Level IV Data Validation for Outfall 200 Mercury Treatment Facility Area at the Y-12 National Security Complex, Oak Ridge, Tennessee (TestAmerica Job IDs 160-18521-1, 160-18521-1, 160-18615-1, and 160-18615-2)

Revision 0

Prepared for

U.S. Department of Energy
Environmental Management
Oak Ridge, Tennessee

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SCOPE

This report contains Level IV validation results for analytical data for the geotechnical and waste characterization of the Outfall 200 Mercury Treatment Facility Area at the Y-12 National Security Complex, Oak Ridge, Tennessee. The evaluation covers 14 total samples, representing 8 solids samples (sediment and soil) and 6 liquid samples (blanks and water). The evaluation covers analyses for metals, organics, miscellaneous inorganic analyses, and radionuclides.

METHOD

The analytical data were validated using the applicable guidelines provided in the SW-846 or wastewater methods, *Guidance on Environmental Data Verification and Data Validation* (EPA/240/R-02/004, November 2002), *National Functional Guidelines for Superfund Organic Methods Data Review* (EPA-540-R-014-002, August 2014), *National Functional Guidelines for Inorganic Superfund Data Review* (EPA-540-R-013-001, August 2014), *National Functional Guidelines for High Resolution Superfund Methods Data Review* (EPA-542-B-16-001, April 2016), *Verification and Validation of Radiological Data for Use in Waste Management and Environmental Remediation* (ANSI/ANS-41.5-2012, 2012), *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP)* (EPA 402-B-04-001A), and *Sampling and Analysis Plan / Quality Assurance Project Plan for Geotechnical and Waste Characterization of the Outfall 200 Mercury Treatment Facility Area at the Y-12 National Security Complex, Oak Ridge, Tennessee* (DOE/OR/01-2657&D1). In cases where specific guidance was not available, professional judgement was used to evaluate impact of quality control issues on the reported data

VERIFICATION AND VALIDATION RESULTS

Completeness

Results for 14 samples with Job Identification (ID) numbers 160-18521-1, 160-18521-2, 160-18615-1, and 160-18615-2 were evaluated. Sample delivery group (SDG) numbers were not consistently provided; however, the Job ID nos. assigned by TestAmerica Laboratories, Inc., (TestAmerica) were essentially equivalent to SDGs and so verification and validation were conducted for each Job ID batch. The analyses were performed by TestAmerica at its St. Louis, Missouri, facility (TestAmerica), its Richland, Washington, facility (TestAmerica RL), or its Denver, Colorado, facility (TestAmerica CO). The following lists analyses, laboratory site, methods, and sample numbers for reported results for each sample.

Analysis	Laboratory	Method	Project Sample ID Numbers
TestAmerica Job ID 160-18521-1			
TCLP Volatile Organic Compounds	TestAmerica	EPA SW846 Method 1311/8260C	YMTFA74SE001 YMTFA75SE001
TCLP Semivolatile Organic Compounds	TestAmerica	EPA SW846 Method 1311/8270D	YMTFA74SE001 YMTFA75SE001
PCBs	TestAmerica	EPA SW-846 Method 8082A	YMTFA74SE001 YMTFA75SE001
TCLP Chlorinated Herbicides	TestAmerica	EPA SW846 Method 1311/8151A	YMTFA74SE001 YMTFA75SE001
TCLP Metals (Not Including Mercury)	TestAmerica	EPA SW-846 Method 1311/6010C	YMTFA74SE001 YMTFA75SE001
Percent Solids	TestAmerica	EPA SW-846 Method 160.3 MOD	YMTFA74SE001 YMTFA75SE001

Analysis	Laboratory	Method	Project Sample ID Numbers
Americium-241	TestAmerica	Alpha Spectrometry (A-01-R)	YMTFA74SE001 YMTFA75SE001
Isotopic Neptunium	TestAmerica	Alpha Spectrometry (A-01-R)	YMTFA74SE001 YMTFA75SE001
Isotopic Plutonium	TestAmerica	Alpha Spectrometry (A-01-R)	YMTFA74SE001 YMTFA75SE001
Isotopic Thorium	TestAmerica	Alpha Spectrometry (A-01-R)	YMTFA74SE001 YMTFA75SE001
Isotopic Uranium	TestAmerica	Alpha Spectrometry (A-01-R)	YMTFA74SE001 YMTFA75SE001
Tritium	TestAmerica	Liquid Scintillation Counting (H3-04-RC)	YMTFA74SE001 YMTFA75SE001
Total Beta Strontium	TestAmerica	Gas Flow Proportional Counting (SR-03-RC)	YMTFA74SE001 YMTFA75SE001
Technetium-99	TestAmerica	Liquid Scintillation Counting (TC-02-RC)	YMTFA74SE001 YMTFA75SE001
Carbon-14	TestAmerica RL	Liquid Scintillation Counting (RL-LSC-008)	YMTFA74SE001 YMTFA75SE001
TestAmerica Job ID 160-18521-2			
TCLP Mercury	TestAmerica	EPA SW-846 Method 1311/7470A	YMTFA74SE001 YMTFA75SE001
Radium-226	TestAmerica	Alpha Spectrometry (ST-RC-0301)	YMTFA74SE001 YMTFA75SE001
TestAmerica Job ID 160-18615-1			
Volatile Organic Compounds	TestAmerica	EPA SW846 Method 8260C	YMTFA 9720 FB YMTFA 9720 TB YMTFA 43 GW YMTFA 42 GW YMTFA 42 TB YMTFA 43 TB
Semivolatile Organic Compounds	TestAmerica	EPA Method 625	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
Chlorinated Pesticides	TestAmerica	EPA Method 608	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
PCBs	TestAmerica	EPA Method 608	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW

Analysis	Laboratory	Method	Project Sample ID Numbers
PCBs	TestAmerica	EPA SW-846 Method 8082	YMTFA70 SO 010 YMTFA69 SO 010 YMTFA67 SO 010 YMTFA62 SO 010 YMTFA61 SO 010 YMTFA60 SO 010
TCLP Metals (Not Including Mercury)	TestAmerica	EPA SW-846 Method 1311/6010C	YMTFA70 SO 010 YMTFA69 SO 010 YMTFA67 SO 010 YMTFA62 SO 010 YMTFA61 SO 010 YMTFA60 SO 010
Total Metals	TestAmerica	EPA SW-846 Methods 6020A	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
TCLP Mercury	TestAmerica	EPA SW-846 Method 1311/7470A.	YMTFA70 SO 010 YMTFA69 SO 010 YMTFA67 SO 010 YMTFA62 SO 010 YMTFA61 SO 010 YMTFA60 SO 010
Total Mercury	TestAmerica	EPA SW-846 Methods 7470A	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
pH	TestAmerica	EPA Method 150.1	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
Total Suspended Solids	TestAmerica	EPA Method 160.2	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
Hexane Extractable Material	TestAmerica CO	EPA Method 1664A	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
Anions by Ion Chromatography	TestAmerica	EPA Method 300.0	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
Total Recoverable Phenols	TestAmerica CO	EPA Method 420.4	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
Total Cyanide	TestAmerica	EPA SW-846 Method 9012B	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
Total Organic Carbon	TestAmerica	EPA SW-846 Method 9060	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW

Analysis	Laboratory	Method	Project Sample ID Numbers
Percent Solids	TestAmerica	EPA Method 160.3 MOD	YMTFA70 SO 010 YMTFA69 SO 010 YMTFA67 SO 010 YMTFA62 SO 010 YMTFA61 SO 010 YMTFA60 SO 010
Acidity	TestAmerica CO	SM 2310B	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
Gross Alpha and Gross Beta	TestAmerica	USEPA Method 900.0	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
Cesium-137 and Other Gamma Emitters	TestAmerica	USEPA Method 901.1	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
Americium-241	TestAmerica	Alpha Spectrometry (A-01R)	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
Isotopic Neptunium	TestAmerica	Alpha Spectrometry (DOE A01R_Np)	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
Isotopic Plutonium	TestAmerica	Alpha Spectrometry	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
Isotopic Thorium	TestAmerica	Alpha Spectrometry	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
Isotopic Uranium	TestAmerica	Alpha Spectrometry	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
Tritium	TestAmerica		YMTFA70 SO 010 YMTFA69 SO 010 YMTFA67 SO 010 YMTFA62 SO 010 YMTFA61 SO 010 YMTFA60 SO 010
Strontium-90	TestAmerica	Gas Flow Proportional Counting (EPA 905.0)	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
Total Beta Strontium	TestAmerica	Gas Flow Proportional Counting (SR-03-RC)	YMTFA70 SO 010 YMTFA69 SO 010 YMTFA67 SO 010 YMTFA62 SO 010 YMTFA61 SO 010 YMTFA60 SO 010

Analysis	Laboratory	Method	Project Sample ID Numbers
Technetium-99	TestAmerica	Liquid Scintillation Counting (TC_02_RC)	YMTFA70 SO 010 YMTFA69 SO 010 YMTFA67 SO 010 YMTFA62 SO 010 YMTFA61 SO 010 YMTFA60 SO 010
Technetium-99	TestAmerica	Liquid Scintillation Counting (TC_02_RC)	YMTFA 9720 FB YMTFA 43 GW YMTFA 42 GW
TestAmerica Job ID 160-18615-2			
Radium-226	TestAmerica	Alpha Spectrometry (ST-RC-0301)	YMTFA70 SO 010 YMTFA69 SO 010 YMTFA67 SO 010 YMTFA62 SO 010 YMTFA61 SO 010 YMTFA60 SO 010
Americium 241	TestAmerica RL	Alpha Spectrometry (RL-ALP-003)	YMTFA70 SO 010 YMTFA69 SO 010 YMTFA67 SO 010 YMTFA62 SO 010 YMTFA61 SO 010 YMTFA60 SO 010
Neptunium-237	TestAmerica RL	Alpha Spectrometry (RL-ALP-013)	YMTFA70 SO 010 YMTFA69 SO 010 YMTFA67 SO 010 YMTFA62 SO 010 YMTFA61 SO 010 YMTFA60 SO 010
Isotopic Plutonium	TestAmerica RL	Alpha Spectrometry (RL-ALP-002)	YMTFA70 SO 010 YMTFA69 SO 010 YMTFA67 SO 010 YMTFA62 SO 010 YMTFA61 SO 010 YMTFA60 SO 010
Isotopic Thorium	TestAmerica RL	Alpha Spectrometry (RL-ALP-001)	YMTFA70 SO 010 YMTFA69 SO 010 YMTFA67 SO 010 YMTFA62 SO 010 YMTFA61 SO 010 YMTFA60 SO 010
Isotopic Uranium	TestAmerica RL	Alpha Spectrometry (RL-ALP-015)	YMTFA70 SO 010 YMTFA69 SO 010 YMTFA67 SO 010 YMTFA62 SO 010 YMTFA61 SO 010 YMTFA60 SO 010

Analysis	Laboratory	Method	Project Sample ID Numbers
Carbon-14	TestAmerica RL	Liquid Scintillation Counting (RL-LSC-008)	YMTFA70 SO 010 YMTFA69 SO 010 YMTFA67 SO 010 YMTFA62 SO 010 YMTFA61 SO 010 YMTFA60 SO 010

Holding times

The dates of sample collection, sample preparation (as applicable), and sample analyses were evaluated. Based on these, all recommended holding times per the analytical methods were met, except for pH results, which should be qualified as estimated (J); see discussion below. No other qualification is necessary.

Preservation, Chain of Custody, and Laboratory Sample Receipt

All samples arrived at TestAmerica facilities intact, in good condition, and properly preserved under valid chains of custody (COCs), except as noted below; COC nos. were 160-4416-2171.2 and 160-4416-2171.4. The COCs were signed indicating the samples were appropriately relinquished by the samplers and accepted by the analytical laboratories. Tamper indicator devices (TIDs) were present and intact on the sample coolers. Cooler temperatures were in the acceptable range (0 to 6 ˚C) upon receipt.

One trip blank, customer sample ID YMTFA 43 TB, was submitted for analyses but was not included on COC 160-4416-2171.2; instructions were provided to TestAmerica by Alliant Corp. to proceed with VOA analyses. In addition, one 250 ml unpreserved polybottle for customer sample ID YMTFA 42 GW was received without a label, but in the same bag with another 250 ml bottle with a label, and all other bottles were accounted for. In addition, the COC entry for YMTFA 42 GW was not marked for all radiochemical analyses, and YMTFA 42 GW and YMTFA 43 GW were not marked for total suspended solids analyses. Instructions were provided to TestAmerica by Alliant Corp. to proceed with all radiochemical analyses and total suspended solids. Since all samples were accounted for, the inclusion of an additional trip blank sample and a bottle without a label does not call into question chain of custody or identification of the samples. No qualification is required.

Analytical Methods, Reporting Units, and Detection Limits

All analytical methods specified (or equivalent to those specified) on the COCs were utilized for the analyses. All results were reported in appropriate units. The minimum detection limits (MDLs) and reporting limits (RLs) were appropriate, although some were elevated due to matrix interference effects, as discussed below for the individual analysis methods. Samples with results reported above the MDLs but below the RLs should be qualified as estimated (J) unless otherwise indicated by the validation qualifier.

Transcription (COC and Lab Data)

There were no transcription errors in sample numbers or other information listed on COCs and in data reports that would impact the results.

Trip Blank (TB)

All trip blank (TB) results for samples YMTFA 9720 TB, YMTFA 42 TB, and YMTFA 43 TB were less than detection limits or estimated detection limits, except for tetrahydrofuran, which was present in all 3 trip blank samples at estimated (J) levels. Tetrahydrofuran results were not reported for any other samples (field blank, water, soil, or sediment) and so no data qualification is required.

Equipment Blanks (EB)

Not applicable.

Field Blank (FB)

Results for field blank (FB) sample YMTFA 9720 FB were all less than detection limits or estimated detection limits, except for boron, cyanide, chloroform, and nitrate, as shown below:

Analyte	Result	Units	Lab Qualifier	MDL	Validation Qualifier
Boron	0.045	MG/L	JB	0.021	J
Cyanide	0.0043	MG/L	J	0.0031	J
Chloroform	0.11	UG/L	J	0.1	J
Nitrate as Nitrogen	0.061	MG/L		0.007	J

Boron and nitrate as nitrogen were also reported in samples YMTFA 42 GW and YMTFA 43 GW and so, due to presence in the field blank, boron and nitrate results for YMTFA 42 GW and YMTFA 43 GW should be qualified as estimated (J).

Chloroform was also detected in sample YMTFA 43 GW and so, due to presence in the field blank, chloroform results for YMTFA 43 GW should be qualified as estimated (J).

Cyanide was not detected in other water samples and so no qualification based on the field blank result is required.

Duplicates

Not applicable.

Laboratory Case Narratives

The laboratory case narratives were evaluated. Data quality issues were indicated in the case narratives, as discussed below under the individual validation sections.

Verification/Validation Checklists, Data Qualifiers, and Qualifier Definitions
Verification and validation checklists are presented in Appendix A and Appendix B. Applicable validation qualifier codes are defined in the table below. The qualified data is provided in Appendix C.

Qualifier or Reason Code	Definition
J	Estimated; the analyte was positively identified, but the concentration listed should be considered estimated
U	Undetected at the limit of detection
UJ	Undetected at an estimated detection limit

VALIDATION RESULTS: TestAmerica Job ID 160-18521-1

TCLP Volatile Organic Compounds (VOCs) by EPA SW846 Method 1311/8260C
A total of two solid samples were analyzed. The detection limits were appropriate for the method.

Holding Times
The holding time requirements were met. No action is necessary.

Calibration
The initial calibration and continuing calibration checks were within the quality control (QC) acceptable limits, except for 2-butanone, which had response factors (RFs) below QC limits. Consequently, 2-butanone results should be qualified as undetected at an estimated detection limit (UJ). No other action is necessary.

GC/MS Tuning
The GC/MS tuning requirements were met. No action is necessary.

Method Blanks
No target compounds were detected in method or other blanks. No action is necessary.

Surrogate Recoveries
Surrogate recoveries were within laboratory QC limits. No action is necessary.

Spike Recoveries
Matrix spike (MS) and matrix spike duplicates (MSD) were within laboratory QC limits. No action is necessary.

Internal Standards
The internal standards areas and/or retention times were within laboratory QC limits. No action is necessary.

Laboratory Control Samples
Spike recoveries were within laboratory QC limits. No action is necessary.

VOCs by EPA SW846 Method 1311/8260C Summary
The 2-butanone results for Job ID 160-18521-1 samples should be qualified as undetected at an estimated detection limit (UJ).

TCLP Semivolatile Organic Compounds (SVOCs) by EPA SW846 Method 1311/8270D
A total of two solid samples were analyzed. The detection limits were appropriate for the method.

Holding Times
The holding time requirements were met. No action is necessary.

Calibration
The initial calibration and continuing calibration checks were within QC acceptable limits. No action is necessary.

GC/MS Tuning
GC/MS tuning requirements were met. No action is necessary.

Method Blanks
No target compounds were detected in the method blanks above MDLs. No action is necessary.

Surrogate Recoveries
Surrogate recoveries were within laboratory QC limits, except for one surrogate (2,4,6-tribromophenol) biased high in one sample. Since all compounds in the sample were nondetects, no action is necessary.

Spike Recoveries
MS and MSD spikes were not performed due to insufficient sample volume. Since LCS and laboratory control sample duplicate (LCSD) samples were analyzed, no action is necessary.

Internal Standards
Internal standards areas and/or retention times were within laboratory QC limits. No action is necessary.

Laboratory Control Samples
LCS and LCSD spike recoveries were within laboratory QC limits, except for Hexachlorobenzene, which was biased high for the LCS. Since Hexachlorobenzene was not detected in characterization samples, no action is necessary.

Tentatively Identified Compounds
Tentatively identified compounds were not reported.

SVOCs by EPA SW846 Method 1311/8270D Summary
No action is necessary.

PCBs by EPA SW-846 Method 8082A
A total of two solid samples were analyzed. The detection limits were appropriate for the method.

Holding Times
The holding time requirements were met. No action is necessary.

Calibration
The initial and continuing calibration checks were within the QC acceptable limits. No action is necessary.

Method Blanks
No target compounds were detected in the method blanks above MDLs. No action is necessary.

Surrogate Recoveries
Surrogate recoveries were within laboratory QC limits. No action is necessary.

Spike Recoveries
MS and MSD recoveries were within laboratory QC limits. No action is necessary.

Internal Standards
Internal standards areas and/or retention times were within laboratory QC limits. No action is necessary.

Laboratory Control Samples
Spike recoveries were within laboratory QC limits. No action is necessary.

PCBs by EPA SW-846 Method 8082A Summary
No action is necessary.

TCLP Chlorinated Herbicides by EPA SW846 Method 1311/8151A
A total of two solid samples were analyzed. The detection limits were appropriate for the method.

Holding Times
The holding time requirements were met. No action is necessary.

Calibration
The initial and continuing calibration checks were within the QC acceptable limits, with the exception of one value for 2,4-D that was above the control limits. Since all sample results were nondetects, no action is necessary.

Method Blanks
No target compounds were detected in the method blanks above MDLs. No action is necessary.

Surrogate Recoveries
Surrogate recoveries were within laboratory QC limits. No action is necessary.

Spike Recoveries
MS and MSD recoveries were within laboratory QC limits. No action is necessary.

Laboratory Control Samples
Spike recoveries were within laboratory QC limits. No action is necessary.

Duplicate Column Results
Duplicate column results were within laboratory QC limits. No action is necessary.

Herbicides by EPA SW846 Method 1311/8151ASummary
No action is necessary.

TCLP Metals by EPA SW-846 Method 1311/6010C
A total of two solid samples were analyzed. The detection limits were appropriate for the method.

Holding Times
The holding time requirements were met. No action is necessary.

Calibration
The initial calibration and continuing calibration checks were within the QC acceptable limits. No action is necessary.

Blanks
No target compounds were detected in the method blanks above MDLs. No action is necessary.

Spike Recoveries
The MS and MSD were within control limits. No action is necessary.

Serial Dilution
Serial dilution results were within QC acceptable limits. No action is necessary.

Interference Check Samples
Interference check samples (ICS) were within QC acceptable limits. No action is necessary.

Laboratory Duplicates/Laboratory Control Samples
LCS recoveries and laboratory duplicates were within QC acceptable limits. No action is necessary.

Metals by EPA SW-846 Method 1311/6010C Summary
No action is necessary.

Percent Solids by EPA SW-846 Method 160.3 MOD
A total of two solid samples were analyzed. Raw data indicates the determination method was appropriate. QC data was not provided for evaluation.

Radionuclides
A total of two solid samples were analyzed for radionuclides. Holding times, applicable initial and continuing calibrations, and control charts were acceptable for all methods. Traceable standard certificates were acceptable.

Americium-241 by Alpha Spectrometry
Am-241 analyses were performed by Alpha Spectrometry. The sample results were above the MDLs/minimum detectable activities MDAs). The LCS and replicate (duplicate) analyses had acceptable relative percent differences (RPDs) or normalized difference (ND) results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **No action is necessary.**

Neptunium-237 by Alpha Spectrometry
Np-237 analyses were performed by Alpha Spectrometry. The sample results were below or slightly above the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs , selected results should be qualified undetected (U), as indicated in Appendix C.**

Isotopic Plutonium by Alpha Spectrometry
Isotopic plutonium analyses for Pu-238 and Pu-239/240 were performed by Alpha Spectrometry. The sample results were below or slightly above the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs , selected results should be qualified undetected (U), as indicated in Appendix C.**

Thorium Isotopes by Alpha Spectrometry
Isotopic thorium analyses for Th-228, Th-230, and Th-232 were performed by Alpha Spectrometry. The sample results were above the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs, with exception of Th-230, although the activity in the method blank was sufficiently low so that qualification of sample results is not required. **No action is necessary.**

Uranium Isotopes by Alpha Spectrometry
Isotopic uranium analyses for U-233/234, U-235/236, and U-238 were performed by Alpha Spectrometry. The sample results were mostly above the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable limits (see table

for discussion of yield of 15.3% for one sample). Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs , selected results should be qualified undetected (U), as shown in Appendix C.**

Total Beta Strontium by Gas Flow Proportional Counting

Total Beta Strontium analyses were performed by Gas Flow Proportional Counting. The sample results were below the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs , results should be qualified undetected (U), as indicated in Appendix C.**

Tritium by Liquid Scintillation Counting

Tritium analyses were performed by Liquid Scintillation Counting. The sample results were below the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs , results should be qualified undetected (U), as indicated in Appendix C.**

Technetium-99 by Liquid Scintillation Counting

Tc-99 analyses were performed by Liquid Scintillation Counting. The sample results were below the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs , results should be qualified undetected (U), as indicated in Appendix C.**

Carbon-14 by Liquid Scintillation Counting

C-14 analyses were performed by Liquid Scintillation Counting. The sample results were below the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs , results should be qualified undetected (U), as indicated in Appendix C.**

VALIDATION RESULTS: TestAmerica Job ID 160-18521-2

TCLP Mercury by EPA SW-846 Method 1311/7470A

A total of two solid samples were analyzed. The detection limits were appropriate for the method.

Holding Times

The holding time requirements were met. No action is necessary.

Calibration

The initial calibration and continuing calibration checks were within the QC acceptable limits. No action is necessary.

Blanks

Mercury was detected in the method blanks. Consequently, sample results above the MDL should be considered estimated (J).

Spike Recoveries

The MS and MSD were within control limits. No action is necessary.

Serial Dilution

Serial dilution results were within QC acceptable limits. No action is necessary.

Laboratory Duplicates/Laboratory Control Samples

LCS recoveries and laboratory duplicates were within QC acceptable limits. No action is necessary.

Metals by EPA SW-846 Method 1311/7470A Summary

Mercury results for sample YMTFA74SE001 should be considered estimated (J). No other action is necessary.

Radionuclides

A total of two solid samples were analyzed for Radium-226. Holding times, applicable initial and continuing calibrations, and control charts were acceptable for all methods. Traceable standard certificates were acceptable.

Radium-226 by Alpha Spectrometry

Ra-226 analyses were performed by Alpha Spectrometry. The sample results were above MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable limits (see table for discussion of yield of 28.2% for one sample). Method blank results were not less than the MDLs/MDAs, although the activity in the method blank was sufficiently low so that qualification of sample results is not required. **No action is necessary.**

VALIDATION RESULTS: TestAmerica Job ID 160-18615-1

Volatile Organic Compounds by EPA SW846 Method 8260C

A total of six liquid samples were analyzed. The detection limits were appropriate for the method.

Holding Times

The holding time requirements were met. No action is necessary.

Calibration

The initial calibration and continuing calibration checks were within the QC acceptable limits, except for Vinyl chloride, Trichlorofluoromethane, Chloroethane, and 1,2-Dichloro-1,1,2,2-tetrachloroethane, which were above QC limits for continuing calibration, and trans-1,4-Dichloro-2-butene, 2-Chloroethyl vinyl ether, and Acrolein, which were below continuing calibration QC limits. For these compounds, detects should be qualified as estimated (J), and nondetects should be qualified as undetected at an estimated detection limit (UJ). In addition, the RFs for Methyl acetate, 1,4-Dioxane, 2-Hexanone, Acetone, and 1-Butanol were below QC limits, and so these compounds should be qualified as undetected at an estimated detection limit (UJ). No other action is necessary.

GC/MS Tuning

The GC/MS tuning requirements were met. No action is necessary.

Method Blanks

No target compounds were detected in method or other blanks. No action is necessary.

Surrogate Recoveries

Surrogate recoveries were within laboratory QC limits. No action is necessary.

Spike Recoveries

MS and MSD were within laboratory QC limits, except for 2-Chloroethyl vinyl ether, 1,2-Dichloroethene, Total, cis-1,2-Dichloroethene, Tetrachloroethene and Trichloroethene; recoveries were all biased high with exception of 2-Chloroethyl vinyl ether, which was biased low. Given the matrix (aqueous) and that LCS recoveries were acceptable for all of these, no action is necessary.

Internal Standards

The internal standards areas and/or retention times were within laboratory QC limits. No action is necessary.

Laboratory Control Samples

Spike recoveries were within laboratory QC limits, except for Chloroethane, which was biased high. Since Chloroethane was not detected in the samples, no action is necessary.

VOCs by EPA SW846 Method 8260C Summary

Vinyl chloride, Trichlorofluoromethane, Chloroethane, 1,2-Dichloro-1,1,2,2-tetrachloroethane, trans-1,4-Dichloro-2-butene, 2-Chloroethyl vinyl ether, and Acrolein should be qualified as estimated (J), and nondetects should be qualified as undetected at an estimated detection limit (UJ). In addition, Methyl acetate, 1,4-Dioxane, 2-Hexanone, Acetone, and 1-Butanol results should be qualified as undetected at an estimated detection limit (UJ). No other action is necessary for Job ID 160-18615-1 VOC results.

Semivolatile Organic Compounds by EPA Method 625

A total of three liquid samples were analyzed. The detection limits were appropriate for the method.

Holding Times
The holding time requirements were met. No action is necessary.

Calibration
The initial calibration and continuing calibration checks were within QC acceptable limits. No action is necessary.

GC/MS Tuning
GC/MS tuning requirements were met. No action is necessary.

Method Blanks
No target compounds were detected in the method blanks above MDLs. No action is necessary.

Surrogate Recoveries
Surrogate recoveries were within laboratory QC limits. No action is necessary

Spike Recoveries
MS and MSD spikes were not performed due to insufficient sample volume. Since LCS and laboratory control sample duplicate (LCSD) samples were analyzed, no action is necessary.

Internal Standards
Internal standards areas and/or retention times were within laboratory QC limits. No action is necessary.

Laboratory Control Samples
LCS and LCSD spike recoveries were within laboratory QC limits, except for 4-Nitrophenol, which was biased high for the LCS. Since 4-Nitrophenol was not detected in characterization samples, no action is necessary.

Tentatively Identified Compounds
Tentatively identified compounds were not reported.

SVOCs by EPA SW846 Method 1311/8270D Summary
No action is necessary.

Chlorinated Pesticides by EPA Method 608
A total of three liquid samples were analyzed. The detection limits were appropriate for the method.

Holding Times
The holding time requirements were met. No action is necessary.

Calibration
The initial and continuing calibration checks were within QC acceptable limits. No action is necessary.

Method Blanks
No target compounds were detected in the method blanks above MDLs. No action is necessary.

Surrogate Recoveries
Surrogate recoveries were within laboratory QC limits. No action is necessary.

Spike Recoveries
MS and MSD spikes were not performed due to insufficient sample volume. Since LCS and laboratory LCSD samples were analyzed, no action is necessary.

Laboratory Control Samples
LCS and LCSD spike recoveries were within laboratory QC limits. No action is necessary.

Duplicate Column Results
Duplicate column results were within laboratory QC limits. No action is necessary.

Pesticides by EPA Method 608 Summary
No action is necessary.

PCBs by EPA Method 608
A total of three liquid samples were analyzed. The detection limits were appropriate for the method.

Holding Times
The holding time requirements were met. No action is necessary.

Calibration
The initial and continuing calibration checks were within the QC acceptable limits. No action is necessary.

Method Blanks
No target compounds were detected in the method blanks above MDLs. No action is necessary.

Surrogate Recoveries
Surrogate recoveries were within laboratory QC limits. No action is necessary.

Spike Recoveries
MS and MSD analyses were not performed. Since LCS and LCSD samples (with similar matrix to the submitted samples) were analyzed, no action is necessary.

Internal Standards
Internal standards areas and/or retention times were within laboratory QC limits, except for one surrogate and internal standard eluted outside the correct time window; since the shift was taken into account for target compounds, no action is necessary.

Laboratory Control Samples
Spike recoveries for the LCS and LCSD were within laboratory QC limits. No action is necessary.

