Sample Format VI Report

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FINAL REPORT FOR TANK 241-AY-101 GRAB SAMPLING AND CHARACTERIZATION OF DOUBLE-SHELL TANK SUPERNATANT AND SOLIDS

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FINAL REPORT FOR TANK 241-AY-101 GRAB SAMPLING AND CHARACTERIZATION OF DOUBLE-SHELL TANK SUPERNATANT AND SOLIDS

1.0 INTRODUCTION

This document presents the final results for the liquid grab samples taken from tank 241-AY-101 on June 11, 2013 through June 13, 2013. The samples were analyzed in accordance with RPP-PLAN-54804, *Tank 241-AY-101 Grab Sampling and Analysis Plan* (TSAP); ATL-MP-1011, *ATL Quality Assurance Project Plan for 222-S Laboratory* (QAPP); SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*; and the additional guidance given in verbal and electronic communications.

Due to the hazardous and complex nature of Hanford tank waste samples, most SW-846 test methods performed at the 222-S Laboratory contain deviations that are listed in an appendix to the analytical procedures. All other known deviations or variances from SW-846 are documented in this narrative.

The following attachments are included in this report.

Attachment 1	Data Summary Report
Attachment 2	Non-Requested Analyte Results
Attachment 3	Sample Breakdown Diagrams
Attachment 4	Holding Time Report
Attachment 5	Correspondence
Attachment 6	Sample Photographs
Attachment 7	Receipt Paperwork
Attachment 8	Raw Data for Thermogravimetric Analysis (TGA) and Hydroxide (OH)
Attachment 9	Additional Quality Control (QC) Results

Three characterization change notices (CCNs) were issued. The first (13-CCN-09) required Table A-1 columns and footnotes be changed from µg/mL to µCi/mL; this modification had no effect on the laboratory's ability to analyze the samples. The second (13-CCN-10) deleted sample 1AY-13-03, revised the sampling location of samples 1AY-13-04 and 1AY-13-05, and added ammonia analysis to samples 1AY-13-10 and 1AY-13-10A. The third (13-CCN-11) revised the list of requested analyses for solid sample 1AY-13-10 and deleted sample 1AY-13-10A.

2.0 SAMPLE RECEIPT AND APPEARANCE INFORMATION

Sampling and receipt dates, and a description of the samples are presented in Table 1.

Table 1. Sample Receipt and Appearance Information

Sample Identification	Date Sampled	Date Received	Sample Weight (g)	Sample Description
1AY-13-01FB	06/11/2013 10:10	06/11/2013 14:00	306.4	250 mL of clear yellow liquid; no visible solids; no organic layer
1AY-13-01	06/11/2013 10:17	06/11/2013 14:00	334	250 mL of clear yellow liquid; no visible solids; no organic layer
1AY-13-01A	06/11/2013 10:26	06/11/2013 14:00	333.2	250 mL of clear yellow liquid; no visible solids; no organic layer
1AY-13-01B	06/11/2013 10:31	06/11/2013 14:00	328.1	250 mL of clear yellow liquid; no visible solids; no organic layer
1AY-13-01DUP	06/11/2013 10:37	06/11/2013 14:00	333.2	250 mL of clear yellow liquid; no visible solids; no organic layer
1AY-13-02	06/11/2013 10:46	06/11/2013 14:00	331.1	250 mL of clear yellow liquid; no visible solids; no organic layer
1AY-13-02A	06/11/2013 10:53	06/11/2013 14:00	333.2	250 mL of clear yellow liquid; no visible solids; no organic layer
1AY-13-04	06/11/2013 10:59	06/11/2013 14:00	335.5	250 mL of clear yellow liquid; no visible solids; no organic layer
1AY-13-05	06/11/2013 13:11	06/12/2013 10:30	332.1	250 mL of clear yellow liquid; no visible solids; no organic layer
1AY-13-06	06/11/2013 13:17	06/12/2013 10:30	338.4	250 mL of clear yellow liquid; no visible solids; no organic layer
1AY-13-07	06/11/2013 13:23	06/12/2013 10:30	348.4	250 mL of clear yellow liquid; no visible solids; no organic layer
1AY-13-08	06/11/2013 13:30	06/12/2013 10:30	351.8	250 mL of clear yellow liquid; no visible solids; no organic layer
1AY-13-09	06/11/2013 13:51	06/12/2013 10:30	360.7	250 mL of clear yellow liquid; no visible solids; no organic layer
1AY-13-10	06/13/2013 10:04	06/13/2013 11:07	356.5	250 mL of dark brown liquid; settled solids observed; no organic layer

As stated in the TSAP, refrigeration and preservation are not appropriate for Hanford waste tank samples. Therefore, the subsamples were not refrigerated prior to analysis and no preservatives were added to the samples.

The descriptions in Table 1 were recorded after the samples were loaded into the hot cell. Pictures of the samples upon receipt are included in Attachment 6.

3.0 ANALYTICAL RESULTS SUMMARY

The Data Summary Report (Attachment 1) presents the final analytical results for all analytes requested in the TSAP. Additional non-requested analytes are reported in Attachment 2. There were no customer-defined QC parameters for these non-requested analytes. The TSAP requests that all available analytes for inductively coupled plasma/atomic emission spectroscopy (ICP/AES) and ion chromatography (IC) analysis be reported. The ICP/AES and IC non-requested analytes are reported in Attachment 2.

The "Det Limit" column in Attachments 1 and 2 contains the method detection limit (MDL) for inorganic constituents or the minimum detectable activity (MDA) for isotopes determined by radiochemical techniques.

In Attachments 1 and 2, the column labeled "A#" indicates the aliquot class or the method used for sample preparation before analysis. Analysis without letter identifiers in this column were analyzed directly, with no separate preparation procedure, or with sample preparation performed as part of the analytical procedure. The aliquot classes are defined as follows:

- "A" indicates samples were prepared using SW-846 3050C acid digest.
- "O" indicates samples were prepared by methylene chloride extraction.
- "HG" indicates acid digestion was performed for mercury analyses following SW-846 7470A.
- "S" indicates samples were prepared by a distillation.
- "W" indicates samples were prepared using a water leach.

The "Qual Flags" column in Attachments 1 and 2 contains data qualifier flags that are defined as follows:

- "B" indicates the blank result is greater than 5% of the sample result.
- "E" indicates the reported result is outside of the calibration range. For this report, this flag is used for pH measurements greater than pH 12.
- "J" indicates the reported result should be considered an estimate because of increased uncertainty near the detection limit. The "J" flag is applied to sample concentrations that are greater than the MDL but less than the quantitation limit or have sample activity with a counting uncertainty greater than 30%.
- "Q" indicates the result is qualitative only.
- "U" indicates the reported result is less than the calculated detection limit.
- "I" indicates the calibration for the reported result used an indirect method (isotope substitution).
- "Y" is a user defined flag. For this report, it is used to indicate a possible high bias.

- “a” indicates the laboratory control sample (LCS) is outside of the specified range in the QAPP or TSAP.

Manual calculations using rounded results from the Data Summary Report or result calculation forms may differ slightly from the actual results derived from the raw data.

3.1 HOLDING TIMES

The TSAP indicates the laboratory is expected to meet the holding times specified in SW-846. Because highly radioactive samples may require additional time to ship and break down in the hot cells, the TSAP recognizes the shorter holding times may not be met. Due to the time needed to process the samples in the hot cells, holding times for pH were exceeded for all samples. Due to re-runs, the holding times for the total inorganic carbon/total organic carbon (TIC/TOC) analyses were exceeded for samples 1AY-13-01, 1AY-13-06, and 1AY-13-09. Actual holding times and sampling dates can be found in Attachment 4.

3.2 INORGANIC ANALYSES

3.2.1 Density

Density was measured on all primary tank samples. All requirements in the QAPP and the TSAP were met. A sample size of 5 mL was used to improve the precision of the measurement.

3.2.2 Bulk Density

Bulk density was determined for the centrifuged solids from sample 1AY-13-10. There was no laboratory control sample (LCS) for this analysis. Bulk density was calculated from the weights and volumes of solids after the centrifugation was complete; therefore, no duplicate results were available.

3.2.3 pH

The pH was measured on the field blank and all primary tank samples except the solids separated from sample 1AY-13-10. The holding time in SW-846 is indicated as “immediate,” which is not a laboratory holding time. Due to the delays in delivery of the samples and the hot cell breakdown, the time between sampling and analysis was between 29 and 52 hours. For the pH analysis, LCS and continuing calibration verification standard were within the required ±0.1 pH unit of their true value. The highest point of the calibration was 12 pH units. Samples 1AY-13-07, 1AY-13-08, 1AY-13-09, and 1AY-13-10 were measured above the calibration range and were flagged with an “E”. All QC requirements were met. The pH results were less than the calculated pH from the hydroxide analysis, which should be considered the more accurate measurement under these conditions.

3.2.4 Hydroxide

The free OH analysis was performed on all primary tank samples except the solids separated from sample 1AY-13-10. All requirements in the QAPP and the TSAP were met. Since all results were above the EQL, the detection limit requirements in the TSAP were met.

3.2.5 Percent Water-Thermogravimetric Analyzer

The percent water analysis was performed on all primary tank samples except the solids separated from sample 1AY-13-10. The percent weight loss was measured using TGA. The results were reported as percent water in Attachment 1 with the assumption that all weight loss below 250°C was due to water loss. This assumption might be incorrect because there could be other gaseous reaction products that contribute to weight loss below 250°C which are not easily differentiated using this method. However, based on the type of sample (high pH liquid tank waste) and the fact that the majority of the weight loss occurred below 120°C, the laboratory believes the results of this analysis can be interpreted to be percent water. The LCS recoveries and relative percent differences (RPDs) met the criteria in the TSAP.

3.2.6 Mercury-Cold Vapor/Atomic Absorption

Mercury analysis was performed on all primary tank samples except the solids separated from sample 1AY-13-10. There were no notable issues, and all QC requirements in the TSAP and the QAPP were met. There is no required reporting limit in the TSAP for mercury.

3.2.7 Anions-Ion Chromatography

The IC analysis for anions was performed on all primary tank samples and the field blank. The detection limit requirements in the TSAP were met for all samples. In batch 42087, sample 1AY-13-10, sulfate was detected in the preparation blank below the estimated quantitation limit (EQL), and the usability of the data was not affected. There were no notable issues, and all QC requirements in the TSAP and the QAPP were met.

3.2.8 Ammonium-Ion Chromatography

The IC analysis for ammonium was performed on the field blank and all primary tank samples except the solids separated from sample 1AY-13-10. For batch 41734, ammonium was present in the preparation blank below the EQL. However since the preparation blank was less than 5% of the sample concentration the data usability was not affected. For batch 41766, ammonium was present in the preparation blank below the EQL, but greater than 5% of the sample concentration for 1AY-13-06 and 1AY-13-07. However, since the result of the preparation blank is below the EQL there is no effect on the sample results. Both samples have been “B” flagged. There are no detection limit requirements in the TSAP for ammonium. There were no other notable issues, and all other QC requirements in the TSAP and the QAPP were met.

3.2.9 Cyanide

The cyanide analysis was performed by distillation and spectrophotometry. The cyanide analysis was performed on all primary tank samples except the solids separated from sample 1AY-13-10. There are no detection limit requirements in the TSAP for cyanide. There were no notable issues, and all QC requirements in the TSAP and the QAPP were met.

3.2.10 Inductively Coupled Plasma/Atomic Emission Spectroscopy

The ICP/AES analysis was performed on the field blank and all primary tank samples. There are no required reporting limits for this analysis. Three batches were processed for this analysis.

For batch 41784, results above the EQL for manganese, neodymium, uranium, vanadium, and results above the MDL for boron and strontium were present in the first and last interference check standard (ICSA). This could indicate a high bias for boron and strontium. Boron and strontium have been "Y" flagged. However, since manganese, neodymium, uranium, and vanadium results are less than the MDL data usability was not affected. The RPD for nickel and tin exceeded 20% however, since the sample results for both were below the EQL this criterion does not apply. Liquid samples analyses for silver, lithium, thallium, and thorium were reanalyzed by inductively coupled plasma/mass spectroscopy (ICP/MS).

For batch 42099, sample results above the EQL for vanadium were present in the first and last ICSA. This could indicate a high bias due to uncorrected inter-element interferences. However, since the sample result was less than the MDL data usability was not affected. Tantalum recovery in the LCS was below the acceptance of 80% to 120% at 78%. An "a" flag was applied to the result. The pre-digest solid sample spike recovery was outside the acceptance criteria for sample 1AY-13-10. Due to limited solid sample the pre-digest spike was unable to be re-digested and was not reported. The tank coordinator was notified via phone communication of the limited amount of solid sample.

For batch 42332, all boron results in the ICSAs were above the EQL. This could indicate a high bias due to uncorrected inter-element interferences. However, since the sample result was greater than ten times the concentration of the ICSA, data usability is not affected. Due to analytical error the pre-digest solid sample spike recovery was outside the acceptance criteria for solid sample 1AY-13-10. Due to limited sample the pre-digest spike was unable to be re-digested and was not reported. The tank coordinator was notified via phone communication of the limited amount of solid sample. Solid sample analyses for lithium, manganese, thallium, thorium, and uranium were reanalyzed by ICP/MS.

3.2.11 Inductively Coupled Plasma/Mass Spectroscopy

The ICP/MS analysis was performed on the field blank and all primary tank samples. Four separate analyses (^{99}Tc, actinides, ^{126}Sn, and metal isotopes) were performed using ICP/MS.

Direct is the most accurate type of calibration; however, standard material is not commercially available for all isotopes of interest. Concentrations of those isotopes without available standards are estimated based on the instrument's response to another isotope of the same element, which is known as "isotopic substitution" and is an indirect method of calibration. All isotope concentrations determined using isotopic substitution were flagged with an "I".

Table 2. Inductively Coupled Plasma/Mass Spectroscopy Standards and Spikes

Standard Type	Isotopes
Direct calibration standards	^{232}Th, ^{233}U, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn

Table 2. Inductively Coupled Plasma/Mass Spectroscopy Standards and Spikes

Standard Type	Isotopes
Matrix spike, laboratory control standard, and calibration verification standards	^{232}Th, ^{233}U, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc
Isotope substitution	^{234}U (^{235}U), ^{236}U (^{235}U), ^{230}Th (^{232}Th), ^{231}Pa (Th^{232}), ^{126}Sn (^{117}Sn)

Technetium-99

There is no required detection limit in the TSAP for ^{99}Tc. For sample 1AY-13-10 the internal standard response was above the acceptance criteria. There were no notable issues, and all QC requirements in the TSAP and the QAPP were met.

Technetium-99 analysis by ICP/MS is subject to isobaric interference from natural ruthenium, cobalt argide, and zinc chloride ions. To help eliminate the polyatomic interferences, these samples were analyzed using an ICP/MS with a collision cell. Interference from natural ^{99}Ru seems unlikely since none of the more abundant isotopes (100, 101, and 102) were detected and all results were above the EQL.

Actinides

There are no reporting limit requirements listed in the TSAP for the actinides. For sample 1AY-13-01, the RPD was greater than 20% for ^{234}U. Since the sample result was below the EQL, the data usability was not affected and reanalysis was not required. The serial dilution sample had greater than 10% difference. Since the sample result is less than the detection limit, the data usability was not affected and reanalysis was not required.

Tin-126

There are no reporting limit requirements listed in the TSAP for tin. There were no other notable QC issues for this analysis. In order to demonstrate batch precision and accuracy stability ^{117}Sn has been use as chemical surrogate or ^{126}Sn and reported in Attachment 1.

Metal Isotopes

For batch 42337, the ending Low Level Standard (LLS) for silver was below the acceptance criteria of 75% to 125% at 68%. However, since the sample results are greater than a 1000 times the LLS concentration the CCV serves as a better indicator that the instrument is within control, the data usability was not affected and reanalysis was not required.

For batch 42400, the predigest spike was not analyzed due to incorrect spike volumes. A post digest spike was analyzed within the acceptance criteria and used for this batch.

For batch 42402, the predigest spike was not analyzed due to incorrect spike volumes. A post digest spike was analyzed within the acceptance criteria and used for this batch. The serial dilution for ^{234}U was greater than 10% however, the sample result was not greater than 100X the

detection limit therefore the acceptance criteria does not apply and data usability was not affected. The interference check standard (ICS) was above the detection limit for ^{232}Th and ^{238}U, but less than the EQL therefore data usability was not affected and reanalysis was not required.

3.2.12 Carbon Analyses

Carbon analysis was performed on all primary tank samples except the solids separated from sample 1AY-13-10. The carbon analysis was scheduled to be performed on the solids separated from sample 1AY-13-10 but, due to limited sample, the analysis was not performed. The carbon analysis was performed by both furnace oxidation (for TOC and total carbon [TC]) and silver catalyzed persulfate oxidation (for TIC/TOC). All analyses met the 28-day SW-846 holding time for TOC except for samples 1AY-13-01, 1AY-13-06, and 1AY-13-09 due to re-analysis. There is no SW-846 holding time for TIC or TC. There are no required detection limits for these analyses. The LCS and MS recoveries and RPDs met the criteria listed in the TSAP.

3.3 RADIOCHEMICAL ANALYSIS

Radiochemical analysis was performed on all primary tank samples and the solids separated from sample 1AY-13-10. There is no SW-846 holding time for radioactive isotopes. Attachment 4 lists the time of analysis for these methods.

3.3.1 Gamma Energy Analysis

Gamma energy analysis was performed directly on approximately 0.1-mL aliquots of all liquid samples except suffix A samples, the suffix B sample, and the solids separated from sample 1AY-13-10. The TSAP requires the reporting of all isotopes with positive results above the MDA; therefore, isotopes additional to those required in the TSAP were reported when detected. Ambient levels of radon decay daughters were not reported. No additional isotopes were reported. There is no required detection limit in the TSAP for GEA. There were no notable issues with this batch, and all QC requirements in the TSAP and the QAPP were met.

3.3.2 Iodine-129

Analysis for ^{129}I by low energy GEA was performed on the field blank and all primary tank samples except the solids separated from sample 1AY-13-10. There is no required detection limit in the TSAP for ^{129}I. There were no notable issues, and all QC requirements in the TSAP and the QAPP were met.

3.3.3 Carbon-14

The ^{14}C analysis by liquid scintillation counting (LSC) was performed on all primary tank samples except the solids separated from sample 1AY-13-10. There is no required detection limit in the TSAP for ^{14}C. ^{14}C was present above the detection limit in the blank. However, since the blank was less than 5% of the samples concentration the data usability was not affected. There were no issues with this analysis, and all QC requirements in the TSAP and the QAPP were met.

3.3.4 Tritium

The ^{3}H analysis by LSC was performed on all primary tank samples except the solids separated from sample 1AY-13-10. There is no required detection limit in the TSAP for ^{3}H. There were no notable issues, and all QC requirements in the TSAP and the QAPP were met.

3.3.5 Strontium-89/90

Strontium-89/90 analysis was performed on all primary tank samples except the solids separated from sample 1AY-13-10. The TSAP requested ^{90}Sr, not $^{89/90}Sr$, be reported. The 222-S Laboratory only performs the latter analysis. Since the half-life for ^{89}Sr is approximately 51 days and ^{89}Sr has not been produced at Hanford for years, $^{89/90}Sr$ is essentially ^{90}Sr. There is no required detection limit in the TSAP for ^{90}Sr. $^{89/90}Sr$ was present above the detection limit in the blank. However, since the blank was below the quantitation limit and the counting error was greater than 30% this criterion does not apply and data usability was not affected. There were no other notable issues with these batches, and all QC requirements in the TSAP and the QAPP were met.

3.3.6 Technetium-99

The ^{99}Tc analysis by LSC was performed on all primary tank samples except the solids separated from sample 1AY-13-10. There is no required detection limit in the TSAP for ^{99}Tc. ^{99}Tc was present above the detection limit in the blank. However, since the blank was less than 5% of the samples concentration the data usability was not affected. There were no other notable issues, and all other QC requirements in the TSAP and the QAPP were met.

3.3.7 Technetium-99-No Oxidation

The ^{99}Tc–No Oxidation analysis by LSC was performed on all primary tank samples except the solids separated from sample 1AY-13-10. There is no required detection limit in the TSAP for ^{99}Tc–No Oxidation. There were no notable issues, and all QC requirements in the TSAP and the QAPP were met

3.3.8 Selenium-79

The ^{79}Se analysis by LSC was performed on all primary tank samples except the solids separated from sample 1AY-13-10. No standard is currently available for ^{79}Se; a cold carrier is used to monitor recovery and is measured gravimetrically. The ^{14}C LSC curve is used to determine the ^{79}Se results since their energies are similar. The sample/duplicate relative percent difference for ^{79}Se was greater than the TSAP required 20%. Since the duplicate result is less than the quantitation limit the criteria does not apply. There is no required detection limit in the TSAP for ^{79}Se. There were no other notable issues, and all other QC requirements in the TSAP and the QAPP were met.

3.3.9 Americium-241 and Curium-243/244

Analysis for ^{241}Am and $^{243/244}Cm$ by alpha energy analysis (AEA) was performed on all primary tank samples except the solids separated from sample 1AY-13-10. ^{241}Am was present above the

detection limit in the blank. The blank concentration was greater than 5% of sample 1AY-13-08. Sample 1AY-13-08 was reanalyzed and results did not improve due to the low sample concentration, a "B" flag was applied to the result. For all remaining samples, the blank was less than 5% of the sample concentration; the data usability was not affected. There are no required detection limits in the TSAP for ^{241}Am and $^{243/244}$Cm. There were no other notable issues, and all QC requirements in the TSAP and the QAPP were met.

3.3.10 Plutonium-238 and Plutonium-239/240

Plutonium isotopic (^{238}Pu and $^{239/240}$Pu) analysis by AEA was performed on all primary tank samples except the solids separated from sample 1AY-13-10. $^{239/240}$Pu was present above the detection limit in the blank. However, since the blank result was below the quantitation limit and the counting error was greater than 30% this criterion does not apply and data usability was not affected. There is no required detection limit in the TSAP for ^{238}Pu and $^{239/240}$Pu . There were no other notable issues, and all QC requirements in the TSAP and the QAPP were met.

3.3.11 Plutonium-241

Plutonium isotopic (^{241}Pu) analysis by LSC was performed on all primary tank samples except the solids separated from sample 1AY-13-10. There is no required detection limit in the TSAP for ^{241}Pu. There were no notable issues, and all QC requirements in the TSAP and the QAPP were met.

3.4 ORGANIC ANALYSIS – POLYCHLORINATED BIPHENYLS

The polychlorinated biphenyls (PCB) analysis was performed on methylene chloride extractions of all primary tank samples except the solids separated from sample 1AY-13-10. The LCS, MS, and matrix spike duplicate (MSD) consisted of only Aroclor-1254, the most common Aroclor detected in Hanford Site samples. The TSAP lists no required detection limit. There were no notable issues, and all other QC requirements in the TSAP and the QAPP were met.

4.0 PROCEDURES

Table lists the procedures used in analyzing the samples contained in this report.

Table 3. Analytical Procedures

Analysis	Preparation Method	Analysis Procedure
Inorganic Analyses		
Appearance	Direct	LA-519-151, Rev. L-0
Density	Direct	LA-510-112, Rev. K-1-A
pH	Direct	LA-212-106, Rev. I-0 (SW-846 9040C)
OH	Direct	LA-211-102, Rev. J-0-A

Table 3. Analytical Procedures

Analysis	Preparation Method	Analysis Procedure
TGA	Direct	LA-514-115, Rev. H-0
Mercury – Cold Vapor Atomic Absorption	LA-325-110, Rev. B-0-A (SW-846 7470A)	LA-325-110, Rev. B-0-A (SW-846 7470A)
Anions & Organic Acids – IC (Liquid)	Direct	LA-533-166, Rev. B-1-A (SW-846 9056A)
Anions & Organic Acids – IC (Solid)	LA-504-101, Rev. N-0	LA-533-166, Rev. B-1-A (SW-846 9056A)
Ammonia – IC	LA-544-112, Rev. G-0	LA-503-157, Rev. B-0-A
Cyanide	LA-695-102, Rev. M-0-A (SW-846 9010C)	LA-695-102, Rev. M-0-A (SW-846 9014)
Metals – ICP/AES (Liquid)	Direct	LA-505-174, Rev. A-0 (SW-846 6010C)
Metals – ICP/AES (Solid)	LA-505-163, Rev. H-0-A (SW-846 3050B)	LA-505-174, Rev. A-0 (SW-846 6010C)
^{99}Tc – ICP/MS	Direct	LA-506-103, Rev. B-1
Actinides – ICP/MS	Direct	LA-506-102, Rev. G-1
^{126}Sn – ICP/MS	Direct	LA-506-102, Rev. G-1
TIC/TOC – Persulfate Oxidation	LA-342-100, Rev. L-0-B SM 5310C	LA-342-100, Rev. L-0-B SM 5310C
TOC/Total Carbon – Furnace Oxidation	LA-344-105, Rev. L-0-A SM 5310B	LA-344-105, Rev. L-0-A SM 5310B
Radiochemical Analyses		
GEA	LA-548-121, Rev. J-0	LA-508-167, Rev. A-0-A
^{79}Se – Separation/LSC	LA-365-132, Rev. L-0	LA-508-121, Rev. G-0
$^{89/90}$Sr – Separation/GPC	LA-220-101, Rev. K-0	LA-508-114, Rev. H-1
^{129}I – Separation/LSC	LA-378-103, Rev. N-0	LA-508-167, Rev. A-0-A
^{99}Tc – Separation/LSC	LA-378-103, Rev. N-0	LA-508-167, Rev. A-0-A
^{99}Tc – Separation/LSC – No Oxidation	LA-438-101, Rev. M-0	LA-508-121, Rev. G-0
^{99}Tc – Separation/LSC – With Oxidation	LA-438-101, Rev. M-0	LA-508-121, Rev. G-0

Table 3. Analytical Procedures

Analysis	Preparation Method	Analysis Procedure
^{14}C – Separation/LSC	LA-348-104, Rev. K-0	LA-508-121, Rev. G-0
^{3}H – Separation/LSC	LA-218-114, Rev. H-0	LA-508-121, Rev. G-0
^{241}Am, $^{243/244}Cm$ – Separation/AEA	LA-953-104, Rev. J-0-B-1	LA-508-168, Rev. A-0-A
^{241}Pu – Separation/LSC	LA-953-104, Rev. J-0-B-1	LA-508-121, Rev. G-0
^{241}Pu – Separation/AEA	LA-953-104, Rev. J-0-B-1	LA-508-168, Rev. A-0-A
$^{239/240, 238}Pu$ – Separation/AEA	LA-953-104, Rev. J-0-B-1	LA-508-168, Rev. A-0-A
Organic Analyses		
PCB – GC/Electron Capture Detector	LA-523-115, Rev. I-1-A (SW-846 3520C)	LA-523-140, Rev. H-0-A (SW-846 8082A)

5.0 REFERENCES

ATL-MP-1011, 2012, *ATL Quality Assurance Project Plan for 222-S Laboratory*, Revision 11-A, Advanced Technologies and Laboratories International, Inc., Richland, Washington.

RPP-PLAN-54804, *Tank 241-AY-101 Grab Sampling and Analysis Plan*, Revision 1, Washington River Protection Solutions, LLC, Richland, Washington.

SW-846, 1986, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*, Third Edition, as amended, U.S. Environmental Protection Agency, Washington, D.C.

Attachment 1

DATA SUMMARY REPORT

15 - Aug - 2013 10:12:54
DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-01
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
% Water by TGA															
S13T006565			%WATER	Percent water	%	101	n/a	91.4	91.2	91.3	0.197	n/a	0.0100	n/a	
Am241,Cm243 by TRU-Spec Resin															
S13T006568			CM-243/244	Curium-243/244	uCi/mL	n/a	<1.48E-07	<1.63E-07	<2.06E-07	n/a	n/a	n/a	1.63E-07	n/a	U
S13T006568			14596-10-2	Americium-241	uCi/mL	101	<1.28E-07	1.22E-05	1.23E-05	1.22E-05	0.816	n/a	1.05E-07	3.49	
Ammonium by IC															
S13T006564		S	14798-03-9	Ammonium	ug/mL	100	0.600	43.8	43.6	43.7	0.595	94.0	0.240	n/a	
Anions and Small Organic Acids															
S13T006565			16984-48-8	Fluoride	ug/mL	101	<1.61E-03	654	n/a	n/a	n/a	n/a	4.02	n/a	
S13T006565			16887-00-6	Chloride	ug/mL	102	<9.98E-03	304	n/a	n/a	n/a	n/a	25.0	n/a	
S13T006565			14797-65-0	Nitrite	ug/mL	98.2	<0.0192	6.64E+03	n/a	n/a	n/a	n/a	48.0	n/a	
S13T006565			14808-79-8	Sulfate	ug/mL	103	0.0530	960	n/a	n/a	n/a	n/a	46.8	n/a	
S13T006565			338-70-5	Oxalate	ug/mL	101	<0.0231	479	n/a	n/a	n/a	n/a	57.8	n/a	J
S13T006565			24959-67-9	Bromide	ug/mL	102	<0.0580	<145	n/a	n/a	n/a	n/a	145	n/a	U
S13T006565			14797-55-8	Nitrate	ug/mL	104	<0.0208	2.48E+04	n/a	n/a	n/a	n/a	52.0	n/a	
S13T006565			14265-44-2	Phosphate	ug/mL	102	<0.0167	1.22E+03	n/a	n/a	n/a	n/a	41.8	n/a	
Carbon 14 by LSC															
S13T006568			14762-75-5	Carbon-14	uCi/mL	93.2	3.30E-06	1.79E-04	1.55E-04	1.67E-04	14.4	91.0	2.94E-06	3.16	
Combination of ICP/MS Low and High Mass Methods															
S13T006565			7440-22-4	Silver	ug/mL	108	<8.00E-06	1.70	1.66	1.68	2.08	100	0.0800	n/a	
S13T006565			7439-93-2	Lithium	ug/mL	105	<1.00E-05	<0.100	<0.100	n/a	n/a	105	0.100	n/a	U
S13T006565			7440-28-0	Thallium	ug/mL	99.3	<4.00E-06	<0.0400	<0.0400	n/a	n/a	100	0.0400	n/a	U
Cyanide Water Distillation															
S13T006566			57-12-5	Cyanide	ug/mL	96.4	<8.12E-03	9.94	9.37	9.65	5.91	100	2.03	n/a	J
Density in Hotcells															
S13T006562			Density	Density	g/mL	100.4	n/a	1.061	1.065	1.063	0.3763	n/a	1.000E-03	n/a	
GEA															
S13T006568			10198-40-0	Cobalt-60	uCi/mL	101	<2.06E-04	6.92E-04	<8.57E-04	n/a	n/a	n/a	2.61E-04	17.98	
S13T006568			14681-63-1	Niobium-94	uCi/mL	n/a	<1.75E-04	<3.09E-04	<7.06E-04	n/a	n/a	n/a	3.09E-04	n/a	U

NA = Not Analyzed, ND = Not Detected

E - Outside Calibration Range
a - LCS Outside Range
J - Estimated
U - Less Than Detection Limit
Q - Qualitative
I - Indirect Calibration
Y - Comment
B - Blank Contamination

AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-01
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
GEA															
S13T006568			RU/RH-106	Ruthenium/Rhodium-106	uCi/mL	n/a	<1.38E-03	<0.0172	<0.0488	n/a	n/a	n/a	0.0172	n/a	U
S13T006568			14234-35-6	Antimony-125	uCi/mL	n/a	<4.27E-04	<0.0105	<0.0322	n/a	n/a	n/a	0.0105	n/a	U
S13T006568			13967-70-9	Cesium-134	uCi/mL	n/a	<9.22E-04	<0.0116	<0.0390	n/a	n/a	n/a	0.0116	n/a	U
S13T006568			10045-97-3	Cesium-137	uCi/mL	106	<2.44E-04	10.8	10.9	10.9	1.55	n/a	2.37E-03	0.05	
S13T006568			14762-78-8	Cerium-144	uCi/mL	n/a	<7.58E-04	<0.0129	<0.0486	n/a	n/a	n/a	0.0129	n/a	U
S13T006568			14683-23-9	Europium-152	uCi/mL	n/a	<4.31E-04	<8.74E-03	<2.18E-02	n/a	n/a	n/a	8.74E-03	n/a	U
S13T006568			15585-10-1	Europium-154	uCi/mL	n/a	<5.42E-04	<7.94E-04	<2.25E-03	n/a	n/a	n/a	7.94E-04	n/a	U
S13T006568			14391-16-3	Europium-155	uCi/mL	n/a	<3.44E-04	<6.02E-03	<3.05E-02	n/a	n/a	n/a	6.02E-03	n/a	U
Hot Cell Breakdown															
S13T006562			ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T006562			VOL%SETS	Volume percent settled solids	%	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
Hot Cell pH															
S13T006562			PH	pH	unitless	n/a	n/a	12.8	12.8	12.8	0.469	n/a	0.0100	n/a	
ICP-AES															
S13T006565			7429-90-5	Aluminum	ug/mL	97.9	<6.00E-03	936	917	926	2.06	97.1	6.00	n/a	
S13T006565			7440-38-2	Arsenic	ug/mL	98.6	<5.00E-03	<5.00	<5.00	n/a	n/a	98.2	5.00	n/a	U
S13T006565			7440-42-8	Boron	ug/mL	103	<1.00E-03	<1.00	<1.00	n/a	n/a	97.0	1.00	n/a	U
S13T006565			7440-39-3	Barium	ug/mL	102	<1.00E-03	<1.00	<1.00	n/a	n/a	95.7	1.00	n/a	U
S13T006565			7440-41-7	Beryllium	ug/mL	102	<1.00E-03	<1.00	<1.00	n/a	n/a	95.3	1.00	n/a	U
S13T006565			7440-69-9	Bismuth	ug/mL	101	<6.00E-03	<6.00	<6.00	n/a	n/a	97.2	6.00	n/a	U
S13T006565			7440-70-2	Calcium	ug/mL	101	<0.0800	<80.0	<80.0	n/a	n/a	91.9	80.0	n/a	U
S13T006565			7440-43-9	Cadmium	ug/mL	101	<1.00E-03	2.23	2.14	2.18	4.14	95.1	1.00	n/a	J
S13T006565			7440-45-1	Cerium	ug/mL	103	<6.00E-03	<6.00	<6.00	n/a	n/a	97.7	6.00	n/a	U
S13T006565			7440-48-4	Cobalt	ug/mL	102	<1.00E-03	1.32	<1.00	n/a	n/a	95.9	1.00	n/a	J
S13T006565			7440-47-3	Chromium	ug/mL	103	<1.00E-03	52.3	51.5	51.9	1.45	94.7	1.00	n/a	
S13T006565			7440-50-8	Copper	ug/mL	104	<2.00E-03	<2.00	<2.00	n/a	n/a	99.3	2.00	n/a	U
S13T006565			7439-89-6	Iron	ug/mL	104	<0.0100	<10.0	<10.0	n/a	n/a	94.5	10.0	n/a	U

