0.18	ug/L			08/17/16 16:57	1
Ethyl ether	0.26	U	1.0	0.26	ug/L			08/17/16 16:57	1
Ethyl methacrylate	0.17	U	1.0	0.17	ug/L			08/17/16 16:57	1
Ethylbenzene	0.12	U	1.0	0.12	ug/L			08/17/16 16:57	1
1,2-Dibromoethane (EDB)	0.13	U	1.0	0.13	ug/L			08/17/16 16:57	1
Hexachlorobutadiene	0.10	U	1.0	0.10	ug/L			08/17/16 16:57	1
Hexane	0.15	U	4.0	0.15	ug/L			08/17/16 16:57	1
Iodomethane	0.10	U	2.0	0.10	ug/L			08/17/16 16:57	1
Isobutanol	8.3	U	80	8.3	ug/L			08/17/16 16:57	1
Isopropylbenzene	0.17	U	1.0	0.17	ug/L			08/17/16 16:57	1
Methacrylonitrile	1.2	U	10	1.2	ug/L			08/17/16 16:57	1
Methyl acetate	0.76	U	25	0.76	ug/L			08/17/16 16:57	1
Methyl methacrylate	0.27	U	2.0	0.27	ug/L			08/17/16 16:57	1
Methyl tert-butyl ether	0.15	U	2.0	0.15	ug/L			08/17/16 16:57	1
Methylcyclohexane	0.16	U	4.0	0.16	ug/L			08/17/16 16:57	1

Client Sample ID: YMTFA 9720 TB

Lab Sample ID: 160-18615-8
Date Collected: 08/11/16 15:20
Matrix: Water
Date Received: 08/12/16 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	0.27	U	1.0	0.27	ug/L			08/17/16 16:57	1
m-Xylene & p-Xylene	0.15	U	2.0	0.15	ug/L			08/17/16 16:57	1
Naphthalene	0.21	U	1.0	0.21	ug/L			08/17/16 16:57	1
1-Butanol	12	U	50	12	ug/L			08/17/16 16:57	1
n-Butylbenzene	0.18	U	1.0	0.18	ug/L			08/17/16 16:57	1
N-Propylbenzene	0.16	U	1.0	0.16	ug/L			08/17/16 16:57	1
o-Xylene	0.13	U	1.0	0.13	ug/L			08/17/16 16:57	1
Propionitrile	1.4	U	10	1.4	ug/L			08/17/16 16:57	1
sec-Butylbenzene	0.16	U	1.0	0.16	ug/L			08/17/16 16:57	1
Styrene	0.13	U	1.0	0.13	ug/L			08/17/16 16:57	1
tert-Butylbenzene	0.18	U	1.0	0.18	ug/L			08/17/16 16:57	1
Tetrachloroethene	0.18	U	1.0	0.18	ug/L			08/17/16 16:57	1
Tetrahydrofuran	**6.1**	**J**	10	0.50	ug/L			08/17/16 16:57	1
Toluene	0.14	U	1.0	0.14	ug/L			08/17/16 16:57	1
trans-1,2-Dichloroethene	0.10	U	1.0	0.10	ug/L			08/17/16 16:57	1
trans-1,3-Dichloropropene	0.10	U	1.0	0.10	ug/L			08/17/16 16:57	1
trans-1,4-Dichloro-2-butene	0.29	U	2.0	0.29	ug/L			08/17/16 16:57	1
Trichloroethene	0.25	U	1.0	0.25	ug/L			08/17/16 16:57	1
Trichlorofluoromethane	0.11	U	1.0	0.11	ug/L			08/17/16 16:57	1
Vinyl acetate	0.18	U	2.0	0.18	ug/L			08/17/16 16:57	1
Vinyl chloride	0.19	U	2.0	0.19	ug/L			08/17/16 16:57	1
Xylenes, Total	0.26	U	3.0	0.26	ug/L			08/17/16 16:57	1
Nonanal	0.41	U	5.0	0.41	ug/L			08/17/16 16:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 129*		*08/17/16 16:57*	*1*
4-Bromofluorobenzene (Surr)	*105*		*81 - 130*		*08/17/16 16:57*	*1*
Dibromofluoromethane (Surr)	*104*		*81 - 124*		*08/17/16 16:57*	*1*
Toluene-d8 (Surr)	*105*		*87 - 128*		*08/17/16 16:57*	*1*

Client Sample ID: YMTFA 43 GW

Lab Sample ID: 160-18615-9
Date Collected: 08/11/16 13:00
Matrix: Water
Date Received: 08/12/16 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.17	U	1.0	0.17	ug/L			08/17/16 14:58	1
1,1,2,2-Tetrachloroethane	0.10	U	1.0	0.10	ug/L			08/17/16 14:58	1
1,1,2-Trichloroethane	0.13	U	1.0	0.13	ug/L			08/17/16 14:58	1
1,1-Dichloroethane	**0.35**	**J**	1.0	0.070	ug/L			08/17/16 14:58	1
1,1-Dichloroethene	0.10	U	1.0	0.10	ug/L			08/17/16 14:58	1
1,2-Dichloroethane	0.22	U	1.0	0.22	ug/L			08/17/16 14:58	1
1,2-Dichloroethene, Total	**140**		20	1.4	ug/L			08/17/16 12:09	10
1,2-Dichloropropane	0.10	U	1.0	0.10	ug/L			08/17/16 14:58	1
2-Chloroethyl vinyl ether	0.24	U	2.0	0.24	ug/L			08/17/16 14:58	1
Acrolein	2.8	U	10	2.8	ug/L			08/17/16 14:58	1
Acrylonitrile	0.73	U	10	0.73	ug/L			08/17/16 14:58	1
Benzene	0.10	U	1.0	0.10	ug/L			08/17/16 14:58	1
Bromoform	0.17	U	1.0	0.17	ug/L			08/17/16 14:58	1
Bromomethane	0.25	U	2.0	0.25	ug/L			08/17/16 14:58	1

Client Sample ID: YMTFA 43 GW

Lab Sample ID: 160-18615-9

Date Collected: 08/11/16 13:00

Matrix: Water

Date Received: 08/12/16 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L			08/17/16 14:58	1
Chlorobenzene	0.11	U	1.0	0.11	ug/L			08/17/16 14:58	1
Chloroethane	0.16	U N	2.0	0.16	ug/L			08/17/16 14:58	1
Chloroform	**0.14**	**J**	1.0	0.10	ug/L			08/17/16 14:58	1
Chloromethane	0.10	U	2.0	0.10	ug/L			08/17/16 14:58	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			08/17/16 14:58	1
Dibromochloromethane	0.14	U	1.0	0.14	ug/L			08/17/16 14:58	1
Dichlorobromomethane	0.14	U	1.0	0.14	ug/L			08/17/16 14:58	1
Dichlorodifluoromethane	0.14	U	2.0	0.14	ug/L			08/17/16 14:58	1
Ethylbenzene	0.12	U	1.0	0.12	ug/L			08/17/16 14:58	1
Methylene Chloride	0.27	U	1.0	0.27	ug/L			08/17/16 14:58	1
Tetrachloroethene	**25**		1.0	0.18	ug/L			08/17/16 14:58	1
Toluene	**0.26**	**J**	1.0	0.14	ug/L			08/17/16 14:58	1
trans-1,2-Dichloroethene	**3.0**		1.0	0.10	ug/L			08/17/16 14:58	1
trans-1,3-Dichloropropene	0.10	U	1.0	0.10	ug/L			08/17/16 14:58	1
Trichloroethene	**15**		1.0	0.25	ug/L			08/17/16 14:58	1
Trichlorofluoromethane	0.11	U	1.0	0.11	ug/L			08/17/16 14:58	1
Vinyl chloride	**1.6**	**J**	2.0	0.19	ug/L			08/17/16 14:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 129*		*08/17/16 12:09*	*10*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 129*		*08/17/16 14:58*	*1*
4-Bromofluorobenzene (Surr)	*111*		*81 - 130*		*08/17/16 12:09*	*10*
4-Bromofluorobenzene (Surr)	*104*		*81 - 130*		*08/17/16 14:58*	*1*
Dibromofluoromethane (Surr)	*102*		*81 - 124*		*08/17/16 12:09*	*10*
Dibromofluoromethane (Surr)	*108*		*81 - 124*		*08/17/16 14:58*	*1*
Toluene-d8 (Surr)	*105*		*87 - 128*		*08/17/16 12:09*	*10*
Toluene-d8 (Surr)	*111*		*87 - 128*		*08/17/16 14:58*	*1*

Method: 625 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Acenaphthylene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Anthracene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Azobenzene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Benzo[a]anthracene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Benzo[b]fluoranthene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Benzo[k]fluoranthene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Benzo[g,h,i]perylene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Benzo[a]pyrene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Benzidine	4.0	U	20	4.0	ug/L		08/18/16 12:02	08/24/16 01:11	1
Bis(2-chloroethoxy)methane	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Bis(2-chloroethyl)ether	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Bis(2-ethylhexyl) phthalate	0.37	U	2.0	0.37	ug/L		08/18/16 12:02	08/24/16 01:11	1
4-Bromophenyl phenyl ether	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Butyl benzyl phthalate	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
4-Chloro-3-methylphenol	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
2-Chloronaphthalene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
2-Chlorophenol	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
4-Chlorophenyl phenyl ether	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1

Client Sample ID: YMTFA 43 GW

Lab Sample ID: 160-18615-9
Date Collected: 08/11/16 13:00
Matrix: Water
Date Received: 08/12/16 09:15

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Dibenz(a,h)anthracene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Di-n-butyl phthalate	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
1,2-Dichlorobenzene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
1,3-Dichlorobenzene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
1,4-Dichlorobenzene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
3,3'-Dichlorobenzidine	0.26	U N	9.9	0.26	ug/L		08/18/16 12:02	08/24/16 01:11	1
2,4-Dichlorophenol	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Diethyl phthalate	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
2,4-Dimethylphenol	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Dimethyl phthalate	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
4,6-Dinitro-2-methylphenol	0.25	U	9.9	0.25	ug/L		08/18/16 12:02	08/24/16 01:11	1
2,4-Dinitrophenol	0.40	U	9.9	0.40	ug/L		08/18/16 12:02	08/24/16 01:11	1
2,4-Dinitrotoluene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
2,6-Dinitrotoluene	0.43	U	2.0	0.43	ug/L		08/18/16 12:02	08/24/16 01:11	1
Di-n-octyl phthalate	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Fluoranthene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Fluorene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Hexachlorobenzene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Hexachlorobutadiene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Hexachlorocyclopentadiene	0.20	U	9.9	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Hexachloroethane	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Indeno[1,2,3-cd]pyrene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Isophorone	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Naphthalene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Nitrobenzene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
N-Nitrosodimethylamine	0.40	U	2.0	0.40	ug/L		08/18/16 12:02	08/24/16 01:11	1
2-Nitrophenol	0.30	U	2.0	0.30	ug/L		08/18/16 12:02	08/24/16 01:11	1
4-Nitrophenol	0.40	U N	9.9	0.40	ug/L		08/18/16 12:02	08/24/16 01:11	1
N-Nitrosodiphenylamine	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
N-Nitrosodi-n-propylamine	0.30	U	2.0	0.30	ug/L		08/18/16 12:02	08/24/16 01:11	1
2,2'-oxybis[1-chloropropane]	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Pentachlorophenol	0.25	U	9.9	0.25	ug/L		08/18/16 12:02	08/24/16 01:11	1
Phenanthrene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
Phenol	0.40	U	2.0	0.40	ug/L		08/18/16 12:02	08/24/16 01:11	1
Pyrene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
1,2,4-Trichlorobenzene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1
2,4,6-Trichlorophenol	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/24/16 01:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*31*		*23 - 82*	*08/18/16 12:02*	*08/24/16 01:11*	*1*
Phenol-d5 (Surr)	*21*		*14 - 68*	*08/18/16 12:02*	*08/24/16 01:11*	*1*
Nitrobenzene-d5 (Surr)	*67*		*36 - 98*	*08/18/16 12:02*	*08/24/16 01:11*	*1*
2,4,6-Tribromophenol (Surr)	*77*		*41 - 109*	*08/18/16 12:02*	*08/24/16 01:11*	*1*
Terphenyl-d14 (Surr)	*69*		*43 - 107*	*08/18/16 12:02*	*08/24/16 01:11*	*1*
2-Fluorobiphenyl (Surr)	*67*		*31 - 103*	*08/18/16 12:02*	*08/24/16 01:11*	*1*

Method: 608 - Organochlorine Pesticides in Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	0.010	U	0.052	0.010	ug/L		08/18/16 12:14	08/23/16 14:39	1

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA 43 GW

Date Collected: 08/11/16 13:00
Date Received: 08/12/16 09:15

Lab Sample ID: 160-18615-9

Matrix: Water

Method: 608 - Organochlorine Pesticides in Water (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	0.010	U	0.052	0.010	ug/L		08/18/16 12:14	08/23/16 14:39	1
beta-BHC	0.013	U	0.052	0.013	ug/L		08/18/16 12:14	08/23/16 14:39	1
delta-BHC	0.010	U	0.052	0.010	ug/L		08/18/16 12:14	08/23/16 14:39	1
gamma-BHC (Lindane)	0.010	U	0.052	0.010	ug/L		08/18/16 12:14	08/23/16 14:39	1
4,4'-DDD	0.010	U	0.052	0.010	ug/L		08/18/16 12:14	08/23/16 14:39	1
4,4'-DDE	0.010	U	0.052	0.010	ug/L		08/18/16 12:14	08/23/16 14:39	1
4,4'-DDT	0.010	U	0.052	0.010	ug/L		08/18/16 12:14	08/23/16 14:39	1
Dieldrin	0.010	U	0.052	0.010	ug/L		08/18/16 12:14	08/23/16 14:39	1
Endosulfan I	0.010	U	0.052	0.010	ug/L		08/18/16 12:14	08/23/16 14:39	1
Endosulfan II	0.010	U	0.052	0.010	ug/L		08/18/16 12:14	08/23/16 14:39	1
Endosulfan sulfate	0.010	U	0.052	0.010	ug/L		08/18/16 12:14	08/23/16 14:39	1
Endrin	0.018	U	0.052	0.018	ug/L		08/18/16 12:14	08/23/16 14:39	1
Endrin aldehyde	0.010	U	0.052	0.010	ug/L		08/18/16 12:14	08/23/16 14:39	1
Heptachlor	0.010	U	0.052	0.010	ug/L		08/18/16 12:14	08/23/16 14:39	1
Heptachlor epoxide	0.018	U	0.052	0.018	ug/L		08/18/16 12:14	08/23/16 14:39	1
Toxaphene	0.28	U	2.1	0.28	ug/L		08/18/16 12:14	08/23/16 14:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*45*		*40 - 130*	*08/18/16 12:14*	*08/23/16 14:39*	*1*
Tetrachloro-m-xylene	*89*		*63 - 115*	*08/18/16 12:14*	*08/23/16 14:39*	*1*

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.34	U	0.98	0.34	ug/L		08/18/16 12:09	08/23/16 18:01	1
PCB-1221	0.34	U	0.98	0.34	ug/L		08/18/16 12:09	08/23/16 18:01	1
PCB-1232	0.34	U	0.98	0.34	ug/L		08/18/16 12:09	08/23/16 18:01	1
PCB-1242	0.34	U	0.98	0.34	ug/L		08/18/16 12:09	08/23/16 18:01	1
PCB-1248	0.34	U	0.98	0.34	ug/L		08/18/16 12:09	08/23/16 18:01	1
PCB-1254	0.21	U	0.98	0.21	ug/L		08/18/16 12:09	08/23/16 18:01	1
PCB-1260	0.21	U	0.98	0.21	ug/L		08/18/16 12:09	08/23/16 18:01	1
Polychlorinated biphenyls, Total	0.21	U	0.98	0.21	ug/L		08/18/16 12:09	08/23/16 18:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*122*		*24 - 126*	*08/18/16 12:09*	*08/23/16 18:01*	*1*
DCB Decachlorobiphenyl (Surr)	*102*		*24 - 126*	*08/18/16 12:09*	*08/23/16 18:01*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	**0.30**		0.25	0.025	mg/L			08/12/16 18:32	1
Nitrate as N	**0.014**	**J**	0.020	0.0070	mg/L			08/12/16 18:32	1
Fluoride	**0.054**	**J**	0.10	0.010	mg/L			08/12/16 18:32	1
Orthophosphate	0.26	U	0.50	0.26	mg/L			08/12/16 18:32	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.070	U	0.20	0.070	mg/L			08/12/16 18:47	10
Sulfate	**33**		5.0	0.50	mg/L			08/12/16 18:47	10
Chloride	**23**		2.0	0.20	mg/L			08/12/16 18:47	10

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA 43 GW

Date Collected: 08/11/16 13:00
Date Received: 08/12/16 09:15

Lab Sample ID: 160-18615-9

Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**13**		0.050	0.017	mg/L		08/19/16 12:22	09/01/16 05:14	2
Antimony	0.0017	U	0.0050	0.0017	mg/L		08/19/16 12:22	09/01/16 05:14	2
Arsenic	**0.0047**	**J**	0.010	0.0012	mg/L		08/19/16 12:22	09/01/16 05:14	2
Barium	**0.35**		0.0020	0.00022	mg/L		08/19/16 12:22	09/01/16 05:14	2
Beryllium	**0.0014**		0.00050	0.00035	mg/L		08/19/16 12:22	09/01/16 05:14	2
Boron	**0.10**	**B**	0.10	0.021	mg/L		08/19/16 12:22	09/01/16 05:14	2
Cadmium	**0.00047**	**J**	0.00050	0.00010	mg/L		08/19/16 12:22	09/01/16 05:14	2
Calcium	**200**	**B**	0.10	0.068	mg/L		08/19/16 12:22	09/01/16 05:14	2
Chromium	**0.019**		0.010	0.0010	mg/L		08/19/16 12:22	09/01/16 05:14	2
Copper	**0.017**		0.0010	0.00068	mg/L		08/19/16 12:22	09/01/16 05:14	2
Iron	**13**		0.050	0.033	mg/L		08/19/16 12:22	09/01/16 05:14	2
Lead	**0.026**		0.0030	0.00017	mg/L		08/19/16 12:22	09/01/16 05:14	2
Lithium	**0.028**		0.0050	0.0011	mg/L		08/19/16 12:22	09/01/16 05:14	2
Nickel	**0.019**		0.0050	0.00080	mg/L		08/19/16 12:22	09/01/16 05:14	2
Potassium	**5.3**		0.10	0.042	mg/L		08/19/16 12:22	09/01/16 05:14	2
Selenium	**0.0025**	**J**	0.0050	0.0016	mg/L		08/19/16 12:22	09/01/16 05:14	2
Silver	0.00082	U	0.0020	0.00082	mg/L		08/19/16 12:22	09/01/16 05:14	2
Sodium	**10**		0.050	0.024	mg/L		08/19/16 12:22	09/01/16 05:14	2
Uranium	**0.0055**		0.0010	0.00023	mg/L		08/19/16 12:22	09/01/16 05:14	2
Zinc	**0.096**		0.020	0.0093	mg/L		08/19/16 12:22	09/01/16 05:14	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00063**		0.00020	0.000060	mg/L		08/25/16 16:00	08/26/16 10:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.8**	**HF**	0.1	0.1	SU			08/12/16 18:44	1
Total Suspended Solids	**560**		4.0	4.0	mg/L			08/17/16 09:25	1
HEM	2.0	U	6.3	2.0	mg/L		09/01/16 09:39	09/01/16 14:38	1
SGT-HEM	3.5	U	7.5	3.5	mg/L		09/01/16 09:39	09/01/16 14:38	1
Phenols, Total	**0.0079**	**J**	0.010	0.0068	mg/L		08/29/16 11:52	08/30/16 11:07	1
Cyanide, Total	0.0031	U	0.010	0.0031	mg/L		08/24/16 17:45	08/24/16 20:10	1
Total Organic Carbon	**2.2**		1.0	0.72	mg/L			08/31/16 17:27	1
Acidity	2.0	U	10	2.0	mg/L			08/19/16 16:12	1

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	3.87	U	3.53	3.56	3.00	5.47	pCi/L	08/18/16 09:05	08/22/16 07:44	1
Gross Beta	2.51	U	1.91	1.92	4.00	2.95	pCi/L	08/18/16 09:05	08/22/16 07:44	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.765	U	6.26	6.26	20.0	10.9	pCi/L	08/18/16 16:27	08/19/16 19:52	1
Cobalt-60	3.39	U	5.86	5.87		6.55	pCi/L	08/18/16 16:27	08/19/16 19:52	1

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA 43 GW

Date Collected: 08/11/16 13:00
Date Received: 08/12/16 09:15

Lab Sample ID: 160-18615-9

Matrix: Water

Method: 905 - Strontium-90 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.0539	U	0.296	0.296	3.00	0.528	pCi/L	08/26/16 20:08	09/06/16 16:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*79.9*		*40 - 110*	*08/26/16 20:08*	*09/06/16 16:06*	*1*
Y Carrier	*96.1*		*40 - 110*	*08/26/16 20:08*	*09/06/16 16:06*	*1*

Method: A-01-R - Isotopic Curium and/or Americium 241 (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Americium-241	0.0642	U	0.272	0.273	1.00	0.719	pCi/L	08/17/16 11:22	08/25/16 11:19	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Americium-243	*52.8*		*30 - 110*	*08/17/16 11:22*	*08/25/16 11:19*	*1*

Method: A-01-R - Isotopic Neptunium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Neptunium-237	0.0397	U	0.168	0.168	1.00	0.445	pCi/L	08/17/16 11:30	08/25/16 11:18	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Neptunium-239	*95.0*		*30 - 110*	*08/17/16 11:30*	*08/25/16 11:18*	*1*

Method: A-01-R - Isotopic Plutonium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Plutonium-238	0.207	U	0.434	0.434	1.00	0.817	pCi/L	08/17/16 11:22	08/25/16 11:23	1
Plutonium-239/240	0.414	U	0.414	0.415	1.00	0.553	pCi/L	08/17/16 11:22	08/25/16 11:23	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Pu-242 (T)	*94.1*		*30 - 110*	*08/17/16 11:22*	*08/25/16 11:23*	*1*

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.178	U	0.470	0.470	1.00	0.920	pCi/L	08/17/16 11:30	08/25/16 20:40	1
Thorium-230	**1.48**		0.733	0.743	1.00	0.435	pCi/L	08/17/16 11:30	08/25/16 20:40	1
Thorium-232	0.177	U	0.319	0.319	1.00	0.591	pCi/L	08/17/16 11:30	08/25/16 20:40	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*80.3*		*30 - 110*	*08/17/16 11:30*	*08/25/16 20:40*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	0.392	U	0.440	0.442	1.00	0.654	pCi/L	08/17/16 11:22	08/25/16 11:23	1

Client Sample ID: YMTFA 43 GW

Lab Sample ID: 160-18615-9
Date Collected: 08/11/16 13:00
Matrix: Water
Date Received: 08/12/16 09:15

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-235/236	0.217	U	0.307	0.307	1.00	0.326	pCi/L	08/17/16 11:22	08/25/16 11:23	1
Uranium-238	**2.42**		0.922	0.944	1.00	0.421	pCi/L	08/17/16 11:22	08/25/16 11:23	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*81.8*		*30 - 110*	*08/17/16 11:22*	*08/25/16 11:23*	*1*

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium-99	-1.26	U	1.97	1.98	3.00	3.46	pCi/L	08/18/16 10:47	08/23/16 02:13	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tc-99m	*108*		*30 - 110*	*08/18/16 10:47*	*08/23/16 02:13*	*1*

Client Sample ID: YMTFA 42 GW

Lab Sample ID: 160-18615-10
Date Collected: 08/11/16 15:00
Matrix: Water
Date Received: 08/12/16 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.7	U	10	1.7	ug/L			08/17/16 10:57	10
1,1,2,2-Tetrachloroethane	1.0	U	10	1.0	ug/L			08/17/16 10:57	10
1,1,2-Trichloroethane	1.3	U	10	1.3	ug/L			08/17/16 10:57	10
1,1-Dichloroethane	0.70	U	10	0.70	ug/L			08/17/16 10:57	10
1,1-Dichloroethene	1.0	U	10	1.0	ug/L			08/17/16 10:57	10
1,2-Dichloroethane	2.2	U	10	2.2	ug/L			08/17/16 10:57	10
1,2-Dichloroethene, Total	**230**		20	1.4	ug/L			08/17/16 10:57	10
1,2-Dichloropropane	1.0	U	10	1.0	ug/L			08/17/16 10:57	10
2-Chloroethyl vinyl ether	2.4	U	20	2.4	ug/L			08/17/16 10:57	10
Acrolein	28	U	100	28	ug/L			08/17/16 10:57	10
Acrylonitrile	7.3	U	100	7.3	ug/L			08/17/16 10:57	10
Benzene	1.0	U	10	1.0	ug/L			08/17/16 10:57	10
Bromoform	1.7	U	10	1.7	ug/L			08/17/16 10:57	10
Bromomethane	2.5	U	20	2.5	ug/L			08/17/16 10:57	10
Carbon tetrachloride	1.8	U	10	1.8	ug/L			08/17/16 10:57	10
Chlorobenzene	1.1	U	10	1.1	ug/L			08/17/16 10:57	10
Chloroethane	1.6	U N	20	1.6	ug/L			08/17/16 10:57	10
Chloroform	1.0	U	10	1.0	ug/L			08/17/16 10:57	10
Chloromethane	1.0	U	20	1.0	ug/L			08/17/16 10:57	10
cis-1,3-Dichloropropene	1.6	U	10	1.6	ug/L			08/17/16 10:57	10
Dibromochloromethane	1.4	U	10	1.4	ug/L			08/17/16 10:57	10
Dichlorobromomethane	1.4	U	10	1.4	ug/L			08/17/16 10:57	10
Dichlorodifluoromethane	1.4	U	20	1.4	ug/L			08/17/16 10:57	10
Ethylbenzene	1.2	U	10	1.2	ug/L			08/17/16 10:57	10
Methylene Chloride	2.7	U	10	2.7	ug/L			08/17/16 10:57	10
Tetrachloroethene	**63**		10	1.8	ug/L			08/17/16 10:57	10
Toluene	1.4	U	10	1.4	ug/L			08/17/16 10:57	10