PCBs by EPA Method 608 Summary
No action is necessary

PCBs by EPA SW-846 Method 8082A
A total of six solid samples were analyzed. The detection limits were appropriate for the method.

Holding Times
The holding time requirements were met. No action is necessary.

Calibration
The initial and continuing calibration checks were within the QC acceptable limits. No action is necessary.

Method Blanks
No target compounds were detected in the method blanks above MDLs. No action is necessary.

Surrogate Recoveries
Surrogate recoveries were within laboratory QC limits, except for one surrogate value biased high. Since the associated samples' PCB results were nondetects, no action is necessary.

Spike Recoveries
MS recoveries were within laboratory QC limits. MSD recoveries were biased high and outside relative percent difference (RPD) limits. Since the associated samples' PCB results were nondetects, no action is necessary.

Internal Standards
Internal standards areas and/or retention times were within laboratory QC limits. No action is necessary.

Laboratory Control Samples
Spike recoveries were within laboratory QC limits. No action is necessary.

PCBs by EPA SW-846 Method 8082A Summary
No action is necessary

TCLP Metals by EPA SW-846 Method 1311/6010C and EPA SW-846 Method 1311/7470A
A total of six solid samples were analyzed. The detection limits were appropriate for the method.

Holding Times
The holding time requirements were met. No action is necessary.

Calibration
The initial calibration and continuing calibration checks were within the QC acceptable limits. No action is necessary.

Blanks
No target compounds were detected in the method blanks above MDLs, except for Mercury. Sample results above the MDL for Mercury should be considered estimated (J). No action is necessary for the other metals.

Spike Recoveries
The MS and MSD were within control limits. No action is necessary.

Serial Dilution
Serial dilution results were within QC acceptable limits. No action is necessary.

Interference Check Samples
Interference check samples (ICS) were within QC acceptable limits. No action is necessary.

Laboratory Duplicates/Laboratory Control Samples
LCS recoveries and laboratory duplicates were within QC acceptable limits. No action is necessary.

Metals by EPA SW-846 Method 1311/6010C and EPA SW-846 Method 1311/7470A Summary
Mercury results for samples YMTFA70 SO 010, YMTFA69 SO 010, YMTFA67 SO 010, YMTFA62 SO 010, YMTFA61 SO 010, and YMTFA60 SO 010 should be considered estimated (J). No other action is necessary.

Total Metals by EPA SW-846 Methods 6020A and EPA SW-846 Methods 7470A
A total of three liquid samples were analyzed. The detection limits were appropriate for the method.

Holding Times
The holding time requirements were met. No action is necessary.

Calibration
The initial calibration and continuing calibration checks were within the QC acceptable limits. No action is necessary.

Blanks
No target compounds were detected in the method blanks above MDLs, except for Boron and Calcium. Sample results above the MDL for Boron should be considered estimated (J). Calcium detections were significantly above the blank detected concentrations, and so qualification of the Calcium results is not necessary. No action is necessary for the other metals.

Spike Recoveries
The MS and MSD were within control limits. No action is necessary.

Serial Dilution
Serial dilution results were within QC acceptable limits. No action is necessary.

Interference Check Samples
Interference check samples (ICS) were within QC acceptable limits. No action is necessary.

Laboratory Duplicates/Laboratory Control Samples
LCS recoveries and laboratory duplicates were within QC acceptable limits. No action is necessary.

Metals by EPA SW-846 Method 1311/6010C and EPA SW-846 Method 1311/7470A Summary
Boron results for samples YMTFA 43 GW, YMTFA 42 GW, and YMTFA 9720 FB should be considered estimated (J). No other action is necessary.

pH by EPA Method 150.1
A total of three liquid samples were analyzed. LCS and duplicate results were acceptable. Method 150.1 requires pH measurements immediately upon obtaining samples. Consequently, the pH results should be considered estimated (J).

Total Suspended Solids by EPA Method 160.2
A total of three liquid samples were analyzed. A method blank, LCS, and duplicate were acceptable. No action is required.

Hexane Extractable Material by EPA Method 1664A
A total of three liquid samples were analyzed. The method blank, LCS, and LCSD/RPD were acceptable. No action is required.

Anions by Ion Chromatography by EPA Method 300.0
A total of three liquid samples were analyzed. The method blank, LCS, MS, and duplicates were acceptable, except for Nitrate as Nitrogen and Orthophosphate that had low MS recoveries for one sample each. Detects for Nitrate as Nitrogen should be qualified as estimated (J). No other action is required.

Total Recoverable Phenols by EPA Method 420.4
A total of three liquid samples were analyzed. The method blank, LCS, MS, and MSD/RPD were acceptable. No action is required.

Total Cyanide by EPA SW-846 Method 9012B
A total of three liquid samples were analyzed. The method blank, LCS, and MS were acceptable. No action is required.

Total Organic Carbon by EPA SW-846 Method 9060
A total of three liquid samples were analyzed. The method blank, LCS, and MS were acceptable. No action is required.

Acidity by SM 2310B
A total of three liquid samples were analyzed. The method blank and duplicate results were acceptable. No action is required.

Radionuclides
A total of three liquid samples and six solid samples were analyzed for radionuclides. Holding times, applicable initial and continuing calibrations, and control charts were acceptable for all methods. Traceable standard certificates were acceptable.

Americium-241 by Alpha Spectrometry
Am-241 analyses were performed by Alpha Spectrometry. The sample results were below the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPDs or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs, results should be qualified undetected (U), as indicated in Appendix C.**

Neptunium-237 by Alpha Spectrometry
Np-237 analyses were performed by Alpha Spectrometry. The sample results were below the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPDs or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs, results should be qualified undetected (U), as indicated in Appendix C.**

Isotopic Plutonium by Alpha Spectrometry
Isotopic plutonium analyses for Pu-238 and Pu-239/240 were performed by Alpha Spectrometry. The sample results were below the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPDs or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs, results should be qualified undetected (U), as indicated in Appendix C.**

Thorium Isotopes by Alpha Spectrometry
Isotopic thorium analyses for Th-228, Th-230, and Th-232 were performed by Alpha Spectrometry. The sample results were below or slightly above MDLs/MDAs. The LCS and replicate (duplicate) analyses

had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs, with exception of Th-230, although the activity in the method blank was sufficiently low so that qualification of sample results is not required. **Due to reported activity levels less than sample specific MDLs/MDAs, selected results should be qualified undetected (U), as indicated in Appendix C.**

Uranium Isotopes by Alpha Spectrometry
Isotopic uranium analyses for U-233/234, U-235/236, and U-238 were performed by Alpha Spectrometry. The sample results were mostly above the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs, selected results should be qualified undetected (U), as shown in Appendix C.**

Cesium-137 and Other Gamma Emitters by EPA Method 900.0 (Gamma Spectroscopy)
Cobalt-60 and Cesium-137 analyses were performed by Gamma Spectroscopy. The sample results were below the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPDs or ND results. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs, results should be qualified undetected (U), as indicated in Appendix C.**

Gross Alpha and Gross Beta EPA Method 900.0 (Gas Flow Proportional Counting)
Gross Alpha and Beta analyses were performed by Gas Flow Proportional Counting. The sample results were above and below the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs, results should be qualified undetected (U), as indicated in Appendix C.**

Strontium-90 by Gas Flow Proportional Counting
Strontium-90 analyses were performed by Gas Flow Proportional Counting. The sample result was below the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs, the result should be qualified undetected (U), as indicated in Appendix C.**

Total Beta Strontium by Gas Flow Proportional Counting
Total Beta Strontium (Strontium-89/90) analyses were performed by Gas Flow Proportional Counting. The sample results were below or slightly above the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs, selected results should be qualified undetected (U), as indicated in Appendix C.**

Tritium by Liquid Scintillation Counting
Tritium analyses were performed by Liquid Scintillation Counting. The sample results were below the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs, results should be qualified undetected (U), as indicated in Appendix C.**

Technetium-99 by Liquid Scintillation Counting

Tc-99 analyses were performed by Liquid Scintillation Counting. The sample results were below the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs, results should be qualified undetected (U), as indicated in Appendix C.**

VALIDATION RESULTS: TestAmerica Job ID 160-18615-2

Radionuclides
A total of six solid samples were analyzed for radionuclides. Holding times, applicable initial and continuing calibrations, and control charts were acceptable for all methods. Traceable standard certificates were acceptable

Radium-226 by Alpha Spectrometry
Ra-226 analyses were performed by Alpha Spectrometry. The sample results were above MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were not less than the MDLs/MDAs, although the activity in the method blank was sufficiently low so that qualification of sample results is not required. **No action is necessary.**

Americium-241 by Alpha Spectrometry
Am-241 analyses were performed by Alpha Spectrometry. The sample results were below the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPDs or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs, results should be qualified undetected (U), as indicated in Appendix C.**

Neptunium-237 by Alpha Spectrometry
Np-237 analyses were performed by Alpha Spectrometry. The sample results were below the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPDs or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs, results should be qualified undetected (U), as indicated in Appendix C.**

Isotopic Plutonium by Alpha Spectrometry
Isotopic plutonium analyses for Pu-238 and Pu-239/240 were performed by Alpha Spectrometry. The sample results were below the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPDs or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs, results should be qualified undetected (U), as indicated in Appendix C.**

Thorium Isotopes by Alpha Spectrometry
Isotopic thorium analyses for Th-228, Th-230, and Th-232 were performed by Alpha Spectrometry. The sample results were above MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **No action is necessary.**

Uranium Isotopes by Alpha Spectrometry
Isotopic uranium analyses for U-233/234, U-235/236, and U-238 were performed by Alpha Spectrometry. The sample results were mostly above the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPD or ND results. Chemical recoveries and yields were within acceptable. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs, selected results should be qualified undetected (U), as shown in Appendix C.**

Carbon-14 by Liquid Scintillation Counting

C-14 analyses were performed by Alpha Spectrometry. The sample results were below the MDLs/MDAs. The LCS and replicate (duplicate) analyses had acceptable RPDs or ND results. Chemical recoveries and yields were within acceptable limits. Method blank results were less than the MDLs/MDAs. **Due to reported activity levels less than sample specific MDLs/MDAs, results should be qualified undetected (U), as indicated in Appendix C.**

Appendix A

Verification Summary Tables

VOAs / SVOAs Verification	Y	N	N/A	Comment
Custody of Samples				
1. Are samples traceable through inspection of signature records on field and laboratory chains of custody?	x			
GC/MS Performance Check				
2. Are Form V's or equivalent for SW-846 methods included in the data package?	x			
3. Has the performance check been run at the specified frequency?	x			
Calibration				
4. Are Forms VI and VII or equivalent for SW-846 methods included in the data package?	x			
5. Has initial calibration been performed within 12 hours of the performance check and prior to analysis of analytical samples?	x			
6. Has continuing calibration been performed every 12 hours in which samples were analyzed?	x			
7. Have the contract-required standard concentrations been used (or those specified in SW-846)?	x			
Surrogate Standards				
8. Are Form II's or equivalent for SW-846 methods included in the data package?	x			
9. Are surrogate recoveries included for all samples, blanks, and QC samples?	x			
10. Have the contract-specified surrogate standard concentrations been used?			x	Appropriate standards used
Internal Standards				
11. Are Form VIII's or equivalent for SW-846 methods included in the data package?	x			
12. Have the contract-specified internal standard concentrations been used?			x	Appropriate standards used
Method Blank				
13. Are Form I's and Form IV' s or equivalent for SW-846 methods, for method blanks, included in the data package?	x			
14. Have frequency requirements for the method blank been satisfied?	x			
Matrix Spike				

VOAs / SVOAs Verification	Y	N	N/A	Comment
15. Are Form III or equivalent for SW-846 methods included in the data package?	x			
16. Have frequency requirements for the MS/MSD been satisfied?	x			
QC Check Standard (SW-846 only)				
17. Is a report for the QC Check Standard for SW-846 methods included in the data package?	x			
18. Was the SVOA QC Check standard both prepared and analyzed?	x			
RLs and MDLs				
19. Are Form I's or equivalent for SW-846 methods included in the data package?	x			
20. Are all MDLs <= the RLs?	x			
21. Are all compounds detected below the RL but above the MDL qualified "J" by the laboratory?	x			
Tentatively Identified Compounds				
22. Are Form I-TIC or equivalent for SW-846 methods for all analytical samples and blanks included in the data package?			x	

Pesticides Verification	Y	N	N/A	Comment
Custody of Samples				
1. Are samples traceable through inspection of signature records on field and laboratory chains of custody?	x			
GC/ECD Instrument Performance Check				
2. Are Form VI; Form VII ; Form VIII or equivalent for SW-846 methods included in the data package?	x			
3. Has the performance check been run at the specified frequency?	x			
Initial and Continuing Calibration				
4. Are Form VI; VII; VIII for initial calibration and Form VI; VII; VIII for continuing calibration, or equivalent for SW-846 methods, included in the data package?	x			
5. Has initial calibration been performed prior to analysis of analytical samples?	x			
6. Has the appropriate sequence been followed for initial and continuing calibrations?	x			
7. Does an instrument blank and PEM bracket one end of a 12-hour period while a second instrument blank and midpoint INDA and INDB bracket the other end?	x			
8. Have the contract-required standard concentrations been used (or those specified in SW-846)?	x			
Method Blank				
9. Are Form I's, IV and VIII, or equivalent for SW-846 methods, included in the data package?	x			
10. Have frequency requirements for the method blank been satisfied?	x			
Surrogate Standards				
11. Are Form II's or equivalent for SW-846 methods included in the data package?	x			
12. Are surrogate recoveries included for all samples, standard mixtures, PEMs, blanks, and matrix spikes?	x			
13. Have the contract-specified surrogate standard concentrations been used?			x	Appropriate concentrations used
Matrix Spike / Matrix Spike Duplicates				
14. Are Form III or equivalent for SW-846 methods included in the data package?	x			

Pesticides Verification	Y	N	N/A	Comment
15. Have frequency requirements for the MS/MSD been satisfied?	x			
QC Check Standard (SW-846 only)				
16. Is a report for the QC Check Standard for SW-846 methods included in the data package?	x			
17. Was the QC Check standard both prepared and analyzed?	x			
Pesticide Cleanup Check				
18. Are Form IX or equivalent for SW-846 methods included in the data package?	x			
RLs and MDLs				
19. Are Form I's or equivalent for SW-846 methods included in the data package?	x			
20. Are all MDLs <= the RLs?	x			
21. Are all compounds detected below the RL but above the MDL qualified "J" by the laboratory?	x			

Herbicides Verification	Y	N	N/A	Comment
Custody of Samples				
1. Are samples traceable through inspection of signature records on field and laboratory chains of custody?	x			
GC/ECD Instrument Performance Check				
2. Are Form VI ; Form VII; Form VIII or equivalent for SW-846 methods included in the data package?	x			
3. Has the performance check been run at the specified frequency?	x			
Initial and Continuing Calibration				
4. Are Form VI; VII; VIII for initial calibration and Form VI; VII; VIII for continuing calibration, or equivalent for SW-846 methods, included in the data package?	x			
5. Has initial calibration been performed prior to analysis of analytical samples?	x			
6. Has the appropriate sequence been followed for initial and continuing calibrations?	x			
7. Does an instrument blank and PEM bracket one end of a 12-hour period while a second instrument blank and midpoint INDA and INDB bracket the other end?	x			
8. Have the contract-required standard concentrations been used (or those specified in SW-846)?	x			
Method Blank				
9. Are Form I's, IV and VIII, or equivalent for SW-846 methods, included in the data package?	x			
10. Have frequency requirements for the method blank been satisfied?	x			
Surrogate Standards				
11. Are Form II's or equivalent for SW-846 methods included in the data package?	x			
12. Are surrogate recoveries included for all samples, standard mixtures, PEMs, blanks, and matrix spikes?	x			
13. Have the contract-specified surrogate standard concentrations been used?			x	Appropriate concentrations used
Matrix Spike / Matrix Spike Duplicates				
14. Are Form III or equivalent for SW-846 methods included in the data package?	x			

Herbicides Verification	Y	N	N/A	Comment
15. Have frequency requirements for the MS/MSD been satisfied?	x			
QC Check Standard (SW-846 only)				
16. Is a report for the QC Check Standard for SW-846 methods included in the data package?	x			
17. Was the QC Check standard both prepared and analyzed?	x			
Cleanup Check				
18. Are Form IX or equivalent for SW-846 methods included in the data package?	x			
RLs and MDLs				
19. Are Form I's or equivalent for SW-846 methods included in the data package?	x			
20. Are all MDLs <= the RLs?	x			
21. Are all compounds detected below the RL but above the MDL qualified "J" by the laboratory?	x			

PCBs Verification	Y	N	N/A	Comment
Custody of Samples				
1. Are samples traceable through inspection of signature records on field and laboratory chains of custody?	x			
GC/ECD Instrument Performance Check				
2. Are Form VI; Form VII; Form VIII or equivalent for SW-846 methods included in the data package?	x			
3. Has the performance check been run at the specified frequency?	x			
Initial and Continuing Calibration				
4. Are Form VI; VII; VIII for initial calibration and Form VI; VII; VIII for continuing calibration, or equivalent for SW-846 methods, included in the data package?	x			
5. Has initial calibration been performed prior to analysis of analytical samples?	x			
6. Has the appropriate sequence been followed for initial and continuing calibrations?	x			
7. Does an instrument blank and PEM bracket one end of a 12-hour period while a second instrument blank and midpoint INDA and INDB bracket the other end?	x			
8. Have the contract-required standard concentrations been used (or those specified in SW-846)?	x			
Method Blank				
9. Are Form I's, IV and VIII, or equivalent for SW-846 methods, included in the data package?	x			
10. Have frequency requirements for the method blank been satisfied?	x			
Surrogate Standards				
11. Are Form II's or equivalent for SW-846 methods included in the data package?	x			
12. Are surrogate recoveries included for all samples, standard mixtures, PEMs, blanks, and matrix spikes?	x			
13. Have the contract-specified surrogate standard concentrations been used?			x	Appropriate concentrations used
Matrix Spike / Matrix Spike Duplicates				
14. Are Form III or equivalent for SW-846 methods included in the data package?	x			

PCBs Verification	Y	N	N/A	Comment
15. Have frequency requirements for the MS/MSD been satisfied?	x			
QC Check Standard (SW-846 only)				
16. Is a report for the QC Check Standard for SW-846 methods included in the data package?	x			
17. Was the QC Check standard both prepared and analyzed?	x			
Cleanup Check				
18. Are Form IX or equivalent for SW-846 methods included in the data package?	x			
RLs and MDLs				
19. Are Form I's or equivalent for SW-846 methods included in the data package?	x			
20. Are all MDLs <= the RLs?	x			
21. Are all compounds detected below the RL but above the MDL qualified "J" by the laboratory?	x			

Metals/Inorganics	Y	N	N/A	Comment
Custody of Samples				
1. Are samples traceable through inspection of signature records on field and laboratory chains of custody?	x			
Calibration				
2. Are Forms IIA, XIV or equivalent for SW-846 methods included in the data package?	x			
3. Have frequency requirements for the ICV and CCV been satisfied?	x			
4. Have the contract-required standard concentrations been used (or those specified in SW-846)?	x			
Blanks				
5. Are Forms III, XIV, or equivalent for SW-846 methods included in the data package?	x			
6. Have frequency requirements for the PB, ICB, and CCB been satisfied?	x			
Interference Check Sample				
7. Is Form IV or equivalent for SW-846 methods included in the data package?	x			
8. Have frequency requirements for the ICS been satisfied?	x			
Laboratory Control Sample				
9. Is Form VII or equivalent for SW-846 methods included in the data package?	x			
10. Have frequency requirements for the LCS been satisfied?	x			
Laboratory Duplicate				
11. Is Form VI or equivalent for SW-846 methods included in the data package?	x			
12. Have frequency requirements for the lab duplicate been satisfied?	x			
13. Field blanks have not been used for the laboratory duplicate.	x			
Pre-digestion spike				
14. Is Form V or equivalent for SW-846 methods included in the data package?	x			
15. Have frequency requirements for the pre-digestion spike been satisfied?	x			
16. Field blanks have not been used for the pre-digestion spike.	x			

Metals/Inorganics	Y	N	N/A	Comment
Furnace Quality Control				
17. Is Form I, VIII, XIV or equivalent for SW-846 methods included in the data package (Form VIII may not be present if MSA was not performed)?			x	
Serial Dilution Analysis				
18. Are Form IX or equivalent for SW-846 methods included in the data package?	x			
19. Have frequency requirements for the serial dilution analysis been satisfied?	x			
20. Field blanks have not been used for the serial dilution analysis.	x			

Radionuclides	Y	N	N/A	Comment
Custody of Samples				
1. Are samples traceable through inspection of signature records on field and laboratory chains of custody?	x			
2. Has contractual turn-around time been met for all samples?			x	Not evaluated
3. Have all samples been preserved correctly?	x			
4. Are all sample MDLs/MDAs <= RL?	x			
Standard Traceability				
5. Have certificate(s) been included for the LCS?	x			
6. Have certificate(s) been included for the MS?	x			
7. Standards have not aged greater than 5 half lives.	x			
Calibration Verification				
8. Have appropriate control charts been included?			x	
Laboratory Control Sample (LCS)				
9. Has the LCS been reported with the following parameters?	x			
a. Measured result of LCS expressed in activity/unit weight or volume.	x			
b. Total Propagated Uncertainty for LCS expressed in activity/unit weight or volume.	x			
c. 2s counting uncertainty for LCS expressed in activity/unit weight or volume	x			
d. MDA of LCS expressed in activity/unit weight or volume.	x			
e. Expected result of LCS expressed in activity/unit weight or volume.	x			
f. Expected counting uncertainty of LCS expressed in activity/unit weight or volume.	x			
10. Was LCS prepared with a maximum of 20 analytical samples?	x			
11. Was the LCS of the same matrix as the samples?	x			

Radionuclides	Y	N	N/A	Comment
Laboratory Duplicate				
12. Has the Laboratory Duplicate been reported with the following parameters?	x			
a. Measured result of sample expressed in activity/unit weight or volume	x			
b. Measured result of duplicate expressed in activity/unit weight or volume	x			
c. MDAs of sample and duplicate expressed in activity/unit weight or volume	x			
d. Total Propagated Uncertainty of sample and duplicate expressed in activity/unit weight or volume	x			
13. Was the duplicate prepared with a maximum of 20 analytical samples?	x			
Matrix Spike (MS)				
14. Has the MS been reported with the following parameters?	x			
a. Measured result of the unspiked sample in activity/unit weight or volume.	x			
b. Measured result of MS expressed in activity/unit weight or volume or volume	x			
c. Expected result of the MS expressed in activity/unit weight or volume.	x			
d. Expected Total Propagated Uncertainty of the MS expressed in activity/unit weight or volume	x			
e. MDAs of unspiked sample and MS expressed in activity/unit weight or volume	x			
f. Total Propagated Uncertainty of unspiked sample, and MS expressed in activity/unit weight or volume	x			
15. Was MS prepared with a maximum of 20 analytical samples?	x			
Method Blank				
16. Has the method blank been reported with the following parameters?	x			
a. Measured result of method blank expressed in activity/unit weight or volume	x			

Radionuclides	Y	N	N/A	Comment
b. MDA of method blank expressed in activity/unit weight or volume	x			
c. Total Propagated Uncertainty of method blank expressed in activity/unit weight or volume	x			
d. Was the method blank prepared with up to analytical 20 samples?	x			
Chemical Yield - Tracers and Carriers				
17. For methods requiring a tracer or carrier, has a chemical yield been reported for all samples and QC samples?	x			
Reporting Verification				
18. Are results, 2s counting uncertainties, and 2s Total Propagated Uncertainty present for all samples that were sent to the laboratory?	x			
19. Are any negative results reported?	x			

Appendix B

Validation Summary Tables

VOCs

SDG:	**Job ID 160-18521-1**		
Sample Nos.:	YMTFA74SE001 YMTFA75SE001		
Method:	EPA SW846 Method 1311/8260C		
Lab:	TestAmerica		
	Requirement	Actual	Qualifier
Holding Time			none
Analysis	14 days to extraction, 14 days to analysis	<14 days/14 days	
Calibration			none (see report narrative)
Initial (%RSD) / Calibration Check Compounds (%RSD)	<15% / <30%	<15% /<30%	
Initial SPCC RF	≥0.1 or 0.3	satisfied	
Continuing (%D) / Calibration Check Compounds (%D)	<15% / <20%	<%15 (average) / <20%	
Continuing SPCC RF	≥0.1 or 0.3	satisfied, except for 2-butanone, 0.0651 and 0.0762	
GC/MS Tuning	various ion abundance criteria	criteria met	none
Method Blanks	<MDL	<MDL	none
Surrogate Recoveries	various limits, 83-120%	94-110%	none
Spike Recoveries			none
Matrix Spike (%R)	various limits, 67-132%	95-106%	
Matrix Spike Duplicate (%R / %RPD)	various limits, 67-132% / <20%	96-109% / ≤4%	
Laboratory Control Samples (%R)	various limits, 64-136%	96-110%	none
Internal Standards	-50% to +100% of avg. calib. IS area, retention times within 30 s	criteria met	none

VOCs

SDG:	**Job ID 160-18615-1**		
Sample Nos.:	YMTFA 9720 FB, YMTFA 9720 TB, YMTFA 43 GW, YMTFA 42 GW, YMTFA 42 TB, YMTFA 43 TB		
Method:	EPA SW846 Method 8260C		
Lab:	TestAmerica		
	Requirement	Actual	Qualifier
Holding Time			none
Analysis	14 days to analysis	<14 days	
Calibration			none
Initial (%RSD) / Calibration Check Compounds (%RSD)	<15% / <30%	<15% /<30%	
Initial SPCC RF	≥0.1 or 0.3	satisfied	
Continuing (%D) / Calibration Check Compounds (%D)	<15% / <20%	<%15 (average) / <20%, except for Vinyl chloride, Trichlorofluoromethane, Chloroethane, and 1,2-Dichloro-1,1,2,2-tetrachloroethane above limits; trans-1,4-Dichloro-2-butene, 2-Chloroethyl vinyl ether, and Acrolein below limits	UJ or J (see report narrative)
Continuing SPCC RF	≥0.1 or 0.3	satisfied, except for Methyl acetate, 1,4-Dioxane, 2-Hexanone, Acetone, and 1-Butanol	UJ (see report narrative)
GC/MS Tuning	various ion abundance criteria	criteria met	none
Method Blanks	<MDL	<MDL	none

Surrogate Recoveries	various limits, 75-130%	94-111%	none
Spike Recoveries			none (see report narrative)
Matrix Spike (%R)	various limits, 21-150%	53-139%, except for 2-Chloroethyl vinyl ether, 1,2-Dichloroethene, Total, cis-1,2-Dichloroethene, Tetrachloroethene and Trichloroethene	
Matrix Spike Duplicate (%R / %RPD)	various limits, 21-150% / <20%	64-114% / ≤18%, except for 2-Chloroethyl vinyl ether, 1,2-Dichloroethene, Total, cis-1,2-Dichloroethene, Tetrachloroethene and Trichloroethene	
Laboratory Control Samples (%R)	various limits, 24-140%	68-138%; chloroethane outside limits (bias high)	none (see report narrative)
Internal Standards	-50% to +100% of avg. calib. IS area, retention times within 30 s	criteria met	none

VOCs	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Holding Times and Preservation					
Were all samples analyzed within the appropriate holding time?	x				
Were all samples preserved correctly?	x				
GC/MS Performance Check					
The GC/MS performance check has been performed at the proper frequency.	x				
No mis-assignment of ions has occurred.	x				
All ions are within ion-abundance criteria.	x				
Initial Calibration					
Initial calibration has been performed within 12 hours of the GC/MS performance check and prior to sample analysis.	x				
Are all compounds' RRF > 0.05?	x				
Are all compounds' RSD among calibration points <30%?	x				
Compounds with RRF<0.05 and %RSD >30% are qualified as follows.			x		
Elimination of either high or low point restores %RSD<30%.			x		
Samples with differing matrices have matching initial calibration matrix.			x		
Raw data have been examined for anomalies.	x				
The quantitation ions of 2 compounds have been confirmed as the correct ions for quantitation.	x				
Continuing Calibration					
Continuing calibration has been performed within 12 hours in which samples are analyzed.	x				

VOCs	Y	N	N/A	Qualifier	Comment
Are all compounds' RRF > 0.05?	x	x		None UJ	2-butanone outside QC RF limits; see narrative Job ID 160-18521-1 Methyl acetate, 1,4-Dioxane, 2-Hexanone, Acetone, and 1-Butanol outside QC RF limits; see narrative Job ID 160-18615-1
Are all compounds' %D between initial and continuing calibration points <20%?	x			UJ or J	Vinyl chloride, Trichlorofluoromethane, Chloroethane, and 1,2-Dichloro-1,1,2,2-tetrachloroethane above limits; trans-1,4-Dichloro-2-butene, 2-Chloroethyl vinyl ether, and Acrolein below limits; see narrative Job ID 160-18615-1
Compounds with RRF<0.05 and %D >20% are qualified as follows.			x		
Method Blank					
Was the method blank analyzed at the appropriate frequency?	x				
Was the method blank the same matrix as the samples?	x				
Sample results are > RL and > 5X Blank result			x		All blanks < MDL
sample result is > RL and < 5X Blank result			x		
sample result is < RL and < 5X Blank result			x		
gross contamination			x		
Confirm from raw data that compounds reported in the method blank are detected above the RL.			x		