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15 - Aug - 2013 10:12:54
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DSR.Jar v. 2.7.31

AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-01
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006565			7440-09-7	Potassium	ug/mL	103	<0.0200	178	172	175	3.00	101	20.0	n/a	J
S13T006565			7439-91-0	Lanthanum	ug/mL	104	<1.00E-03	<1.00	<1.00	n/a	n/a	97.1	1.00	n/a	U
S13T006565			7439-95-4	Magnesium	ug/mL	103	<2.00E-03	<2.00	<2.00	n/a	n/a	99.4	2.00	n/a	U
S13T006565			7439-96-5	Manganese	ug/mL	104	<1.00E-03	<1.00	<1.00	n/a	n/a	95.4	1.00	n/a	U
S13T006565			7439-98-7	Molybdenum	ug/mL	100	<1.00E-03	3.78	4.25	4.01	11.5	96.2	1.00	n/a	J
S13T006565			7440-23-5	Sodium	ug/mL	104	<0.0400	2.92E+04	2.88E+04	2.90E+04	1.57	83.9	40.0	n/a	
S13T006565			7440-00-8	Neodymium	ug/mL	106	<3.00E-03	<3.00	<3.00	n/a	n/a	96.8	3.00	n/a	U
S13T006565			7440-02-0	Nickel	ug/mL	102	<1.00E-03	5.68	4.62	5.15	20.6	95.5	1.00	n/a	J
S13T006565			7723-14-0	Phosphorus	ug/mL	101	<3.00E-03	461	450	455	2.60	97.9	3.00	n/a	
S13T006565			7439-92-1	Lead	ug/mL	101	<6.00E-03	<6.00	<6.00	n/a	n/a	101	6.00	n/a	U
S13T006565			7440-05-3	Palladium	ug/mL	107	<9.00E-03	<9.00	<9.00	n/a	n/a	97.2	9.00	n/a	U
S13T006565			7440-10-0	Praseodymium	ug/mL	107	<4.00E-03	<4.00	<4.00	n/a	n/a	96.7	4.00	n/a	U
S13T006565			7440-17-7	Rubidium	ug/mL	101	<0.0300	<30.0	<30.0	n/a	n/a	96.2	30.0	n/a	U
S13T006565			7440-16-6	Rhodium	ug/mL	97.3	<8.00E-03	<8.00	<8.00	n/a	n/a	96.7	8.00	n/a	U
S13T006565			7440-18-8	Ruthenium	ug/mL	104	4.48E-03	<4.00	4.96	4.48	21.5	92.6	4.00	n/a	U
S13T006565			7704-34-9	Sulfur	ug/mL	101	<5.00E-03	334	330	332	1.15	98.5	5.00	n/a	
S13T006565			7440-36-0	Antimony	ug/mL	98.1	<6.00E-03	<6.00	<6.00	n/a	n/a	106	6.00	n/a	U
S13T006565			7782-49-2	Selenium	ug/mL	99.5	<6.00E-03	<6.00	<6.00	n/a	n/a	97.8	6.00	n/a	U
S13T006565			7440-21-3	Silicon	ug/mL	98.9	<5.00E-03	<5.00	7.16	6.08	35.5	102	5.00	n/a	U
S13T006565			7440-31-5	Tin	ug/mL	103	<3.00E-03	4.71	6.41	5.56	30.7	95.4	3.00	n/a	J
S13T006565			7440-24-6	Strontium	ug/mL	101	<2.00E-03	2.19	<2.00	n/a	n/a	94.6	2.00	n/a	JY
S13T006565			7440-25-7	Tantalum	ug/mL	109	<5.00E-03	<5.00	<5.00	n/a	n/a	96.1	5.00	n/a	U
S13T006565			13494-80-9	Tellurium	ug/mL	102	<5.00E-03	<5.00	<5.00	n/a	n/a	95.0	5.00	n/a	U
S13T006565			7440-32-6	Titanium	ug/mL	104	<1.00E-03	<1.00	<1.00	n/a	n/a	96.6	1.00	n/a	U
S13T006565			7440-61-1	Uranium	ug/mL	103	<0.0200	<20.0	<20.0	n/a	n/a	97.3	20.0	n/a	U
S13T006565			7440-62-2	Vanadium	ug/mL	103	<1.00E-03	<1.00	<1.00	n/a	n/a	96.0	1.00	n/a	U
S13T006565			7440-33-7	Tungsten	ug/mL	107	<6.00E-03	6.62	<6.00	n/a	n/a	95.4	6.00	n/a	J

NA = Not Analyzed, ND = Not Detected

E - Outside Calibration Range
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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-01
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006565			7440-65-5	Yttrium	ug/mL	101	<2.00E-03	<2.00	<2.00	n/a	n/a	97.4	2.00	n/a	U
S13T006565			7440-66-6	Zinc	ug/mL	100	<4.00E-03	<4.00	<4.00	n/a	n/a	96.3	4.00	n/a	U
S13T006565			7440-67-7	Zirconium	ug/mL	105	<1.00E-03	<1.00	<1.00	n/a	n/a	97.7	1.00	n/a	U
ICP/MS															
S13T006565			TH-232	Thorium-232	ug/mL	99.4	<5.00E-07	<1.25E-03	<1.25E-03	n/a	n/a	98.4	1.25E-03	n/a	U
S13T006565			13968-55-3	Uranium-233	ug/mL	102	<2.00E-07	<5.00E-04	<5.00E-04	n/a	n/a	105	5.00E-04	n/a	U
S13T006565			13966-29-5	Uranium-234	ug/mL	n/a	<5.00E-09	5.13E-05	8.55E-05	6.84E-05	50.1	n/a	1.25E-05	n/a	IJ
S13T006565			15117-96-1	Uranium-235	ug/mL	97.0	<1.00E-08	9.80E-03	9.82E-03	9.81E-03	0.234	107	2.50E-05	n/a	
S13T006565			13982-70-2	Uranium-236	ug/mL	n/a	<4.00E-09	3.26E-04	3.47E-04	3.36E-04	6.30	n/a	1.00E-05	n/a	I
S13T006565			13994-20-2	Neptunium-237	ug/mL	108	<1.00E-07	7.23E-03	7.22E-03	7.23E-03	0.0969	105	2.50E-04	n/a	
S13T006565			U-238	Uranium-238	ug/mL	100	<5.00E-07	1.45	1.44	1.44	0.277	95.6	1.25E-03	n/a	
S13T006565			SN-117	Tin-117	ug/mL	105	<1.00E-05	0.236	0.237	0.237	0.380	101	0.0100	n/a	
S13T006565			15832-50-5	Tin-126	ug/mL	n/a	<2.00E-07	6.72E-03	7.18E-03	6.95E-03	6.65	n/a	2.00E-04	n/a	I
S13T006565			14133-76-7	Technetium-99	ug/mL	98.5	<6.00E-07	0.549	0.554	0.552	1.02	88.6	6.00E-04	n/a	
Iodine-129															
S13T006568			15046-84-1	Iodine-129	uCi/mL	95.0	<1.28E-05	<1.73E-05	<1.12E-05	n/a	n/a	n/a	1.73E-05	n/a	U
Mercury by CVAA															
S13T006567		HG	7439-97-6	Mercury	ug/mL	105	<1.10E-05	0.0438	0.0432	0.0435	1.38	98.2	2.20E-03	n/a	J
OH- by Pot. Titration															
S13T006565			HYDROXIDE	Hydroxide	ug/mL	93.9	<9.22	2.93E+03	2.90E+03	2.92E+03	1.11	90.8	111	n/a	
PCB (EPA 8082) from Liquid-Liquid Extraction															
S13T006572		O	12674-11-2	Aroclor 1016	ug/L	n/a	<37.8	<37.8	<49.1	n/a	n/a	n/a	37.8	n/a	U
S13T006572		O	11104-28-2	Aroclor 1221	ug/L	n/a	<7.10	<7.10	<9.22	n/a	n/a	n/a	7.10	n/a	U
S13T006572		O	11141-16-5	Aroclor 1232	ug/L	n/a	<8.20	<8.20	<10.6	n/a	n/a	n/a	8.20	n/a	U
S13T006572		O	53469-21-9	Aroclor 1242	ug/L	n/a	<12.6	<12.6	<16.4	n/a	n/a	n/a	12.6	n/a	U
S13T006572		O	12672-29-6	Aroclor 1248	ug/L	n/a	<7.10	<7.10	<9.22	n/a	n/a	n/a	7.10	n/a	U
S13T006572		O	11097-69-1	Aroclor 1254	ug/L	82.1	<2.60	<2.60	<3.38	n/a	n/a	80.1	2.60	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-01
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
PCB (EPA 8082) from Liquid-Liquid Extraction															
S13T006572		O	11096-82-5	Aroclor 1260	ug/L	n/a	<28.6	<28.6	<37.1	n/a	n/a	n/a	28.6	n/a	U
Plutonium-241 by LSC															
S13T006568			14119-32-5	Plutonium-241	uCi/mL	106	<4.46E-05	1.12E-03	9.71E-04	1.05E-03	14.3	n/a	2.30E-05	3.765	
Pu238,239 by TRU-SPEC Resin															
S13T006568			PU-239/240	Plutonium-239/240	uCi/mL	109	1.53E-07	3.37E-04	3.18E-04	3.28E-04	5.80	n/a	1.82E-07	0.70	
S13T006568			13981-16-3	Plutonium-238	uCi/mL	n/a	<1.67E-07	8.39E-05	8.15E-05	8.27E-05	2.90	n/a	1.09E-07	1.44	
Selenium-79 by LSC															
S13T006568			15758-45-9	Selenium-79	uCi/mL	n/a	<2.87E-06	3.32E-05	1.48E-05	2.40E-05	76.4	n/a	2.98E-06	11.984	
Sr-89/90 by GPC															
S13T006568			SR-89/90	Strontium-89/90	uCi/mL	97.4	1.07E-03	0.217	0.220	0.218	1.39	n/a	3.54E-04	2.133	
TIC/TOC by Acid Persulfate															
S13T006566			TIC	Total inorganic carbon	ug/mL	101	<7.00	2.43E+03	n/a	n/a	n/a	n/a	14.0	n/a	
S13T006566			TOC	Total organic carbon	ug/mL	94.9	<20.0	562	n/a	n/a	n/a	n/a	40.0	n/a	
Technetium - Liq. Scint.															
S13T006568			14133-76-7	Technetium-99	uCi/mL	96.6	4.51E-05	1.02E-02	9.50E-03	9.87E-03	7.36	85.4	4.01E-05	1.96	
Technetium99 No Oxidation															
S13T006568			14133-76-7	Technetium-99	uCi/mL	98.5	<3.07E-05	8.86E-03	8.60E-03	8.73E-03	2.94	n/a	3.08E-05	1.77	
Total Carbon by Furnace															
S13T006566			TC	Total carbon	ug/mL	97.3	<5.00	2.60E+03	2.59E+03	2.60E+03	0.385	93.8	30.0	n/a	
Total Organic Carbon by Furnace															
S13T006566			TOC	Total organic carbon	ug/mL	92.3	<5.00	518	509	514	1.75	88.5	10.0	n/a	
Tritium (H3) by LSC															
S13T006568			10028-17-8	Tritium	uCi/mL	85.1	<2.42E-04	6.01E-03	6.78E-03	6.40E-03	12.0	86.9	2.48E-04	7.013	

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DSR.Jar v. 2.7.31

AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-01A
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Hot Cell Breakdown															
S13T006573			ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T006573			VOL%SETS	Volume percent settled solids	%	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q

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DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-01B
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Hot Cell Breakdown															
S13T006583			ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T006583			VOL%SETS	Volume percent settled solids	%	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-01DUP
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
% Water by TGA															
S13T006577			%WATER	Percent water	%	98.5	n/a	89.9	91.6	90.8	1.89	n/a	0.0100	n/a	
Am241,Cm243 by TRU-Spec Resin															
S13T006580			CM-243/244	Curium-243/244	uCi/mL	n/a	<1.48E-07	<1.97E-07	n/a	n/a	n/a	n/a	1.97E-07	n/a	U
S13T006580			14596-10-2	Americium-241	uCi/mL	101	<1.28E-07	1.17E-05	n/a	n/a	n/a	n/a	1.60E-07	3.57	
Ammonium by IC															
S13T006576		S	14798-03-9	Ammonium	ug/mL	100	0.600	44.6	n/a	n/a	n/a	n/a	0.240	n/a	
Anions and Small Organic Acids															
S13T006577			16984-48-8	Fluoride	ug/mL	101	<1.61E-03	658	n/a	n/a	n/a	n/a	4.02	n/a	
S13T006577			16887-00-6	Chloride	ug/mL	102	<9.98E-03	298	n/a	n/a	n/a	n/a	25.0	n/a	
S13T006577			14797-65-0	Nitrite	ug/mL	98.2	<0.0192	6.59E+03	n/a	n/a	n/a	n/a	48.0	n/a	
S13T006577			14808-79-8	Sulfate	ug/mL	103	0.0530	952	n/a	n/a	n/a	n/a	46.8	n/a	
S13T006577			338-70-5	Oxalate	ug/mL	101	<0.0231	475	n/a	n/a	n/a	n/a	57.8	n/a	J
S13T006577			24959-67-9	Bromide	ug/mL	102	<0.0580	<145	n/a	n/a	n/a	n/a	145	n/a	U
S13T006577			14797-55-8	Nitrate	ug/mL	104	<0.0208	2.50E+04	n/a	n/a	n/a	n/a	52.0	n/a	
S13T006577			14265-44-2	Phosphate	ug/mL	102	<0.0167	1.23E+03	n/a	n/a	n/a	n/a	41.8	n/a	
Carbon 14 by LSC															
S13T006580			14762-75-5	Carbon-14	uCi/mL	93.2	3.30E-06	1.68E-04	n/a	n/a	n/a	n/a	2.95E-06	3.342	
Combination of ICP/MS Low and High Mass Methods															
S13T006577			7440-22-4	Silver	ug/mL	108	<8.00E-06	1.60	n/a	n/a	n/a	n/a	0.0800	n/a	
S13T006577			7439-93-2	Lithium	ug/mL	105	<1.00E-05	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S13T006577			7440-28-0	Thallium	ug/mL	99.3	<4.00E-06	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
Cyanide Water Distillation															
S13T006578			57-12-5	Cyanide	ug/mL	96.4	<8.12E-03	9.62	n/a	n/a	n/a	n/a	2.03	n/a	J
Density in Hotcells															
S13T006574			Density	Density	g/mL	100.4	n/a	1.067	n/a	n/a	n/a	n/a	1.000E-03	n/a	
GEA															
S13T006580			10198-40-0	Cobalt-60	uCi/mL	101	<2.06E-04	<7.68E-04	n/a	n/a	n/a	n/a	7.68E-04	n/a	U
S13T006580			14681-63-1	Niobium-94	uCi/mL	n/a	<1.75E-04	<5.94E-04	n/a	n/a	n/a	n/a	5.94E-04	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-01DUP
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
GEA															
S13T006580			RU/RH-106	Ruthenium/Rhodium-106	uCi/mL	n/a	<1.38E-03	<0.0319	n/a	n/a	n/a	n/a	0.0319	n/a	U
S13T006580			14234-35-6	Antimony-125	uCi/mL	n/a	<4.27E-04	<0.0248	n/a	n/a	n/a	n/a	0.0248	n/a	U
S13T006580			13967-70-9	Cesium-134	uCi/mL	n/a	<9.22E-04	<0.0257	n/a	n/a	n/a	n/a	0.0257	n/a	U
S13T006580			10045-97-3	Cesium-137	uCi/mL	106	<2.44E-04	10.6	n/a	n/a	n/a	n/a	0.0102	0.12	
S13T006580			14762-78-8	Cerium-144	uCi/mL	n/a	<7.58E-04	<0.0288	n/a	n/a	n/a	n/a	0.0288	n/a	U
S13T006580			14683-23-9	Europium-152	uCi/mL	n/a	<4.31E-04	<0.0200	n/a	n/a	n/a	n/a	0.0200	n/a	U
S13T006580			15585-10-1	Europium-154	uCi/mL	n/a	<5.42E-04	<2.02E-03	n/a	n/a	n/a	n/a	2.02E-03	n/a	U
S13T006580			14391-16-3	Europium-155	uCi/mL	n/a	<3.44E-04	<0.0102	n/a	n/a	n/a	n/a	0.0102	n/a	U
Hot Cell Breakdown															
S13T006574			ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T006574			VOL%SETS	Volume percent settled solids	%	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
Hot Cell pH															
S13T006574			PH	pH	unitless	n/a	n/a	12.8	n/a	n/a	n/a	n/a	0.0100	n/a	
ICP-AES															
S13T006577			7429-90-5	Aluminum	ug/mL	97.9	<6.00E-03	931	n/a	n/a	n/a	n/a	6.00	n/a	
S13T006577			7440-38-2	Arsenic	ug/mL	98.6	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006577			7440-42-8	Boron	ug/mL	103	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006577			7440-39-3	Barium	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006577			7440-41-7	Beryllium	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006577			7440-69-9	Bismuth	ug/mL	101	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006577			7440-70-2	Calcium	ug/mL	101	<0.0800	<80.0	n/a	n/a	n/a	n/a	80.0	n/a	U
S13T006577			7440-43-9	Cadmium	ug/mL	101	<1.00E-03	2.34	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006577			7440-45-1	Cerium	ug/mL	103	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006577			7440-48-4	Cobalt	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006577			7440-47-3	Chromium	ug/mL	103	<1.00E-03	51.8	n/a	n/a	n/a	n/a	1.00	n/a	
S13T006577			7440-50-8	Copper	ug/mL	104	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006577			7439-89-6	Iron	ug/mL	104	<0.0100	<10.0	n/a	n/a	n/a	n/a	10.0	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-01DUP
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006577			7440-09-7	Potassium	ug/mL	103	<0.0200	182	n/a	n/a	n/a	n/a	20.0	n/a	J
S13T006577			7439-91-0	Lanthanum	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006577			7439-95-4	Magnesium	ug/mL	103	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006577			7439-96-5	Manganese	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006577			7439-98-7	Molybdenum	ug/mL	100	<1.00E-03	4.60	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006577			7440-23-5	Sodium	ug/mL	104	<0.0400	2.88E+04	n/a	n/a	n/a	n/a	40.0	n/a	
S13T006577			7440-00-8	Neodymium	ug/mL	106	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006577			7440-02-0	Nickel	ug/mL	102	<1.00E-03	5.37	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006577			7723-14-0	Phosphorus	ug/mL	101	<3.00E-03	452	n/a	n/a	n/a	n/a	3.00	n/a	
S13T006577			7439-92-1	Lead	ug/mL	101	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006577			7440-05-3	Palladium	ug/mL	107	<9.00E-03	<9.00	n/a	n/a	n/a	n/a	9.00	n/a	U
S13T006577			7440-10-0	Praseodymium	ug/mL	107	<4.00E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006577			7440-17-7	Rubidium	ug/mL	101	<0.0300	<30.0	n/a	n/a	n/a	n/a	30.0	n/a	U
S13T006577			7440-16-6	Rhodium	ug/mL	97.3	<8.00E-03	<8.00	n/a	n/a	n/a	n/a	8.00	n/a	U
S13T006577			7440-18-8	Ruthenium	ug/mL	104	4.48E-03	5.20	n/a	n/a	n/a	n/a	4.00	n/a	J
S13T006577			7704-34-9	Sulfur	ug/mL	101	<5.00E-03	326	n/a	n/a	n/a	n/a	5.00	n/a	
S13T006577			7440-36-0	Antimony	ug/mL	98.1	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006577			7782-49-2	Selenium	ug/mL	99.5	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006577			7440-21-3	Silicon	ug/mL	98.9	<5.00E-03	86.7	n/a	n/a	n/a	n/a	5.00	n/a	
S13T006577			7440-31-5	Tin	ug/mL	103	<3.00E-03	5.02	n/a	n/a	n/a	n/a	3.00	n/a	J
S13T006577			7440-24-6	Strontium	ug/mL	101	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006577			7440-25-7	Tantalum	ug/mL	109	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006577			13494-80-9	Tellurium	ug/mL	102	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006577			7440-32-6	Titanium	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006577			7440-61-1	Uranium	ug/mL	103	<0.0200	<20.0	n/a	n/a	n/a	n/a	20.0	n/a	U
S13T006577			7440-62-2	Vanadium	ug/mL	103	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006577			7440-33-7	Tungsten	ug/mL	107	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-01DUP
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006577			7440-65-5	Yttrium	ug/mL	101	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006577			7440-66-6	Zinc	ug/mL	100	<4.00E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006577			7440-67-7	Zirconium	ug/mL	105	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
ICP/MS															
S13T006577			TH-232	Thorium-232	ug/mL	99.4	<5.00E-07	<1.25E-03	n/a	n/a	n/a	n/a	1.25E-03	n/a	U
S13T006577			13968-55-3	Uranium-233	ug/mL	102	<2.00E-07	<5.00E-04	n/a	n/a	n/a	n/a	5.00E-04	n/a	U
S13T006577			13966-29-5	Uranium-234	ug/mL	n/a	<5.00E-09	5.12E-05	n/a	n/a	n/a	n/a	1.25E-05	n/a	IJ
S13T006577			15117-96-1	Uranium-235	ug/mL	97.0	<1.00E-08	0.0102	n/a	n/a	n/a	n/a	2.50E-05	n/a	
S13T006577			13982-70-2	Uranium-236	ug/mL	n/a	<4.00E-09	3.60E-04	n/a	n/a	n/a	n/a	1.00E-05	n/a	I
S13T006577			13994-20-2	Neptunium-237	ug/mL	108	<1.00E-07	7.02E-03	n/a	n/a	n/a	n/a	2.50E-04	n/a	
S13T006577			U-238	Uranium-238	ug/mL	100	<5.00E-07	1.44	n/a	n/a	n/a	n/a	1.25E-03	n/a	
S13T006577			SN-117	Tin-117	ug/mL	105	<1.00E-05	0.232	n/a	n/a	n/a	n/a	0.0100	n/a	
S13T006577			15832-50-5	Tin-126	ug/mL	n/a	<2.00E-07	7.10E-03	n/a	n/a	n/a	n/a	2.00E-04	n/a	I
S13T006577			14133-76-7	Technetium-99	ug/mL	98.5	<6.00E-07	0.545	n/a	n/a	n/a	n/a	6.00E-04	n/a	
Iodine-129															
S13T006580			15046-84-1	Iodine-129	uCi/mL	95.0	<1.28E-05	<1.84E-05	n/a	n/a	n/a	n/a	1.84E-05	n/a	U
Mercury by CVAA															
S13T006579		HG	7439-97-6	Mercury	ug/mL	105	<1.10E-05	0.0426	n/a	n/a	n/a	n/a	2.20E-03	n/a	J
OH- by Pot. Titration															
S13T006577			HYDROXIDE	Hydroxide	ug/mL	93.9	<9.22	2.70E+03	n/a	n/a	n/a	n/a	111	n/a	
PCB (EPA 8082) from Liquid-Liquid Extraction															
S13T006582		O	12674-11-2	Aroclor 1016	ug/L	n/a	<37.8	<37.8	n/a	n/a	n/a	n/a	37.8	n/a	U
S13T006582		O	11104-28-2	Aroclor 1221	ug/L	n/a	<7.10	<7.10	n/a	n/a	n/a	n/a	7.10	n/a	U
S13T006582		O	11141-16-5	Aroclor 1232	ug/L	n/a	<8.20	<8.20	n/a	n/a	n/a	n/a	8.20	n/a	U
S13T006582		O	53469-21-9	Aroclor 1242	ug/L	n/a	<12.6	<12.6	n/a	n/a	n/a	n/a	12.6	n/a	U
S13T006582		O	12672-29-6	Aroclor 1248	ug/L	n/a	<7.10	<7.10	n/a	n/a	n/a	n/a	7.10	n/a	U
S13T006582		O	11097-69-1	Aroclor 1254	ug/L	82.1	<2.60	<2.60	n/a	n/a	n/a	n/a	2.60	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-01DUP
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
PCB (EPA 8082) from Liquid-Liquid Extraction															
S13T006582		O	11096-82-5	Aroclor 1260	ug/L	n/a	<28.6	<28.6	n/a	n/a	n/a	n/a	28.6	n/a	U
Plutonium-241 by LSC															
S13T006580			14119-32-5	Plutonium-241	uCi/mL	106	<4.46E-05	3.80E-03	n/a	n/a	n/a	n/a	2.32E-05	1.719	
Pu238,239 by TRU-SPEC Resin															
S13T006580			PU-239/240	Plutonium-239/240	uCi/mL	109	1.53E-07	3.29E-04	n/a	n/a	n/a	n/a	2.03E-07	0.72	
S13T006580			13981-16-3	Plutonium-238	uCi/mL	n/a	<1.67E-07	8.24E-05	n/a	n/a	n/a	n/a	1.80E-07	1.47	
Selenium-79 by LSC															
S13T006580			15758-45-9	Selenium-79	uCi/mL	n/a	<2.87E-06	2.96E-05	n/a	n/a	n/a	n/a	2.98E-06	13.309	
Sr-89/90 by GPC															
S13T006580			SR-89/90	Strontium-89/90	uCi/mL	97.4	1.07E-03	0.221	n/a	n/a	n/a	n/a	3.58E-04	2.123	
TIC/TOC by Acid Persulfate															
S13T006578			TIC	Total inorganic carbon	ug/mL	101	<7.00	2.33E+03	2.33E+03	2.33E+03	0.0	101	14.0	n/a	
S13T006578			TOC	Total organic carbon	ug/mL	94.4	<20.0	537	533	535	0.748	95.9	40.0	n/a	
Technetium - Liq. Scint.															
S13T006580			14133-76-7	Technetium-99	uCi/mL	96.6	4.51E-05	9.85E-03	n/a	n/a	n/a	n/a	4.10E-05	2.02	
Technetium99 No Oxidation															
S13T006580			14133-76-7	Technetium-99	uCi/mL	98.5	<3.07E-05	8.94E-03	n/a	n/a	n/a	n/a	3.20E-05	1.81	
Total Carbon by Furnace															
S13T006578			TC	Total carbon	ug/mL	97.3	<5.00	2.69E+03	n/a	n/a	n/a	n/a	30.0	n/a	
Total Organic Carbon by Furnace															
S13T006578			TOC	Total organic carbon	ug/mL	92.3	<5.00	524	n/a	n/a	n/a	n/a	10.0	n/a	
Tritium (H3) by LSC															
S13T006580			10028-17-8	Tritium	uCi/mL	85.1	<2.42E-04	4.58E-03	n/a	n/a	n/a	n/a	2.47E-04	8.697	

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-01FB
Segment Portion: Field Blank

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Ammonium by IC															
S13T006560		S	14798-03-9	Ammonium	ug/mL	100	0.600	0.640	n/a	n/a	n/a	n/a	0.240	n/a	J
Anions and Small Organic Acids															
S13T006559			16984-48-8	Fluoride	ug/mL	101	<1.61E-03	0.0230	n/a	n/a	n/a	n/a	1.61E-03	n/a	J
S13T006559			16887-00-6	Chloride	ug/mL	102	<9.98E-03	<9.98E-03	n/a	n/a	n/a	n/a	9.98E-03	n/a	U
S13T006559			14797-65-0	Nitrite	ug/mL	98.2	<0.0192	<0.0192	n/a	n/a	n/a	n/a	0.0192	n/a	U
S13T006559			14808-79-8	Sulfate	ug/mL	103	0.0530	0.0940	n/a	n/a	n/a	n/a	0.0187	n/a	J
S13T006559			338-70-5	Oxalate	ug/mL	101	<0.0231	<0.0231	n/a	n/a	n/a	n/a	0.0231	n/a	U
S13T006559			24959-67-9	Bromide	ug/mL	102	<0.0580	<0.0580	n/a	n/a	n/a	n/a	0.0580	n/a	U
S13T006559			14797-55-8	Nitrate	ug/mL	104	<0.0208	<0.0208	n/a	n/a	n/a	n/a	0.0208	n/a	U
S13T006559			14265-44-2	Phosphate	ug/mL	102	<0.0167	<0.0167	n/a	n/a	n/a	n/a	0.0167	n/a	U
Combination of ICP/MS Low and High Mass Methods															
S13T006559			7440-22-4	Silver	ug/mL	108	<8.00E-06	<0.0800	n/a	n/a	n/a	n/a	0.0800	n/a	U
S13T006559			7439-93-2	Lithium	ug/mL	105	<1.00E-05	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S13T006559			7440-28-0	Thallium	ug/mL	99.3	<4.00E-06	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
GEA															
S13T006561			10198-40-0	Cobalt-60	uCi/mL	101	<2.06E-04	<1.45E-04	n/a	n/a	n/a	n/a	1.45E-04	n/a	U
S13T006561			14681-63-1	Niobium-94	uCi/mL	n/a	<1.75E-04	<1.28E-04	n/a	n/a	n/a	n/a	1.28E-04	n/a	U
S13T006561			RU/RH-106	Ruthenium/Rhodium-106	uCi/mL	n/a	<1.38E-03	<9.18E-04	n/a	n/a	n/a	n/a	9.18E-04	n/a	U
S13T006561			14234-35-6	Antimony-125	uCi/mL	n/a	<4.27E-04	<3.62E-04	n/a	n/a	n/a	n/a	3.62E-04	n/a	U
S13T006561			13967-70-9	Cesium-134	uCi/mL	n/a	<9.22E-04	<6.06E-04	n/a	n/a	n/a	n/a	6.06E-04	n/a	U
S13T006561			10045-97-3	Cesium-137	uCi/mL	106	<2.44E-04	<1.40E-04	n/a	n/a	n/a	n/a	1.40E-04	n/a	U
S13T006561			14762-78-8	Cerium-144	uCi/mL	n/a	<7.58E-04	<6.61E-04	n/a	n/a	n/a	n/a	6.61E-04	n/a	U
S13T006561			14683-23-9	Europium-152	uCi/mL	n/a	<4.31E-04	<2.48E-04	n/a	n/a	n/a	n/a	2.48E-04	n/a	U
S13T006561			15585-10-1	Europium-154	uCi/mL	n/a	<5.42E-04	<4.61E-04	n/a	n/a	n/a	n/a	4.61E-04	n/a	U
S13T006561			14391-16-3	Europium-155	uCi/mL	n/a	<3.44E-04	<3.16E-04	n/a	n/a	n/a	n/a	3.16E-04	n/a	U
Hot Cell Breakdown															
S13T006558			ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-01FB
Segment Portion: Field Blank

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Hot Cell Breakdown															
S13T006558			VOL%SETS	Volume percent settled solids	%	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
Hot Cell pH															
S13T006558			PH	pH	unitless	n/a	n/a	7.17	7.23	7.20	0.833	n/a	0.0100	n/a	
ICP-AES															
S13T006559			7429-90-5	Aluminum	ug/mL	97.9	<6.00E-03	0.0270	n/a	n/a	n/a	n/a	0.0120	n/a	J
S13T006559			7440-38-2	Arsenic	ug/mL	98.6	<5.00E-03	0.0480	n/a	n/a	n/a	n/a	0.0100	n/a	J
S13T006559			7440-42-8	Boron	ug/mL	103	<1.00E-03	0.162	n/a	n/a	n/a	n/a	2.00E-03	n/a	Y
S13T006559			7440-39-3	Barium	ug/mL	102	<1.00E-03	0.0403	n/a	n/a	n/a	n/a	2.00E-03	n/a	
S13T006559			7440-41-7	Beryllium	ug/mL	102	<1.00E-03	<2.00E-03	n/a	n/a	n/a	n/a	2.00E-03	n/a	U
S13T006559			7440-69-9	Bismuth	ug/mL	101	<6.00E-03	<0.0120	n/a	n/a	n/a	n/a	0.0120	n/a	U
S13T006559			7440-70-2	Calcium	ug/mL	101	<0.0800	<0.160	n/a	n/a	n/a	n/a	0.160	n/a	U
S13T006559			7440-43-9	Cadmium	ug/mL	101	<1.00E-03	<2.00E-03	n/a	n/a	n/a	n/a	2.00E-03	n/a	U
S13T006559			7440-45-1	Cerium	ug/mL	103	<6.00E-03	0.0135	n/a	n/a	n/a	n/a	0.0120	n/a	J
S13T006559			7440-48-4	Cobalt	ug/mL	102	<1.00E-03	<2.00E-03	n/a	n/a	n/a	n/a	2.00E-03	n/a	U
S13T006559			7440-47-3	Chromium	ug/mL	103	<1.00E-03	<2.00E-03	n/a	n/a	n/a	n/a	2.00E-03	n/a	U
S13T006559			7440-50-8	Copper	ug/mL	104	<2.00E-03	<4.00E-03	n/a	n/a	n/a	n/a	4.00E-03	n/a	U
S13T006559			7439-89-6	Iron	ug/mL	104	<0.0100	<0.0200	n/a	n/a	n/a	n/a	0.0200	n/a	U
S13T006559			7440-09-7	Potassium	ug/mL	103	<0.0200	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
S13T006559			7439-91-0	Lanthanum	ug/mL	104	<1.00E-03	<2.00E-03	n/a	n/a	n/a	n/a	2.00E-03	n/a	U
S13T006559			7439-95-4	Magnesium	ug/mL	103	<2.00E-03	0.0135	n/a	n/a	n/a	n/a	4.00E-03	n/a	J
S13T006559			7439-96-5	Manganese	ug/mL	104	<1.00E-03	<2.00E-03	n/a	n/a	n/a	n/a	2.00E-03	n/a	U
S13T006559			7439-98-7	Molybdenum	ug/mL	100	<1.00E-03	2.38E-03	n/a	n/a	n/a	n/a	2.00E-03	n/a	J
S13T006559			7440-23-5	Sodium	ug/mL	104	<0.0400	1.34	n/a	n/a	n/a	n/a	0.0800	n/a	
S13T006559			7440-00-8	Neodymium	ug/mL	106	<3.00E-03	<6.00E-03	n/a	n/a	n/a	n/a	6.00E-03	n/a	U
S13T006559			7440-02-0	Nickel	ug/mL	102	<1.00E-03	<2.00E-03	n/a	n/a	n/a	n/a	2.00E-03	n/a	U
S13T006559			7723-14-0	Phosphorus	ug/mL	101	<3.00E-03	<6.00E-03	n/a	n/a	n/a	n/a	6.00E-03	n/a	U
S13T006559			7439-92-1	Lead	ug/mL	101	<6.00E-03	<0.0120	n/a	n/a	n/a	n/a	0.0120	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-01FB
Segment Portion: Field Blank