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA 42 GW

Lab Sample ID: 160-18615-10
Date Collected: 08/11/16 15:00
Matrix: Water
Date Received: 08/12/16 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	**3.7**	**J**	10	1.0	ug/L			08/17/16 10:57	10
trans-1,3-Dichloropropene	1.0	U	10	1.0	ug/L			08/17/16 10:57	10
Trichloroethene	**48**		10	2.5	ug/L			08/17/16 10:57	10
Trichlorofluoromethane	1.1	U	10	1.1	ug/L			08/17/16 10:57	10
Vinyl chloride	**5.3**	**J**	20	1.9	ug/L			08/17/16 10:57	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*75 - 129*		*08/17/16 10:57*	*10*
4-Bromofluorobenzene (Surr)	*107*		*81 - 130*		*08/17/16 10:57*	*10*
Dibromofluoromethane (Surr)	*100*		*81 - 124*		*08/17/16 10:57*	*10*
Toluene-d8 (Surr)	*108*		*87 - 128*		*08/17/16 10:57*	*10*

Method: 625 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Acenaphthylene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Anthracene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Azobenzene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Benzo[a]anthracene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Benzo[b]fluoranthene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Benzo[k]fluoranthene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Benzo[g,h,i]perylene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Benzo[a]pyrene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Benzidine	4.5	U	23	4.5	ug/L		08/18/16 12:02	08/24/16 01:44	1
Bis(2-chloroethoxy)methane	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Bis(2-chloroethyl)ether	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Bis(2-ethylhexyl) phthalate	0.42	U	2.3	0.42	ug/L		08/18/16 12:02	08/24/16 01:44	1
4-Bromophenyl phenyl ether	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Butyl benzyl phthalate	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
4-Chloro-3-methylphenol	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
2-Chloronaphthalene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
2-Chlorophenol	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
4-Chlorophenyl phenyl ether	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Chrysene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Dibenz(a,h)anthracene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Di-n-butyl phthalate	**1.2**	**J**	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
1,2-Dichlorobenzene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
1,3-Dichlorobenzene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
1,4-Dichlorobenzene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
3,3'-Dichlorobenzidine	0.29	U N	11	0.29	ug/L		08/18/16 12:02	08/24/16 01:44	1
2,4-Dichlorophenol	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Diethyl phthalate	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
2,4-Dimethylphenol	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Dimethyl phthalate	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
4,6-Dinitro-2-methylphenol	0.29	U	11	0.29	ug/L		08/18/16 12:02	08/24/16 01:44	1
2,4-Dinitrophenol	0.45	U	11	0.45	ug/L		08/18/16 12:02	08/24/16 01:44	1
2,4-Dinitrotoluene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
2,6-Dinitrotoluene	0.49	U	2.3	0.49	ug/L		08/18/16 12:02	08/24/16 01:44	1
Di-n-octyl phthalate	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Fluoranthene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA 42 GW

Lab Sample ID: 160-18615-10
Date Collected: 08/11/16 15:00
Matrix: Water
Date Received: 08/12/16 09:15

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Hexachlorobenzene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Hexachlorobutadiene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Hexachlorocyclopentadiene	0.23	U	11	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Hexachloroethane	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Indeno[1,2,3-cd]pyrene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Isophorone	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Naphthalene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Nitrobenzene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
N-Nitrosodimethylamine	0.45	U	2.3	0.45	ug/L		08/18/16 12:02	08/24/16 01:44	1
2-Nitrophenol	0.34	U	2.3	0.34	ug/L		08/18/16 12:02	08/24/16 01:44	1
4-Nitrophenol	0.45	U N	11	0.45	ug/L		08/18/16 12:02	08/24/16 01:44	1
N-Nitrosodiphenylamine	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
N-Nitrosodi-n-propylamine	0.34	U	2.3	0.34	ug/L		08/18/16 12:02	08/24/16 01:44	1
2,2'-oxybis[1-chloropropane]	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Pentachlorophenol	0.29	U	11	0.29	ug/L		08/18/16 12:02	08/24/16 01:44	1
Phenanthrene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
Phenol	0.45	U	2.3	0.45	ug/L		08/18/16 12:02	08/24/16 01:44	1
Pyrene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
1,2,4-Trichlorobenzene	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1
2,4,6-Trichlorophenol	0.23	U	2.3	0.23	ug/L		08/18/16 12:02	08/24/16 01:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*32*		*23 - 82*	*08/18/16 12:02*	*08/24/16 01:44*	*1*
Phenol-d5 (Surr)	*23*		*14 - 68*	*08/18/16 12:02*	*08/24/16 01:44*	*1*
Nitrobenzene-d5 (Surr)	*65*		*36 - 98*	*08/18/16 12:02*	*08/24/16 01:44*	*1*
2,4,6-Tribromophenol (Surr)	*72*		*41 - 109*	*08/18/16 12:02*	*08/24/16 01:44*	*1*
Terphenyl-d14 (Surr)	*77*		*43 - 107*	*08/18/16 12:02*	*08/24/16 01:44*	*1*
2-Fluorobiphenyl (Surr)	*67*		*31 - 103*	*08/18/16 12:02*	*08/24/16 01:44*	*1*

Method: 608 - Organochlorine Pesticides in Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	0.013	U	0.064	0.013	ug/L		08/18/16 12:14	08/23/16 14:59	1
alpha-BHC	0.013	U	0.064	0.013	ug/L		08/18/16 12:14	08/23/16 14:59	1
beta-BHC	0.017	U	0.064	0.017	ug/L		08/18/16 12:14	08/23/16 14:59	1
delta-BHC	0.013	U	0.064	0.013	ug/L		08/18/16 12:14	08/23/16 14:59	1
gamma-BHC (Lindane)	0.013	U	0.064	0.013	ug/L		08/18/16 12:14	08/23/16 14:59	1
4,4'-DDD	0.013	U	0.064	0.013	ug/L		08/18/16 12:14	08/23/16 14:59	1
4,4'-DDE	0.013	U	0.064	0.013	ug/L		08/18/16 12:14	08/23/16 14:59	1
4,4'-DDT	0.013	U	0.064	0.013	ug/L		08/18/16 12:14	08/23/16 14:59	1
Dieldrin	0.013	U	0.064	0.013	ug/L		08/18/16 12:14	08/23/16 14:59	1
Endosulfan I	0.013	U	0.064	0.013	ug/L		08/18/16 12:14	08/23/16 14:59	1
Endosulfan II	0.013	U	0.064	0.013	ug/L		08/18/16 12:14	08/23/16 14:59	1
Endosulfan sulfate	0.013	U	0.064	0.013	ug/L		08/18/16 12:14	08/23/16 14:59	1
Endrin	0.022	U	0.064	0.022	ug/L		08/18/16 12:14	08/23/16 14:59	1
Endrin aldehyde	0.013	U	0.064	0.013	ug/L		08/18/16 12:14	08/23/16 14:59	1
Heptachlor	0.013	U	0.064	0.013	ug/L		08/18/16 12:14	08/23/16 14:59	1
Heptachlor epoxide	0.022	U	0.064	0.022	ug/L		08/18/16 12:14	08/23/16 14:59	1
Toxaphene	0.34	U	2.6	0.34	ug/L		08/18/16 12:14	08/23/16 14:59	1

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA 42 GW

Date Collected: 08/11/16 15:00
Date Received: 08/12/16 09:15

Lab Sample ID: 160-18615-10

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*59*		*40 - 130*	*08/18/16 12:14*	*08/23/16 14:59*	*1*
Tetrachloro-m-xylene	*82*		*63 - 115*	*08/18/16 12:14*	*08/23/16 14:59*	*1*

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.40	U	1.1	0.40	ug/L		08/18/16 12:09	08/23/16 18:24	1
PCB-1221	0.40	U	1.1	0.40	ug/L		08/18/16 12:09	08/23/16 18:24	1
PCB-1232	0.40	U	1.1	0.40	ug/L		08/18/16 12:09	08/23/16 18:24	1
PCB-1242	0.40	U	1.1	0.40	ug/L		08/18/16 12:09	08/23/16 18:24	1
PCB-1248	0.40	U	1.1	0.40	ug/L		08/18/16 12:09	08/23/16 18:24	1
PCB-1254	0.25	U	1.1	0.25	ug/L		08/18/16 12:09	08/23/16 18:24	1
PCB-1260	0.25	U	1.1	0.25	ug/L		08/18/16 12:09	08/23/16 18:24	1
Polychlorinated biphenyls, Total	0.25	U	1.1	0.25	ug/L		08/18/16 12:09	08/23/16 18:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*119*		*24 - 126*	*08/18/16 12:09*	*08/23/16 18:24*	*1*
DCB Decachlorobiphenyl (Surr)	*102*		*24 - 126*	*08/18/16 12:09*	*08/23/16 18:24*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	**0.32**		0.25	0.025	mg/L			08/12/16 21:17	1
Nitrate as N	**0.020**		0.020	0.0070	mg/L			08/12/16 21:17	1
Fluoride	**0.062**	**J**	0.10	0.010	mg/L			08/12/16 21:17	1
Nitrite as N	**0.071**		0.020	0.0070	mg/L			08/12/16 21:17	1
Orthophosphate	0.26	U	0.50	0.26	mg/L			08/12/16 21:17	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**35**		5.0	0.50	mg/L			08/12/16 21:32	10
Chloride	**23**		2.0	0.20	mg/L			08/12/16 21:32	10

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.7**		0.050	0.017	mg/L		08/19/16 12:22	09/01/16 05:21	2
Antimony	0.0017	U	0.0050	0.0017	mg/L		08/19/16 12:22	09/01/16 05:21	2
Arsenic	0.0012	U	0.010	0.0012	mg/L		08/19/16 12:22	09/01/16 05:21	2
Barium	**0.10**		0.0020	0.00022	mg/L		08/19/16 12:22	09/01/16 05:21	2
Beryllium	0.00035	U	0.00050	0.00035	mg/L		08/19/16 12:22	09/01/16 05:21	2
Boron	**0.11**	**B**	0.10	0.021	mg/L		08/19/16 12:22	09/01/16 05:21	2
Cadmium	0.00010	U	0.00050	0.00010	mg/L		08/19/16 12:22	09/01/16 05:21	2
Calcium	**68**	**B**	0.10	0.068	mg/L		08/19/16 12:22	09/01/16 05:21	2
Chromium	**0.0022**	**J**	0.010	0.0010	mg/L		08/19/16 12:22	09/01/16 05:21	2
Copper	**0.0019**		0.0010	0.00068	mg/L		08/19/16 12:22	09/01/16 05:21	2
Iron	**1.4**		0.050	0.033	mg/L		08/19/16 12:22	09/01/16 05:21	2
Lead	**0.0012**	**J**	0.0030	0.00017	mg/L		08/19/16 12:22	09/01/16 05:21	2
Lithium	**0.0030**	**J**	0.0050	0.0011	mg/L		08/19/16 12:22	09/01/16 05:21	2
Nickel	**0.0017**	**J**	0.0050	0.00080	mg/L		08/19/16 12:22	09/01/16 05:21	2
Potassium	**2.7**		0.10	0.042	mg/L		08/19/16 12:22	09/01/16 05:21	2
Selenium	0.0016	U	0.0050	0.0016	mg/L		08/19/16 12:22	09/01/16 05:21	2
Silver	0.00082	U	0.0020	0.00082	mg/L		08/19/16 12:22	09/01/16 05:21	2
Sodium	**12**		0.050	0.024	mg/L		08/19/16 12:22	09/01/16 05:21	2

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA 42 GW

Date Collected: 08/11/16 15:00
Date Received: 08/12/16 09:15

Lab Sample ID: 160-18615-10

Matrix: Water

Method: 6020A - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	**0.0011**		0.0010	0.00023	mg/L		08/19/16 12:22	09/01/16 05:21	2
Zinc	0.0093	U	0.020	0.0093	mg/L		08/19/16 12:22	09/01/16 05:21	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000060	U	0.00020	0.000060	mg/L		08/25/16 16:00	08/26/16 10:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.7**	**HF**	0.1	0.1	SU			08/12/16 18:48	1
Total Suspended Solids	**16**		4.0	4.0	mg/L			08/17/16 09:25	1
HEM	1.8	U	5.6	1.8	mg/L		09/01/16 09:39	09/01/16 14:38	1
SGT-HEM	3.1	U	6.7	3.1	mg/L		09/01/16 09:39	09/01/16 14:38	1
Phenols, Total	0.0068	U	0.010	0.0068	mg/L		08/29/16 11:52	08/30/16 11:10	1
Cyanide, Total	0.0031	U	0.010	0.0031	mg/L		08/24/16 17:45	08/24/16 20:14	1
Total Organic Carbon	**1.9**		1.0	0.72	mg/L			08/31/16 17:39	1
Acidity	2.0	U	10	2.0	mg/L			08/19/16 16:12	1

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.32	U	1.60	1.61	3.00	2.63	pCi/L	08/18/16 09:05	08/22/16 07:44	1
Gross Beta	**3.24**		1.10	1.14	4.00	1.42	pCi/L	08/18/16 09:05	08/22/16 07:44	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-5.04	U	10.6	10.7	20.0	17.2	pCi/L	08/18/16 16:27	08/18/16 23:56	1
Cobalt-60	0.654	U	12.7	12.7		14.3	pCi/L	08/18/16 16:27	08/18/16 23:56	1

Method: 905 - Strontium-90 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.00316	U	0.364	0.364	3.00	0.646	pCi/L	08/18/16 13:29	08/26/16 18:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*87.2*		*40 - 110*	*08/18/16 13:29*	*08/26/16 18:37*	*1*
Y Carrier	*96.4*		*40 - 110*	*08/18/16 13:29*	*08/26/16 18:37*	*1*

Method: A-01-R - Isotopic Curium and/or Americium 241 (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Americium-241	-0.0322	U	0.412	0.412	1.00	1.10	pCi/L	08/17/16 11:22	08/25/16 11:19	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Americium-243	*61.7*		*30 - 110*	*08/17/16 11:22*	*08/25/16 11:19*	*1*

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA 42 GW

Date Collected: 08/11/16 15:00
Date Received: 08/12/16 09:15

Lab Sample ID: 160-18615-10

Matrix: Water

Method: A-01-R - Isotopic Neptunium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Neptunium-237	-0.0201	U	0.184	0.184	1.00	0.571	pCi/L	08/17/16 11:30	08/25/16 11:18	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Neptunium-239	*95.9*		*30 - 110*	*08/17/16 11:30*	*08/25/16 11:18*	*1*

Method: A-01-R - Isotopic Plutonium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Plutonium-238	0.278	U	0.554	0.554	1.00	1.01	pCi/L	08/17/16 11:22	08/24/16 19:18	1
Plutonium-239/240	0.279	U	0.351	0.352	1.00	0.531	pCi/L	08/17/16 11:22	08/24/16 19:18	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Pu-242 (T)	*83.1*		*30 - 110*	*08/17/16 11:22*	*08/24/16 19:18*	*1*

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	-0.0287	U	0.353	0.353	1.00	0.867	pCi/L	08/17/16 11:30	08/26/16 18:54	1
Thorium-230	**0.381**		0.366	0.367	1.00	0.263	pCi/L	08/17/16 11:30	08/26/16 18:54	1
Thorium-232	0.109	U	0.258	0.259	1.00	0.540	pCi/L	08/17/16 11:30	08/26/16 18:54	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*80.3*		*30 - 110*	*08/17/16 11:30*	*08/26/16 18:54*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	0.382	U	0.409	0.410	1.00	0.555	pCi/L	08/17/16 11:22	08/25/16 11:23	1
Uranium-235/236	0.224	U	0.316	0.317	1.00	0.335	pCi/L	08/17/16 11:22	08/25/16 11:23	1
Uranium-238	**0.448**		0.401	0.403	1.00	0.269	pCi/L	08/17/16 11:22	08/25/16 11:23	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*86.7*		*30 - 110*	*08/17/16 11:22*	*08/25/16 11:23*	*1*

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium-99	-0.902	U	1.63	1.64	3.00	2.86	pCi/L	08/18/16 10:47	08/23/16 03:03	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tc-99m	*65.9*		*30 - 110*	*08/18/16 10:47*	*08/23/16 03:03*	*1*

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA 42 TB

Date Collected: 08/11/16 15:00
Date Received: 08/12/16 09:15

Lab Sample ID: 160-18615-11

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.12	U	1.0	0.12	ug/L			08/17/16 17:21	1
1,1,1-Trichloroethane	0.17	U	1.0	0.17	ug/L			08/17/16 17:21	1
1,1,2,2-Tetrachloroethane	0.10	U	1.0	0.10	ug/L			08/17/16 17:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.10	U	1.0	0.10	ug/L			08/17/16 17:21	1
1,1,2-Trichloroethane	0.13	U	1.0	0.13	ug/L			08/17/16 17:21	1
1,1-Dichloroethene	0.10	U	1.0	0.10	ug/L			08/17/16 17:21	1
1,1-Dichloroethane	0.070	U	1.0	0.070	ug/L			08/17/16 17:21	1
1,1-Dichloropropene	0.10	U	1.0	0.10	ug/L			08/17/16 17:21	1
1,2,3-Trichlorobenzene	0.17	U	1.0	0.17	ug/L			08/17/16 17:21	1
1,2,3-Trichloropropane	0.18	U	1.0	0.18	ug/L			08/17/16 17:21	1
1,2,4-Trichlorobenzene	0.10	U	1.0	0.10	ug/L			08/17/16 17:21	1
1,2,4-Trimethylbenzene	0.17	U	1.0	0.17	ug/L			08/17/16 17:21	1
1,2-Dibromo-3-Chloropropane	0.41	U	1.0	0.41	ug/L			08/17/16 17:21	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.18	U	4.0	0.18	ug/L			08/17/16 17:21	1
1,2-Dichlorobenzene	0.10	U	1.0	0.10	ug/L			08/17/16 17:21	1
1,2-Dichloroethane	0.22	U	1.0	0.22	ug/L			08/17/16 17:21	1
1,2-Dichloroethene, Total	0.14	U	2.0	0.14	ug/L			08/17/16 17:21	1
1,2-Dichloropropane	0.10	U	1.0	0.10	ug/L			08/17/16 17:21	1
1,3,5-Trimethylbenzene	0.16	U	1.0	0.16	ug/L			08/17/16 17:21	1
1,3-Dichlorobenzene	0.11	U	1.0	0.11	ug/L			08/17/16 17:21	1
1,3-Dichloropropane	0.10	U	1.0	0.10	ug/L			08/17/16 17:21	1
1,4-Dichlorobenzene	0.10	U	1.0	0.10	ug/L			08/17/16 17:21	1
1,4-Dioxane	11	U	80	11	ug/L			08/17/16 17:21	1
2,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			08/17/16 17:21	1
2-Butanone (MEK)	0.47	U	5.0	0.47	ug/L			08/17/16 17:21	1
2-Chloro-1,3-butadiene	0.16	U	1.0	0.16	ug/L			08/17/16 17:21	1
2-Chloroethyl vinyl ether	0.24	U	2.0	0.24	ug/L			08/17/16 17:21	1
2-Chlorotoluene	0.15	U	1.0	0.15	ug/L			08/17/16 17:21	1
2-Hexanone	0.25	U	5.0	0.25	ug/L			08/17/16 17:21	1
2-Nitropropane	0.40	U	10	0.40	ug/L			08/17/16 17:21	1
Allyl chloride	0.10	U	2.0	0.10	ug/L			08/17/16 17:21	1
4-Chlorotoluene	0.15	U	1.0	0.15	ug/L			08/17/16 17:21	1
4-Isopropyltoluene	0.17	U	1.0	0.17	ug/L			08/17/16 17:21	1
4-Methyl-2-pentanone (MIBK)	0.22	U	5.0	0.22	ug/L			08/17/16 17:21	1
Acetone	0.55	U	2.0	0.55	ug/L			08/17/16 17:21	1
Acetonitrile	3.7	U	10	3.7	ug/L			08/17/16 17:21	1
Acrolein	2.8	U	10	2.8	ug/L			08/17/16 17:21	1
Acrylonitrile	0.73	U	10	0.73	ug/L			08/17/16 17:21	1
Benzene	0.10	U	1.0	0.10	ug/L			08/17/16 17:21	1
Bromobenzene	0.12	U	1.0	0.12	ug/L			08/17/16 17:21	1
Bromoform	0.17	U	1.0	0.17	ug/L			08/17/16 17:21	1
Bromomethane	0.25	U	2.0	0.25	ug/L			08/17/16 17:21	1
Carbon disulfide	0.10	U	1.0	0.10	ug/L			08/17/16 17:21	1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L			08/17/16 17:21	1
Chlorobenzene	0.11	U	1.0	0.11	ug/L			08/17/16 17:21	1
Bromochloromethane	0.14	U	1.0	0.14	ug/L			08/17/16 17:21	1
Dibromochloromethane	0.14	U	1.0	0.14	ug/L			08/17/16 17:21	1
Chloroethane	0.16	U N	2.0	0.16	ug/L			08/17/16 17:21	1
Chloroform	0.10	U	1.0	0.10	ug/L			08/17/16 17:21	1

Client Sample ID: YMTFA 42 TB

Lab Sample ID: 160-18615-11

Date Collected: 08/11/16 15:00

Matrix: Water

Date Received: 08/12/16 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.10	U	2.0	0.10	ug/L			08/17/16 17:21	1
cis-1,2-Dichloroethene	0.10	U	1.0	0.10	ug/L			08/17/16 17:21	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			08/17/16 17:21	1
Cyclohexane	0.14	U	1.0	0.14	ug/L			08/17/16 17:21	1
Cyclohexanone	5.8	U	20	5.8	ug/L			08/17/16 17:21	1
Dibromomethane	0.21	U	1.0	0.21	ug/L			08/17/16 17:21	1
Dichlorobromomethane	0.14	U	1.0	0.14	ug/L			08/17/16 17:21	1
Dichlorodifluoromethane	0.14	U	2.0	0.14	ug/L			08/17/16 17:21	1
Ethyl acetate	0.18	U	2.0	0.18	ug/L			08/17/16 17:21	1
Ethyl ether	0.26	U	1.0	0.26	ug/L			08/17/16 17:21	1
Ethyl methacrylate	0.17	U	1.0	0.17	ug/L			08/17/16 17:21	1
Ethylbenzene	0.12	U	1.0	0.12	ug/L			08/17/16 17:21	1
1,2-Dibromoethane (EDB)	0.13	U	1.0	0.13	ug/L			08/17/16 17:21	1
Hexachlorobutadiene	0.10	U	1.0	0.10	ug/L			08/17/16 17:21	1
Hexane	0.15	U	4.0	0.15	ug/L			08/17/16 17:21	1
Iodomethane	0.10	U	2.0	0.10	ug/L			08/17/16 17:21	1
Isobutanol	8.3	U	80	8.3	ug/L			08/17/16 17:21	1
Isopropylbenzene	0.17	U	1.0	0.17	ug/L			08/17/16 17:21	1
Methacrylonitrile	1.2	U	10	1.2	ug/L			08/17/16 17:21	1
Methyl acetate	0.76	U	25	0.76	ug/L			08/17/16 17:21	1
Methyl methacrylate	0.27	U	2.0	0.27	ug/L			08/17/16 17:21	1
Methyl tert-butyl ether	0.15	U	2.0	0.15	ug/L			08/17/16 17:21	1
Methylcyclohexane	0.16	U	4.0	0.16	ug/L			08/17/16 17:21	1
Methylene Chloride	0.27	U	1.0	0.27	ug/L			08/17/16 17:21	1
m-Xylene & p-Xylene	0.15	U	2.0	0.15	ug/L			08/17/16 17:21	1
Naphthalene	0.21	U	1.0	0.21	ug/L			08/17/16 17:21	1
1-Butanol	12	U	50	12	ug/L			08/17/16 17:21	1
n-Butylbenzene	0.18	U	1.0	0.18	ug/L			08/17/16 17:21	1
N-Propylbenzene	0.16	U	1.0	0.16	ug/L			08/17/16 17:21	1
o-Xylene	0.13	U	1.0	0.13	ug/L			08/17/16 17:21	1
Propionitrile	1.4	U	10	1.4	ug/L			08/17/16 17:21	1
sec-Butylbenzene	0.16	U	1.0	0.16	ug/L			08/17/16 17:21	1
Styrene	0.13	U	1.0	0.13	ug/L			08/17/16 17:21	1
tert-Butylbenzene	0.18	U	1.0	0.18	ug/L			08/17/16 17:21	1
Tetrachloroethene	0.18	U	1.0	0.18	ug/L			08/17/16 17:21	1
Tetrahydrofuran	**6.8**	**J**	10	0.50	ug/L			08/17/16 17:21	1
Toluene	0.14	U	1.0	0.14	ug/L			08/17/16 17:21	1
trans-1,2-Dichloroethene	0.10	U	1.0	0.10	ug/L			08/17/16 17:21	1
trans-1,3-Dichloropropene	0.10	U	1.0	0.10	ug/L			08/17/16 17:21	1
trans-1,4-Dichloro-2-butene	0.29	U	2.0	0.29	ug/L			08/17/16 17:21	1
Trichloroethene	0.25	U	1.0	0.25	ug/L			08/17/16 17:21	1
Trichlorofluoromethane	0.11	U	1.0	0.11	ug/L			08/17/16 17:21	1
Vinyl acetate	0.18	U	2.0	0.18	ug/L			08/17/16 17:21	1
Vinyl chloride	0.19	U	2.0	0.19	ug/L			08/17/16 17:21	1
Xylenes, Total	0.26	U	3.0	0.26	ug/L			08/17/16 17:21	1
Nonanal	0.41	U	5.0	0.41	ug/L			08/17/16 17:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*75 - 129*		*08/17/16 17:21*	*1*
4-Bromofluorobenzene (Surr)	*109*		*81 - 130*		*08/17/16 17:21*	*1*

Client Sample ID: YMTFA 42 TB

Lab Sample ID: 160-18615-11
Date Collected: 08/11/16 15:00
Matrix: Water
Date Received: 08/12/16 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	106		81 - 124		08/17/16 17:21	1
Toluene-d8 (Surr)	106		87 - 128		08/17/16 17:21	1