VOCs	Y	N	N/A	Qualifier	Comment
Surrogate Standards					
Have the proper surrogate standards and surrogate concentrations been used?	x				
%R is > upper control limit			x		
%R is between 10 and lower control limit			x		
If surrogate is <10% compounds are qualified as follows			x		
Internal Standards					
Have the proper internal standards and internal standard concentrations been used?	x				
Are peak areas between -50% and +100% of the continuing calibration internal standard peak areas?	x				
if < 50%			x		
if >100%			x		
extremely low area counts			x		
Internal standard retention time does not vary more than 30 seconds from continuing calibration.	x				
Matrix Spike/Matrix Spike Duplicate					
Was the MS/MSD analyzed at the appropriate frequency?	x				
Are all MS/MSD compounds within control criteria?	x	x		none	See report narratives
Are all MS/MSD RPD within control criteria?	x	x		none	See report narratives
QC Check Standard (SW-846 methods only)					
Were all noncompliant compounds in the MS/MSD reported in the QC Check Standard?			x		
Were the %R of the reported compounds within acceptance criteria?			x		
Sample Data Evaluation					
For one compound in each sample, determine whether RLs have been modified to MDLs.		x			
Sample-specific evaluation - these evaluations are performed one sample in each batch (excluding QC)					
evaluate whether the correct quantitation ions were used	x				
evaluate adequacy of manual integrations of peak areas.	x				
evaluate the presence of carryover	x				
evaluate the validity of dilutions and re-analyses	x				
evaluate interferences which may preclude accurate quantitation of compounds.	x				
Manually recalculate 2 detected and 2 non-detected results from a selected sample in the SDG.	x				

VOCs	Y	N	N/A	Qualifier	Comment
Did recalculation confirm reported results? If not, increase the frequency of recalculations until adequate confidence is gained in the reported results.	x				
Qualify all TICs "NJ"			x		
Evaluate all TICs according to VIII.M.3 of the VOA/SVOA verification/validation procedure.			x		

SVOCs

SDG:	Job ID 160-18521-1		
Sample Nos.:	YMTFA74SE001 YMTFA75SE001		
Method:	EPA SW846 Method 1311/8270D		
Lab:	TestAmerica		
	Requirement	Actual	Qualifier
Holding Time			none
Extraction	14 days	<14 days	
Analysis	40 days	<40 days	
Calibration			none
Initial (%RSD) / Calibration Check Compounds (%RSD)	<15% / <30%	<15% / <30%	
SPCC RF	≥0.05	≥0.05	
Continuing (%D) / Calibration Check Compounds (%D)	<20%	<20%	
Continuing SPCC RF	≥0.05	≥0.05	
GC/MS Tuning	various ion abundance criteria	criteria met	none
Method Blanks	<MDL	<MDL	none
Surrogate Recoveries	various limits, 37-113%	59-112%; 2,4,6-tribromophenol recovery high one sample (101%)	none (see report narrative)
Spike Recoveries			none (see report narrative)
Matrix Spike (%R)	various limits, 10-103%	56-84%; hexachloro-benzene outside limits (98%)	
Matrix Spike Duplicate (%R / %RPD)	various limits, 10-103% / 30	57-90% / ≤14%	
Laboratory Control Samples (%R)	various limits, 10-100%	55-91%; hexachloro-benzene outside limits (102%)	none (see report narrative)
Internal Standards	-50% to +100% of avg. calib. IS area, retention times within 30 s	Based on case narrative, criteria met	none

SVOCs

SDG:	Job ID 160-185615-1		
Sample Nos.:	YMTFA 9720 FB, YMTFA 43 GW, YMTFA 42 GW		
Method:	EPA Method 625		
Lab:	TestAmerica		
	Requirement	Actual	Qualifier
Holding Time			none
Extraction	7 days	<7 days	
Analysis	40 days	<40 days	
Calibration			none
Initial (%RSD) / Calibration Check Compounds (%RSD)	<15% / <30%	<15% / <30%	
SPCC RF	≥0.05	≥0.05	
Continuing (%D) / Calibration Check Compounds (%D)	<20%	<20%	
Continuing SPCC RF	≥0.05	≥0.05	
GC/MS Tuning	various ion abundance criteria	criteria met	none
Method Blanks	<MDL	<MDL	none
Surrogate Recoveries	various limits, 14-109%	21-91%	none
Spike Recoveries			none (see report narrative)
Matrix Spike (%R)	various limits	not performed	
Matrix Spike Duplicate (%R / %RPD)	various limits	not performed	
Laboratory Control Samples (%R)	various limits, 16-146%	40-102%; 4-Nitrophenol outside limits (high at 51%)	none (see report narrative)
Laboratory Control Samples Duplicate (%R / %RPD)	various limits, 16-146% / <20%	41-98% / ≤10%; 4-Nitrophenol outside limits (high at 52%)	none (see report narrative)
Internal Standards	-50% to +100% of avg. calib. IS area, retention times within 30 s	criteria met	none

SVOCs	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Holding Times and Preservation					
Were all samples analyzed within the appropriate holding time?	x				
Were all samples preserved correctly?	x				
GC/MS Performance Check					
The GC/MS performance check has been performed at the proper frequency.	x				
No mis-assignment of ions has occurred.	x				
All ions are within ion-abundance criteria.	x				
Initial Calibration					
Initial calibration has been performed within 12 hours of the GC/MS performance check and prior to sample analysis.	x				
Are all compounds' RRF > 0.05?	x				
Are all compounds' RSD among calibration points <30%?	x				
Compounds with RRF<0.05 and %RSD >30% are qualified as follows.			x		
Elimination of either high or low point restores %RSD<30%.			x		
Samples with differing matrices have matching initial calibration matrix.	x				
Raw data have been examined for anomalies.	x				
The quantitation ions of 2 compounds have been confirmed as the correct ions for quantitation.	x				
Continuing Calibration					
Continuing calibration has been performed within 12 hours in which samples are analyzed.	x				
Are all compounds' RRF > 0.05?	x				
Are all compounds' %D between initial and continuing calibration points <20%?	x				
Compounds with RRF<0.05 and %D >25% are qualified as follows.			x		
Method Blank					
Was the method blank analyzed at the appropriate frequency?	x				
Was the method blank the same matrix as the samples?	x				
Sample results are > RL and > 5X Blank result			x		All blanks < MDL

SVOCs	Y	N	N/A	Qualifier	Comment
sample result is > RL and < 5X Blank result			x		
sample result is < RL and < 5X Blank result			x		
gross contamination			x		
Confirm from raw data that compounds reported in the method blank are detected above the RL.			x		
Surrogate Standards					
Have the proper surrogate standards and surrogate concentrations been used?	x				
%R is > upper control limit			x		
%R is between 10 and lower control limit			x		
If surrogate is <10% compounds are qualified as follows			x		
Internal Standards					
Have the proper internal standards and internal standard concentrations been used?	x				
Are peak areas between -50% and +100% of the continuing calibration internal standard peak areas?	x				
if < 50%			x		
if >100%			x		
extremely low area counts			x		
Internal standard retention time does not vary more than 30 seconds from continuing calibration.	x				
Matrix Spike/Matrix Spike Duplicate					
Was the MS/MSD analyzed at the appropriate frequency?		x			Insufficient sample for MS/MSD; LCS/LCSD sufficient; see report narrative
Are all MS/MSD compounds within control criteria?			x		
Are all MS/MSD RPD within control criteria?			x		
QC Check Standard (SW-846 methods only)					
Were all noncompliant compounds in the MS/MSD reported in the QC Check Standard?			x		
Was the QC Check Standard prepared and analyzed for SVOA compounds?			x		
Were the %R of the reported compounds within acceptance criteria?			x		
Sample Data Evaluation					
For one compound in each sample, determine whether RLs have been modified to MDLs.	x				

SVOCs	Y	N	N/A	Qualifier	Comment
Sample-specific evaluation - these evaluations are performed one sample in each batch (excluding QC)					
evaluate whether the correct quantitation ions were used	x				
evaluate adequacy of manual integrations of peak areas.	x				
evaluate the presence of carryover	x				
evaluate the validity of dilutions and re-analyses	x				
evaluate interferences which may preclude accurate quantitation of compounds.	x				
Manually recalculate 2 detected and 2 non-detected results from a selected sample in the SDG.	x				
Did recalculation confirm reported results? If not, increase the frequency of recalculations until adequate confidence is gained in the reported results.	x				
Qualify all TICs "NJ"			x		
Evaluate all TICs according to VIII.M.3 of the VOA/SVOA verification/validation procedure.			x		

PCBs

SDG:	Job ID 160-18521-1		
Sample Nos.:	YMTFA74SE001 YMTFA75SE001		
Method:	EPA SW-846 Method 8082A		
Lab:	TestAmerica		
	Requirement	Actual	Qualifier
Holding Time			none
Analysis	none; 40 days (best practice)	<40 days	
Calibration			none
Initial (%RSD)	<20%		
Continuing (%D)	<15%		
Method Blanks	<MDL		none
Surrogate Recoveries	23-146%	67-106%	none
Spike Recoveries			none
Matrix Spike (%R)	20-140%	36-93%	
Matrix Spike Duplicate (%R / %RPD)	20-140% / <30%	45-101% / 7%	
Laboratory Control Samples (%R)	50-134%	92-95%	none
Internal Standards	-50% to +100% of avg. calib. IS area, retention times within 30 s	criteria met	none

PCBs

SDG:	Job ID 160-18615-1		
Sample Nos.:	YMTFA 9720 FB, YMTFA 43 GW, YMTFA 42 GW		
Method:	EPA Method 608		
Lab:	TestAmerica		
	Requirement	Actual	Qualifier
Holding Time			none
Analysis	none; 40 days (best practice)	<40 days	
Calibration			none
Initial (%RSD)	<20%		
Continuing (%D)	<15%		
Method Blanks	<MDL		none
Surrogate Recoveries	24-126%	97-122%	none
Spike Recoveries			none (see report narrative)
Matrix Spike (%R)	various limits	not performed	
Matrix Spike Duplicate (%R / %RPD)	various limits	not performed	
Laboratory Control Samples (%R)	50-127%	80-84%	none
Laboratory Control Samples (%R / %RPD)	50-127% / / <20%	82-88% / ≤4%	none
Internal Standards	-50% to +100% of avg. calib. IS area, retention times within 30 s	criteria met; one surrogate and internal standard eluted outside time window; shift taken into account for target compounds	none

PCBs

SDG:	Job ID 160-18615-1		
Sample Nos.:	YMTFA70 SO 010, YMTFA69 SO 010, YMTFA67 SO 010, YMTFA62 SO 010, YMTFA61 SO 010, YMTFA60 SO 010		
Method:	EPA SW-846 Method 8082A		
Lab:	TestAmerica		
	Requirement	Actual	Qualifier
Holding Time			none
Analysis	none; 40 days (best practice)	<40 days	
Calibration			none
Initial (%RSD)	<20%		
Continuing (%D)	<15%		
Method Blanks	<MDL		none
Surrogate Recoveries	23-146%	57-100%; one outside limits (bias high 154%)	none (see report narrative)
Spike Recoveries			none (see report)
Matrix Spike (%R)	20-140%	54-56%	
Matrix Spike Duplicate (%R / %RPD)	20-140% / <30%	132-140%; PCB-1260 biased high (140%) / RPDs outside limits 83-86%	
Laboratory Control Samples (%R)	50-134%	89-90%	none
Internal Standards	-50% to +100% of avg. calib. IS area, retention times within 30 s	criteria met	none

PCBs	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Holding Times and Preservation					
Were all samples analyzed within the appropriate holding time?	x				
Were all samples preserved correctly?	x				
GC/ECD Instrument Performance Check					
The performance check has been performed at the proper frequency.	x				
Is Resolution Check Mixture >= 60% on both columns?	x				
Is PEM resolution for all peaks is >=90%?	x				
Do all PEM compounds fall within retention time windows?	x				
Is RPD between true and calculated amounts for PEM within ± 20%?	x				
Chromatograms do not show peaks > RL and near or within retention time window.	x				
Initial Calibration					
Was the correct calibration sequence followed?	x				
Were the appropriate number of standards used?	x				
Were the appropriate standard concentrations used?	x				
Was resolution of midpoint INDA and INDB >=90%?	x				
Is %RSD criteria satisfied for single-component compounds?	x				
Are recorder deflections from at least one chromatogram >= 50%.	x				
Continuing Calibration					
Was continuing calibration performed at the appropriate frequency?	x				
Was resolution of midpoint INDA and INDB >=90%?	x				
Is RPD between true and calculated amount for single component compounds in INDA and INDB <= 25%?	x				
For SW-8082, are response factors within ±15% of the initial calibration?	x				
Method Blank					
Have method blanks been analyzed at the appropriate frequency?	x				Blank results <MDLs
Sample results are > RL and > 5X Blank result			x		
sample result is > RL and < 5X Blank result			x		
sample result is < RL and < 5X Blank result			x		

gross contamination					
Instrument blanks have been analyzed after samples showing high concentrations.			x		
Confirm from raw data that compounds reported in the method blank are detected above the RL.			x		
Surrogate Standards					
Have the proper surrogate standards been used?	x				
Have the proper surrogate concentrations been used?	x				
The following checks are applicable to % recovery:					See report narrative
%R is 10-30%			x		
%R is 0-10%			x		
%R is 0			x		
%R is >150%			x		
Are surrogate standards within the appropriate retention time windows?	x	x			See report narrative
Matrix Spike/Matrix Spike Duplicate					
Was the MS/MSD analyzed at the appropriate frequency?	x				
Are all MS/MSD compounds within control criteria?	x	x			See report narrative
Are all MS/MSD RPD within control criteria?	x	x			
QC Check Standard (SW-846 methods only)					
Was the QC Check Standard analyzed at the appropriate frequency?	x				
Was the QC Check Standard prepared and analyzed?	x				
Were the %R of the reported compounds within acceptance criteria?	x				
Cleanup Check					
Have frequency requirements been satisfied for Florosil and GPC cleanup?			x		
The following checks are applicable to % recovery:					
% recovery is < 10%			x		
% recovery is > 120%			x		
For noncompliant cleanup analyses, raw data have been inspected for presence of high molecular weight compounds.			x		
Sample Data Evaluation					
For one compound in each sample, determine whether RLs have been modified to MDLs.	x				

Sample-specific evaluation - these evaluations are performed one sample in each batch (excluding QC).					
evaluate adequacy of manual integrations of peak areas.	x				
evaluate the presence of carryover	x				
evaluate the validity of dilutions and reanalyses	x				
evaluate interferences which may preclude accurate quantitation of compounds.	x				
evaluate the eluation of compounds within the appropriate retention windows	x				
evaluate occurrences of peak interference	x				
evaluate pattern-matching of multi-component compounds	x				
Manually recalculate 2 detected and 2 non-detected results from a selected sample in the SDG.	x				
Did recalculation confirm reported results? If not, increase the frequency of recalculations until adequate confidence is gained in the reported results.	x				
Confirm that single-peak results agree within 20% RPD between column analyses.	x				

Herbicides

SDG:	Job ID 160-18521-1		
Sample Nos.:	YMTFA74SE001 YMTFA75SE001		
Method:	EPA SW846 Method 1311/8151A		
Lab:	TestAmerica		
	Requirement	Actual	Qualifier
Holding Time			none
Extraction	14 days	≤14 days	
Analysis	40 days	≤14 days	
Calibration			none
Initial (%RSD)	<20%	<20%	
Continuing (%D)	<15%	<15%	
Method Blanks	<MDL	<MDL	none
Surrogate Recoveries	56-147%	78-115%	none
Spike Recoveries			none
Matrix Spike (%R)	45-150%	86-92%	
Matrix Spike Duplicate (%R / %RPD)	45-150% / 20%	94-103% / ≤11%	
Laboratory Control Samples (%R)	42-140%	119-128%	none
%Difference Between Columns	<20%	<20%	none
Internal Standards	-50% to +100% of avg. calib. IS area, retention times within 30 s	criteria met	none

Herbicides	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Holding Times and Preservation					
Were all samples analyzed within the appropriate holding time?	x				
Were all samples preserved correctly?	x				
GC/ECD Instrument Performance Check					
The performance check has been performed at the proper frequency.	x				
Is Resolution Check Mixture >= 60% on both columns?	x				
Is PEM resolution for all peaks is >=90%?	x				
Do all PEM compounds fall within retention time windows?	x				
Is RPD between true and calculated amounts for PEM within ± 25%?	x				
Chromatograms do not show peaks > RL and near or within retention time window.	x				
Initial Calibration					
Was the correct calibration sequence followed?	x				
Were the appropriate number of standards used?	x				
Were the appropriate standard concentrations used?	x				
Was resolution of midpoint INDA and INDB >=90%?	x				
Is %RSD criteria satisfied for single-component compounds?	x				
Are recorder deflections from at least one chromatogram >= 50%.	x				
Continuing Calibration					
Was continuing calibration performed at the appropriate frequency?	x				
Was resolution of midpoint INDA and INDB >=90%?	x				
Is RPD between true and calculated amount for single component compounds in INDA and INDB <= 25%?	x				See report narrative
Are response factors within ±15% of the initial calibration?	x				
Method Blank					
Have method blanks been analyzed at the appropriate frequency?	x				
Sample results are > RL and > 5X Blank result			x		All blanks < MDL
sample result is > RL and < 5X Blank result			x		
sample result is < RL and < 5X Blank result			x		

Herbicides	Y	N	N/A	Qualifier	Comment
gross contamination			x		
Instrument blanks have been analyzed after samples showing high concentrations.			x		
Confirm from raw data that compounds reported in the method blank are detected above the RL.			x		
Surrogate Standards					
Have the proper surrogate standards been used?	x				
Have the proper surrogate concentrations been used?	x				
The following checks are applicable to % recovery:					
%R is 10-30%			x		
%R is 0-10%			x		
%R is 0			x		
%R is >150%			x		
Are surrogate standards within the appropriate retention time windows?	x				
Matrix Spike/Matrix Spike Duplicate					
Was the MS/MSD analyzed at the appropriate frequency?	x				
Are all MS/MSD compounds within control criteria?	x				
Are all MS/MSD RPD within control criteria?	x				
QC Check Standard (SW-846 methods only)					
Was the QC Check Standard analyzed at the appropriate frequency?	x				
Was the QC Check Standard prepared and analyzed?	x				
Were the %R of the reported compounds within acceptance criteria?	x				
Cleanup Check					
Have frequency requirements been satisfied for Florosil and GPC cleanup?			x		
The following checks are applicable to % recovery:					
% recovery is < 10%			x		
% recovery is > 120%			x		
For noncompliant cleanup analyses, raw data have been inspected for presence of high molecular weight compounds.			x		
Sample Data Evaluation					
For one compound in each sample, determine whether RLs have been modified to MDLs.	x				

Herbicides	Y	N	N/A	Qualifier	Comment
Sample-specific evaluation - these evaluations are performed one sample in each batch (excluding QC).	x				
evaluate adequacy of manual integrations of peak areas.	x				
evaluate the presence of carryover	x				
evaluate the validity of dilutions and reanalyses	x				
evaluate interferences which may preclude accurate quantitation of compounds.	x				
evaluate the eluation of compounds within the appropriate retention windows	x				
evaluate occurrences of peak interference	x				
evaluate pattern-matching of multi-component compounds	x				
Manually recalculate 2 detected and 2 nondetected results from a selected sample in the SDG.	x				
Did recalculation confirm reported results? If not, increase the frequency of recalculations until adequate confidence is gained in the reported results.	x				
Confirm that single-peak results agree within 20% RPD between column analyses.	x				

Pesticides

SDG:	Job ID 160-18615-1		
Sample Nos.:	YMTFA 9720 FB, YMTFA 43 GW, YMTFA 42 GW		
Method:	EPA Method 608		
Lab:	TestAmerica		
	Requirement	Actual	Qualifier
Holding Time			none
Extraction	7 days	≤14 days	
Analysis	40 days	≤14 days	
Calibration			none
Initial (%RSD)	<20%	<20%	
Continuing (%D)	<15%	<15%	
Method Blanks	<MDL	<MDL	none
Surrogate Recoveries	40-130%	44-92%	none
Spike Recoveries			none (see report narrative)
Matrix Spike (%R)	various limits	not performed	
Matrix Spike Duplicate (%R / %RPD)	various limits	not performed	
Laboratory Control Samples (%R)	10-160 %	75-101%	none
Laboratory Control Sample Duplicate (%R / % RPD)	10-160 % / 20%	72-98% / ≤8%	none
%Difference Between Columns	<20%	<20%	none
Internal Standards	-50% to +100% of avg. calib. IS area, retention times within 30 s	criteria met	none

Pesticides	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Holding Times and Preservation					
Were all samples analyzed within the appropriate holding time?	x				
Were all samples preserved correctly?	x				
GC/ECD Instrument Performance Check					
The performance check has been performed at the proper frequency.	x				
Is Resolution Check Mixture >= 60% on both columns?	x				
Is PEM resolution for all peaks is >=90%?	x				
Do all PEM compounds fall within retention time windows?	x				
Is RPD between true and calculated amounts for PEM within ± 25%?	x				
Chromatograms do not show peaks > RL and near or within retention time window.	x				
Initial Calibration					
Was the correct calibration sequence followed?	x				
Were the appropriate number of standards used?	x				
Were the appropriate standard concentrations used?	x				
Was resolution of midpoint INDA and INDB >=90%?	x				
Is %RSD criteria satisfied for single-component compounds?	x				
Are recorder deflections from at least one chromatogram >= 50%.	x				
Continuing Calibration					
Was continuing calibration performed at the appropriate frequency?	x				
Was resolution of midpoint INDA and INDB >=90%?	x				
Is RPD between true and calculated amount for single component compounds in INDA and INDB <= 25%?	x				
Are response factors within ±15% of the initial calibration?	x				
Method Blank					
Have method blanks been analyzed at the appropriate frequency?	x				
Sample results are > RL and > 5X Blank result			x		All blanks < MDL
sample result is > RL and < 5X Blank result			x		
sample result is < RL and < 5X Blank result			x		

Pesticides	Y	N	N/A	Qualifier	Comment
gross contamination			x		
Instrument blanks have been analyzed after samples showing high concentrations.			x		
Confirm from raw data that compounds reported in the method blank are detected above the RL.			x		
Surrogate Standards					
Have the proper surrogate standards been used?	x				
Have the proper surrogate concentrations been used?	x				
The following checks are applicable to % recovery:					
%R is 10-30%			x		
%R is 0-10%			x		
%R is 0			x		
%R is >150%			x		
Are surrogate standards within the appropriate retention time windows?	x				
Matrix Spike/Matrix Spike Duplicate					
Was the MS/MSD analyzed at the appropriate frequency?			x		see report narrative
Are all MS/MSD compounds within control criteria?			x		
Are all MS/MSD RPD within control criteria?			x		
QC Check Standard (SW-846 methods only)					
Was the QC Check Standard analyzed at the appropriate frequency?	x				
Was the QC Check Standard prepared and analyzed?	x				
Were the %R of the reported compounds within acceptance criteria?	x				
Cleanup Check					
Have frequency requirements been satisfied for Florosil and GPC cleanup?			x		
The following checks are applicable to % recovery:					
% recovery is < 10%			x		
% recovery is > 120%			x		
For noncompliant cleanup analyses, raw data have been inspected for presence of high molecular weight compounds.			x		
Sample Data Evaluation					
For one compound in each sample, determine whether RLs have been modified to MDLs.	x				

Pesticides	Y	N	N/A	Qualifier	Comment
Sample-specific evaluation - these evaluations are performed one sample in each batch (excluding QC).	x				
evaluate adequacy of manual integrations of peak areas.	x				
evaluate the presence of carryover	x				
evaluate the validity of dilutions and reanalyses	x				
evaluate interferences which may preclude accurate quantitation of compounds.	x				
evaluate the eluation of compounds within the appropriate retention windows	x				
evaluate occurrences of peak interference	x				
evaluate pattern-matching of multi-component compounds	x				
Manually recalculate 2 detected and 2 nondetected results from a selected sample in the SDG.	x				
Did recalculation confirm reported results? If not, increase the frequency of recalculations until adequate confidence is gained in the reported results.	x				
Confirm that single-peak results agree within 20% RPD between column analyses.	x				

Metals

SDG:	Job ID 160-18521-1 / 160-18521-2		
Sample Nos.:	YMTFA74SE001 YMTFA75SE001		
Method:	EPA SW-846 Method 1311/6010C EPA SW-846 Method 1311/7470A		
Lab:	TestAmerica		
	Requirement	Actual	Qualifier
Holding Time			none
Analysis	28 days Hg, 180 days other	<28 days	
Calibration			none
Initial (%D)	+/-10% (mid) +/-30% (low)	+/-10% (mid) +/-30% (low)	
Continuing (%D)	+/-10%*	+/-10%	
Calibration Blanks	<MDL	<MDL	
Blanks	<MDL	<MDL, except Hg	J (Hg); see report narrative
Spike Recoveries			none
Matrix Spikes (%R)	75-125%	95-110%	
Matrix Spike Duplicates (%R / %RPD)	75-125% / 20%	96-117% / ≤7%	
Serial Dilution (%D)	+/-10%	≤|3|%	none
Interference Check Samples (%D)	+/-20%	≤|9|%	none
Lab Duplicate (RPD)	+/-20%	≤7%	none
Laboratory Control Samples (%R)	80-120%	96-113%	none
*Hg limit +/-20%			

Metals

SDG:	Job ID 160-18615-1		
Sample Nos.:	YMTFA70 SO 010, YMTFA69 SO 010, YMTFA67 SO 010, YMTFA62 SO 010, YMTFA61 SO 010, YMTFA60 SO 010		
Method:	EPA SW-846 Method 1311/6010C EPA SW-846 Method 1311/7470A		
Lab:	TestAmerica		
	Requirement	Actual	Qualifier
Holding Time			none
Analysis	28 days Hg, 180 days other	<28 days	
Calibration			none
Initial (%D)	+/-10% (mid) +/-30% (low)	+/-10% (mid) +/-30% (low)	
Continuing (%D)	+/-10%*	+/-10%	
Calibration Blanks	<MDL	<MDL	
Blanks	<MDL	<MDL, except Hg	J (Hg); see report narrative
Spike Recoveries			none
Matrix Spikes (%R)	75-125%	98-106%	
Matrix Spike Duplicates (%R / %RPD)	75-125% / 20%	99-107% / ≤1%	
Serial Dilution (%D)	+/-10%	≤|1|%	none
Interference Check Samples (%D)	+/-20%	≤|1|%	none
Lab Duplicate (RPD)	+/-20%	≤1%	none
Laboratory Control Samples (%R)	80-120%	99-111%	none
*Hg limit +/-20%			

Metals

SDG:	Job ID 160-18615-1		
Sample Nos.:	YMTFA 9720 FB, YMTFA 43 GW, YMTFA 42 GW		
Method:	EPA SW-846 Methods 6020A EPA SW-846 Methods 7470A		
Lab:	TestAmerica		
	Requirement	Actual	Qualifier
Holding Time			none
Analysis	28 days Hg, 180 days other	<28 days	
Calibration			none
Initial (%D)	+/-10% (mid) +/-30% (low)	+/-10% (mid) +/-30% (low)	
Continuing (%D)	+/-10%*	+/-10%	
Calibration Blanks	<MDL	<MDL	
Blanks	<MDL	<MDL, except B and Ca	J, none (see report narrative)
Spike Recoveries			none
Matrix Spikes (%R)	75-125%	89-104%	
Matrix Spike Duplicates (%R / %RPD)	75-125% / 20%	96-104% / ≤9%	
Serial Dilution (%D)	+/-10%	≤|1|%	none
Interference Check Samples (%D)	+/-20%	≤|11|%	none
Lab Duplicate (RPD)	+/-20%	≤9%	none
Laboratory Control Samples (%R)	80-120%	96-107%	none
*Hg limit +/-20%			

Metals	Y	N	N/A	Qualifier	Comment or
Chains of Custody					
All samples traceable?	x				
Holding Times and Preservation					
Were all samples analyzed within the appropriate holding time?	x				
Were all samples preserved correctly?	x				
Calibration					
ICP-MS Tuning Acceptable?	x		x		
Was the instrument(s) calibrated at the appropriate frequency?	x				
Were the minimum number of standards used in calibrating the instrument(s)?	x				
Were all ICV recoveries within control limits?	x				
Were all CCV recoveries within control limits?	x				
Blanks					
Were PB, ICB, and CCB prepared and/or analyzed at the appropriate frequency?	x				
Were sample results verified as uncorrected for blank concentrations?	x				
Were all blanks evaluated for contamination?	x				
Was the PB the same matrix as the analytical samples?	x				
Were negative concentrations in blanks evaluated?	x				
Were blank contaminant presences confirmed from raw data?	x				
Interference Check Sample					
If the relevant reporting form was not included, place the following reason code on the affected sample data.			x		
Was the ICS analyzed at the appropriate frequency?	x				
Were the ICSAB %Rs within acceptance criteria?	x				
Were samples evaluated when elements other than Al, Ca, Fe, and Mg were present at levels >10 mg/L?			x		
Were samples evaluated for results for elements not present in the ICS solution?			x		
Were negative results for elements not present in the ICS solution evaluated?			x		
If samples were analyzed for thorium or uranium, were those results evaluated for high concentrations?			x		
Laboratory Control Sample					
If the relevant reporting form was not included, place the following reason code on the affected sample data.			x		