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006559			7440-05-3	Palladium	ug/mL	107	<9.00E-03	<0.0180	n/a	n/a	n/a	n/a	0.0180	n/a	U
S13T006559			7440-10-0	Praseodymium	ug/mL	107	<4.00E-03	<8.00E-03	n/a	n/a	n/a	n/a	8.00E-03	n/a	U
S13T006559			7440-17-7	Rubidium	ug/mL	101	<0.0300	<0.0600	n/a	n/a	n/a	n/a	0.0600	n/a	U
S13T006559			7440-16-6	Rhodium	ug/mL	97.3	<8.00E-03	<0.0160	n/a	n/a	n/a	n/a	0.0160	n/a	U
S13T006559			7440-18-8	Ruthenium	ug/mL	104	4.48E-03	<8.00E-03	n/a	n/a	n/a	n/a	8.00E-03	n/a	U
S13T006559			7704-34-9	Sulfur	ug/mL	101	<5.00E-03	0.0229	n/a	n/a	n/a	n/a	0.0100	n/a	J
S13T006559			7440-36-0	Antimony	ug/mL	98.1	<6.00E-03	<0.0120	n/a	n/a	n/a	n/a	0.0120	n/a	U
S13T006559			7782-49-2	Selenium	ug/mL	99.5	<6.00E-03	<0.0120	n/a	n/a	n/a	n/a	0.0120	n/a	U
S13T006559			7440-21-3	Silicon	ug/mL	98.9	<5.00E-03	0.799	n/a	n/a	n/a	n/a	0.0100	n/a	
S13T006559			7440-31-5	Tin	ug/mL	103	<3.00E-03	0.0144	n/a	n/a	n/a	n/a	6.00E-03	n/a	J
S13T006559			7440-24-6	Strontium	ug/mL	101	<2.00E-03	4.16E-03	n/a	n/a	n/a	n/a	4.00E-03	n/a	JY
S13T006559			7440-25-7	Tantalum	ug/mL	109	<5.00E-03	<0.0100	n/a	n/a	n/a	n/a	0.0100	n/a	U
S13T006559			13494-80-9	Tellurium	ug/mL	102	<5.00E-03	<0.0100	n/a	n/a	n/a	n/a	0.0100	n/a	U
S13T006559			7440-32-6	Titanium	ug/mL	104	<1.00E-03	<2.00E-03	n/a	n/a	n/a	n/a	2.00E-03	n/a	U
S13T006559			7440-61-1	Uranium	ug/mL	103	<0.0200	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
S13T006559			7440-62-2	Vanadium	ug/mL	103	<1.00E-03	<2.00E-03	n/a	n/a	n/a	n/a	2.00E-03	n/a	U
S13T006559			7440-33-7	Tungsten	ug/mL	107	<6.00E-03	<0.0120	n/a	n/a	n/a	n/a	0.0120	n/a	U
S13T006559			7440-65-5	Yttrium	ug/mL	101	<2.00E-03	<4.00E-03	n/a	n/a	n/a	n/a	4.00E-03	n/a	U
S13T006559			7440-66-6	Zinc	ug/mL	100	<4.00E-03	<8.00E-03	n/a	n/a	n/a	n/a	8.00E-03	n/a	U
S13T006559			7440-67-7	Zirconium	ug/mL	105	<1.00E-03	<2.00E-03	n/a	n/a	n/a	n/a	2.00E-03	n/a	U
Iodine-129															
S13T006561			15046-84-1	Iodine-129	uCi/mL	95.0	<1.28E-05	<1.14E-05	n/a	n/a	n/a	n/a	1.14E-05	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-02
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
% Water by TGA															
S13T006587			%WATER	Percent water	%	98.5	n/a	92.1	n/a	n/a	n/a	n/a	0.0100	n/a	
Am241,Cm243 by TRU-Spec Resin															
S13T006590			CM-243/244	Curium-243/244	uCi/mL	n/a	<1.48E-07	<1.50E-07	n/a	n/a	n/a	n/a	1.50E-07	n/a	U
S13T006590			14596-10-2	Americium-241	uCi/mL	101	<1.28E-07	1.22E-05	n/a	n/a	n/a	n/a	1.54E-07	3.47	
Ammonium by IC															
S13T006586		S	14798-03-9	Ammonium	ug/mL	100	0.600	41.9	n/a	n/a	n/a	n/a	0.240	n/a	
Anions and Small Organic Acids															
S13T006587			16984-48-8	Fluoride	ug/mL	101	<1.61E-03	654	n/a	n/a	n/a	n/a	4.02	n/a	
S13T006587			16887-00-6	Chloride	ug/mL	102	<9.98E-03	302	n/a	n/a	n/a	n/a	25.0	n/a	
S13T006587			14797-65-0	Nitrite	ug/mL	98.2	<0.0192	6.58E+03	n/a	n/a	n/a	n/a	48.0	n/a	
S13T006587			14808-79-8	Sulfate	ug/mL	103	0.0530	953	n/a	n/a	n/a	n/a	46.8	n/a	
S13T006587			338-70-5	Oxalate	ug/mL	101	<0.0231	467	n/a	n/a	n/a	n/a	57.8	n/a	J
S13T006587			24959-67-9	Bromide	ug/mL	102	<0.0580	<145	n/a	n/a	n/a	n/a	145	n/a	U
S13T006587			14797-55-8	Nitrate	ug/mL	104	<0.0208	2.53E+04	n/a	n/a	n/a	n/a	52.0	n/a	
S13T006587			14265-44-2	Phosphate	ug/mL	102	<0.0167	1.28E+03	n/a	n/a	n/a	n/a	41.8	n/a	
Carbon 14 by LSC															
S13T006590			14762-75-5	Carbon-14	uCi/mL	93.2	3.30E-06	1.79E-04	n/a	n/a	n/a	n/a	2.94E-06	3.172	
Combination of ICP/MS Low and High Mass Methods															
S13T006587			7440-22-4	Silver	ug/mL	108	<8.00E-06	1.68	n/a	n/a	n/a	n/a	0.0800	n/a	
S13T006587			7439-93-2	Lithium	ug/mL	105	<1.00E-05	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S13T006587			7440-28-0	Thallium	ug/mL	99.3	<4.00E-06	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
Cyanide Water Distillation															
S13T006588			57-12-5	Cyanide	ug/mL	96.4	<8.12E-03	9.42	n/a	n/a	n/a	n/a	2.03	n/a	J
Density in Hotcells															
S13T006584			Density	Density	g/mL	100.4	n/a	1.062	n/a	n/a	n/a	n/a	1.000E-03	n/a	
GEA															
S13T006590			10198-40-0	Cobalt-60	uCi/mL	101	<2.06E-04	<7.12E-04	n/a	n/a	n/a	n/a	7.12E-04	n/a	U
S13T006590			14681-63-1	Niobium-94	uCi/mL	n/a	<1.75E-04	<1.64E-04	n/a	n/a	n/a	n/a	1.64E-04	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-02
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
GEA															
S13T006590			RU/RH-106	Ruthenium/Rhodium-106	uCi/mL	n/a	<1.38E-03	<9.23E-03	n/a	n/a	n/a	n/a	9.23E-03	n/a	U
S13T006590			14234-35-6	Antimony-125	uCi/mL	n/a	<4.27E-04	<5.80E-03	n/a	n/a	n/a	n/a	5.80E-03	n/a	U
S13T006590			13967-70-9	Cesium-134	uCi/mL	n/a	<9.22E-04	<6.17E-03	n/a	n/a	n/a	n/a	6.17E-03	n/a	U
S13T006590			10045-97-3	Cesium-137	uCi/mL	106	<2.44E-04	10.8	n/a	n/a	n/a	n/a	1.26E-03	0.03	
S13T006590			14762-78-8	Cerium-144	uCi/mL	n/a	<7.58E-04	<7.43E-03	n/a	n/a	n/a	n/a	7.43E-03	n/a	U
S13T006590			14683-23-9	Europium-152	uCi/mL	n/a	<4.31E-04	<4.69E-03	n/a	n/a	n/a	n/a	4.69E-03	n/a	U
S13T006590			15585-10-1	Europium-154	uCi/mL	n/a	<5.42E-04	<4.32E-04	n/a	n/a	n/a	n/a	4.32E-04	n/a	U
S13T006590			14391-16-3	Europium-155	uCi/mL	n/a	<3.44E-04	<3.23E-03	n/a	n/a	n/a	n/a	3.23E-03	n/a	U
Hot Cell Breakdown															
S13T006584			ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T006584			VOL%SETS	Volume percent settled solids	%	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
Hot Cell pH															
S13T006584			PH	pH	unitless	n/a	n/a	12.8	n/a	n/a	n/a	n/a	0.0100	n/a	
ICP-AES															
S13T006587			7429-90-5	Aluminum	ug/mL	97.9	<6.00E-03	934	n/a	n/a	n/a	n/a	6.00	n/a	
S13T006587			7440-38-2	Arsenic	ug/mL	98.6	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006587			7440-42-8	Boron	ug/mL	103	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006587			7440-39-3	Barium	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006587			7440-41-7	Beryllium	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006587			7440-69-9	Bismuth	ug/mL	101	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006587			7440-70-2	Calcium	ug/mL	101	<0.0800	<80.0	n/a	n/a	n/a	n/a	80.0	n/a	U
S13T006587			7440-43-9	Cadmium	ug/mL	101	<1.00E-03	2.09	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006587			7440-45-1	Cerium	ug/mL	103	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006587			7440-48-4	Cobalt	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006587			7440-47-3	Chromium	ug/mL	103	<1.00E-03	51.4	n/a	n/a	n/a	n/a	1.00	n/a	
S13T006587			7440-50-8	Copper	ug/mL	104	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006587			7439-89-6	Iron	ug/mL	104	<0.0100	<10.0	n/a	n/a	n/a	n/a	10.0	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-02
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006587			7440-09-7	Potassium	ug/mL	103	<0.0200	182	n/a	n/a	n/a	n/a	20.0	n/a	J
S13T006587			7439-91-0	Lanthanum	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006587			7439-95-4	Magnesium	ug/mL	103	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006587			7439-96-5	Manganese	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006587			7439-98-7	Molybdenum	ug/mL	100	<1.00E-03	3.93	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006587			7440-23-5	Sodium	ug/mL	104	<0.0400	2.92E+04	n/a	n/a	n/a	n/a	40.0	n/a	
S13T006587			7440-00-8	Neodymium	ug/mL	106	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006587			7440-02-0	Nickel	ug/mL	102	<1.00E-03	5.25	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006587			7723-14-0	Phosphorus	ug/mL	101	<3.00E-03	456	n/a	n/a	n/a	n/a	3.00	n/a	
S13T006587			7439-92-1	Lead	ug/mL	101	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006587			7440-05-3	Palladium	ug/mL	107	<9.00E-03	<9.00	n/a	n/a	n/a	n/a	9.00	n/a	U
S13T006587			7440-10-0	Praseodymium	ug/mL	107	<4.00E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006587			7440-17-7	Rubidium	ug/mL	101	<0.0300	<30.0	n/a	n/a	n/a	n/a	30.0	n/a	U
S13T006587			7440-16-6	Rhodium	ug/mL	97.3	<8.00E-03	<8.00	n/a	n/a	n/a	n/a	8.00	n/a	U
S13T006587			7440-18-8	Ruthenium	ug/mL	104	4.48E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006587			7704-34-9	Sulfur	ug/mL	101	<5.00E-03	326	n/a	n/a	n/a	n/a	5.00	n/a	
S13T006587			7440-36-0	Antimony	ug/mL	98.1	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006587			7782-49-2	Selenium	ug/mL	99.5	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006587			7440-21-3	Silicon	ug/mL	98.9	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006587			7440-31-5	Tin	ug/mL	103	<3.00E-03	3.70	n/a	n/a	n/a	n/a	3.00	n/a	J
S13T006587			7440-24-6	Strontium	ug/mL	101	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006587			7440-25-7	Tantalum	ug/mL	109	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006587			13494-80-9	Tellurium	ug/mL	102	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006587			7440-32-6	Titanium	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006587			7440-61-1	Uranium	ug/mL	103	<0.0200	<20.0	n/a	n/a	n/a	n/a	20.0	n/a	U
S13T006587			7440-62-2	Vanadium	ug/mL	103	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006587			7440-33-7	Tungsten	ug/mL	107	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-02
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006587			7440-65-5	Yttrium	ug/mL	101	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006587			7440-66-6	Zinc	ug/mL	100	<4.00E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006587			7440-67-7	Zirconium	ug/mL	105	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
ICP/MS															
S13T006587			TH-232	Thorium-232	ug/mL	99.4	<5.00E-07	<1.25E-03	n/a	n/a	n/a	n/a	1.25E-03	n/a	U
S13T006587			13968-55-3	Uranium-233	ug/mL	102	<2.00E-07	<5.00E-04	n/a	n/a	n/a	n/a	5.00E-04	n/a	U
S13T006587			13966-29-5	Uranium-234	ug/mL	n/a	<5.00E-09	5.04E-05	n/a	n/a	n/a	n/a	1.25E-05	n/a	IJ
S13T006587			15117-96-1	Uranium-235	ug/mL	97.0	<1.00E-08	9.94E-03	n/a	n/a	n/a	n/a	2.50E-05	n/a	
S13T006587			13982-70-2	Uranium-236	ug/mL	n/a	<4.00E-09	3.33E-04	n/a	n/a	n/a	n/a	1.00E-05	n/a	I
S13T006587			13994-20-2	Neptunium-237	ug/mL	108	<1.00E-07	7.24E-03	n/a	n/a	n/a	n/a	2.50E-04	n/a	
S13T006587			U-238	Uranium-238	ug/mL	100	<5.00E-07	1.45	n/a	n/a	n/a	n/a	1.25E-03	n/a	
S13T006587			SN-117	Tin-117	ug/mL	105	<1.00E-05	0.236	n/a	n/a	n/a	n/a	0.0100	n/a	
S13T006587			15832-50-5	Tin-126	ug/mL	n/a	<2.00E-07	8.70E-03	n/a	n/a	n/a	n/a	2.00E-04	n/a	I
S13T006587			14133-76-7	Technetium-99	ug/mL	98.5	<6.00E-07	0.542	n/a	n/a	n/a	n/a	6.00E-04	n/a	
Iodine-129															
S13T006590			15046-84-1	Iodine-129	uCi/mL	95.0	<1.28E-05	<3.01E-05	n/a	n/a	n/a	n/a	3.01E-05	n/a	U
Mercury by CVAA															
S13T006589		HG	7439-97-6	Mercury	ug/mL	105	<1.10E-05	0.0418	n/a	n/a	n/a	n/a	2.20E-03	n/a	J
OH- by Pot. Titration															
S13T006587			HYDROXIDE	Hydroxide	ug/mL	93.9	<9.22	2.63E+03	n/a	n/a	n/a	n/a	111	n/a	
PCB (EPA 8082) from Liquid-Liquid Extraction															
S13T006592		O	12674-11-2	Aroclor 1016	ug/L	n/a	<37.8	<37.8	n/a	n/a	n/a	n/a	37.8	n/a	U
S13T006592		O	11104-28-2	Aroclor 1221	ug/L	n/a	<7.10	<7.10	n/a	n/a	n/a	n/a	7.10	n/a	U
S13T006592		O	11141-16-5	Aroclor 1232	ug/L	n/a	<8.20	<8.20	n/a	n/a	n/a	n/a	8.20	n/a	U
S13T006592		O	53469-21-9	Aroclor 1242	ug/L	n/a	<12.6	<12.6	n/a	n/a	n/a	n/a	12.6	n/a	U
S13T006592		O	12672-29-6	Aroclor 1248	ug/L	n/a	<7.10	<7.10	n/a	n/a	n/a	n/a	7.10	n/a	U
S13T006592		O	11097-69-1	Aroclor 1254	ug/L	82.1	<2.60	<2.60	n/a	n/a	n/a	n/a	2.60	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-02
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
PCB (EPA 8082) from Liquid-Liquid Extraction															
S13T006592		O	11096-82-5	Aroclor 1260	ug/L	n/a	<28.6	<28.6	n/a	n/a	n/a	n/a	28.6	n/a	U
Plutonium-241 by LSC															
S13T006590			14119-32-5	Plutonium-241	uCi/mL	106	<4.46E-05	9.70E-04	n/a	n/a	n/a	n/a	2.20E-05	4.045	
Pu238,239 by TRU-SPEC Resin															
S13T006590			PU-239/240	Plutonium-239/240	uCi/mL	109	1.53E-07	3.21E-04	n/a	n/a	n/a	n/a	1.80E-07	0.71	
S13T006590			13981-16-3	Plutonium-238	uCi/mL	n/a	<1.67E-07	8.30E-05	n/a	n/a	n/a	n/a	1.66E-07	1.43	
Selenium-79 by LSC															
S13T006590			15758-45-9	Selenium-79	uCi/mL	n/a	<2.87E-06	1.77E-05	n/a	n/a	n/a	n/a	2.87E-06	20.686	
Sr-89/90 by GPC															
S13T006590			SR-89/90	Strontium-89/90	uCi/mL	97.4	1.07E-03	0.218	n/a	n/a	n/a	n/a	3.61E-04	2.146	
TIC/TOC by Acid Persulfate															
S13T006588			TIC	Total inorganic carbon	ug/mL	101	<7.00	2.42E+03	n/a	n/a	n/a	n/a	14.0	n/a	
S13T006588			TOC	Total organic carbon	ug/mL	94.4	<20.0	534	n/a	n/a	n/a	n/a	40.0	n/a	
Technetium - Liq. Scint.															
S13T006590			14133-76-7	Technetium-99	uCi/mL	96.6	4.51E-05	0.0104	n/a	n/a	n/a	n/a	4.09E-05	1.97	
Technetium99 No Oxidation															
S13T006590			14133-76-7	Technetium-99	uCi/mL	98.5	<3.07E-05	9.00E-03	n/a	n/a	n/a	n/a	3.23E-05	1.82	
Total Carbon by Furnace															
S13T006588			TC	Total carbon	ug/mL	97.3	<5.00	2.69E+03	n/a	n/a	n/a	n/a	30.0	n/a	
Total Organic Carbon by Furnace															
S13T006588			TOC	Total organic carbon	ug/mL	92.3	<5.00	520	n/a	n/a	n/a	n/a	10.0	n/a	
Tritium (H3) by LSC															
S13T006590			10028-17-8	Tritium	uCi/mL	85.1	<2.42E-04	4.29E-03	n/a	n/a	n/a	n/a	2.46E-04	9.008	

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-02A
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Hot Cell Breakdown															
S13T006593			ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T006593			VOL%SETS	Volume percent settled solids	%	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-04
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
% Water by TGA															
S13T006597			%WATER	Percent water	%	98.5	n/a	91.7	n/a	n/a	n/a	n/a	0.0100	n/a	
Am241,Cm243 by TRU-Spec Resin															
S13T006600			CM-243/244	Curium-243/244	uCi/mL	n/a	<1.48E-07	<1.59E-07	n/a	n/a	n/a	n/a	1.59E-07	n/a	U
S13T006600			14596-10-2	Americium-241	uCi/mL	101	<1.28E-07	1.18E-05	n/a	n/a	n/a	n/a	1.43E-07	3.51	
Ammonium by IC															
S13T006596		S	14798-03-9	Ammonium	ug/mL	100	0.600	41.3	n/a	n/a	n/a	n/a	0.240	n/a	
Anions and Small Organic Acids															
S13T006597			16984-48-8	Fluoride	ug/mL	101	<1.61E-03	663	n/a	n/a	n/a	n/a	4.02	n/a	
S13T006597			16887-00-6	Chloride	ug/mL	102	<9.98E-03	308	n/a	n/a	n/a	n/a	25.0	n/a	
S13T006597			14797-65-0	Nitrite	ug/mL	98.2	<0.0192	6.68E+03	n/a	n/a	n/a	n/a	48.0	n/a	
S13T006597			14808-79-8	Sulfate	ug/mL	103	0.0530	945	n/a	n/a	n/a	n/a	46.8	n/a	
S13T006597			338-70-5	Oxalate	ug/mL	101	<0.0231	450	n/a	n/a	n/a	n/a	57.8	n/a	J
S13T006597			24959-67-9	Bromide	ug/mL	102	<0.0580	<145	n/a	n/a	n/a	n/a	145	n/a	U
S13T006597			14797-55-8	Nitrate	ug/mL	104	<0.0208	2.55E+04	n/a	n/a	n/a	n/a	52.0	n/a	
S13T006597			14265-44-2	Phosphate	ug/mL	102	<0.0167	1.29E+03	n/a	n/a	n/a	n/a	41.8	n/a	
Carbon 14 by LSC															
S13T006600			14762-75-5	Carbon-14	uCi/mL	93.2	3.30E-06	1.85E-04	n/a	n/a	n/a	n/a	2.96E-06	3.129	
Combination of ICP/MS Low and High Mass Methods															
S13T006597			7440-22-4	Silver	ug/mL	108	<8.00E-06	1.64	n/a	n/a	n/a	n/a	0.0800	n/a	
S13T006597			7439-93-2	Lithium	ug/mL	105	<1.00E-05	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S13T006597			7440-28-0	Thallium	ug/mL	99.3	<4.00E-06	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
Cyanide Water Distillation															
S13T006598			57-12-5	Cyanide	ug/mL	96.4	<8.12E-03	9.43	n/a	n/a	n/a	n/a	2.03	n/a	J
Density in Hotcells															
S13T006594			Density	Density	g/mL	100.4	n/a	1.065	n/a	n/a	n/a	n/a	1.000E-03	n/a	
GEA															
S13T006600			10198-40-0	Cobalt-60	uCi/mL	101	<2.06E-04	9.03E-04	n/a	n/a	n/a	n/a	5.13E-04	24.15	
S13T006600			14681-63-1	Niobium-94	uCi/mL	n/a	<1.75E-04	<6.81E-04	n/a	n/a	n/a	n/a	6.81E-04	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-04
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
GEA															
S13T006600			RU/RH-106	Ruthenium/Rhodium-106	uCi/mL	n/a	<1.38E-03	<0.0301	n/a	n/a	n/a	n/a	0.0301	n/a	U
S13T006600			14234-35-6	Antimony-125	uCi/mL	n/a	<4.27E-04	<0.0141	n/a	n/a	n/a	n/a	0.0141	n/a	U
S13T006600			13967-70-9	Cesium-134	uCi/mL	n/a	<9.22E-04	<0.0194	n/a	n/a	n/a	n/a	0.0194	n/a	U
S13T006600			10045-97-3	Cesium-137	uCi/mL	106	<2.44E-04	10.7	n/a	n/a	n/a	n/a	4.18E-03	0.08	
S13T006600			14762-78-8	Cerium-144	uCi/mL	n/a	<7.58E-04	<0.0255	n/a	n/a	n/a	n/a	0.0255	n/a	U
S13T006600			14683-23-9	Europium-152	uCi/mL	n/a	<4.31E-04	<9.07E-03	n/a	n/a	n/a	n/a	9.07E-03	n/a	U
S13T006600			15585-10-1	Europium-154	uCi/mL	n/a	<5.42E-04	<1.84E-03	n/a	n/a	n/a	n/a	1.84E-03	n/a	U
S13T006600			14391-16-3	Europium-155	uCi/mL	n/a	<3.44E-04	<0.0118	n/a	n/a	n/a	n/a	0.0118	n/a	U
Hot Cell Breakdown															
S13T006594			ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T006594			VOL%SETS	Volume percent settled solids	%	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
Hot Cell pH															
S13T006594			PH	pH	unitless	n/a	n/a	12.8	n/a	n/a	n/a	n/a	0.0100	n/a	
ICP-AES															
S13T006597			7429-90-5	Aluminum	ug/mL	97.9	<6.00E-03	905	n/a	n/a	n/a	n/a	6.00	n/a	
S13T006597			7440-38-2	Arsenic	ug/mL	98.6	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006597			7440-42-8	Boron	ug/mL	103	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006597			7440-39-3	Barium	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006597			7440-41-7	Beryllium	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006597			7440-69-9	Bismuth	ug/mL	101	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006597			7440-70-2	Calcium	ug/mL	101	<0.0800	<80.0	n/a	n/a	n/a	n/a	80.0	n/a	U
S13T006597			7440-43-9	Cadmium	ug/mL	101	<1.00E-03	2.59	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006597			7440-45-1	Cerium	ug/mL	103	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006597			7440-48-4	Cobalt	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006597			7440-47-3	Chromium	ug/mL	103	<1.00E-03	51.4	n/a	n/a	n/a	n/a	1.00	n/a	
S13T006597			7440-50-8	Copper	ug/mL	104	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006597			7439-89-6	Iron	ug/mL	104	<0.0100	<10.0	n/a	n/a	n/a	n/a	10.0	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-04
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006597			7440-09-7	Potassium	ug/mL	103	<0.0200	176	n/a	n/a	n/a	n/a	20.0	n/a	J
S13T006597			7439-91-0	Lanthanum	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006597			7439-95-4	Magnesium	ug/mL	103	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006597			7439-96-5	Manganese	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006597			7439-98-7	Molybdenum	ug/mL	100	<1.00E-03	3.00	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006597			7440-23-5	Sodium	ug/mL	104	<0.0400	2.85E+04	n/a	n/a	n/a	n/a	40.0	n/a	
S13T006597			7440-00-8	Neodymium	ug/mL	106	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006597			7440-02-0	Nickel	ug/mL	102	<1.00E-03	4.82	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006597			7723-14-0	Phosphorus	ug/mL	101	<3.00E-03	448	n/a	n/a	n/a	n/a	3.00	n/a	
S13T006597			7439-92-1	Lead	ug/mL	101	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006597			7440-05-3	Palladium	ug/mL	107	<9.00E-03	<9.00	n/a	n/a	n/a	n/a	9.00	n/a	U
S13T006597			7440-10-0	Praseodymium	ug/mL	107	<4.00E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006597			7440-17-7	Rubidium	ug/mL	101	<0.0300	<30.0	n/a	n/a	n/a	n/a	30.0	n/a	U
S13T006597			7440-16-6	Rhodium	ug/mL	97.3	<8.00E-03	<8.00	n/a	n/a	n/a	n/a	8.00	n/a	U
S13T006597			7440-18-8	Ruthenium	ug/mL	104	4.48E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006597			7704-34-9	Sulfur	ug/mL	101	<5.00E-03	323	n/a	n/a	n/a	n/a	5.00	n/a	
S13T006597			7440-36-0	Antimony	ug/mL	98.1	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006597			7782-49-2	Selenium	ug/mL	99.5	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006597			7440-21-3	Silicon	ug/mL	98.9	<5.00E-03	8.49	n/a	n/a	n/a	n/a	5.00	n/a	J
S13T006597			7440-31-5	Tin	ug/mL	103	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006597			7440-24-6	Strontium	ug/mL	101	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006597			7440-25-7	Tantalum	ug/mL	109	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006597			13494-80-9	Tellurium	ug/mL	102	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006597			7440-32-6	Titanium	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006597			7440-61-1	Uranium	ug/mL	103	<0.0200	<20.0	n/a	n/a	n/a	n/a	20.0	n/a	U
S13T006597			7440-62-2	Vanadium	ug/mL	103	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006597			7440-33-7	Tungsten	ug/mL	107	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-04
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006597			7440-65-5	Yttrium	ug/mL	101	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006597			7440-66-6	Zinc	ug/mL	100	<4.00E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006597			7440-67-7	Zirconium	ug/mL	105	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
ICP/MS															
S13T006597			13968-55-3	Uranium-233	ug/mL	102	<2.00E-07	<5.00E-04	n/a	n/a	n/a	n/a	5.00E-04	n/a	U
S13T006597			13966-29-5	Uranium-234	ug/mL	n/a	<5.00E-09	7.86E-05	n/a	n/a	n/a	n/a	1.25E-05	n/a	IJ
S13T006597			15117-96-1	Uranium-235	ug/mL	97.0	<1.00E-08	9.61E-03	n/a	n/a	n/a	n/a	2.50E-05	n/a	
S13T006597			13982-70-2	Uranium-236	ug/mL	n/a	<4.00E-09	3.71E-04	n/a	n/a	n/a	n/a	1.00E-05	n/a	I
S13T006597			13994-20-2	Neptunium-237	ug/mL	108	<1.00E-07	7.09E-03	n/a	n/a	n/a	n/a	2.50E-04	n/a	
S13T006597			U-238	Uranium-238	ug/mL	100	<5.00E-07	1.44	n/a	n/a	n/a	n/a	1.25E-03	n/a	
S13T006597			SN-117	Tin-117	ug/mL	105	<1.00E-05	0.233	n/a	n/a	n/a	n/a	0.0100	n/a	
S13T006597			15832-50-5	Tin-126	ug/mL	n/a	<2.00E-07	7.88E-03	n/a	n/a	n/a	n/a	2.00E-04	n/a	I
S13T006597			14133-76-7	Technetium-99	ug/mL	98.5	<6.00E-07	0.542	n/a	n/a	n/a	n/a	6.00E-04	n/a	
Iodine-129															
S13T006600			15046-84-1	Iodine-129	uCi/mL	95.0	<1.28E-05	1.63E-05	n/a	n/a	n/a	n/a	9.99E-06	29.5	
Mercury by CVAA															
S13T006599		HG	7439-97-6	Mercury	ug/mL	105	<1.10E-05	0.0410	n/a	n/a	n/a	n/a	2.20E-03	n/a	J
OH- by Pot. Titration															
S13T006597			HYDROXIDE	Hydroxide	ug/mL	93.9	<9.22	2.86E+03	n/a	n/a	n/a	n/a	111	n/a	
PCB (EPA 8082) from Liquid-Liquid Extraction															
S13T006602		O	12674-11-2	Aroclor 1016	ug/L	n/a	<37.8	<37.8	n/a	n/a	n/a	n/a	37.8	n/a	U
S13T006602		O	11104-28-2	Aroclor 1221	ug/L	n/a	<7.10	<7.10	n/a	n/a	n/a	n/a	7.10	n/a	U
S13T006602		O	11141-16-5	Aroclor 1232	ug/L	n/a	<8.20	<8.20	n/a	n/a	n/a	n/a	8.20	n/a	U
S13T006602		O	53469-21-9	Aroclor 1242	ug/L	n/a	<12.6	<12.6	n/a	n/a	n/a	n/a	12.6	n/a	U
S13T006602		O	12672-29-6	Aroclor 1248	ug/L	n/a	<7.10	<7.10	n/a	n/a	n/a	n/a	7.10	n/a	U
S13T006602		O	11097-69-1	Aroclor 1254	ug/L	82.1	<2.60	<2.60	n/a	n/a	n/a	n/a	2.60	n/a	U
S13T006602		O	11096-82-5	Aroclor 1260	ug/L	n/a	<28.6	<28.6	n/a	n/a	n/a	n/a	28.6	n/a	U
Plutonium-241 by LSC															

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-04
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Plutonium-241 by LSC															
S13T006600			14119-32-5	Plutonium-241	uCi/mL	106	<4.46E-05	1.03E-03	n/a	n/a	n/a	n/a	2.22E-05	3.881	
Pu238,239 by TRU-SPEC Resin															
S13T006600			PU-239/240	Plutonium-239/240	uCi/mL	109	1.53E-07	3.24E-04	n/a	n/a	n/a	n/a	2.28E-07	0.71	
S13T006600			13981-16-3	Plutonium-238	uCi/mL	n/a	<1.67E-07	8.23E-05	n/a	n/a	n/a	n/a	1.61E-07	1.43	
Selenium-79 by LSC															
S13T006600			15758-45-9	Selenium-79	uCi/mL	n/a	<2.87E-06	1.97E-05	n/a	n/a	n/a	n/a	2.79E-06	18.039	
Sr-89/90 by GPC															
S13T006600			SR-89/90	Strontium-89/90	uCi/mL	97.4	1.07E-03	0.214	n/a	n/a	n/a	n/a	3.58E-04	2.161	
TIC/TOC by Acid Persulfate															
S13T006598			TIC	Total inorganic carbon	ug/mL	101	<7.00	2.42E+03	n/a	n/a	n/a	n/a	14.0	n/a	
S13T006598			TOC	Total organic carbon	ug/mL	94.4	<20.0	518	n/a	n/a	n/a	n/a	40.0	n/a	
Technetium - Liq. Scint.															
S13T006600			14133-76-7	Technetium-99	uCi/mL	96.6	4.51E-05	9.01E-03	n/a	n/a	n/a	n/a	3.99E-05	2.11	
Technetium99 No Oxidation															
S13T006600			14133-76-7	Technetium-99	uCi/mL	98.5	<3.07E-05	9.07E-03	n/a	n/a	n/a	n/a	3.30E-05	1.83	
Total Carbon by Furnace															
S13T006598			TC	Total carbon	ug/mL	97.3	<5.00	2.65E+03	n/a	n/a	n/a	n/a	30.0	n/a	
Total Organic Carbon by Furnace															
S13T006598			TOC	Total organic carbon	ug/mL	92.3	<5.00	537	n/a	n/a	n/a	n/a	10.0	n/a	
Tritium (H3) by LSC															
S13T006600			10028-17-8	Tritium	uCi/mL	85.1	<2.42E-04	4.92E-03	n/a	n/a	n/a	n/a	2.50E-04	8.481	