Client Sample ID: YMTFA 43 TB

Lab Sample ID: 160-18615-12
Date Collected: 08/11/16 00:00
Matrix: Water
Date Received: 08/12/16 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.12	U	1.0	0.12	ug/L			08/17/16 17:44	1
1,1,1-Trichloroethane	0.17	U	1.0	0.17	ug/L			08/17/16 17:44	1
1,1,2,2-Tetrachloroethane	0.10	U	1.0	0.10	ug/L			08/17/16 17:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.10	U	1.0	0.10	ug/L			08/17/16 17:44	1
1,1,2-Trichloroethane	0.13	U	1.0	0.13	ug/L			08/17/16 17:44	1
1,1-Dichloroethene	0.10	U	1.0	0.10	ug/L			08/17/16 17:44	1
1,1-Dichloroethane	0.070	U	1.0	0.070	ug/L			08/17/16 17:44	1
1,1-Dichloropropene	0.10	U	1.0	0.10	ug/L			08/17/16 17:44	1
1,2,3-Trichlorobenzene	0.17	U	1.0	0.17	ug/L			08/17/16 17:44	1
1,2,3-Trichloropropane	0.18	U	1.0	0.18	ug/L			08/17/16 17:44	1
1,2,4-Trichlorobenzene	0.10	U	1.0	0.10	ug/L			08/17/16 17:44	1
1,2,4-Trimethylbenzene	0.17	U	1.0	0.17	ug/L			08/17/16 17:44	1
1,2-Dibromo-3-Chloropropane	0.41	U	1.0	0.41	ug/L			08/17/16 17:44	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.18	U	4.0	0.18	ug/L			08/17/16 17:44	1
1,2-Dichlorobenzene	0.10	U	1.0	0.10	ug/L			08/17/16 17:44	1
1,2-Dichloroethane	0.22	U	1.0	0.22	ug/L			08/17/16 17:44	1
1,2-Dichloroethene, Total	0.14	U	2.0	0.14	ug/L			08/17/16 17:44	1
1,2-Dichloropropane	0.10	U	1.0	0.10	ug/L			08/17/16 17:44	1
1,3,5-Trimethylbenzene	0.16	U	1.0	0.16	ug/L			08/17/16 17:44	1
1,3-Dichlorobenzene	0.11	U	1.0	0.11	ug/L			08/17/16 17:44	1
1,3-Dichloropropane	0.10	U	1.0	0.10	ug/L			08/17/16 17:44	1
1,4-Dichlorobenzene	0.10	U	1.0	0.10	ug/L			08/17/16 17:44	1
1,4-Dioxane	11	U	80	11	ug/L			08/17/16 17:44	1
2,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			08/17/16 17:44	1
2-Butanone (MEK)	0.47	U	5.0	0.47	ug/L			08/17/16 17:44	1
2-Chloro-1,3-butadiene	0.16	U	1.0	0.16	ug/L			08/17/16 17:44	1
2-Chloroethyl vinyl ether	0.24	U	2.0	0.24	ug/L			08/17/16 17:44	1
2-Chlorotoluene	0.15	U	1.0	0.15	ug/L			08/17/16 17:44	1
2-Hexanone	0.25	U	5.0	0.25	ug/L			08/17/16 17:44	1
2-Nitropropane	0.40	U	10	0.40	ug/L			08/17/16 17:44	1
Allyl chloride	0.10	U	2.0	0.10	ug/L			08/17/16 17:44	1
4-Chlorotoluene	0.15	U	1.0	0.15	ug/L			08/17/16 17:44	1
4-Isopropyltoluene	0.17	U	1.0	0.17	ug/L			08/17/16 17:44	1
4-Methyl-2-pentanone (MIBK)	0.22	U	5.0	0.22	ug/L			08/17/16 17:44	1
Acetone	0.55	U	2.0	0.55	ug/L			08/17/16 17:44	1
Acetonitrile	3.7	U	10	3.7	ug/L			08/17/16 17:44	1
Acrolein	2.8	U	10	2.8	ug/L			08/17/16 17:44	1
Acrylonitrile	0.73	U	10	0.73	ug/L			08/17/16 17:44	1
Benzene	0.10	U	1.0	0.10	ug/L			08/17/16 17:44	1
Bromobenzene	0.12	U	1.0	0.12	ug/L			08/17/16 17:44	1

Client Sample ID: YMTFA 43 TB

Lab Sample ID: 160-18615-12

Date Collected: 08/11/16 00:00

Matrix: Water

Date Received: 08/12/16 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	0.17	U	1.0	0.17	ug/L			08/17/16 17:44	1
Bromomethane	0.25	U	2.0	0.25	ug/L			08/17/16 17:44	1
Carbon disulfide	0.10	U	1.0	0.10	ug/L			08/17/16 17:44	1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L			08/17/16 17:44	1
Chlorobenzene	0.11	U	1.0	0.11	ug/L			08/17/16 17:44	1
Bromochloromethane	0.14	U	1.0	0.14	ug/L			08/17/16 17:44	1
Dibromochloromethane	0.14	U	1.0	0.14	ug/L			08/17/16 17:44	1
Chloroethane	0.16	U N	2.0	0.16	ug/L			08/17/16 17:44	1
Chloroform	0.10	U	1.0	0.10	ug/L			08/17/16 17:44	1
Chloromethane	0.10	U	2.0	0.10	ug/L			08/17/16 17:44	1
cis-1,2-Dichloroethene	0.10	U	1.0	0.10	ug/L			08/17/16 17:44	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			08/17/16 17:44	1
Cyclohexane	0.14	U	1.0	0.14	ug/L			08/17/16 17:44	1
Cyclohexanone	5.8	U	20	5.8	ug/L			08/17/16 17:44	1
Dibromomethane	0.21	U	1.0	0.21	ug/L			08/17/16 17:44	1
Dichlorobromomethane	0.14	U	1.0	0.14	ug/L			08/17/16 17:44	1
Dichlorodifluoromethane	0.14	U	2.0	0.14	ug/L			08/17/16 17:44	1
Ethyl acetate	0.18	U	2.0	0.18	ug/L			08/17/16 17:44	1
Ethyl ether	0.26	U	1.0	0.26	ug/L			08/17/16 17:44	1
Ethyl methacrylate	0.17	U	1.0	0.17	ug/L			08/17/16 17:44	1
Ethylbenzene	0.12	U	1.0	0.12	ug/L			08/17/16 17:44	1
1,2-Dibromoethane (EDB)	0.13	U	1.0	0.13	ug/L			08/17/16 17:44	1
Hexachlorobutadiene	0.10	U	1.0	0.10	ug/L			08/17/16 17:44	1
Hexane	0.15	U	4.0	0.15	ug/L			08/17/16 17:44	1
Iodomethane	0.10	U	2.0	0.10	ug/L			08/17/16 17:44	1
Isobutanol	8.3	U	80	8.3	ug/L			08/17/16 17:44	1
Isopropylbenzene	0.17	U	1.0	0.17	ug/L			08/17/16 17:44	1
Methacrylonitrile	1.2	U	10	1.2	ug/L			08/17/16 17:44	1
Methyl acetate	0.76	U	25	0.76	ug/L			08/17/16 17:44	1
Methyl methacrylate	0.27	U	2.0	0.27	ug/L			08/17/16 17:44	1
Methyl tert-butyl ether	0.15	U	2.0	0.15	ug/L			08/17/16 17:44	1
Methylcyclohexane	0.16	U	4.0	0.16	ug/L			08/17/16 17:44	1
Methylene Chloride	0.27	U	1.0	0.27	ug/L			08/17/16 17:44	1
m-Xylene & p-Xylene	0.15	U	2.0	0.15	ug/L			08/17/16 17:44	1
Naphthalene	0.21	U	1.0	0.21	ug/L			08/17/16 17:44	1
1-Butanol	12	U	50	12	ug/L			08/17/16 17:44	1
n-Butylbenzene	0.18	U	1.0	0.18	ug/L			08/17/16 17:44	1
N-Propylbenzene	0.16	U	1.0	0.16	ug/L			08/17/16 17:44	1
o-Xylene	0.13	U	1.0	0.13	ug/L			08/17/16 17:44	1
Propionitrile	1.4	U	10	1.4	ug/L			08/17/16 17:44	1
sec-Butylbenzene	0.16	U	1.0	0.16	ug/L			08/17/16 17:44	1
Styrene	0.13	U	1.0	0.13	ug/L			08/17/16 17:44	1
tert-Butylbenzene	0.18	U	1.0	0.18	ug/L			08/17/16 17:44	1
Tetrachloroethene	0.18	U	1.0	0.18	ug/L			08/17/16 17:44	1
Tetrahydrofuran	**7.0**	**J**	10	0.50	ug/L			08/17/16 17:44	1
Toluene	0.14	U	1.0	0.14	ug/L			08/17/16 17:44	1
trans-1,2-Dichloroethene	0.10	U	1.0	0.10	ug/L			08/17/16 17:44	1
trans-1,3-Dichloropropene	0.10	U	1.0	0.10	ug/L			08/17/16 17:44	1
trans-1,4-Dichloro-2-butene	0.29	U	2.0	0.29	ug/L			08/17/16 17:44	1

Client Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Client Sample ID: YMTFA 43 TB

Lab Sample ID: 160-18615-12

Date Collected: 08/11/16 00:00
Matrix: Water
Date Received: 08/12/16 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	0.25	U	1.0	0.25	ug/L			08/17/16 17:44	1
Trichlorofluoromethane	0.11	U	1.0	0.11	ug/L			08/17/16 17:44	1
Vinyl acetate	0.18	U	2.0	0.18	ug/L			08/17/16 17:44	1
Vinyl chloride	0.19	U	2.0	0.19	ug/L			08/17/16 17:44	1
Xylenes, Total	0.26	U	3.0	0.26	ug/L			08/17/16 17:44	1
Nonanal	0.41	U	5.0	0.41	ug/L			08/17/16 17:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*75 - 129*		*08/17/16 17:44*	*1*
4-Bromofluorobenzene (Surr)	*109*		*81 - 130*		*08/17/16 17:44*	*1*
Dibromofluoromethane (Surr)	*107*		*81 - 124*		*08/17/16 17:44*	*1*
Toluene-d8 (Surr)	*106*		*87 - 128*		*08/17/16 17:44*	*1*

Method: 8260C - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-265132/9
Matrix: Water
Analysis Batch: 265132

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.12	U	1.0	0.12	ug/L			08/17/16 08:58	1
1,1,1-Trichloroethane	0.17	U	1.0	0.17	ug/L			08/17/16 08:58	1
1,1,2,2-Tetrachloroethane	0.10	U	1.0	0.10	ug/L			08/17/16 08:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.10	U	1.0	0.10	ug/L			08/17/16 08:58	1
1,1,2-Trichloroethane	0.13	U	1.0	0.13	ug/L			08/17/16 08:58	1
1,1-Dichloroethene	0.10	U	1.0	0.10	ug/L			08/17/16 08:58	1
1,1-Dichloroethane	0.070	U	1.0	0.070	ug/L			08/17/16 08:58	1
1,1-Dichloropropene	0.10	U	1.0	0.10	ug/L			08/17/16 08:58	1
1,2,3-Trichlorobenzene	0.17	U	1.0	0.17	ug/L			08/17/16 08:58	1
1,2,3-Trichloropropane	0.18	U	1.0	0.18	ug/L			08/17/16 08:58	1
1,2,4-Trichlorobenzene	0.10	U	1.0	0.10	ug/L			08/17/16 08:58	1
1,2,4-Trimethylbenzene	0.17	U	1.0	0.17	ug/L			08/17/16 08:58	1
1,2-Dibromo-3-Chloropropane	0.41	U	1.0	0.41	ug/L			08/17/16 08:58	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.18	U	4.0	0.18	ug/L			08/17/16 08:58	1
1,2-Dichlorobenzene	0.10	U	1.0	0.10	ug/L			08/17/16 08:58	1
1,2-Dichloroethane	0.22	U	1.0	0.22	ug/L			08/17/16 08:58	1
1,2-Dichloroethene, Total	0.14	U	2.0	0.14	ug/L			08/17/16 08:58	1
1,2-Dichloropropane	0.10	U	1.0	0.10	ug/L			08/17/16 08:58	1
1,3,5-Trimethylbenzene	0.16	U	1.0	0.16	ug/L			08/17/16 08:58	1
1,3-Dichlorobenzene	0.11	U	1.0	0.11	ug/L			08/17/16 08:58	1
1,3-Dichloropropane	0.10	U	1.0	0.10	ug/L			08/17/16 08:58	1
1,4-Dichlorobenzene	0.10	U	1.0	0.10	ug/L			08/17/16 08:58	1
1,4-Dioxane	11	U	80	11	ug/L			08/17/16 08:58	1
2,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			08/17/16 08:58	1
2-Butanone (MEK)	0.47	U	5.0	0.47	ug/L			08/17/16 08:58	1
2-Chloro-1,3-butadiene	0.16	U	1.0	0.16	ug/L			08/17/16 08:58	1
2-Chloroethyl vinyl ether	0.24	U	2.0	0.24	ug/L			08/17/16 08:58	1
2-Chlorotoluene	0.15	U	1.0	0.15	ug/L			08/17/16 08:58	1
2-Hexanone	0.25	U	5.0	0.25	ug/L			08/17/16 08:58	1
2-Nitropropane	0.40	U	10	0.40	ug/L			08/17/16 08:58	1
Allyl chloride	0.10	U	2.0	0.10	ug/L			08/17/16 08:58	1
4-Chlorotoluene	0.15	U	1.0	0.15	ug/L			08/17/16 08:58	1
4-Isopropyltoluene	0.17	U	1.0	0.17	ug/L			08/17/16 08:58	1
4-Methyl-2-pentanone (MIBK)	0.22	U	5.0	0.22	ug/L			08/17/16 08:58	1
Acetone	0.55	U	2.0	0.55	ug/L			08/17/16 08:58	1
Acetonitrile	3.7	U	10	3.7	ug/L			08/17/16 08:58	1
Acrolein	2.8	U	10	2.8	ug/L			08/17/16 08:58	1
Acrylonitrile	0.73	U	10	0.73	ug/L			08/17/16 08:58	1
Benzene	0.10	U	1.0	0.10	ug/L			08/17/16 08:58	1
Bromobenzene	0.12	U	1.0	0.12	ug/L			08/17/16 08:58	1
Bromoform	0.17	U	1.0	0.17	ug/L			08/17/16 08:58	1
Bromomethane	0.25	U	2.0	0.25	ug/L			08/17/16 08:58	1
Carbon disulfide	0.10	U	1.0	0.10	ug/L			08/17/16 08:58	1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L			08/17/16 08:58	1
Chlorobenzene	0.11	U	1.0	0.11	ug/L			08/17/16 08:58	1
Bromochloromethane	0.14	U	1.0	0.14	ug/L			08/17/16 08:58	1
Dibromochloromethane	0.14	U	1.0	0.14	ug/L			08/17/16 08:58	1
Chloroethane	0.16	U	2.0	0.16	ug/L			08/17/16 08:58	1

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-265132/9
Matrix: Water
Analysis Batch: 265132

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	0.10	U	1.0	0.10	ug/L			08/17/16 08:58	1
Chloromethane	0.10	U	2.0	0.10	ug/L			08/17/16 08:58	1
cis-1,2-Dichloroethene	0.10	U	1.0	0.10	ug/L			08/17/16 08:58	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			08/17/16 08:58	1
Cyclohexane	0.14	U	1.0	0.14	ug/L			08/17/16 08:58	1
Cyclohexanone	5.8	U	20	5.8	ug/L			08/17/16 08:58	1
Dibromomethane	0.21	U	1.0	0.21	ug/L			08/17/16 08:58	1
Dichlorobromomethane	0.14	U	1.0	0.14	ug/L			08/17/16 08:58	1
Dichlorodifluoromethane	0.14	U	2.0	0.14	ug/L			08/17/16 08:58	1
Ethyl acetate	0.18	U	2.0	0.18	ug/L			08/17/16 08:58	1
Ethyl ether	0.26	U	1.0	0.26	ug/L			08/17/16 08:58	1
Ethyl methacrylate	0.17	U	1.0	0.17	ug/L			08/17/16 08:58	1
Ethylbenzene	0.12	U	1.0	0.12	ug/L			08/17/16 08:58	1
1,2-Dibromoethane (EDB)	0.13	U	1.0	0.13	ug/L			08/17/16 08:58	1
Hexachlorobutadiene	0.10	U	1.0	0.10	ug/L			08/17/16 08:58	1
Hexane	0.15	U	4.0	0.15	ug/L			08/17/16 08:58	1
Iodomethane	0.10	U	2.0	0.10	ug/L			08/17/16 08:58	1
Isobutanol	8.3	U	80	8.3	ug/L			08/17/16 08:58	1
Isopropylbenzene	0.17	U	1.0	0.17	ug/L			08/17/16 08:58	1
Methacrylonitrile	1.2	U	10	1.2	ug/L			08/17/16 08:58	1
Methyl acetate	0.76	U	25	0.76	ug/L			08/17/16 08:58	1
Methyl methacrylate	0.27	U	2.0	0.27	ug/L			08/17/16 08:58	1
Methyl tert-butyl ether	0.15	U	2.0	0.15	ug/L			08/17/16 08:58	1
Methylcyclohexane	0.16	U	4.0	0.16	ug/L			08/17/16 08:58	1
Methylene Chloride	0.27	U	1.0	0.27	ug/L			08/17/16 08:58	1
m-Xylene & p-Xylene	0.15	U	2.0	0.15	ug/L			08/17/16 08:58	1
Naphthalene	0.21	U	1.0	0.21	ug/L			08/17/16 08:58	1
1-Butanol	12	U	50	12	ug/L			08/17/16 08:58	1
n-Butylbenzene	0.18	U	1.0	0.18	ug/L			08/17/16 08:58	1
N-Propylbenzene	0.16	U	1.0	0.16	ug/L			08/17/16 08:58	1
o-Xylene	0.13	U	1.0	0.13	ug/L			08/17/16 08:58	1
Propionitrile	1.4	U	10	1.4	ug/L			08/17/16 08:58	1
sec-Butylbenzene	0.16	U	1.0	0.16	ug/L			08/17/16 08:58	1
Styrene	0.13	U	1.0	0.13	ug/L			08/17/16 08:58	1
tert-Butylbenzene	0.18	U	1.0	0.18	ug/L			08/17/16 08:58	1
Tetrachloroethene	0.18	U	1.0	0.18	ug/L			08/17/16 08:58	1
Tetrahydrofuran	0.50	U	10	0.50	ug/L			08/17/16 08:58	1
Toluene	0.14	U	1.0	0.14	ug/L			08/17/16 08:58	1
trans-1,2-Dichloroethene	0.10	U	1.0	0.10	ug/L			08/17/16 08:58	1
trans-1,3-Dichloropropene	0.10	U	1.0	0.10	ug/L			08/17/16 08:58	1
trans-1,4-Dichloro-2-butene	0.29	U	2.0	0.29	ug/L			08/17/16 08:58	1
Trichloroethene	0.25	U	1.0	0.25	ug/L			08/17/16 08:58	1
Trichlorofluoromethane	0.11	U	1.0	0.11	ug/L			08/17/16 08:58	1
Vinyl acetate	0.18	U	2.0	0.18	ug/L			08/17/16 08:58	1
Vinyl chloride	0.19	U	2.0	0.19	ug/L			08/17/16 08:58	1
Xylenes, Total	0.26	U	3.0	0.26	ug/L			08/17/16 08:58	1
Nonanal	0.41	U	5.0	0.41	ug/L			08/17/16 08:58	1

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-265132/9
Matrix: Water
Analysis Batch: 265132

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

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 129*		*08/17/16 08:58*	*1*
4-Bromofluorobenzene (Surr)	*107*		*81 - 130*		*08/17/16 08:58*	*1*
Dibromofluoromethane (Surr)	*99*		*81 - 124*		*08/17/16 08:58*	*1*
Toluene-d8 (Surr)	*106*		*87 - 128*		*08/17/16 08:58*	*1*

Lab Sample ID: LCS 160-265132/6
Matrix: Water
Analysis Batch: 265132

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	9.50		ug/L		95	80 - 120
1,1,1-Trichloroethane	10.0	10.8		ug/L		108	85 - 116
1,1,2,2-Tetrachloroethane	10.0	9.18		ug/L		92	80 - 120
1,1,2-Trichloroethane	10.0	8.83		ug/L		88	80 - 120
1,1-Dichloroethene	10.0	11.9		ug/L		119	80 - 120
1,1-Dichloroethane	10.0	10.5		ug/L		105	80 - 120
1,1-Dichloropropene	10.0	11.7		ug/L		117	82 - 125
1,2,3-Trichlorobenzene	10.0	10.5		ug/L		105	61 - 133
1,2,3-Trichloropropane	10.0	10.8		ug/L		108	77 - 117
1,2,4-Trichlorobenzene	10.0	11.1		ug/L		111	75 - 121
1,2,4-Trimethylbenzene	10.0	10.5		ug/L		105	87 - 126
1,2-Dibromo-3-Chloropropane	10.0	8.49		ug/L		85	73 - 123
1,2-Dichloro-1,1,2,2-tetrafluoroethane	10.0	13.8		ug/L		138	45 - 140
1,2-Dichlorobenzene	10.0	9.79		ug/L		98	80 - 120
1,2-Dichloroethane	10.0	10.1		ug/L		101	80 - 115
1,2-Dichloroethene, Total	20.0	20.5		ug/L		103	80 - 120
1,2-Dichloropropane	10.0	10.9		ug/L		109	80 - 120
1,3,5-Trimethylbenzene	10.0	11.4		ug/L		114	85 - 129
1,3-Dichlorobenzene	10.0	10.4		ug/L		104	80 - 120
1,3-Dichloropropane	10.0	8.96		ug/L		90	80 - 120
1,4-Dichlorobenzene	10.0	10.1		ug/L		101	80 - 120
1,4-Dioxane	200	204		ug/L		102	61 - 130
2,2-Dichloropropane	10.0	11.1		ug/L		111	81 - 128
2-Butanone (MEK)	10.0	9.36		ug/L		94	67 - 127
2-Chloro-1,3-butadiene	10.0	11.7		ug/L		117	79 - 132
2-Chloroethyl vinyl ether	10.0	6.80		ug/L		68	33 - 140
2-Chlorotoluene	10.0	10.9		ug/L		109	81 - 124
2-Hexanone	10.0	8.58		ug/L		86	70 - 123
2-Nitropropane	20.0	16.2		ug/L		81	57 - 136
Allyl chloride	10.0	10.0		ug/L		100	25 - 140
4-Chlorotoluene	10.0	10.7		ug/L		107	81 - 127
4-Isopropyltoluene	10.0	10.6		ug/L		106	82 - 134
4-Methyl-2-pentanone (MIBK)	10.0	9.20		ug/L		92	75 - 126
Acetone	10.0	11.3		ug/L		113	69 - 129
Acetonitrile	100	92.1		ug/L		92	67 - 122
Acrolein	50.0	41.8		ug/L		84	58 - 140
Acrylonitrile	100	102		ug/L		102	80 - 122

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-265132/6
Matrix: Water
Analysis Batch: 265132

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	10.7		ug/L		107	80 - 120
Bromobenzene	10.0	10.0		ug/L		100	80 - 120
Bromoform	10.0	9.91		ug/L		99	80 - 120
Bromomethane	10.0	11.9		ug/L		119	70 - 124
Carbon disulfide	10.0	12.0		ug/L		120	80 - 121
Carbon tetrachloride	10.0	11.1		ug/L		111	83 - 125
Chlorobenzene	10.0	10.1		ug/L		101	80 - 120
Bromochloromethane	10.0	10.8		ug/L		108	80 - 120
Dibromochloromethane	10.0	8.97		ug/L		90	80 - 120
Chloroethane	10.0	13.0	N	ug/L		130	73 - 119
Chloroform	10.0	11.0		ug/L		110	80 - 120
Chloromethane	10.0	11.7		ug/L		117	72 - 124
cis-1,2-Dichloroethene	10.0	9.94		ug/L		99	80 - 120
cis-1,3-Dichloropropene	10.0	10.4		ug/L		104	80 - 120
Cyclohexane	10.0	12.5		ug/L		125	82 - 129
Cyclohexanone	100	96.1		ug/L		96	38 - 140
Dibromomethane	10.0	10.7		ug/L		107	80 - 120
Dichlorobromomethane	10.0	10.8		ug/L		108	80 - 120
Dichlorodifluoromethane	10.0	12.1		ug/L		121	24 - 140
Ethyl acetate	20.0	19.0		ug/L		95	75 - 124
Ethyl ether	10.0	11.0		ug/L		110	80 - 120
Ethyl methacrylate	10.0	10.2		ug/L		102	69 - 123
Ethylbenzene	10.0	9.86		ug/L		99	80 - 120
1,2-Dibromoethane (EDB)	10.0	8.79		ug/L		88	80 - 120
Hexachlorobutadiene	10.0	11.0		ug/L		110	59 - 140
Hexane	10.0	11.5		ug/L		115	73 - 140
Iodomethane	10.0	11.3		ug/L		113	69 - 129
Isobutanol	250	225		ug/L		90	64 - 124
Isopropylbenzene	10.0	10.3		ug/L		103	84 - 130
Methacrylonitrile	100	99.6		ug/L		100	79 - 126
Methyl acetate	50.0	48.2		ug/L		96	69 - 119
Methyl methacrylate	20.0	21.4		ug/L		107	70 - 123
Methyl tert-butyl ether	10.0	9.99		ug/L		100	78 - 121
Methylcyclohexane	10.0	11.2		ug/L		112	71 - 140
Methylene Chloride	10.0	9.72		ug/L		97	80 - 120
m-Xylene & p-Xylene	10.0	10.2		ug/L		102	80 - 120
Naphthalene	10.0	9.83		ug/L		98	72 - 128
1-Butanol	250	241		ug/L		96	62 - 128
n-Butylbenzene	10.0	11.3		ug/L		113	78 - 132
N-Propylbenzene	10.0	9.88		ug/L		99	80 - 134
o-Xylene	10.0	10.8		ug/L		108	80 - 120
Propionitrile	100	97.8		ug/L		98	77 - 121
sec-Butylbenzene	10.0	10.6		ug/L		106	76 - 134
Styrene	10.0	11.7		ug/L		117	81 - 133
tert-Butylbenzene	10.0	10.9		ug/L		109	84 - 129
Tetrachloroethene	10.0	10.5		ug/L		105	83 - 123
Tetrahydrofuran	20.0	19.2		ug/L		96	71 - 124
Toluene	10.0	10.5		ug/L		105	80 - 120

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-265132/6
Matrix: Water
Analysis Batch: 265132