Metals	Y	N	N/A	Qualifier	Comment or
Was the LCS prepared and analyzed at the appropriate frequency?	x				
Was the LCS matrix the same as the analytical samples?	x				
Were percent recoveries within acceptance criteria?	x				
Laboratory Duplicate					
If the relevant reporting form was not included, place the following reason code on the affected sample data.	x				
Was the laboratory duplicate prepared and analyzed at the appropriate frequency?	x				
Were reported precision estimates within acceptance criteria?	x				
Pre-digestion spike					
If the relevant reporting form was not included, place the following reason code on the affected sample data.			x		
Was the pre-digestion spike prepared and analyzed at the appropriate frequency?			x		
Were percent recoveries within acceptance criteria?			x		
Furnace Quality Control					
Were duplicate injection criteria satisfied?			x		
Were post-digestion spike recovery criteria satisfied?			x		
Were analytical spike percent recovery criteria satisfied?			x		
When MSA was required, was it carried out?			x		
Were MSA spike levels at 50, 100, and 150% of sample concentration?			x		
Was MSA correlation coefficient >=0.995?			x		
Serial Dilution Analysis					
If the relevant reporting form was not included, place the following reason code on the affected sample data.			x		
Was the serial dilution analyzed at the appropriate frequency?	x				
Was serial dilution percent difference criteria satisfied?	x				
Sample Result Verification					
Recalculate 2 detected and 2 non-detected results for AA, ICP, CVAA, and CN from each SDG from raw data.	x				
Did recalculation confirm reported results? If not, increase the frequency of recalculations until adequate confidence is gained in the reported results.	x				

Metals	Y	N	N/A	Qualifier	Comment or
Were initial sample volumes equivalent to final digestate volumes for ICP and GFAA digestions, or were sample results corrected for differences in volumes?			x		
Were ICP results within linear range of the ICP?	x				
Were GFAA and CVAA results within calibration range?	x				
Were results from diluted samples corrected for the dilution factor?	x				
Were ICP results for As, Pb, Se, and Tl >5X the ICP IDL; others greater than 4X?			x		
If trace ICP analysis was used for As, Pb, Se, or Tl, were the CRL requirements satisfied?			x		

Job ID 160-18521-1

Am-241 by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples as appropriate?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		88% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.73
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		

Am-241 by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias between 2 and 3?			x		
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		<MDL
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				All yields acceptable.
Validation of Sample Measurements					
Are sample results the MDA?		x			
Are sample results their 2s counting uncertainty?		x			
Do negative sample results have absolute values greater than their 2 counting uncertainty?			x		
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		
Spectral Interpretation — Alpha Analyses					
Are target peaks within the energy range of interest?	x				
Peak overlap through tailing does not preclude quantitation.	x				

Np-237 by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples as appropriate?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		98% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.31
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		
Does the normalized absolute difference show positive bias between 2 and 3?			x		

Np-237 by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		<MDL
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				All yields acceptable.
Validation of Sample Measurements					
Are sample results the MDA?	x	x		U (<MDL)	one sample
Are sample results their 2s counting uncertainty?		x			
Do negative sample results have absolute values greater than their 2 counting uncertainty?			x		
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		
Spectral Interpretation — Alpha Analyses					
Are target peaks within the energy range of interest?	x				
Peak overlap through tailing does not preclude quantitation.	x				

Isotopic Plutonium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples as appropriate?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		98-103% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0-0.21
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		
Does the normalized absolute difference show positive bias between 2 and 3?			x		

Isotopic Plutonium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		<MDL
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				All yields acceptable.
Validation of Sample Measurements					
Are sample results the MDA?	x	x		U (<MDL)	one sample
Are sample results their 2s counting uncertainty?		x			
Do negative sample results have absolute values greater than their 2 counting uncertainty?			x		
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		
Spectral Interpretation — Alpha Analyses					
Are target peaks within the energy range of interest?	x				
Peak overlap through tailing does not preclude quantitation.	x				

Isotopic Thorium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples as appropriate?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		105-107% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.44-2.9
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		
Does the normalized absolute difference show positive bias between 2 and 3?			x		

Isotopic Thorium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		<MDL, except for Th-230
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				All yields acceptable.
Validation of Sample Measurements					
Are sample results the MDA?		x			
Are sample results their 2s counting uncertainty?		x			
Do negative sample results have absolute values greater than their 2 counting uncertainty?			x		
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		
Spectral Interpretation — Alpha Analyses					
Are target peaks within the energy range of interest?	x				
Peak overlap through tailing does not preclude quantitation.	x				

Isotopic Uranium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples as appropriate?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		95-101% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.11-1.58
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		

Isotopic Uranium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias between 2 and 3?			x		
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		<MDL
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				All yields acceptable, except for YMTFA74SE0 01 below QC limits at 15.3%. Based on guidance documents, qualification not required since >15% and meets other conditions (LCS and duplicates acceptable).
Validation of Sample Measurements					
Are sample results the MDA?		x			
Are sample results their 2s counting uncertainty?		x			
Do negative sample results have absolute values greater than their 2 counting uncertainty?			x		
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		

Isotopic Uranium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Each sample-specific TPU is < 80% of its respective sample result.			x		
Spectral Interpretation — Alpha Analyses					
Are target peaks within the energy range of interest?	x				
Peak overlap through tailing does not preclude quantitation.	x				

Strontium 89/90 by GFPC					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		86% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.35
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		
Does the normalized absolute difference show positive bias between 2 and 3?			x		

Strontium 89/90 by GFPC					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				Blank Results < MDA
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				
Validation of Sample Measurements					
Are sample results the MDA?	x			U	both samples
Are sample results their 2s counting uncertainty?			x		
Do negative sample results have absolute values greater than their 2 counting uncertainty?			x		
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?	x				
Each sample-specific TPU is < 80% of its respective sample result.			x		

Tritium by Liquid Scintillation Counting					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		91% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.28
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?	x				94% Recovery
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		

Tritium by Liquid Scintillation Counting					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias between 2 and 3?			x		
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				Blank Results < MDA
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				
Validation of Sample Measurements					
Are sample results the MDA?	x			U	both samples
Are sample results their 2s counting uncertainty?		x			
Do negative sample results have absolute values greater than their 2 counting uncertainty?		x			
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		

Technetium-99 by Liquid Scintillation Counting					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		104% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.33
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		
Does the normalized absolute difference show positive bias between 2 and 3?			x		

Technetium-99 by Liquid Scintillation Counting					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				Blank Results < MDA
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				
Validation of Sample Measurements					
Are sample results the MDA?	x			U	both samples
Are sample results their 2s counting uncertainty?		x			
Do negative sample results have absolute values greater than their 2 counting uncertainty?		x			
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		

Carbon-14 by Liquid Scintillation Counting					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		105% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.6
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		
Does the normalized absolute difference show positive bias between 2 and 3?			x		

Carbon-14 by Liquid Scintillation Counting					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				Blank Results < MDA
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				
Validation of Sample Measurements					
Are sample results the MDA?	x			U	both samples
Are sample results their 2s counting uncertainty?	x			U	both samples
Do negative sample results have absolute values greater than their 2 counting uncertainty?		x			
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		

Job ID 160-18521-2

Radium-226 by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples as appropriate?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		117% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.88
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		

Radium-226 by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias between 2 and 3?			x		
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		>MDL; results significantly greater than blank so no qualification necessary
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				All yields acceptable, except for LCS which was below the QC limits at 28.2%. Based on guidance documents, qualification not required since >15% and meets other conditions (LCS and duplicates acceptable).
Validation of Sample Measurements					
Are sample results the MDA?		x			
Are sample results their 2s counting uncertainty?		x			

Radium-226 by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Do negative sample results have absolute values greater than their 2 counting uncertainty?			x		
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		
Spectral Interpretation — Alpha Analyses					
Are target peaks within the energy range of interest?	x				
Peak overlap through tailing does not preclude quantitation.	x				

Job ID 160-18615-1

Am-241 by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples as appropriate?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		99% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.43
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		

Am-241 by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias between 2 and 3?			x		
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		<MDL
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				All yields acceptable.
Validation of Sample Measurements					
Are sample results the MDA?	x			U	All three liquid samples
Are sample results their 2s counting uncertainty?	x			U	
Do negative sample results have absolute values greater than their 2 counting uncertainty?	x	x			
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		
Spectral Interpretation — Alpha Analyses					
Are target peaks within the energy range of interest?	x				
Peak overlap through tailing does not preclude quantitation.	x				

Np-237 by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples as appropriate?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		111% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			1.51
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		
Does the normalized absolute difference show positive bias between 2 and 3?			x		

Np-237 by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		<MDL
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				All yields acceptable.
Validation of Sample Measurements					
Are sample results the MDA?	x			U (<MDL)	all three liquid samples
Are sample results their 2s counting uncertainty?	x			U	
Do negative sample results have absolute values greater than their 2 counting uncertainty?	x	x		U	
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		
Spectral Interpretation — Alpha Analyses					
Are target peaks within the energy range of interest?	x				
Peak overlap through tailing does not preclude quantitation.	x				

Isotopic Plutonium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples as appropriate?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		100-108% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x	x			Duplicate analyses performed on LCS due to insufficient sample volume
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.50-0.97
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		

Isotopic Plutonium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		
Does the normalized absolute difference show positive bias between 2 and 3?			x		
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		<MDL
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				All yields acceptable.
Validation of Sample Measurements					
Are sample results the MDA?	x			U (<MDL)	all three liquid samples
Are sample results their 2s counting uncertainty?			x		
Do negative sample results have absolute values greater than their 2 counting uncertainty?			x		
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		
Spectral Interpretation — Alpha Analyses					
Are target peaks within the energy range of interest?	x				
Peak overlap through tailing does not preclude quantitation.	x				

Isotopic Thorium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples as appropriate?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x	x			Duplicate analyses performed on LCS due to insufficient sample volume
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		114-125% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.99
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		

Isotopic Thorium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		
Does the normalized absolute difference show positive bias between 2 and 3?			x		
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		<MDL, except for Th-230
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				All yields acceptable.
Validation of Sample Measurements					
Are sample results the MDA?	x	x		U (Th-228, Th-232)	As indicated in Appendix C
Are sample results their 2s counting uncertainty?		x			
Do negative sample results have absolute values greater than their 2 counting uncertainty?			x		
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		
Spectral Interpretation — Alpha Analyses					
Are target peaks within the energy range of interest?	x				
Peak overlap through tailing does not preclude quantitation.	x				

Isotopic Uranium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples as appropriate?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x	x			Duplicate analyses performed on LCS due to insufficient sample volume
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		97-114% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			1.13-1.47

Isotopic Uranium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		
Does the normalized absolute difference show positive bias between 2 and 3?			x		
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		<MDL
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				
Validation of Sample Measurements					
Are sample results the MDA?	x	x		U (<MDA)	As indicated in Appendix C
Are sample results their 2s counting uncertainty?	x	x		U	
Do negative sample results have absolute values greater than their 2 counting uncertainty?	x	x		U	
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		
Spectral Interpretation — Alpha Analyses					
Are target peaks within the energy range of interest?	x				
Peak overlap through tailing does not preclude quantitation.	x				

Gamma Spectroscopy – Co-60 and Cs-137	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				97-98% Recovery
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 2?		x			0.22-1.70
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		

Gamma Spectroscopy – Co-60 and Cs-137	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias between 2 and 3?			x		
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				Blanks < MDA
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?			x		
Are percent recovery criteria satisfied for all yield results?			x		
Validation of Sample Measurements					
Are sample results the MDA?	x			U (<MDL)	all three liquid samples
Are sample results their 2s counting uncertainty?	x	x		U	
Do negative sample results have absolute values greater than their 2 counting uncertainty?		x			
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		
Spectral Interpretation — Gamma Analyses					
Do isotopes of the same radionuclide show secular equilibrium?			x		
Are all detected peaks correctly identified?	x				
Overlap of peaks is not significant.	x				

Gross Alpha/Beta by GFPC					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		87-97% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.97-1.47
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?	x				
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		91-102% Recovery
Does the normalized absolute difference show positive bias between 2 and 3?			x		

Gross Alpha/Beta by GFPC					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				Blank Results < MDA
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				
Validation of Sample Measurements					
Are sample results the MDA?	x	x		U	As indicated in Appendix C
Are sample results their 2s counting uncertainty?	x	x		U	
Do negative sample results have absolute values greater than their 2 counting uncertainty?			x		
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?	x				
Each sample-specific TPU is < 80% of its respective sample result.			x		

Strontium 90 by GFPC					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		91% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			1.43
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		
Does the normalized absolute difference show positive bias between 2 and 3?			x		

Strontium 90 by GFPC					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				Blank Results < MDA
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				
Validation of Sample Measurements					
Are sample results the MDA?	x			U	sample YMTFA 42 GW, as indicated in Appendix C
Are sample results their 2s counting uncertainty?	x	x		U	
Do negative sample results have absolute values greater than their 2 counting uncertainty?			x		
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?	x				
Each sample-specific TPU is < 80% of its respective sample result.			x		

Strontium-89/90 by GFPC (solids)					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		77% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.74
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		
Does the normalized absolute difference show positive bias between 2 and 3?			x		

Strontium-89/90 by GFPC (solids)					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				Blank Results < MDA
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				
Validation of Sample Measurements					
Are sample results the MDA?	x	x		U	As indicated in Appendix C
Are sample results their 2s counting uncertainty?	x	x		U	
Do negative sample results have absolute values greater than their 2 counting uncertainty?	x	x		U	
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?	x				
Each sample-specific TPU is < 80% of its respective sample result.			x		

Tritium by Liquid Scintillation Counting					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		98% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.40
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?	x				95% Recovery
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		

Tritium by Liquid Scintillation Counting					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias between 2 and 3?			x		
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				Blank Results < MDA
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				
Validation of Sample Measurements					
Are sample results the MDA?	x			U	all three liquid samples
Are sample results their 2s counting uncertainty?	x	x		U	
Do negative sample results have absolute values greater than their 2 counting uncertainty?	x	x		U	
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		

Technetium-99 by Liquid Scintillation Counting					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		93%, 93% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.42-1.0
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		
Does the normalized absolute difference show positive bias between 2 and 3?			x		

Technetium-99 by Liquid Scintillation Counting					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				Blank Results < MDA
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				
Validation of Sample Measurements					
Are sample results the MDA?	x			U	as provided in Appendix C
Are sample results their 2s counting uncertainty?	x	x		U	
Do negative sample results have absolute values greater than their 2 counting uncertainty?	x	x		U	
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		

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Radium-226 by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples as appropriate?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		115% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			1.14
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		

Radium-226 by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias between 2 and 3?			x		
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		>MDL
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				All yields acceptable
Validation of Sample Measurements					
Are sample results the MDA?		x			
Are sample results their 2s counting uncertainty?		x			
Do negative sample results have absolute values greater than their 2 counting uncertainty?			x		
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		
Spectral Interpretation — Alpha Analyses					
Are target peaks within the energy range of interest?	x				
Peak overlap through tailing does not preclude quantitation.	x				

Am-241 by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples as appropriate?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		103% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			1.1
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		

Am-241 by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias between 2 and 3?			x		
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		<MDL
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				All yields acceptable.
Validation of Sample Measurements					
Are sample results the MDA?	x			U	see Appendix C
Are sample results their 2s counting uncertainty?	x	x		U	
Do negative sample results have absolute values greater than their 2 counting uncertainty?	x	x		U	
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		
Spectral Interpretation — Alpha Analyses					
Are target peaks within the energy range of interest?	x				
Peak overlap through tailing does not preclude quantitation.	x				

Np-237 by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples as appropriate?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		112% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.0
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		
Does the normalized absolute difference show positive bias between 2 and 3?			x		

Np-237 by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		<MDL
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				All yields acceptable.
Validation of Sample Measurements					
Are sample results the MDA?	x			U	see Appendix C
Are sample results their 2s counting uncertainty?	x	x		U	
Do negative sample results have absolute values greater than their 2 counting uncertainty?	x	x		U	
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		
Spectral Interpretation — Alpha Analyses					
Are target peaks within the energy range of interest?	x				
Peak overlap through tailing does not preclude quantitation.	x				

Isotopic Plutonium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples as appropriate?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		96% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.1-0.4
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		
Does the normalized absolute difference show positive bias between 2 and 3?			x		

Isotopic Plutonium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		<MDL
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				All yields acceptable.
Validation of Sample Measurements					
Are sample results the MDA?	x			U	see Appendix C
Are sample results their 2s counting uncertainty?	x	x		U	
Do negative sample results have absolute values greater than their 2 counting uncertainty?	x	x		U	
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		
Spectral Interpretation — Alpha Analyses					
Are target peaks within the energy range of interest?	x				
Peak overlap through tailing does not preclude quantitation.	x				

Isotopic Thorium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples as appropriate?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		90% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.0-0.1
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		
Does the normalized absolute difference show positive bias between 2 and 3?			x		

Isotopic Thorium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		<MDL
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				All yields acceptable.
Validation of Sample Measurements					
Are sample results the MDA?		x			
Are sample results their 2s counting uncertainty?		x			
Do negative sample results have absolute values greater than their 2 counting uncertainty?			x		
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		
Spectral Interpretation — Alpha Analyses					
Are target peaks within the energy range of interest?	x				
Peak overlap through tailing does not preclude quantitation.	x				

Isotopic Uranium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples as appropriate?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		91-96% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.0-0.6
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		

Isotopic Uranium by Alpha Spectroscopy					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias between 2 and 3?			x		
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		<MDL
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				All yields acceptable
Validation of Sample Measurements					
Are sample results the MDA?	x	x		U	see Appendix C
Are sample results their 2s counting uncertainty?		x			
Do negative sample results have absolute values greater than their 2 counting uncertainty?			x		
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		
Spectral Interpretation — Alpha Analyses					
Are target peaks within the energy range of interest?	x				
Peak overlap through tailing does not preclude quantitation.	x				

Carbon-14 by Liquid Scintillation Counting					
	Y	N	N/A	Qualifier	Comment
Chains of Custody					
All samples traceable?	x				
Detection Limits and Preservation					
Do all samples show MDA <= RL?	x				
Were all samples preserved correctly?	x				
Standard Traceability					
Were all certificates included for the LCS and MS samples?	x				
Calibration Verification					
Are efficiencies within the appropriate control criteria?	x				
Are instrument backgrounds within the appropriate control criteria?	x				
Are energies within the appropriate control criteria?	x				
Are appropriate peak resolution within appropriate control criteria?	x				
LCS					
Has at least one LCS been prepared for up to 20 samples?	x				
Is the LCS the same matrix as the samples in the reporting batch?	x				
Is the normalized difference between the measured and expected values of the LCS within -2 and 2?			x		98% Recovery
Does the normalized difference show positive bias between 2 and 3?			x		
Does the normalized difference show positive bias greater than 3?			x		
Does the normalized difference show negative bias between -2 and -3?			x		
Does the normalized difference show negative bias less than -3?			x		
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	x				
Is the normalized absolute difference between the sample and laboratory duplicate values greater than 3?		x			0.1
Matrix Spike					
Has at least one MS been prepared for up to 20 samples?			x		
Is the normalized difference between the measured and expected values of the MS within -2 and 2?			x		
Does the normalized absolute difference show positive bias between 2 and 3?			x		

Carbon-14 by Liquid Scintillation Counting					
	Y	N	N/A	Qualifier	Comment
Does the normalized absolute difference show positive bias greater than 3?			x		
Does the normalized absolute difference show negative bias between -2 and -3?			x		
Does the normalized absolute difference show negative bias less than -3?			x		
Method Blank					
Has at least one method blank been prepared for up to 20 samples?	x				Blank Results < MDA
Is the method blank the same matrix as the samples in the reporting batch?	x				
Is the normalized absolute difference of the method blank and sample greater than 3?			x		
Is the normalized absolute difference of the method blank and sample between 2 and 3?			x		
Is the normalized absolute difference of the method blank between 0 and 2?			x		
Chemical Yield - Tracers and Carriers					
Is yield reported for all samples and QC samples in the reporting batch?	x				
Are percent recovery criteria satisfied for all yield results?	x				
Validation of Sample Measurements					
Are sample results the MDA?	x			U	see Appendix C
Are sample results their 2s counting uncertainty?	x			U	
Do negative sample results have absolute values greater than their 2 counting uncertainty?	x	x		U	
For gas proportional systems, was the sample weight equal or less than the greatest weight indicated on the mass attenuation curve?			x		
Each sample-specific TPU is < 80% of its respective sample result.			x		

The relative percent difference (RPD) is calculated as:

$$Relative\ Percent\ Difference = \frac{|Result - Expected|}{(Result + Expected)/2} \times 100$$

In cases where RPD is large due to uncertainty associated with measurements, the normalized difference can be used to compare the values taking into account the uncertainty; it is calculated as:

$$Normalized\ Difference\ (ND) = \frac{Result - Expected}{\sqrt{TPU^2_{original} - TPU^2_{expected}}}$$

where TPU = total propagated uncertainty. The ND may also be referred to as the duplicate error ratio (DER) such as in MARLAP.

$TPU_{expected}$ is not reported in some cases and so a conservative (high) estimate of ND can be made by setting $TPU_{expected} = 0$ and calculating the ND using the above equation. The ND calculated with $TPU_{expected} = 0$ will always be greater than the actual ND.