NA = Not Analyzed, ND = Not Detected

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-05
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
% Water by TGA															
S13T006606			%WATER	Percent water	%	98.5	n/a	90.6	n/a	n/a	n/a	n/a	0.0100	n/a	
Am241,Cm243 by TRU-Spec Resin															
S13T006609			CM-243/244	Curium-243/244	uCi/mL	n/a	<1.48E-07	<4.32E-08	n/a	n/a	n/a	n/a	4.32E-08	n/a	U
S13T006609			14596-10-2	Americium-241	uCi/mL	101	<1.28E-07	1.13E-05	n/a	n/a	n/a	n/a	1.20E-07	3.64	
Ammonium by IC															
S13T006605		S	14798-03-9	Ammonium	ug/mL	94.8	2.70	37.3	n/a	n/a	n/a	n/a	0.240	n/a	
Anions and Small Organic Acids															
S13T006606			16984-48-8	Fluoride	ug/mL	101	<1.61E-03	661	n/a	n/a	n/a	n/a	4.02	n/a	
S13T006606			16887-00-6	Chloride	ug/mL	102	<9.98E-03	314	n/a	n/a	n/a	n/a	25.0	n/a	
S13T006606			14797-65-0	Nitrite	ug/mL	98.2	<0.0192	6.52E+03	n/a	n/a	n/a	n/a	48.0	n/a	
S13T006606			14808-79-8	Sulfate	ug/mL	103	0.0530	956	n/a	n/a	n/a	n/a	46.8	n/a	
S13T006606			338-70-5	Oxalate	ug/mL	101	<0.0231	508	n/a	n/a	n/a	n/a	57.8	n/a	J
S13T006606			24959-67-9	Bromide	ug/mL	102	<0.0580	<145	n/a	n/a	n/a	n/a	145	n/a	U
S13T006606			14797-55-8	Nitrate	ug/mL	104	<0.0208	2.51E+04	n/a	n/a	n/a	n/a	52.0	n/a	
S13T006606			14265-44-2	Phosphate	ug/mL	102	<0.0167	1.26E+03	n/a	n/a	n/a	n/a	41.8	n/a	
Carbon 14 by LSC															
S13T006609			14762-75-5	Carbon-14	uCi/mL	93.2	3.30E-06	1.93E-04	n/a	n/a	n/a	n/a	2.92E-06	2.956	
Combination of ICP/MS Low and High Mass Methods															
S13T006606			7440-22-4	Silver	ug/mL	108	<8.00E-06	1.66	n/a	n/a	n/a	n/a	0.0800	n/a	
S13T006606			7439-93-2	Lithium	ug/mL	105	<1.00E-05	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S13T006606			7440-28-0	Thallium	ug/mL	99.3	<4.00E-06	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
Cyanide Water Distillation															
S13T006607			57-12-5	Cyanide	ug/mL	96.4	<8.12E-03	9.63	n/a	n/a	n/a	n/a	2.03	n/a	J
Density in Hotcells															
S13T006603			Density	Density	g/mL	100.4	n/a	1.065	n/a	n/a	n/a	n/a	1.000E-03	n/a	
GEA															
S13T006609			10198-40-0	Cobalt-60	uCi/mL	101	<2.06E-04	<8.95E-04	n/a	n/a	n/a	n/a	8.95E-04	n/a	U
S13T006609			14681-63-1	Niobium-94	uCi/mL	n/a	<1.75E-04	<7.56E-04	n/a	n/a	n/a	n/a	7.56E-04	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-05
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
GEA															
S13T006609			RU/RH-106	Ruthenium/Rhodium-106	uCi/mL	n/a	<1.38E-03	<0.0619	n/a	n/a	n/a	n/a	0.0619	n/a	U
S13T006609			14234-35-6	Antimony-125	uCi/mL	n/a	<4.27E-04	<0.0321	n/a	n/a	n/a	n/a	0.0321	n/a	U
S13T006609			13967-70-9	Cesium-134	uCi/mL	n/a	<9.22E-04	<0.0389	n/a	n/a	n/a	n/a	0.0389	n/a	U
S13T006609			10045-97-3	Cesium-137	uCi/mL	106	<2.44E-04	10.7	n/a	n/a	n/a	n/a	7.01E-03	0.14	
S13T006609			14762-78-8	Cerium-144	uCi/mL	n/a	<7.58E-04	<0.0480	n/a	n/a	n/a	n/a	0.0480	n/a	U
S13T006609			14683-23-9	Europium-152	uCi/mL	n/a	<4.31E-04	<0.0273	n/a	n/a	n/a	n/a	0.0273	n/a	U
S13T006609			15585-10-1	Europium-154	uCi/mL	n/a	<5.42E-04	<2.34E-03	n/a	n/a	n/a	n/a	2.34E-03	n/a	U
S13T006609			14391-16-3	Europium-155	uCi/mL	n/a	<3.44E-04	<0.0303	n/a	n/a	n/a	n/a	0.0303	n/a	U
Hot Cell Breakdown															
S13T006603			ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T006603			VOL%SETS	Volume percent settled solids	%	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
Hot Cell pH															
S13T006603			PH	pH	unitless	n/a	n/a	12.8	n/a	n/a	n/a	n/a	0.0100	n/a	
ICP-AES															
S13T006606			7429-90-5	Aluminum	ug/mL	97.9	<6.00E-03	913	n/a	n/a	n/a	n/a	6.00	n/a	
S13T006606			7440-38-2	Arsenic	ug/mL	98.6	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006606			7440-42-8	Boron	ug/mL	103	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006606			7440-39-3	Barium	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006606			7440-41-7	Beryllium	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006606			7440-69-9	Bismuth	ug/mL	101	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006606			7440-70-2	Calcium	ug/mL	101	<0.0800	<80.0	n/a	n/a	n/a	n/a	80.0	n/a	U
S13T006606			7440-43-9	Cadmium	ug/mL	101	<1.00E-03	2.57	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006606			7440-45-1	Cerium	ug/mL	103	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006606			7440-48-4	Cobalt	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006606			7440-47-3	Chromium	ug/mL	103	<1.00E-03	53.4	n/a	n/a	n/a	n/a	1.00	n/a	
S13T006606			7440-50-8	Copper	ug/mL	104	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006606			7439-89-6	Iron	ug/mL	104	<0.0100	<10.0	n/a	n/a	n/a	n/a	10.0	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-05
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006606			7440-09-7	Potassium	ug/mL	103	<0.0200	175	n/a	n/a	n/a	n/a	20.0	n/a	J
S13T006606			7439-91-0	Lanthanum	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006606			7439-95-4	Magnesium	ug/mL	103	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006606			7439-96-5	Manganese	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006606			7439-98-7	Molybdenum	ug/mL	100	<1.00E-03	3.51	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006606			7440-23-5	Sodium	ug/mL	104	<0.0400	2.88E+04	n/a	n/a	n/a	n/a	40.0	n/a	
S13T006606			7440-00-8	Neodymium	ug/mL	106	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006606			7440-02-0	Nickel	ug/mL	102	<1.00E-03	5.65	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006606			7723-14-0	Phosphorus	ug/mL	101	<3.00E-03	459	n/a	n/a	n/a	n/a	3.00	n/a	
S13T006606			7439-92-1	Lead	ug/mL	101	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006606			7440-05-3	Palladium	ug/mL	107	<9.00E-03	<9.00	n/a	n/a	n/a	n/a	9.00	n/a	U
S13T006606			7440-10-0	Praseodymium	ug/mL	107	<4.00E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006606			7440-17-7	Rubidium	ug/mL	101	<0.0300	<30.0	n/a	n/a	n/a	n/a	30.0	n/a	U
S13T006606			7440-16-6	Rhodium	ug/mL	97.3	<8.00E-03	<8.00	n/a	n/a	n/a	n/a	8.00	n/a	U
S13T006606			7440-18-8	Ruthenium	ug/mL	104	4.48E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006606			7704-34-9	Sulfur	ug/mL	101	<5.00E-03	336	n/a	n/a	n/a	n/a	5.00	n/a	
S13T006606			7440-36-0	Antimony	ug/mL	98.1	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006606			7782-49-2	Selenium	ug/mL	99.5	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006606			7440-21-3	Silicon	ug/mL	98.9	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006606			7440-31-5	Tin	ug/mL	103	<3.00E-03	4.48	n/a	n/a	n/a	n/a	3.00	n/a	J
S13T006606			7440-24-6	Strontium	ug/mL	101	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006606			7440-25-7	Tantalum	ug/mL	109	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006606			13494-80-9	Tellurium	ug/mL	102	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006606			7440-32-6	Titanium	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006606			7440-61-1	Uranium	ug/mL	103	<0.0200	<20.0	n/a	n/a	n/a	n/a	20.0	n/a	U
S13T006606			7440-62-2	Vanadium	ug/mL	103	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006606			7440-33-7	Tungsten	ug/mL	107	<6.00E-03	9.71	n/a	n/a	n/a	n/a	6.00	n/a	J

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-05
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006606			7440-65-5	Yttrium	ug/mL	101	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006606			7440-66-6	Zinc	ug/mL	100	<4.00E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006606			7440-67-7	Zirconium	ug/mL	105	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
ICP/MS															
S13T006606			TH-232	Thorium-232	ug/mL	99.4	<5.00E-07	<1.25E-03	n/a	n/a	n/a	n/a	1.25E-03	n/a	U
S13T006606			13968-55-3	Uranium-233	ug/mL	102	<2.00E-07	<5.00E-04	n/a	n/a	n/a	n/a	5.00E-04	n/a	U
S13T006606			13966-29-5	Uranium-234	ug/mL	n/a	<5.00E-09	4.74E-05	n/a	n/a	n/a	n/a	1.25E-05	n/a	IJ
S13T006606			15117-96-1	Uranium-235	ug/mL	97.0	<1.00E-08	9.74E-03	n/a	n/a	n/a	n/a	2.50E-05	n/a	
S13T006606			13982-70-2	Uranium-236	ug/mL	n/a	<4.00E-09	3.53E-04	n/a	n/a	n/a	n/a	1.00E-05	n/a	I
S13T006606			13994-20-2	Neptunium-237	ug/mL	108	<1.00E-07	7.18E-03	n/a	n/a	n/a	n/a	2.50E-04	n/a	
S13T006606			U-238	Uranium-238	ug/mL	100	<5.00E-07	1.45	n/a	n/a	n/a	n/a	1.25E-03	n/a	
S13T006606			SN-117	Tin-117	ug/mL	105	<1.00E-05	0.236	n/a	n/a	n/a	n/a	0.0100	n/a	
S13T006606			15832-50-5	Tin-126	ug/mL	n/a	<2.00E-07	7.72E-03	n/a	n/a	n/a	n/a	2.00E-04	n/a	I
S13T006606			14133-76-7	Technetium-99	ug/mL	98.5	<6.00E-07	0.546	n/a	n/a	n/a	n/a	6.00E-04	n/a	
Iodine-129															
S13T006609			15046-84-1	Iodine-129	uCi/mL	95.0	<1.28E-05	<2.29E-05	n/a	n/a	n/a	n/a	2.29E-05	n/a	U
Mercury by CVAA															
S13T006608		HG	7439-97-6	Mercury	ug/mL	105	<1.10E-05	0.0392	n/a	n/a	n/a	n/a	2.20E-03	n/a	J
OH- by Pot. Titration															
S13T006606			HYDROXIDE	Hydroxide	ug/mL	93.9	<9.22	2.79E+03	n/a	n/a	n/a	n/a	111	n/a	
PCB (EPA 8082) from Liquid-Liquid Extraction															
S13T006611		O	12674-11-2	Aroclor 1016	ug/L	n/a	<37.8	<37.8	n/a	n/a	n/a	n/a	37.8	n/a	U
S13T006611		O	11104-28-2	Aroclor 1221	ug/L	n/a	<7.10	<7.10	n/a	n/a	n/a	n/a	7.10	n/a	U
S13T006611		O	11141-16-5	Aroclor 1232	ug/L	n/a	<8.20	<8.20	n/a	n/a	n/a	n/a	8.20	n/a	U
S13T006611		O	53469-21-9	Aroclor 1242	ug/L	n/a	<12.6	<12.6	n/a	n/a	n/a	n/a	12.6	n/a	U
S13T006611		O	12672-29-6	Aroclor 1248	ug/L	n/a	<7.10	<7.10	n/a	n/a	n/a	n/a	7.10	n/a	U
S13T006611		O	11097-69-1	Aroclor 1254	ug/L	82.1	<2.60	<2.60	n/a	n/a	n/a	n/a	2.60	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-05
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
PCB (EPA 8082) from Liquid-Liquid Extraction															
S13T006611		O	11096-82-5	Aroclor 1260	ug/L	n/a	<28.6	<28.6	n/a	n/a	n/a	n/a	28.6	n/a	U
Plutonium-241 by LSC															
S13T006609			14119-32-5	Plutonium-241	uCi/mL	106	<4.46E-05	1.08E-03	n/a	n/a	n/a	n/a	2.47E-05	4.064	
Pu238,239 by TRU-SPEC Resin															
S13T006609			PU-239/240	Plutonium-239/240	uCi/mL	109	1.53E-07	3.41E-04	n/a	n/a	n/a	n/a	1.53E-07	0.73	
S13T006609			13981-16-3	Plutonium-238	uCi/mL	n/a	<1.67E-07	8.77E-05	n/a	n/a	n/a	n/a	1.36E-07	1.46	
Selenium-79 by LSC															
S13T006609			15758-45-9	Selenium-79	uCi/mL	n/a	<2.87E-06	1.92E-05	n/a	n/a	n/a	n/a	2.82E-06	19.111	
Sr-89/90 by GPC															
S13T006609			SR-89/90	Strontium-89/90	uCi/mL	97.4	1.07E-03	0.218	n/a	n/a	n/a	n/a	3.53E-04	2.125	
TIC/TOC by Acid Persulfate															
S13T006607			TIC	Total inorganic carbon	ug/mL	101	<7.00	2.37E+03	n/a	n/a	n/a	n/a	14.0	n/a	
S13T006607			TOC	Total organic carbon	ug/mL	94.4	<20.0	552	n/a	n/a	n/a	n/a	40.0	n/a	
Technetium - Liq. Scint.															
S13T006609			14133-76-7	Technetium-99	uCi/mL	96.6	4.51E-05	0.0107	n/a	n/a	n/a	n/a	4.36E-05	2.02	
Technetium99 No Oxidation															
S13T006609			14133-76-7	Technetium-99	uCi/mL	98.5	<3.07E-05	9.12E-03	n/a	n/a	n/a	n/a	3.34E-05	1.85	
Total Carbon by Furnace															
S13T006607			TC	Total carbon	ug/mL	97.3	<5.00	2.71E+03	n/a	n/a	n/a	n/a	30.0	n/a	
Total Organic Carbon by Furnace															
S13T006607			TOC	Total organic carbon	ug/mL	92.3	<5.00	527	n/a	n/a	n/a	n/a	10.0	n/a	
Tritium (H3) by LSC															
S13T006609			10028-17-8	Tritium	uCi/mL	85.1	<2.42E-04	7.16E-03	n/a	n/a	n/a	n/a	2.52E-04	6.362	

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-06
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
% Water by TGA															
S13T006615			%WATER	Percent water	%	98.5	n/a	93.1	n/a	n/a	n/a	n/a	0.0100	n/a	
Am241,Cm243 by TRU-Spec Resin															
S13T006618			CM-243/244	Curium-243/244	uCi/mL	n/a	<1.48E-07	<1.38E-07	n/a	n/a	n/a	n/a	1.38E-07	n/a	U
S13T006618			14596-10-2	Americium-241	uCi/mL	101	<1.28E-07	1.46E-05	n/a	n/a	n/a	n/a	1.29E-07	3.23	
Ammonium by IC															
S13T006614		S	14798-03-9	Ammonium	ug/mL	94.8	2.70	34.8	35.2	35.0	1.14	116	1.20	n/a	B
Anions and Small Organic Acids															
S13T006615			16984-48-8	Fluoride	ug/mL	101	<1.61E-03	650	n/a	n/a	n/a	n/a	4.02	n/a	
S13T006615			16887-00-6	Chloride	ug/mL	102	<9.98E-03	317	n/a	n/a	n/a	n/a	25.0	n/a	
S13T006615			14797-65-0	Nitrite	ug/mL	98.2	<0.0192	6.60E+03	n/a	n/a	n/a	n/a	48.0	n/a	
S13T006615			14808-79-8	Sulfate	ug/mL	103	0.0530	954	n/a	n/a	n/a	n/a	46.8	n/a	
S13T006615			338-70-5	Oxalate	ug/mL	101	<0.0231	476	n/a	n/a	n/a	n/a	57.8	n/a	J
S13T006615			24959-67-9	Bromide	ug/mL	102	<0.0580	<145	n/a	n/a	n/a	n/a	145	n/a	U
S13T006615			14797-55-8	Nitrate	ug/mL	104	<0.0208	2.53E+04	n/a	n/a	n/a	n/a	52.0	n/a	
S13T006615			14265-44-2	Phosphate	ug/mL	102	<0.0167	1.27E+03	n/a	n/a	n/a	n/a	41.8	n/a	
Carbon 14 by LSC															
S13T006618			14762-75-5	Carbon-14	uCi/mL	93.2	3.30E-06	1.85E-04	n/a	n/a	n/a	n/a	2.91E-06	3.033	
Combination of ICP/MS Low and High Mass Methods															
S13T006615			7440-22-4	Silver	ug/mL	108	<8.00E-06	1.56	n/a	n/a	n/a	n/a	0.0800	n/a	
S13T006615			7439-93-2	Lithium	ug/mL	105	<1.00E-05	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S13T006615			7440-28-0	Thallium	ug/mL	99.3	<4.00E-06	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
Cyanide Water Distillation															
S13T006616			57-12-5	Cyanide	ug/mL	96.4	<8.12E-03	9.60	n/a	n/a	n/a	n/a	2.03	n/a	J
Density in Hotcells															
S13T006612			Density	Density	g/mL	100.4	n/a	1.066	n/a	n/a	n/a	n/a	1.000E-03	n/a	
GEA															
S13T006618			10198-40-0	Cobalt-60	uCi/mL	101	<2.06E-04	<6.51E-04	n/a	n/a	n/a	n/a	6.51E-04	n/a	U
S13T006618			14681-63-1	Niobium-94	uCi/mL	n/a	<1.75E-04	<6.32E-04	n/a	n/a	n/a	n/a	6.32E-04	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-06
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
GEA															
S13T006618			RU/RH-106	Ruthenium/Rhodium-106	uCi/mL	n/a	<1.38E-03	<0.0364	n/a	n/a	n/a	n/a	0.0364	n/a	U
S13T006618			14234-35-6	Antimony-125	uCi/mL	n/a	<4.27E-04	<0.0246	n/a	n/a	n/a	n/a	0.0246	n/a	U
S13T006618			13967-70-9	Cesium-134	uCi/mL	n/a	<9.22E-04	<0.0233	n/a	n/a	n/a	n/a	0.0233	n/a	U
S13T006618			10045-97-3	Cesium-137	uCi/mL	106	<2.44E-04	10.9	n/a	n/a	n/a	n/a	3.86E-03	0.12	
S13T006618			14762-78-8	Cerium-144	uCi/mL	n/a	<7.58E-04	<0.0288	n/a	n/a	n/a	n/a	0.0288	n/a	U
S13T006618			14683-23-9	Europium-152	uCi/mL	n/a	<4.31E-04	<0.0200	n/a	n/a	n/a	n/a	0.0200	n/a	U
S13T006618			15585-10-1	Europium-154	uCi/mL	n/a	<5.42E-04	<1.88E-03	n/a	n/a	n/a	n/a	1.88E-03	n/a	U
S13T006618			14391-16-3	Europium-155	uCi/mL	n/a	<3.44E-04	<0.0129	n/a	n/a	n/a	n/a	0.0129	n/a	U
Hot Cell Breakdown															
S13T006612			ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T006612			VOL%SETS	Volume percent settled solids	%	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
Hot Cell pH															
S13T006612			PH	pH	unitless	n/a	n/a	12.9	n/a	n/a	n/a	n/a	0.0100	n/a	
ICP-AES															
S13T006615			7429-90-5	Aluminum	ug/mL	97.9	<6.00E-03	903	n/a	n/a	n/a	n/a	6.00	n/a	
S13T006615			7440-38-2	Arsenic	ug/mL	98.6	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006615			7440-42-8	Boron	ug/mL	103	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006615			7440-39-3	Barium	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006615			7440-41-7	Beryllium	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006615			7440-69-9	Bismuth	ug/mL	101	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006615			7440-70-2	Calcium	ug/mL	101	<0.0800	<80.0	n/a	n/a	n/a	n/a	80.0	n/a	U
S13T006615			7440-43-9	Cadmium	ug/mL	101	<1.00E-03	2.12	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006615			7440-45-1	Cerium	ug/mL	103	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006615			7440-48-4	Cobalt	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006615			7440-47-3	Chromium	ug/mL	103	<1.00E-03	52.5	n/a	n/a	n/a	n/a	1.00	n/a	
S13T006615			7440-50-8	Copper	ug/mL	104	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006615			7439-89-6	Iron	ug/mL	104	<0.0100	<10.0	n/a	n/a	n/a	n/a	10.0	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-06
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006615			7440-09-7	Potassium	ug/mL	103	<0.0200	169	n/a	n/a	n/a	n/a	20.0	n/a	J
S13T006615			7439-91-0	Lanthanum	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006615			7439-95-4	Magnesium	ug/mL	103	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006615			7439-96-5	Manganese	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006615			7439-98-7	Molybdenum	ug/mL	100	<1.00E-03	3.73	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006615			7440-23-5	Sodium	ug/mL	104	<0.0400	2.83E+04	n/a	n/a	n/a	n/a	40.0	n/a	
S13T006615			7440-00-8	Neodymium	ug/mL	106	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006615			7440-02-0	Nickel	ug/mL	102	<1.00E-03	5.95	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006615			7723-14-0	Phosphorus	ug/mL	101	<3.00E-03	452	n/a	n/a	n/a	n/a	3.00	n/a	
S13T006615			7439-92-1	Lead	ug/mL	101	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006615			7440-05-3	Palladium	ug/mL	107	<9.00E-03	<9.00	n/a	n/a	n/a	n/a	9.00	n/a	U
S13T006615			7440-10-0	Praseodymium	ug/mL	107	<4.00E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006615			7440-17-7	Rubidium	ug/mL	101	<0.0300	<30.0	n/a	n/a	n/a	n/a	30.0	n/a	U
S13T006615			7440-16-6	Rhodium	ug/mL	97.3	<8.00E-03	<8.00	n/a	n/a	n/a	n/a	8.00	n/a	U
S13T006615			7440-18-8	Ruthenium	ug/mL	104	4.48E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006615			7704-34-9	Sulfur	ug/mL	101	<5.00E-03	330	n/a	n/a	n/a	n/a	5.00	n/a	
S13T006615			7440-36-0	Antimony	ug/mL	98.1	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006615			7782-49-2	Selenium	ug/mL	99.5	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006615			7440-21-3	Silicon	ug/mL	98.9	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006615			7440-31-5	Tin	ug/mL	103	<3.00E-03	4.31	n/a	n/a	n/a	n/a	3.00	n/a	J
S13T006615			7440-24-6	Strontium	ug/mL	101	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006615			7440-25-7	Tantalum	ug/mL	109	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006615			13494-80-9	Tellurium	ug/mL	102	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006615			7440-32-6	Titanium	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006615			7440-61-1	Uranium	ug/mL	103	<0.0200	<20.0	n/a	n/a	n/a	n/a	20.0	n/a	U
S13T006615			7440-62-2	Vanadium	ug/mL	103	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006615			7440-33-7	Tungsten	ug/mL	107	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-06
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006615			7440-65-5	Yttrium	ug/mL	101	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006615			7440-66-6	Zinc	ug/mL	100	<4.00E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006615			7440-67-7	Zirconium	ug/mL	105	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
ICP/MS															
S13T006615			TH-232	Thorium-232	ug/mL	99.4	<5.00E-07	<1.25E-03	n/a	n/a	n/a	n/a	1.25E-03	n/a	U
S13T006615			13968-55-3	Uranium-233	ug/mL	102	<2.00E-07	<5.00E-04	n/a	n/a	n/a	n/a	5.00E-04	n/a	U
S13T006615			13966-29-5	Uranium-234	ug/mL	n/a	<5.00E-09	4.33E-05	n/a	n/a	n/a	n/a	1.25E-05	n/a	IJ
S13T006615			15117-96-1	Uranium-235	ug/mL	97.0	<1.00E-08	9.78E-03	n/a	n/a	n/a	n/a	2.50E-05	n/a	
S13T006615			13982-70-2	Uranium-236	ug/mL	n/a	<4.00E-09	3.97E-04	n/a	n/a	n/a	n/a	1.00E-05	n/a	I
S13T006615			13994-20-2	Neptunium-237	ug/mL	108	<1.00E-07	6.89E-03	n/a	n/a	n/a	n/a	2.50E-04	n/a	
S13T006615			U-238	Uranium-238	ug/mL	100	<5.00E-07	1.41	n/a	n/a	n/a	n/a	1.25E-03	n/a	
S13T006615			SN-117	Tin-117	ug/mL	105	<1.00E-05	0.232	n/a	n/a	n/a	n/a	0.0100	n/a	
S13T006615			15832-50-5	Tin-126	ug/mL	n/a	<2.00E-07	7.49E-03	n/a	n/a	n/a	n/a	2.00E-04	n/a	I
S13T006615			14133-76-7	Technetium-99	ug/mL	98.5	<6.00E-07	0.545	n/a	n/a	n/a	n/a	6.00E-04	n/a	
Iodine-129															
S13T006618			15046-84-1	Iodine-129	uCi/mL	95.0	<1.28E-05	<1.02E-05	n/a	n/a	n/a	n/a	1.02E-05	n/a	U
Mercury by CVAA															
S13T006617		HG	7439-97-6	Mercury	ug/mL	105	<1.10E-05	0.0404	n/a	n/a	n/a	n/a	2.20E-03	n/a	J
OH- by Pot. Titration															
S13T006615			HYDROXIDE	Hydroxide	ug/mL	93.9	<9.22	2.66E+03	n/a	n/a	n/a	n/a	111	n/a	
PCB (EPA 8082) from Liquid-Liquid Extraction															
S13T006620		O	12674-11-2	Aroclor 1016	ug/L	n/a	<37.8	<37.8	n/a	n/a	n/a	n/a	37.8	n/a	U
S13T006620		O	11104-28-2	Aroclor 1221	ug/L	n/a	<7.10	<7.10	n/a	n/a	n/a	n/a	7.10	n/a	U
S13T006620		O	11141-16-5	Aroclor 1232	ug/L	n/a	<8.20	<8.20	n/a	n/a	n/a	n/a	8.20	n/a	U
S13T006620		O	53469-21-9	Aroclor 1242	ug/L	n/a	<12.6	<12.6	n/a	n/a	n/a	n/a	12.6	n/a	U
S13T006620		O	12672-29-6	Aroclor 1248	ug/L	n/a	<7.10	<7.10	n/a	n/a	n/a	n/a	7.10	n/a	U
S13T006620		O	11097-69-1	Aroclor 1254	ug/L	82.1	<2.60	<2.60	n/a	n/a	n/a	n/a	2.60	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-06
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
PCB (EPA 8082) from Liquid-Liquid Extraction															
S13T006620		O	11096-82-5	Aroclor 1260	ug/L	n/a	<28.6	<28.6	n/a	n/a	n/a	n/a	28.6	n/a	U
Plutonium-241 by LSC															
S13T006618			14119-32-5	Plutonium-241	uCi/mL	106	<4.46E-05	1.06E-03	n/a	n/a	n/a	n/a	2.29E-05	3.896	
Pu238,239 by TRU-SPEC Resin															
S13T006618			PU-239/240	Plutonium-239/240	uCi/mL	109	1.53E-07	3.30E-04	n/a	n/a	n/a	n/a	1.51E-07	0.70	
S13T006618			13981-16-3	Plutonium-238	uCi/mL	n/a	<1.67E-07	8.27E-05	n/a	n/a	n/a	n/a	1.39E-07	1.44	
Selenium-79 by LSC															
S13T006618			15758-45-9	Selenium-79	uCi/mL	n/a	<2.87E-06	2.49E-05	n/a	n/a	n/a	n/a	2.79E-06	14.759	
Sr-89/90 by GPC															
S13T006618			SR-89/90	Strontium-89/90	uCi/mL	97.4	1.07E-03	0.219	n/a	n/a	n/a	n/a	3.53E-04	2.117	
TIC/TOC by Acid Persulfate															
S13T006616			TIC	Total inorganic carbon	ug/mL	101	<7.00	2.34E+03	2.33E+03	2.34E+03	0.428	94.3	14.0	n/a	
S13T006616			TOC	Total organic carbon	ug/mL	94.9	<20.0	565	540	552	4.52	88.7	40.0	n/a	
Technetium - Liq. Scint.															
S13T006618			14133-76-7	Technetium-99	uCi/mL	96.6	4.51E-05	0.0107	n/a	n/a	n/a	n/a	4.33E-05	2	
Technetium99 No Oxidation															
S13T006618			14133-76-7	Technetium-99	uCi/mL	98.5	<3.07E-05	9.12E-03	n/a	n/a	n/a	n/a	3.37E-05	1.86	
Total Carbon by Furnace															
S13T006616			TC	Total carbon	ug/mL	97.3	<5.00	2.76E+03	n/a	n/a	n/a	n/a	30.0	n/a	
Total Organic Carbon by Furnace															
S13T006616			TOC	Total organic carbon	ug/mL	92.3	<5.00	534	n/a	n/a	n/a	n/a	10.0	n/a	
Tritium (H3) by LSC															
S13T006618			10028-17-8	Tritium	uCi/mL	85.1	<2.42E-04	5.06E-03	n/a	n/a	n/a	n/a	2.50E-04	8.206	

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-07
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
% Water by TGA															
S13T006624			%WATER	Percent water	%	98.6	n/a	85.6	87.9	86.8	2.67	n/a	0.0100	n/a	
Am241,Cm243 by TRU-Spec Resin															
S13T006627			CM-243/244	Curium-243/244	uCi/mL	n/a	<1.25E-07	<1.43E-07	n/a	n/a	n/a	n/a	1.43E-07	n/a	U
S13T006627			14596-10-2	Americium-241	uCi/mL	94.9	1.85E-07	1.02E-05	n/a	n/a	n/a	n/a	2.10E-07	3.92	B
Ammonium by IC															
S13T006623		S	14798-03-9	Ammonium	ug/mL	94.8	2.70	53.0	n/a	n/a	n/a	n/a	1.20	n/a	B
Anions and Small Organic Acids															
S13T006624			16984-48-8	Fluoride	ug/mL	101	<1.61E-03	506	n/a	n/a	n/a	n/a	4.83	n/a	
S13T006624			16887-00-6	Chloride	ug/mL	102	<9.98E-03	429	n/a	n/a	n/a	n/a	29.9	n/a	
S13T006624			14797-65-0	Nitrite	ug/mL	98.2	<0.0192	9.20E+03	n/a	n/a	n/a	n/a	57.6	n/a	
S13T006624			14808-79-8	Sulfate	ug/mL	103	0.0530	1.65E+03	n/a	n/a	n/a	n/a	56.1	n/a	
S13T006624			338-70-5	Oxalate	ug/mL	101	<0.0231	777	n/a	n/a	n/a	n/a	69.3	n/a	
S13T006624			24959-67-9	Bromide	ug/mL	102	<0.0580	<174	n/a	n/a	n/a	n/a	174	n/a	U
S13T006624			14797-55-8	Nitrate	ug/mL	104	<0.0208	4.59E+04	n/a	n/a	n/a	n/a	62.4	n/a	
S13T006624			14265-44-2	Phosphate	ug/mL	102	<0.0167	2.95E+03	n/a	n/a	n/a	n/a	50.1	n/a	
Carbon 14 by LSC															
S13T006627			14762-75-5	Carbon-14	uCi/mL	93.2	3.30E-06	3.14E-04	n/a	n/a	n/a	n/a	2.94E-06	2.165	
Combination of ICP/MS Low and High Mass Methods															
S13T006624			7440-22-4	Silver	ug/mL	108	<8.00E-06	2.73	n/a	n/a	n/a	n/a	0.0800	n/a	
S13T006624			7439-93-2	Lithium	ug/mL	105	<1.00E-05	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S13T006624			7440-28-0	Thallium	ug/mL	99.3	<4.00E-06	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
Cyanide Water Distillation															
S13T006625			57-12-5	Cyanide	ug/mL	96.4	<8.12E-03	7.09	n/a	n/a	n/a	n/a	2.03	n/a	J
Density in Hotcells															
S13T006621			Density	Density	g/mL	100.4	n/a	1.110	n/a	n/a	n/a	n/a	1.000E-03	n/a	
GEA															
S13T006627			10198-40-0	Cobalt-60	uCi/mL	101	<2.06E-04	<7.20E-04	n/a	n/a	n/a	n/a	7.20E-04	n/a	U
S13T006627			14681-63-1	Niobium-94	uCi/mL	n/a	<1.75E-04	<6.74E-04	n/a	n/a	n/a	n/a	6.74E-04	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-07
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
GEA															
S13T006627			RU/RH-106	Ruthenium/Rhodium-106	uCi/mL	n/a	<1.38E-03	<0.0231	n/a	n/a	n/a	n/a	0.0231	n/a	U
S13T006627			14234-35-6	Antimony-125	uCi/mL	n/a	<4.27E-04	<0.0213	n/a	n/a	n/a	n/a	0.0213	n/a	U
S13T006627			13967-70-9	Cesium-134	uCi/mL	n/a	<9.22E-04	<0.0231	n/a	n/a	n/a	n/a	0.0231	n/a	U
S13T006627			10045-97-3	Cesium-137	uCi/mL	106	<2.44E-04	15.5	n/a	n/a	n/a	n/a	4.98E-03	0.07	
S13T006627			14762-78-8	Cerium-144	uCi/mL	n/a	<7.58E-04	<0.0299	n/a	n/a	n/a	n/a	0.0299	n/a	U
S13T006627			14683-23-9	Europium-152	uCi/mL	n/a	<4.31E-04	<0.0143	n/a	n/a	n/a	n/a	0.0143	n/a	U
S13T006627			15585-10-1	Europium-154	uCi/mL	n/a	<5.42E-04	<1.20E-03	n/a	n/a	n/a	n/a	1.20E-03	n/a	U
S13T006627			14391-16-3	Europium-155	uCi/mL	n/a	<3.44E-04	<0.0138	n/a	n/a	n/a	n/a	0.0138	n/a	U
Hot Cell Breakdown															
S13T006621			ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T006621			VOL%SETS	Volume percent settled solids	%	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
Hot Cell pH															
S13T006621			PH	pH	unitless	n/a	n/a	13.1	n/a	n/a	n/a	n/a	0.0100	n/a	E
ICP-AES															
S13T006624			7429-90-5	Aluminum	ug/mL	97.9	<6.00E-03	1.86E+03	n/a	n/a	n/a	n/a	6.00	n/a	
S13T006624			7440-38-2	Arsenic	ug/mL	98.6	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006624			7440-42-8	Boron	ug/mL	103	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006624			7440-39-3	Barium	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006624			7440-41-7	Beryllium	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006624			7440-69-9	Bismuth	ug/mL	101	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006624			7440-70-2	Calcium	ug/mL	101	<0.0800	<80.0	n/a	n/a	n/a	n/a	80.0	n/a	U
S13T006624			7440-43-9	Cadmium	ug/mL	101	<1.00E-03	1.08	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006624			7440-45-1	Cerium	ug/mL	103	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006624			7440-48-4	Cobalt	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006624			7440-47-3	Chromium	ug/mL	103	<1.00E-03	98.8	n/a	n/a	n/a	n/a	1.00	n/a	
S13T006624			7440-50-8	Copper	ug/mL	104	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006624			7439-89-6	Iron	ug/mL	104	<0.0100	<10.0	n/a	n/a	n/a	n/a	10.0	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-07
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006624			7440-09-7	Potassium	ug/mL	103	<0.0200	204	n/a	n/a	n/a	n/a	20.0	n/a	
S13T006624			7439-91-0	Lanthanum	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006624			7439-95-4	Magnesium	ug/mL	103	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006624			7439-96-5	Manganese	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006624			7439-98-7	Molybdenum	ug/mL	100	<1.00E-03	4.77	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006624			7440-23-5	Sodium	ug/mL	104	<0.0400	4.60E+04	n/a	n/a	n/a	n/a	40.0	n/a	
S13T006624			7440-00-8	Neodymium	ug/mL	106	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006624			7440-02-0	Nickel	ug/mL	102	<1.00E-03	2.89	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006624			7723-14-0	Phosphorus	ug/mL	101	<3.00E-03	964	n/a	n/a	n/a	n/a	3.00	n/a	
S13T006624			7439-92-1	Lead	ug/mL	101	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006624			7440-05-3	Palladium	ug/mL	107	<9.00E-03	<9.00	n/a	n/a	n/a	n/a	9.00	n/a	U
S13T006624			7440-10-0	Praseodymium	ug/mL	107	<4.00E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006624			7440-17-7	Rubidium	ug/mL	101	<0.0300	<30.0	n/a	n/a	n/a	n/a	30.0	n/a	U
S13T006624			7440-16-6	Rhodium	ug/mL	97.3	<8.00E-03	<8.00	n/a	n/a	n/a	n/a	8.00	n/a	U
S13T006624			7440-18-8	Ruthenium	ug/mL	104	4.48E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006624			7704-34-9	Sulfur	ug/mL	101	<5.00E-03	554	n/a	n/a	n/a	n/a	5.00	n/a	
S13T006624			7440-36-0	Antimony	ug/mL	98.1	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006624			7782-49-2	Selenium	ug/mL	99.5	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006624			7440-21-3	Silicon	ug/mL	98.9	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006624			7440-31-5	Tin	ug/mL	103	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006624			7440-24-6	Strontium	ug/mL	101	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006624			7440-25-7	Tantalum	ug/mL	109	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006624			13494-80-9	Tellurium	ug/mL	102	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006624			7440-32-6	Titanium	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006624			7440-61-1	Uranium	ug/mL	103	<0.0200	<20.0	n/a	n/a	n/a	n/a	20.0	n/a	U
S13T006624			7440-62-2	Vanadium	ug/mL	103	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006624			7440-33-7	Tungsten	ug/mL	107	<6.00E-03	18.8	n/a	n/a	n/a	n/a	6.00	n/a	J