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
trans-1,2-Dichloroethene	10.0	10.6		ug/L		106	80 - 120
trans-1,3-Dichloropropene	10.0	9.06		ug/L		91	82 - 124
trans-1,4-Dichloro-2-butene	10.0	7.76		ug/L		78	64 - 137
Trichloroethene	10.0	10.7		ug/L		107	80 - 120
Trichlorofluoromethane	10.0	12.0		ug/L		120	71 - 132
Vinyl acetate	10.0	9.92		ug/L		99	63 - 140
Vinyl chloride	10.0	11.9		ug/L		119	77 - 122
Xylenes, Total	20.0	21.0		ug/L		105	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 129*
4-Bromofluorobenzene (Surr)	*101*		*81 - 130*
Dibromofluoromethane (Surr)	*108*		*81 - 124*
Toluene-d8 (Surr)	*101*		*87 - 128*

Lab Sample ID: LCSD 160-265132/7
Matrix: Water
Analysis Batch: 265132

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
1,1,1,2-Tetrachloroethane	10.0	11.0		ug/L		110	80 - 120	15	20
1,1,1-Trichloroethane	10.0	10.3		ug/L		103	85 - 116	5	20
1,1,2,2-Tetrachloroethane	10.0	9.63		ug/L		96	80 - 120	5	20
1,1,2-Trichloroethane	10.0	8.92		ug/L		89	80 - 120	1	20
1,1-Dichloroethene	10.0	11.3		ug/L		113	80 - 120	5	20
1,1-Dichloroethane	10.0	10.3		ug/L		103	80 - 120	2	20
1,1-Dichloropropene	10.0	10.6		ug/L		106	82 - 125	10	20
1,2,3-Trichlorobenzene	10.0	9.67		ug/L		97	61 - 133	8	20
1,2,3-Trichloropropane	10.0	10.5		ug/L		105	77 - 117	2	20
1,2,4-Trichlorobenzene	10.0	9.72		ug/L		97	75 - 121	13	20
1,2,4-Trimethylbenzene	10.0	10.2		ug/L		102	87 - 126	3	20
1,2-Dibromo-3-Chloropropane	10.0	7.46		ug/L		75	73 - 123	13	20
1,2-Dichloro-1,1,2,2-tetrafluoroethane	10.0	13.2		ug/L		132	45 - 140	5	20
1,2-Dichlorobenzene	10.0	9.38		ug/L		94	80 - 120	4	20
1,2-Dichloroethane	10.0	10.0		ug/L		100	80 - 115	0	20
1,2-Dichloroethene, Total	20.0	20.3		ug/L		102	80 - 120	1	20
1,2-Dichloropropane	10.0	10.5		ug/L		105	80 - 120	4	20
1,3,5-Trimethylbenzene	10.0	11.1		ug/L		111	85 - 129	2	20
1,3-Dichlorobenzene	10.0	10.2		ug/L		102	80 - 120	2	20
1,3-Dichloropropane	10.0	8.90		ug/L		89	80 - 120	1	20
1,4-Dichlorobenzene	10.0	10.1		ug/L		101	80 - 120	1	20
1,4-Dioxane	200	176		ug/L		88	61 - 130	15	20
2,2-Dichloropropane	10.0	10.2		ug/L		102	81 - 128	9	20
2-Butanone (MEK)	10.0	8.47		ug/L		85	67 - 127	10	20
2-Chloro-1,3-butadiene	10.0	10.9		ug/L		109	79 - 132	7	20
2-Chloroethyl vinyl ether	10.0	6.29		ug/L		63	33 - 140	8	20
2-Chlorotoluene	10.0	10.2		ug/L		102	81 - 124	7	20

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-265132/7
Matrix: Water
Analysis Batch: 265132

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
2-Hexanone	10.0	7.49		ug/L		75	70 - 123	14	20
2-Nitropropane	20.0	17.5		ug/L		87	57 - 136	7	20
Allyl chloride	10.0	9.47		ug/L		95	25 - 140	6	20
4-Chlorotoluene	10.0	10.0		ug/L		100	81 - 127	6	20
4-Isopropyltoluene	10.0	10.1		ug/L		101	82 - 134	4	20
4-Methyl-2-pentanone (MIBK)	10.0	9.63		ug/L		96	75 - 126	5	20
Acetone	10.0	10.7		ug/L		107	69 - 129	5	20
Acetonitrile	100	88.2		ug/L		88	67 - 122	4	20
Acrolein	50.0	41.8		ug/L		84	58 - 140	0	20
Acrylonitrile	100	102		ug/L		102	80 - 122	0	20
Benzene	10.0	10.3		ug/L		103	80 - 120	3	20
Bromobenzene	10.0	10.2		ug/L		102	80 - 120	2	20
Bromoform	10.0	9.42		ug/L		94	80 - 120	5	20
Bromomethane	10.0	11.4		ug/L		114	70 - 124	4	20
Carbon disulfide	10.0	11.4		ug/L		114	80 - 121	5	20
Carbon tetrachloride	10.0	10.6		ug/L		106	83 - 125	4	20
Chlorobenzene	10.0	11.0		ug/L		110	80 - 120	8	20
Bromochloromethane	10.0	10.8		ug/L		108	80 - 120	0	20
Dibromochloromethane	10.0	9.22		ug/L		92	80 - 120	3	20
Chloroethane	10.0	12.5	N	ug/L		125	73 - 119	4	20
Chloroform	10.0	10.6		ug/L		106	80 - 120	4	20
Chloromethane	10.0	11.6		ug/L		116	72 - 124	1	20
cis-1,2-Dichloroethene	10.0	10.0		ug/L		100	80 - 120	1	20
cis-1,3-Dichloropropene	10.0	10.2		ug/L		102	80 - 120	2	20
Cyclohexane	10.0	11.8		ug/L		118	82 - 129	6	20
Cyclohexanone	100	90.8		ug/L		91	38 - 140	6	20
Dibromomethane	10.0	10.2		ug/L		102	80 - 120	5	20
Dichlorobromomethane	10.0	10.4		ug/L		104	80 - 120	4	20
Dichlorodifluoromethane	10.0	11.0		ug/L		110	24 - 140	10	20
Ethyl acetate	20.0	19.1		ug/L		96	75 - 124	0	20
Ethyl ether	10.0	10.6		ug/L		106	80 - 120	4	20
Ethyl methacrylate	10.0	10.2		ug/L		102	69 - 123	1	20
Ethylbenzene	10.0	10.0		ug/L		100	80 - 120	2	20
1,2-Dibromoethane (EDB)	10.0	8.56		ug/L		86	80 - 120	3	20
Hexachlorobutadiene	10.0	9.65		ug/L		96	59 - 140	13	20
Hexane	10.0	11.0		ug/L		110	73 - 140	5	20
Iodomethane	10.0	11.5		ug/L		115	69 - 129	2	20
Isobutanol	250	226		ug/L		91	64 - 124	1	20
Isopropylbenzene	10.0	9.99		ug/L		100	84 - 130	3	20
Methacrylonitrile	100	94.2		ug/L		94	79 - 126	6	20
Methyl acetate	50.0	47.3		ug/L		95	69 - 119	2	20
Methyl methacrylate	20.0	19.8		ug/L		99	70 - 123	8	20
Methyl tert-butyl ether	10.0	9.91		ug/L		99	78 - 121	1	20
Methylcyclohexane	10.0	10.7		ug/L		107	71 - 140	5	20
Methylene Chloride	10.0	9.66		ug/L		97	80 - 120	1	20
m-Xylene & p-Xylene	10.0	11.7		ug/L		117	80 - 120	14	20
Naphthalene	10.0	9.02		ug/L		90	72 - 128	9	20
1-Butanol	250	267		ug/L		107	62 - 128	10	20

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-265132/7
Matrix: Water
Analysis Batch: 265132

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
n-Butylbenzene	10.0	10.8		ug/L		108	78 - 132	5	20
N-Propylbenzene	10.0	10.1		ug/L		101	80 - 134	2	20
o-Xylene	10.0	11.9		ug/L		119	80 - 120	10	20
Propionitrile	100	92.3		ug/L		92	77 - 121	6	20
sec-Butylbenzene	10.0	9.90		ug/L		99	76 - 134	7	20
Styrene	10.0	12.5		ug/L		125	81 - 133	6	20
tert-Butylbenzene	10.0	10.4		ug/L		104	84 - 129	5	20
Tetrachloroethene	10.0	10.5		ug/L		105	83 - 123	0	20
Tetrahydrofuran	20.0	18.3		ug/L		92	71 - 124	5	20
Toluene	10.0	11.1		ug/L		111	80 - 120	5	20
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	80 - 120	4	20
trans-1,3-Dichloropropene	10.0	9.34		ug/L		93	82 - 124	3	20
trans-1,4-Dichloro-2-butene	10.0	7.00		ug/L		70	64 - 137	10	20
Trichloroethene	10.0	10.3		ug/L		103	80 - 120	3	20
Trichlorofluoromethane	10.0	11.3		ug/L		113	71 - 132	6	20
Vinyl acetate	10.0	9.87		ug/L		99	63 - 140	0	20
Vinyl chloride	10.0	11.5		ug/L		115	77 - 122	3	20
Xylenes, Total	20.0	23.6		ug/L		118	80 - 120	12	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 129*
4-Bromofluorobenzene (Surr)	*104*		*81 - 130*
Dibromofluoromethane (Surr)	*106*		*81 - 124*
Toluene-d8 (Surr)	*109*		*87 - 128*

Lab Sample ID: 160-18615-10 MS
Matrix: Water
Analysis Batch: 265132

Client Sample ID: YMTFA 42 GW
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	1.2	U	100	98.6		ug/L		99	80 - 120
1,1,1-Trichloroethane	1.7	U	100	102		ug/L		102	82 - 124
1,1,2,2-Tetrachloroethane	1.0	U	100	88.3		ug/L		88	75 - 121
1,1,2-Trichloroethane	1.3	U	100	94.1		ug/L		94	80 - 120
1,1-Dichloroethene	1.0	U	100	97.4		ug/L		97	80 - 120
1,1-Dichloroethane	0.70	U	100	103		ug/L		103	80 - 122
1,1-Dichloropropene	1.0	U	100	101		ug/L		101	79 - 130
1,2,3-Trichlorobenzene	1.7	U	100	96.4		ug/L		96	59 - 132
1,2,3-Trichloropropane	1.8	U	100	101		ug/L		101	71 - 119
1,2,4-Trichlorobenzene	1.0	U	100	96.6		ug/L		97	74 - 120
1,2,4-Trimethylbenzene	1.7	U	100	98.2		ug/L		98	85 - 128
1,2-Dibromo-3-Chloropropane	4.1	U	100	80.1		ug/L		80	64 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	1.8	U	100	108		ug/L		108	47 - 148
1,2-Dichlorobenzene	1.0	U	100	96.5		ug/L		96	80 - 120
1,2-Dichloroethane	2.2	U	100	103		ug/L		103	80 - 120
1,2-Dichloroethene, Total	230		200	511	N	ug/L		139	80 - 120
1,2-Dichloropropane	1.0	U	100	99.3		ug/L		99	80 - 120

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-18615-10 MS
Matrix: Water
Analysis Batch: 265132

Client Sample ID: YMTFA 42 GW
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	1.6	U	100	102		ug/L		102	82 - 132
1,3-Dichlorobenzene	1.1	U	100	95.9		ug/L		96	80 - 120
1,3-Dichloropropane	1.0	U	100	97.4		ug/L		97	80 - 121
1,4-Dichlorobenzene	1.0	U	100	97.5		ug/L		97	80 - 120
1,4-Dioxane	110	U	2000	1820		ug/L		91	59 - 145
2,2-Dichloropropane	1.8	U	100	99.2		ug/L		99	79 - 132
2-Butanone (MEK)	29	J	100	82.2		ug/L		53	53 - 145
2-Chloro-1,3-butadiene	1.6	U	100	106		ug/L		106	74 - 137
2-Chloroethyl vinyl ether	2.4	U	100	10.4	J N	ug/L		10	50 - 150
2-Chlorotoluene	1.5	U	100	93.6		ug/L		94	81 - 125
2-Hexanone	5.9	J	100	86.8		ug/L		81	59 - 132
2-Nitropropane	4.0	U	200	181		ug/L		91	58 - 135
Allyl chloride	1.0	U	100	99.5		ug/L		100	49 - 150
4-Chlorotoluene	1.5	U	100	95.5		ug/L		95	82 - 126
4-Isopropyltoluene	1.7	U	100	98.9		ug/L		99	81 - 137
4-Methyl-2-pentanone (MIBK)	2.2	U	100	96.7		ug/L		97	70 - 131
Acetone	1300		100	148		ug/L		-1111	50 - 137
Acetonitrile	37	U	1000	945		ug/L		94	67 - 138
Acrolein	28	U	500	442		ug/L		88	52 - 150
Acrylonitrile	7.3	U	1000	1020		ug/L		102	73 - 137
Benzene	1.0	U	100	107		ug/L		107	80 - 120
Bromobenzene	1.2	U	100	91.5		ug/L		91	80 - 120
Bromoform	1.7	U	100	87.1		ug/L		87	81 - 121
Bromomethane	2.5	U	100	100		ug/L		100	55 - 137
Carbon disulfide	1.0	U	100	101		ug/L		101	80 - 121
Carbon tetrachloride	1.8	U	100	100		ug/L		100	77 - 131
Chlorobenzene	1.1	U	100	101		ug/L		101	80 - 120
Bromochloromethane	1.4	U	100	96.6		ug/L		97	80 - 120
Dibromochloromethane	1.4	U	100	98.6		ug/L		99	84 - 123
Chloroethane	1.6	U N	100	110		ug/L		110	71 - 126
Chloroform	1.0	U	100	97.6		ug/L		98	80 - 120
Chloromethane	1.0	U	100	93.7		ug/L		94	62 - 132
cis-1,2-Dichloroethene	230		100	411	N	ug/L		183	80 - 120
cis-1,3-Dichloropropene	1.6	U	100	99.5		ug/L		100	83 - 127
Cyclohexane	1.4	U	100	104		ug/L		104	81 - 136
Cyclohexanone	58	U	1000	801		ug/L		80	21 - 150
Dibromomethane	2.1	U	100	96.0		ug/L		96	78 - 122
Dichlorobromomethane	1.4	U	100	104		ug/L		104	80 - 120
Dichlorodifluoromethane	1.4	U	100	101		ug/L		101	67 - 135
Ethyl acetate	1.8	U	200	186		ug/L		93	71 - 132
Ethyl ether	2.6	U	100	93.8		ug/L		94	77 - 121
Ethyl methacrylate	1.7	U	100	112		ug/L		112	69 - 123
Ethylbenzene	1.2	U	100	101		ug/L		101	84 - 125
1,2-Dibromoethane (EDB)	1.3	U	100	94.4		ug/L		94	82 - 122
Hexachlorobutadiene	1.0	U	100	96.5		ug/L		97	61 - 145
Hexane	1.5	U	100	98.7		ug/L		99	73 - 141
Iodomethane	1.0	U	100	98.2		ug/L		98	53 - 141
Isobutanol	83	U	2500	2390		ug/L		95	59 - 138

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-18615-10 MS
Matrix: Water
Analysis Batch: 265132

Client Sample ID: YMTFA 42 GW
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Isopropylbenzene	1.7	U	100	94.9		ug/L		95	83 - 132
Methacrylonitrile	12	U	1000	1010		ug/L		101	70 - 142
Methyl acetate	7.6	U	500	430		ug/L		86	67 - 127
Methyl methacrylate	2.7	U	200	205		ug/L		102	66 - 131
Methyl tert-butyl ether	1.5	U	100	99.9		ug/L		100	75 - 125
Methylcyclohexane	1.6	U	100	103		ug/L		103	67 - 150
Methylene Chloride	2.7	U	100	94.2		ug/L		94	80 - 120
m-Xylene & p-Xylene	1.5	U	100	104		ug/L		104	80 - 120
Naphthalene	2.1	U	100	90.3		ug/L		90	58 - 131
1-Butanol	120	U	2500	2430		ug/L		97	58 - 144
n-Butylbenzene	1.8	U	100	105		ug/L		105	80 - 132
N-Propylbenzene	1.6	U	100	96.3		ug/L		96	77 - 137
o-Xylene	1.3	U	100	105		ug/L		105	86 - 125
Propionitrile	14	U	1000	988		ug/L		99	67 - 141
sec-Butylbenzene	1.6	U	100	98.7		ug/L		99	76 - 137
Styrene	1.3	U	100	113		ug/L		113	77 - 139
tert-Butylbenzene	1.8	U	100	96.2		ug/L		96	82 - 132
Tetrachloroethene	63		100	215	N	ug/L		152	80 - 126
Tetrahydrofuran	5.0	U	200	185		ug/L		93	65 - 136
Toluene	1.4	U	100	105		ug/L		105	85 - 123
trans-1,2-Dichloroethene	3.7	J	100	99.7		ug/L		96	80 - 120
trans-1,3-Dichloropropene	1.0	U	100	101		ug/L		101	83 - 125
trans-1,4-Dichloro-2-butene	2.9	U	100	76.4		ug/L		76	56 - 139
Trichloroethene	48		100	178	N	ug/L		130	81 - 125
Trichlorofluoromethane	1.1	U	100	106		ug/L		106	69 - 133
Vinyl acetate	1.8	U	100	103		ug/L		103	58 - 150
Vinyl chloride	5.3	J	100	96.6		ug/L		91	70 - 129
Xylenes, Total	2.6	U	200	209		ug/L		105	80 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 129*
4-Bromofluorobenzene (Surr)	*94*		*81 - 130*
Dibromofluoromethane (Surr)	*106*		*81 - 124*
Toluene-d8 (Surr)	*103*		*87 - 128*

Lab Sample ID: 160-18615-10 MSD
Matrix: Water
Analysis Batch: 265132

Client Sample ID: YMTFA 42 GW
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	1.2	U	100	98.1		ug/L		98	80 - 120	1	20
1,1,1-Trichloroethane	1.7	U	100	100		ug/L		100	82 - 124	2	20
1,1,2,2-Tetrachloroethane	1.0	U	100	90.1		ug/L		90	75 - 121	2	20
1,1,2-Trichloroethane	1.3	U	100	98.6		ug/L		99	80 - 120	5	20
1,1-Dichloroethene	1.0	U	100	97.8		ug/L		98	80 - 120	0	20
1,1-Dichloroethane	0.70	U	100	104		ug/L		104	80 - 122	1	20
1,1-Dichloropropene	1.0	U	100	104		ug/L		104	79 - 130	3	20
1,2,3-Trichlorobenzene	1.7	U	100	105		ug/L		105	59 - 132	9	20

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-18615-10 MSD
Matrix: Water
Analysis Batch: 265132

Client Sample ID: YMTFA 42 GW
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3-Trichloropropane	1.8	U	100	106		ug/L		106	71 - 119	4	20
1,2,4-Trichlorobenzene	1.0	U	100	105		ug/L		105	74 - 120	8	20
1,2,4-Trimethylbenzene	1.7	U	100	101		ug/L		101	85 - 128	3	20
1,2-Dibromo-3-Chloropropane	4.1	U	100	85.3		ug/L		85	64 - 130	6	20
1,2-Dichloro-1,1,2,2-tetrafluoroethane	1.8	U	100	114		ug/L		114	47 - 148	5	20
1,2-Dichlorobenzene	1.0	U	100	96.9		ug/L		97	80 - 120	0	20
1,2-Dichloroethane	2.2	U	100	98.9		ug/L		99	80 - 120	4	20
1,2-Dichloroethene, Total	230		200	522	N	ug/L		144	80 - 120	2	20
1,2-Dichloropropane	1.0	U	100	98.9		ug/L		99	80 - 120	0	20
1,3,5-Trimethylbenzene	1.6	U	100	111		ug/L		111	82 - 132	8	20
1,3-Dichlorobenzene	1.1	U	100	102		ug/L		102	80 - 120	6	20
1,3-Dichloropropane	1.0	U	100	98.9		ug/L		99	80 - 121	2	20
1,4-Dichlorobenzene	1.0	U	100	100		ug/L		100	80 - 120	3	20
1,4-Dioxane	110	U	2000	1830		ug/L		92	59 - 145	1	20
2,2-Dichloropropane	1.8	U	100	98.5		ug/L		99	79 - 132	1	20
2-Butanone (MEK)	29	J	100	93.0		ug/L		64	53 - 145	12	20
2-Chloro-1,3-butadiene	1.6	U	100	106		ug/L		106	74 - 137	1	20
2-Chloroethyl vinyl ether	2.4	U	100	6.11	J N *	ug/L		6	50 - 150	52	20
2-Chlorotoluene	1.5	U	100	98.8		ug/L		99	81 - 125	5	20
2-Hexanone	5.9	J	100	88.6		ug/L		83	59 - 132	2	20
2-Nitropropane	4.0	U	200	173		ug/L		86	58 - 135	5	20
Allyl chloride	1.0	U	100	99.4		ug/L		99	49 - 150	0	20
4-Chlorotoluene	1.5	U	100	95.6		ug/L		96	82 - 126	0	20
4-Isopropyltoluene	1.7	U	100	101		ug/L		101	81 - 137	2	20
4-Methyl-2-pentanone (MIBK)	2.2	U	100	94.8		ug/L		95	70 - 131	2	20
Acetone	1300		100	124		ug/L		-1135	50 - 137	18	20
Acetonitrile	37	U	1000	943		ug/L		94	67 - 138	0	20
Acrolein	28	U	500	421		ug/L		84	52 - 150	5	20
Acrylonitrile	7.3	U	1000	1000		ug/L		100	73 - 137	1	20
Benzene	1.0	U	100	104		ug/L		104	80 - 120	3	20
Bromobenzene	1.2	U	100	93.3		ug/L		93	80 - 120	2	20
Bromoform	1.7	U	100	97.1		ug/L		97	81 - 121	11	20
Bromomethane	2.5	U	100	101		ug/L		101	55 - 137	1	20
Carbon disulfide	1.0	U	100	103		ug/L		103	80 - 121	2	20
Carbon tetrachloride	1.8	U	100	103		ug/L		103	77 - 131	2	20
Chlorobenzene	1.1	U	100	103		ug/L		103	80 - 120	1	20
Bromochloromethane	1.4	U	100	95.5		ug/L		96	80 - 120	1	20
Dibromochloromethane	1.4	U	100	92.6		ug/L		93	84 - 123	6	20
Chloroethane	1.6	U N	100	107		ug/L		107	71 - 126	2	20
Chloroform	1.0	U	100	96.9		ug/L		97	80 - 120	1	20
Chloromethane	1.0	U	100	101		ug/L		101	62 - 132	8	20
cis-1,2-Dichloroethene	230		100	422	N	ug/L		194	80 - 120	3	20
cis-1,3-Dichloropropene	1.6	U	100	96.4		ug/L		96	83 - 127	3	20
Cyclohexane	1.4	U	100	105		ug/L		105	81 - 136	1	20
Cyclohexanone	58	U	1000	912		ug/L		91	21 - 150	13	20
Dibromomethane	2.1	U	100	94.1		ug/L		94	78 - 122	2	20
Dichlorobromomethane	1.4	U	100	103		ug/L		103	80 - 120	1	20

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-18615-10 MSD
Matrix: Water
Analysis Batch: 265132

Client Sample ID: YMTFA 42 GW
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dichlorodifluoromethane	1.4	U	100	111		ug/L		111	67 - 135	10	20
Ethyl acetate	1.8	U	200	190		ug/L		95	71 - 132	2	20
Ethyl ether	2.6	U	100	93.1		ug/L		93	77 - 121	1	20
Ethyl methacrylate	1.7	U	100	106		ug/L		106	69 - 123	5	20
Ethylbenzene	1.2	U	100	98.5		ug/L		99	84 - 125	2	20
1,2-Dibromoethane (EDB)	1.3	U	100	91.9		ug/L		92	82 - 122	3	20
Hexachlorobutadiene	1.0	U	100	100		ug/L		100	61 - 145	4	20
Hexane	1.5	U	100	102		ug/L		102	73 - 141	3	20
Iodomethane	1.0	U	100	99.4		ug/L		99	53 - 141	1	20
Isobutanol	83	U	2500	2230		ug/L		89	59 - 138	7	20
Isopropylbenzene	1.7	U	100	100		ug/L		100	83 - 132	6	20
Methacrylonitrile	12	U	1000	1000		ug/L		100	70 - 142	1	20
Methyl acetate	7.6	U	500	483		ug/L		97	67 - 127	11	20
Methyl methacrylate	2.7	U	200	198		ug/L		99	66 - 131	3	20
Methyl tert-butyl ether	1.5	U	100	94.9		ug/L		95	75 - 125	5	20
Methylcyclohexane	1.6	U	100	104		ug/L		104	67 - 150	1	20
Methylene Chloride	2.7	U	100	93.7		ug/L		94	80 - 120	1	20
m-Xylene & p-Xylene	1.5	U	100	103		ug/L		103	80 - 120	0	20
Naphthalene	2.1	U	100	98.9		ug/L		99	58 - 131	9	20
1-Butanol	120	U	2500	2290		ug/L		92	58 - 144	6	20
n-Butylbenzene	1.8	U	100	105		ug/L		105	80 - 132	0	20
N-Propylbenzene	1.6	U	100	98.7		ug/L		99	77 - 137	2	20
o-Xylene	1.3	U	100	102		ug/L		102	86 - 125	3	20
Propionitrile	14	U	1000	938		ug/L		94	67 - 141	5	20
sec-Butylbenzene	1.6	U	100	103		ug/L		103	76 - 137	4	20
Styrene	1.3	U	100	113		ug/L		113	77 - 139	0	20
tert-Butylbenzene	1.8	U	100	102		ug/L		102	82 - 132	6	20
Tetrachloroethene	63		100	215	N	ug/L		152	80 - 126	0	20
Tetrahydrofuran	5.0	U	200	184		ug/L		92	65 - 136	1	20
Toluene	1.4	U	100	102		ug/L		102	85 - 123	3	20
trans-1,2-Dichloroethene	3.7	J	100	99.6		ug/L		96	80 - 120	0	20
trans-1,3-Dichloropropene	1.0	U	100	98.1		ug/L		98	83 - 125	3	20
trans-1,4-Dichloro-2-butene	2.9	U	100	76.5		ug/L		77	56 - 139	0	20
Trichloroethene	48		100	178	N	ug/L		130	81 - 125	0	20
Trichlorofluoromethane	1.1	U	100	102		ug/L		102	69 - 133	3	20
Vinyl acetate	1.8	U	100	104		ug/L		104	58 - 150	1	20
Vinyl chloride	5.3	J	100	104		ug/L		99	70 - 129	7	20
Xylenes, Total	2.6	U	200	205		ug/L		103	80 - 120	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 129*
4-Bromofluorobenzene (Surr)	*96*		*81 - 130*
Dibromofluoromethane (Surr)	*105*		*81 - 124*
Toluene-d8 (Surr)	*99*		*87 - 128*