Appendix C

Qualified Data

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 42 GW	EPA-150.1	pH	SU	6.7	HF	J
YMTFA 43 GW	EPA-150.1	pH	SU	6.8	HF	J
YMTFA 9720 FB	EPA-150.1	pH	SU	3.7	HF	J
YMTFA 42 GW	EPA-160.2	Suspended Solids	MG/L	16		
YMTFA 43 GW	EPA-160.2	Suspended Solids	MG/L	560		
YMTFA 9720 FB	EPA-160.2	Suspended Solids	MG/L	4	U	U
YMTFA 42 GW	EPA-1664A	Oil and Grease	MG/L	1.8	U	U
YMTFA 42 GW	EPA-1664A	Oil and Grease	MG/L	3.1	U	U
YMTFA 43 GW	EPA-1664A	Oil and Grease	MG/L	2	U	U
YMTFA 43 GW	EPA-1664A	Oil and Grease	MG/L	3.5	U	U
YMTFA 9720 FB	EPA-1664A	Oil and Grease	MG/L	2.7	U	U
YMTFA 9720 FB	EPA-1664A	Oil and Grease	MG/L	1.6	U	U
YMTFA 42 GW	EPA-300.0	Bromide	MG/L	0.32		
YMTFA 43 GW	EPA-300.0	Bromide	MG/L	0.3		
YMTFA 9720 FB	EPA-300.0	Bromide	MG/L	0.025	U	U
YMTFA 42 GW	EPA-300.0	Chloride	MG/L	23		
YMTFA 43 GW	EPA-300.0	Chloride	MG/L	23		
YMTFA 9720 FB	EPA-300.0	Chloride	MG/L	0.02	U	U
YMTFA 42 GW	EPA-300.0	Fluoride	MG/L	0.062	J	J
YMTFA 43 GW	EPA-300.0	Fluoride	MG/L	0.054	J	J
YMTFA 9720 FB	EPA-300.0	Fluoride	MG/L	0.01	U	U
YMTFA 42 GW	EPA-300.0	Nitrate as Nitrogen	MG/L	0.02		J
YMTFA 43 GW	EPA-300.0	Nitrate as Nitrogen	MG/L	0.014	J	J
YMTFA 9720 FB	EPA-300.0	Nitrate as Nitrogen	MG/L	0.061		J
YMTFA 42 GW	EPA-300.0	Nitrite as Nitrogen	MG/L	0.071		J
YMTFA 43 GW	EPA-300.0	Nitrite as Nitrogen	MG/L	0.07	U	UJ
YMTFA 9720 FB	EPA-300.0	Nitrite as Nitrogen	MG/L	0.007	U	UJ
YMTFA 42 GW	EPA-300.0	ORTHOPHOSPHATE	MG/L	0.26	U	UJ
YMTFA 43 GW	EPA-300.0	ORTHOPHOSPHATE	MG/L	0.26	U	UJ
YMTFA 9720 FB	EPA-300.0	ORTHOPHOSPHATE	MG/L	0.26	U	UJ
YMTFA 42 GW	EPA-300.0	Sulfate	MG/L	35		
YMTFA 43 GW	EPA-300.0	Sulfate	MG/L	33		
YMTFA 9720 FB	EPA-300.0	Sulfate	MG/L	0.05	U	U
YMTFA 42 GW	EPA-420.4	Phenols	MG/L	0.0068	U	U
YMTFA 43 GW	EPA-420.4	Phenols	MG/L	0.0079	J	J
YMTFA 9720 FB	EPA-420.4	Phenols	MG/L	0.0068	U	U
YMTFA 42 GW	EPA-608	4,4'-DDD	UG/L	0.013	U	U
YMTFA 43 GW	EPA-608	4,4'-DDD	UG/L	0.01	U	U
YMTFA 9720 FB	EPA-608	4,4'-DDD	UG/L	0.01	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 42 GW	EPA-608	4,4'-DDE	UG/L	0.013	U	U
YMTFA 43 GW	EPA-608	4,4'-DDE	UG/L	0.01	U	U
YMTFA 9720 FB	EPA-608	4,4'-DDE	UG/L	0.01	U	U
YMTFA 42 GW	EPA-608	4,4'-DDT	UG/L	0.013	U	U
YMTFA 43 GW	EPA-608	4,4'-DDT	UG/L	0.01	U	U
YMTFA 9720 FB	EPA-608	4,4'-DDT	UG/L	0.01	U	U
YMTFA 42 GW	EPA-608	Aldrin	UG/L	0.013	U	U
YMTFA 43 GW	EPA-608	Aldrin	UG/L	0.01	U	U
YMTFA 9720 FB	EPA-608	Aldrin	UG/L	0.01	U	U
YMTFA 42 GW	EPA-608	alpha-BHC	UG/L	0.013	U	U
YMTFA 43 GW	EPA-608	alpha-BHC	UG/L	0.01	U	U
YMTFA 9720 FB	EPA-608	alpha-BHC	UG/L	0.01	U	U
YMTFA 42 GW	EPA-608	beta-BHC	UG/L	0.017	U	U
YMTFA 43 GW	EPA-608	beta-BHC	UG/L	0.013	U	U
YMTFA 9720 FB	EPA-608	beta-BHC	UG/L	0.013	U	U
YMTFA 42 GW	EPA-608	Decachlorobiphenyl	UG/L	0.23		NA
YMTFA 42 GW	EPA-608	Decachlorobiphenyl	UG/L	0.27		NA
YMTFA 42 GW	EPA-608	Decachlorobiphenyl	UG/L	0.15		NA
YMTFA 43 GW	EPA-608	Decachlorobiphenyl	UG/L	0.094		NA
YMTFA 43 GW	EPA-608	Decachlorobiphenyl	UG/L	0.2		NA
YMTFA 43 GW	EPA-608	Decachlorobiphenyl	UG/L	0.24		NA
YMTFA 9720 FB	EPA-608	Decachlorobiphenyl	UG/L	0.089		NA
YMTFA 9720 FB	EPA-608	Decachlorobiphenyl	UG/L	0.2		NA
YMTFA 42 GW	EPA-608	delta-BHC	UG/L	0.013	U	U
YMTFA 43 GW	EPA-608	delta-BHC	UG/L	0.01	U	U
YMTFA 9720 FB	EPA-608	delta-BHC	UG/L	0.01	U	U
YMTFA 42 GW	EPA-608	Dieldrin	UG/L	0.013	U	U
YMTFA 43 GW	EPA-608	Dieldrin	UG/L	0.01	U	U
YMTFA 9720 FB	EPA-608	Dieldrin	UG/L	0.01	U	U
YMTFA 42 GW	EPA-608	Endosulfan I	UG/L	0.013	U	U
YMTFA 43 GW	EPA-608	Endosulfan I	UG/L	0.01	U	U
YMTFA 9720 FB	EPA-608	Endosulfan I	UG/L	0.01	U	U
YMTFA 42 GW	EPA-608	Endosulfan II	UG/L	0.013	U	U
YMTFA 43 GW	EPA-608	Endosulfan II	UG/L	0.01	U	U
YMTFA 9720 FB	EPA-608	Endosulfan II	UG/L	0.01	U	U
YMTFA 42 GW	EPA-608	Endosulfan sulfate	UG/L	0.013	U	U
YMTFA 43 GW	EPA-608	Endosulfan sulfate	UG/L	0.01	U	U
YMTFA 9720 FB	EPA-608	Endosulfan sulfate	UG/L	0.01	U	U
YMTFA 42 GW	EPA-608	Endrin	UG/L	0.022	U	U
YMTFA 43 GW	EPA-608	Endrin	UG/L	0.018	U	U
YMTFA 9720 FB	EPA-608	Endrin	UG/L	0.017	U	U
YMTFA 42 GW	EPA-608	Endrin aldehyde	UG/L	0.013	U	U
YMTFA 43 GW	EPA-608	Endrin aldehyde	UG/L	0.01	U	U
YMTFA 9720 FB	EPA-608	Endrin aldehyde	UG/L	0.01	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 42 GW	EPA-608	Heptachlor	UG/L	0.013	U	U
YMTFA 43 GW	EPA-608	Heptachlor	UG/L	0.01	U	U
YMTFA 9720 FB	EPA-608	Heptachlor	UG/L	0.01	U	U
YMTFA 42 GW	EPA-608	Heptachlor epoxide	UG/L	0.022	U	U
YMTFA 43 GW	EPA-608	Heptachlor epoxide	UG/L	0.018	U	U
YMTFA 9720 FB	EPA-608	Heptachlor epoxide	UG/L	0.017	U	U
YMTFA 42 GW	EPA-608	Lindane	UG/L	0.013	U	U
YMTFA 43 GW	EPA-608	Lindane	UG/L	0.01	U	U
YMTFA 9720 FB	EPA-608	Lindane	UG/L	0.01	U	U
YMTFA 42 GW	EPA-608	PCB-1016	UG/L	0.4	U	U
YMTFA 43 GW	EPA-608	PCB-1016	UG/L	0.34	U	U
YMTFA 9720 FB	EPA-608	PCB-1016	UG/L	0.35	U	U
YMTFA 42 GW	EPA-608	PCB-1221	UG/L	0.4	U	U
YMTFA 43 GW	EPA-608	PCB-1221	UG/L	0.34	U	U
YMTFA 9720 FB	EPA-608	PCB-1221	UG/L	0.35	U	U
YMTFA 42 GW	EPA-608	PCB-1232	UG/L	0.4	U	U
YMTFA 43 GW	EPA-608	PCB-1232	UG/L	0.34	U	U
YMTFA 9720 FB	EPA-608	PCB-1232	UG/L	0.35	U	U
YMTFA 42 GW	EPA-608	PCB-1242	UG/L	0.4	U	U
YMTFA 43 GW	EPA-608	PCB-1242	UG/L	0.34	U	U
YMTFA 9720 FB	EPA-608	PCB-1242	UG/L	0.35	U	U
YMTFA 42 GW	EPA-608	PCB-1248	UG/L	0.4	U	U
YMTFA 43 GW	EPA-608	PCB-1248	UG/L	0.34	U	U
YMTFA 9720 FB	EPA-608	PCB-1248	UG/L	0.35	U	U
YMTFA 42 GW	EPA-608	PCB-1254	UG/L	0.25	U	U
YMTFA 43 GW	EPA-608	PCB-1254	UG/L	0.21	U	U
YMTFA 9720 FB	EPA-608	PCB-1254	UG/L	0.22	U	U
YMTFA 42 GW	EPA-608	PCB-1260	UG/L	0.25	U	U
YMTFA 43 GW	EPA-608	PCB-1260	UG/L	0.21	U	U
YMTFA 9720 FB	EPA-608	PCB-1260	UG/L	0.22	U	U
YMTFA 42 GW	EPA-608	Tetrachloro-m-xylene	UG/L	0.21		NA
YMTFA 43 GW	EPA-608	Tetrachloro-m-xylene	UG/L	0.18		NA
YMTFA 9720 FB	EPA-608	Tetrachloro-m-xylene	UG/L	0.18		NA
YMTFA 42 GW	EPA-608	Total Polychlorinated Biphenyls (PCB)	UG/L	0.25	U	U
YMTFA 43 GW	EPA-608	Total Polychlorinated Biphenyls (PCB)	UG/L	0.21	U	U
YMTFA 9720 FB	EPA-608	Total Polychlorinated Biphenyls (PCB)	UG/L	0.22	U	U
YMTFA 42 GW	EPA-608	Toxaphene	UG/L	0.34	U	U
YMTFA 43 GW	EPA-608	Toxaphene	UG/L	0.28	U	U
YMTFA 9720 FB	EPA-608	Toxaphene	UG/L	0.27	U	U
YMTFA 42 GW	EPA-625	1,2,4-Trichlorobenzene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	1,2,4-Trichlorobenzene	UG/L	0.2	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 9720 FB	EPA-625	1,2,4-Trichlorobenzene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	1,2-Dichlorobenzene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	1,2-Dichlorobenzene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	1,2-Dichlorobenzene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	1,3-Dichlorobenzene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	1,3-Dichlorobenzene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	1,3-Dichlorobenzene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	1,4-Dichlorobenzene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	1,4-Dichlorobenzene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	1,4-Dichlorobenzene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	2,4,6-Tribromophenol	UG/L	61		NA
YMTFA 43 GW	EPA-625	2,4,6-Tribromophenol	UG/L	57		NA
YMTFA 9720 FB	EPA-625	2,4,6-Tribromophenol	UG/L	64		NA
YMTFA 42 GW	EPA-625	2,4,6-Trichlorophenol	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	2,4,6-Trichlorophenol	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	2,4,6-Trichlorophenol	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	2,4-Dichlorophenol	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	2,4-Dichlorophenol	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	2,4-Dichlorophenol	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	2,4-Dimethylphenol	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	2,4-Dimethylphenol	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	2,4-Dimethylphenol	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	2,4-Dinitrophenol	UG/L	0.45	U	U
YMTFA 43 GW	EPA-625	2,4-Dinitrophenol	UG/L	0.4	U	U
YMTFA 9720 FB	EPA-625	2,4-Dinitrophenol	UG/L	0.5	U	U
YMTFA 42 GW	EPA-625	2,4-Dinitrotoluene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	2,4-Dinitrotoluene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	2,4-Dinitrotoluene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	2,6-Dinitrotoluene	UG/L	0.49	U	U
YMTFA 43 GW	EPA-625	2,6-Dinitrotoluene	UG/L	0.43	U	U
YMTFA 9720 FB	EPA-625	2,6-Dinitrotoluene	UG/L	0.54	U	U
YMTFA 42 GW	EPA-625	2-Chloronaphthalene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	2-Chloronaphthalene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	2-Chloronaphthalene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	2-Chlorophenol	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	2-Chlorophenol	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	2-Chlorophenol	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	2-Fluoro-1,1'-biphenyl	UG/L	57		NA
YMTFA 43 GW	EPA-625	2-Fluoro-1,1'-biphenyl	UG/L	50		NA
YMTFA 9720 FB	EPA-625	2-Fluoro-1,1'-biphenyl	UG/L	66		NA
YMTFA 42 GW	EPA-625	2-Fluorophenol	UG/L	27		NA
YMTFA 43 GW	EPA-625	2-Fluorophenol	UG/L	23		NA
YMTFA 9720 FB	EPA-625	2-Fluorophenol	UG/L	37		NA
YMTFA 42 GW	EPA-625	2-Methyl-4,6-dinitrophenol	UG/L	0.29	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 43 GW	EPA-625	2-Methyl-4,6-dinitrophenol	UG/L	0.25	U	U
YMTFA 9720 FB	EPA-625	2-Methyl-4,6-dinitrophenol	UG/L	0.32	U	U
YMTFA 42 GW	EPA-625	2-Nitrophenol	UG/L	0.34	U	U
YMTFA 43 GW	EPA-625	2-Nitrophenol	UG/L	0.3	U	U
YMTFA 9720 FB	EPA-625	2-Nitrophenol	UG/L	0.38	U	U
YMTFA 42 GW	EPA-625	3,3'-Dichlorobenzidine	UG/L	0.29	UN	U
YMTFA 43 GW	EPA-625	3,3'-Dichlorobenzidine	UG/L	0.26	UN	U
YMTFA 9720 FB	EPA-625	3,3'-Dichlorobenzidine	UG/L	0.32	U	U
YMTFA 42 GW	EPA-625	4-Bromophenyl phenyl ether	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	4-Bromophenyl phenyl ether	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	4-Bromophenyl phenyl ether	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	4-Chloro-3-methylphenol	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	4-Chloro-3-methylphenol	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	4-Chloro-3-methylphenol	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	4-Chlorophenyl phenyl ether	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	4-Chlorophenyl phenyl ether	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	4-Chlorophenyl phenyl ether	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	4-Nitrophenol	UG/L	0.45	UN	U
YMTFA 43 GW	EPA-625	4-Nitrophenol	UG/L	0.4	UN	U
YMTFA 9720 FB	EPA-625	4-Nitrophenol	UG/L	0.5	UN	U
YMTFA 42 GW	EPA-625	Acenaphthene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Acenaphthene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Acenaphthene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Acenaphthylene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Acenaphthylene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Acenaphthylene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Anthracene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Anthracene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Anthracene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Benz(a)anthracene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Benz(a)anthracene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Benz(a)anthracene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Benzidine	UG/L	4.5	U	U
YMTFA 43 GW	EPA-625	Benzidine	UG/L	4	U	U
YMTFA 9720 FB	EPA-625	Benzidine	UG/L	5	U	U
YMTFA 42 GW	EPA-625	Benzo(a)pyrene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Benzo(a)pyrene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Benzo(a)pyrene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Benzo(b)fluoranthene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Benzo(b)fluoranthene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Benzo(b)fluoranthene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Benzo(ghi)perylene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Benzo(ghi)perylene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Benzo(ghi)perylene	UG/L	0.25	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 42 GW	EPA-625	Benzo(k)fluoranthene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Benzo(k)fluoranthene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Benzo(k)fluoranthene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	bis(2 chloro-1-methylethyl) ether	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	bis(2 chloro-1-methylethyl) ether	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	bis(2 chloro-1-methylethyl) ether	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Bis(2-chloroethoxy)methane	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Bis(2-chloroethoxy)methane	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Bis(2-chloroethoxy)methane	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Bis(2-chloroethyl) ether	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Bis(2-chloroethyl) ether	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Bis(2-chloroethyl) ether	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Bis(2-ethylhexyl)phthalate	UG/L	0.42	U	U
YMTFA 43 GW	EPA-625	Bis(2-ethylhexyl)phthalate	UG/L	0.37	U	U
YMTFA 9720 FB	EPA-625	Bis(2-ethylhexyl)phthalate	UG/L	0.47	U	U
YMTFA 42 GW	EPA-625	Butyl benzyl phthalate	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Butyl benzyl phthalate	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Butyl benzyl phthalate	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Chrysene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Chrysene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Chrysene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Dibenz(a,h)anthracene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Dibenz(a,h)anthracene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Dibenz(a,h)anthracene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Diethyl phthalate	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Diethyl phthalate	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Diethyl phthalate	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Dimethyl phthalate	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Dimethyl phthalate	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Dimethyl phthalate	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Di-n-butyl phthalate	UG/L	1.2	J	J
YMTFA 43 GW	EPA-625	Di-n-butyl phthalate	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Di-n-butyl phthalate	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Di-n-octylphthalate	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Di-n-octylphthalate	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Di-n-octylphthalate	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Diphenyldiazene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Diphenyldiazene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Diphenyldiazene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Fluoranthene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Fluoranthene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Fluoranthene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Fluorene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Fluorene	UG/L	0.2	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 9720 FB	EPA-625	Fluorene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Hexachlorobenzene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Hexachlorobenzene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Hexachlorobenzene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Hexachlorobutadiene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Hexachlorobutadiene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Hexachlorobutadiene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Hexachlorocyclopentadiene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Hexachlorocyclopentadiene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Hexachlorocyclopentadiene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Hexachloroethane	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Hexachloroethane	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Hexachloroethane	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Indeno(1,2,3-cd)pyrene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Indeno(1,2,3-cd)pyrene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Indeno(1,2,3-cd)pyrene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Isophorone	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Isophorone	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Isophorone	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Naphthalene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Naphthalene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Naphthalene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Nitrobenzene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Nitrobenzene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Nitrobenzene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Nitrobenzene-d5	UG/L	55		NA
YMTFA 43 GW	EPA-625	Nitrobenzene-d5	UG/L	50		NA
YMTFA 9720 FB	EPA-625	Nitrobenzene-d5	UG/L	68		NA
YMTFA 42 GW	EPA-625	N-Nitrosodimethylamine	UG/L	0.45	U	U
YMTFA 43 GW	EPA-625	N-Nitrosodimethylamine	UG/L	0.4	U	U
YMTFA 9720 FB	EPA-625	N-Nitrosodimethylamine	UG/L	0.5	U	U
YMTFA 42 GW	EPA-625	N-Nitroso-di-n-propylamine	UG/L	0.34	U	U
YMTFA 43 GW	EPA-625	N-Nitroso-di-n-propylamine	UG/L	0.3	U	U
YMTFA 9720 FB	EPA-625	N-Nitroso-di-n-propylamine	UG/L	0.38	U	U
YMTFA 42 GW	EPA-625	N-Nitrosodiphenylamine	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	N-Nitrosodiphenylamine	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	N-Nitrosodiphenylamine	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Pentachlorophenol	UG/L	0.29	U	U
YMTFA 43 GW	EPA-625	Pentachlorophenol	UG/L	0.25	U	U
YMTFA 9720 FB	EPA-625	Pentachlorophenol	UG/L	0.32	U	U
YMTFA 42 GW	EPA-625	Phenanthrene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Phenanthrene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Phenanthrene	UG/L	0.25	U	U
YMTFA 42 GW	EPA-625	Phenol	UG/L	0.45	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 43 GW	EPA-625	Phenol	UG/L	0.4	U	U
YMTFA 9720 FB	EPA-625	Phenol	UG/L	0.5	U	U
YMTFA 42 GW	EPA-625	Phenol-d5	UG/L	20		NA
YMTFA 43 GW	EPA-625	Phenol-d5	UG/L	16		NA
YMTFA 9720 FB	EPA-625	Phenol-d5	UG/L	27		NA
YMTFA 42 GW	EPA-625	p-Terphenyl-d14	UG/L	65		NA
YMTFA 43 GW	EPA-625	p-Terphenyl-d14	UG/L	51		NA
YMTFA 9720 FB	EPA-625	p-Terphenyl-d14	UG/L	76		NA
YMTFA 42 GW	EPA-625	Pyrene	UG/L	0.23	U	U
YMTFA 43 GW	EPA-625	Pyrene	UG/L	0.2	U	U
YMTFA 9720 FB	EPA-625	Pyrene	UG/L	0.25	U	U
YMTFA 42 GW	SM-2310 B	ACIDITY	MG/L	2	U	U
YMTFA 43 GW	SM-2310 B	ACIDITY	MG/L	2	U	U
YMTFA 9720 FB	SM-2310 B	ACIDITY	MG/L	2	U	U
YMTFA60 SO 010	SW846-6010C	Arsenic	MG/L	0.05	U	U
YMTFA61 SO 010	SW846-6010C	Arsenic	MG/L	0.05	U	U
YMTFA62 SO 010	SW846-6010C	Arsenic	MG/L	0.05	U	U
YMTFA67 SO 010	SW846-6010C	Arsenic	MG/L	0.05	U	U
YMTFA69 SO 010	SW846-6010C	Arsenic	MG/L	0.05	U	U
YMTFA70 SO 010	SW846-6010C	Arsenic	MG/L	0.05	U	U
YMTFA74SE001	SW846-6010C	Arsenic	MG/L	0.01	U	U
YMTFA75SE001	SW846-6010C	Arsenic	MG/L	0.01	U	U
YMTFA60 SO 010	SW846-6010C	Barium	MG/L	0.26	J	J
YMTFA61 SO 010	SW846-6010C	Barium	MG/L	0.5	J	J
YMTFA62 SO 010	SW846-6010C	Barium	MG/L	0.54	J	J
YMTFA67 SO 010	SW846-6010C	Barium	MG/L	0.91		
YMTFA69 SO 010	SW846-6010C	Barium	MG/L	0.46	J	J
YMTFA70 SO 010	SW846-6010C	Barium	MG/L	0.98		
YMTFA74SE001	SW846-6010C	Barium	MG/L	0.93		
YMTFA75SE001	SW846-6010C	Barium	MG/L	0.69		

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA60 SO 010	SW846-6010C	Cadmium	MG/L	0.019	U	U
YMTFA61 SO 010	SW846-6010C	Cadmium	MG/L	0.019	U	U
YMTFA62 SO 010	SW846-6010C	Cadmium	MG/L	0.019	U	U
YMTFA67 SO 010	SW846-6010C	Cadmium	MG/L	0.019	U	U
YMTFA69 SO 010	SW846-6010C	Cadmium	MG/L	0.019	U	U
YMTFA70 SO 010	SW846-6010C	Cadmium	MG/L	0.019	U	U
YMTFA74SE001	SW846-6010C	Cadmium	MG/L	0.0078	J	J
YMTFA75SE001	SW846-6010C	Cadmium	MG/L	0.0038	U	U
YMTFA60 SO 010	SW846-6010C	Chromium	MG/L	0.038	U	U
YMTFA61 SO 010	SW846-6010C	Chromium	MG/L	0.038	U	U
YMTFA62 SO 010	SW846-6010C	Chromium	MG/L	0.038	U	U
YMTFA67 SO 010	SW846-6010C	Chromium	MG/L	0.038	U	U
YMTFA69 SO 010	SW846-6010C	Chromium	MG/L	0.038	U	U
YMTFA70 SO 010	SW846-6010C	Chromium	MG/L	0.038	U	U
YMTFA74SE001	SW846-6010C	Chromium	MG/L	0.0075	U	U
YMTFA75SE001	SW846-6010C	Chromium	MG/L	0.0075	U	U
YMTFA60 SO 010	SW846-6010C	Lead	MG/L	0.038	U	U
YMTFA61 SO 010	SW846-6010C	Lead	MG/L	0.038	U	U
YMTFA62 SO 010	SW846-6010C	Lead	MG/L	0.038	U	U
YMTFA67 SO 010	SW846-6010C	Lead	MG/L	0.045	J	J
YMTFA69 SO 010	SW846-6010C	Lead	MG/L	0.038	U	U
YMTFA70 SO 010	SW846-6010C	Lead	MG/L	0.038	U	U
YMTFA74SE001	SW846-6010C	Lead	MG/L	0.0075	U	U
YMTFA75SE001	SW846-6010C	Lead	MG/L	0.0075	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA60 SO 010	SW846-6010C	Selenium	MG/L	0.063	U	U
YMTFA61 SO 010	SW846-6010C	Selenium	MG/L	0.063	U	U
YMTFA62 SO 010	SW846-6010C	Selenium	MG/L	0.063	U	U
YMTFA67 SO 010	SW846-6010C	Selenium	MG/L	0.063	U	U
YMTFA69 SO 010	SW846-6010C	Selenium	MG/L	0.063	U	U
YMTFA70 SO 010	SW846-6010C	Selenium	MG/L	0.063	U	U
YMTFA74SE001	SW846-6010C	Selenium	MG/L	0.013	U	U
YMTFA75SE001	SW846-6010C	Selenium	MG/L	0.013	U	U
YMTFA60 SO 010	SW846-6010C	Silver	MG/L	0.038	U	U
YMTFA61 SO 010	SW846-6010C	Silver	MG/L	0.038	U	U
YMTFA62 SO 010	SW846-6010C	Silver	MG/L	0.038	U	U
YMTFA67 SO 010	SW846-6010C	Silver	MG/L	0.038	U	U
YMTFA69 SO 010	SW846-6010C	Silver	MG/L	0.038	U	U
YMTFA70 SO 010	SW846-6010C	Silver	MG/L	0.038	U	U
YMTFA74SE001	SW846-6010C	Silver	MG/L	0.0075	U	U
YMTFA75SE001	SW846-6010C	Silver	MG/L	0.0075	U	U
YMTFA 42 GW	SW846-6020A	Aluminum	MG/L	1.7		
YMTFA 43 GW	SW846-6020A	Aluminum	MG/L	13		
YMTFA 9720 FB	SW846-6020A	Aluminum	MG/L	0.017	U	U
YMTFA 42 GW	SW846-6020A	Antimony	MG/L	0.0017	U	U
YMTFA 43 GW	SW846-6020A	Antimony	MG/L	0.0017	U	U
YMTFA 9720 FB	SW846-6020A	Antimony	MG/L	0.0017	U	U
YMTFA 42 GW	SW846-6020A	Arsenic	MG/L	0.0012	U	U
YMTFA 43 GW	SW846-6020A	Arsenic	MG/L	0.0047	J	J

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 9720 FB	SW846-6020A	Arsenic	MG/L	0.0012	U	U
YMTFA 42 GW	SW846-6020A	Barium	MG/L	0.1		
YMTFA 43 GW	SW846-6020A	Barium	MG/L	0.35		
YMTFA 9720 FB	SW846-6020A	Barium	MG/L	0.00022	U	U
YMTFA 42 GW	SW846-6020A	Beryllium	MG/L	0.00035	U	U
YMTFA 43 GW	SW846-6020A	Beryllium	MG/L	0.0014		
YMTFA 9720 FB	SW846-6020A	Beryllium	MG/L	0.00035	U	U
YMTFA 42 GW	SW846-6020A	Boron	MG/L	0.11	B	J
YMTFA 43 GW	SW846-6020A	Boron	MG/L	0.1	B	J
YMTFA 9720 FB	SW846-6020A	Boron	MG/L	0.045	JB	J
YMTFA 42 GW	SW846-6020A	Cadmium	MG/L	0.0001	U	U
YMTFA 43 GW	SW846-6020A	Cadmium	MG/L	0.00047	J	J
YMTFA 9720 FB	SW846-6020A	Cadmium	MG/L	0.0001	U	U
YMTFA 42 GW	SW846-6020A	Calcium	MG/L	68	B	
YMTFA 43 GW	SW846-6020A	Calcium	MG/L	200	B	
YMTFA 9720 FB	SW846-6020A	Calcium	MG/L	0.068	U	U
YMTFA 42 GW	SW846-6020A	Chromium	MG/L	0.0022	J	J
YMTFA 43 GW	SW846-6020A	Chromium	MG/L	0.019		
YMTFA 9720 FB	SW846-6020A	Chromium	MG/L	0.001	U	U
YMTFA 42 GW	SW846-6020A	Copper	MG/L	0.0019		
YMTFA 43 GW	SW846-6020A	Copper	MG/L	0.017		
YMTFA 9720 FB	SW846-6020A	Copper	MG/L	0.00068	U	U
YMTFA 42 GW	SW846-6020A	Iron	MG/L	1.4		
YMTFA 43 GW	SW846-6020A	Iron	MG/L	13		

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 9720 FB	SW846-6020A	Iron	MG/L	0.033	U	U
YMTFA 42 GW	SW846-6020A	Lead	MG/L	0.0012	J	J
YMTFA 43 GW	SW846-6020A	Lead	MG/L	0.026		
YMTFA 9720 FB	SW846-6020A	Lead	MG/L	0.00017	U	U
YMTFA 42 GW	SW846-6020A	Lithium	MG/L	0.003	J	J
YMTFA 43 GW	SW846-6020A	Lithium	MG/L	0.028		
YMTFA 9720 FB	SW846-6020A	Lithium	MG/L	0.0011	U	U
YMTFA 42 GW	SW846-6020A	Nickel	MG/L	0.0017	J	J
YMTFA 43 GW	SW846-6020A	Nickel	MG/L	0.019		
YMTFA 9720 FB	SW846-6020A	Nickel	MG/L	0.0008	U	U
YMTFA 42 GW	SW846-6020A	Potassium	MG/L	2.7		
YMTFA 43 GW	SW846-6020A	Potassium	MG/L	5.3		
YMTFA 9720 FB	SW846-6020A	Potassium	MG/L	0.042	U	U
YMTFA 42 GW	SW846-6020A	Selenium	MG/L	0.0016	U	U
YMTFA 43 GW	SW846-6020A	Selenium	MG/L	0.0025	J	J
YMTFA 9720 FB	SW846-6020A	Selenium	MG/L	0.0016	U	U
YMTFA 42 GW	SW846-6020A	Silver	MG/L	0.00082	U	U
YMTFA 43 GW	SW846-6020A	Silver	MG/L	0.00082	U	U
YMTFA 9720 FB	SW846-6020A	Silver	MG/L	0.00082	U	U
YMTFA 42 GW	SW846-6020A	Sodium	MG/L	12		
YMTFA 43 GW	SW846-6020A	Sodium	MG/L	10		
YMTFA 9720 FB	SW846-6020A	Sodium	MG/L	0.024	U	U
YMTFA 42 GW	SW846-6020A	Uranium	MG/L	0.0011		
YMTFA 43 GW	SW846-6020A	Uranium	MG/L	0.0055		