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-07
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006624			7440-65-5	Yttrium	ug/mL	101	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006624			7440-66-6	Zinc	ug/mL	100	<4.00E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006624			7440-67-7	Zirconium	ug/mL	105	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
ICP/MS															
S13T006624			TH-232	Thorium-232	ug/mL	99.4	<5.00E-07	<1.25E-03	n/a	n/a	n/a	n/a	1.25E-03	n/a	U
S13T006624			13968-55-3	Uranium-233	ug/mL	102	<2.00E-07	<5.00E-04	n/a	n/a	n/a	n/a	5.00E-04	n/a	U
S13T006624			13966-29-5	Uranium-234	ug/mL	n/a	<5.00E-09	2.11E-04	n/a	n/a	n/a	n/a	1.25E-05	n/a	I
S13T006624			15117-96-1	Uranium-235	ug/mL	97.0	<1.00E-08	0.0214	n/a	n/a	n/a	n/a	2.50E-05	n/a	
S13T006624			13982-70-2	Uranium-236	ug/mL	n/a	<4.00E-09	1.13E-03	n/a	n/a	n/a	n/a	1.00E-05	n/a	I
S13T006624			13994-20-2	Neptunium-237	ug/mL	108	<1.00E-07	0.0152	n/a	n/a	n/a	n/a	2.50E-04	n/a	
S13T006624			U-238	Uranium-238	ug/mL	100	<5.00E-07	3.07	n/a	n/a	n/a	n/a	1.25E-03	n/a	
S13T006624			SN-117	Tin-117	ug/mL	105	<1.00E-05	0.211	n/a	n/a	n/a	n/a	0.0100	n/a	
S13T006624			15832-50-5	Tin-126	ug/mL	n/a	<2.00E-07	0.0111	n/a	n/a	n/a	n/a	2.00E-04	n/a	I
S13T006624			14133-76-7	Technetium-99	ug/mL	98.5	<6.00E-07	0.887	n/a	n/a	n/a	n/a	6.00E-04	n/a	
Iodine-129															
S13T006627			15046-84-1	Iodine-129	uCi/mL	95.0	<1.28E-05	<1.75E-05	n/a	n/a	n/a	n/a	1.75E-05	n/a	U
Mercury by CVAA															
S13T006626		HG	7439-97-6	Mercury	ug/mL	105	<1.10E-05	0.0168	n/a	n/a	n/a	n/a	2.20E-03	n/a	J
OH- by Pot. Titration															
S13T006624			HYDROXIDE	Hydroxide	ug/mL	93.9	<9.22	6.20E+03	n/a	n/a	n/a	n/a	111	n/a	
PCB (EPA 8082) from Liquid-Liquid Extraction															
S13T006629		O	12674-11-2	Aroclor 1016	ug/L	n/a	<37.8	<37.8	n/a	n/a	n/a	n/a	37.8	n/a	U
S13T006629		O	11104-28-2	Aroclor 1221	ug/L	n/a	<7.10	<7.10	n/a	n/a	n/a	n/a	7.10	n/a	U
S13T006629		O	11141-16-5	Aroclor 1232	ug/L	n/a	<8.20	<8.20	n/a	n/a	n/a	n/a	8.20	n/a	U
S13T006629		O	53469-21-9	Aroclor 1242	ug/L	n/a	<12.6	<12.6	n/a	n/a	n/a	n/a	12.6	n/a	U
S13T006629		O	12672-29-6	Aroclor 1248	ug/L	n/a	<7.10	<7.10	n/a	n/a	n/a	n/a	7.10	n/a	U
S13T006629		O	11097-69-1	Aroclor 1254	ug/L	82.1	<2.60	<2.60	n/a	n/a	n/a	n/a	2.60	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-07
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
PCB (EPA 8082) from Liquid-Liquid Extraction															
S13T006629		O	11096-82-5	Aroclor 1260	ug/L	n/a	<28.6	<28.6	n/a	n/a	n/a	n/a	28.6	n/a	U
Plutonium-241 by LSC															
S13T006627			14119-32-5	Plutonium-241	uCi/mL	100	<2.86E-05	2.05E-03	n/a	n/a	n/a	n/a	2.68E-05	2.807	
Pu238,239 by TRU-SPEC Resin															
S13T006627			PU-239/240	Plutonium-239/240	uCi/mL	109	1.53E-07	5.18E-04	n/a	n/a	n/a	n/a	2.10E-05	6.47	
S13T006627			13981-16-3	Plutonium-238	uCi/mL	n/a	<1.67E-07	1.71E-04	n/a	n/a	n/a	n/a	2.03E-05	19.19	
Selenium-79 by LSC															
S13T006627			15758-45-9	Selenium-79	uCi/mL	n/a	<2.87E-06	4.27E-05	n/a	n/a	n/a	n/a	2.84E-06	9.183	
Sr-89/90 by GPC															
S13T006627			SR-89/90	Strontium-89/90	uCi/mL	97.4	1.07E-03	0.107	n/a	n/a	n/a	n/a	3.55E-04	3.06	
TIC/TOC by Acid Persulfate															
S13T006625			TIC	Total inorganic carbon	ug/mL	100	<7.00	2.98E+03	3.02E+03	3.00E+03	1.33	103	14.0	n/a	
S13T006625			TOC	Total organic carbon	ug/mL	96.9	<20.0	593	602	598	1.51	95.6	40.0	n/a	
Technetium - Liq. Scint.															
S13T006627			14133-76-7	Technetium-99	uCi/mL	96.6	4.51E-05	0.0147	n/a	n/a	n/a	n/a	4.20E-05	1.67	
Technetium99 No Oxidation															
S13T006627			14133-76-7	Technetium-99	uCi/mL	98.5	<3.07E-05	0.0140	n/a	n/a	n/a	n/a	3.31E-05	1.48	
Total Carbon by Furnace															
S13T006625			TC	Total carbon	ug/mL	97.3	<5.00	3.32E+03	n/a	n/a	n/a	n/a	30.0	n/a	
Total Organic Carbon by Furnace															
S13T006625			TOC	Total organic carbon	ug/mL	92.3	<5.00	581	n/a	n/a	n/a	n/a	10.0	n/a	
Tritium (H3) by LSC															
S13T006627			10028-17-8	Tritium	uCi/mL	85.1	<2.42E-04	3.86E-03	n/a	n/a	n/a	n/a	2.48E-04	10.092	

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-08
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
% Water by TGA															
S13T006633			%WATER	Percent water	%	98.6	n/a	83.6	n/a	n/a	n/a	n/a	0.0100	n/a	
Am241,Cm243 by TRU-Spec Resin															
S13T006636			CM-243/244	Curium-243/244	uCi/mL	n/a	<1.25E-07	<1.27E-07	n/a	n/a	n/a	n/a	1.27E-07	n/a	U
S13T006636			14596-10-2	Americium-241	uCi/mL	94.9	1.85E-07	3.39E-06	n/a	n/a	n/a	n/a	9.34E-08	6.54	B
Ammonium by IC															
S13T006632		S	14798-03-9	Ammonium	ug/mL	94.8	2.70	66.8	n/a	n/a	n/a	n/a	1.20	n/a	
Anions and Small Organic Acids															
S13T006633			16984-48-8	Fluoride	ug/mL	101	<1.61E-03	349	n/a	n/a	n/a	n/a	4.02	n/a	
S13T006633			16887-00-6	Chloride	ug/mL	102	<9.98E-03	558	n/a	n/a	n/a	n/a	25.0	n/a	
S13T006633			14797-65-0	Nitrite	ug/mL	98.2	<0.0192	1.19E+04	n/a	n/a	n/a	n/a	48.0	n/a	
S13T006633			14808-79-8	Sulfate	ug/mL	103	0.0530	2.33E+03	n/a	n/a	n/a	n/a	46.8	n/a	
S13T006633			338-70-5	Oxalate	ug/mL	101	<0.0231	1.07E+03	n/a	n/a	n/a	n/a	57.8	n/a	
S13T006633			24959-67-9	Bromide	ug/mL	102	<0.0580	<145	n/a	n/a	n/a	n/a	145	n/a	U
S13T006633			14797-55-8	Nitrate	ug/mL	104	<0.0208	6.24E+04	n/a	n/a	n/a	n/a	52.0	n/a	
S13T006633			14265-44-2	Phosphate	ug/mL	102	<0.0167	4.27E+03	n/a	n/a	n/a	n/a	41.8	n/a	
Carbon 14 by LSC															
S13T006636			14762-75-5	Carbon-14	uCi/mL	93.2	3.30E-06	4.19E-04	n/a	n/a	n/a	n/a	2.91E-06	1.772	
Combination of ICP/MS Low and High Mass Methods															
S13T006633			7440-22-4	Silver	ug/mL	108	<8.00E-06	4.73	n/a	n/a	n/a	n/a	0.0800	n/a	
S13T006633			7439-93-2	Lithium	ug/mL	105	<1.00E-05	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S13T006633			7440-28-0	Thallium	ug/mL	99.3	<4.00E-06	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
Cyanide Water Distillation															
S13T006634			57-12-5	Cyanide	ug/mL	96.4	<8.12E-03	4.04	n/a	n/a	n/a	n/a	2.03	n/a	J
Density in Hotcells															
S13T006630			Density	Density	g/mL	100.4	n/a	1.134	n/a	n/a	n/a	n/a	1.000E-03	n/a	
GEA															
S13T006636			10198-40-0	Cobalt-60	uCi/mL	101	<2.06E-04	<3.27E-03	n/a	n/a	n/a	n/a	3.27E-03	n/a	U
S13T006636			14681-63-1	Niobium-94	uCi/mL	n/a	<1.75E-04	<3.49E-03	n/a	n/a	n/a	n/a	3.49E-03	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-08
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
GEA															
S13T006636			RU/RH-106	Ruthenium/Rhodium-106	uCi/mL	n/a	<1.38E-03	<0.122	n/a	n/a	n/a	n/a	0.122	n/a	U
S13T006636			14234-35-6	Antimony-125	uCi/mL	n/a	<4.27E-04	<0.0943	n/a	n/a	n/a	n/a	0.0943	n/a	U
S13T006636			13967-70-9	Cesium-134	uCi/mL	n/a	<9.22E-04	<0.104	n/a	n/a	n/a	n/a	0.104	n/a	U
S13T006636			10045-97-3	Cesium-137	uCi/mL	106	<2.44E-04	53.5	n/a	n/a	n/a	n/a	0.0211	0.09	
S13T006636			14762-78-8	Cerium-144	uCi/mL	n/a	<7.58E-04	<0.141	n/a	n/a	n/a	n/a	0.141	n/a	U
S13T006636			14683-23-9	Europium-152	uCi/mL	n/a	<4.31E-04	<0.0791	n/a	n/a	n/a	n/a	0.0791	n/a	U
S13T006636			15585-10-1	Europium-154	uCi/mL	n/a	<5.42E-04	<8.92E-03	n/a	n/a	n/a	n/a	8.92E-03	n/a	U
S13T006636			14391-16-3	Europium-155	uCi/mL	n/a	<3.44E-04	<0.172	n/a	n/a	n/a	n/a	0.172	n/a	U
Hot Cell Breakdown															
S13T006630			ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T006630			VOL%SETS	Volume percent settled solids	%	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
Hot Cell pH															
S13T006630			PH	pH	unitless	n/a	n/a	13.2	n/a	n/a	n/a	n/a	0.0100	n/a	E
ICP-AES															
S13T006633			7429-90-5	Aluminum	ug/mL	97.9	<6.00E-03	2.75E+03	n/a	n/a	n/a	n/a	6.00	n/a	
S13T006633			7440-38-2	Arsenic	ug/mL	98.6	<5.00E-03	6.13	n/a	n/a	n/a	n/a	5.00	n/a	J
S13T006633			7440-42-8	Boron	ug/mL	103	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006633			7440-39-3	Barium	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006633			7440-41-7	Beryllium	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006633			7440-69-9	Bismuth	ug/mL	101	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006633			7440-70-2	Calcium	ug/mL	101	<0.0800	<80.0	n/a	n/a	n/a	n/a	80.0	n/a	U
S13T006633			7440-43-9	Cadmium	ug/mL	101	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006633			7440-45-1	Cerium	ug/mL	103	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006633			7440-48-4	Cobalt	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006633			7440-47-3	Chromium	ug/mL	103	<1.00E-03	153	n/a	n/a	n/a	n/a	1.00	n/a	
S13T006633			7440-50-8	Copper	ug/mL	104	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006633			7439-89-6	Iron	ug/mL	104	<0.0100	<10.0	n/a	n/a	n/a	n/a	10.0	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-08
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006633			7440-09-7	Potassium	ug/mL	103	<0.0200	235	n/a	n/a	n/a	n/a	20.0	n/a	
S13T006633			7439-91-0	Lanthanum	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006633			7439-95-4	Magnesium	ug/mL	103	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006633			7439-96-5	Manganese	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006633			7439-98-7	Molybdenum	ug/mL	100	<1.00E-03	6.62	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006633			7440-23-5	Sodium	ug/mL	104	<0.0400	6.34E+04	n/a	n/a	n/a	n/a	40.0	n/a	
S13T006633			7440-00-8	Neodymium	ug/mL	106	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006633			7440-02-0	Nickel	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006633			7723-14-0	Phosphorus	ug/mL	101	<3.00E-03	1.39E+03	n/a	n/a	n/a	n/a	3.00	n/a	
S13T006633			7439-92-1	Lead	ug/mL	101	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006633			7440-05-3	Palladium	ug/mL	107	<9.00E-03	<9.00	n/a	n/a	n/a	n/a	9.00	n/a	U
S13T006633			7440-10-0	Praseodymium	ug/mL	107	<4.00E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006633			7440-17-7	Rubidium	ug/mL	101	<0.0300	<30.0	n/a	n/a	n/a	n/a	30.0	n/a	U
S13T006633			7440-16-6	Rhodium	ug/mL	97.3	<8.00E-03	<8.00	n/a	n/a	n/a	n/a	8.00	n/a	U
S13T006633			7440-18-8	Ruthenium	ug/mL	104	4.48E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006633			7704-34-9	Sulfur	ug/mL	101	<5.00E-03	786	n/a	n/a	n/a	n/a	5.00	n/a	
S13T006633			7440-36-0	Antimony	ug/mL	98.1	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006633			7782-49-2	Selenium	ug/mL	99.5	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006633			7440-21-3	Silicon	ug/mL	98.9	<5.00E-03	5.11	n/a	n/a	n/a	n/a	5.00	n/a	J
S13T006633			7440-31-5	Tin	ug/mL	103	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006633			7440-24-6	Strontium	ug/mL	101	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006633			7440-25-7	Tantalum	ug/mL	109	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006633			13494-80-9	Tellurium	ug/mL	102	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006633			7440-32-6	Titanium	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006633			7440-61-1	Uranium	ug/mL	103	<0.0200	<20.0	n/a	n/a	n/a	n/a	20.0	n/a	U
S13T006633			7440-62-2	Vanadium	ug/mL	103	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006633			7440-33-7	Tungsten	ug/mL	107	<6.00E-03	32.5	n/a	n/a	n/a	n/a	6.00	n/a	J

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-08
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006633			7440-65-5	Yttrium	ug/mL	101	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006633			7440-66-6	Zinc	ug/mL	100	<4.00E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006633			7440-67-7	Zirconium	ug/mL	105	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
ICP/MS															
S13T006633			TH-232	Thorium-232	ug/mL	99.4	<5.00E-07	<1.25E-03	n/a	n/a	n/a	n/a	1.25E-03	n/a	U
S13T006633			13968-55-3	Uranium-233	ug/mL	102	<2.00E-07	<5.00E-04	n/a	n/a	n/a	n/a	5.00E-04	n/a	U
S13T006633			13966-29-5	Uranium-234	ug/mL	n/a	<5.00E-09	2.92E-04	n/a	n/a	n/a	n/a	1.25E-05	n/a	I
S13T006633			15117-96-1	Uranium-235	ug/mL	97.0	<1.00E-08	0.0306	n/a	n/a	n/a	n/a	2.50E-05	n/a	
S13T006633			13982-70-2	Uranium-236	ug/mL	n/a	<4.00E-09	1.61E-03	n/a	n/a	n/a	n/a	1.00E-05	n/a	I
S13T006633			13994-20-2	Neptunium-237	ug/mL	108	<1.00E-07	0.0257	n/a	n/a	n/a	n/a	2.50E-04	n/a	
S13T006633			U-238	Uranium-238	ug/mL	100	<5.00E-07	4.43	n/a	n/a	n/a	n/a	1.25E-03	n/a	
S13T006633			SN-117	Tin-117	ug/mL	105	<1.00E-05	0.194	n/a	n/a	n/a	n/a	0.0100	n/a	
S13T006633			15832-50-5	Tin-126	ug/mL	n/a	<2.00E-07	0.0156	n/a	n/a	n/a	n/a	2.00E-04	n/a	I
S13T006633			14133-76-7	Technetium-99	ug/mL	98.5	<6.00E-07	1.08	n/a	n/a	n/a	n/a	6.00E-04	n/a	
Iodine-129															
S13T006636			15046-84-1	Iodine-129	uCi/mL	95.0	<1.28E-05	<9.68E-06	n/a	n/a	n/a	n/a	9.68E-06	n/a	U
Mercury by CVAA															
S13T006635		HG	7439-97-6	Mercury	ug/mL	105	<1.10E-05	<2.20E-03	n/a	n/a	n/a	n/a	2.20E-03	n/a	U
OH- by Pot. Titration															
S13T006633			HYDROXIDE	Hydroxide	ug/mL	96.0	<9.22	8.87E+03	8.80E+03	8.84E+03	0.857	89.4	111	n/a	
PCB (EPA 8082) from Liquid-Liquid Extraction															
S13T006638		O	12674-11-2	Aroclor 1016	ug/L	n/a	<37.8	<37.8	n/a	n/a	n/a	n/a	37.8	n/a	U
S13T006638		O	11104-28-2	Aroclor 1221	ug/L	n/a	<7.10	<7.10	n/a	n/a	n/a	n/a	7.10	n/a	U
S13T006638		O	11141-16-5	Aroclor 1232	ug/L	n/a	<8.20	<8.20	n/a	n/a	n/a	n/a	8.20	n/a	U
S13T006638		O	53469-21-9	Aroclor 1242	ug/L	n/a	<12.6	<12.6	n/a	n/a	n/a	n/a	12.6	n/a	U
S13T006638		O	12672-29-6	Aroclor 1248	ug/L	n/a	<7.10	<7.10	n/a	n/a	n/a	n/a	7.10	n/a	U
S13T006638		O	11097-69-1	Aroclor 1254	ug/L	73.5	<2.60	<2.60	n/a	n/a	n/a	71.0	2.60	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-08
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
PCB (EPA 8082) from Liquid-Liquid Extraction															
S13T006638		O	11096-82-5	Aroclor 1260	ug/L	n/a	<28.6	<28.6	n/a	n/a	n/a	n/a	28.6	n/a	U
Plutonium-241 by LSC															
S13T006636			14119-32-5	Plutonium-241	uCi/mL	100	<2.86E-05	2.79E-03	n/a	n/a	n/a	n/a	2.18E-05	2.034	
Pu238,239 by TRU-SPEC Resin															
S13T006636			PU-239/240	Plutonium-239/240	uCi/mL	109	1.53E-07	8.21E-04	n/a	n/a	n/a	n/a	2.36E-05	5.20	
S13T006636			13981-16-3	Plutonium-238	uCi/mL	n/a	<1.67E-07	2.40E-04	n/a	n/a	n/a	n/a	1.75E-05	14.63	
Selenium-79 by LSC															
S13T006636			15758-45-9	Selenium-79	uCi/mL	n/a	<2.87E-06	5.75E-05	n/a	n/a	n/a	n/a	2.98E-06	7.39	
Sr-89/90 by GPC															
S13T006636			SR-89/90	Strontium-89/90	uCi/mL	97.4	1.07E-03	0.163	n/a	n/a	n/a	n/a	3.59E-04	2.479	
TIC/TOC by Acid Persulfate															
S13T006634			TIC	Total inorganic carbon	ug/mL	99.2	<7.00	3.80E+03	3.80E+03	3.80E+03	0.0	97.3	14.0	n/a	
S13T006634			TOC	Total organic carbon	ug/mL	94.6	<20.0	603	587	595	2.69	92.5	40.0	n/a	
Technetium - Liq. Scint.															
S13T006636			14133-76-7	Technetium-99	uCi/mL	96.6	4.51E-05	0.0184	n/a	n/a	n/a	n/a	4.10E-05	1.46	
Technetium99 No Oxidation															
S13T006636			14133-76-7	Technetium-99	uCi/mL	98.5	<3.07E-05	0.0200	n/a	n/a	n/a	n/a	3.35E-05	1.23	
Total Carbon by Furnace															
S13T006634			TC	Total carbon	ug/mL	97.3	<5.00	4.03E+03	n/a	n/a	n/a	n/a	30.0	n/a	
Total Organic Carbon by Furnace															
S13T006634			TOC	Total organic carbon	ug/mL	92.3	<5.00	604	n/a	n/a	n/a	n/a	10.0	n/a	
Tritium (H3) by LSC															
S13T006636			10028-17-8	Tritium	uCi/mL	85.1	<2.42E-04	0.0137	n/a	n/a	n/a	n/a	2.52E-04	3.969	

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-09
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
% Water by TGA															
S13T006642			%WATER	Percent water	%	98.6	n/a	80.5	n/a	n/a	n/a	n/a	0.0100	n/a	
Am241,Cm243 by TRU-Spec Resin															
S13T006645			CM-243/244	Curium-243/244	uCi/mL	n/a	<1.25E-07	7.76E-07	n/a	n/a	n/a	n/a	1.55E-07	16.12	
S13T006645			14596-10-2	Americium-241	uCi/mL	94.9	1.85E-07	4.87E-05	n/a	n/a	n/a	n/a	1.20E-07	1.80	B
Ammonium by IC															
S13T006641		S	14798-03-9	Ammonium	ug/mL	94.8	2.70	142	n/a	n/a	n/a	n/a	0.240	n/a	
Anions and Small Organic Acids															
S13T006642			16984-48-8	Fluoride	ug/mL	101	<1.61E-03	535	522	529	2.49	103	4.02	n/a	
S13T006642			16887-00-6	Chloride	ug/mL	102	<9.98E-03	542	507	525	6.73	103	25.0	n/a	
S13T006642			14797-65-0	Nitrite	ug/mL	97.3	<0.0192	2.07E+04	2.02E+04	2.05E+04	2.51	100	48.0	n/a	
S13T006642			14808-79-8	Sulfate	ug/mL	103	0.0540	4.68E+03	4.63E+03	4.65E+03	0.990	103	46.8	n/a	
S13T006642			338-70-5	Oxalate	ug/mL	102	<0.0231	1.73E+03	1.71E+03	1.72E+03	1.53	101	57.8	n/a	
S13T006642			24959-67-9	Bromide	ug/mL	102	<0.0580	<145	<145	n/a	n/a	97.4	145	n/a	U
S13T006642			14797-55-8	Nitrate	ug/mL	104	<0.0208	4.13E+04	4.08E+04	4.10E+04	1.07	96.4	52.0	n/a	
S13T006642			14265-44-2	Phosphate	ug/mL	103	<0.0167	4.24E+03	4.05E+03	4.14E+03	4.41	104	41.8	n/a	
Carbon 14 by LSC															
S13T006645			14762-75-5	Carbon-14	uCi/mL	93.2	3.30E-06	5.97E-04	n/a	n/a	n/a	n/a	2.92E-06	1.442	
Combination of ICP/MS Low and High Mass Methods															
S13T006642			7440-22-4	Silver	ug/mL	108	<8.00E-06	16.6	n/a	n/a	n/a	n/a	0.0800	n/a	
S13T006642			7439-93-2	Lithium	ug/mL	105	<1.00E-05	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S13T006642			7440-28-0	Thallium	ug/mL	99.3	<4.00E-06	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
Cyanide Water Distillation															
S13T006643			57-12-5	Cyanide	ug/mL	96.6	<8.12E-03	12.6	12.6	12.6	0.515	99.2	2.03	n/a	J
Density in Hotcells															
S13T006639			Density	Density	g/mL	100.4	n/a	1.185	n/a	n/a	n/a	n/a	1.000E-03	n/a	
GEA															
S13T006645			10198-40-0	Cobalt-60	uCi/mL	101	<2.06E-04	<1.66E-03	n/a	n/a	n/a	n/a	1.66E-03	n/a	U
S13T006645			14681-63-1	Niobium-94	uCi/mL	n/a	<1.75E-04	<1.50E-03	n/a	n/a	n/a	n/a	1.50E-03	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-09
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
GEA															
S13T006645			RU/RH-106	Ruthenium/Rhodium-106	uCi/mL	n/a	<1.38E-03	<0.185	n/a	n/a	n/a	n/a	0.185	n/a	U
S13T006645			14234-35-6	Antimony-125	uCi/mL	n/a	<4.27E-04	<0.0947	n/a	n/a	n/a	n/a	0.0947	n/a	U
S13T006645			13967-70-9	Cesium-134	uCi/mL	n/a	<9.22E-04	<0.117	n/a	n/a	n/a	n/a	0.117	n/a	U
S13T006645			10045-97-3	Cesium-137	uCi/mL	106	<2.44E-04	48.7	n/a	n/a	n/a	n/a	0.0208	0.09	
S13T006645			14762-78-8	Cerium-144	uCi/mL	n/a	<7.58E-04	<0.138	n/a	n/a	n/a	n/a	0.138	n/a	U
S13T006645			14683-23-9	Europium-152	uCi/mL	n/a	<4.31E-04	<0.0818	n/a	n/a	n/a	n/a	0.0818	n/a	U
S13T006645			15585-10-1	Europium-154	uCi/mL	n/a	<5.42E-04	<5.56E-03	n/a	n/a	n/a	n/a	5.56E-03	n/a	U
S13T006645			14391-16-3	Europium-155	uCi/mL	n/a	<3.44E-04	<0.0907	n/a	n/a	n/a	n/a	0.0907	n/a	U
Hot Cell Breakdown															
S13T006639			ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T006639			VOL%SETS	Volume percent settled solids	%	n/a	n/a	0.500	n/a	n/a	n/a	n/a	n/a	n/a	Q
Hot Cell pH															
S13T006639			PH	pH	unitless	n/a	n/a	13.2	n/a	n/a	n/a	n/a	0.0100	n/a	E
ICP-AES															
S13T006642			7429-90-5	Aluminum	ug/mL	97.9	<6.00E-03	2.47E+03	n/a	n/a	n/a	n/a	6.00	n/a	
S13T006642			7440-38-2	Arsenic	ug/mL	98.6	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006642			7440-42-8	Boron	ug/mL	103	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006642			7440-39-3	Barium	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006642			7440-41-7	Beryllium	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006642			7440-69-9	Bismuth	ug/mL	101	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006642			7440-70-2	Calcium	ug/mL	101	<0.0800	<80.0	n/a	n/a	n/a	n/a	80.0	n/a	U
S13T006642			7440-43-9	Cadmium	ug/mL	101	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006642			7440-45-1	Cerium	ug/mL	103	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006642			7440-48-4	Cobalt	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006642			7440-47-3	Chromium	ug/mL	103	<1.00E-03	449	n/a	n/a	n/a	n/a	1.00	n/a	
S13T006642			7440-50-8	Copper	ug/mL	104	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006642			7439-89-6	Iron	ug/mL	104	<0.0100	<10.0	n/a	n/a	n/a	n/a	10.0	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-09
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006642			7440-09-7	Potassium	ug/mL	103	<0.0200	289	n/a	n/a	n/a	n/a	20.0	n/a	
S13T006642			7439-91-0	Lanthanum	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006642			7439-95-4	Magnesium	ug/mL	103	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006642			7439-96-5	Manganese	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006642			7439-98-7	Molybdenum	ug/mL	100	<1.00E-03	9.43	n/a	n/a	n/a	n/a	1.00	n/a	J
S13T006642			7440-23-5	Sodium	ug/mL	104	<0.0400	8.18E+04	n/a	n/a	n/a	n/a	40.0	n/a	
S13T006642			7440-00-8	Neodymium	ug/mL	106	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006642			7440-02-0	Nickel	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006642			7723-14-0	Phosphorus	ug/mL	101	<3.00E-03	1.37E+03	n/a	n/a	n/a	n/a	3.00	n/a	
S13T006642			7439-92-1	Lead	ug/mL	101	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006642			7440-05-3	Palladium	ug/mL	107	<9.00E-03	<9.00	n/a	n/a	n/a	n/a	9.00	n/a	U
S13T006642			7440-10-0	Praseodymium	ug/mL	107	<4.00E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006642			7440-17-7	Rubidium	ug/mL	101	<0.0300	<30.0	n/a	n/a	n/a	n/a	30.0	n/a	U
S13T006642			7440-16-6	Rhodium	ug/mL	97.3	<8.00E-03	<8.00	n/a	n/a	n/a	n/a	8.00	n/a	U
S13T006642			7440-18-8	Ruthenium	ug/mL	104	4.48E-03	6.48	n/a	n/a	n/a	n/a	4.00	n/a	J
S13T006642			7704-34-9	Sulfur	ug/mL	101	<5.00E-03	1.59E+03	n/a	n/a	n/a	n/a	5.00	n/a	
S13T006642			7440-36-0	Antimony	ug/mL	98.1	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006642			7782-49-2	Selenium	ug/mL	99.5	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006642			7440-21-3	Silicon	ug/mL	98.9	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006642			7440-31-5	Tin	ug/mL	103	<3.00E-03	5.29	n/a	n/a	n/a	n/a	3.00	n/a	J
S13T006642			7440-24-6	Strontium	ug/mL	101	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006642			7440-25-7	Tantalum	ug/mL	109	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006642			13494-80-9	Tellurium	ug/mL	102	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006642			7440-32-6	Titanium	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006642			7440-61-1	Uranium	ug/mL	103	<0.0200	<20.0	n/a	n/a	n/a	n/a	20.0	n/a	U
S13T006642			7440-62-2	Vanadium	ug/mL	103	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006642			7440-33-7	Tungsten	ug/mL	107	<6.00E-03	133	n/a	n/a	n/a	n/a	6.00	n/a	