Method: 625 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-265033/1-A
Matrix: Water
Analysis Batch: 266068

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 265033

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Acenaphthylene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Anthracene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Azobenzene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Benzo[a]anthracene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Benzo[b]fluoranthene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Benzo[k]fluoranthene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Benzo[g,h,i]perylene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Benzo[a]pyrene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Benzidine	4.0	U	20	4.0	ug/L		08/16/16 11:15	08/23/16 14:10	1
Bis(2-chloroethoxy)methane	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Bis(2-chloroethyl)ether	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Bis(2-ethylhexyl) phthalate	0.37	U	2.0	0.37	ug/L		08/16/16 11:15	08/23/16 14:10	1
4-Bromophenyl phenyl ether	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Butyl benzyl phthalate	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
4-Chloro-3-methylphenol	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
2-Chloronaphthalene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
2-Chlorophenol	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
4-Chlorophenyl phenyl ether	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Chrysene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Dibenz(a,h)anthracene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Di-n-butyl phthalate	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
1,2-Dichlorobenzene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
1,3-Dichlorobenzene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
1,4-Dichlorobenzene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
3,3'-Dichlorobenzidine	0.26	U	10	0.26	ug/L		08/16/16 11:15	08/23/16 14:10	1
2,4-Dichlorophenol	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Diethyl phthalate	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
2,4-Dimethylphenol	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Dimethyl phthalate	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
4,6-Dinitro-2-methylphenol	0.25	U	10	0.25	ug/L		08/16/16 11:15	08/23/16 14:10	1
2,4-Dinitrophenol	0.40	U	10	0.40	ug/L		08/16/16 11:15	08/23/16 14:10	1
2,4-Dinitrotoluene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
2,6-Dinitrotoluene	0.43	U	2.0	0.43	ug/L		08/16/16 11:15	08/23/16 14:10	1
Di-n-octyl phthalate	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Fluoranthene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Fluorene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Hexachlorobenzene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Hexachlorobutadiene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Hexachlorocyclopentadiene	0.20	U	10	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Hexachloroethane	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Indeno[1,2,3-cd]pyrene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Isophorone	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Naphthalene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Nitrobenzene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
N-Nitrosodimethylamine	0.40	U	2.0	0.40	ug/L		08/16/16 11:15	08/23/16 14:10	1
2-Nitrophenol	0.30	U	2.0	0.30	ug/L		08/16/16 11:15	08/23/16 14:10	1
4-Nitrophenol	0.40	U	10	0.40	ug/L		08/16/16 11:15	08/23/16 14:10	1

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-265033/1-A
Matrix: Water
Analysis Batch: 266068

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 265033

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodiphenylamine	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
N-Nitrosodi-n-propylamine	0.30	U	2.0	0.30	ug/L		08/16/16 11:15	08/23/16 14:10	1
2,2'-oxybis[1-chloropropane]	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Pentachlorophenol	0.25	U	10	0.25	ug/L		08/16/16 11:15	08/23/16 14:10	1
Phenanthrene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
Phenol	0.40	U	2.0	0.40	ug/L		08/16/16 11:15	08/23/16 14:10	1
Pyrene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
1,2,4-Trichlorobenzene	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1
2,4,6-Trichlorophenol	0.20	U	2.0	0.20	ug/L		08/16/16 11:15	08/23/16 14:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*44*		*23 - 82*	*08/16/16 11:15*	*08/23/16 14:10*	*1*
Phenol-d5 (Surr)	*35*		*14 - 68*	*08/16/16 11:15*	*08/23/16 14:10*	*1*
Nitrobenzene-d5 (Surr)	*71*		*36 - 98*	*08/16/16 11:15*	*08/23/16 14:10*	*1*
2,4,6-Tribromophenol (Surr)	*80*		*41 - 109*	*08/16/16 11:15*	*08/23/16 14:10*	*1*
Terphenyl-d14 (Surr)	*90*		*43 - 107*	*08/16/16 11:15*	*08/23/16 14:10*	*1*
2-Fluorobiphenyl (Surr)	*72*		*31 - 103*	*08/16/16 11:15*	*08/23/16 14:10*	*1*

Lab Sample ID: LCS 160-265033/2-A
Matrix: Water
Analysis Batch: 266068

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 265033

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	100	83.7		ug/L		84	51 - 89
Acenaphthylene	100	85.4		ug/L		85	46 - 98
Anthracene	100	87.7		ug/L		88	54 - 111
Benzo[a]anthracene	100	91.3		ug/L		91	68 - 108
Benzo[b]fluoranthene	100	102		ug/L		102	57 - 114
Benzo[k]fluoranthene	100	90.9		ug/L		91	59 - 112
Benzo[g,h,i]perylene	100	92.5		ug/L		93	58 - 120
Benzo[a]pyrene	100	95.3		ug/L		95	55 - 108
Bis(2-chloroethoxy)methane	100	85.7		ug/L		86	53 - 99
Bis(2-chloroethyl)ether	100	81.8		ug/L		82	50 - 97
Bis(2-ethylhexyl) phthalate	100	99.5		ug/L		100	54 - 116
4-Bromophenyl phenyl ether	100	88.4		ug/L		88	54 - 111
Butyl benzyl phthalate	100	98.5		ug/L		98	52 - 126
4-Chloro-3-methylphenol	100	83.7		ug/L		84	45 - 106
2-Chloronaphthalene	100	82.2		ug/L		82	45 - 95
2-Chlorophenol	100	74.2		ug/L		74	56 - 93
4-Chlorophenyl phenyl ether	100	87.3		ug/L		87	53 - 100
Chrysene	100	88.0		ug/L		88	58 - 112
Dibenz(a,h)anthracene	100	98.1		ug/L		98	56 - 122
Di-n-butyl phthalate	100	92.4		ug/L		92	57 - 108
3,3'-Dichlorobenzidine	100	77.3		ug/L		77	26 - 77
2,4-Dichlorophenol	100	81.0		ug/L		81	46 - 103
Diethyl phthalate	100	90.1		ug/L		90	60 - 101
2,4-Dimethylphenol	100	73.1		ug/L		73	40 - 105
Dimethyl phthalate	100	88.8		ug/L		89	57 - 101

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-265033/2-A
Matrix: Water
Analysis Batch: 266068

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 265033

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,6-Dinitro-2-methylphenol	100	94.2		ug/L		94	61 - 120
2,4-Dinitrophenol	100	78.0		ug/L		78	42 - 146
2,4-Dinitrotoluene	100	91.5		ug/L		91	62 - 101
2,6-Dinitrotoluene	100	87.8		ug/L		88	62 - 103
Di-n-octyl phthalate	100	102		ug/L		102	57 - 118
Fluoranthene	100	91.3		ug/L		91	55 - 114
Fluorene	100	88.3		ug/L		88	59 - 96
Hexachlorobenzene	100	87.9		ug/L		88	56 - 110
Hexachlorobutadiene	100	69.7		ug/L		70	36 - 84
Hexachlorocyclopentadiene	100	65.3		ug/L		65	16 - 86
Hexachloroethane	100	69.6		ug/L		70	40 - 77
Indeno[1,2,3-cd]pyrene	100	97.1		ug/L		97	55 - 124
Isophorone	100	75.7		ug/L		76	50 - 107
Naphthalene	100	77.4		ug/L		77	42 - 82
Nitrobenzene	100	83.9		ug/L		84	48 - 96
2-Nitrophenol	100	86.3		ug/L		86	51 - 98
4-Nitrophenol	100	50.6	N	ug/L		51	25 - 45
N-Nitrosodi-n-propylamine	100	87.9		ug/L		88	57 - 113
2,2'-oxybis[1-chloropropane]	100	85.0		ug/L		85	42 - 102
Pentachlorophenol	100	89.4		ug/L		89	56 - 126
Phenanthrene	100	89.7		ug/L		90	54 - 110
Phenol	100	40.5		ug/L		40	27 - 43
Pyrene	100	86.5		ug/L		86	53 - 117
1,2,4-Trichlorobenzene	100	71.2		ug/L		71	44 - 84
2,4,6-Trichlorophenol	100	87.5		ug/L		87	54 - 105

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorophenol (Surr)	*53*		*23 - 82*
Phenol-d5 (Surr)	*43*		*14 - 68*
Nitrobenzene-d5 (Surr)	*87*		*36 - 98*
2,4,6-Tribromophenol (Surr)	*90*		*41 - 109*
Terphenyl-d14 (Surr)	*91*		*43 - 107*
2-Fluorobiphenyl (Surr)	*84*		*31 - 103*

Lab Sample ID: LCSD 160-265033/3-A
Matrix: Water
Analysis Batch: 266068

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 265033

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	100	78.3		ug/L		78	51 - 89	7	20
Acenaphthylene	100	79.5		ug/L		80	46 - 98	7	20
Anthracene	100	82.5		ug/L		83	54 - 111	6	20
Benzo[a]anthracene	100	87.6		ug/L		88	68 - 108	4	20
Benzo[b]fluoranthene	100	94.2		ug/L		94	57 - 114	8	20
Benzo[k]fluoranthene	100	84.1		ug/L		84	59 - 112	8	20
Benzo[g,h,i]perylene	100	89.8		ug/L		90	58 - 120	3	20
Benzo[a]pyrene	100	88.1		ug/L		88	55 - 108	8	20
Bis(2-chloroethoxy)methane	100	78.4		ug/L		78	53 - 99	9	20

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-265033/3-A
Matrix: Water
Analysis Batch: 266068

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 265033

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bis(2-chloroethyl)ether			100	74.6		ug/L		75	50 - 97	9	20
Bis(2-ethylhexyl) phthalate			100	95.7		ug/L		96	54 - 116	4	20
4-Bromophenyl phenyl ether			100	84.4		ug/L		84	54 - 111	5	20
Butyl benzyl phthalate			100	94.0		ug/L		94	52 - 126	5	20
4-Chloro-3-methylphenol			100	78.3		ug/L		78	45 - 106	7	20
2-Chloronaphthalene			100	77.2		ug/L		77	45 - 95	6	20
2-Chlorophenol			100	68.9		ug/L		69	56 - 93	8	20
4-Chlorophenyl phenyl ether			100	82.1		ug/L		82	53 - 100	6	20
Chrysene			100	85.5		ug/L		85	58 - 112	3	20
Dibenz(a,h)anthracene			100	92.4		ug/L		92	56 - 122	6	20
Di-n-butyl phthalate			100	87.6		ug/L		88	57 - 108	5	20
3,3'-Dichlorobenzidine			100	75.9		ug/L		76	26 - 77	2	20
2,4-Dichlorophenol			100	74.6		ug/L		75	46 - 103	8	20
Diethyl phthalate			100	84.8		ug/L		85	60 - 101	6	20
2,4-Dimethylphenol			100	70.5		ug/L		70	40 - 105	4	20
Dimethyl phthalate			100	84.4		ug/L		84	57 - 101	5	20
4,6-Dinitro-2-methylphenol			100	90.8		ug/L		91	61 - 120	4	20
2,4-Dinitrophenol			100	76.0		ug/L		76	42 - 146	3	20
2,4-Dinitrotoluene			100	87.1		ug/L		87	62 - 101	5	20
2,6-Dinitrotoluene			100	84.6		ug/L		85	62 - 103	4	20
Di-n-octyl phthalate			100	97.6		ug/L		98	57 - 118	4	20
Fluoranthene			100	86.5		ug/L		86	55 - 114	5	20
Fluorene			100	83.5		ug/L		83	59 - 96	6	20
Hexachlorobenzene			100	83.2		ug/L		83	56 - 110	6	20
Hexachlorobutadiene			100	63.2		ug/L		63	36 - 84	10	20
Hexachlorocyclopentadiene			100	61.6		ug/L		62	16 - 86	6	20
Hexachloroethane			100	62.7		ug/L		63	40 - 77	10	20
Indeno[1,2,3-cd]pyrene			100	93.1		ug/L		93	55 - 124	4	20
Isophorone			100	69.9		ug/L		70	50 - 107	8	20
Naphthalene			100	70.6		ug/L		71	42 - 82	9	20
Nitrobenzene			100	76.7		ug/L		77	48 - 96	9	20
2-Nitrophenol			100	79.8		ug/L		80	51 - 98	8	20
4-Nitrophenol			100	52.2	N	ug/L		52	25 - 45	3	20
N-Nitrosodi-n-propylamine			100	80.6		ug/L		81	57 - 113	9	20
2,2'-oxybis[1-chloropropane]			100	77.4		ug/L		77	42 - 102	9	20
Pentachlorophenol			100	85.7		ug/L		86	56 - 126	4	20
Phenanthrene			100	84.4		ug/L		84	54 - 110	6	20
Phenol			100	40.7		ug/L		41	27 - 43	0	20
Pyrene			100	82.8		ug/L		83	53 - 117	4	20
1,2,4-Trichlorobenzene			100	65.0		ug/L		65	44 - 84	9	20
2,4,6-Trichlorophenol			100	82.6		ug/L		83	54 - 105	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorophenol (Surr)	*51*		*23 - 82*
Phenol-d5 (Surr)	*43*		*14 - 68*
Nitrobenzene-d5 (Surr)	*79*		*36 - 98*
2,4,6-Tribromophenol (Surr)	*86*		*41 - 109*
Terphenyl-d14 (Surr)	*87*		*43 - 107*

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-265033/3-A
Matrix: Water
Analysis Batch: 266068

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 265033

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*78*		*31 - 103*

Lab Sample ID: MB 160-265425/1-A
Matrix: Water
Analysis Batch: 266068

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 265425

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Acenaphthylene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Anthracene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Azobenzene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Benzo[a]anthracene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Benzo[b]fluoranthene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Benzo[k]fluoranthene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Benzo[g,h,i]perylene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Benzo[a]pyrene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Benzidine	4.0	U	20	4.0	ug/L		08/18/16 12:02	08/23/16 15:49	1
Bis(2-chloroethoxy)methane	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Bis(2-chloroethyl)ether	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Bis(2-ethylhexyl) phthalate	0.37	U	2.0	0.37	ug/L		08/18/16 12:02	08/23/16 15:49	1
4-Bromophenyl phenyl ether	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Butyl benzyl phthalate	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
4-Chloro-3-methylphenol	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
2-Chloronaphthalene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
2-Chlorophenol	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
4-Chlorophenyl phenyl ether	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Chrysene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Dibenz(a,h)anthracene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Di-n-butyl phthalate	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
1,2-Dichlorobenzene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
1,3-Dichlorobenzene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
1,4-Dichlorobenzene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
3,3'-Dichlorobenzidine	0.26	U	10	0.26	ug/L		08/18/16 12:02	08/23/16 15:49	1
2,4-Dichlorophenol	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Diethyl phthalate	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
2,4-Dimethylphenol	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Dimethyl phthalate	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
4,6-Dinitro-2-methylphenol	0.25	U	10	0.25	ug/L		08/18/16 12:02	08/23/16 15:49	1
2,4-Dinitrophenol	0.40	U	10	0.40	ug/L		08/18/16 12:02	08/23/16 15:49	1
2,4-Dinitrotoluene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
2,6-Dinitrotoluene	0.43	U	2.0	0.43	ug/L		08/18/16 12:02	08/23/16 15:49	1
Di-n-octyl phthalate	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Fluoranthene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Fluorene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Hexachlorobenzene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Hexachlorobutadiene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Hexachlorocyclopentadiene	0.20	U	10	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Hexachloroethane	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-265425/1-A
Matrix: Water
Analysis Batch: 266068

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 265425

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indeno[1,2,3-cd]pyrene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Isophorone	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Naphthalene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Nitrobenzene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
N-Nitrosodimethylamine	0.40	U	2.0	0.40	ug/L		08/18/16 12:02	08/23/16 15:49	1
2-Nitrophenol	0.30	U	2.0	0.30	ug/L		08/18/16 12:02	08/23/16 15:49	1
4-Nitrophenol	0.40	U	10	0.40	ug/L		08/18/16 12:02	08/23/16 15:49	1
N-Nitrosodiphenylamine	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
N-Nitrosodi-n-propylamine	0.30	U	2.0	0.30	ug/L		08/18/16 12:02	08/23/16 15:49	1
2,2'-oxybis[1-chloropropane]	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Pentachlorophenol	0.25	U	10	0.25	ug/L		08/18/16 12:02	08/23/16 15:49	1
Phenanthrene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
Phenol	0.40	U	2.0	0.40	ug/L		08/18/16 12:02	08/23/16 15:49	1
Pyrene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
1,2,4-Trichlorobenzene	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1
2,4,6-Trichlorophenol	0.20	U	2.0	0.20	ug/L		08/18/16 12:02	08/23/16 15:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*38*		*23 - 82*	*08/18/16 12:02*	*08/23/16 15:49*	*1*
Phenol-d5 (Surr)	*33*		*14 - 68*	*08/18/16 12:02*	*08/23/16 15:49*	*1*
Nitrobenzene-d5 (Surr)	*63*		*36 - 98*	*08/18/16 12:02*	*08/23/16 15:49*	*1*
2,4,6-Tribromophenol (Surr)	*61*		*41 - 109*	*08/18/16 12:02*	*08/23/16 15:49*	*1*
Terphenyl-d14 (Surr)	*86*		*43 - 107*	*08/18/16 12:02*	*08/23/16 15:49*	*1*
2-Fluorobiphenyl (Surr)	*64*		*31 - 103*	*08/18/16 12:02*	*08/23/16 15:49*	*1*

Lab Sample ID: LCS 160-265425/2-A
Matrix: Water
Analysis Batch: 266068

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 265425

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	100	76.8		ug/L		77	51 - 89
Acenaphthylene	100	78.9		ug/L		79	46 - 98
Anthracene	100	84.5		ug/L		85	54 - 111
Benzo[a]anthracene	100	88.6		ug/L		89	68 - 108
Benzo[b]fluoranthene	100	98.6		ug/L		99	57 - 114
Benzo[k]fluoranthene	100	88.2		ug/L		88	59 - 112
Benzo[g,h,i]perylene	100	93.8		ug/L		94	58 - 120
Benzo[a]pyrene	100	92.0		ug/L		92	55 - 108
Bis(2-chloroethoxy)methane	100	77.5		ug/L		78	53 - 99
Bis(2-chloroethyl)ether	100	74.4		ug/L		74	50 - 97
Bis(2-ethylhexyl) phthalate	100	96.1		ug/L		96	54 - 116
4-Bromophenyl phenyl ether	100	81.8		ug/L		82	54 - 111
Butyl benzyl phthalate	100	95.0		ug/L		95	52 - 126
4-Chloro-3-methylphenol	100	75.3		ug/L		75	45 - 106
2-Chloronaphthalene	100	75.6		ug/L		76	45 - 95
2-Chlorophenol	100	66.7		ug/L		67	56 - 93
4-Chlorophenyl phenyl ether	100	81.5		ug/L		81	53 - 100
Chrysene	100	87.0		ug/L		87	58 - 112

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-265425/2-A
Matrix: Water
Analysis Batch: 266068

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 265425

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibenz(a,h)anthracene	100	94.8		ug/L		95	56 - 122
Di-n-butyl phthalate	100	92.1		ug/L		92	57 - 108
3,3'-Dichlorobenzidine	100	76.1		ug/L		76	26 - 77
2,4-Dichlorophenol	100	73.4		ug/L		73	46 - 103
Diethyl phthalate	100	87.5		ug/L		87	60 - 101
2,4-Dimethylphenol	100	67.0		ug/L		67	40 - 105
Dimethyl phthalate	100	84.7		ug/L		85	57 - 101
4,6-Dinitro-2-methylphenol	100	86.9		ug/L		87	61 - 120
2,4-Dinitrophenol	100	71.0		ug/L		71	42 - 146
2,4-Dinitrotoluene	100	87.0		ug/L		87	62 - 101
2,6-Dinitrotoluene	100	82.1		ug/L		82	62 - 103
Di-n-octyl phthalate	100	99.2		ug/L		99	57 - 118
Fluoranthene	100	88.9		ug/L		89	55 - 114
Fluorene	100	83.1		ug/L		83	59 - 96
Hexachlorobenzene	100	82.7		ug/L		83	56 - 110
Hexachlorobutadiene	100	63.4		ug/L		63	36 - 84
Hexachlorocyclopentadiene	100	50.9		ug/L		51	16 - 86
Hexachloroethane	100	64.4		ug/L		64	40 - 77
Indeno[1,2,3-cd]pyrene	100	92.7		ug/L		93	55 - 124
Isophorone	100	68.0		ug/L		68	50 - 107
Naphthalene	100	72.4		ug/L		72	42 - 82
Nitrobenzene	100	76.7		ug/L		77	48 - 96
2-Nitrophenol	100	77.2		ug/L		77	51 - 98
4-Nitrophenol	100	45.4		ug/L		45	25 - 45
N-Nitrosodi-n-propylamine	100	79.2		ug/L		79	57 - 113
2,2'-oxybis[1-chloropropane]	100	78.0		ug/L		78	42 - 102
Pentachlorophenol	100	82.1		ug/L		82	56 - 126
Phenanthrene	100	86.3		ug/L		86	54 - 110
Phenol	100	34.7		ug/L		35	27 - 43
Pyrene	100	83.6		ug/L		84	53 - 117
1,2,4-Trichlorobenzene	100	64.9		ug/L		65	44 - 84
2,4,6-Trichlorophenol	100	80.3		ug/L		80	54 - 105

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorophenol (Surr)	*47*		*23 - 82*
Phenol-d5 (Surr)	*37*		*14 - 68*
Nitrobenzene-d5 (Surr)	*78*		*36 - 98*
2,4,6-Tribromophenol (Surr)	*82*		*41 - 109*
Terphenyl-d14 (Surr)	*86*		*43 - 107*
2-Fluorobiphenyl (Surr)	*77*		*31 - 103*

Lab Sample ID: LCSD 160-265425/3-A
Matrix: Water
Analysis Batch: 266068

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 265425

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	100	82.4		ug/L		82	51 - 89	7	20
Acenaphthylene	100	84.1		ug/L		84	46 - 98	6	20

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-265425/3-A
Matrix: Water
Analysis Batch: 266068

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 265425

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Anthracene	100	88.6		ug/L		89	54 - 111	5	20
Benzo[a]anthracene	100	92.7		ug/L		93	68 - 108	5	20
Benzo[b]fluoranthene	100	103		ug/L		103	57 - 114	4	20
Benzo[k]fluoranthene	100	92.1		ug/L		92	59 - 112	4	20
Benzo[g,h,i]perylene	100	101		ug/L		101	58 - 120	8	20
Benzo[a]pyrene	100	97.6		ug/L		98	55 - 108	6	20
Bis(2-chloroethoxy)methane	100	82.9		ug/L		83	53 - 99	7	20
Bis(2-chloroethyl)ether	100	80.5		ug/L		81	50 - 97	8	20
Bis(2-ethylhexyl) phthalate	100	101		ug/L		101	54 - 116	5	20
4-Bromophenyl phenyl ether	100	86.7		ug/L		87	54 - 111	6	20
Butyl benzyl phthalate	100	100		ug/L		100	52 - 126	5	20
4-Chloro-3-methylphenol	100	82.2		ug/L		82	45 - 106	9	20
2-Chloronaphthalene	100	80.9		ug/L		81	45 - 95	7	20
2-Chlorophenol	100	73.3		ug/L		73	56 - 93	10	20
4-Chlorophenyl phenyl ether	100	86.8		ug/L		87	53 - 100	6	20
Chrysene	100	90.2		ug/L		90	58 - 112	4	20
Dibenz(a,h)anthracene	100	101		ug/L		101	56 - 122	6	20
Di-n-butyl phthalate	100	96.5		ug/L		97	57 - 108	5	20
3,3'-Dichlorobenzidine	100	78.5	N	ug/L		79	26 - 77	3	20
2,4-Dichlorophenol	100	78.6		ug/L		79	46 - 103	7	20
Diethyl phthalate	100	92.5		ug/L		92	60 - 101	6	20
2,4-Dimethylphenol	100	75.3		ug/L		75	40 - 105	12	20
Dimethyl phthalate	100	90.4		ug/L		90	57 - 101	7	20
4,6-Dinitro-2-methylphenol	100	93.1		ug/L		93	61 - 120	7	20
2,4-Dinitrophenol	100	75.9		ug/L		76	42 - 146	7	20
2,4-Dinitrotoluene	100	92.8		ug/L		93	62 - 101	6	20
2,6-Dinitrotoluene	100	88.9		ug/L		89	62 - 103	8	20
Di-n-octyl phthalate	100	105		ug/L		105	57 - 118	6	20
Fluoranthene	100	91.8		ug/L		92	55 - 114	3	20
Fluorene	100	88.1		ug/L		88	59 - 96	6	20
Hexachlorobenzene	100	87.2		ug/L		87	56 - 110	5	20
Hexachlorobutadiene	100	66.6		ug/L		67	36 - 84	5	20
Hexachlorocyclopentadiene	100	53.6		ug/L		54	16 - 86	5	20
Hexachloroethane	100	67.5		ug/L		68	40 - 77	5	20
Indeno[1,2,3-cd]pyrene	100	100		ug/L		100	55 - 124	8	20
Isophorone	100	73.7		ug/L		74	50 - 107	8	20
Naphthalene	100	76.6		ug/L		77	42 - 82	6	20
Nitrobenzene	100	82.1		ug/L		82	48 - 96	7	20
2-Nitrophenol	100	84.5		ug/L		85	51 - 98	9	20
4-Nitrophenol	100	50.5	N	ug/L		51	25 - 45	11	20
N-Nitrosodi-n-propylamine	100	86.7		ug/L		87	57 - 113	9	20
2,2'-oxybis[1-chloropropane]	100	84.1		ug/L		84	42 - 102	7	20
Pentachlorophenol	100	87.5		ug/L		88	56 - 126	6	20
Phenanthrene	100	90.0		ug/L		90	54 - 110	4	20
Phenol	100	40.0		ug/L		40	27 - 43	14	20
Pyrene	100	87.4		ug/L		87	53 - 117	4	20
1,2,4-Trichlorobenzene	100	68.3		ug/L		68	44 - 84	5	20
2,4,6-Trichlorophenol	100	87.1		ug/L		87	54 - 105	8	20