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 9720 FB	SW846-6020A	Uranium	MG/L	0.00023	U	U
YMTFA 42 GW	SW846-6020A	Zinc	MG/L	0.0093	U	U
YMTFA 43 GW	SW846-6020A	Zinc	MG/L	0.096		
YMTFA 9720 FB	SW846-6020A	Zinc	MG/L	0.0093	U	U
YMTFA 42 GW	SW846-7470A	Mercury	MG/L	0.00006	U	U
YMTFA 43 GW	SW846-7470A	Mercury	MG/L	0.00063		
YMTFA 9720 FB	SW846-7470A	Mercury	MG/L	0.00006	U	U
YMTFA60 SO 010	SW846-7470A	Mercury	MG/L	0.00015	JB	J
YMTFA61 SO 010	SW846-7470A	Mercury	MG/L	0.00014	JB	J
YMTFA62 SO 010	SW846-7470A	Mercury	MG/L	0.00013	JB	J
YMTFA67 SO 010	SW846-7470A	Mercury	MG/L	0.00012	JB	J
YMTFA69 SO 010	SW846-7470A	Mercury	MG/L	0.00012	JB	J
YMTFA70 SO 010	SW846-7470A	Mercury	MG/L	0.00013	JB	J
YMTFA74SE001	SW846-7470A	Mercury	MG/L	0.0022	B	J
YMTFA75SE001	SW846-7470A	Mercury	MG/L	0.000079	U	U
YMTFA60 SO 010	SW846-8082A	Decachlorobiphenyl	MG/KG	0.0038		NA
YMTFA61 SO 010	SW846-8082A	Decachlorobiphenyl	MG/KG	0.005		NA
YMTFA62 SO 010	SW846-8082A	Decachlorobiphenyl	MG/KG	0.0048		NA
YMTFA67 SO 010	SW846-8082A	Decachlorobiphenyl	MG/KG	0.0039		NA
YMTFA69 SO 010	SW846-8082A	Decachlorobiphenyl	MG/KG	0.0056		NA
YMTFA70 SO 010	SW846-8082A	Decachlorobiphenyl	MG/KG	0.0052		NA
YMTFA74SE001	SW846-8082A	Decachlorobiphenyl	MG/KG	0.0045		NA
YMTFA75SE001	SW846-8082A	Decachlorobiphenyl	MG/KG	0.0061		NA
YMTFA60 SO 010	SW846-8082A	PCB-1016	MG/KG	0.0096	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA61 SO 010	SW846-8082A	PCB-1016	MG/KG	0.0095	U	U
YMTFA62 SO 010	SW846-8082A	PCB-1016	MG/KG	0.0096	U	U
YMTFA67 SO 010	SW846-8082A	PCB-1016	MG/KG	0.0095	U	U
YMTFA69 SO 010	SW846-8082A	PCB-1016	MG/KG	0.0096	U	U
YMTFA70 SO 010	SW846-8082A	PCB-1016	MG/KG	0.0095	U	U
YMTFA74SE001	SW846-8082A	PCB-1016	MG/KG	0.0096	U	U
YMTFA75SE001	SW846-8082A	PCB-1016	MG/KG	0.0096	U	U
YMTFA60 SO 010	SW846-8082A	PCB-1221	MG/KG	0.0096	U	U
YMTFA61 SO 010	SW846-8082A	PCB-1221	MG/KG	0.0095	U	U
YMTFA62 SO 010	SW846-8082A	PCB-1221	MG/KG	0.0096	U	U
YMTFA67 SO 010	SW846-8082A	PCB-1221	MG/KG	0.0095	U	U
YMTFA69 SO 010	SW846-8082A	PCB-1221	MG/KG	0.0096	U	U
YMTFA70 SO 010	SW846-8082A	PCB-1221	MG/KG	0.0095	U	U
YMTFA74SE001	SW846-8082A	PCB-1221	MG/KG	0.0096	U	U
YMTFA75SE001	SW846-8082A	PCB-1221	MG/KG	0.0096	U	U
YMTFA60 SO 010	SW846-8082A	PCB-1232	MG/KG	0.0096	U	U
YMTFA61 SO 010	SW846-8082A	PCB-1232	MG/KG	0.0095	U	U
YMTFA62 SO 010	SW846-8082A	PCB-1232	MG/KG	0.0096	U	U
YMTFA67 SO 010	SW846-8082A	PCB-1232	MG/KG	0.0095	U	U
YMTFA69 SO 010	SW846-8082A	PCB-1232	MG/KG	0.0096	U	U
YMTFA70 SO 010	SW846-8082A	PCB-1232	MG/KG	0.0095	U	U
YMTFA74SE001	SW846-8082A	PCB-1232	MG/KG	0.0096	U	U
YMTFA75SE001	SW846-8082A	PCB-1232	MG/KG	0.0096	U	U
YMTFA60 SO 010	SW846-8082A	PCB-1242	MG/KG	0.0096	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA61 SO 010	SW846-8082A	PCB-1242	MG/KG	0.0095	U	U
YMTFA62 SO 010	SW846-8082A	PCB-1242	MG/KG	0.0096	U	U
YMTFA67 SO 010	SW846-8082A	PCB-1242	MG/KG	0.0095	U	U
YMTFA69 SO 010	SW846-8082A	PCB-1242	MG/KG	0.0096	U	U
YMTFA70 SO 010	SW846-8082A	PCB-1242	MG/KG	0.0095	U	U
YMTFA74SE001	SW846-8082A	PCB-1242	MG/KG	0.0096	U	U
YMTFA75SE001	SW846-8082A	PCB-1242	MG/KG	0.0096	U	U
YMTFA60 SO 010	SW846-8082A	PCB-1248	MG/KG	0.0096	U	U
YMTFA61 SO 010	SW846-8082A	PCB-1248	MG/KG	0.0095	U	U
YMTFA62 SO 010	SW846-8082A	PCB-1248	MG/KG	0.0096	U	U
YMTFA67 SO 010	SW846-8082A	PCB-1248	MG/KG	0.0095	U	U
YMTFA69 SO 010	SW846-8082A	PCB-1248	MG/KG	0.0096	U	U
YMTFA70 SO 010	SW846-8082A	PCB-1248	MG/KG	0.0095	U	U
YMTFA74SE001	SW846-8082A	PCB-1248	MG/KG	0.0096	U	U
YMTFA75SE001	SW846-8082A	PCB-1248	MG/KG	0.0096	U	U
YMTFA60 SO 010	SW846-8082A	PCB-1254	MG/KG	0.008	U	U
YMTFA61 SO 010	SW846-8082A	PCB-1254	MG/KG	0.0079	U	U
YMTFA62 SO 010	SW846-8082A	PCB-1254	MG/KG	0.008	U	U
YMTFA67 SO 010	SW846-8082A	PCB-1254	MG/KG	0.0079	U	U
YMTFA69 SO 010	SW846-8082A	PCB-1254	MG/KG	0.008	U	U
YMTFA70 SO 010	SW846-8082A	PCB-1254	MG/KG	0.0079	U	U
YMTFA74SE001	SW846-8082A	PCB-1254	MG/KG	0.17	J	J
YMTFA75SE001	SW846-8082A	PCB-1254	MG/KG	0.028	J	J
YMTFA60 SO 010	SW846-8082A	PCB-1260	MG/KG	0.008	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA61 SO 010	SW846-8082A	PCB-1260	MG/KG	0.0079	U	U
YMTFA62 SO 010	SW846-8082A	PCB-1260	MG/KG	0.008	U	U
YMTFA67 SO 010	SW846-8082A	PCB-1260	MG/KG	0.0079	U	U
YMTFA69 SO 010	SW846-8082A	PCB-1260	MG/KG	0.008	U	U
YMTFA70 SO 010	SW846-8082A	PCB-1260	MG/KG	0.0079	U	U
YMTFA74SE001	SW846-8082A	PCB-1260	MG/KG	0.24		
YMTFA75SE001	SW846-8082A	PCB-1260	MG/KG	0.081		
YMTFA60 SO 010	SW846-8082A	PCB-1262	MG/KG	0.008	U	U
YMTFA61 SO 010	SW846-8082A	PCB-1262	MG/KG	0.0079	U	U
YMTFA62 SO 010	SW846-8082A	PCB-1262	MG/KG	0.008	U	U
YMTFA67 SO 010	SW846-8082A	PCB-1262	MG/KG	0.0079	U	U
YMTFA69 SO 010	SW846-8082A	PCB-1262	MG/KG	0.008	U	U
YMTFA70 SO 010	SW846-8082A	PCB-1262	MG/KG	0.0079	U	U
YMTFA74SE001	SW846-8082A	PCB-1262	MG/KG	0.008	U	U
YMTFA75SE001	SW846-8082A	PCB-1262	MG/KG	0.008	U	U
YMTFA60 SO 010	SW846-8082A	PCB-1268	MG/KG	0.008	U	U
YMTFA61 SO 010	SW846-8082A	PCB-1268	MG/KG	0.0079	U	U
YMTFA62 SO 010	SW846-8082A	PCB-1268	MG/KG	0.008	U	U
YMTFA67 SO 010	SW846-8082A	PCB-1268	MG/KG	0.0079	U	U
YMTFA69 SO 010	SW846-8082A	PCB-1268	MG/KG	0.008	U	U
YMTFA70 SO 010	SW846-8082A	PCB-1268	MG/KG	0.0079	U	U
YMTFA74SE001	SW846-8082A	PCB-1268	MG/KG	0.008	U	U
YMTFA75SE001	SW846-8082A	PCB-1268	MG/KG	0.008	U	U
YMTFA60 SO 010	SW846-8082A	Total Polychlorinated Biphenyls (PCB)	MG/KG	0.008	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA61 SO 010	SW846-8082A	Total Polychlorinated Biphenyls (PCB)	MG/KG	0.0079	U	U
YMTFA62 SO 010	SW846-8082A	Total Polychlorinated Biphenyls (PCB)	MG/KG	0.008	U	U
YMTFA67 SO 010	SW846-8082A	Total Polychlorinated Biphenyls (PCB)	MG/KG	0.0079	U	U
YMTFA69 SO 010	SW846-8082A	Total Polychlorinated Biphenyls (PCB)	MG/KG	0.008	U	U
YMTFA70 SO 010	SW846-8082A	Total Polychlorinated Biphenyls (PCB)	MG/KG	0.0079	U	U
YMTFA74SE001	SW846-8082A	Total Polychlorinated Biphenyls (PCB)	MG/KG	0.41		
YMTFA75SE001	SW846-8082A	Total Polychlorinated Biphenyls (PCB)	MG/KG	0.11		
YMTFA74SE001	SW846-8151A	2,4-D	MG/L	0.02	U	U
YMTFA75SE001	SW846-8151A	2,4-D	MG/L	0.02	U	U
YMTFA74SE001	SW846-8151A	2,4-Dichlorophenylacetic acid	MG/L	0.08		NA
YMTFA75SE001	SW846-8151A	2,4-Dichlorophenylacetic acid	MG/L	0.1		NA
YMTFA74SE001	SW846-8151A	Silvex	MG/L	0.003	U	U
YMTFA75SE001	SW846-8151A	Silvex	MG/L	0.003	U	U
YMTFA 42 TB	SW846-8260C	(1,1-Dimethylethyl)benzene	UG/L	0.18	U	U
YMTFA 43 TB	SW846-8260C	(1,1-Dimethylethyl)benzene	UG/L	0.18	U	U
YMTFA 9720 TB	SW846-8260C	(1,1-Dimethylethyl)benzene	UG/L	0.18	U	U
YMTFA 42 TB	SW846-8260C	(1-Methylpropyl)benzene	UG/L	0.16	U	U
YMTFA 43 TB	SW846-8260C	(1-Methylpropyl)benzene	UG/L	0.16	U	U
YMTFA 9720 TB	SW846-8260C	(1-Methylpropyl)benzene	UG/L	0.16	U	U
YMTFA 42 TB	SW846-8260C	1,1,1,2-Tetrachloroethane	UG/L	0.12	U	U
YMTFA 43 TB	SW846-8260C	1,1,1,2-Tetrachloroethane	UG/L	0.12	U	U
YMTFA 9720 TB	SW846-8260C	1,1,1,2-Tetrachloroethane	UG/L	0.12	U	U
YMTFA 42 GW	SW846-8260C	1,1,1-Trichloroethane	UG/L	1.7	U	U
YMTFA 42 TB	SW846-8260C	1,1,1-Trichloroethane	UG/L	0.17	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 43 GW	SW846-8260C	1,1,1-Trichloroethane	UG/L	0.17	U	U
YMTFA 43 TB	SW846-8260C	1,1,1-Trichloroethane	UG/L	0.17	U	U
YMTFA 9720 FB	SW846-8260C	1,1,1-Trichloroethane	UG/L	0.17	U	U
YMTFA 9720 TB	SW846-8260C	1,1,1-Trichloroethane	UG/L	0.17	U	U
YMTFA 42 GW	SW846-8260C	1,1,2,2-Tetrachloroethane	UG/L	1	U	U
YMTFA 42 TB	SW846-8260C	1,1,2,2-Tetrachloroethane	UG/L	0.1	U	U
YMTFA 43 GW	SW846-8260C	1,1,2,2-Tetrachloroethane	UG/L	0.1	U	U
YMTFA 43 TB	SW846-8260C	1,1,2,2-Tetrachloroethane	UG/L	0.1	U	U
YMTFA 9720 FB	SW846-8260C	1,1,2,2-Tetrachloroethane	UG/L	0.1	U	U
YMTFA 9720 TB	SW846-8260C	1,1,2,2-Tetrachloroethane	UG/L	0.1	U	U
YMTFA 42 TB	SW846-8260C	1,1,2-Trichloro-1,2,2-trifluoroethane	UG/L	0.1	U	U
YMTFA 43 TB	SW846-8260C	1,1,2-Trichloro-1,2,2-trifluoroethane	UG/L	0.1	U	U
YMTFA 9720 TB	SW846-8260C	1,1,2-Trichloro-1,2,2-trifluoroethane	UG/L	0.1	U	U
YMTFA 42 GW	SW846-8260C	1,1,2-Trichloroethane	UG/L	1.3	U	U
YMTFA 42 TB	SW846-8260C	1,1,2-Trichloroethane	UG/L	0.13	U	U
YMTFA 43 GW	SW846-8260C	1,1,2-Trichloroethane	UG/L	0.13	U	U
YMTFA 43 TB	SW846-8260C	1,1,2-Trichloroethane	UG/L	0.13	U	U
YMTFA 9720 FB	SW846-8260C	1,1,2-Trichloroethane	UG/L	0.13	U	U
YMTFA 9720 TB	SW846-8260C	1,1,2-Trichloroethane	UG/L	0.13	U	U
YMTFA 42 GW	SW846-8260C	1,1-Dichloroethane	UG/L	0.7	U	U
YMTFA 42 TB	SW846-8260C	1,1-Dichloroethane	UG/L	0.07	U	U
YMTFA 43 GW	SW846-8260C	1,1-Dichloroethane	UG/L	0.35	J	J
YMTFA 43 TB	SW846-8260C	1,1-Dichloroethane	UG/L	0.07	U	U
YMTFA 9720 FB	SW846-8260C	1,1-Dichloroethane	UG/L	0.07	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 9720 TB	SW846-8260C	1,1-Dichloroethane	UG/L	0.07	U	U
YMTFA 42 GW	SW846-8260C	1,1-Dichloroethene	UG/L	1	U	U
YMTFA 42 TB	SW846-8260C	1,1-Dichloroethene	UG/L	0.1	U	U
YMTFA 43 GW	SW846-8260C	1,1-Dichloroethene	UG/L	0.1	U	U
YMTFA 43 TB	SW846-8260C	1,1-Dichloroethene	UG/L	0.1	U	U
YMTFA 9720 FB	SW846-8260C	1,1-Dichloroethene	UG/L	0.1	U	U
YMTFA 9720 TB	SW846-8260C	1,1-Dichloroethene	UG/L	0.1	U	U
YMTFA74SE001	SW846-8260C	1,1-Dichloroethene	MG/L	0.0037	U	U
YMTFA75SE001	SW846-8260C	1,1-Dichloroethene	MG/L	0.0037	U	U
YMTFA 42 TB	SW846-8260C	1,1-Dichloropropene	UG/L	0.1	U	U
YMTFA 43 TB	SW846-8260C	1,1-Dichloropropene	UG/L	0.1	U	U
YMTFA 9720 TB	SW846-8260C	1,1-Dichloropropene	UG/L	0.1	U	U
YMTFA 42 TB	SW846-8260C	1,2,3-Trichlorobenzene	UG/L	0.17	U	U
YMTFA 43 TB	SW846-8260C	1,2,3-Trichlorobenzene	UG/L	0.17	U	U
YMTFA 9720 TB	SW846-8260C	1,2,3-Trichlorobenzene	UG/L	0.17	U	U
YMTFA 42 TB	SW846-8260C	1,2,3-Trichloropropane	UG/L	0.18	U	U
YMTFA 43 TB	SW846-8260C	1,2,3-Trichloropropane	UG/L	0.18	U	U
YMTFA 9720 TB	SW846-8260C	1,2,3-Trichloropropane	UG/L	0.18	U	U
YMTFA 42 TB	SW846-8260C	1,2,4-Trichlorobenzene	UG/L	0.1	U	U
YMTFA 43 TB	SW846-8260C	1,2,4-Trichlorobenzene	UG/L	0.1	U	U
YMTFA 9720 TB	SW846-8260C	1,2,4-Trichlorobenzene	UG/L	0.1	U	U
YMTFA 42 TB	SW846-8260C	1,2,4-Trimethylbenzene	UG/L	0.17	U	U
YMTFA 43 TB	SW846-8260C	1,2,4-Trimethylbenzene	UG/L	0.17	U	U
YMTFA 9720 TB	SW846-8260C	1,2,4-Trimethylbenzene	UG/L	0.17	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 42 TB	SW846-8260C	1,2-Dibromo-3-chloropropane	UG/L	0.41	U	U
YMTFA 43 TB	SW846-8260C	1,2-Dibromo-3-chloropropane	UG/L	0.41	U	U
YMTFA 9720 TB	SW846-8260C	1,2-Dibromo-3-chloropropane	UG/L	0.41	U	U
YMTFA 42 TB	SW846-8260C	1,2-Dibromoethane	UG/L	0.13	U	U
YMTFA 43 TB	SW846-8260C	1,2-Dibromoethane	UG/L	0.13	U	U
YMTFA 9720 TB	SW846-8260C	1,2-Dibromoethane	UG/L	0.13	U	U
YMTFA 42 TB	SW846-8260C	1,2-Dichloro-1,1,2,2-tetrafluoroethane	UG/L	0.18	U	UJ
YMTFA 43 TB	SW846-8260C	1,2-Dichloro-1,1,2,2-tetrafluoroethane	UG/L	0.18	U	UJ
YMTFA 9720 TB	SW846-8260C	1,2-Dichloro-1,1,2,2-tetrafluoroethane	UG/L	0.18	U	UJ
YMTFA 42 TB	SW846-8260C	1,2-Dichlorobenzene	UG/L	0.1	U	U
YMTFA 43 TB	SW846-8260C	1,2-Dichlorobenzene	UG/L	0.1	U	U
YMTFA 9720 TB	SW846-8260C	1,2-Dichlorobenzene	UG/L	0.1	U	U
YMTFA 42 GW	SW846-8260C	1,2-Dichloroethane	UG/L	2.2	U	U
YMTFA 42 TB	SW846-8260C	1,2-Dichloroethane	UG/L	0.22	U	U
YMTFA 43 GW	SW846-8260C	1,2-Dichloroethane	UG/L	0.22	U	U
YMTFA 43 TB	SW846-8260C	1,2-Dichloroethane	UG/L	0.22	U	U
YMTFA 9720 FB	SW846-8260C	1,2-Dichloroethane	UG/L	0.22	U	U
YMTFA 9720 TB	SW846-8260C	1,2-Dichloroethane	UG/L	0.22	U	U
YMTFA74SE001	SW846-8260C	1,2-Dichloroethane	MG/L	0.0037	U	U
YMTFA75SE001	SW846-8260C	1,2-Dichloroethane	MG/L	0.0037	U	U
YMTFA 42 GW	SW846-8260C	1,2-Dichloroethane-d4	UG/L	95		NA
YMTFA 42 TB	SW846-8260C	1,2-Dichloroethane-d4	UG/L	11		NA
YMTFA 43 GW	SW846-8260C	1,2-Dichloroethane-d4	UG/L	97		NA
YMTFA 43 GW	SW846-8260C	1,2-Dichloroethane-d4	UG/L	10		NA

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 43 TB	SW846-8260C	1,2-Dichloroethane-d4	UG/L	11		NA
YMTFA 9720 FB	SW846-8260C	1,2-Dichloroethane-d4	UG/L	10		NA
YMTFA 9720 TB	SW846-8260C	1,2-Dichloroethane-d4	UG/L	10		NA
YMTFA74SE001	SW846-8260C	1,2-Dichloroethane-d4	MG/L	0.55		NA
YMTFA75SE001	SW846-8260C	1,2-Dichloroethane-d4	MG/L	0.54		NA
YMTFA 42 GW	SW846-8260C	1,2-Dichloroethene	UG/L	230		
YMTFA 42 TB	SW846-8260C	1,2-Dichloroethene	UG/L	0.14	U	U
YMTFA 43 GW	SW846-8260C	1,2-Dichloroethene	UG/L	140		
YMTFA 43 TB	SW846-8260C	1,2-Dichloroethene	UG/L	0.14	U	U
YMTFA 9720 FB	SW846-8260C	1,2-Dichloroethene	UG/L	0.14	U	U
YMTFA 9720 TB	SW846-8260C	1,2-Dichloroethene	UG/L	0.14	U	U
YMTFA 42 GW	SW846-8260C	1,2-Dichloropropane	UG/L	1	U	U
YMTFA 42 TB	SW846-8260C	1,2-Dichloropropane	UG/L	0.1	U	U
YMTFA 43 GW	SW846-8260C	1,2-Dichloropropane	UG/L	0.1	U	U
YMTFA 43 TB	SW846-8260C	1,2-Dichloropropane	UG/L	0.1	U	U
YMTFA 9720 FB	SW846-8260C	1,2-Dichloropropane	UG/L	0.1	U	U
YMTFA 9720 TB	SW846-8260C	1,2-Dichloropropane	UG/L	0.1	U	U
YMTFA 42 TB	SW846-8260C	1,3,5-Trimethylbenzene	UG/L	0.16	U	U
YMTFA 43 TB	SW846-8260C	1,3,5-Trimethylbenzene	UG/L	0.16	U	U
YMTFA 9720 TB	SW846-8260C	1,3,5-Trimethylbenzene	UG/L	0.16	U	U
YMTFA 42 TB	SW846-8260C	1,3-Dichlorobenzene	UG/L	0.11	U	U
YMTFA 43 TB	SW846-8260C	1,3-Dichlorobenzene	UG/L	0.11	U	U
YMTFA 9720 TB	SW846-8260C	1,3-Dichlorobenzene	UG/L	0.11	U	U
YMTFA 42 TB	SW846-8260C	1,3-Dichloropropane	UG/L	0.1	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 43 TB	SW846-8260C	1,3-Dichloropropane	UG/L	0.1	U	U
YMTFA 9720 TB	SW846-8260C	1,3-Dichloropropane	UG/L	0.1	U	U
YMTFA 42 TB	SW846-8260C	1,4-Dichlorobenzene	UG/L	0.1	U	U
YMTFA 43 TB	SW846-8260C	1,4-Dichlorobenzene	UG/L	0.1	U	U
YMTFA 9720 TB	SW846-8260C	1,4-Dichlorobenzene	UG/L	0.1	U	U
YMTFA 42 TB	SW846-8260C	1,4-Dioxane	UG/L	11	U	UJ
YMTFA 43 TB	SW846-8260C	1,4-Dioxane	UG/L	11	U	UJ
YMTFA 9720 TB	SW846-8260C	1,4-Dioxane	UG/L	11	U	UJ
YMTFA 42 TB	SW846-8260C	1-Butanol	UG/L	12	U	UJ
YMTFA 43 TB	SW846-8260C	1-Butanol	UG/L	12	U	UJ
YMTFA 9720 TB	SW846-8260C	1-Butanol	UG/L	12	U	UJ
YMTFA 42 TB	SW846-8260C	1-Chloro-4-methylbenzene	UG/L	0.15	U	U
YMTFA 43 TB	SW846-8260C	1-Chloro-4-methylbenzene	UG/L	0.15	U	U
YMTFA 9720 TB	SW846-8260C	1-Chloro-4-methylbenzene	UG/L	0.15	U	U
YMTFA 42 TB	SW846-8260C	1-Methyl-4-(1-methylethyl)benzene	UG/L	0.17	U	U
YMTFA 43 TB	SW846-8260C	1-Methyl-4-(1-methylethyl)benzene	UG/L	0.17	U	U
YMTFA 9720 TB	SW846-8260C	1-Methyl-4-(1-methylethyl)benzene	UG/L	0.17	U	U
YMTFA 42 TB	SW846-8260C	2,2-Dichloropropane	UG/L	0.18	U	U
YMTFA 43 TB	SW846-8260C	2,2-Dichloropropane	UG/L	0.18	U	U
YMTFA 9720 TB	SW846-8260C	2,2-Dichloropropane	UG/L	0.18	U	U
YMTFA 42 TB	SW846-8260C	2-Butanone	UG/L	0.47	U	UJ
YMTFA 43 TB	SW846-8260C	2-Butanone	UG/L	0.47	U	UJ
YMTFA 9720 TB	SW846-8260C	2-Butanone	UG/L	0.47	U	UJ
YMTFA74SE001	SW846-8260C	2-Butanone	MG/L	0.0039	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA75SE001	SW846-8260C	2-Butanone	MG/L	0.0039	U	U
YMTFA 42 TB	SW846-8260C	2-Chloro-1,3-butadiene	UG/L	0.16	U	U
YMTFA 43 TB	SW846-8260C	2-Chloro-1,3-butadiene	UG/L	0.16	U	U
YMTFA 9720 TB	SW846-8260C	2-Chloro-1,3-butadiene	UG/L	0.16	U	U
YMTFA 42 GW	SW846-8260C	2-Chloroethyl vinyl ether	UG/L	2.4	U	UJ
YMTFA 42 TB	SW846-8260C	2-Chloroethyl vinyl ether	UG/L	0.24	U	UJ
YMTFA 43 GW	SW846-8260C	2-Chloroethyl vinyl ether	UG/L	0.24	U	UJ
YMTFA 43 TB	SW846-8260C	2-Chloroethyl vinyl ether	UG/L	0.24	U	UJ
YMTFA 9720 FB	SW846-8260C	2-Chloroethyl vinyl ether	UG/L	0.24	U	UJ
YMTFA 9720 TB	SW846-8260C	2-Chloroethyl vinyl ether	UG/L	0.24	U	UJ
YMTFA 42 TB	SW846-8260C	2-Hexanone	UG/L	0.25	U	UJ
YMTFA 43 TB	SW846-8260C	2-Hexanone	UG/L	0.25	U	UJ
YMTFA 9720 TB	SW846-8260C	2-Hexanone	UG/L	0.25	U	UJ
YMTFA 42 TB	SW846-8260C	2-Methoxy-2-methylpropane	UG/L	0.15	U	U
YMTFA 43 TB	SW846-8260C	2-Methoxy-2-methylpropane	UG/L	0.15	U	U
YMTFA 9720 TB	SW846-8260C	2-Methoxy-2-methylpropane	UG/L	0.15	U	U
YMTFA 42 TB	SW846-8260C	2-Nitropropane	UG/L	0.4	U	U
YMTFA 43 TB	SW846-8260C	2-Nitropropane	UG/L	0.4	U	U
YMTFA 9720 TB	SW846-8260C	2-Nitropropane	UG/L	0.4	U	U
YMTFA 42 GW	SW846-8260C	4-Bromofluorobenzene	UG/L	110		NA
YMTFA 42 TB	SW846-8260C	4-Bromofluorobenzene	UG/L	11		NA
YMTFA 43 GW	SW846-8260C	4-Bromofluorobenzene	UG/L	10		NA
YMTFA 43 GW	SW846-8260C	4-Bromofluorobenzene	UG/L	110		NA
YMTFA 43 TB	SW846-8260C	4-Bromofluorobenzene	UG/L	11		NA