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-09
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006642			7440-65-5	Yttrium	ug/mL	101	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006642			7440-66-6	Zinc	ug/mL	100	<4.00E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006642			7440-67-7	Zirconium	ug/mL	105	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
ICP/MS															
S13T006642			TH-232	Thorium-232	ug/mL	99.4	<5.00E-07	<1.25E-03	n/a	n/a	n/a	n/a	1.25E-03	n/a	U
S13T006642			13968-55-3	Uranium-233	ug/mL	102	<2.00E-07	<5.00E-04	n/a	n/a	n/a	n/a	5.00E-04	n/a	U
S13T006642			13966-29-5	Uranium-234	ug/mL	n/a	<5.00E-09	4.30E-04	n/a	n/a	n/a	n/a	1.25E-05	n/a	I
S13T006642			15117-96-1	Uranium-235	ug/mL	97.0	<1.00E-08	0.0458	0.0474	0.0466	3.35	99.5	1.00E-04	n/a	
S13T006642			13982-70-2	Uranium-236	ug/mL	n/a	<4.00E-09	3.40E-03	n/a	n/a	n/a	n/a	1.00E-05	n/a	I
S13T006642			13994-20-2	Neptunium-237	ug/mL	108	<1.00E-07	0.144	n/a	n/a	n/a	n/a	2.50E-04	n/a	
S13T006642			U-238	Uranium-238	ug/mL	100	<5.00E-07	6.64	6.65	6.64	0.226	99.2	5.00E-03	n/a	
S13T006642			SN-117	Tin-117	ug/mL	105	<1.00E-05	0.454	n/a	n/a	n/a	n/a	0.0100	n/a	
S13T006642			15832-50-5	Tin-126	ug/mL	n/a	<2.00E-07	0.0390	n/a	n/a	n/a	n/a	2.00E-04	n/a	I
S13T006642			14133-76-7	Technetium-99	ug/mL	98.5	<6.00E-07	1.32	n/a	n/a	n/a	n/a	6.00E-04	n/a	
Iodine-129															
S13T006645			15046-84-1	Iodine-129	uCi/mL	95.0	<1.28E-05	2.17E-05	n/a	n/a	n/a	n/a	1.31E-05	29	
Mercury by CVAA															
S13T006644		HG	7439-97-6	Mercury	ug/mL	105	<1.10E-05	0.285	n/a	n/a	n/a	n/a	2.20E-03	n/a	
OH- by Pot. Titration															
S13T006642			HYDROXIDE	Hydroxide	ug/mL	96.0	<9.22	7.36E+03	n/a	n/a	n/a	n/a	111	n/a	
PCB (EPA 8082) from Liquid-Liquid Extraction															
S13T006647		O	12674-11-2	Aroclor 1016	ug/L	n/a	<37.8	<37.8	n/a	n/a	n/a	n/a	37.8	n/a	U
S13T006647		O	11104-28-2	Aroclor 1221	ug/L	n/a	<7.10	<7.10	n/a	n/a	n/a	n/a	7.10	n/a	U
S13T006647		O	11141-16-5	Aroclor 1232	ug/L	n/a	<8.20	<8.20	n/a	n/a	n/a	n/a	8.20	n/a	U
S13T006647		O	53469-21-9	Aroclor 1242	ug/L	n/a	<12.6	<12.6	n/a	n/a	n/a	n/a	12.6	n/a	U
S13T006647		O	12672-29-6	Aroclor 1248	ug/L	n/a	<7.10	<7.10	n/a	n/a	n/a	n/a	7.10	n/a	U
S13T006647		O	11097-69-1	Aroclor 1254	ug/L	73.5	<2.60	<2.60	n/a	n/a	n/a	n/a	2.60	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-09
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
PCB (EPA 8082) from Liquid-Liquid Extraction															
S13T006647		O	11096-82-5	Aroclor 1260	ug/L	n/a	<28.6	<28.6	n/a	n/a	n/a	n/a	28.6	n/a	U
Plutonium-241 by LSC															
S13T006645			14119-32-5	Plutonium-241	uCi/mL	100	<2.86E-05	0.0237	n/a	n/a	n/a	n/a	2.43E-05	0.665	
Pu238,239 by TRU-SPEC Resin															
S13T006645			PU-239/240	Plutonium-239/240	uCi/mL	109	1.53E-07	0.0107	n/a	n/a	n/a	n/a	2.80E-05	1.32	
S13T006645			13981-16-3	Plutonium-238	uCi/mL	n/a	<1.67E-07	2.29E-03	n/a	n/a	n/a	n/a	1.58E-05	3.07	
Selenium-79 by LSC															
S13T006645			15758-45-9	Selenium-79	uCi/mL	n/a	<2.87E-06	7.43E-05	n/a	n/a	n/a	n/a	3.00E-06	6.018	
Sr-89/90 by GPC															
S13T006645			SR-89/90	Strontium-89/90	uCi/mL	97.4	1.07E-03	0.392	n/a	n/a	n/a	n/a	3.47E-04	1.567	
TIC/TOC by Acid Persulfate															
S13T006643			TIC	Total inorganic carbon	ug/mL	101	<7.00	9.21E+03	9.46E+03	9.34E+03	2.68	116	14.0	n/a	
S13T006643			TOC	Total organic carbon	ug/mL	95.9	<20.0	878	899	888	2.36	89.9	40.0	n/a	
Technetium - Liq. Scint.															
S13T006645			14133-76-7	Technetium-99	uCi/mL	96.6	4.51E-05	0.0220	n/a	n/a	n/a	n/a	4.24E-05	1.35	
Technetium99 No Oxidation															
S13T006645			14133-76-7	Technetium-99	uCi/mL	98.5	<3.07E-05	0.0229	n/a	n/a	n/a	n/a	3.75E-05	1.23	
Total Carbon by Furnace															
S13T006643			TC	Total carbon	ug/mL	97.3	<5.00	9.46E+03	n/a	n/a	n/a	n/a	30.0	n/a	
Total Organic Carbon by Furnace															
S13T006643			TOC	Total organic carbon	ug/mL	92.3	<5.00	870	n/a	n/a	n/a	n/a	10.0	n/a	
Tritium (H3) by LSC															
S13T006645			10028-17-8	Tritium	uCi/mL	85.1	<2.42E-04	0.0197	n/a	n/a	n/a	n/a	2.48E-04	3.037	

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-10
Segment Portion: Grab Sample (Centrifuged Liquid Portion)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
% Water by TGA															
S13T006665			%WATER	Percent water	%	98.6	n/a	80.6	n/a	n/a	n/a	n/a	0.0100	n/a	
Am241,Cm243 by TRU-Spec Resin															
S13T006668			CM-243/244	Curium-243/244	uCi/mL	n/a	<1.25E-07	1.76E-06	1.70E-06	1.73E-06	3.47	n/a	3.60E-07	16.34	
S13T006668			14596-10-2	Americium-241	uCi/mL	94.9	1.85E-07	1.73E-04	1.60E-04	1.66E-04	7.81	n/a	3.40E-07	1.46	B
Anions and Small Organic Acids															
S13T006665			16984-48-8	Fluoride	ug/mL	99.1	<1.61E-03	554	546	550	1.42	101	4.02	n/a	
S13T006665			16887-00-6	Chloride	ug/mL	102	<9.98E-03	543	521	532	4.17	102	25.0	n/a	
S13T006665			14797-65-0	Nitrite	ug/mL	99.6	<0.0192	2.09E+04	2.06E+04	2.08E+04	1.07	99.8	48.0	n/a	
S13T006665			14808-79-8	Sulfate	ug/mL	103	0.0550	4.84E+03	4.82E+03	4.83E+03	0.253	101	46.8	n/a	
S13T006665			338-70-5	Oxalate	ug/mL	101	<0.0231	1.89E+03	1.88E+03	1.88E+03	0.493	98.7	57.8	n/a	
S13T006665			24959-67-9	Bromide	ug/mL	103	<0.0580	<145	<145	n/a	n/a	101	145	n/a	U
S13T006665			14797-55-8	Nitrate	ug/mL	104	<0.0208	4.06E+04	4.02E+04	4.04E+04	1.04	97.2	52.0	n/a	
S13T006665			14265-44-2	Phosphate	ug/mL	103	<0.0167	4.32E+03	4.27E+03	4.30E+03	1.16	103	41.8	n/a	
Carbon 14 by LSC															
S13T006668			14762-75-5	Carbon-14	uCi/mL	93.2	3.30E-06	5.88E-04	n/a	n/a	n/a	n/a	2.90E-06	1.438	
Combination of ICP/MS Low and High Mass Methods															
S13T006665			7440-22-4	Silver	ug/mL	108	<8.00E-06	18.6	n/a	n/a	n/a	n/a	0.0800	n/a	
S13T006665			7439-93-2	Lithium	ug/mL	105	<1.00E-05	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S13T006665			7440-28-0	Thallium	ug/mL	99.3	<4.00E-06	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
Cyanide Water Distillation															
S13T006666			57-12-5	Cyanide	ug/mL	96.6	<8.12E-03	14.8	n/a	n/a	n/a	n/a	2.03	n/a	J
Density in Hotcells															
S13T006660			Density	Density	g/mL	100.5	n/a	1.164	1.173	1.168	0.7702	n/a	1.000E-03	n/a	
GEA															
S13T006668			10198-40-0	Cobalt-60	uCi/mL	101	<2.06E-04	<0.704	n/a	n/a	n/a	n/a	0.704	n/a	U
S13T006668			14681-63-1	Niobium-94	uCi/mL	n/a	<1.75E-04	<0.501	n/a	n/a	n/a	n/a	0.501	n/a	U
S13T006668			RU/RH-106	Ruthenium/Rhodium-106	uCi/mL	n/a	<1.38E-03	<20.6	n/a	n/a	n/a	n/a	20.6	n/a	U
S13T006668			14234-35-6	Antimony-125	uCi/mL	n/a	<4.27E-04	<12.6	n/a	n/a	n/a	n/a	12.6	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-10
Segment Portion: Grab Sample (Centrifuged Liquid Portion)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
GEA															
S13T006668			13967-70-9	Cesium-134	uCi/mL	n/a	<9.22E-04	<14.3	n/a	n/a	n/a	n/a	14.3	n/a	U
S13T006668			10045-97-3	Cesium-137	uCi/mL	106	<2.44E-04	30.3	n/a	n/a	n/a	n/a	2.19	0.22	
S13T006668			14762-78-8	Cerium-144	uCi/mL	n/a	<7.58E-04	<15.7	n/a	n/a	n/a	n/a	15.7	n/a	U
S13T006668			14683-23-9	Europium-152	uCi/mL	n/a	<4.31E-04	<10.8	n/a	n/a	n/a	n/a	10.8	n/a	U
S13T006668			15585-10-1	Europium-154	uCi/mL	n/a	<5.42E-04	<1.85	n/a	n/a	n/a	n/a	1.85	n/a	U
S13T006668			14391-16-3	Europium-155	uCi/mL	n/a	<3.44E-04	<7.07	n/a	n/a	n/a	n/a	7.07	n/a	U
Hot Cell pH															
S13T006660			PH	pH	unitless	n/a	n/a	13.0	13.1	13.0	0.307	n/a	0.0100	n/a	E
ICP-AES															
S13T006665			7429-90-5	Aluminum	ug/mL	97.9	<6.00E-03	2.51E+03	n/a	n/a	n/a	n/a	6.00	n/a	
S13T006665			7440-38-2	Arsenic	ug/mL	98.6	<5.00E-03	5.19	n/a	n/a	n/a	n/a	5.00	n/a	J
S13T006665			7440-42-8	Boron	ug/mL	103	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006665			7440-39-3	Barium	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006665			7440-41-7	Beryllium	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006665			7440-69-9	Bismuth	ug/mL	101	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006665			7440-70-2	Calcium	ug/mL	101	<0.0800	<80.0	n/a	n/a	n/a	n/a	80.0	n/a	U
S13T006665			7440-43-9	Cadmium	ug/mL	101	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006665			7440-45-1	Cerium	ug/mL	103	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006665			7440-48-4	Cobalt	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006665			7440-47-3	Chromium	ug/mL	103	<1.00E-03	475	n/a	n/a	n/a	n/a	1.00	n/a	
S13T006665			7440-50-8	Copper	ug/mL	104	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006665			7439-89-6	Iron	ug/mL	104	<0.0100	<10.0	n/a	n/a	n/a	n/a	10.0	n/a	U
S13T006665			7440-09-7	Potassium	ug/mL	103	<0.0200	297	n/a	n/a	n/a	n/a	20.0	n/a	
S13T006665			7439-91-0	Lanthanum	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006665			7439-95-4	Magnesium	ug/mL	103	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006665			7439-96-5	Manganese	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006665			7439-98-7	Molybdenum	ug/mL	100	<1.00E-03	9.93	n/a	n/a	n/a	n/a	1.00	n/a	J

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-10
Segment Portion: Grab Sample (Centrifuged Liquid Portion)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T006665			7440-23-5	Sodium	ug/mL	104	<0.0400	8.47E+04	n/a	n/a	n/a	n/a	40.0	n/a	
S13T006665			7440-00-8	Neodymium	ug/mL	106	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006665			7440-02-0	Nickel	ug/mL	102	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006665			7723-14-0	Phosphorus	ug/mL	101	<3.00E-03	1.39E+03	n/a	n/a	n/a	n/a	3.00	n/a	
S13T006665			7439-92-1	Lead	ug/mL	101	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006665			7440-05-3	Palladium	ug/mL	107	<9.00E-03	<9.00	n/a	n/a	n/a	n/a	9.00	n/a	U
S13T006665			7440-10-0	Praseodymium	ug/mL	107	<4.00E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006665			7440-17-7	Rubidium	ug/mL	101	<0.0300	<30.0	n/a	n/a	n/a	n/a	30.0	n/a	U
S13T006665			7440-16-6	Rhodium	ug/mL	97.3	<8.00E-03	<8.00	n/a	n/a	n/a	n/a	8.00	n/a	U
S13T006665			7440-18-8	Ruthenium	ug/mL	104	4.48E-03	5.76	n/a	n/a	n/a	n/a	4.00	n/a	J
S13T006665			7704-34-9	Sulfur	ug/mL	101	<5.00E-03	1.65E+03	n/a	n/a	n/a	n/a	5.00	n/a	
S13T006665			7440-36-0	Antimony	ug/mL	98.1	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006665			7782-49-2	Selenium	ug/mL	99.5	<6.00E-03	<6.00	n/a	n/a	n/a	n/a	6.00	n/a	U
S13T006665			7440-21-3	Silicon	ug/mL	98.9	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006665			7440-31-5	Tin	ug/mL	103	<3.00E-03	5.38	n/a	n/a	n/a	n/a	3.00	n/a	J
S13T006665			7440-24-6	Strontium	ug/mL	101	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006665			7440-25-7	Tantalum	ug/mL	109	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006665			13494-80-9	Tellurium	ug/mL	102	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U
S13T006665			7440-32-6	Titanium	ug/mL	104	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006665			7440-61-1	Uranium	ug/mL	103	<0.0200	<20.0	n/a	n/a	n/a	n/a	20.0	n/a	U
S13T006665			7440-62-2	Vanadium	ug/mL	103	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006665			7440-33-7	Tungsten	ug/mL	107	<6.00E-03	141	n/a	n/a	n/a	n/a	6.00	n/a	
S13T006665			7440-65-5	Yttrium	ug/mL	101	<2.00E-03	<2.00	n/a	n/a	n/a	n/a	2.00	n/a	U
S13T006665			7440-66-6	Zinc	ug/mL	100	<4.00E-03	<4.00	n/a	n/a	n/a	n/a	4.00	n/a	U
S13T006665			7440-67-7	Zirconium	ug/mL	105	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
ICP/MS															
S13T006665			TH-232	Thorium-232	ug/mL	99.4	<5.00E-07	<2.50E-03	n/a	n/a	n/a	n/a	2.50E-03	n/a	U

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-10
Segment Portion: Grab Sample (Centrifuged Liquid Portion)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP/MS															
S13T006665			13968-55-3	Uranium-233	ug/mL	102	<2.00E-07	<1.00E-03	n/a	n/a	n/a	n/a	1.00E-03	n/a	U
S13T006665			13966-29-5	Uranium-234	ug/mL	n/a	<5.00E-09	3.76E-04	n/a	n/a	n/a	n/a	2.50E-05	n/a	I
S13T006665			15117-96-1	Uranium-235	ug/mL	97.0	<1.00E-08	0.0452	n/a	n/a	n/a	n/a	5.00E-05	n/a	
S13T006665			13982-70-2	Uranium-236	ug/mL	n/a	<4.00E-09	3.68E-03	n/a	n/a	n/a	n/a	2.00E-05	n/a	I
S13T006665			13994-20-2	Neptunium-237	ug/mL	108	<1.00E-07	0.151	n/a	n/a	n/a	n/a	5.00E-04	n/a	
S13T006665			U-238	Uranium-238	ug/mL	100	<5.00E-07	6.44	n/a	n/a	n/a	n/a	2.50E-03	n/a	
S13T006665			SN-117	Tin-117	ug/mL	105	<1.00E-05	0.479	n/a	n/a	n/a	n/a	0.0100	n/a	
S13T006665			15832-50-5	Tin-126	ug/mL	n/a	<2.00E-07	0.0408	n/a	n/a	n/a	n/a	2.00E-04	n/a	I
S13T006665			14133-76-7	Technetium-99	ug/mL	99.2	<6.00E-07	1.27	1.26	1.26	1.42	96.4	1.50E-03	n/a	
Iodine-129															
S13T006668			15046-84-1	Iodine-129	uCi/mL	95.0	<1.28E-05	<1.35E-05	n/a	n/a	n/a	n/a	1.35E-05	n/a	U
Liquid Recovered - Weight															
S13T006660			LIQWT-01	Weight of Liquid	g	n/a	n/a	268	n/a	n/a	n/a	n/a	n/a	n/a	
Mercury by CVAA															
S13T006667		HG	7439-97-6	Mercury	ug/mL	105	<1.10E-05	1.10	n/a	n/a	n/a	n/a	2.20E-03	n/a	
OH- by Pot. Titration															
S13T006665			HYDROXIDE	Hydroxide	ug/mL	96.0	<9.22	6.90E+03	n/a	n/a	n/a	n/a	111	n/a	
PCB (EPA 8082) from Liquid-Liquid Extraction															
S13T006670		O	12674-11-2	Aroclor 1016	ug/L	n/a	<37.8	<37.8	n/a	n/a	n/a	n/a	37.8	n/a	U
S13T006670		O	11104-28-2	Aroclor 1221	ug/L	n/a	<7.10	<7.10	n/a	n/a	n/a	n/a	7.10	n/a	U
S13T006670		O	11141-16-5	Aroclor 1232	ug/L	n/a	<8.20	<8.20	n/a	n/a	n/a	n/a	8.20	n/a	U
S13T006670		O	53469-21-9	Aroclor 1242	ug/L	n/a	<12.6	<12.6	n/a	n/a	n/a	n/a	12.6	n/a	U
S13T006670		O	12672-29-6	Aroclor 1248	ug/L	n/a	<7.10	<7.10	n/a	n/a	n/a	n/a	7.10	n/a	U
S13T006670		O	11097-69-1	Aroclor 1254	ug/L	73.5	<2.60	<2.60	n/a	n/a	n/a	n/a	2.60	n/a	U
S13T006670		O	11096-82-5	Aroclor 1260	ug/L	n/a	<28.6	<28.6	n/a	n/a	n/a	n/a	28.6	n/a	U
Plutonium-241 by LSC															
S13T006668			14119-32-5	Plutonium-241	uCi/mL	100	<2.86E-05	0.0256	0.0237	0.0246	7.71	n/a	6.41E-05	1.066	
Pu238,239 by TRU-SPEC Resin															

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AY101 CC8
Data Summary Report

Sample Group: 20130628

Riser: 054

Segment Number: 1AY-13-10

Segment Portion: Grab Sample (Centrifuged Liquid Portion)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Pu238,239 by TRU-SPEC Resin															
S13T006668			PU-239/240	Plutonium-239/240	uCi/mL	109	1.53E-07	0.0108	n/a	n/a	n/a	n/a	1.99E-05	1.28	
S13T006668			13981-16-3	Plutonium-238	uCi/mL	n/a	<1.67E-07	2.27E-03	n/a	n/a	n/a	n/a	1.65E-05	3.03	
Selenium-79 by LSC															
S13T006668			15758-45-9	Selenium-79	uCi/mL	n/a	<2.87E-06	4.93E-05	n/a	n/a	n/a	n/a	1.47E-05	38.38	J
Sr-89/90 by GPC															
S13T006668			SR-89/90	Strontium-89/90	uCi/mL	97.4	1.07E-03	0.495	n/a	n/a	n/a	n/a	3.56E-04	1.41	
TIC/TOC by Acid Persulfate															
S13T006666			TIC	Total inorganic carbon	ug/mL	100	<7.00	1.06E+04	n/a	n/a	n/a	n/a	70.0	n/a	
S13T006666			TOC	Total organic carbon	ug/mL	96.9	<20.0	1.05E+03	n/a	n/a	n/a	n/a	200	n/a	J
Technetium - Liq. Scint.															
S13T006668			14133-76-7	Technetium-99	uCi/mL	96.6	4.51E-05	0.0225	n/a	n/a	n/a	n/a	4.08E-05	1.31	
Technetium99 No Oxidation															
S13T006668			14133-76-7	Technetium-99	uCi/mL	98.5	<3.07E-05	0.0206	n/a	n/a	n/a	n/a	3.30E-05	1.22	
Total Carbon by Furnace															
S13T006666			TC	Total carbon	ug/mL	114	<5.00	1.08E+04	1.09E+04	1.08E+04	0.922	81.9	55.0	n/a	
Total Organic Carbon by Furnace															
S13T006666			TOC	Total organic carbon	ug/mL	95.6	<5.00	1.06E+03	n/a	n/a	n/a	n/a	5.50	n/a	
Tritium (H3) by LSC															
S13T006668			10028-17-8	Tritium	uCi/mL	85.1	<2.42E-04	0.0103	n/a	n/a	n/a	n/a	2.50E-04	4.777	

Segment Portion: Grab Sample (Centrifuged Solids Portion)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Anions and Small Organic Acids															
S13T007184		W	16984-48-8	Fluoride	ug/g	98.5	<1.61E-03	559	579	569	3.54	94.6	10.3	n/a	
S13T007184		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	447	483	465	7.92	96.7	32.9	n/a	
S13T007184		W	14797-65-0	Nitrite	ug/g	97.5	<0.0192	1.77E+04	1.83E+04	1.80E+04	3.24	97.0	144	n/a	
S13T007184		W	14808-79-8	Sulfate	ug/g	99.3	0.0910	3.95E+03	4.12E+03	4.04E+03	4.35	93.1	94.5	n/a	
S13T007184		W	338-70-5	Oxalate	ug/g	99.0	<0.0231	1.87E+03	1.92E+03	1.89E+03	2.35	90.7	53.4	n/a	

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-10
Segment Portion: Grab Sample (Centrifuged Solids Portion)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Anions and Small Organic Acids															
S13T007184		W	24959-67-9	Bromide	ug/g	104	<0.0580	<30.8	<31.1	n/a	n/a	96.4	30.8	n/a	U
S13T007184		W	14797-55-8	Nitrate	ug/g	100	<0.0208	3.29E+04	3.42E+04	3.35E+04	3.82	121	129	n/a	
S13T007184		W	14265-44-2	Phosphate	ug/g	97.2	<0.0167	2.57E+03	2.85E+03	2.71E+03	10.3	87.9	41.1	n/a	
Bulk Density of Sample in 11A Hot Cell															
S13T006658			BULKDENSI	Bulk Density	g/mL	n/a	n/a	1.22	n/a	n/a	n/a	n/a	1.00E-03	n/a	
Combination of ICP/MS Low and High Mass Methods															
S13T007044		A	7440-22-4	Silver	ug/g	103	<8.00E-03	373	381	377	2.12	103	4.76	n/a	
S13T007044		A	7440-45-1	Cerium	ug/g	103	<3.00E-03	424	403	414	4.92	98.9	1.78	n/a	
S13T007044		A	7439-93-2	Lithium	ug/g	107	<0.0100	33.5	32.4	33.0	3.46	105	5.95	n/a	J
S13T007044		A	7439-96-5	Manganese	ug/g	101	<0.0260	5.47E+03	5.13E+03	5.30E+03	6.39	88.4	15.5	n/a	
S13T007044		A	7440-28-0	Thallium	ug/g	108	<4.00E-03	<2.38	<2.35	n/a	n/a	106	2.38	n/a	U
S13T007044		A	7440-02-0	Nickel	ug/g	104	<0.0230	1.00E+03	9.48E+02	9.75E+02	5.40	99.0	13.7	n/a	
ICP-AES															
S13T007044		A	7440-22-4	Silver	ug/g	84.5	1.41E-03	404	392	398	3.07	94.3	11.9	n/a	
S13T007044		A	7429-90-5	Aluminum	ug/g	84.8	<6.00E-03	1.35E+04	1.31E+04	1.33E+04	3.38	98.9	71.4	n/a	
S13T007044		A	7440-38-2	Arsenic	ug/g	91.3	<5.00E-03	<59.5	<58.8	n/a	n/a	98.2	59.5	n/a	U
S13T007044		A	7440-42-8	Boron	ug/g	88.8	<1.00E-03	1.21E+04	1.02E+04	1.12E+04	16.5	96.6	11.9	n/a	
S13T007044		A	7440-39-3	Barium	ug/g	91.2	<1.00E-03	600	574	587	4.51	92.6	11.9	n/a	
S13T007044		A	7440-41-7	Beryllium	ug/g	86.3	<1.00E-03	<11.9	<11.8	n/a	n/a	95.3	11.9	n/a	U
S13T007044		A	7440-69-9	Bismuth	ug/g	89.9	<6.00E-03	142	132	137	7.48	97.9	71.4	n/a	J
S13T007044		A	7440-70-2	Calcium	ug/g	89.7	0.126	6.54E+03	6.16E+03	6.35E+03	5.98	87.1	952	n/a	J
S13T007044		A	7440-43-9	Cadmium	ug/g	89.5	<1.00E-03	57.8	58.6	58.2	1.39	92.1	11.9	n/a	J
S13T007044		A	7440-45-1	Cerium	ug/g	92.9	<6.00E-03	854	799	827	6.67	96.1	71.4	n/a	
S13T007044		A	7440-48-4	Cobalt	ug/g	93.2	<1.00E-03	<11.9	<11.8	n/a	n/a	94.2	11.9	n/a	U
S13T007044		A	7440-47-3	Chromium	ug/g	88.3	1.99E-03	1.47E+03	1.41E+03	1.44E+03	4.20	94.3	11.9	n/a	
S13T007044		A	7440-50-8	Copper	ug/g	98.3	<2.00E-03	55.3	52.9	54.1	4.50	101	23.8	n/a	J
S13T007044		A	7439-89-6	Iron	ug/g	89.2	<0.0100	3.16E+04	3.02E+04	3.09E+04	4.55	93.0	119	n/a	

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AY101 CC8
Data Summary Report

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-10
Segment Portion: Grab Sample (Centrifuged Solids Portion)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T007044		A	7440-09-7	Potassium	ug/g	87.1	<0.0200	643	722	683	11.5	105	238	n/a	J
S13T007044		A	7439-91-0	Lanthanum	ug/g	91.5	<1.00E-03	7.29E+03	6.98E+03	7.14E+03	4.32	96.5	11.9	n/a	
S13T007044		A	7439-95-4	Magnesium	ug/g	89.7	<2.00E-03	3.43E+03	3.33E+03	3.38E+03	2.91	101	23.8	n/a	
S13T007044		A	7439-98-7	Molybdenum	ug/g	94.1	<1.00E-03	<11.9	<11.8	n/a	n/a	90.7	11.9	n/a	U
S13T007044		A	7440-23-5	Sodium	ug/g	89.0	<0.0400	8.23E+04	8.01E+04	8.12E+04	2.77	96.2	476	n/a	
S13T007044		A	7440-00-8	Neodymium	ug/g	98.4	<3.00E-03	3.14E+03	3.03E+03	3.09E+03	3.74	97.0	35.7	n/a	
S13T007044		A	7440-02-0	Nickel	ug/g	92.1	<1.00E-03	1.00E+03	9.44E+02	9.72E+02	5.75	89.7	11.9	n/a	
S13T007044		A	7723-14-0	Phosphorus	ug/g	93.4	4.13E-03	3.98E+03	3.85E+03	3.91E+03	3.40	97.2	35.7	n/a	
S13T007044		A	7439-92-1	Lead	ug/g	87.3	<6.00E-03	1.59E+03	1.55E+03	1.57E+03	2.59	99.8	71.4	n/a	
S13T007044		A	7440-05-3	Palladium	ug/g	94.2	<9.00E-03	<107	<106	n/a	n/a	98.0	107	n/a	U
S13T007044		A	7440-10-0	Praseodymium	ug/g	96.7	<4.00E-03	578	514	546	11.8	93.3	47.6	n/a	
S13T007044		A	7440-17-7	Rubidium	ug/g	82.6	<0.0300	<357	<353	n/a	n/a	103	357	n/a	U
S13T007044		A	7440-16-6	Rhodium	ug/g	98.3	<8.00E-03	<95.2	<94.2	n/a	n/a	99.2	95.2	n/a	U
S13T007044		A	7440-18-8	Ruthenium	ug/g	87.4	<4.00E-03	<47.6	<47.1	n/a	n/a	91.6	47.6	n/a	U
S13T007044		A	7704-34-9	Sulfur	ug/g	90.1	9.85E-03	1.43E+03	1.38E+03	1.41E+03	3.69	98.2	59.5	n/a	
S13T007044		A	7440-36-0	Antimony	ug/g	92.2	<6.00E-03	<71.4	<70.6	n/a	n/a	104	71.4	n/a	U
S13T007044		A	7782-49-2	Selenium	ug/g	92.2	9.11E-03	<71.4	<70.6	n/a	n/a	97.7	71.4	n/a	U
S13T007044		A	7440-21-3	Silicon	ug/g	92.2	0.0118	4.57E+03	3.95E+03	4.26E+03	14.6	102	59.5	n/a	
S13T007044		A	7440-31-5	Tin	ug/g	90.9	5.28E-03	66.5	73.8	70.1	10.5	94.1	35.7	n/a	J
S13T007044		A	7440-24-6	Strontium	ug/g	88.9	<2.00E-03	247	238	242	3.86	87.0	23.8	n/a	
S13T007044		A	7440-25-7	Tantalum	ug/g	78.4	6.17E-03	<59.5	<58.8	n/a	n/a	96.1	59.5	n/a	Ua
S13T007044		A	13494-80-9	Tellurium	ug/g	88.9	<5.00E-03	<59.5	<58.8	n/a	n/a	95.0	59.5	n/a	U
S13T007044		A	7440-32-6	Titanium	ug/g	91.7	1.24E-03	42.3	44.9	43.6	6.09	94.1	11.9	n/a	J
S13T007044		A	7440-62-2	Vanadium	ug/g	89.8	<1.00E-03	<11.9	<11.8	n/a	n/a	95.6	11.9	n/a	U
S13T007044		A	7440-33-7	Tungsten	ug/g	84.5	<6.00E-03	369	387	378	4.61	95.9	71.4	n/a	J
S13T007044		A	7440-65-5	Yttrium	ug/g	89.4	<2.00E-03	179	165	172	8.44	95.3	23.8	n/a	J
S13T007044		A	7440-66-6	Zinc	ug/g	88.8	<4.00E-03	274	279	277	1.93	95.7	47.6	n/a	J

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AY101 CC8
Data Summary Report

Sample Group: 20130628

Riser: 054

Segment Number: 1AY-13-10

Segment Portion: Grab Sample (Centrifuged Solids Portion)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES															
S13T007044		A	7440-67-7	Zirconium	ug/g	91.1	<1.00E-03	3.88E+03	3.76E+03	3.82E+03	3.32	95.2	11.9	n/a	
ICP/MS															
S13T007044		A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-05	0.226	0.234	0.230	3.53	n/a	0.0149	n/a	I
S13T007044		A	15117-96-1	Uranium-235	ug/g	98.8	<5.00E-05	22.0	20.2	21.1	8.51	93.9	0.0297	n/a	
S13T007044		A	13982-70-2	Uranium-236	ug/g	n/a	<2.00E-05	1.73	1.68	1.71	2.89	n/a	0.0119	n/a	I
S13T007044		A	U-238	Uranium-238	ug/g	99.0	<2.50E-03	3.17E+03	2.97E+03	3.07E+03	6.60	95.5	1.49	n/a	
Solids Recovered - Weight															
S13T006658			SLDWT01	Solid Weight	g	n/a	n/a	10.4	n/a	n/a	n/a	n/a	0.100	n/a	

Segment Portion: Grab Sample (Supernatant Liquid)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Ammonium by IC															
S13T006892		S	14798-03-9	Ammonium	ug/mL	94.8	2.70	78.4	n/a	n/a	n/a	n/a	1.20	n/a	

Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Centrifuge Liquid / hotcell															
S13T006648				Centrifuge	None	n/a	n/a	5.00	n/a	n/a	n/a	n/a	n/a	n/a	
Hot Cell Breakdown															
S13T006648			ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T006648			VOL%SETS	Volume percent settled solids	%	n/a	n/a	8.33	n/a	n/a	n/a	n/a	n/a	n/a	Q
Weight % Centrifudge Solids - Hotcells															
S13T006648			WT%CENTS	Weight percent centrifuged solids	%	n/a	n/a	3.73	n/a	n/a	n/a	n/a	n/a	n/a	

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Attachment 2

NON-REQUESTED ANALYTE RESULTS

15 - Aug - 2013 10:39:23
DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

AY101 CC8
Opportunistic Analyte Results

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-01
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Anions and Small Organic Acids															
S13T006565			666-14-8	Glycolate	ug/mL	102	<9.37E-03	<23.4	n/a	n/a	n/a	n/a	23.4	n/a	U
S13T006565			71-50-1	Acetate	ug/mL	102	<6.04E-03	<15.1	n/a	n/a	n/a	n/a	15.1	n/a	U
S13T006565			12311-97-6	Formate	ug/mL	106	<4.67E-03	259	n/a	n/a	n/a	n/a	11.7	n/a	J
ICP-AES															
S13T006565			7440-53-1	Europium	ug/mL	108	<1.00E-03	<1.00	<1.00	n/a	n/a	95.2	1.00	n/a	U
S13T006565			7440-30-1	Niobium	ug/mL	104	<3.00E-03	<3.00	<3.00	n/a	n/a	96.2	3.00	n/a	U
S13T006565			7440-19-9	Samarium	ug/mL	105	<5.00E-03	<5.00	<5.00	n/a	n/a	96.2	5.00	n/a	U

NA = Not Analyzed, ND = Not Detected

J - Estimated U - Less Than Detection Limit B - Blank Contamination

15 - Aug - 2013 10:39:23
DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

AY101 CC8
Opportunistic Analyte Results

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-01DUP
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Anions and Small Organic Acids															
S13T006577			666-14-8	Glycolate	ug/mL	102	<9.37E-03	<23.4	n/a	n/a	n/a	n/a	23.4	n/a	U
S13T006577			71-50-1	Acetate	ug/mL	102	<6.04E-03	197	n/a	n/a	n/a	n/a	15.1	n/a	J
S13T006577			12311-97-6	Formate	ug/mL	106	<4.67E-03	286	n/a	n/a	n/a	n/a	11.7	n/a	J
ICP-AES															
S13T006577			7440-53-1	Europium	ug/mL	108	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006577			7440-30-1	Niobium	ug/mL	104	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006577			7440-19-9	Samarium	ug/mL	105	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U

NA = Not Analyzed, ND = Not Detected

J - Estimated U - Less Than Detection Limit B - Blank Contamination

15 - Aug - 2013 10:39:23
DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

AY101 CC8
Opportunistic Analyte Results

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-01FB
Segment Portion: Field Blank

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Anions and Small Organic Acids															
S13T006559			666-14-8	Glycolate	ug/mL	102	<9.37E-03	<9.37E-03	n/a	n/a	n/a	n/a	9.37E-03	n/a	U
S13T006559			71-50-1	Acetate	ug/mL	102	<6.04E-03	<6.04E-03	n/a	n/a	n/a	n/a	6.04E-03	n/a	U
S13T006559			12311-97-6	Formate	ug/mL	106	<4.67E-03	<4.67E-03	n/a	n/a	n/a	n/a	4.67E-03	n/a	U
GEA															
S13T006561			14596-10-2	Americium-241	uCi/mL	n/a	n/a	<1.68E-04	n/a	n/a	n/a	n/a	1.68E-04	n/a	U
ICP-AES															
S13T006559			7440-53-1	Europium	ug/mL	108	<1.00E-03	<2.00E-03	n/a	n/a	n/a	n/a	2.00E-03	n/a	U
S13T006559			7440-30-1	Niobium	ug/mL	104	<3.00E-03	<6.00E-03	n/a	n/a	n/a	n/a	6.00E-03	n/a	U
S13T006559			7440-19-9	Samarium	ug/mL	105	<5.00E-03	<0.0100	n/a	n/a	n/a	n/a	0.0100	n/a	U