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-265425/3-A
Matrix: Water
Analysis Batch: 266068

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 265425

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorophenol (Surr)	*52*		*23 - 82*
Phenol-d5 (Surr)	*42*		*14 - 68*
Nitrobenzene-d5 (Surr)	*84*		*36 - 98*
2,4,6-Tribromophenol (Surr)	*91*		*41 - 109*
Terphenyl-d14 (Surr)	*91*		*43 - 107*
2-Fluorobiphenyl (Surr)	*83*		*31 - 103*

Method: 608 - Organochlorine Pesticides in Water

Lab Sample ID: MB 160-265429/1-A
Matrix: Water
Analysis Batch: 266065

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 265429

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 13:19	1
alpha-BHC	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 13:19	1
beta-BHC	0.013	U	0.050	0.013	ug/L		08/18/16 12:14	08/23/16 13:19	1
delta-BHC	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 13:19	1
gamma-BHC (Lindane)	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 13:19	1
4,4'-DDD	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 13:19	1
4,4'-DDE	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 13:19	1
4,4'-DDT	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 13:19	1
Dieldrin	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 13:19	1
Endosulfan I	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 13:19	1
Endosulfan II	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 13:19	1
Endosulfan sulfate	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 13:19	1
Endrin	0.017	U	0.050	0.017	ug/L		08/18/16 12:14	08/23/16 13:19	1
Endrin aldehyde	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 13:19	1
Heptachlor	0.010	U	0.050	0.010	ug/L		08/18/16 12:14	08/23/16 13:19	1
Heptachlor epoxide	0.017	U	0.050	0.017	ug/L		08/18/16 12:14	08/23/16 13:19	1
Toxaphene	0.27	U	2.0	0.27	ug/L		08/18/16 12:14	08/23/16 13:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*88*		*40 - 130*	*08/18/16 12:14*	*08/23/16 13:19*	*1*
Tetrachloro-m-xylene	*83*		*63 - 115*	*08/18/16 12:14*	*08/23/16 13:19*	*1*

Lab Sample ID: LCS 160-265429/2-A
Matrix: Water
Analysis Batch: 266065

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 265429

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.500	0.383		ug/L		77	42 - 122
alpha-BHC	0.500	0.488		ug/L		98	37 - 134
beta-BHC	0.500	0.466		ug/L		93	17 - 147
delta-BHC	0.500	0.506		ug/L		101	19 - 140
gamma-BHC (Lindane)	0.501	0.483		ug/L		97	32 - 127
4,4'-DDD	0.500	0.500		ug/L		100	31 - 141

Method: 608 - Organochlorine Pesticides in Water (Continued)

Lab Sample ID: LCS 160-265429/2-A
Matrix: Water
Analysis Batch: 266065

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 265429

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDE	0.501	0.452		ug/L		90	30 - 145
4,4'-DDT	0.500	0.495		ug/L		99	25 - 160
Dieldrin	0.501	0.479		ug/L		96	36 - 146
Endosulfan I	0.500	0.397		ug/L		79	45 - 153
Endosulfan II	0.500	0.419		ug/L		84	10 - 140
Endosulfan sulfate	0.500	0.472		ug/L		94	26 - 144
Endrin	0.501	0.478		ug/L		96	30 - 147
Endrin aldehyde	0.500	0.493		ug/L		99	40 - 139
Heptachlor	0.500	0.376		ug/L		75	34 - 111
Heptachlor epoxide	0.500	0.463		ug/L		93	37 - 142

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*92*		*40 - 130*
Tetrachloro-m-xylene	*85*		*63 - 115*

Lab Sample ID: LCSD 160-265429/3-A
Matrix: Water
Analysis Batch: 266065

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 265429

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.500	0.374		ug/L		75	42 - 122	2	20
alpha-BHC	0.500	0.481		ug/L		96	37 - 134	2	20
beta-BHC	0.500	0.453		ug/L		91	17 - 147	3	20
delta-BHC	0.500	0.492		ug/L		98	19 - 140	3	20
gamma-BHC (Lindane)	0.501	0.472		ug/L		94	32 - 127	2	20
4,4'-DDD	0.500	0.476		ug/L		95	31 - 141	5	20
4,4'-DDE	0.501	0.442		ug/L		88	30 - 145	2	20
4,4'-DDT	0.500	0.469		ug/L		94	25 - 160	5	20
Dieldrin	0.501	0.466		ug/L		93	36 - 146	3	20
Endosulfan I	0.500	0.385		ug/L		77	45 - 153	3	20
Endosulfan II	0.500	0.401		ug/L		80	10 - 140	5	20
Endosulfan sulfate	0.500	0.454		ug/L		91	26 - 144	4	20
Endrin	0.501	0.458		ug/L		92	30 - 147	4	20
Endrin aldehyde	0.500	0.456		ug/L		91	40 - 139	8	20
Heptachlor	0.500	0.361	J	ug/L		72	34 - 111	4	20
Heptachlor epoxide	0.500	0.450		ug/L		90	37 - 142	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*84*		*40 - 130*
Tetrachloro-m-xylene	*86*		*63 - 115*

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 160-265426/1-A
Matrix: Water
Analysis Batch: 266032

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 265426

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	1.0	0.35	ug/L		08/18/16 12:09	08/23/16 16:31	1
PCB-1221	0.35	U	1.0	0.35	ug/L		08/18/16 12:09	08/23/16 16:31	1
PCB-1232	0.35	U	1.0	0.35	ug/L		08/18/16 12:09	08/23/16 16:31	1
PCB-1242	0.35	U	1.0	0.35	ug/L		08/18/16 12:09	08/23/16 16:31	1
PCB-1248	0.35	U	1.0	0.35	ug/L		08/18/16 12:09	08/23/16 16:31	1
PCB-1254	0.22	U	1.0	0.22	ug/L		08/18/16 12:09	08/23/16 16:31	1
PCB-1260	0.22	U	1.0	0.22	ug/L		08/18/16 12:09	08/23/16 16:31	1
Polychlorinated biphenyls, Total	0.22	U	1.0	0.22	ug/L		08/18/16 12:09	08/23/16 16:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*104*		*24 - 126*	*08/18/16 12:09*	*08/23/16 16:31*	*1*

Lab Sample ID: LCS 160-265426/2-A
Matrix: Water
Analysis Batch: 266032

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 265426

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	5.00	3.99		ug/L		80	50 - 114
PCB-1260	5.00	4.22		ug/L		84	80 - 127

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*103*		*24 - 126*

Lab Sample ID: LCSD 160-265426/3-A
Matrix: Water
Analysis Batch: 266032

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 265426

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	5.00	4.10		ug/L		82	50 - 114	3	20
PCB-1260	5.00	4.38		ug/L		88	80 - 127	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*100*		*24 - 126*

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

Lab Sample ID: MB 160-266064/1-A
Matrix: Solid
Analysis Batch: 266183

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 266064

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 11:34	1
PCB-1221	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 11:34	1
PCB-1232	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 11:34	1
PCB-1242	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 11:34	1
PCB-1248	0.0096	U	0.033	0.0096	mg/Kg		08/23/16 10:23	08/24/16 11:34	1
PCB-1254	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 11:34	1

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

Lab Sample ID: MB 160-266064/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 266183 — **Prep Batch: 266064**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1260	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 11:34	1
PCB-1262	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 11:34	1
Polychlorinated biphenyls, Total	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 11:34	1
PCB-1268	0.0080	U	0.033	0.0080	mg/Kg		08/23/16 10:23	08/24/16 11:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*94*		*23 - 146*	*08/23/16 10:23*	*08/24/16 11:34*	*1*

Lab Sample ID: LCS 160-266064/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 266183 — **Prep Batch: 266064**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	0.167	0.148		mg/Kg		89	52 - 134
PCB-1260	0.167	0.150		mg/Kg		90	50 - 132

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*100*		*23 - 146*

Lab Sample ID: 160-18571-C-1-R MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 266183 — **Prep Batch: 266064**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	0.0096	U	0.166	0.0897		mg/Kg		54	23 - 140
PCB-1260	0.0080	U	0.166	0.0927		mg/Kg		56	20 - 131

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*68*		*23 - 146*

Lab Sample ID: 160-18571-C-1-S MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 266183 — **Prep Batch: 266064**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	0.0096	U	0.165	0.218	*	mg/Kg		132	23 - 140	83	30
PCB-1260	0.0080	U	0.165	0.232	N *	mg/Kg		140	20 - 131	86	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*154*	*S*	*23 - 146*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 160-264674/9
Matrix: Water
Analysis Batch: 264674

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	0.025	U	0.25	0.025	mg/L			08/12/16 17:48	1
Fluoride	0.010	U	0.10	0.010	mg/L			08/12/16 17:48	1
Sulfate	0.050	U	0.50	0.050	mg/L			08/12/16 17:48	1
Chloride	0.020	U	0.20	0.020	mg/L			08/12/16 17:48	1

Lab Sample ID: LCS 160-264674/10
Matrix: Water
Analysis Batch: 264674

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	2.00	1.99		mg/L		99	90 - 110
Fluoride	1.00	1.02		mg/L		102	90 - 110
Sulfate	8.00	7.76		mg/L		97	90 - 110
Chloride	2.00	1.94		mg/L		97	90 - 110

Lab Sample ID: 160-18615-9 MS
Matrix: Water
Analysis Batch: 264674

Client Sample ID: YMTFA 43 GW
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	0.30		2.00	2.28		mg/L		99	90 - 110
Fluoride	0.054	J	2.00	1.87		mg/L		91	90 - 110

Lab Sample ID: 160-18615-9 DU
Matrix: Water
Analysis Batch: 264674

Client Sample ID: YMTFA 43 GW
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Bromide	0.30		0.302		mg/L		0.5	20
Fluoride	0.054	J	0.0536	J	mg/L		0.3	20

Lab Sample ID: MB 160-264675/9
Matrix: Water
Analysis Batch: 264675

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.0070	U	0.020	0.0070	mg/L			08/12/16 17:48	1
Nitrite as N	0.0070	U	0.020	0.0070	mg/L			08/12/16 17:48	1
Orthophosphate	0.26	U	0.50	0.26	mg/L			08/12/16 17:48	1

Lab Sample ID: LCS 160-264675/10
Matrix: Water
Analysis Batch: 264675

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.400	0.398		mg/L		99	90 - 110
Nitrite as N	0.160	0.153		mg/L		95	90 - 110
Orthophosphate	8.00	7.83		mg/L		98	90 - 110

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 160-18615-9 MS — **Client Sample ID: YMTFA 43 GW**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 264675

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.014	J	0.400	0.410		mg/L		99	90 - 110
Orthophosphate	0.26	U	4.00	3.04	N	mg/L		76	90 - 110

Lab Sample ID: 160-18615-9 DU — **Client Sample ID: YMTFA 43 GW**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 264675

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	0.014	J	0.0115	J	mg/L		19	20
Orthophosphate	0.26	U	0.26	U	mg/L		NC	20

Method: 300.0 - Anions, Ion Chromatography - DL

Lab Sample ID: 160-18615-9 MS — **Client Sample ID: YMTFA 43 GW**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 264674

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate - DL	33		40.0	71.9		mg/L		97	90 - 110
Chloride - DL	23		20.0	42.9		mg/L		97	90 - 110

Lab Sample ID: 160-18615-9 DU — **Client Sample ID: YMTFA 43 GW**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 264674

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate - DL	33		33.3		mg/L		0.6	20
Chloride - DL	23		23.4		mg/L		0.5	20

Lab Sample ID: 160-18615-9 MS — **Client Sample ID: YMTFA 43 GW**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 264675

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N - DL	0.070	U	1.00	0.742	N	mg/L		74	90 - 110

Lab Sample ID: 160-18615-9 DU — **Client Sample ID: YMTFA 43 GW**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 264675

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrite as N - DL	0.070	U	0.070	U	mg/L		NC	20

QC Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Method: 6010C - Metals (ICP)

Lab Sample ID: LCS 160-266138/2-A
Matrix: Solid
Analysis Batch: 266472

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 266138

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	2.50	2.62		mg/L		105	80 - 120
Barium	2.50	2.48		mg/L		99	80 - 120
Cadmium	2.50	2.60		mg/L		104	80 - 120
Chromium	2.50	2.58		mg/L		103	80 - 120
Lead	2.50	2.48		mg/L		99	80 - 120
Selenium	1.25	1.37		mg/L		109	80 - 120
Silver	0.500	0.554		mg/L		111	80 - 120

Lab Sample ID: LB 160-265387/1-D
Matrix: Solid
Analysis Batch: 266472

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 266138

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.010	U	0.025	0.010	mg/L		08/23/16 15:14	08/24/16 17:06	1
Barium	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 17:06	1
Cadmium	0.0038	U	0.013	0.0038	mg/L		08/23/16 15:14	08/24/16 17:06	1
Chromium	0.0075	U	0.025	0.0075	mg/L		08/23/16 15:14	08/24/16 17:06	1
Lead	0.0075	U	0.025	0.0075	mg/L		08/23/16 15:14	08/24/16 17:06	1
Selenium	0.013	U	0.038	0.013	mg/L		08/23/16 15:14	08/24/16 17:06	1
Silver	0.0075	U	0.025	0.0075	mg/L		08/23/16 15:14	08/24/16 17:06	1

Lab Sample ID: 160-18348-E-1-T MS ^5
Matrix: Solid
Analysis Batch: 266472

Client Sample ID: Matrix Spike
Prep Type: TCLP
Prep Batch: 266138

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.050	U	2.50	2.45		mg/L		98	75 - 125
Barium	0.31	J	2.50	2.78		mg/L		99	75 - 125
Cadmium	0.031	J	2.50	2.55		mg/L		101	75 - 125
Chromium	0.038	U	2.50	2.56		mg/L		102	75 - 125
Lead	0.75		2.50	3.32		mg/L		103	75 - 125
Selenium	0.063	U	1.25	1.25		mg/L		100	75 - 125
Silver	0.038	U	0.500	0.530		mg/L		106	75 - 125

Lab Sample ID: 160-18348-E-1-U MSD ^5
Matrix: Solid
Analysis Batch: 266472

Client Sample ID: Matrix Spike Duplicate
Prep Type: TCLP
Prep Batch: 266138

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.050	U	2.50	2.46		mg/L		99	75 - 125	1	20
Barium	0.31	J	2.50	2.80		mg/L		99	75 - 125	1	20
Cadmium	0.031	J	2.50	2.55		mg/L		101	75 - 125	0	20
Chromium	0.038	U	2.50	2.57		mg/L		103	75 - 125	0	20
Lead	0.75		2.50	3.28		mg/L		101	75 - 125	1	20
Selenium	0.063	U	1.25	1.24		mg/L		99	75 - 125	1	20
Silver	0.038	U	0.500	0.535		mg/L		107	75 - 125	1	20

QC Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-265668/1-A
Matrix: Water
Analysis Batch: 267618

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 265668

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.017	U	0.050	0.017	mg/L		08/19/16 12:22	09/01/16 04:14	2
Antimony	0.0017	U	0.0050	0.0017	mg/L		08/19/16 12:22	09/01/16 04:14	2
Arsenic	0.0012	U	0.010	0.0012	mg/L		08/19/16 12:22	09/01/16 04:14	2
Barium	0.00022	U	0.0020	0.00022	mg/L		08/19/16 12:22	09/01/16 04:14	2
Beryllium	0.00035	U	0.00050	0.00035	mg/L		08/19/16 12:22	09/01/16 04:14	2
Boron	0.0281	J	0.10	0.021	mg/L		08/19/16 12:22	09/01/16 04:14	2
Cadmium	0.00010	U	0.00050	0.00010	mg/L		08/19/16 12:22	09/01/16 04:14	2
Calcium	0.0893	J	0.10	0.068	mg/L		08/19/16 12:22	09/01/16 04:14	2
Chromium	0.0010	U	0.010	0.0010	mg/L		08/19/16 12:22	09/01/16 04:14	2
Copper	0.00068	U	0.0010	0.00068	mg/L		08/19/16 12:22	09/01/16 04:14	2
Iron	0.033	U	0.050	0.033	mg/L		08/19/16 12:22	09/01/16 04:14	2
Lead	0.00017	U	0.0030	0.00017	mg/L		08/19/16 12:22	09/01/16 04:14	2
Lithium	0.0011	U	0.0050	0.0011	mg/L		08/19/16 12:22	09/01/16 04:14	2
Nickel	0.00080	U	0.0050	0.00080	mg/L		08/19/16 12:22	09/01/16 04:14	2
Potassium	0.042	U	0.10	0.042	mg/L		08/19/16 12:22	09/01/16 04:14	2
Selenium	0.0016	U	0.0050	0.0016	mg/L		08/19/16 12:22	09/01/16 04:14	2
Silver	0.00082	U	0.0020	0.00082	mg/L		08/19/16 12:22	09/01/16 04:14	2
Sodium	0.024	U	0.050	0.024	mg/L		08/19/16 12:22	09/01/16 04:14	2
Uranium	0.00023	U	0.0010	0.00023	mg/L		08/19/16 12:22	09/01/16 04:14	2
Zinc	0.0093	U	0.020	0.0093	mg/L		08/19/16 12:22	09/01/16 04:14	2

Lab Sample ID: LCS 160-265668/2-A
Matrix: Water
Analysis Batch: 267618

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 265668

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	10.0	9.66		mg/L		97	80 - 120
Antimony	0.500	0.483		mg/L		97	80 - 120
Arsenic	1.00	0.959		mg/L		96	80 - 120
Barium	1.00	1.00		mg/L		100	80 - 120
Beryllium	1.00	1.05		mg/L		105	80 - 120
Boron	2.00	2.13		mg/L		107	80 - 120
Cadmium	1.00	1.01		mg/L		101	80 - 120
Calcium	10.0	10.1		mg/L		101	80 - 120
Chromium	1.00	1.01		mg/L		101	80 - 120
Copper	1.00	0.984		mg/L		98	80 - 120
Iron	10.0	9.74		mg/L		97	80 - 120
Lead	1.00	0.994		mg/L		99	80 - 120
Lithium	1.00	1.01		mg/L		101	80 - 120
Nickel	1.00	0.989		mg/L		99	80 - 120
Potassium	10.0	9.73		mg/L		97	80 - 120
Selenium	0.500	0.484		mg/L		97	80 - 120
Silver	0.200	0.204		mg/L		102	80 - 120
Sodium	10.0	9.79		mg/L		98	80 - 120
Uranium	1.00	1.03		mg/L		103	80 - 120
Zinc	1.00	0.963		mg/L		96	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 160-18615-7 MS — **Client Sample ID: YMTFA 9720 FB**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 267618 — **Prep Batch: 265668**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	0.017	U	10.0	8.99		mg/L		90	75 - 125
Antimony	0.0017	U	0.500	0.481		mg/L		96	75 - 125
Arsenic	0.0012	U	1.00	0.895		mg/L		89	75 - 125
Barium	0.00022	U	1.00	0.991		mg/L		99	75 - 125
Beryllium	0.00035	U	1.00	1.04		mg/L		104	75 - 125
Boron	0.045	J B	2.00	2.09		mg/L		102	75 - 125
Cadmium	0.00010	U	1.00	1.00		mg/L		100	75 - 125
Calcium	0.068	U	10.0	9.96		mg/L		100	75 - 125
Chromium	0.0010	U	1.00	0.932		mg/L		93	75 - 125
Copper	0.00068	U	1.00	0.916		mg/L		92	75 - 125
Iron	0.033	U	10.0	9.00		mg/L		90	75 - 125
Lead	0.00017	U	1.00	0.976		mg/L		98	75 - 125
Lithium	0.0011	U	1.00	0.997		mg/L		100	75 - 125
Nickel	0.00080	U	1.00	0.919		mg/L		92	75 - 125
Potassium	0.042	U	10.0	8.93		mg/L		89	75 - 125
Selenium	0.0016	U	0.500	0.456		mg/L		91	75 - 125
Silver	0.00082	U	0.200	0.205		mg/L		102	75 - 125
Sodium	0.024	U	10.0	9.10		mg/L		91	75 - 125
Uranium	0.00023	U	1.00	0.996		mg/L		100	75 - 125
Zinc	0.0093	U	1.00	0.903		mg/L		90	75 - 125

Lab Sample ID: 160-18615-7 MSD — **Client Sample ID: YMTFA 9720 FB**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 267618 — **Prep Batch: 265668**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	0.017	U	10.0	9.64		mg/L		96	75 - 125	7	20
Antimony	0.0017	U	0.500	0.478		mg/L		96	75 - 125	1	20
Arsenic	0.0012	U	1.00	0.964		mg/L		96	75 - 125	7	20
Barium	0.00022	U	1.00	0.990		mg/L		99	75 - 125	0	20
Beryllium	0.00035	U	1.00	1.04		mg/L		104	75 - 125	0	20
Boron	0.045	J B	2.00	2.13		mg/L		104	75 - 125	2	20
Cadmium	0.00010	U	1.00	1.02		mg/L		102	75 - 125	2	20
Calcium	0.068	U	10.0	10.0		mg/L		100	75 - 125	1	20
Chromium	0.0010	U	1.00	1.01		mg/L		101	75 - 125	8	20
Copper	0.00068	U	1.00	0.992		mg/L		99	75 - 125	8	20
Iron	0.033	U	10.0	9.81		mg/L		98	75 - 125	9	20
Lead	0.00017	U	1.00	0.983		mg/L		98	75 - 125	1	20
Lithium	0.0011	U	1.00	1.00		mg/L		100	75 - 125	1	20
Nickel	0.00080	U	1.00	0.990		mg/L		99	75 - 125	7	20
Potassium	0.042	U	10.0	9.67		mg/L		97	75 - 125	8	20
Selenium	0.0016	U	0.500	0.485		mg/L		97	75 - 125	6	20
Silver	0.00082	U	0.200	0.206		mg/L		103	75 - 125	0	20
Sodium	0.024	U	10.0	9.82		mg/L		98	75 - 125	8	20
Uranium	0.00023	U	1.00	1.00		mg/L		100	75 - 125	1	20
Zinc	0.0093	U	1.00	0.980		mg/L		98	75 - 125	8	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: LB 160-266071/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 266428 — **Prep Batch: 266071**

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000137	J	0.0010	0.000079	mg/L		08/23/16 10:50	08/23/16 19:28	1

Lab Sample ID: LCS 160-266071/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 266428 — **Prep Batch: 266071**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.0250	0.0256		mg/L		102	80 - 120

Lab Sample ID: MB 160-266715/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 267023 — **Prep Batch: 266715**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000060	U	0.00020	0.000060	mg/L		08/25/16 16:00	08/26/16 10:06	1

Lab Sample ID: LCS 160-266715/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 267023 — **Prep Batch: 266715**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00515		mg/L		103	80 - 120

Lab Sample ID: 160-18488-E-4-C MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 267023 — **Prep Batch: 266715**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.000060	U	0.00500	0.00524		mg/L		105	80 - 120

Lab Sample ID: 160-18488-E-4-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 267023 — **Prep Batch: 266715**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.000060	U	0.00500	0.00504		mg/L		101	80 - 120	4	20

Lab Sample ID: 160-18348-E-1-Q MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: TCLP**
Analysis Batch: 266428 — **Prep Batch: 266071**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.000079	U	0.0250	0.0253		mg/L		101	70 - 130

Lab Sample ID: 160-18348-E-1-R MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: TCLP**
Analysis Batch: 266428 — **Prep Batch: 266071**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.000079	U	0.0250	0.0254		mg/L		102	70 - 130	0	20

Method: 150.1 - pH (Electrometric)

Lab Sample ID: LCS 160-264688/5
Matrix: Water
Analysis Batch: 264688

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		99	99.0 - 101.0

Lab Sample ID: 160-18615-7 DU
Matrix: Water
Analysis Batch: 264688

Client Sample ID: YMTFA 9720 FB
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	3.7	HF	3.8		SU		1	5

Method: 160.2 - Solids, Total Suspended (TSS)

Lab Sample ID: MB 160-265160/1
Matrix: Water
Analysis Batch: 265160

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	4.0	U	4.0	4.0	mg/L			08/17/16 09:25	1

Lab Sample ID: LCS 160-265160/2
Matrix: Water
Analysis Batch: 265160

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	500	505		mg/L		101	78 - 124

Lab Sample ID: 160-18611-A-1 DU
Matrix: Water
Analysis Batch: 265160

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	470		469		mg/L		0.4	20

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 280-340443/3-A
Matrix: Water
Analysis Batch: 340515

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 340443

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	1.6	U	5.0	1.6	mg/L		09/01/16 09:39	09/01/16 14:38	1
SGT-HEM	2.8	U	6.0	2.8	mg/L		09/01/16 09:39	09/01/16 14:38	1

Lab Sample ID: LCS 280-340443/1-A
Matrix: Water
Analysis Batch: 340515

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 340443

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	40.0	36.10		mg/L		90	78 - 114

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 280-340443/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 340515 — **Prep Batch: 340443**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
SGT-HEM	20.0	15.20		mg/L		76	64 - 132

Lab Sample ID: LCSD 280-340443/2-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 340515 — **Prep Batch: 340443**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
HEM	40.0	33.80		mg/L		85	78 - 114	7	18
SGT-HEM	20.0	14.90		mg/L		75	64 - 132	2	34

Method: 420.4 - Phenolics, Total Recoverable

Lab Sample ID: MB 280-339923/2-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 340137 — **Prep Batch: 339923**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	0.0068	U	0.010	0.0068	mg/L		08/29/16 11:52	08/30/16 10:55	1

Lab Sample ID: LCS 280-339923/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 340137 — **Prep Batch: 339923**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenols, Total	0.202	0.199		mg/L		99	90 - 110

Lab Sample ID: 160-18615-7 MS — **Client Sample ID: YMTFA 9720 FB**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 340137 — **Prep Batch: 339923**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenols, Total	0.0068	U	0.202	0.194		mg/L		96	72 - 118

Lab Sample ID: 160-18615-7 MSD — **Client Sample ID: YMTFA 9720 FB**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 340137 — **Prep Batch: 339923**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenols, Total	0.0068	U	0.202	0.177		mg/L		88	72 - 118	9	16

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 160-266439/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266767 — **Prep Batch: 266439**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.0031	U	0.010	0.0031	mg/L		08/24/16 17:45	08/24/16 19:53	1

Method: 9012B - Cyanide, Total andor Amenable (Continued)

Lab Sample ID: HLCS 160-266439/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266767 — **Prep Batch: 266439**