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 9720 FB	SW846-8260C	4-Bromofluorobenzene	UG/L	11		NA
YMTFA 9720 TB	SW846-8260C	4-Bromofluorobenzene	UG/L	11		NA
YMTFA74SE001	SW846-8260C	4-Bromofluorobenzene	MG/L	0.5		NA
YMTFA75SE001	SW846-8260C	4-Bromofluorobenzene	MG/L	0.49		NA
YMTFA 42 TB	SW846-8260C	4-Methyl-2-pentanone	UG/L	0.22	U	U
YMTFA 43 TB	SW846-8260C	4-Methyl-2-pentanone	UG/L	0.22	U	U
YMTFA 9720 TB	SW846-8260C	4-Methyl-2-pentanone	UG/L	0.22	U	U
YMTFA 42 TB	SW846-8260C	Acetone	UG/L	0.55	U	UJ
YMTFA 43 TB	SW846-8260C	Acetone	UG/L	0.55	U	UJ
YMTFA 9720 TB	SW846-8260C	Acetone	UG/L	0.55	U	UJ
YMTFA 42 TB	SW846-8260C	Acetonitrile	UG/L	3.7	U	U
YMTFA 43 TB	SW846-8260C	Acetonitrile	UG/L	3.7	U	U
YMTFA 9720 TB	SW846-8260C	Acetonitrile	UG/L	3.7	U	U
YMTFA 42 GW	SW846-8260C	Acrolein	UG/L	28	U	UJ
YMTFA 42 TB	SW846-8260C	Acrolein	UG/L	2.8	U	UJ
YMTFA 43 GW	SW846-8260C	Acrolein	UG/L	2.8	U	UJ
YMTFA 43 TB	SW846-8260C	Acrolein	UG/L	2.8	U	UJ
YMTFA 9720 FB	SW846-8260C	Acrolein	UG/L	2.8	U	UJ
YMTFA 9720 TB	SW846-8260C	Acrolein	UG/L	2.8	U	UJ
YMTFA 42 GW	SW846-8260C	Acrylonitrile	UG/L	7.3	U	U
YMTFA 42 TB	SW846-8260C	Acrylonitrile	UG/L	0.73	U	U
YMTFA 43 GW	SW846-8260C	Acrylonitrile	UG/L	0.73	U	U
YMTFA 43 TB	SW846-8260C	Acrylonitrile	UG/L	0.73	U	U
YMTFA 9720 FB	SW846-8260C	Acrylonitrile	UG/L	0.73	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 9720 TB	SW846-8260C	Acrylonitrile	UG/L	0.73	U	U
YMTFA 42 TB	SW846-8260C	Allyl chloride	UG/L	0.1	U	U
YMTFA 43 TB	SW846-8260C	Allyl chloride	UG/L	0.1	U	U
YMTFA 9720 TB	SW846-8260C	Allyl chloride	UG/L	0.1	U	U
YMTFA 42 GW	SW846-8260C	Benzene	UG/L	1	U	U
YMTFA 42 TB	SW846-8260C	Benzene	UG/L	0.1	U	U
YMTFA 43 GW	SW846-8260C	Benzene	UG/L	0.1	U	U
YMTFA 43 TB	SW846-8260C	Benzene	UG/L	0.1	U	U
YMTFA 9720 FB	SW846-8260C	Benzene	UG/L	0.1	U	U
YMTFA 9720 TB	SW846-8260C	Benzene	UG/L	0.1	U	U
YMTFA74SE001	SW846-8260C	Benzene	MG/L	0.0025	U	U
YMTFA75SE001	SW846-8260C	Benzene	MG/L	0.0025	U	U
YMTFA 42 TB	SW846-8260C	Bromobenzene	UG/L	0.12	U	U
YMTFA 43 TB	SW846-8260C	Bromobenzene	UG/L	0.12	U	U
YMTFA 9720 TB	SW846-8260C	Bromobenzene	UG/L	0.12	U	U
YMTFA 42 TB	SW846-8260C	Bromochloromethane	UG/L	0.14	U	U
YMTFA 43 TB	SW846-8260C	Bromochloromethane	UG/L	0.14	U	U
YMTFA 9720 TB	SW846-8260C	Bromochloromethane	UG/L	0.14	U	U
YMTFA 42 GW	SW846-8260C	Bromodichloromethane	UG/L	1.4	U	U
YMTFA 42 TB	SW846-8260C	Bromodichloromethane	UG/L	0.14	U	U
YMTFA 43 GW	SW846-8260C	Bromodichloromethane	UG/L	0.14	U	U
YMTFA 43 TB	SW846-8260C	Bromodichloromethane	UG/L	0.14	U	U
YMTFA 9720 FB	SW846-8260C	Bromodichloromethane	UG/L	0.14	U	U
YMTFA 9720 TB	SW846-8260C	Bromodichloromethane	UG/L	0.14	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 42 GW	SW846-8260C	Bromoform	UG/L	1.7	U	U
YMTFA 42 TB	SW846-8260C	Bromoform	UG/L	0.17	U	U
YMTFA 43 GW	SW846-8260C	Bromoform	UG/L	0.17	U	U
YMTFA 43 TB	SW846-8260C	Bromoform	UG/L	0.17	U	U
YMTFA 9720 FB	SW846-8260C	Bromoform	UG/L	0.17	U	U
YMTFA 9720 TB	SW846-8260C	Bromoform	UG/L	0.17	U	U
YMTFA 42 GW	SW846-8260C	Bromomethane	UG/L	2.5	U	U
YMTFA 42 TB	SW846-8260C	Bromomethane	UG/L	0.25	U	U
YMTFA 43 GW	SW846-8260C	Bromomethane	UG/L	0.25	U	U
YMTFA 43 TB	SW846-8260C	Bromomethane	UG/L	0.25	U	U
YMTFA 9720 FB	SW846-8260C	Bromomethane	UG/L	0.25	U	U
YMTFA 9720 TB	SW846-8260C	Bromomethane	UG/L	0.25	U	U
YMTFA 42 TB	SW846-8260C	Butylbenzene	UG/L	0.18	U	U
YMTFA 43 TB	SW846-8260C	Butylbenzene	UG/L	0.18	U	U
YMTFA 9720 TB	SW846-8260C	Butylbenzene	UG/L	0.18	U	U
YMTFA 42 TB	SW846-8260C	Carbon disulfide	UG/L	0.1	U	U
YMTFA 43 TB	SW846-8260C	Carbon disulfide	UG/L	0.1	U	U
YMTFA 9720 TB	SW846-8260C	Carbon disulfide	UG/L	0.1	U	U
YMTFA 42 GW	SW846-8260C	Carbon tetrachloride	UG/L	1.8	U	U
YMTFA 42 TB	SW846-8260C	Carbon tetrachloride	UG/L	0.18	U	U
YMTFA 43 GW	SW846-8260C	Carbon tetrachloride	UG/L	0.18	U	U
YMTFA 43 TB	SW846-8260C	Carbon tetrachloride	UG/L	0.18	U	U
YMTFA 9720 FB	SW846-8260C	Carbon tetrachloride	UG/L	0.18	U	U
YMTFA 9720 TB	SW846-8260C	Carbon tetrachloride	UG/L	0.18	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA74SE001	SW846-8260C	Carbon tetrachloride	MG/L	0.0036	U	U
YMTFA75SE001	SW846-8260C	Carbon tetrachloride	MG/L	0.0036	U	U
YMTFA 42 GW	SW846-8260C	Chlorobenzene	UG/L	1.1	U	U
YMTFA 42 TB	SW846-8260C	Chlorobenzene	UG/L	0.11	U	U
YMTFA 43 GW	SW846-8260C	Chlorobenzene	UG/L	0.11	U	U
YMTFA 43 TB	SW846-8260C	Chlorobenzene	UG/L	0.11	U	U
YMTFA 9720 FB	SW846-8260C	Chlorobenzene	UG/L	0.11	U	U
YMTFA 9720 TB	SW846-8260C	Chlorobenzene	UG/L	0.11	U	U
YMTFA74SE001	SW846-8260C	Chlorobenzene	MG/L	0.0038	U	U
YMTFA75SE001	SW846-8260C	Chlorobenzene	MG/L	0.0038	U	U
YMTFA 42 GW	SW846-8260C	Chloroethane	UG/L	1.6	UN	U
YMTFA 42 TB	SW846-8260C	Chloroethane	UG/L	0.16	UN	U
YMTFA 43 GW	SW846-8260C	Chloroethane	UG/L	0.16	UN	U
YMTFA 43 TB	SW846-8260C	Chloroethane	UG/L	0.16	UN	U
YMTFA 9720 FB	SW846-8260C	Chloroethane	UG/L	0.16	UN	U
YMTFA 9720 TB	SW846-8260C	Chloroethane	UG/L	0.16	UN	U
YMTFA 42 GW	SW846-8260C	Chloroform	UG/L	1	U	U
YMTFA 42 TB	SW846-8260C	Chloroform	UG/L	0.1	U	U
YMTFA 43 GW	SW846-8260C	Chloroform	UG/L	0.14	J	J
YMTFA 43 TB	SW846-8260C	Chloroform	UG/L	0.1	U	U
YMTFA 9720 FB	SW846-8260C	Chloroform	UG/L	0.11	J	J
YMTFA 9720 TB	SW846-8260C	Chloroform	UG/L	0.1	U	U
YMTFA74SE001	SW846-8260C	Chloroform	MG/L	0.00092	U	U
YMTFA75SE001	SW846-8260C	Chloroform	MG/L	0.00092	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 42 GW	SW846-8260C	Chloromethane	UG/L	1	U	U
YMTFA 42 TB	SW846-8260C	Chloromethane	UG/L	0.1	U	U
YMTFA 43 GW	SW846-8260C	Chloromethane	UG/L	0.1	U	U
YMTFA 43 TB	SW846-8260C	Chloromethane	UG/L	0.1	U	U
YMTFA 9720 FB	SW846-8260C	Chloromethane	UG/L	0.1	U	U
YMTFA 9720 TB	SW846-8260C	Chloromethane	UG/L	0.1	U	U
YMTFA 42 TB	SW846-8260C	cis-1,2-Dichloroethene	UG/L	0.1	U	U
YMTFA 43 TB	SW846-8260C	cis-1,2-Dichloroethene	UG/L	0.1	U	U
YMTFA 9720 TB	SW846-8260C	cis-1,2-Dichloroethene	UG/L	0.1	U	U
YMTFA 42 GW	SW846-8260C	cis-1,3-Dichloropropene	UG/L	1.6	U	U
YMTFA 42 TB	SW846-8260C	cis-1,3-Dichloropropene	UG/L	0.16	U	U
YMTFA 43 GW	SW846-8260C	cis-1,3-Dichloropropene	UG/L	0.16	U	U
YMTFA 43 TB	SW846-8260C	cis-1,3-Dichloropropene	UG/L	0.16	U	U
YMTFA 9720 FB	SW846-8260C	cis-1,3-Dichloropropene	UG/L	0.16	U	U
YMTFA 9720 TB	SW846-8260C	cis-1,3-Dichloropropene	UG/L	0.16	U	U
YMTFA 42 TB	SW846-8260C	Cumene	UG/L	0.17	U	U
YMTFA 43 TB	SW846-8260C	Cumene	UG/L	0.17	U	U
YMTFA 9720 TB	SW846-8260C	Cumene	UG/L	0.17	U	U
YMTFA 42 TB	SW846-8260C	Cyclohexane	UG/L	0.14	U	U
YMTFA 43 TB	SW846-8260C	Cyclohexane	UG/L	0.14	U	U
YMTFA 9720 TB	SW846-8260C	Cyclohexane	UG/L	0.14	U	U
YMTFA 42 TB	SW846-8260C	Cyclohexanone	UG/L	5.8	U	U
YMTFA 43 TB	SW846-8260C	Cyclohexanone	UG/L	5.8	U	U
YMTFA 9720 TB	SW846-8260C	Cyclohexanone	UG/L	5.8	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 42 GW	SW846-8260C	Dibromochloromethane	UG/L	1.4	U	U
YMTFA 42 TB	SW846-8260C	Dibromochloromethane	UG/L	0.14	U	U
YMTFA 43 GW	SW846-8260C	Dibromochloromethane	UG/L	0.14	U	U
YMTFA 43 TB	SW846-8260C	Dibromochloromethane	UG/L	0.14	U	U
YMTFA 9720 FB	SW846-8260C	Dibromochloromethane	UG/L	0.14	U	U
YMTFA 9720 TB	SW846-8260C	Dibromochloromethane	UG/L	0.14	U	U
YMTFA 42 GW	SW846-8260C	Dibromofluoromethane	UG/L	100		NA
YMTFA 42 TB	SW846-8260C	Dibromofluoromethane	UG/L	11		NA
YMTFA 43 GW	SW846-8260C	Dibromofluoromethane	UG/L	100		NA
YMTFA 43 GW	SW846-8260C	Dibromofluoromethane	UG/L	11		NA
YMTFA 43 TB	SW846-8260C	Dibromofluoromethane	UG/L	11		NA
YMTFA 9720 FB	SW846-8260C	Dibromofluoromethane	UG/L	11		NA
YMTFA 9720 TB	SW846-8260C	Dibromofluoromethane	UG/L	10		NA
YMTFA74SE001	SW846-8260C	Dibromofluoromethane	MG/L	0.52		NA
YMTFA75SE001	SW846-8260C	Dibromofluoromethane	MG/L	0.5		NA
YMTFA 42 TB	SW846-8260C	Dibromomethane	UG/L	0.21	U	U
YMTFA 43 TB	SW846-8260C	Dibromomethane	UG/L	0.21	U	U
YMTFA 9720 TB	SW846-8260C	Dibromomethane	UG/L	0.21	U	U
YMTFA 42 GW	SW846-8260C	Dichlorodifluoromethane	UG/L	1.4	U	U
YMTFA 42 TB	SW846-8260C	Dichlorodifluoromethane	UG/L	0.14	U	U
YMTFA 43 GW	SW846-8260C	Dichlorodifluoromethane	UG/L	0.14	U	U
YMTFA 43 TB	SW846-8260C	Dichlorodifluoromethane	UG/L	0.14	U	U
YMTFA 9720 FB	SW846-8260C	Dichlorodifluoromethane	UG/L	0.14	U	U
YMTFA 9720 TB	SW846-8260C	Dichlorodifluoromethane	UG/L	0.14	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 42 TB	SW846-8260C	Diethyl ether	UG/L	0.26	U	U
YMTFA 43 TB	SW846-8260C	Diethyl ether	UG/L	0.26	U	U
YMTFA 9720 TB	SW846-8260C	Diethyl ether	UG/L	0.26	U	U
YMTFA 42 TB	SW846-8260C	Ethyl acetate	UG/L	0.18	U	U
YMTFA 43 TB	SW846-8260C	Ethyl acetate	UG/L	0.18	U	U
YMTFA 9720 TB	SW846-8260C	Ethyl acetate	UG/L	0.18	U	U
YMTFA 42 TB	SW846-8260C	Ethyl cyanide	UG/L	1.4	U	U
YMTFA 43 TB	SW846-8260C	Ethyl cyanide	UG/L	1.4	U	U
YMTFA 9720 TB	SW846-8260C	Ethyl cyanide	UG/L	1.4	U	U
YMTFA 42 TB	SW846-8260C	Ethyl methacrylate	UG/L	0.17	U	U
YMTFA 43 TB	SW846-8260C	Ethyl methacrylate	UG/L	0.17	U	U
YMTFA 9720 TB	SW846-8260C	Ethyl methacrylate	UG/L	0.17	U	U
YMTFA 42 GW	SW846-8260C	Ethylbenzene	UG/L	1.2	U	U
YMTFA 42 TB	SW846-8260C	Ethylbenzene	UG/L	0.12	U	U
YMTFA 43 GW	SW846-8260C	Ethylbenzene	UG/L	0.12	U	U
YMTFA 43 TB	SW846-8260C	Ethylbenzene	UG/L	0.12	U	U
YMTFA 9720 FB	SW846-8260C	Ethylbenzene	UG/L	0.12	U	U
YMTFA 9720 TB	SW846-8260C	Ethylbenzene	UG/L	0.12	U	U
YMTFA 42 TB	SW846-8260C	Hexachlorobutadiene	UG/L	0.1	U	U
YMTFA 43 TB	SW846-8260C	Hexachlorobutadiene	UG/L	0.1	U	U
YMTFA 9720 TB	SW846-8260C	Hexachlorobutadiene	UG/L	0.1	U	U
YMTFA 42 TB	SW846-8260C	Hexane	UG/L	0.15	U	U
YMTFA 43 TB	SW846-8260C	Hexane	UG/L	0.15	U	U
YMTFA 9720 TB	SW846-8260C	Hexane	UG/L	0.15	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 42 TB	SW846-8260C	Iodomethane	UG/L	0.1	U	U
YMTFA 43 TB	SW846-8260C	Iodomethane	UG/L	0.1	U	U
YMTFA 9720 TB	SW846-8260C	Iodomethane	UG/L	0.1	U	U
YMTFA 42 TB	SW846-8260C	Isobutanol	UG/L	8.3	U	U
YMTFA 43 TB	SW846-8260C	Isobutanol	UG/L	8.3	U	U
YMTFA 9720 TB	SW846-8260C	Isobutanol	UG/L	8.3	U	U
YMTFA 42 TB	SW846-8260C	m,p-Xylenes	UG/L	0.15	U	U
YMTFA 43 TB	SW846-8260C	m,p-Xylenes	UG/L	0.15	U	U
YMTFA 9720 TB	SW846-8260C	m,p-Xylenes	UG/L	0.15	U	U
YMTFA 42 TB	SW846-8260C	Methacrylonitrile	UG/L	1.2	U	U
YMTFA 43 TB	SW846-8260C	Methacrylonitrile	UG/L	1.2	U	U
YMTFA 9720 TB	SW846-8260C	Methacrylonitrile	UG/L	1.2	U	U
YMTFA 42 TB	SW846-8260C	Methyl acetate	UG/L	0.76	U	UJ
YMTFA 43 TB	SW846-8260C	Methyl acetate	UG/L	0.76	U	UJ
YMTFA 9720 TB	SW846-8260C	Methyl acetate	UG/L	0.76	U	UJ
YMTFA 42 TB	SW846-8260C	Methyl methacrylate	UG/L	0.27	U	U
YMTFA 43 TB	SW846-8260C	Methyl methacrylate	UG/L	0.27	U	U
YMTFA 9720 TB	SW846-8260C	Methyl methacrylate	UG/L	0.27	U	U
YMTFA 42 TB	SW846-8260C	Methylcyclohexane	UG/L	0.16	U	U
YMTFA 43 TB	SW846-8260C	Methylcyclohexane	UG/L	0.16	U	U
YMTFA 9720 TB	SW846-8260C	Methylcyclohexane	UG/L	0.16	U	U
YMTFA 42 GW	SW846-8260C	Methylene chloride	UG/L	2.7	U	U
YMTFA 42 TB	SW846-8260C	Methylene chloride	UG/L	0.27	U	U
YMTFA 43 GW	SW846-8260C	Methylene chloride	UG/L	0.27	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 43 TB	SW846-8260C	Methylene chloride	UG/L	0.27	U	U
YMTFA 9720 FB	SW846-8260C	Methylene chloride	UG/L	0.27	U	U
YMTFA 9720 TB	SW846-8260C	Methylene chloride	UG/L	0.27	U	U
YMTFA 42 TB	SW846-8260C	Naphthalene	UG/L	0.21	U	U
YMTFA 43 TB	SW846-8260C	Naphthalene	UG/L	0.21	U	U
YMTFA 9720 TB	SW846-8260C	Naphthalene	UG/L	0.21	U	U
YMTFA 42 TB	SW846-8260C	NONANAL	UG/L	0.41	U	U
YMTFA 43 TB	SW846-8260C	NONANAL	UG/L	0.41	U	U
YMTFA 9720 TB	SW846-8260C	NONANAL	UG/L	0.41	U	U
YMTFA 42 TB	SW846-8260C	o-Chlorotoluene	UG/L	0.15	U	U
YMTFA 43 TB	SW846-8260C	o-Chlorotoluene	UG/L	0.15	U	U
YMTFA 9720 TB	SW846-8260C	o-Chlorotoluene	UG/L	0.15	U	U
YMTFA 42 TB	SW846-8260C	o-Xylene	UG/L	0.13	U	U
YMTFA 43 TB	SW846-8260C	o-Xylene	UG/L	0.13	U	U
YMTFA 9720 TB	SW846-8260C	o-Xylene	UG/L	0.13	U	U
YMTFA 42 TB	SW846-8260C	Propylbenzene	UG/L	0.16	U	U
YMTFA 43 TB	SW846-8260C	Propylbenzene	UG/L	0.16	U	U
YMTFA 9720 TB	SW846-8260C	Propylbenzene	UG/L	0.16	U	U
YMTFA 42 TB	SW846-8260C	Styrene	UG/L	0.13	U	U
YMTFA 43 TB	SW846-8260C	Styrene	UG/L	0.13	U	U
YMTFA 9720 TB	SW846-8260C	Styrene	UG/L	0.13	U	U
YMTFA 42 GW	SW846-8260C	Tetrachloroethene	UG/L	63		
YMTFA 42 TB	SW846-8260C	Tetrachloroethene	UG/L	0.18	U	U
YMTFA 43 GW	SW846-8260C	Tetrachloroethene	UG/L	25		

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 43 TB	SW846-8260C	Tetrachloroethene	UG/L	0.18	U	U
YMTFA 9720 FB	SW846-8260C	Tetrachloroethene	UG/L	0.18	U	U
YMTFA 9720 TB	SW846-8260C	Tetrachloroethene	UG/L	0.18	U	U
YMTFA74SE001	SW846-8260C	Tetrachloroethene	MG/L	0.0028	U	U
YMTFA75SE001	SW846-8260C	Tetrachloroethene	MG/L	0.0028	U	U
YMTFA 42 TB	SW846-8260C	Tetrahydrofuran	UG/L	6.8	J	J
YMTFA 43 TB	SW846-8260C	Tetrahydrofuran	UG/L	7	J	J
YMTFA 9720 TB	SW846-8260C	Tetrahydrofuran	UG/L	6.1	J	J
YMTFA 42 GW	SW846-8260C	Toluene	UG/L	1.4	U	U
YMTFA 42 TB	SW846-8260C	Toluene	UG/L	0.14	U	U
YMTFA 43 GW	SW846-8260C	Toluene	UG/L	0.26	J	J
YMTFA 43 TB	SW846-8260C	Toluene	UG/L	0.14	U	U
YMTFA 9720 FB	SW846-8260C	Toluene	UG/L	0.14	U	U
YMTFA 9720 TB	SW846-8260C	Toluene	UG/L	0.14	U	U
YMTFA 42 GW	SW846-8260C	Toluene-d8	UG/L	110		NA
YMTFA 42 TB	SW846-8260C	Toluene-d8	UG/L	11		NA
YMTFA 43 GW	SW846-8260C	Toluene-d8	UG/L	11		NA
YMTFA 43 GW	SW846-8260C	Toluene-d8	UG/L	110		NA
YMTFA 43 TB	SW846-8260C	Toluene-d8	UG/L	11		NA
YMTFA 9720 FB	SW846-8260C	Toluene-d8	UG/L	11		NA
YMTFA 9720 TB	SW846-8260C	Toluene-d8	UG/L	11		NA
YMTFA74SE001	SW846-8260C	Toluene-d8	MG/L	0.5		NA
YMTFA75SE001	SW846-8260C	Toluene-d8	MG/L	0.49		NA
YMTFA 42 TB	SW846-8260C	Total Xylene	UG/L	0.26	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA 43 TB	SW846-8260C	Total Xylene	UG/L	0.26	U	U
YMTFA 9720 TB	SW846-8260C	Total Xylene	UG/L	0.26	U	U
YMTFA 42 GW	SW846-8260C	trans-1,2-Dichloroethene	UG/L	3.7	J	J
YMTFA 42 TB	SW846-8260C	trans-1,2-Dichloroethene	UG/L	0.1	U	U
YMTFA 43 GW	SW846-8260C	trans-1,2-Dichloroethene	UG/L	3		
YMTFA 43 TB	SW846-8260C	trans-1,2-Dichloroethene	UG/L	0.1	U	U
YMTFA 9720 FB	SW846-8260C	trans-1,2-Dichloroethene	UG/L	0.1	U	U
YMTFA 9720 TB	SW846-8260C	trans-1,2-Dichloroethene	UG/L	0.1	U	U
YMTFA 42 GW	SW846-8260C	trans-1,3-Dichloropropene	UG/L	1	U	U
YMTFA 42 TB	SW846-8260C	trans-1,3-Dichloropropene	UG/L	0.1	U	U
YMTFA 43 GW	SW846-8260C	trans-1,3-Dichloropropene	UG/L	0.1	U	U
YMTFA 43 TB	SW846-8260C	trans-1,3-Dichloropropene	UG/L	0.1	U	U
YMTFA 9720 FB	SW846-8260C	trans-1,3-Dichloropropene	UG/L	0.1	U	U
YMTFA 9720 TB	SW846-8260C	trans-1,3-Dichloropropene	UG/L	0.1	U	U
YMTFA 42 TB	SW846-8260C	Trans-1,4-Dichloro-2-butene	UG/L	0.29	U	UJ
YMTFA 43 TB	SW846-8260C	Trans-1,4-Dichloro-2-butene	UG/L	0.29	U	UJ
YMTFA 9720 TB	SW846-8260C	Trans-1,4-Dichloro-2-butene	UG/L	0.29	U	UJ
YMTFA 42 GW	SW846-8260C	Trichloroethene	UG/L	48		
YMTFA 42 TB	SW846-8260C	Trichloroethene	UG/L	0.25	U	U
YMTFA 43 GW	SW846-8260C	Trichloroethene	UG/L	15		
YMTFA 43 TB	SW846-8260C	Trichloroethene	UG/L	0.25	U	U
YMTFA 9720 FB	SW846-8260C	Trichloroethene	UG/L	0.25	U	U
YMTFA 9720 TB	SW846-8260C	Trichloroethene	UG/L	0.25	U	U
YMTFA74SE001	SW846-8260C	Trichloroethene	MG/L	0.0029	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA75SE001	SW846-8260C	Trichloroethene	MG/L	0.0029	U	U
YMTFA 42 GW	SW846-8260C	Trichlorofluoromethane	UG/L	1.1	U	U
YMTFA 42 TB	SW846-8260C	Trichlorofluoromethane	UG/L	0.11	U	U
YMTFA 43 GW	SW846-8260C	Trichlorofluoromethane	UG/L	0.11	U	U
YMTFA 43 TB	SW846-8260C	Trichlorofluoromethane	UG/L	0.11	U	U
YMTFA 9720 FB	SW846-8260C	Trichlorofluoromethane	UG/L	0.11	U	U
YMTFA 9720 TB	SW846-8260C	Trichlorofluoromethane	UG/L	0.11	U	U
YMTFA 42 TB	SW846-8260C	Vinyl acetate	UG/L	0.18	U	U
YMTFA 43 TB	SW846-8260C	Vinyl acetate	UG/L	0.18	U	U
YMTFA 9720 TB	SW846-8260C	Vinyl acetate	UG/L	0.18	U	U
YMTFA 42 GW	SW846-8260C	Vinyl chloride	UG/L	5.3	J	J
YMTFA 42 TB	SW846-8260C	Vinyl chloride	UG/L	0.19	U	U
YMTFA 43 GW	SW846-8260C	Vinyl chloride	UG/L	1.6	J	J
YMTFA 43 TB	SW846-8260C	Vinyl chloride	UG/L	0.19	U	U
YMTFA 9720 FB	SW846-8260C	Vinyl chloride	UG/L	0.19	U	U
YMTFA 9720 TB	SW846-8260C	Vinyl chloride	UG/L	0.19	U	U
YMTFA74SE001	SW846-8260C	Vinyl chloride	MG/L	0.0043	U	U
YMTFA75SE001	SW846-8260C	Vinyl chloride	MG/L	0.0043	U	U
YMTFA74SE001	SW846-8270D	1,4-Dichlorobenzene	MG/L	0.005	U	U
YMTFA75SE001	SW846-8270D	1,4-Dichlorobenzene	MG/L	0.005	U	U
YMTFA74SE001	SW846-8270D	2,4,5-Trichlorophenol	MG/L	0.01	U	U
YMTFA75SE001	SW846-8270D	2,4,5-Trichlorophenol	MG/L	0.01	U	U
YMTFA74SE001	SW846-8270D	2,4,6-Tribromophenol	MG/L	0.3		NA
YMTFA75SE001	SW846-8270D	2,4,6-Tribromophenol	MG/L	0.3		NA

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA74SE001	SW846-8270D	2,4,6-Trichlorophenol	MG/L	0.01	U	U
YMTFA75SE001	SW846-8270D	2,4,6-Trichlorophenol	MG/L	0.01	U	U
YMTFA74SE001	SW846-8270D	2,4-Dinitrotoluene	MG/L	0.005	U	U
YMTFA75SE001	SW846-8270D	2,4-Dinitrotoluene	MG/L	0.005	U	U
YMTFA74SE001	SW846-8270D	2-Fluoro-1,1'-biphenyl	MG/L	0.32		NA
YMTFA75SE001	SW846-8270D	2-Fluoro-1,1'-biphenyl	MG/L	0.3		NA
YMTFA74SE001	SW846-8270D	2-Fluorophenol	MG/L	0.25		NA
YMTFA75SE001	SW846-8270D	2-Fluorophenol	MG/L	0.24		NA
YMTFA74SE001	SW846-8270D	2-Methylphenol	MG/L	0.01	U	U
YMTFA75SE001	SW846-8270D	2-Methylphenol	MG/L	0.01	U	U
YMTFA74SE001	SW846-8270D	3 & 4 Methylphenol	MG/L	0.005	U	U
YMTFA75SE001	SW846-8270D	3 & 4 Methylphenol	MG/L	0.005	U	U
YMTFA74SE001	SW846-8270D	Hexachlorobenzene	MG/L	0.005	UN	U
YMTFA75SE001	SW846-8270D	Hexachlorobenzene	MG/L	0.005	UN	U
YMTFA74SE001	SW846-8270D	Hexachlorobutadiene	MG/L	0.005	U	U
YMTFA75SE001	SW846-8270D	Hexachlorobutadiene	MG/L	0.005	U	U
YMTFA74SE001	SW846-8270D	Hexachloroethane	MG/L	0.005	U	U
YMTFA75SE001	SW846-8270D	Hexachloroethane	MG/L	0.005	U	U
YMTFA74SE001	SW846-8270D	Nitrobenzene	MG/L	0.005	U	U
YMTFA75SE001	SW846-8270D	Nitrobenzene	MG/L	0.005	U	U
YMTFA74SE001	SW846-8270D	Nitrobenzene-d5	MG/L	0.32		NA
YMTFA75SE001	SW846-8270D	Nitrobenzene-d5	MG/L	0.31		NA
YMTFA74SE001	SW846-8270D	Pentachlorophenol	MG/L	0.01	U	U
YMTFA75SE001	SW846-8270D	Pentachlorophenol	MG/L	0.01	U	U

Client Sample ID	Method	Analyte	Units	Result	Lab Qualifier	Validation Qualifier
YMTFA74SE001	SW846-8270D	Phenol-d5	MG/L	0.22		NA
YMTFA75SE001	SW846-8270D	Phenol-d5	MG/L	0.22		NA
YMTFA74SE001	SW846-8270D	p-Terphenyl-d14	MG/L	0.37		NA
YMTFA75SE001	SW846-8270D	p-Terphenyl-d14	MG/L	0.38		NA
YMTFA74SE001	SW846-8270D	Pyridine	MG/L	0.025	U	U
YMTFA75SE001	SW846-8270D	Pyridine	MG/L	0.025	U	U
YMTFA 42 GW	SW846-9012B	Cyanide	MG/L	0.0031	U	U
YMTFA 43 GW	SW846-9012B	Cyanide	MG/L	0.0031	U	U
YMTFA 9720 FB	SW846-9012B	Cyanide	MG/L	0.0043	J	J
YMTFA 42 GW	SW846-9060	Total Organic Carbon (TOC)	MG/L	1.9		
YMTFA 43 GW	SW846-9060	Total Organic Carbon (TOC)	MG/L	2.2		
YMTFA 9720 FB	SW846-9060	Total Organic Carbon (TOC)	MG/L	0.72	U	U

Method	Client Sample ID	Analyte	Result	TU_2s	Units	Lab Qualifier	Validation Qualifier
RAD-CM ISO BY ALPHA	YMTFA 42 GW	Americium 241	-0.0322	0.412	PCI/L	U	U
RAD-CM ISO BY ALPHA	YMTFA 43 GW	Americium 241	0.0642	0.273	PCI/L	U	U
RAD-CM ISO BY ALPHA	YMTFA 9720 FB	Americium 241	0.0337	0.0799	PCI/L	U	U
RAD-CM ISO BY ALPHA	YMTFA74SE001	Americium 241	0.14	0.0644	PCI/G		
RAD-CM ISO BY ALPHA	YMTFA75SE001	Americium 241	0.0434	0.0293	PCI/G		
L4SX	YMTFA60 SO 010	AMERICIUM-241	0.0198	0.038	PCI_G	U	U
L4SX	YMTFA60 SO 010	AMERICIUM-241	0.0198	0.038	PCI_G	U	U
L4SX	YMTFA61 SO 010	AMERICIUM-241	0.0111	0.029	PCI_G	U	U
L4SX	YMTFA61 SO 010	AMERICIUM-241	0.0111	0.029	PCI_G	U	U
L4SX	YMTFA62 SO 010	AMERICIUM-241	-0.00614	0.028	PCI_G	U	U
L4SX	YMTFA62 SO 010	AMERICIUM-241	-0.00614	0.028	PCI_G	U	U
L4SX	YMTFA67 SO 010	AMERICIUM-241	-0.00191	0.032	PCI_G	U	U
L4SX	YMTFA67 SO 010	AMERICIUM-241	-0.00191	0.032	PCI_G	U	U
L4SX	YMTFA69 SO 010	AMERICIUM-241	0.0458	0.055	PCI_G	U	U
L4SX	YMTFA69 SO 010	AMERICIUM-241	0.0458	0.055	PCI_G	U	U
L4SX	YMTFA70 SO 010	AMERICIUM-241	-0.00815	0.032	PCI_G	U	U
L4SX	YMTFA70 SO 010	AMERICIUM-241	-0.00815	0.032	PCI_G	U	U
RL-LSC-008	YMTFA60 SO 010	CARBON-14	-0.0527	0.096	PCI_G	U	U
RL-LSC-008	YMTFA60 SO 010	CARBON-14	-0.0527	0.096	PCI_G	U	U
RL-LSC-008	YMTFA61 SO 010	CARBON-14	-0.0897	0.093	PCI_G	U	U
RL-LSC-008	YMTFA61 SO 010	CARBON-14	-0.0897	0.093	PCI_G	U	U
RL-LSC-008	YMTFA62 SO 010	CARBON-14	-0.0721	0.092	PCI_G	U	U
RL-LSC-008	YMTFA62 SO 010	CARBON-14	-0.0721	0.092	PCI_G	U	U
RL-LSC-008	YMTFA67 SO 010	CARBON-14	-0.0548	0.094	PCI_G	U	U

Method	Client Sample ID	Analyte	Result	TU_2s	Units	Lab Qualifier	Validation Qualifier
RL-LSC-008	YMTFA67 SO 010	CARBON-14	-0.0548	0.094	PCI_G	U	U
RL-LSC-008	YMTFA69 SO 010	CARBON-14	-0.0331	0.094	PCI_G	U	U
RL-LSC-008	YMTFA69 SO 010	CARBON-14	-0.0331	0.094	PCI_G	U	U
RL-LSC-008	YMTFA70 SO 010	CARBON-14	-0.0775	0.095	PCI_G	U	U
RL-LSC-008	YMTFA70 SO 010	CARBON-14	-0.0775	0.095	PCI_G	U	U
RL-LSC-008	YMTFA74SE001	CARBON-14	0.0651	0.089	PCI_G	U	U
RL-LSC-008	YMTFA75SE001	CARBON-14	0.054	0.096	PCI_G	U	U
EPA-901.1	YMTFA 42 GW	Cesium 137	-5.04	10.7	PCI/L	U	U
EPA-901.1	YMTFA 43 GW	Cesium 137	-0.765	6.26	PCI/L	U	U
EPA-901.1	YMTFA 9720 FB	Cesium 137	3.19	6.44	PCI/L	U	U
EPA-901.1	YMTFA 42 GW	Cobalt 60	0.654	12.7	PCI/L	U	U
EPA-901.1	YMTFA 43 GW	Cobalt 60	3.39	5.87	PCI/L	U	U
EPA-901.1	YMTFA 9720 FB	Cobalt 60	-3.52	10.9	PCI/L	U	U
ERR	YMTFA74SE001	ERR	0.0876	0.167	PCI/G	U	U
ERR	YMTFA75SE001	ERR	0.00725	0.155	PCI/G	U	U
EPA-900.0	YMTFA 42 GW	Gross Alpha	1.32	1.61	PCI/L	U	U
EPA-900.0	YMTFA 43 GW	Gross Alpha	3.87	3.56	PCI/L	U	U
EPA-900.0	YMTFA 9720 FB	Gross Alpha	0.249	0.559	PCI/L	U	U
EPA-900.0	YMTFA 42 GW	Gross Beta	3.24	1.14	PCI/L		
EPA-900.0	YMTFA 43 GW	Gross Beta	2.51	1.92	PCI/L	U	U
EPA-900.0	YMTFA 9720 FB	Gross Beta	0.578	0.565	PCI/L	U	U
RAD-NP-237 BY ALPHA	YMTFA 42 GW	Neptunium 237	-0.0201	0.184	PCI/L	U	U
RAD-NP-237 BY ALPHA	YMTFA 43 GW	Neptunium 237	0.0397	0.168	PCI/L	U	U
RAD-NP-237 BY ALPHA	YMTFA 9720 FB	Neptunium 237	0.0349	0.0494	PCI/L	U	U
RAD-NP-237 BY ALPHA	YMTFA74SE001	Neptunium 237	0.0461	0.0397	PCI/G		
RAD-NP-237 BY ALPHA	YMTFA75SE001	Neptunium 237	0.0178	0.0282	PCI/G	U	U
E7XW	YMTFA60 SO 010	NEPTUNIUM-237	-0.000677	0.017	PCI_G	U	U
E7XW	YMTFA60 SO 010	NEPTUNIUM-237	-0.000677	0.017	PCI_G	U	U
E7XW	YMTFA61 SO 010	NEPTUNIUM-237	0.00467	0.0095	PCI_G	U	U
E7XW	YMTFA61 SO 010	NEPTUNIUM-237	0.00467	0.0095	PCI_G	U	U
E7XW	YMTFA62 SO 010	NEPTUNIUM-237	0.00549	0.013	PCI_G	U	U