NA = Not Analyzed, ND = Not Detected

J - Estimated U - Less Than Detection Limit B - Blank Contamination

15 - Aug - 2013 10:39:23
DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

AY101 CC8
Opportunistic Analyte Results

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-02
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Anions and Small Organic Acids															
S13T006587			666-14-8	Glycolate	ug/mL	102	<9.37E-03	<23.4	n/a	n/a	n/a	n/a	23.4	n/a	U
S13T006587			71-50-1	Acetate	ug/mL	102	<6.04E-03	198	n/a	n/a	n/a	n/a	15.1	n/a	J
S13T006587			12311-97-6	Formate	ug/mL	106	<4.67E-03	292	n/a	n/a	n/a	n/a	11.7	n/a	J
ICP-AES															
S13T006587			7440-53-1	Europium	ug/mL	108	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006587			7440-30-1	Niobium	ug/mL	104	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006587			7440-19-9	Samarium	ug/mL	105	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U

NA = Not Analyzed, ND = Not Detected

J - Estimated U - Less Than Detection Limit B - Blank Contamination

15 - Aug - 2013 10:39:23
DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

AY101 CC8
Opportunistic Analyte Results

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-04
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Anions and Small Organic Acids															
S13T006597			666-14-8	Glycolate	ug/mL	102	<9.37E-03	<23.4	n/a	n/a	n/a	n/a	23.4	n/a	U
S13T006597			71-50-1	Acetate	ug/mL	102	<6.04E-03	<15.1	n/a	n/a	n/a	n/a	15.1	n/a	U
S13T006597			12311-97-6	Formate	ug/mL	106	<4.67E-03	274	n/a	n/a	n/a	n/a	11.7	n/a	J
ICP-AES															
S13T006597			7440-53-1	Europium	ug/mL	108	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006597			7440-30-1	Niobium	ug/mL	104	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006597			7440-19-9	Samarium	ug/mL	105	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U

NA = Not Analyzed, ND = Not Detected

J - Estimated U - Less Than Detection Limit B - Blank Contamination

15 - Aug - 2013 10:39:23
DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

AY101 CC8
Opportunistic Analyte Results

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-05
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Anions and Small Organic Acids															
S13T006606			666-14-8	Glycolate	ug/mL	102	<9.37E-03	<23.4	n/a	n/a	n/a	n/a	23.4	n/a	U
S13T006606			71-50-1	Acetate	ug/mL	102	<6.04E-03	<15.1	n/a	n/a	n/a	n/a	15.1	n/a	U
S13T006606			12311-97-6	Formate	ug/mL	106	<4.67E-03	268	n/a	n/a	n/a	n/a	11.7	n/a	J
ICP-AES															
S13T006606			7440-53-1	Europium	ug/mL	108	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006606			7440-30-1	Niobium	ug/mL	104	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006606			7440-19-9	Samarium	ug/mL	105	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U

NA = Not Analyzed, ND = Not Detected

J - Estimated U - Less Than Detection Limit B - Blank Contamination

15 - Aug - 2013 10:39:23
DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

AY101 CC8
Opportunistic Analyte Results

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-06
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Anions and Small Organic Acids															
S13T006615			666-14-8	Glycolate	ug/mL	102	<9.37E-03	<23.4	n/a	n/a	n/a	n/a	23.4	n/a	U
S13T006615			71-50-1	Acetate	ug/mL	102	<6.04E-03	<15.1	n/a	n/a	n/a	n/a	15.1	n/a	U
S13T006615			12311-97-6	Formate	ug/mL	106	<4.67E-03	269	n/a	n/a	n/a	n/a	11.7	n/a	J
ICP-AES															
S13T006615			7440-53-1	Europium	ug/mL	108	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006615			7440-30-1	Niobium	ug/mL	104	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006615			7440-19-9	Samarium	ug/mL	105	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U

NA = Not Analyzed, ND = Not Detected

J - Estimated U - Less Than Detection Limit B - Blank Contamination

15 - Aug - 2013 10:39:23
DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

AY101 CC8
Opportunistic Analyte Results

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-07
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Anions and Small Organic Acids															
S13T006624			666-14-8	Glycolate	ug/mL	102	<9.37E-03	<28.1	n/a	n/a	n/a	n/a	28.1	n/a	U
S13T006624			71-50-1	Acetate	ug/mL	102	<6.04E-03	<18.1	n/a	n/a	n/a	n/a	18.1	n/a	U
S13T006624			12311-97-6	Formate	ug/mL	106	<4.67E-03	310	n/a	n/a	n/a	n/a	14.0	n/a	J
ICP-AES															
S13T006624			7440-53-1	Europium	ug/mL	108	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006624			7440-30-1	Niobium	ug/mL	104	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006624			7440-19-9	Samarium	ug/mL	105	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U

NA = Not Analyzed, ND = Not Detected

J - Estimated U - Less Than Detection Limit B - Blank Contamination

15 - Aug - 2013 10:39:23
DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

AY101 CC8
Opportunistic Analyte Results

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-08
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Anions and Small Organic Acids															
S13T006633			666-14-8	Glycolate	ug/mL	102	<9.37E-03	<23.4	n/a	n/a	n/a	n/a	23.4	n/a	U
S13T006633			71-50-1	Acetate	ug/mL	102	<6.04E-03	<15.1	n/a	n/a	n/a	n/a	15.1	n/a	U
S13T006633			12311-97-6	Formate	ug/mL	106	<4.67E-03	267	n/a	n/a	n/a	n/a	11.7	n/a	J
ICP-AES															
S13T006633			7440-53-1	Europium	ug/mL	108	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006633			7440-30-1	Niobium	ug/mL	104	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006633			7440-19-9	Samarium	ug/mL	105	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U

NA = Not Analyzed, ND = Not Detected

J - Estimated U - Less Than Detection Limit B - Blank Contamination

15 - Aug - 2013 10:39:23
DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

AY101 CC8
Opportunistic Analyte Results

Sample Group: 20130628
Riser: 054
Segment Number: 1AY-13-09
Segment Portion: Grab Sample (Total)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Anions and Small Organic Acids															
S13T006642			666-14-8	Glycolate	ug/mL	102	<9.37E-03	<23.4	<23.4	n/a	n/a	102	23.4	n/a	U
S13T006642			71-50-1	Acetate	ug/mL	102	<6.04E-03	270	231	251	15.7	104	15.1	n/a	J
S13T006642			12311-97-6	Formate	ug/mL	104	<4.67E-03	210	<11.7	n/a	n/a	106	11.7	n/a	J
ICP-AES															
S13T006642			7440-53-1	Europium	ug/mL	108	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006642			7440-30-1	Niobium	ug/mL	104	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006642			7440-19-9	Samarium	ug/mL	105	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U

NA = Not Analyzed, ND = Not Detected

J - Estimated U - Less Than Detection Limit B - Blank Contamination

AY101 CC8
Opportunistic Analyte Results

Sample Group: 20130628

Riser: 054

Segment Number: 1AY-13-10

Segment Portion: Grab Sample (Centrifuged Liquid Portion)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Anions and Small Organic Acids															
S13T006665			666-14-8	Glycolate	ug/mL	99.0	<9.37E-03	<23.4	<23.4	n/a	n/a	101	23.4	n/a	U
S13T006665			71-50-1	Acetate	ug/mL	98.1	<6.04E-03	<15.1	282	n/a	n/a	99.6	15.1	n/a	U
S13T006665			12311-97-6	Formate	ug/mL	104	<4.67E-03	191	213	202	11.0	104	11.7	n/a	J
ICP-AES															
S13T006665			7440-53-1	Europium	ug/mL	108	<1.00E-03	<1.00	n/a	n/a	n/a	n/a	1.00	n/a	U
S13T006665			7440-30-1	Niobium	ug/mL	104	<3.00E-03	<3.00	n/a	n/a	n/a	n/a	3.00	n/a	U
S13T006665			7440-19-9	Samarium	ug/mL	105	<5.00E-03	<5.00	n/a	n/a	n/a	n/a	5.00	n/a	U

Segment Portion: Grab Sample (Centrifuged Solids Portion)

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Anions and Small Organic Acids															
S13T007184		W	666-14-8	Glycolate	ug/g	94.7	<9.37E-03	<32.9	<33.1	n/a	n/a	91.6	32.9	n/a	U
S13T007184		W	71-50-1	Acetate	ug/g	113	0.532	794	802	798	1.08	92.8	57.5	n/a	B
S13T007184		W	12311-97-6	Formate	ug/g	116	0.631	835	822	828	1.54	95.9	86.2	n/a	B
ICP-AES															
S13T007044		A	7440-53-1	Europium	ug/g	97.0	<1.00E-03	14.0	14.2	14.1	0.939	97.9	11.9	n/a	J
S13T007044		A	7440-30-1	Niobium	ug/g	91.1	<3.00E-03	<35.7	<35.3	n/a	n/a	95.8	35.7	n/a	U
S13T007044		A	7440-19-9	Samarium	ug/g	97.6	7.16E-03	237	241	239	1.71	96.8	59.5	n/a	J
ICP/MS															
S13T007044		A	TH-232	Thorium-232	ug/g	97.8	<2.50E-03	1.30E+03	1.22E+03	1.26E+03	5.93	97.7	1.49	n/a	