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.400	0.412		mg/L		103	85 - 115

Lab Sample ID: LCS 160-266439/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266767 — **Prep Batch: 266439**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.200	0.212		mg/L		106	85 - 115

Lab Sample ID: 160-18615-7 MS — **Client Sample ID: YMTFA 9720 FB**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266767 — **Prep Batch: 266439**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0043	J	0.200	0.224		mg/L		110	66 - 120

Method: 9012B - Cyanide, Total andor Amenable - RADL

Lab Sample ID: 160-18597-A-1-C MS ^2 — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266767 — **Prep Batch: 266439**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total - RADL	0.47		0.200	0.669		mg/L		98	66 - 120

Lab Sample ID: 160-18597-A-1-B DU ^2 — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266767 — **Prep Batch: 266439**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cyanide, Total - RADL	0.47		0.494		mg/L		4	20

Method: 9060 - Organic Carbon, Total (TOC)

Lab Sample ID: MB 160-267650/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 267650

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.72	U	1.0	0.72	mg/L			08/31/16 16:25	1

Lab Sample ID: LCS 160-267650/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 267650

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.84		mg/L		98	90 - 110

Method: 9060 - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 160-18615-7 MS — **Client Sample ID: YMTFA 9720 FB**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 267650

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon	0.72	U	5.00	5.06		mg/L		101	76 - 120		

Lab Sample ID: 160-18615-7 DU — **Client Sample ID: YMTFA 9720 FB**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 267650

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon	0.72	U		0.72	U	mg/L				NC	20

Method: SM 2310B - Acidity

Lab Sample ID: MB 280-338713/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 338713

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acidity	2.0	U	10	2.0	mg/L			08/19/16 16:12	1

Lab Sample ID: 160-18615-9 DU — **Client Sample ID: YMTFA 43 GW**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 338713

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Acidity	2.0	U		2.0	U	mg/L				NC	10

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-265056/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 265960 — **Prep Batch: 265056**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.2106	U	0.614	0.614	3.00	1.11	pCi/L	08/16/16 13:01	08/22/16 07:48	1
Gross Beta	-0.1398	U	0.486	0.487	4.00	0.893	pCi/L	08/16/16 13:01	08/22/16 07:48	1

Lab Sample ID: LCS 160-265056/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 265960 — **Prep Batch: 265056**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Gross Alpha			49.9	43.31		6.37	3.00	1.54	pCi/L	87	73 - 133		

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity (Continued)

Lab Sample ID: LCSB 160-265056/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 265960 — **Prep Batch: 265056**

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Gross Beta	92.2	89.23		9.46	4.00	1.09	pCi/L	97	75 - 125

Lab Sample ID: 600-135279-D-1-E MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 265964 — **Prep Batch: 265056**

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Gross Alpha	2.61	U	90.0	82.21		12.2	3.00	3.62	pCi/L	91	60 - 140

Lab Sample ID: 600-135279-D-1-F MSBT — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 265964 — **Prep Batch: 265056**

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Gross Beta	1.58	U	166	168.7		17.8	4.00	1.79	pCi/L	102	60 - 140

Lab Sample ID: 600-135279-D-1-G DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 265964 — **Prep Batch: 265056**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	2.61	U	0.4416	U	1.92	3.00	3.56	pCi/L	0.52	1
Gross Beta	1.58	U	2.449		1.26	4.00	1.82	pCi/L	0.34	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-265506/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 265493 — **Prep Batch: 265506**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-1.580	U	5.26	5.26	20.0	15.3	pCi/L	08/18/16 16:27	08/18/16 18:52	1
Cobalt-60	2.889	U	5.17	5.18		14.0	pCi/L	08/18/16 16:27	08/18/16 18:52	1

Lab Sample ID: LCS 160-265506/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 265488 — **Prep Batch: 265506**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Americium-241	137000	132600		15300		438	pCi/L	97	90 - 111
Cesium-137	47600	46550		4670	20.0	164	pCi/L	98	90 - 111
Cobalt-60	42500	41070		4060		96.7	pCi/L	97	89 - 110

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: 160-18615-7 DU — **Client Sample ID: YMTFA 9720 FB**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 265538 — **Prep Batch: 265506**

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Cesium-137	3.19	U		4.656	U	11.7	20.0	20.2	pCi/L			0.08	1
Cobalt-60	-3.52	U		6.964	U	5.73		8.55	pCi/L			0.63	1

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-265450/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266771 — **Prep Batch: 265450**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.2040	U	0.181	0.181	3.00	0.290	pCi/L	08/18/16 13:29	08/26/16 18:36	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*90.6*		*40 - 110*	*08/18/16 13:29*	*08/26/16 18:36*	*1*
Y Carrier	*90.1*		*40 - 110*	*08/18/16 13:29*	*08/26/16 18:36*	*1*

Lab Sample ID: LCS 160-265450/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266771 — **Prep Batch: 265450**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Strontium-90			8.60	7.851		0.816	3.00	0.247	pCi/L	91	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*90.8*		*40 - 110*
Y Carrier	*96.1*		*40 - 110*

Lab Sample ID: LCSD 160-265450/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266771 — **Prep Batch: 265450**

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Strontium-90			8.60	8.717		0.898	3.00	0.274	pCi/L	101	75 - 125	0.51	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*89.5*		*40 - 110*
Y Carrier	*93.1*		*40 - 110*

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: MB 160-266822/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268223 — **Prep Batch: 266822**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.07389	U	0.194	0.194	3.00	0.369	pCi/L	08/26/16 20:08	09/06/16 16:12	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*76.1*		*40 - 110*	*08/26/16 20:08*	*09/06/16 16:12*	*1*
Y Carrier	*98.3*		*40 - 110*	*08/26/16 20:08*	*09/06/16 16:12*	*1*

Lab Sample ID: LCS 160-266822/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268223 — **Prep Batch: 266822**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Strontium-90			11.5	11.94		1.27	3.00	0.460	pCi/L	104	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*74.0*		*40 - 110*
Y Carrier	*95.0*		*40 - 110*

Lab Sample ID: LCSD 160-266822/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 268223 — **Prep Batch: 266822**

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Strontium-90			11.5	11.26		1.19	3.00	0.400	pCi/L	98	75 - 125	0.28	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*79.5*		*40 - 110*
Y Carrier	*94.2*		*40 - 110*

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Lab Sample ID: MB 160-265328/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266587 — **Prep Batch: 265328**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.03192	U	0.0969	0.0970	1.00	0.193	pCi/L	08/17/16 11:30	08/25/16 20:40	1
Thorium-230	0.1967		0.122	0.123	1.00	0.0883	pCi/L	08/17/16 11:30	08/25/16 20:40	1
Thorium-232	-0.009079	U	0.0128	0.0129	1.00	0.102	pCi/L	08/17/16 11:30	08/25/16 20:40	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*84.8*		*30 - 110*	*08/17/16 11:30*	*08/25/16 20:40*	*1*

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCS 160-265328/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266588 — **Prep Batch: 265328**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Thorium-230			8.03	9.183		1.14	1.00	0.141	pCi/L	114	81 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Thorium-229	*75.4*		*30 - 110*

Lab Sample ID: LCSD 160-265328/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266589 — **Prep Batch: 265328**

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Thorium-230			8.03	10.02		1.24	1.00	0.0614	pCi/L	125	81 - 125	0.35	1

Tracer	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Thorium-229	*76.2*		*30 - 110*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-265331/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266574 — **Prep Batch: 265331**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	0.1509		0.111	0.112	1.00	0.113	pCi/L	08/17/16 11:22	08/25/16 11:23	1
Uranium-235/236	0.02276	U	0.0455	0.0456	1.00	0.0683	pCi/L	08/17/16 11:22	08/25/16 11:23	1
Uranium-238	0.06844	U	0.0736	0.0738	1.00	0.0883	pCi/L	08/17/16 11:22	08/25/16 11:23	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*83.0*		*30 - 110*	*08/17/16 11:22*	*08/25/16 11:23*	*1*

Lab Sample ID: LCS 160-265331/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266575 — **Prep Batch: 265331**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Uranium-233/234			12.7	14.50		1.67	1.00	0.159	pCi/L	114	84 - 120		
Uranium-238			13.0	14.31		1.65	1.00	0.108	pCi/L	110	83 - 121		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*70.5*		*30 - 110*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCSD 160-265331/3-A
Matrix: Water
Analysis Batch: 266576

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 265331

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Uranium-233/234			12.7	13.22		1.52	1.00	0.114	pCi/L	104	84 - 120	0.40	1
Uranium-238			13.0	12.68		1.47	1.00	0.0609	pCi/L	97	83 - 121	0.52	1

Tracer	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Uranium-232	*73.0*		*30 - 110*

Method: A-01-R - Isotopic Neptunium (Alpha Spectrometry)

Lab Sample ID: MB 160-265228/1-A
Matrix: Water
Analysis Batch: 266620

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 265228

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Neptunium-237	-0.01643	U	0.0164	0.0165	1.00	0.110	pCi/L	08/17/16 11:30	08/25/16 11:18	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Neptunium-239	*90.0*		*30 - 110*	*08/17/16 11:30*	*08/25/16 11:18*	*1*

Lab Sample ID: LCS 160-265228/2-A
Matrix: Water
Analysis Batch: 266621

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 265228

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Neptunium-237			7.75	8.612		1.05	1.00	0.140	pCi/L	111	58 - 126		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Neptunium-239	*97.2*		*30 - 110*

Lab Sample ID: LCSD 160-265228/3-A
Matrix: Water
Analysis Batch: 266622

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 265228

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Neptunium-237			7.75	7.529		0.966	1.00	0.0991	pCi/L	97	58 - 126	0.54	1

Tracer	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Neptunium-239	*86.3*		*30 - 110*

QC Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Method: A-01-R - Isotopic Plutonium (Alpha Spectrometry)

Lab Sample ID: MB 160-265330/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266585 — **Prep Batch: 265330**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Plutonium-238	0.1285	U	0.130	0.130	1.00	0.199	pCi/L	08/17/16 11:22	08/25/16 11:22	1
Plutonium-239/240	0.08575	U	0.0858	0.0861	1.00	0.115	pCi/L	08/17/16 11:22	08/25/16 11:22	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Pu-242 (T)	*89.1*		*30 - 110*	*08/17/16 11:22*	*08/25/16 11:22*	*1*

Lab Sample ID: LCS 160-265330/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266586 — **Prep Batch: 265330**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Plutonium-238	10.7	10.72		1.22	1.00	0.158	pCi/L	100	79 - 115
Plutonium-239/240	13.2	13.42		1.45	1.00	0.104	pCi/L	102	85 - 120

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Pu-242 (T)	*94.3*		*30 - 110*

Lab Sample ID: LCSD 160-265330/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266587 — **Prep Batch: 265330**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Plutonium-238	10.7	11.61		1.34	1.00	0.187	pCi/L	108	79 - 115	0.34	1
Plutonium-239/240	13.2	13.96		1.54	1.00	0.128	pCi/L	106	85 - 120	0.18	1

Tracer	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Pu-242 (T)	*85.6*		*30 - 110*

Method: A-01-R - Isotopic Curium and/or Americium 241 (Alpha Spectrometry)

Lab Sample ID: MB 160-265177/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266629 — **Prep Batch: 265177**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Americium-241	0.02456	U	0.0737	0.0737	1.00	0.164	pCi/L	08/17/16 11:22	08/25/16 11:19	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Americium-243	*63.8*		*30 - 110*	*08/17/16 11:22*	*08/25/16 11:19*	*1*

Method: A-01-R - Isotopic Curium and/or Americium 241 (Alpha Spectrometry) (Continued)

Lab Sample ID: LCS 160-265177/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266630 — **Prep Batch: 265177**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Americium-241			7.46	7.358		1.16	1.00	0.172	pCi/L	99	80 - 116		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Americium-243	*65.2*		*30 - 110*

Lab Sample ID: LCSD 160-265177/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266631 — **Prep Batch: 265177**

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Americium-241			7.46	7.716		1.21	1.00	0.117	pCi/L	103	80 - 116	0.15	1

Tracer	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Americium-243	*61.4*		*30 - 110*

Method: H3-04-RC - Tritium (LSC)

Lab Sample ID: MB 160-267448/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 267629 — **Prep Batch: 267448**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-0.03839	U	0.194	0.195	1.00	0.352	pCi/g	08/31/16 09:24	08/31/16 22:59	1

Lab Sample ID: LCS 160-267448/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 267629 — **Prep Batch: 267448**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Tritium			10.1	9.897		1.10	1.00	0.351	pCi/g	98	80 - 114		

Lab Sample ID: 160-18615-2 MS — **Client Sample ID: YMTFA69 SO 010**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 267629 — **Prep Batch: 267448**

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Tritium	0.0381	U	10.1	9.606		1.10	1.00	0.396	pCi/g	95	78 - 122		

Method: H3-04-RC - Tritium (LSC) (Continued)

Lab Sample ID: 160-18615-1 DU — **Client Sample ID: YMTFA70 SO 010**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 267629 — **Prep Batch: 267448**

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	0.00407	U		-0.05765	U	0.218	1.00	0.398	pCi/g			0.14	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Lab Sample ID: MB 160-266450/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 266904 — **Prep Batch: 266450**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium 89/90	-0.1454	U	0.152	0.153	3.00	0.294	pCi/g	08/24/16 22:35	08/27/16 12:48	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*62.3*		*40 - 110*	*08/24/16 22:35*	*08/27/16 12:48*	*1*

Lab Sample ID: LCS 160-266450/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 266904 — **Prep Batch: 266450**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Strontium 89/90			8.60	6.667		0.641	3.00	0.220	pCi/g	77	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*68.6*		*40 - 110*

Lab Sample ID: 160-18633-A-3-H DU — **Client Sample ID: Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 266904 — **Prep Batch: 266450**

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Strontium 89/90	0.0732	U		0.1433	U	0.145	3.00	0.236	pCi/g			0.26	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Sr Carrier	*69.8*		*40 - 110*

Method: TC-02-RC - Technetium-99 (LSC)

Lab Sample ID: MB 160-265402/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 266358 — **Prep Batch: 265402**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium-99	-0.1132	U	0.261	0.261	1.00	0.457	pCi/g	08/18/16 09:45	08/23/16 15:05	1

Tracer	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tc-99m	93.5		30 - 110	08/18/16 09:45	08/23/16 15:05	1

Lab Sample ID: LCS 160-265402/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 266358 — **Prep Batch: 265402**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Technetium-99			34.2	31.89		3.18	1.00	0.421	pCi/g	93	75 - 125		

Tracer	LCS %Yield	LCS Qualifier	Limits
Tc-99m	102		30 - 110

Lab Sample ID: 160-18591-C-6-E DU — **Client Sample ID: Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 266358 — **Prep Batch: 265402**

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Technetium-99	-0.0177	U		-0.1108	U	0.302	1.00	0.527	pCi/g			0.15	1

Tracer	DU %Yield	DU Qualifier	Limits
Tc-99m	81.6		30 - 110

Lab Sample ID: MB 160-265415/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266086 — **Prep Batch: 265415**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium-99	0.1799	U	1.05	1.05	3.00	1.79	pCi/L	08/18/16 10:47	08/22/16 22:53	1

Tracer	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tc-99m	105		30 - 110	08/18/16 10:47	08/22/16 22:53	1

Lab Sample ID: LCS 160-265415/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266086 — **Prep Batch: 265415**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Technetium-99			206	191.9		18.9	3.00	1.80	pCi/L	93	75 - 125		

Tracer	LCS %Yield	LCS Qualifier	Limits
Tc-99m	103		30 - 110

Lab Sample ID: 160-18615-7 DU — **Client Sample ID: YMTFA 9720 FB**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 266086 — **Prep Batch: 265415**

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Technetium-99	-0.113	U		-0.9034	U	1.19	3.00	2.09	pCi/L			0.35	1

QC Sample Results

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Tracer	DU %Yield	DU Qualifier	Limits
Tc-99m	89.6		30 - 110

QC Association Summary

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

GC/MS VOA

Analysis Batch: 265132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	8260C	
160-18615-8	YMTFA 9720 TB	Total/NA	Water	8260C	
160-18615-9	YMTFA 43 GW	Total/NA	Water	8260C	
160-18615-9	YMTFA 43 GW	Total/NA	Water	8260C	
160-18615-10	YMTFA 42 GW	Total/NA	Water	8260C	
160-18615-11	YMTFA 42 TB	Total/NA	Water	8260C	
160-18615-12	YMTFA 43 TB	Total/NA	Water	8260C	
MB 160-265132/9	Method Blank	Total/NA	Water	8260C	
LCS 160-265132/6	Lab Control Sample	Total/NA	Water	8260C	
LCSD 160-265132/7	Lab Control Sample Dup	Total/NA	Water	8260C	
160-18615-10 MS	YMTFA 42 GW	Total/NA	Water	8260C	
160-18615-10 MSD	YMTFA 42 GW	Total/NA	Water	8260C	

GC/MS Semi VOA

Prep Batch: 265033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	625	
MB 160-265033/1-A	Method Blank	Total/NA	Water	625	
LCS 160-265033/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 160-265033/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Prep Batch: 265425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-9	YMTFA 43 GW	Total/NA	Water	625	
160-18615-10	YMTFA 42 GW	Total/NA	Water	625	
MB 160-265425/1-A	Method Blank	Total/NA	Water	625	
LCS 160-265425/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 160-265425/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 266068

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	625	265033
160-18615-9	YMTFA 43 GW	Total/NA	Water	625	265425
160-18615-10	YMTFA 42 GW	Total/NA	Water	625	265425
MB 160-265033/1-A	Method Blank	Total/NA	Water	625	265033
MB 160-265425/1-A	Method Blank	Total/NA	Water	625	265425
LCS 160-265033/2-A	Lab Control Sample	Total/NA	Water	625	265033
LCS 160-265425/2-A	Lab Control Sample	Total/NA	Water	625	265425
LCSD 160-265033/3-A	Lab Control Sample Dup	Total/NA	Water	625	265033
LCSD 160-265425/3-A	Lab Control Sample Dup	Total/NA	Water	625	265425

GC Semi VOA

ISM Prep Batch: 265251

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18571-C-1-R MS	Matrix Spike	Total/NA	Solid	Increment, Prep	
160-18571-C-1-S MSD	Matrix Spike Duplicate	Total/NA	Solid	Increment, Prep	

GC Semi VOA (Continued)

Prep Batch: 265426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	608	
160-18615-9	YMTFA 43 GW	Total/NA	Water	608	
160-18615-10	YMTFA 42 GW	Total/NA	Water	608	
MB 160-265426/1-A	Method Blank	Total/NA	Water	608	
LCS 160-265426/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 160-265426/3-A	Lab Control Sample Dup	Total/NA	Water	608	

Prep Batch: 265429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	608	
160-18615-9	YMTFA 43 GW	Total/NA	Water	608	
160-18615-10	YMTFA 42 GW	Total/NA	Water	608	
MB 160-265429/1-A	Method Blank	Total/NA	Water	608	
LCS 160-265429/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 160-265429/3-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 266032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	608	265426
160-18615-9	YMTFA 43 GW	Total/NA	Water	608	265426
160-18615-10	YMTFA 42 GW	Total/NA	Water	608	265426
MB 160-265426/1-A	Method Blank	Total/NA	Water	608	265426
LCS 160-265426/2-A	Lab Control Sample	Total/NA	Water	608	265426
LCSD 160-265426/3-A	Lab Control Sample Dup	Total/NA	Water	608	265426

Prep Batch: 266064

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-1	YMTFA70 SO 010	Total/NA	Solid	3550C	
160-18615-2	YMTFA69 SO 010	Total/NA	Solid	3550C	
160-18615-3	YMTFA67 SO 010	Total/NA	Solid	3550C	
160-18615-4	YMTFA62 SO 010	Total/NA	Solid	3550C	
160-18615-5	YMTFA61 SO 010	Total/NA	Solid	3550C	
160-18615-6	YMTFA60 SO 010	Total/NA	Solid	3550C	
MB 160-266064/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 160-266064/2-A	Lab Control Sample	Total/NA	Solid	3550C	
160-18571-C-1-R MS	Matrix Spike	Total/NA	Solid	3550C	265251
160-18571-C-1-S MSD	Matrix Spike Duplicate	Total/NA	Solid	3550C	265251

Analysis Batch: 266065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	608	265429
160-18615-9	YMTFA 43 GW	Total/NA	Water	608	265429
160-18615-10	YMTFA 42 GW	Total/NA	Water	608	265429
MB 160-265429/1-A	Method Blank	Total/NA	Water	608	265429
LCS 160-265429/2-A	Lab Control Sample	Total/NA	Water	608	265429
LCSD 160-265429/3-A	Lab Control Sample Dup	Total/NA	Water	608	265429

Analysis Batch: 266183

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-1	YMTFA70 SO 010	Total/NA	Solid	8082A	266064
160-18615-2	YMTFA69 SO 010	Total/NA	Solid	8082A	266064

GC Semi VOA (Continued)

Analysis Batch: 266183 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-3	YMTFA67 SO 010	Total/NA	Solid	8082A	266064
160-18615-4	YMTFA62 SO 010	Total/NA	Solid	8082A	266064
160-18615-5	YMTFA61 SO 010	Total/NA	Solid	8082A	266064
160-18615-6	YMTFA60 SO 010	Total/NA	Solid	8082A	266064
MB 160-266064/1-A	Method Blank	Total/NA	Solid	8082A	266064
LCS 160-266064/2-A	Lab Control Sample	Total/NA	Solid	8082A	266064
160-18571-C-1-R MS	Matrix Spike	Total/NA	Solid	8082A	266064
160-18571-C-1-S MSD	Matrix Spike Duplicate	Total/NA	Solid	8082A	266064

HPLC/IC

Analysis Batch: 264674

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	300.0	
160-18615-9	YMTFA 43 GW	Total/NA	Water	300.0	
160-18615-9 - DL	YMTFA 43 GW	Total/NA	Water	300.0	
160-18615-10	YMTFA 42 GW	Total/NA	Water	300.0	
160-18615-10 - DL	YMTFA 42 GW	Total/NA	Water	300.0	
MB 160-264674/9	Method Blank	Total/NA	Water	300.0	
LCS 160-264674/10	Lab Control Sample	Total/NA	Water	300.0	
160-18615-9 MS	YMTFA 43 GW	Total/NA	Water	300.0	
160-18615-9 MS - DL	YMTFA 43 GW	Total/NA	Water	300.0	
160-18615-9 DU	YMTFA 43 GW	Total/NA	Water	300.0	
160-18615-9 DU - DL	YMTFA 43 GW	Total/NA	Water	300.0	

Analysis Batch: 264675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	300.0	
160-18615-9	YMTFA 43 GW	Total/NA	Water	300.0	
160-18615-9 - DL	YMTFA 43 GW	Total/NA	Water	300.0	
160-18615-10	YMTFA 42 GW	Total/NA	Water	300.0	
MB 160-264675/9	Method Blank	Total/NA	Water	300.0	
LCS 160-264675/10	Lab Control Sample	Total/NA	Water	300.0	
160-18615-9 MS	YMTFA 43 GW	Total/NA	Water	300.0	
160-18615-9 MS - DL	YMTFA 43 GW	Total/NA	Water	300.0	
160-18615-9 DU	YMTFA 43 GW	Total/NA	Water	300.0	
160-18615-9 DU - DL	YMTFA 43 GW	Total/NA	Water	300.0	

Metals

Leach Batch: 265387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-1	YMTFA70 SO 010	TCLP	Solid	1311	
160-18615-2	YMTFA69 SO 010	TCLP	Solid	1311	
160-18615-3	YMTFA67 SO 010	TCLP	Solid	1311	
160-18615-4	YMTFA62 SO 010	TCLP	Solid	1311	
160-18615-5	YMTFA61 SO 010	TCLP	Solid	1311	
160-18615-6	YMTFA60 SO 010	TCLP	Solid	1311	
LB 160-265387/1-D	Method Blank	TCLP	Solid	1311	
160-18348-E-1-Q MS	Matrix Spike	TCLP	Solid	1311	

Metals (Continued)

Leach Batch: 265387 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18348-E-1-R MSD	Matrix Spike Duplicate	TCLP	Solid	1311	
160-18348-E-1-T MS ^5	Matrix Spike	TCLP	Solid	1311	
160-18348-E-1-U MSD ^5	Matrix Spike Duplicate	TCLP	Solid	1311	

Prep Batch: 265668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	3010A	
160-18615-9	YMTFA 43 GW	Total/NA	Water	3010A	
160-18615-10	YMTFA 42 GW	Total/NA	Water	3010A	
MB 160-265668/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-265668/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-18615-7 MS	YMTFA 9720 FB	Total/NA	Water	3010A	
160-18615-7 MSD	YMTFA 9720 FB	Total/NA	Water	3010A	

Prep Batch: 266071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-1	YMTFA70 SO 010	TCLP	Solid	7470A	265387
160-18615-2	YMTFA69 SO 010	TCLP	Solid	7470A	265387
160-18615-3	YMTFA67 SO 010	TCLP	Solid	7470A	265387
160-18615-4	YMTFA62 SO 010	TCLP	Solid	7470A	265387
160-18615-5	YMTFA61 SO 010	TCLP	Solid	7470A	265387
160-18615-6	YMTFA60 SO 010	TCLP	Solid	7470A	265387
LB 160-266071/1-A	Method Blank	Total/NA	Solid	7470A	
LCS 160-266071/2-A	Lab Control Sample	Total/NA	Solid	7470A	
160-18348-E-1-Q MS	Matrix Spike	TCLP	Solid	7470A	265387
160-18348-E-1-R MSD	Matrix Spike Duplicate	TCLP	Solid	7470A	265387

Prep Batch: 266138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-1	YMTFA70 SO 010	TCLP	Solid	3010A	265387
160-18615-2	YMTFA69 SO 010	TCLP	Solid	3010A	265387
160-18615-3	YMTFA67 SO 010	TCLP	Solid	3010A	265387
160-18615-4	YMTFA62 SO 010	TCLP	Solid	3010A	265387
160-18615-5	YMTFA61 SO 010	TCLP	Solid	3010A	265387
160-18615-6	YMTFA60 SO 010	TCLP	Solid	3010A	265387
LB 160-265387/1-D	Method Blank	TCLP	Solid	3010A	265387
LCS 160-266138/2-A	Lab Control Sample	Total/NA	Solid	3010A	
160-18348-E-1-T MS ^5	Matrix Spike	TCLP	Solid	3010A	265387
160-18348-E-1-U MSD ^5	Matrix Spike Duplicate	TCLP	Solid	3010A	265387