Method	Client Sample ID	Analyte	Result	TU_2s	Units	Lab Qualifier	Validation Qualifier
E7XW	YMTFA62 SO 010	NEPTUNIUM-237	0.00549	0.013	PCI_G	U	U
E7XW	YMTFA67 SO 010	NEPTUNIUM-237	0.00361	0.012	PCI_G	U	U
E7XW	YMTFA67 SO 010	NEPTUNIUM-237	0.00361	0.012	PCI_G	U	U
E7XW	YMTFA69 SO 010	NEPTUNIUM-237	-0.00157	0.013	PCI_G	U	U
E7XW	YMTFA69 SO 010	NEPTUNIUM-237	-0.00157	0.013	PCI_G	U	U
E7XW	YMTFA70 SO 010	NEPTUNIUM-237	-0.000993	0.012	PCI_G	U	U
E7XW	YMTFA70 SO 010	NEPTUNIUM-237	-0.000993	0.012	PCI_G	U	U
RAD-PU ISO BY ALPHA	YMTFA 42 GW	Plutonium 238	0.278	0.554	PCI/L	U	U
RAD-PU ISO BY ALPHA	YMTFA 43 GW	Plutonium 238	0.207	0.434	PCI/L	U	U
RAD-PU ISO BY ALPHA	YMTFA 9720 FB	Plutonium 238	0.0526	0.0993	PCI/L	U	U
RAD-PU ISO BY ALPHA	YMTFA74SE001	Plutonium 238	0.771	0.168	PCI/G		
RAD-PU ISO BY ALPHA	YMTFA75SE001	Plutonium 238	0.0349	0.0332	PCI/G	U	U
RAD-PU ISO BY ALPHA	YMTFA 42 GW	Plutonium 239/240	0.279	0.352	PCI/L	U	U
RAD-PU ISO BY ALPHA	YMTFA 43 GW	Plutonium 239/240	0.414	0.415	PCI/L	U	U
RAD-PU ISO BY ALPHA	YMTFA 9720 FB	Plutonium 239/240	0	0.0393	PCI/L	U	U
RAD-PU ISO BY ALPHA	YMTFA74SE001	Plutonium 239/240	0.086	0.0539	PCI/G		
RAD-PU ISO BY ALPHA	YMTFA75SE001	Plutonium 239/240	0.0221	0.0304	PCI/G	U	U
L4SO	YMTFA60 SO 010	PLUTONIUM-238	-0.00304	0.025	PCI_G	U	U
L4SO	YMTFA60 SO 010	PLUTONIUM-238	-0.00304	0.025	PCI_G	U	U
L4SO	YMTFA61 SO 010	PLUTONIUM-238	0.00783	0.03	PCI_G	U	U
L4SO	YMTFA61 SO 010	PLUTONIUM-238	0.00783	0.03	PCI_G	U	U
L4SO	YMTFA62 SO 010	PLUTONIUM-238	0.00932	0.029	PCI_G	U	U
L4SO	YMTFA62 SO 010	PLUTONIUM-238	0.00932	0.029	PCI_G	U	U
L4SO	YMTFA67 SO 010	PLUTONIUM-238	-0.00875	0.037	PCI_G	U	U

Method	Client Sample ID	Analyte	Result	TU_2s	Units	Lab Qualifier	Validation Qualifier
L4SO	YMTFA67 SO 010	PLUTONIUM-238	-0.00875	0.037	PCI_G	U	U
L4SO	YMTFA69 SO 010	PLUTONIUM-238	0.0109	0.029	PCI_G	U	U
L4SO	YMTFA69 SO 010	PLUTONIUM-238	0.0109	0.029	PCI_G	U	U
L4SO	YMTFA70 SO 010	PLUTONIUM-238	0.00792	0.031	PCI_G	U	U
L4SO	YMTFA70 SO 010	PLUTONIUM-238	0.00792	0.031	PCI_G	U	U
L4SO	YMTFA60 SO 010	PLUTONIUM-239/240	0.0106	0.025	PCI_G	U	U
L4SO	YMTFA60 SO 010	PLUTONIUM-239/240	0.0106	0.025	PCI_G	U	U
L4SO	YMTFA61 SO 010	PLUTONIUM-239/240	0.0144	0.03	PCI_G	U	U
L4SO	YMTFA61 SO 010	PLUTONIUM-239/240	0.0144	0.03	PCI_G	U	U
L4SO	YMTFA62 SO 010	PLUTONIUM-239/240	-0.00116	0.029	PCI_G	U	U
L4SO	YMTFA62 SO 010	PLUTONIUM-239/240	-0.00116	0.029	PCI_G	U	U
L4SO	YMTFA67 SO 010	PLUTONIUM-239/240	-0.00291	0.037	PCI_G	U	U
L4SO	YMTFA67 SO 010	PLUTONIUM-239/240	-0.00291	0.037	PCI_G	U	U
L4SO	YMTFA69 SO 010	PLUTONIUM-239/240	-0.00286	0.029	PCI_G	U	U
L4SO	YMTFA69 SO 010	PLUTONIUM-239/240	-0.00286	0.029	PCI_G	U	U
L4SO	YMTFA70 SO 010	PLUTONIUM-239/240	0	0.03	PCI_G	U	U
L4SO	YMTFA70 SO 010	PLUTONIUM-239/240	0	0.03	PCI_G	U	U
ST-RC-0301	YMTFA60 SO 010	Radium 226	1.2	0.193	PCI/G		
ST-RC-0301	YMTFA61 SO 010	Radium 226	1.33	0.2	PCI/G		
ST-RC-0301	YMTFA62 SO 010	Radium 226	1.19	0.199	PCI/G		
ST-RC-0301	YMTFA67 SO 010	Radium 226	1.42	0.207	PCI/G		
ST-RC-0301	YMTFA69 SO 010	Radium 226	0.576	0.124	PCI/G		
ST-RC-0301	YMTFA70 SO 010	Radium 226	1.58	0.232	PCI/G		
ST-RC-0301	YMTFA74SE001	Radium 226	0.712	0.196	PCI/G		
ST-RC-0301	YMTFA75SE001	Radium 226	84.4	7.33	PCI/G		

Method	Client Sample ID	Analyte	Result	TU_2s	Units	Lab Qualifier	Validation Qualifier
ERR	YMTFA60 SO 010	Strontium 89/90	-0.0349	0.101	PCI/G	U	U
ERR	YMTFA61 SO 010	Strontium 89/90	-0.0225	0.107	PCI/G	U	U
ERR	YMTFA62 SO 010	Strontium 89/90	0.28	0.128	PCI/G		
ERR	YMTFA67 SO 010	Strontium 89/90	-0.0408	0.11	PCI/G	U	U
ERR	YMTFA69 SO 010	Strontium 89/90	0.0632	0.104	PCI/G	U	U
ERR	YMTFA70 SO 010	Strontium 89/90	0.0482	0.128	PCI/G	U	U
EPA-905	YMTFA 42 GW	Strontium 90	-0.00316	0.364	PCI/L	U	U
EPA-905	YMTFA 43 GW	Strontium 90	0.0539	0.296	PCI/L	U	U
EPA-905	YMTFA 9720 FB	Strontium 90	0.0958	0.223	PCI/L	U	U
RAD-TC-99 BY LSC	YMTFA 42 GW	Technetium 99	-0.902	1.64	PCI/L	U	U
RAD-TC-99 BY LSC	YMTFA 43 GW	Technetium 99	-1.26	1.98	PCI/L	U	U
RAD-TC-99 BY LSC	YMTFA 9720 FB	Technetium 99	-0.113	1.04	PCI/L	U	U
RAD-TC-99 BY LSC	YMTFA60 SO 010	Technetium 99	-0.216	0.262	PCI/G	U	U
RAD-TC-99 BY LSC	YMTFA61 SO 010	Technetium 99	-0.0963	0.282	PCI/G	U	U
RAD-TC-99 BY LSC	YMTFA62 SO 010	Technetium 99	-0.13	0.263	PCI/G	U	U
RAD-TC-99 BY LSC	YMTFA67 SO 010	Technetium 99	-0.208	0.24	PCI/G	U	U
RAD-TC-99 BY LSC	YMTFA69 SO 010	Technetium 99	-0.0247	0.292	PCI/G	U	U
RAD-TC-99 BY LSC	YMTFA70 SO 010	Technetium 99	-0.138	0.258	PCI/G	U	U
RAD-TC-99 BY LSC	YMTFA74SE001	Technetium 99	0.228	0.207	PCI/G	U	U
RAD-TC-99 BY LSC	YMTFA75SE001	Technetium 99	0.235	0.29	PCI/G	U	U
RAD-TH ISO BY ALPHA	YMTFA 42 GW	Thorium 228	-0.0287	0.353	PCI/L	U	U
RAD-TH ISO BY ALPHA	YMTFA 43 GW	Thorium 228	0.178	0.47	PCI/L	U	U
RAD-TH ISO BY ALPHA	YMTFA 9720 FB	Thorium 228	0.00114	0.073	PCI/L	U	U
RAD-TH ISO BY ALPHA	YMTFA74SE001	Thorium 228	3.72	0.493	PCI/G		
RAD-TH ISO BY ALPHA	YMTFA75SE001	Thorium 228	1.1	0.221	PCI/G		

Method	Client Sample ID	Analyte	Result	TU_2s	Units	Lab Qualifier	Validation Qualifier
RAD-TH ISO BY ALPHA	YMTFA 42 GW	Thorium 230	0.381	0.367	PCI/L		
RAD-TH ISO BY ALPHA	YMTFA 43 GW	Thorium 230	1.48	0.743	PCI/L		
RAD-TH ISO BY ALPHA	YMTFA 9720 FB	Thorium 230	0.193	0.113	PCI/L		
RAD-TH ISO BY ALPHA	YMTFA74SE001	Thorium 230	2.6	0.385	PCI/G		
RAD-TH ISO BY ALPHA	YMTFA75SE001	Thorium 230	0.773	0.178	PCI/G		
RAD-TH ISO BY ALPHA	YMTFA 42 GW	Thorium 232	0.109	0.259	PCI/L	U	U
RAD-TH ISO BY ALPHA	YMTFA 43 GW	Thorium 232	0.177	0.319	PCI/L	U	U
RAD-TH ISO BY ALPHA	YMTFA 9720 FB	Thorium 232	-0.00805	0.0114	PCI/L	U	U
RAD-TH ISO BY ALPHA	YMTFA74SE001	Thorium 232	4.65	0.575	PCI/G		
RAD-TH ISO BY ALPHA	YMTFA75SE001	Thorium 232	1.11	0.218	PCI/G		
L4S1	YMTFA60 SO 010	THORIUM-228	0.484	0.19	PCI_G		
L4S1	YMTFA60 SO 010	THORIUM-228	0.484	0.19	PCI_G		
L4S1	YMTFA61 SO 010	THORIUM-228	0.719	0.25	PCI_G		
L4S1	YMTFA61 SO 010	THORIUM-228	0.719	0.25	PCI_G		
L4S1	YMTFA62 SO 010	THORIUM-228	0.693	0.23	PCI_G		
L4S1	YMTFA62 SO 010	THORIUM-228	0.693	0.23	PCI_G		
L4S1	YMTFA67 SO 010	THORIUM-228	0.474	0.22	PCI_G		
L4S1	YMTFA67 SO 010	THORIUM-228	0.474	0.22	PCI_G		
L4S1	YMTFA69 SO 010	THORIUM-228	0.258	0.12	PCI_G		
L4S1	YMTFA69 SO 010	THORIUM-228	0.258	0.12	PCI_G		
L4S1	YMTFA70 SO 010	THORIUM-228	0.542	0.22	PCI_G		
L4S1	YMTFA70 SO 010	THORIUM-228	0.542	0.22	PCI_G		
L4S1	YMTFA60 SO 010	THORIUM-230	0.246	0.12	PCI_G		
L4S1	YMTFA60 SO 010	THORIUM-230	0.246	0.12	PCI_G		

Method	Client Sample ID	Analyte	Result	TU_2s	Units	Lab Qualifier	Validation Qualifier
L4S1	YMTFA61 SO 010	THORIUM-230	0.0875	0.074	PCI_G		
L4S1	YMTFA61 SO 010	THORIUM-230	0.0875	0.074	PCI_G		
L4S1	YMTFA62 SO 010	THORIUM-230	0.161	0.094	PCI_G		
L4S1	YMTFA62 SO 010	THORIUM-230	0.161	0.094	PCI_G		
L4S1	YMTFA67 SO 010	THORIUM-230	0.355	0.19	PCI_G		
L4S1	YMTFA67 SO 010	THORIUM-230	0.355	0.19	PCI_G		
L4S1	YMTFA69 SO 010	THORIUM-230	0.249	0.12	PCI_G		
L4S1	YMTFA69 SO 010	THORIUM-230	0.249	0.12	PCI_G		
L4S1	YMTFA70 SO 010	THORIUM-230	0.271	0.15	PCI_G		
L4S1	YMTFA70 SO 010	THORIUM-230	0.271	0.15	PCI_G		
L4S1	YMTFA60 SO 010	THORIUM-232	0.656	0.22	PCI_G		
L4S1	YMTFA60 SO 010	THORIUM-232	0.656	0.22	PCI_G		
L4S1	YMTFA61 SO 010	THORIUM-232	0.443	0.18	PCI_G		
L4S1	YMTFA61 SO 010	THORIUM-232	0.443	0.18	PCI_G		
L4S1	YMTFA62 SO 010	THORIUM-232	0.334	0.14	PCI_G		
L4S1	YMTFA62 SO 010	THORIUM-232	0.334	0.14	PCI_G		
L4S1	YMTFA67 SO 010	THORIUM-232	0.356	0.19	PCI_G		
L4S1	YMTFA67 SO 010	THORIUM-232	0.356	0.19	PCI_G		
L4S1	YMTFA69 SO 010	THORIUM-232	0.368	0.15	PCI_G		
L4S1	YMTFA69 SO 010	THORIUM-232	0.368	0.15	PCI_G		
L4S1	YMTFA70 SO 010	THORIUM-232	0.366	0.17	PCI_G		
L4S1	YMTFA70 SO 010	THORIUM-232	0.366	0.17	PCI_G		
RAD-H-3 BY LSC	YMTFA60 SO 010	Tritium	0.0356	0.237	PCI/G	U	U
RAD-H-3 BY LSC	YMTFA61 SO 010	Tritium	-0.039	0.225	PCI/G	U	U

Method	Client Sample ID	Analyte	Result	TU_2s	Units	Lab Qualifier	Validation Qualifier
RAD-H-3 BY LSC	YMTFA62 SO 010	Tritium	0.121	0.241	PCI/G	U	U
RAD-H-3 BY LSC	YMTFA67 SO 010	Tritium	-0.201	0.199	PCI/G	U	U
RAD-H-3 BY LSC	YMTFA69 SO 010	Tritium	0.0381	0.24	PCI/G	U	U
RAD-H-3 BY LSC	YMTFA70 SO 010	Tritium	0.00407	0.223	PCI/G	U	U
RAD-H-3 BY LSC	YMTFA74SE001	Tritium	-0.0829	0.217	PCI/G	U	U
RAD-H-3 BY LSC	YMTFA75SE001	Tritium	-0.0886	0.21	PCI/G	U	U
RAD-U ISO BY ALPHA	YMTFA 42 GW	Uranium 233/234	0.382	0.41	PCI/L	U	U
RAD-U ISO BY ALPHA	YMTFA 43 GW	Uranium 233/234	0.392	0.442	PCI/L	U	U
RAD-U ISO BY ALPHA	YMTFA 9720 FB	Uranium 233/234	0.00894	0.0379	PCI/L	U	U
RAD-U ISO BY ALPHA	YMTFA74SE001	Uranium 233/234	44.5	4.01	PCI/G		
RAD-U ISO BY ALPHA	YMTFA75SE001	Uranium 233/234	1.71	0.281	PCI/G		
RAD-U ISO BY ALPHA	YMTFA 42 GW	Uranium 235/236	0.224	0.317	PCI/L	U	U
RAD-U ISO BY ALPHA	YMTFA 43 GW	Uranium 235/236	0.217	0.307	PCI/L	U	U
RAD-U ISO BY ALPHA	YMTFA 9720 FB	Uranium 235/236	-0.00556	0.0111	PCI/L	U	U
RAD-U ISO BY ALPHA	YMTFA74SE001	Uranium 235/236	5.05	0.693	PCI/G		
RAD-U ISO BY ALPHA	YMTFA75SE001	Uranium 235/236	0.0634	0.0571	PCI/G	U	U
RAD-U ISO BY ALPHA	YMTFA 42 GW	Uranium 238	0.448	0.403	PCI/L		
RAD-U ISO BY ALPHA	YMTFA 43 GW	Uranium 238	2.42	0.944	PCI/L		
RAD-U ISO BY ALPHA	YMTFA 9720 FB	Uranium 238	0.0357	0.0506	PCI/L	U	U
RAD-U ISO BY ALPHA	YMTFA74SE001	Uranium 238	299	25.4	PCI/G		
RAD-U ISO BY ALPHA	YMTFA75SE001	Uranium 238	2.04	0.314	PCI/G		
C0SR	YMTFA60 SO 010	URANIUM-233/234	0.219	0.15	PCI_G		
C0SR	YMTFA60 SO 010	URANIUM-233/234	0.219	0.15	PCI_G		
C0SR	YMTFA61 SO 010	URANIUM-233/234	0.242	0.13	PCI_G		
C0SR	YMTFA61 SO 010	URANIUM-233/234	0.242	0.13	PCI_G		

Method	Client Sample ID	Analyte	Result	TU_2s	Units	Lab Qualifier	Validation Qualifier
C0SR	YMTFA62 SO 010	URANIUM-233/234	0.124	0.091	PCI_G		
C0SR	YMTFA67 SO 010	URANIUM-233/234	0.253	0.14	PCI_G		
C0SR	YMTFA67 SO 010	URANIUM-233/234	0.253	0.14	PCI_G		
C0SR	YMTFA69 SO 010	URANIUM-233/234	0.371	0.17	PCI_G		
C0SR	YMTFA69 SO 010	URANIUM-233/234	0.371	0.17	PCI_G		
C0SR	YMTFA70 SO 010	URANIUM-233/234	0.381	0.17	PCI_G		
C0SR	YMTFA70 SO 010	URANIUM-233/234	0.381	0.17	PCI_G		
C0SR	YMTFA60 SO 010	URANIUM-235/236	0.0435	0.063	PCI_G	U	U
C0SR	YMTFA60 SO 010	URANIUM-235/236	0.0435	0.063	PCI_G	U	U
C0SR	YMTFA61 SO 010	URANIUM-235/236	-0.000574	0.029	PCI_G	U	U
C0SR	YMTFA61 SO 010	URANIUM-235/236	-0.000574	0.029	PCI_G	U	U
C0SR	YMTFA62 SO 010	URANIUM-235/236	0.0156	0.031	PCI_G	U	U
C0SR	YMTFA67 SO 010	URANIUM-235/236	0	0.034	PCI_G	U	U
C0SR	YMTFA67 SO 010	URANIUM-235/236	0	0.034	PCI_G	U	U
C0SR	YMTFA69 SO 010	URANIUM-235/236	0.0155	0.031	PCI_G	U	U
C0SR	YMTFA69 SO 010	URANIUM-235/236	0.0155	0.031	PCI_G	U	U
C0SR	YMTFA70 SO 010	URANIUM-235/236	-0.000593	0.03	PCI_G	U	U
C0SR	YMTFA70 SO 010	URANIUM-235/236	-0.000593	0.03	PCI_G	U	U
C0SR	YMTFA60 SO 010	URANIUM-238	0.155	0.12	PCI_G		
C0SR	YMTFA60 SO 010	URANIUM-238	0.155	0.12	PCI_G		
C0SR	YMTFA61 SO 010	URANIUM-238	0.256	0.13	PCI_G		
C0SR	YMTFA61 SO 010	URANIUM-238	0.256	0.13	PCI_G		
C0SR	YMTFA62 SO 010	URANIUM-238	0.156	0.1	PCI_G		
C0SR	YMTFA67 SO 010	URANIUM-238	0.234	0.13	PCI_G		

Method	Client Sample ID	Analyte	Result	TU_2s	Units	Lab Qualifier	Validation Qualifier
C0SR	YMTFA67 SO 010	URANIUM-238	0.234	0.13	PCI_G		
C0SR	YMTFA69 SO 010	URANIUM-238	0.185	0.11	PCI_G		
C0SR	YMTFA69 SO 010	URANIUM-238	0.185	0.11	PCI_G		
C0SR	YMTFA70 SO 010	URANIUM-238	0.34	0.15	PCI_G		
C0SR	YMTFA70 SO 010	URANIUM-238	0.34	0.15	PCI_G		

Analytical Data Review
Verification Checklist

Laboratory:	Test America	SOW or Contract No.:	Outfall 200
Verifier Name:	JD Milloway	Date Verified:	9/19/16
SDG No(s).	18521-1; 18521-2		

		Acceptable?				Comments
Item No.	Criteria	Yes	No	NA	NR	
1.	Case Narrative Present	X				
2.	Lab Qualifiers Present	X				
3.	Methods Specified in SAP or Equivalent Methods were Used	X				
4.	Data is Complete for All Requested Analytes with All Samples	X				
5.	Units are as Specified in SOW/Contract or Otherwise are Appropriate	X				
6.	Detection Limits Meet Contract Required Detection Limits or Other Project Defined Limits (e.g., regulatory limits)	X				
7,	Samples IDs and Analytes Agree with those on COCs	X				
8.	Samples IDs Agree Throughout Report	X				
9.	Raw Data Results Agree with Data Reports and Electronic Data	X				
10.	COCs – Samples Traceable	X				
11.	All Samples Preserved Correctly	X				
12.	Samples Arrived Intact	X				
13.	Custody Seals on Samples			X		COC Seals on coolers only
14.	Holding Times Met	X				
	-Metals other than Mercury ≤ 180 days			X		
	-Mercury ≤28 days			X		
	-TCLP Metals other than Mercury to TCLP Extraction ≤180 days	X				
	-TCLP Metals other than Mercury TCLP Extraction to Analysis ≤180 days	X				
	-TCLP Mercury to TCLP Extraction ≤28 days	X				
	-TCLP Mercury TCLP Extraction to Analysis ≤28 days	X				
	-VOAs to Extraction/Analysis ≤14 days			X		
	-SVOAs to Extraction ≤7 days (liquids),			X		

Analytical Data Review
Verification Checklist

Laboratory:	Test America	SOW or Contract No.:	Outfall 200
Verifier Name:	JD Milloway	Date Verified:	9/19/16
SDG No(s).	18521-1; 18521-2		

		Acceptable?				Comments
Item No.	Criteria	Yes	No	NA	NR	
	≤14 days (solids)					
	-SVOAs Extraction to Analysis ≤40 days			X		
	-Pesticides to Extraction ≤7 days (liquids), ≤14 days (solids)			X		
	-Pesticides Extraction to Analysis ≤40 days			X		
	-Herbicides to Extraction ≤7 days (liquids), ≤14 days (solids)			X		
	-Herbicides Extraction to Analysis ≤40 days			X		
	PCBs - none	X				
	-TCLP VOAs to TCLP Extraction ≤14 days	X				
	-TCLP VOAs TCLP Extraction to Analysis ≤14 days	X				
	-TCLP SVOAs to TCLP Extraction ≤14 days	X				
	-TCLP SVOAs TCLP Extraction to Prep Extraction ≤7 days	X				
	-TCLP SVOAs Prep Extraction to Analysis ≤40 days	X				
	-TCLP Pesticides to TCLP Extraction ≤14 days			X		
	-TCLP Pesticides TCLP Extraction to Prep Extraction ≤7 days			X		
	-TCLP Pesticides Prep Extraction to Analysis ≤40 days			X		
	-TCLP Herbicides to TCLP Extraction ≤14 days	X				
	-TCLP Herbicides TCLP Extraction to Prep Extraction ≤7 days	X				
	-TCLP Herbicides Prep Extraction to Analysis ≤40 days	X				
	TOC ≤28 days			X		
	-Hexane Extractable Material, Oil and Grease ≤28 days			X		

Analytical Data Review
Verification Checklist

Laboratory:	Test America	SOW or Contract No.:	Outfall 200
Verifier Name:	JD Milloway	Date Verified:	9/19/16
SDG No(s).	18521-1; 18521-2		

		Acceptable?				Comments
Item No.	Criteria	Yes	No	NA	NR	
	-Chloride, Fluoride, Nitrate, Sulfate ≤28 days			X		
	-Cyanide ≤14 days			X		
	-Sulfide ≤7 days			X		
	-pH – immediately			X		
	-Specific Conductance - immediately			X		
	-Radionuclides 180 days (best practice)	X				

Analytical Data Review
Verification Checklist

Laboratory:	TestAmerica	SOW or Contract No.:	Outfall 200
Verifier Name:	JD Milloway	Date Verified:	9/21/16
SDG No(s).	18615-1; 18615-2		

		Acceptable?				Comments
Item No.	Criteria	Yes	No	NA	NR	
1.	Case Narrative Present	X				
2.	Lab Qualifiers Present	X				
3.	Methods Specified in SAP or Equivalent Methods were Used	X				
4.	Data is Complete for All Requested Analytes with All Samples	X				
5.	Units are as Specified in SOW/Contract or Otherwise are Appropriate	X				
6.	Detection Limits Meet Contract Required Detection Limits or Other Project Defined Limits (e.g., regulatory limits)	X				
7.	Samples IDs and Analytes Agree with those on COCs	X				Two trip blanks were delivered that were not on the COC but were identified by their associated water samples. Another sample jar was not labeled but the required aliquot and preservative dictated the Sample ID and analysis.
8.	Samples IDs Agree Throughout Report	X				
9.	Raw Data Results Agree with Data Reports and Electronic Data	X				
10.	COCs – Samples Traceable	X				See comments No. 7
11.	All Samples Preserved Correctly	X				
12.	Samples Arrived Intact	X				
13.	Custody Seals on Samples					COC seals on coolers only
14.	Holding Times Met					
	-Metals other than Mercury ≤ 180 days	X				
	-Mercury ≤28 days	X				
	-TCLP Metals other than Mercury to TCLP Extraction ≤180 days	X				
	-TCLP Metals other than Mercury TCLP Extraction to Analysis ≤180 days	X				
	-TCLP Mercury to TCLP Extraction ≤28	X				

Analytical Data Review
Verification Checklist

Laboratory:	TestAmerica	SOW or Contract No.:	Outfall 200
Verifier Name:	JD Milloway	Date Verified:	9/21/16
SDG No(s).	18615-1; 18615-2		

		Acceptable?				Comments
Item No.	Criteria	Yes	No	NA	NR	
	days					
	-TCLP Mercury TCLP Extraction to Analysis ≤28 days	X				
	-VOAs to Extraction/Analysis ≤14 days	X				
	-SVOAs to Extraction ≤7 days (liquids), ≤14 days (solids)	X				
	-SVOAs Extraction to Analysis ≤40 days	X				
	-Pesticides to Extraction ≤7 days (liquids), ≤14 days (solids)	X				
	-Pesticides Extraction to Analysis ≤40 days	X				
	-Herbicides to Extraction ≤7 days (liquids), ≤14 days (solids)			X		
	-Herbicides Extraction to Analysis ≤40 days			X		
	PCBs - none	X				
	-TCLP VOAs to TCLP Extraction ≤14 days			X		
	-TCLP VOAs TCLP Extraction to Analysis ≤14 days			X		
	-TCLP SVOAs to TCLP Extraction ≤14 days			X		
	-TCLP SVOAs TCLP Extraction to Prep Extraction ≤7 days			X		
	-TCLP SVOAs Prep Extraction to Analysis ≤40 days			X		
	-TCLP Pesticides to TCLP Extraction ≤14 days			X		
	-TCLP Pesticides TCLP Extraction to Prep Extraction ≤7 days			X		
	-TCLP Pesticides Prep Extraction to Analysis ≤40 days			X		
	-TCLP Herbicides to TCLP Extraction ≤14 days			X		
	-TCLP Herbicides TCLP Extraction to Prep Extraction ≤7 days			X		

Analytical Data Review
Verification Checklist

Laboratory:	TestAmerica	SOW or Contract No.:	Outfall 200
Verifier Name:	JD Milloway	Date Verified:	9/21/16
SDG No(s).	18615-1; 18615-2		

		Acceptable?				Comments
Item No.	Criteria	Yes	No	NA	NR	
	-TCLP Herbicides Prep Extraction to Analysis ≤40 days			X		
	TOC ≤28 days	X				
	-Hexane Extractable Material, Oil and Grease ≤28 days	X				
	-Chloride, Fluoride, Nitrate, Sulfate ≤28 days	X				
	-Cyanide ≤14 days	X				
	-Sulfide ≤7 days	X		X		
	-pH – immediately		X			Needs to be done in the field
	-Specific Conductance - immediately			X		
	-Radionuclides 180 days (best practice)	X				