Analysis Batch: 266428

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-1	YMTFA70 SO 010	TCLP	Solid	7470A	266071
160-18615-2	YMTFA69 SO 010	TCLP	Solid	7470A	266071
160-18615-3	YMTFA67 SO 010	TCLP	Solid	7470A	266071
160-18615-4	YMTFA62 SO 010	TCLP	Solid	7470A	266071
160-18615-5	YMTFA61 SO 010	TCLP	Solid	7470A	266071
160-18615-6	YMTFA60 SO 010	TCLP	Solid	7470A	266071
LB 160-266071/1-A	Method Blank	Total/NA	Solid	7470A	266071
LCS 160-266071/2-A	Lab Control Sample	Total/NA	Solid	7470A	266071
160-18348-E-1-Q MS	Matrix Spike	TCLP	Solid	7470A	266071

Metals (Continued)

Analysis Batch: 266428 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18348-E-1-R MSD	Matrix Spike Duplicate	TCLP	Solid	7470A	266071

Analysis Batch: 266472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-1	YMTFA70 SO 010	TCLP	Solid	6010C	266138
160-18615-2	YMTFA69 SO 010	TCLP	Solid	6010C	266138
160-18615-3	YMTFA67 SO 010	TCLP	Solid	6010C	266138
160-18615-4	YMTFA62 SO 010	TCLP	Solid	6010C	266138
160-18615-5	YMTFA61 SO 010	TCLP	Solid	6010C	266138
160-18615-6	YMTFA60 SO 010	TCLP	Solid	6010C	266138
LB 160-265387/1-D	Method Blank	TCLP	Solid	6010C	266138
LCS 160-266138/2-A	Lab Control Sample	Total/NA	Solid	6010C	266138
160-18348-E-1-T MS ^5	Matrix Spike	TCLP	Solid	6010C	266138
160-18348-E-1-U MSD ^5	Matrix Spike Duplicate	TCLP	Solid	6010C	266138

Prep Batch: 266715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	7470A	
160-18615-9	YMTFA 43 GW	Total/NA	Water	7470A	
160-18615-10	YMTFA 42 GW	Total/NA	Water	7470A	
MB 160-266715/1-A	Method Blank	Total/NA	Water	7470A	
LCS 160-266715/2-A	Lab Control Sample	Total/NA	Water	7470A	
160-18488-E-4-C MS	Matrix Spike	Total/NA	Water	7470A	
160-18488-E-4-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Analysis Batch: 267023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	7470A	266715
160-18615-9	YMTFA 43 GW	Total/NA	Water	7470A	266715
160-18615-10	YMTFA 42 GW	Total/NA	Water	7470A	266715
MB 160-266715/1-A	Method Blank	Total/NA	Water	7470A	266715
LCS 160-266715/2-A	Lab Control Sample	Total/NA	Water	7470A	266715
160-18488-E-4-C MS	Matrix Spike	Total/NA	Water	7470A	266715
160-18488-E-4-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	266715

Analysis Batch: 267618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	6020A	265668
160-18615-9	YMTFA 43 GW	Total/NA	Water	6020A	265668
160-18615-10	YMTFA 42 GW	Total/NA	Water	6020A	265668
MB 160-265668/1-A	Method Blank	Total/NA	Water	6020A	265668
LCS 160-265668/2-A	Lab Control Sample	Total/NA	Water	6020A	265668
160-18615-7 MS	YMTFA 9720 FB	Total/NA	Water	6020A	265668
160-18615-7 MSD	YMTFA 9720 FB	Total/NA	Water	6020A	265668

General Chemistry

Analysis Batch: 264688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	150.1	

General Chemistry (Continued)

Analysis Batch: 264688 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-9	YMTFA 43 GW	Total/NA	Water	150.1	
160-18615-10	YMTFA 42 GW	Total/NA	Water	150.1	
LCS 160-264688/5	Lab Control Sample	Total/NA	Water	150.1	
160-18615-7 DU	YMTFA 9720 FB	Total/NA	Water	150.1	

Analysis Batch: 265160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	160.2	
160-18615-9	YMTFA 43 GW	Total/NA	Water	160.2	
160-18615-10	YMTFA 42 GW	Total/NA	Water	160.2	
MB 160-265160/1	Method Blank	Total/NA	Water	160.2	
LCS 160-265160/2	Lab Control Sample	Total/NA	Water	160.2	
160-18611-A-1 DU	Duplicate	Total/NA	Water	160.2	

Analysis Batch: 265418

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-1	YMTFA70 SO 010	Total/NA	Solid	Moisture	
160-18615-2	YMTFA69 SO 010	Total/NA	Solid	Moisture	
160-18615-3	YMTFA67 SO 010	Total/NA	Solid	Moisture	
160-18615-4	YMTFA62 SO 010	Total/NA	Solid	Moisture	
160-18615-5	YMTFA61 SO 010	Total/NA	Solid	Moisture	
160-18615-6	YMTFA60 SO 010	Total/NA	Solid	Moisture	
160-18570-B-1 DU	Duplicate	Total/NA	Solid	Moisture	

Prep Batch: 266439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	9010C	
160-18615-9	YMTFA 43 GW	Total/NA	Water	9010C	
160-18615-10	YMTFA 42 GW	Total/NA	Water	9010C	
MB 160-266439/1-A	Method Blank	Total/NA	Water	9010C	
HLCS 160-266439/3-A	Lab Control Sample	Total/NA	Water	9010C	
LCS 160-266439/2-A	Lab Control Sample	Total/NA	Water	9010C	
160-18597-A-1-C MS ^2 - RA	Matrix Spike	Total/NA	Water	9010C	
160-18615-7 MS	YMTFA 9720 FB	Total/NA	Water	9010C	
160-18597-A-1-B DU ^2 - RA	Duplicate	Total/NA	Water	9010C	

Analysis Batch: 266767

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	9012B	266439
160-18615-9	YMTFA 43 GW	Total/NA	Water	9012B	266439
160-18615-10	YMTFA 42 GW	Total/NA	Water	9012B	266439
MB 160-266439/1-A	Method Blank	Total/NA	Water	9012B	266439
HLCS 160-266439/3-A	Lab Control Sample	Total/NA	Water	9012B	266439
LCS 160-266439/2-A	Lab Control Sample	Total/NA	Water	9012B	266439
160-18597-A-1-C MS ^2 - RA	Matrix Spike	Total/NA	Water	9012B	266439
160-18615-7 MS	YMTFA 9720 FB	Total/NA	Water	9012B	266439
160-18597-A-1-B DU ^2 - RA	Duplicate	Total/NA	Water	9012B	266439

Analysis Batch: 267650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	9060	

General Chemistry (Continued)

Analysis Batch: 267650 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-9	YMTFA 43 GW	Total/NA	Water	9060	
160-18615-10	YMTFA 42 GW	Total/NA	Water	9060	
MB 160-267650/4	Method Blank	Total/NA	Water	9060	
LCS 160-267650/5	Lab Control Sample	Total/NA	Water	9060	
160-18615-7 MS	YMTFA 9720 FB	Total/NA	Water	9060	
160-18615-7 DU	YMTFA 9720 FB	Total/NA	Water	9060	

Analysis Batch: 338713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	SM 2310B	
160-18615-9	YMTFA 43 GW	Total/NA	Water	SM 2310B	
160-18615-10	YMTFA 42 GW	Total/NA	Water	SM 2310B	
MB 280-338713/3	Method Blank	Total/NA	Water	SM 2310B	
LCS 280-338713/2	Lab Control Sample	Total/NA	Water	SM 2310B	
160-18615-9 DU	YMTFA 43 GW	Total/NA	Water	SM 2310B	

Prep Batch: 339923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	Distill/Phenol	
160-18615-9	YMTFA 43 GW	Total/NA	Water	Distill/Phenol	
160-18615-10	YMTFA 42 GW	Total/NA	Water	Distill/Phenol	
MB 280-339923/2-A	Method Blank	Total/NA	Water	Distill/Phenol	
LCS 280-339923/1-A	Lab Control Sample	Total/NA	Water	Distill/Phenol	
160-18615-7 MS	YMTFA 9720 FB	Total/NA	Water	Distill/Phenol	
160-18615-7 MSD	YMTFA 9720 FB	Total/NA	Water	Distill/Phenol	

Analysis Batch: 340137

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	420.4	339923
160-18615-9	YMTFA 43 GW	Total/NA	Water	420.4	339923
160-18615-10	YMTFA 42 GW	Total/NA	Water	420.4	339923
MB 280-339923/2-A	Method Blank	Total/NA	Water	420.4	339923
LCS 280-339923/1-A	Lab Control Sample	Total/NA	Water	420.4	339923
160-18615-7 MS	YMTFA 9720 FB	Total/NA	Water	420.4	339923
160-18615-7 MSD	YMTFA 9720 FB	Total/NA	Water	420.4	339923

Prep Batch: 340443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	1664A	
160-18615-9	YMTFA 43 GW	Total/NA	Water	1664A	
160-18615-10	YMTFA 42 GW	Total/NA	Water	1664A	
MB 280-340443/3-A	Method Blank	Total/NA	Water	1664A	
LCS 280-340443/1-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 280-340443/2-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 340515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	1664A	340443
160-18615-9	YMTFA 43 GW	Total/NA	Water	1664A	340443
160-18615-10	YMTFA 42 GW	Total/NA	Water	1664A	340443
MB 280-340443/3-A	Method Blank	Total/NA	Water	1664A	340443

General Chemistry (Continued)

Analysis Batch: 340515 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-340443/1-A	Lab Control Sample	Total/NA	Water	1664A	340443
LCSD 280-340443/2-A	Lab Control Sample Dup	Total/NA	Water	1664A	340443

Rad

Leach Batch: 264657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-1	YMTFA70 SO 010	Total/NA	Solid	Dry and Grind	
160-18615-2	YMTFA69 SO 010	Total/NA	Solid	Dry and Grind	
160-18615-3	YMTFA67 SO 010	Total/NA	Solid	Dry and Grind	
160-18615-4	YMTFA62 SO 010	Total/NA	Solid	Dry and Grind	
160-18615-5	YMTFA61 SO 010	Total/NA	Solid	Dry and Grind	
160-18615-6	YMTFA60 SO 010	Total/NA	Solid	Dry and Grind	

Leach Batch: 264940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18633-A-3-H DU	Duplicate	Total/NA	Solid	Dry and Grind	

Prep Batch: 265056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	Evaporation	
160-18615-9	YMTFA 43 GW	Total/NA	Water	Evaporation	
160-18615-10	YMTFA 42 GW	Total/NA	Water	Evaporation	
MB 160-265056/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-265056/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-265056/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
600-135279-D-1-E MS	Matrix Spike	Total/NA	Water	Evaporation	
600-135279-D-1-F MSBT	Matrix Spike	Total/NA	Water	Evaporation	
600-135279-D-1-G DU	Duplicate	Total/NA	Water	Evaporation	

Prep Batch: 265177

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	ExtChrom	
160-18615-9	YMTFA 43 GW	Total/NA	Water	ExtChrom	
160-18615-10	YMTFA 42 GW	Total/NA	Water	ExtChrom	
MB 160-265177/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-265177/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
LCSD 160-265177/3-A	Lab Control Sample Dup	Total/NA	Water	ExtChrom	

Prep Batch: 265228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	A-01-R	
160-18615-9	YMTFA 43 GW	Total/NA	Water	A-01-R	
160-18615-10	YMTFA 42 GW	Total/NA	Water	A-01-R	
MB 160-265228/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-265228/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
LCSD 160-265228/3-A	Lab Control Sample Dup	Total/NA	Water	ExtChrom	

Rad (Continued)

Prep Batch: 265328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	ExtChrom	
160-18615-9	YMTFA 43 GW	Total/NA	Water	ExtChrom	
160-18615-10	YMTFA 42 GW	Total/NA	Water	ExtChrom	
MB 160-265328/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-265328/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
LCSD 160-265328/3-A	Lab Control Sample Dup	Total/NA	Water	ExtChrom	

Prep Batch: 265330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	ExtChrom	
160-18615-9	YMTFA 43 GW	Total/NA	Water	ExtChrom	
160-18615-10	YMTFA 42 GW	Total/NA	Water	ExtChrom	
MB 160-265330/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-265330/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
LCSD 160-265330/3-A	Lab Control Sample Dup	Total/NA	Water	ExtChrom	

Prep Batch: 265331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	ExtChrom	
160-18615-9	YMTFA 43 GW	Total/NA	Water	ExtChrom	
160-18615-10	YMTFA 42 GW	Total/NA	Water	ExtChrom	
MB 160-265331/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-265331/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
LCSD 160-265331/3-A	Lab Control Sample Dup	Total/NA	Water	ExtChrom	

Prep Batch: 265402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-1	YMTFA70 SO 010	Total/NA	Solid	Ext_Chrom_LSC	
160-18615-2	YMTFA69 SO 010	Total/NA	Solid	Ext_Chrom_LSC	
160-18615-3	YMTFA67 SO 010	Total/NA	Solid	Ext_Chrom_LSC	
160-18615-4	YMTFA62 SO 010	Total/NA	Solid	Ext_Chrom_LSC	
160-18615-5	YMTFA61 SO 010	Total/NA	Solid	Ext_Chrom_LSC	
160-18615-6	YMTFA60 SO 010	Total/NA	Solid	Ext_Chrom_LSC	
MB 160-265402/1-A	Method Blank	Total/NA	Solid	Ext_Chrom_LSC	
LCS 160-265402/2-A	Lab Control Sample	Total/NA	Solid	Ext_Chrom_LSC	
160-18591-C-6-E DU	Duplicate	Total/NA	Solid	Ext_Chrom_LSC	

Prep Batch: 265415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	Ext_Chrom_LSC	
160-18615-9	YMTFA 43 GW	Total/NA	Water	Ext_Chrom_LSC	
160-18615-10	YMTFA 42 GW	Total/NA	Water	Ext_Chrom_LSC	
MB 160-265415/1-A	Method Blank	Total/NA	Water	Ext_Chrom_LSC	
LCS 160-265415/2-A	Lab Control Sample	Total/NA	Water	Ext_Chrom_LSC	
160-18615-7 DU	YMTFA 9720 FB	Total/NA	Water	Ext_Chrom_LSC	

Prep Batch: 265450

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-10	YMTFA 42 GW	Total/NA	Water	PrecSep-7	
MB 160-265450/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-265450/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	

Rad (Continued)

Prep Batch: 265450 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 160-265450/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 265506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	Fill_Geo-0	
160-18615-9	YMTFA 43 GW	Total/NA	Water	Fill_Geo-0	
160-18615-10	YMTFA 42 GW	Total/NA	Water	Fill_Geo-0	
MB 160-265506/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-265506/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
160-18615-7 DU	YMTFA 9720 FB	Total/NA	Water	Fill_Geo-0	

Prep Batch: 266450

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-1	YMTFA70 SO 010	Total/NA	Solid	DPS-0	264657
160-18615-2	YMTFA69 SO 010	Total/NA	Solid	DPS-0	264657
160-18615-3	YMTFA67 SO 010	Total/NA	Solid	DPS-0	264657
160-18615-4	YMTFA62 SO 010	Total/NA	Solid	DPS-0	264657
160-18615-5	YMTFA61 SO 010	Total/NA	Solid	DPS-0	264657
160-18615-6	YMTFA60 SO 010	Total/NA	Solid	DPS-0	264657
MB 160-266450/1-A	Method Blank	Total/NA	Solid	DPS-0	
LCS 160-266450/2-A	Lab Control Sample	Total/NA	Solid	DPS-0	
160-18633-A-3-H DU	Duplicate	Total/NA	Solid	DPS-0	264940

Prep Batch: 266822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-7	YMTFA 9720 FB	Total/NA	Water	PrecSep-7	
160-18615-9	YMTFA 43 GW	Total/NA	Water	PrecSep-7	
MB 160-266822/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-266822/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-266822/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 267448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18615-1	YMTFA70 SO 010	Total/NA	Solid	LSC_Dist_Susp	
160-18615-2	YMTFA69 SO 010	Total/NA	Solid	LSC_Dist_Susp	
160-18615-3	YMTFA67 SO 010	Total/NA	Solid	LSC_Dist_Susp	
160-18615-4	YMTFA62 SO 010	Total/NA	Solid	LSC_Dist_Susp	
160-18615-5	YMTFA61 SO 010	Total/NA	Solid	LSC_Dist_Susp	
160-18615-6	YMTFA60 SO 010	Total/NA	Solid	LSC_Dist_Susp	
MB 160-267448/1-A	Method Blank	Total/NA	Solid	LSC_Dist_Susp	
LCS 160-267448/2-A	Lab Control Sample	Total/NA	Solid	LSC_Dist_Susp	
160-18615-2 MS	YMTFA69 SO 010	Total/NA	Solid	LSC_Dist_Susp	
160-18615-1 DU	YMTFA70 SO 010	Total/NA	Solid	LSC_Dist_Susp	

Surrogate Summary

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Method: 8260C - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(75-129)	(81-130)	(81-124)	(87-128)
160-18615-7	YMTFA 9720 FB	105	111	107	107
160-18615-8	YMTFA 9720 TB	102	105	104	105
160-18615-9	YMTFA 43 GW	97	111	102	105
160-18615-9	YMTFA 43 GW	103	104	108	111
160-18615-10	YMTFA 42 GW	95	107	100	108
160-18615-10 MS	YMTFA 42 GW	101	94	106	103
160-18615-10 MSD	YMTFA 42 GW	98	96	105	99
160-18615-11	YMTFA 42 TB	106	109	106	106
160-18615-12	YMTFA 43 TB	108	109	107	106
LCS 160-265132/6	Lab Control Sample	100	101	108	101
LCSD 160-265132/7	Lab Control Sample Dup	102	104	106	109
MB 160-265132/9	Method Blank	96	107	99	106

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 625 - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		2FP	PHL	NBZ	TBP	TPH	FBP
Lab Sample ID	Client Sample ID	(23-82)	(14-68)	(36-98)	(41-109)	(43-107)	(31-103)
160-18615-7	YMTFA 9720 FB	39	29	72	68	81	70
160-18615-9	YMTFA 43 GW	31	21	67	77	69	67
160-18615-10	YMTFA 42 GW	32	23	65	72	77	67
LCS 160-265033/2-A	Lab Control Sample	53	43	87	90	91	84
LCS 160-265425/2-A	Lab Control Sample	47	37	78	82	86	77
LCSD 160-265033/3-A	Lab Control Sample Dup	51	43	79	86	87	78
LCSD 160-265425/3-A	Lab Control Sample Dup	52	42	84	91	91	83
MB 160-265033/1-A	Method Blank	44	35	71	80	90	72
MB 160-265425/1-A	Method Blank	38	33	63	61	86	64

Surrogate Legend

2FP = 2-Fluorophenol (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
TPH = Terphenyl-d14 (Surr)
FBP = 2-Fluorobiphenyl (Surr)

Method: 608 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB2	TCX2
Lab Sample ID	Client Sample ID	(40-130)	(63-115)
160-18615-9	YMTFA 43 GW	45	89

Surrogate Summary

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Method: 608 - Organochlorine Pesticides in Water (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB2	TCX2
Lab Sample ID	Client Sample ID	(40-130)	(63-115)
160-18615-10	YMTFA 42 GW	59	82
LCS 160-265429/2-A	Lab Control Sample	92	85
LCSD 160-265429/3-A	Lab Control Sample Dup	84	86
MB 160-265429/1-A	Method Blank	88	83

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene

Method: 608 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX2
Lab Sample ID	Client Sample ID	(40-130)	(63-115)
160-18615-7	YMTFA 9720 FB	44	89

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	DCB2
Lab Sample ID	Client Sample ID	(24-126)	(24-126)
160-18615-7	YMTFA 9720 FB		97
160-18615-9	YMTFA 43 GW	122	102
160-18615-10	YMTFA 42 GW	119	102
LCS 160-265426/2-A	Lab Control Sample		103
LCSD 160-265426/3-A	Lab Control Sample Dup		100
MB 160-265426/1-A	Method Blank		104

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

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

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DCB2
Lab Sample ID	Client Sample ID	(23-146)
160-18571-C-1-R MS	Matrix Spike	68
160-18615-1	YMTFA70 SO 010	79
160-18615-2	YMTFA69 SO 010	83
160-18615-4	YMTFA62 SO 010	72
LCS 160-266064/2-A	Lab Control Sample	100
MB 160-266064/1-A	Method Blank	94

Surrogate Legend

Surrogate Summary

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

DCB = DCB Decachlorobiphenyl (Surr)

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

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	**Client Sample ID**	**DCB1 (23-146)**							
160-18571-C-1-S MSD	Matrix Spike Duplicate	154 S							
160-18615-3	YMTFA67 SO 010	58							
160-18615-5	YMTFA61 SO 010	76							
160-18615-6	YMTFA60 SO 010	57							

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

Tracer/Carrier Summary

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	Sr (C) (40-110)	Y (40-110)
160-18615-7	YMTFA 9720 FB	80.4	93.8
160-18615-9	YMTFA 43 GW	79.9	96.1
160-18615-10	YMTFA 42 GW	87.2	96.4
LCS 160-265450/2-A	Lab Control Sample	90.8	96.1
LCS 160-266822/2-A	Lab Control Sample	74.0	95.0
LCSD 160-265450/3-A	Lab Control Sample Dup	89.5	93.1
LCSD 160-266822/3-A	Lab Control Sample Dup	79.5	94.2
MB 160-265450/1-A	Method Blank	90.6	90.1
MB 160-266822/1-A	Method Blank	76.1	98.3

Percent Yield (Acceptance Limits)

Tracer/Carrier Legend

Sr (C) = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Curium and/or Americium 241 (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	Am-243 (30-110)
160-18615-7	YMTFA 9720 FB	53.7
160-18615-9	YMTFA 43 GW	52.8
160-18615-10	YMTFA 42 GW	61.7
LCS 160-265177/2-A	Lab Control Sample	65.2
LCSD 160-265177/3-A	Lab Control Sample Dup	61.4
MB 160-265177/1-A	Method Blank	63.8

Percent Yield (Acceptance Limits)

Tracer/Carrier Legend

Am-243 = Americium-243

Method: A-01-R - Isotopic Neptunium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	Np-239 (30-110)
160-18615-7	YMTFA 9720 FB	88.5
160-18615-9	YMTFA 43 GW	95.0
160-18615-10	YMTFA 42 GW	95.9
LCS 160-265228/2-A	Lab Control Sample	97.2
LCSD 160-265228/3-A	Lab Control Sample Dup	86.3
MB 160-265228/1-A	Method Blank	90.0

Percent Yield (Acceptance Limits)

Tracer/Carrier Legend

Np-239 = Neptunium-239

Tracer/Carrier Summary

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Method: A-01-R - Isotopic Plutonium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	Pu-242 (T) (30-110)
160-18615-7	YMTFA 9720 FB	81.7
160-18615-9	YMTFA 43 GW	94.1
160-18615-10	YMTFA 42 GW	83.1
LCS 160-265330/2-A	Lab Control Sample	94.3
LCSD 160-265330/3-A	Lab Control Sample Dup	85.6
MB 160-265330/1-A	Method Blank	89.1

Percent Yield (Acceptance Limits)

Tracer/Carrier Legend

Pu-242 (T) = Pu-242 (T)

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	Th-229 (30-110)
160-18615-7	YMTFA 9720 FB	94.9
160-18615-9	YMTFA 43 GW	80.3
160-18615-10	YMTFA 42 GW	80.3
LCS 160-265328/2-A	Lab Control Sample	75.4
LCSD 160-265328/3-A	Lab Control Sample Dup	76.2
MB 160-265328/1-A	Method Blank	84.8

Percent Yield (Acceptance Limits)

Tracer/Carrier Legend

Th-229 = Thorium-229

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	U-232 (30-110)
160-18615-7	YMTFA 9720 FB	80.5
160-18615-9	YMTFA 43 GW	81.8
160-18615-10	YMTFA 42 GW	86.7
LCS 160-265331/2-A	Lab Control Sample	70.5
LCSD 160-265331/3-A	Lab Control Sample Dup	73.0
MB 160-265331/1-A	Method Blank	83.0

Percent Yield (Acceptance Limits)

Tracer/Carrier Legend

U-232 = Uranium-232

Method: SR-03-RC - Total Beta Strontium (GFPC)

Matrix: Solid **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	Sr (C) (40-110)
160-18615-1	YMTFA70 SO 010	85.8
160-18615-2	YMTFA69 SO 010	80.7

Percent Yield (Acceptance Limits)

Tracer/Carrier Summary

Client: Alliant Corporation
Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18615-1

Method: SR-03-RC - Total Beta Strontium (GFPC) (Continued)

Matrix: Solid **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	Sr (C) (40-110)
160-18615-3	YMTFA67 SO 010	83.1
160-18615-4	YMTFA62 SO 010	86.8
160-18615-5	YMTFA61 SO 010	81.6
160-18615-6	YMTFA60 SO 010	84.0
160-18633-A-3-H DU	Duplicate	69.8
LCS 160-266450/2-A	Lab Control Sample	68.6
MB 160-266450/1-A	Method Blank	62.3

Tracer/Carrier Legend

Sr (C) = Sr Carrier

Method: TC-02-RC - Technetium-99 (LSC)

Matrix: Solid **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	Tc-99m (30-110)
160-18591-C-6-E DU	Duplicate	81.6
160-18615-1	YMTFA70 SO 010	94.4
160-18615-2	YMTFA69 SO 010	85.1
160-18615-3	YMTFA67 SO 010	99.1
160-18615-4	YMTFA62 SO 010	93.4
160-18615-5	YMTFA61 SO 010	86.7
160-18615-6	YMTFA60 SO 010	91.2
LCS 160-265402/2-A	Lab Control Sample	102
MB 160-265402/1-A	Method Blank	93.5

Tracer/Carrier Legend

Tc-99m = Tc-99m

Method: TC-02-RC - Technetium-99 (LSC)

Matrix: Water **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	Tc-99m (30-110)
160-18615-7	YMTFA 9720 FB	104
160-18615-7 DU	YMTFA 9720 FB	89.6
160-18615-9	YMTFA 43 GW	108
160-18615-10	YMTFA 42 GW	65.9
LCS 160-265415/2-A	Lab Control Sample	103
MB 160-265415/1-A	Method Blank	105

Tracer/Carrier Legend

Tc-99m = Tc-99m