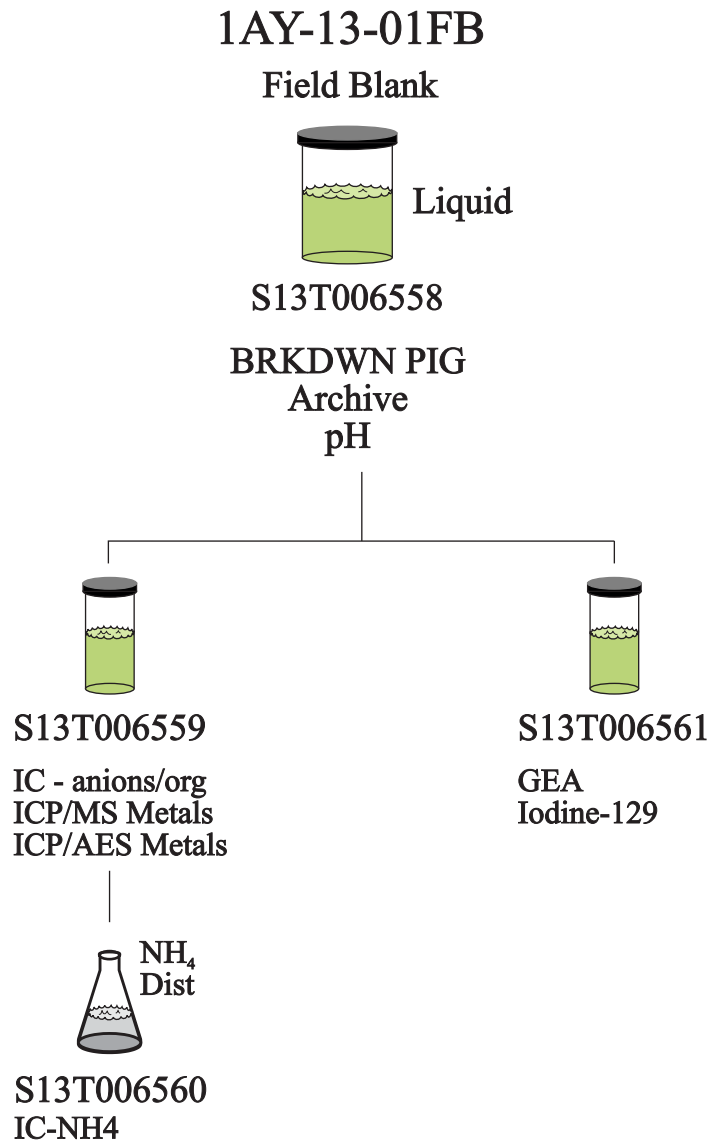
NA = Not Analyzed, ND = Not Detected

J - Estimated U - Less Than Detection Limit B - Blank Contamination

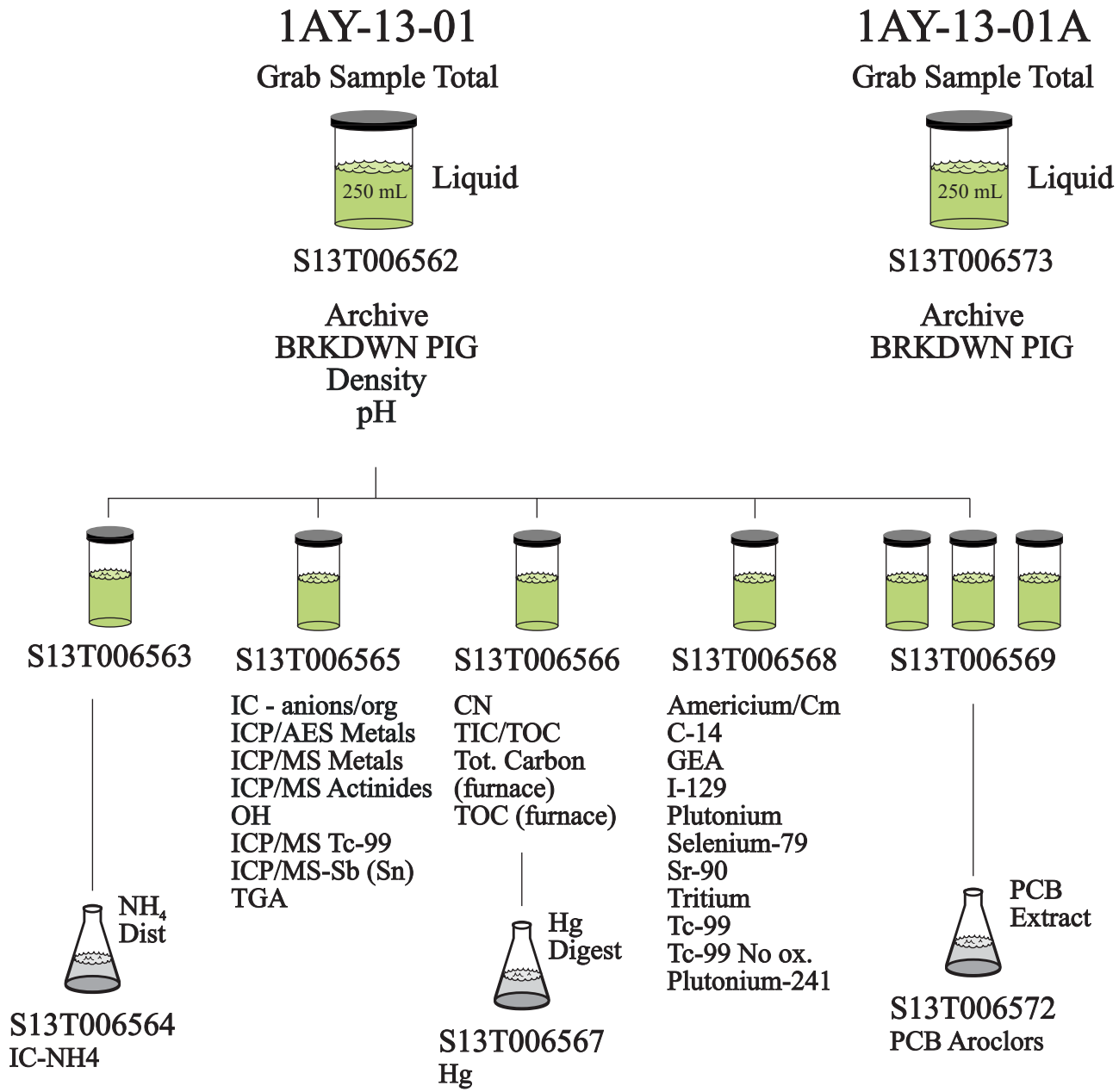
Attachment 3

SAMPLE BREAKDOWN DIAGRAMS

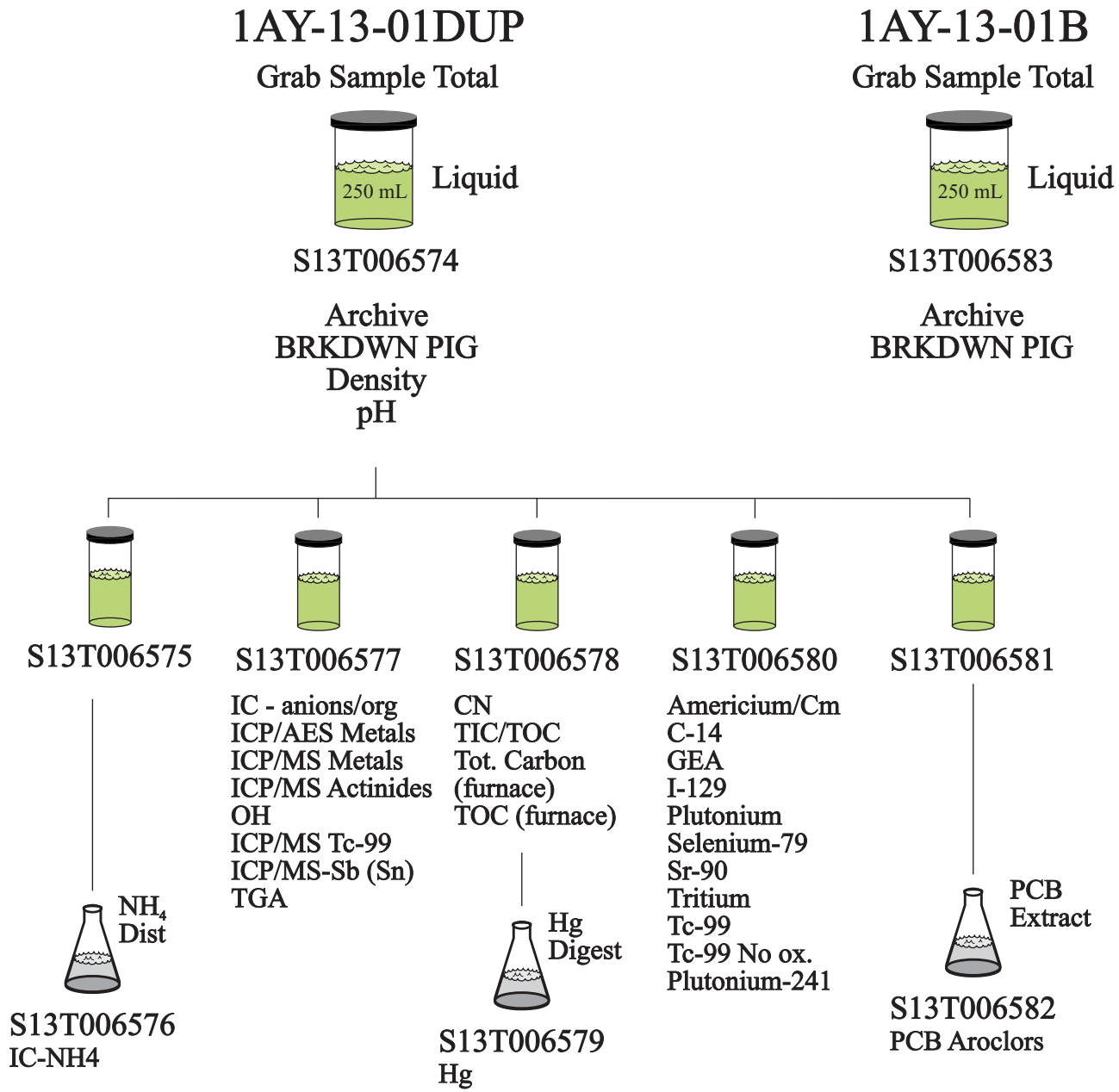
AY101 CC8
Riser 054
Group 20130628



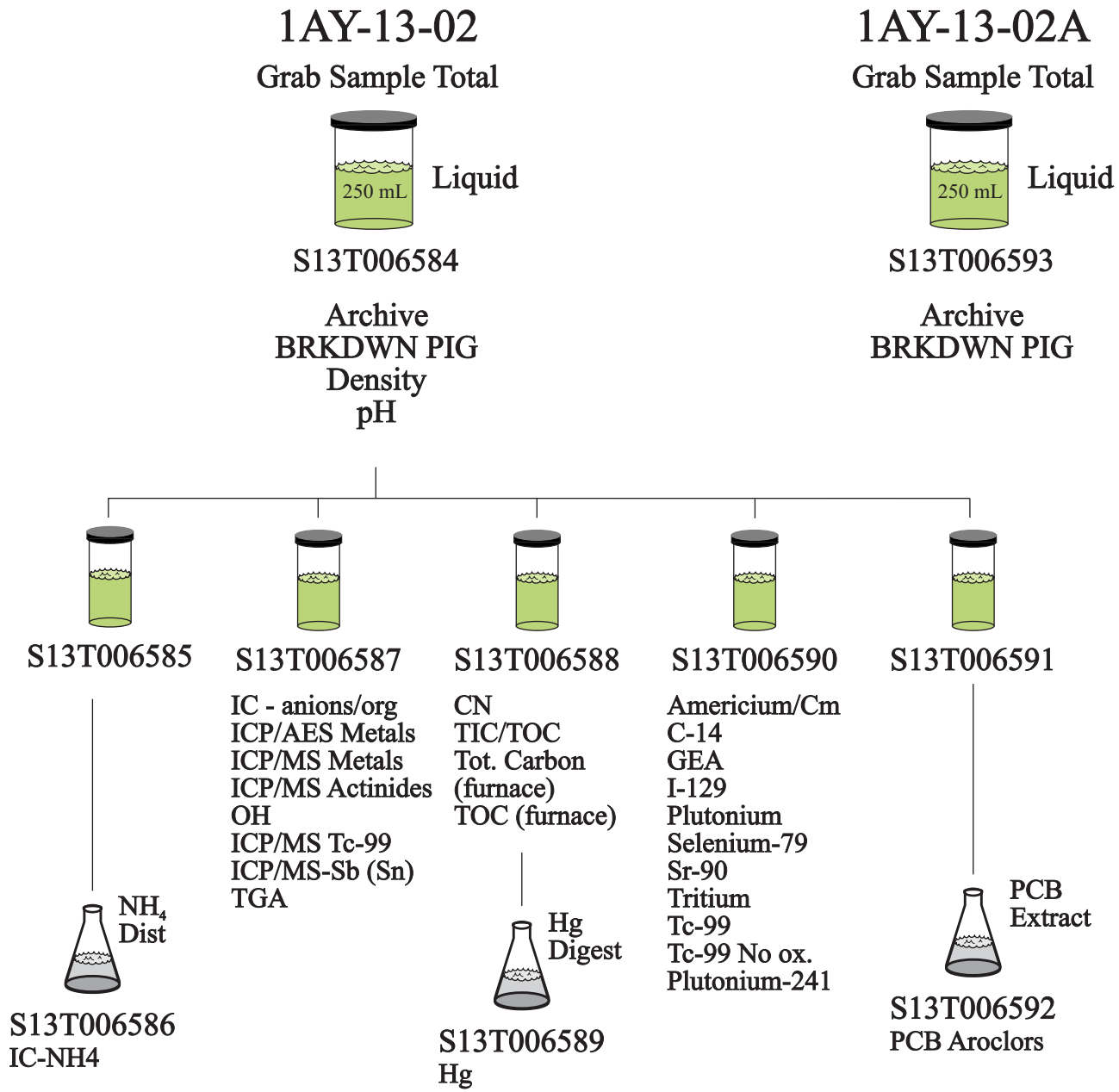
AY101 CC8
Riser 054
Group 20130628



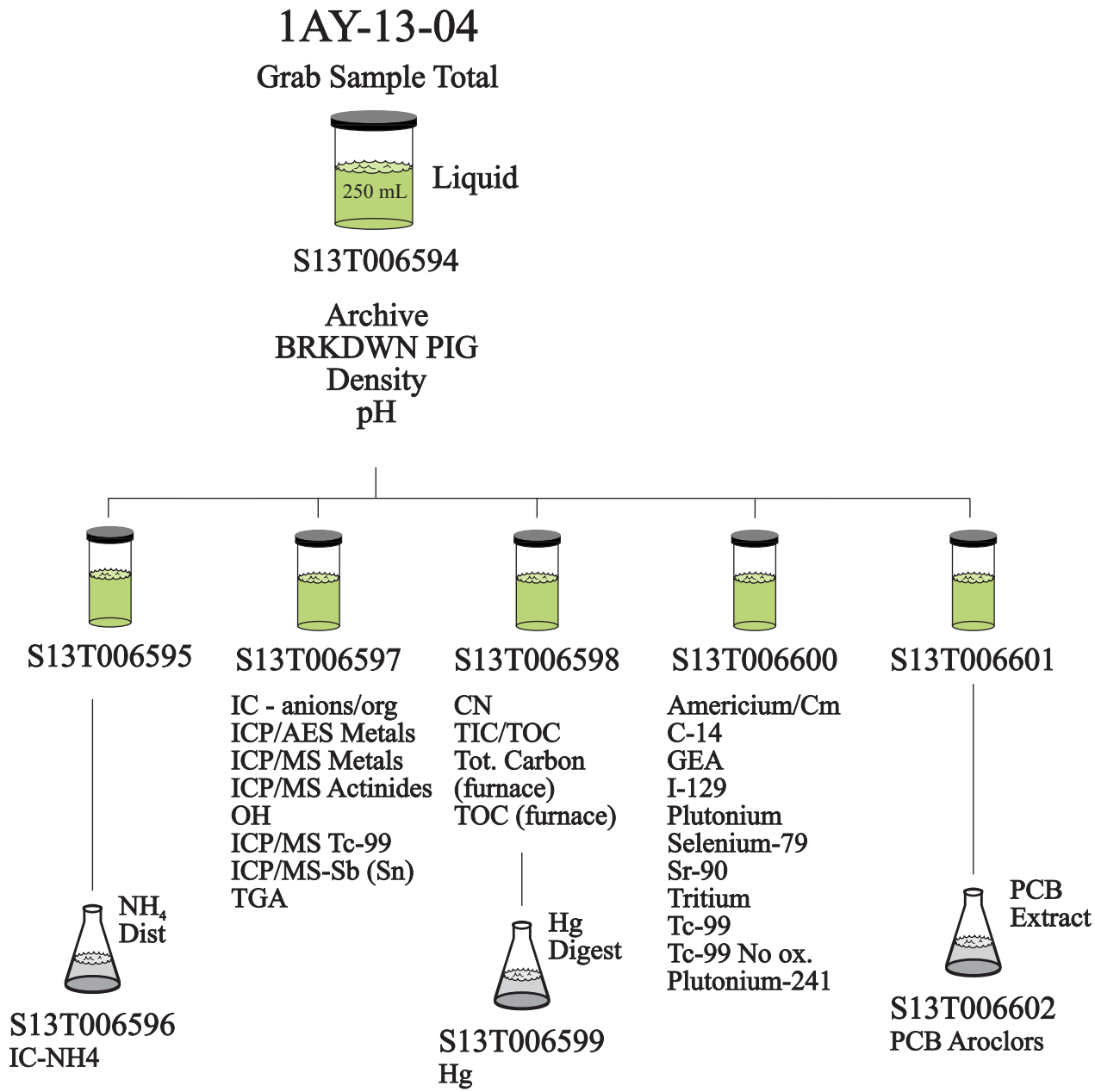
AY101 CC8
Riser 054
Group 20130628



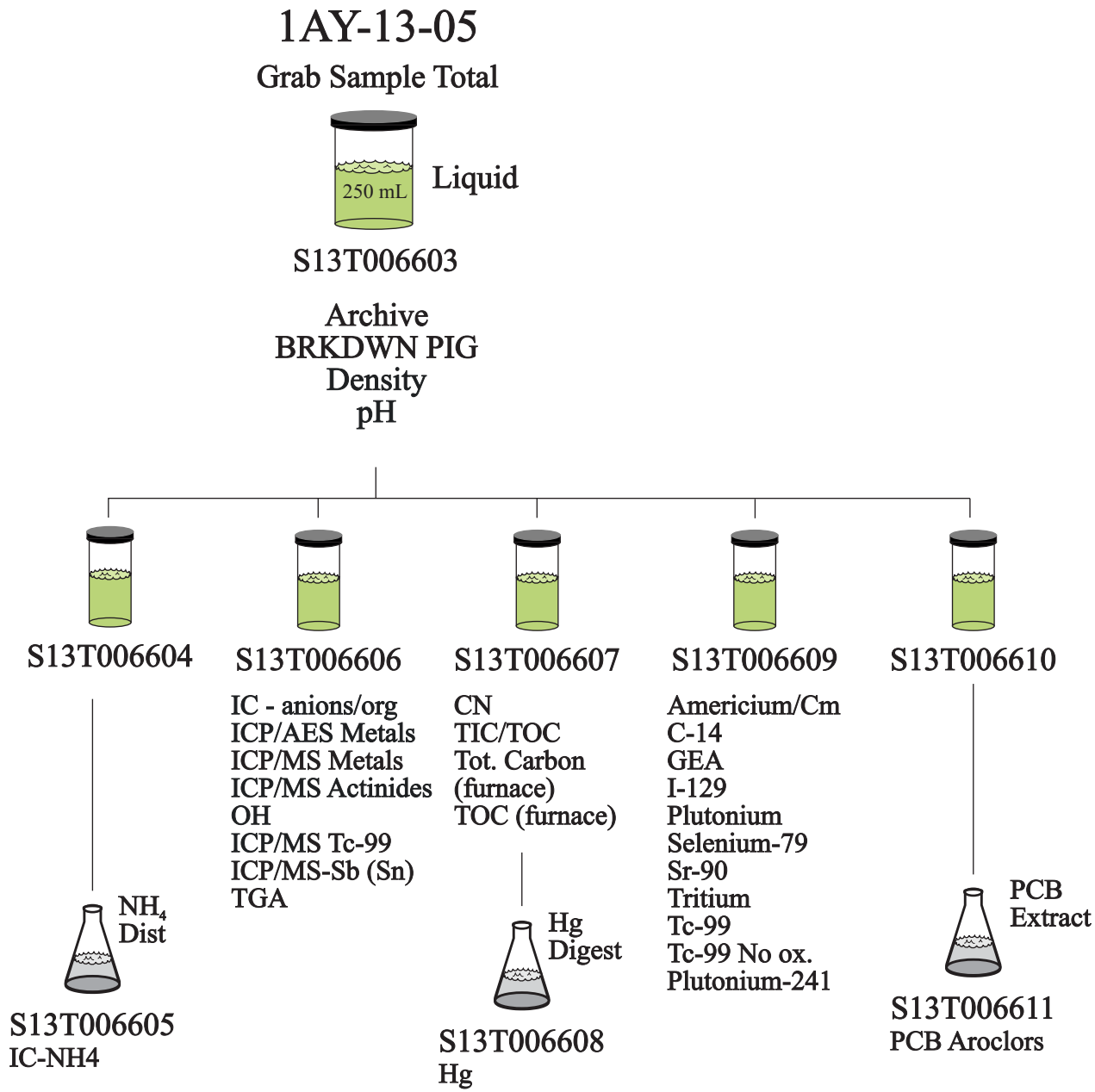
AY101 CC8
Riser 054
Group 20130628



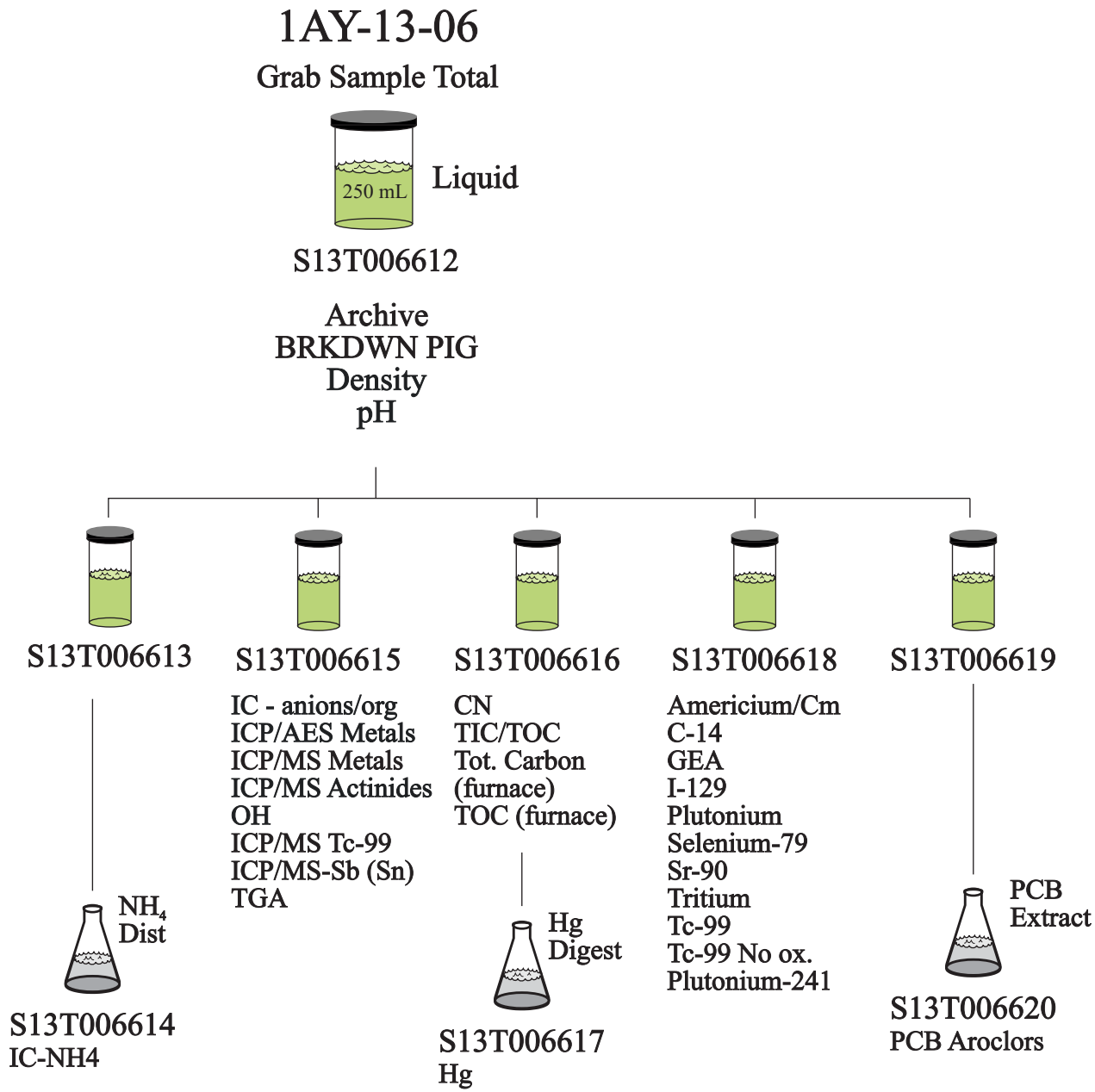
AY101 CC8
Riser 054
Group 20130628



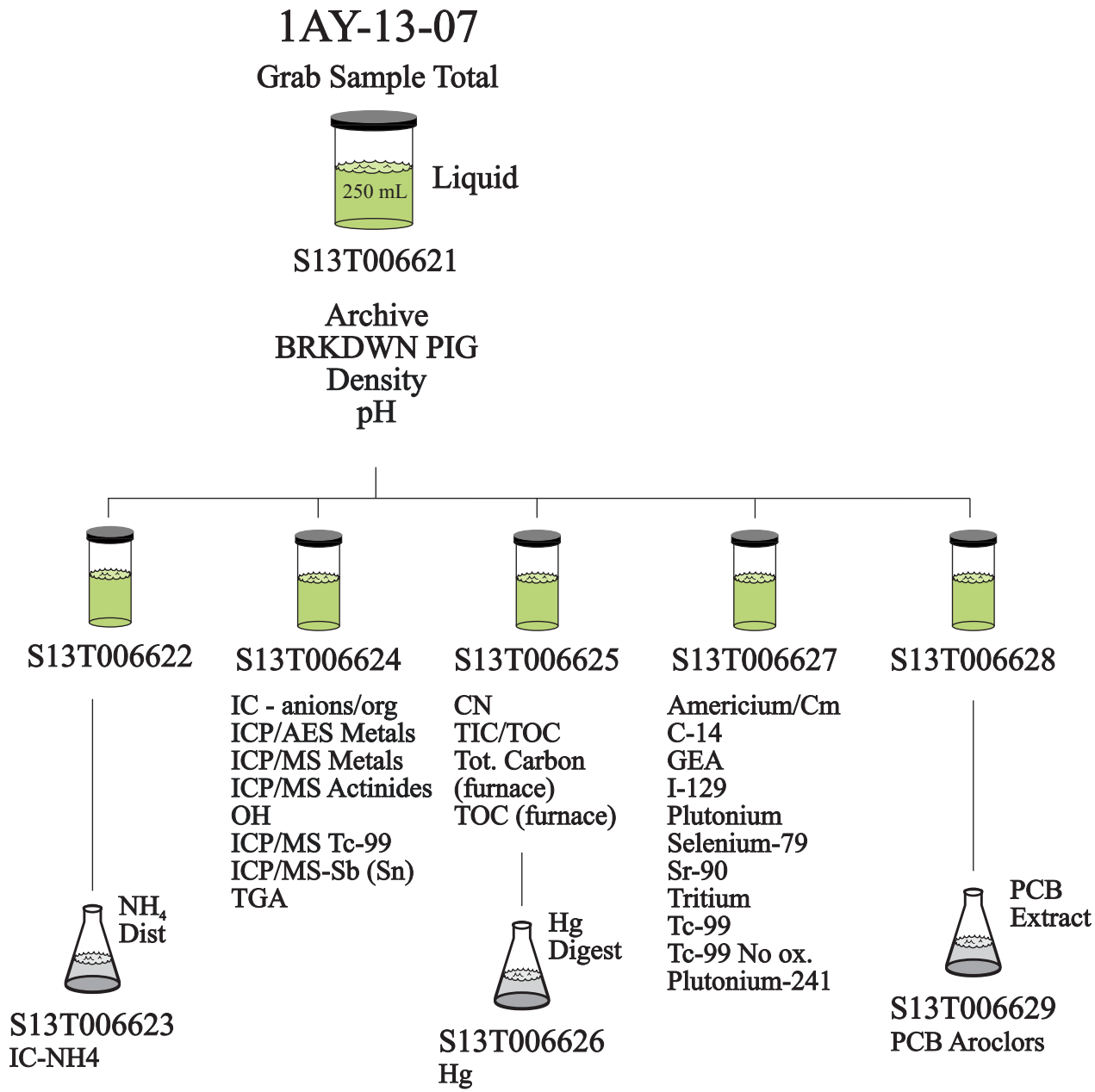
AY101 CC8
Riser 054
Group 20130628



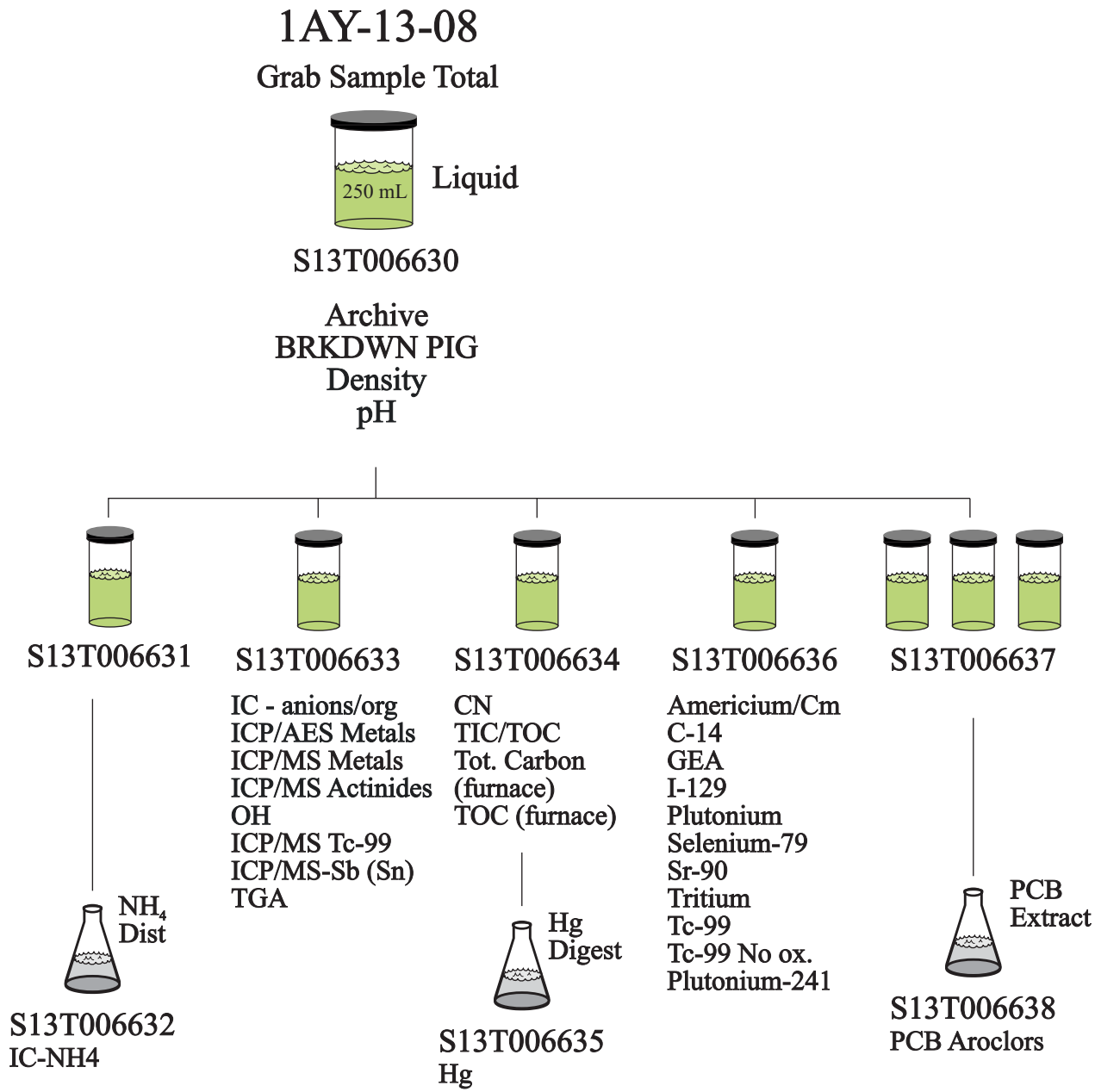
AY101 CC8
Riser 054
Group 20130628



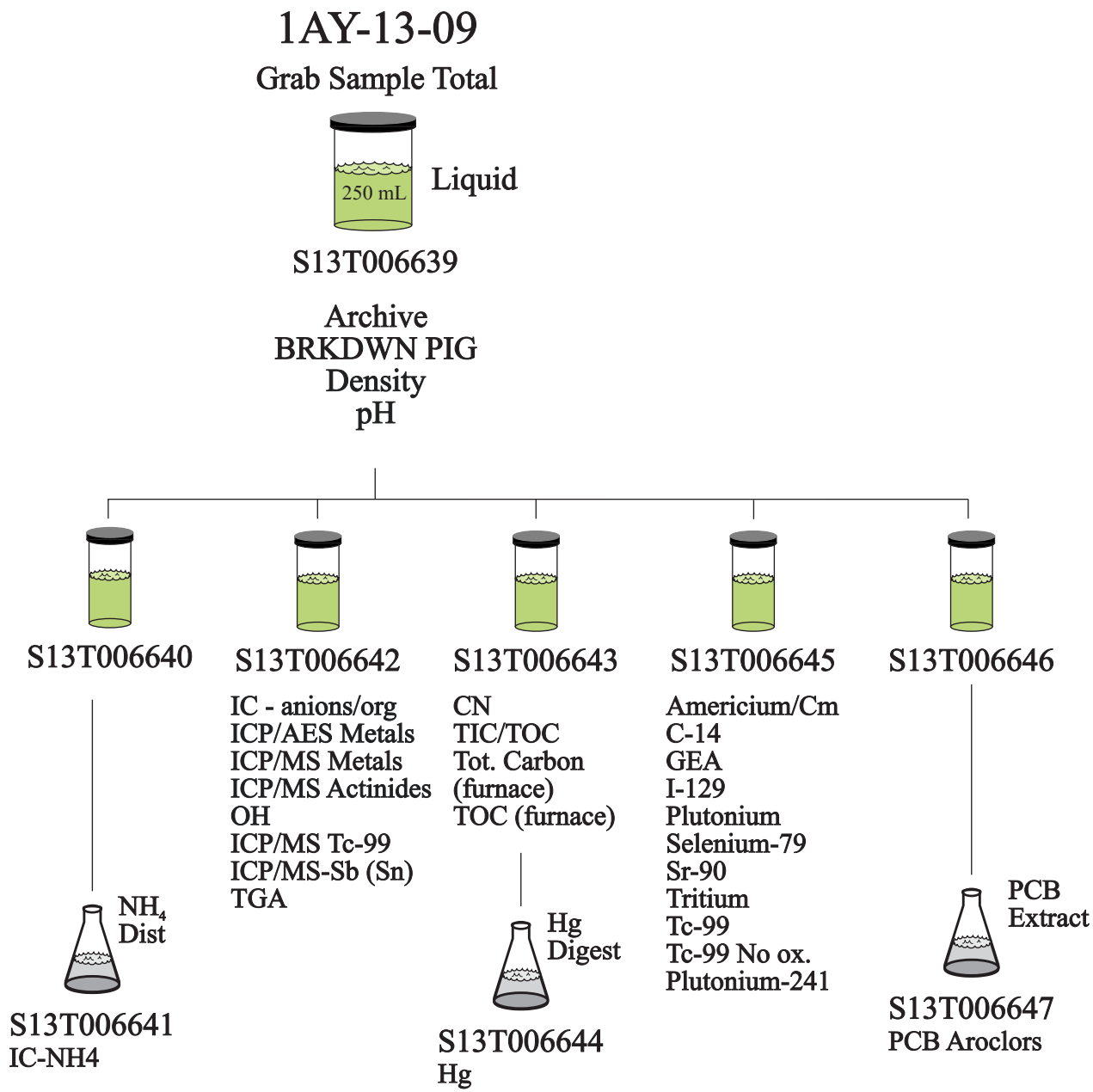
AY101 CC8
Riser 054
Group 20130628



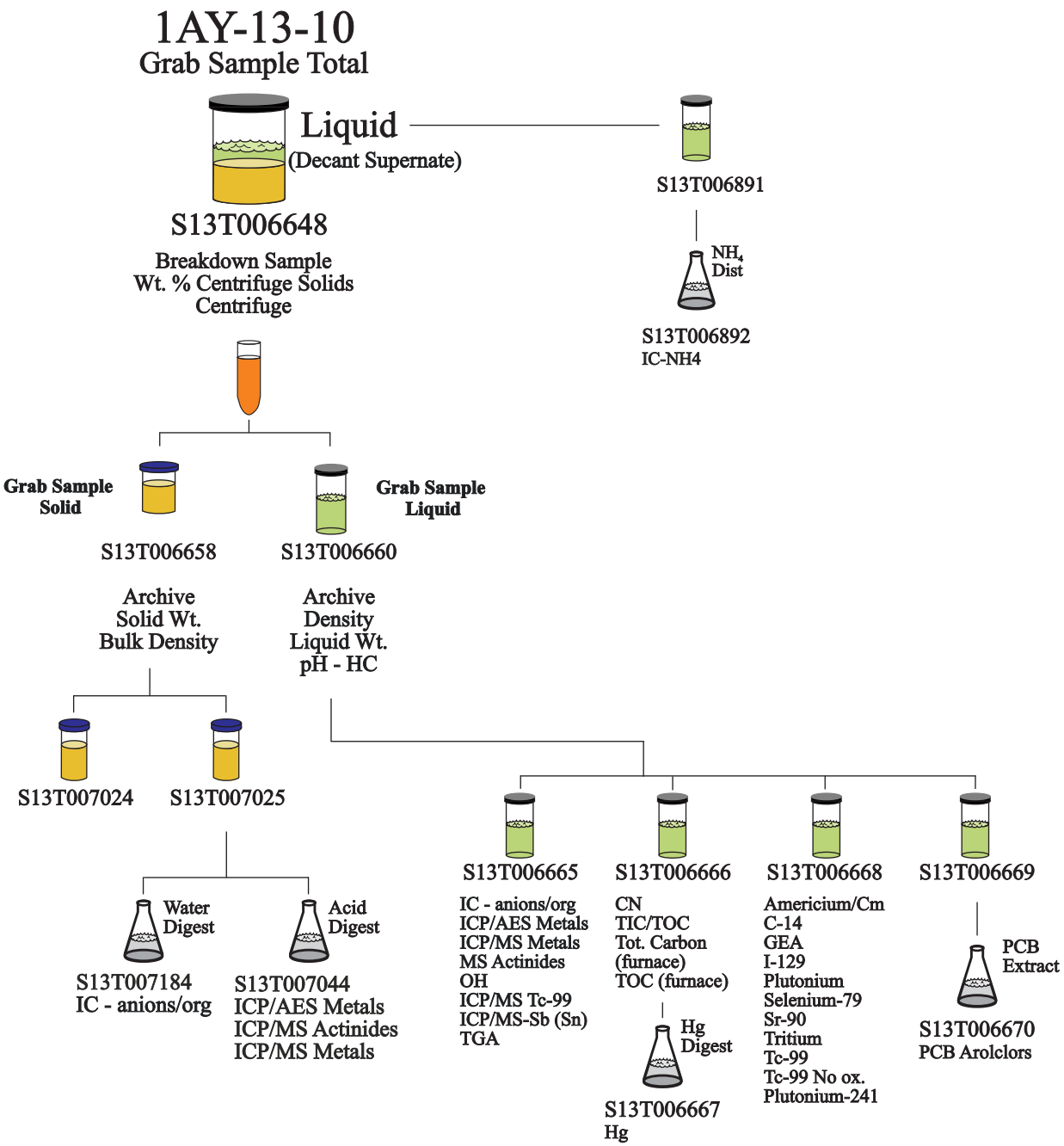
AY101 CC8
Riser 054
Group 20130628



AY101 CC8
Riser 054
Group 20130628



AY101 CC8
Riser 054
Group 20130628



Attachment 4

HOLDING TIME REPORT

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date	Received Date	Preparation Date	Analysis Date	Missed Hold Time
S13T006568	1AY-13-01	AEA Am-241, Cm-243/244	Separation	06/11/2013 10:17	06/11/2013 14:00	N/A	06/27/2013 11:20	No
S13T006580	1AY-13-01DUP	AEA Am-241, Cm-243/244	Separation	06/11/2013 10:37	06/11/2013 14:00	N/A	06/27/2013 11:20	No
S13T006590	1AY-13-02	AEA Am-241, Cm-243/244	Separation	06/11/2013 10:46	06/11/2013 14:00	N/A	06/27/2013 11:20	No
S13T006600	1AY-13-04	AEA Am-241, Cm-243/244	Separation	06/11/2013 10:59	06/11/2013 14:00	N/A	06/27/2013 11:20	No
S13T006609	1AY-13-05	AEA Am-241, Cm-243/244	Separation	06/11/2013 13:11	06/12/2013 10:30	N/A	06/27/2013 11:20	No
S13T006618	1AY-13-06	AEA Am-241, Cm-243/244	Separation	06/11/2013 13:17	06/12/2013 10:30	N/A	06/27/2013 11:20	No
S13T006627	1AY-13-07	AEA Am-241, Cm-243/244	Separation	06/11/2013 13:23	06/12/2013 10:30	N/A	07/08/2013 13:18	No
S13T006636	1AY-13-08	AEA Am-241, Cm-243/244	Separation	06/11/2013 13:30	06/12/2013 10:30	N/A	07/08/2013 13:18	No
S13T006645	1AY-13-09	AEA Am-241, Cm-243/244	Separation	06/11/2013 13:51	06/12/2013 10:30	N/A	07/08/2013 13:18	No
S13T006668	1AY-13-10	AEA Am-241, Cm-243/244	Separation	06/13/2013 10:04	06/13/2013 11:07	N/A	07/08/2013 13:18	No
S13T006568	1AY-13-01	LSC CARBON-14	Separation	06/11/2013 10:17	06/11/2013 14:00	N/A	07/11/2013 14:19	No
S13T006580	1AY-13-01DUP	LSC CARBON-14	Separation	06/11/2013 10:37	06/11/2013 14:00	N/A	07/11/2013 14:19	No
S13T006590	1AY-13-02	LSC CARBON-14	Separation	06/11/2013 10:46	06/11/2013 14:00	N/A	07/11/2013 14:19	No
S13T006600	1AY-13-04	LSC CARBON-14	Separation	06/11/2013 10:59	06/11/2013 14:00	N/A	07/11/2013 14:19	No
S13T006609	1AY-13-05	LSC CARBON-14	Separation	06/11/2013 13:11	06/12/2013 10:30	N/A	07/11/2013 14:19	No
S13T006618	1AY-13-06	LSC CARBON-14	Separation	06/11/2013 13:17	06/12/2013 10:30	N/A	07/11/2013 14:19	No
S13T006627	1AY-13-07	LSC CARBON-14	Separation	06/11/2013 13:23	06/12/2013 10:30	N/A	07/11/2013 14:19	No
S13T006636	1AY-13-08	LSC CARBON-14	Separation	06/11/2013 13:30	06/12/2013 10:30	N/A	07/11/2013 14:19	No
S13T006645	1AY-13-09	LSC CARBON-14	Separation	06/11/2013 13:51	06/12/2013 10:30	N/A	07/11/2013 14:19	No
S13T006668	1AY-13-10	LSC CARBON-14	Separation	06/13/2013 10:04	06/13/2013 11:07	N/A	07/11/2013 14:19	No
S13T006566	1AY-13-01	CN - EDTA SW846-9014/SM4500	SW846-9010C	06/11/2013 10:17	06/11/2013 14:00	N/A	06/19/2013 07:30	No
S13T006578	1AY-13-01DUP	CN - EDTA SW846-9014/SM4500	SW846-9010C	06/11/2013 10:37	06/11/2013 14:00	N/A	06/19/2013 07:30	No
S13T006588	1AY-13-02	CN - EDTA SW846-9014/SM4500	SW846-9010C	06/11/2013 10:46	06/11/2013 14:00	N/A	06/19/2013 07:30	No
S13T006598	1AY-13-04	CN - EDTA SW846-9014/SM4500	SW846-9010C	06/11/2013 10:59	06/11/2013 14:00	N/A	06/19/2013 07:30	No
S13T006607	1AY-13-05	CN - EDTA SW846-9014/SM4500	SW846-9010C	06/11/2013 13:11	06/12/2013 10:30	N/A	06/19/2013 07:30	No
S13T006616	1AY-13-06	CN - EDTA SW846-9014/SM4500	SW846-9010C	06/11/2013 13:17	06/12/2013 10:30	N/A	06/19/2013 07:30	No
S13T006625	1AY-13-07	CN - EDTA SW846-9014/SM4500	SW846-9010C	06/11/2013 13:23	06/12/2013 10:30	N/A	06/19/2013 07:30	No
S13T006634	1AY-13-08	CN - EDTA SW846-9014/SM4500	SW846-9010C	06/11/2013 13:30	06/12/2013 10:30	N/A	06/19/2013 07:30	No
S13T006643	1AY-13-09	CN - EDTA SW846-9014/SM4500	SW846-9010C	06/11/2013 13:51	06/12/2013 10:30	N/A	06/20/2013 08:55	No
S13T006666	1AY-13-10	CN - EDTA SW846-9014/SM4500	SW846-9010C	06/13/2013 10:04	06/13/2013 11:07	N/A	06/20/2013 08:55	No
S13T006562	1AY-13-01	Gravimetric Density	N/A	06/11/2013 10:17	06/11/2013 14:00	N/A	06/13/2013 09:30	N/A
S13T006574	1AY-13-01DUP	Gravimetric Density	N/A	06/11/2013 10:37	06/11/2013 14:00	N/A	06/13/2013 09:30	N/A
S13T006584	1AY-13-02	Gravimetric Density	N/A	06/11/2013 10:46	06/11/2013 14:00	N/A	06/13/2013 09:30	N/A
S13T006594	1AY-13-04	Gravimetric Density	N/A	06/11/2013 10:59	06/11/2013 14:00	N/A	06/13/2013 09:30	N/A
S13T006603	1AY-13-05	Gravimetric Density	N/A	06/11/2013 13:11	06/12/2013 10:30	N/A	06/13/2013 09:30	N/A
S13T006612	1AY-13-06	Gravimetric Density	N/A	06/11/2013 13:17	06/12/2013 10:30	N/A	06/13/2013 09:30	N/A

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S13T006621	1AY-13-07	Gravimetric Density	N/A	06/11/2013 13:23	06/12/2013 10:30	N/A	06/13/2013 09:30	N/A
S13T006630	1AY-13-08	Gravimetric Density	N/A	06/11/2013 13:30	06/12/2013 10:30	N/A	06/13/2013 09:30	N/A
S13T006639	1AY-13-09	Gravimetric Density	N/A	06/11/2013 13:51	06/12/2013 10:30	N/A	06/13/2013 09:30	N/A
S13T006660	1AY-13-10	Gravimetric Density	N/A	06/13/2013 10:04	06/13/2013 11:07	N/A	06/14/2013 01:54	N/A
S13T006561	1AY-13-01FB	GEA	N/A	06/11/2013 10:10	06/11/2013 14:00	N/A	06/24/2013 13:36	No
S13T006568	1AY-13-01	GEA	N/A	06/11/2013 10:17	06/11/2013 14:00	N/A	06/24/2013 13:37	No
S13T006580	1AY-13-01DUP	GEA	N/A	06/11/2013 10:37	06/11/2013 14:00	N/A	06/24/2013 16:39	No
S13T006590	1AY-13-02	GEA	N/A	06/11/2013 10:46	06/11/2013 14:00	N/A	06/24/2013 16:40	No
S13T006600	1AY-13-04	GEA	N/A	06/11/2013 10:59	06/11/2013 14:00	N/A	06/24/2013 16:42	No
S13T006609	1AY-13-05	GEA	N/A	06/11/2013 13:11	06/12/2013 10:30	N/A	06/24/2013 19:21	No
S13T006618	1AY-13-06	GEA	N/A	06/11/2013 13:17	06/12/2013 10:30	N/A	06/24/2013 19:22	No
S13T006627	1AY-13-07	GEA	N/A	06/11/2013 13:23	06/12/2013 10:30	N/A	06/24/2013 22:10	No
S13T006636	1AY-13-08	GEA	N/A	06/11/2013 13:30	06/12/2013 10:30	N/A	06/24/2013 19:26	No
S13T006645	1AY-13-09	GEA	N/A	06/11/2013 13:51	06/12/2013 10:30	N/A	06/24/2013 22:08	No
S13T006668	1AY-13-10	GEA	N/A	06/13/2013 10:04	06/13/2013 11:07	N/A	06/24/2013 22:09	No
S13T006567	1AY-13-01	SW-846 7470A - Hg	SW-846 7470A	06/11/2013 10:17	06/11/2013 14:00	07/03/2013 08:45	07/03/2013 13:42	No
S13T006579	1AY-13-01DUP	SW-846 7470A - Hg	SW-846 7470A	06/11/2013 10:37	06/11/2013 14:00	07/03/2013 08:45	07/03/2013 13:50	No
S13T006589	1AY-13-02	SW-846 7470A - Hg	SW-846 7470A	06/11/2013 10:46	06/11/2013 14:00	07/03/2013 08:45	07/03/2013 13:52	No
S13T006599	1AY-13-04	SW-846 7470A - Hg	SW-846 7470A	06/11/2013 10:59	06/11/2013 14:00	07/03/2013 08:45	07/03/2013 13:53	No
S13T006608	1AY-13-05	SW-846 7470A - Hg	SW-846 7470A	06/11/2013 13:11	06/12/2013 10:30	07/03/2013 08:45	07/03/2013 13:55	No
S13T006617	1AY-13-06	SW-846 7470A - Hg	SW-846 7470A	06/11/2013 13:17	06/12/2013 10:30	07/03/2013 08:45	07/03/2013 13:57	No
S13T006626	1AY-13-07	SW-846 7470A - Hg	SW-846 7470A	06/11/2013 13:23	06/12/2013 10:30	07/03/2013 08:45	07/03/2013 14:02	No
S13T006635	1AY-13-08	SW-846 7470A - Hg	SW-846 7470A	06/11/2013 13:30	06/12/2013 10:30	07/03/2013 08:45	07/03/2013 14:04	No
S13T006644	1AY-13-09	SW-846 7470A - Hg	SW-846 7470A	06/11/2013 13:51	06/12/2013 10:30	07/03/2013 08:45	07/03/2013 14:05	No
S13T006667	1AY-13-10	SW-846 7470A - Hg	SW-846 7470A	06/13/2013 10:04	06/13/2013 11:07	07/03/2013 08:45	07/03/2013 14:07	No
S13T006559	1AY-13-01FB	SW-846 9056A- IC Anions	N/A	06/11/2013 10:10	06/11/2013 14:00	N/A	06/13/2013 08:18	No
S13T006565	1AY-13-01	SW-846 9056A- IC Anions	N/A	06/11/2013 10:17	06/11/2013 14:00	N/A	06/13/2013 08:51	No
S13T006577	1AY-13-01DUP	SW-846 9056A- IC Anions	N/A	06/11/2013 10:37	06/11/2013 14:00	N/A	06/13/2013 09:24	No
S13T006587	1AY-13-02	SW-846 9056A- IC Anions	N/A	06/11/2013 10:46	06/11/2013 14:00	N/A	06/13/2013 09:57	No
S13T006597	1AY-13-04	SW-846 9056A- IC Anions	N/A	06/11/2013 10:59	06/11/2013 14:00	N/A	06/13/2013 10:30	No
S13T006606	1AY-13-05	SW-846 9056A- IC Anions	N/A	06/11/2013 13:11	06/12/2013 10:30	N/A	06/13/2013 11:04	No
S13T006615	1AY-13-06	SW-846 9056A- IC Anions	N/A	06/11/2013 13:17	06/12/2013 10:30	N/A	06/13/2013 11:37	No
S13T006624	1AY-13-07	SW-846 9056A- IC Anions	N/A	06/11/2013 13:23	06/12/2013 10:30	N/A	06/13/2013 12:10	No
S13T006633	1AY-13-08	SW-846 9056A- IC Anions	N/A	06/11/2013 13:30	06/12/2013 10:30	N/A	06/13/2013 12:43	No
S13T006642	1AY-13-09	SW-846 9056A- IC Anions	N/A	06/11/2013 13:51	06/12/2013 10:30	N/A	06/13/2013 01:06	No
S13T006665	1AY-13-10	SW-846 9056A- IC Anions	N/A	06/13/2013 10:04	06/13/2013 11:07	N/A	06/14/2013 18:34	No

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S13T007184	1AY-13-10	SW-846 9056A- IC Anions	Water Digest, Solid	06/13/2013 10:04	06/13/2013 11:07	07/08/2013 09:15	07/08/2013 19:18	No
S13T006560	1AY-13-01FB	EPA 300.7 - IC Ammonium	Distillation	06/11/2013 10:10	06/11/2013 14:00	06/13/2013 09:00	06/13/2013 15:04	No
S13T006564	1AY-13-01	EPA 300.7 - IC Ammonium	Distillation	06/11/2013 10:17	06/11/2013 14:00	06/13/2013 09:00	06/13/2013 15:21	No
S13T006576	1AY-13-01DUP	EPA 300.7 - IC Ammonium	Distillation	06/11/2013 10:37	06/11/2013 14:00	06/13/2013 09:00	06/13/2013 16:28	No
S13T006586	1AY-13-02	EPA 300.7 - IC Ammonium	Distillation	06/11/2013 10:46	06/11/2013 14:00	06/13/2013 09:00	06/13/2013 16:45	No
S13T006596	1AY-13-04	EPA 300.7 - IC Ammonium	Distillation	06/11/2013 10:59	06/11/2013 14:00	06/13/2013 09:00	06/13/2013 17:02	No
S13T006605	1AY-13-05	EPA 300.7 - IC Ammonium	Distillation	06/11/2013 13:11	06/12/2013 10:30	06/13/2013 09:00	06/18/2013 11:15	No
S13T006614	1AY-13-06	EPA 300.7 - IC Ammonium	Distillation	06/11/2013 13:17	06/12/2013 10:30	06/18/2013 09:00	06/18/2013 12:38	No
S13T006623	1AY-13-07	EPA 300.7 - IC Ammonium	Distillation	06/11/2013 13:23	06/12/2013 10:30	06/18/2013 09:00	06/18/2013 13:45	No
S13T006632	1AY-13-08	EPA 300.7 - IC Ammonium	Distillation	06/11/2013 13:30	06/12/2013 10:30	06/18/2013 09:00	06/18/2013 14:51	No
S13T006641	1AY-13-09	EPA 300.7 - IC Ammonium	Distillation	06/11/2013 13:51	06/12/2013 10:30	06/13/2013 09:00	06/18/2013 11:32	No
S13T006892	1AY-13-10	EPA 300.7 - IC Ammonium	Distillation	06/13/2013 10:04	06/13/2013 11:07	06/18/2013 09:00	06/18/2013 15:08	No
S13T006559	1AY-13-01FB	SW-846 6010C - ICP/AES Metals	N/A	06/11/2013 10:10	06/11/2013 14:00	N/A	06/18/2013 11:58	No
S13T006565	1AY-13-01	SW-846 6010C - ICP/AES Metals	N/A	06/11/2013 10:17	06/11/2013 14:00	N/A	06/18/2013 12:07	No
S13T006577	1AY-13-01DUP	SW-846 6010C - ICP/AES Metals	N/A	06/11/2013 10:37	06/11/2013 14:00	N/A	06/18/2013 12:22	No
S13T006587	1AY-13-02	SW-846 6010C - ICP/AES Metals	N/A	06/11/2013 10:46	06/11/2013 14:00	N/A	06/18/2013 12:27	No
S13T006597	1AY-13-04	SW-846 6010C - ICP/AES Metals	N/A	06/11/2013 10:59	06/11/2013 14:00	N/A	06/18/2013 12:31	No
S13T006606	1AY-13-05	SW-846 6010C - ICP/AES Metals	N/A	06/11/2013 13:11	06/12/2013 10:30	N/A	06/18/2013 12:55	No
S13T006615	1AY-13-06	SW-846 6010C - ICP/AES Metals	N/A	06/11/2013 13:17	06/12/2013 10:30	N/A	06/18/2013 13:00	No
S13T006624	1AY-13-07	SW-846 6010C - ICP/AES Metals	N/A	06/11/2013 13:23	06/12/2013 10:30	N/A	06/18/2013 13:05	No
S13T006633	1AY-13-08	SW-846 6010C - ICP/AES Metals	N/A	06/11/2013 13:30	06/12/2013 10:30	N/A	06/18/2013 13:10	No
S13T006642	1AY-13-09	SW-846 6010C - ICP/AES Metals	N/A	06/11/2013 13:51	06/12/2013 10:30	N/A	06/18/2013 13:15	No
S13T006665	1AY-13-10	SW-846 6010C - ICP/AES Metals	N/A	06/13/2013 10:04	06/13/2013 11:07	N/A	06/18/2013 13:20	No
S13T007044	1AY-13-10	SW-846 6010C - ICP/AES Metals	SW-846 3050B	06/13/2013 10:04	06/13/2013 11:07	07/01/2013 09:45	07/09/2013 13:31	No
S13T007044	1AY-13-10	SW-846 6010C - ICP/AES Metals	SW-846 3050B	06/13/2013 10:04	06/13/2013 11:07	07/01/2013 09:45	07/25/2013 15:25	No
S13T006561	1AY-13-01FB	Iodine-129/GEA	Separation	06/11/2013 10:10	06/11/2013 14:00	N/A	06/28/2013 14:10	No
S13T006568	1AY-13-01	Iodine-129/GEA	Separation	06/11/2013 10:17	06/11/2013 14:00	N/A	06/28/2013 14:10	No
S13T006580	1AY-13-01DUP	Iodine-129/GEA	Separation	06/11/2013 10:37	06/11/2013 14:00	N/A	06/28/2013 14:10	No
S13T006590	1AY-13-02	Iodine-129/GEA	Separation	06/11/2013 10:46	06/11/2013 14:00	N/A	06/28/2013 14:10	No
S13T006600	1AY-13-04	Iodine-129/GEA	Separation	06/11/2013 10:59	06/11/2013 14:00	N/A	06/28/2013 14:10	No
S13T006609	1AY-13-05	Iodine-129/GEA	Separation	06/11/2013 13:11	06/12/2013 10:30	N/A	06/28/2013 14:10	No
S13T006618	1AY-13-06	Iodine-129/GEA	Separation	06/11/2013 13:17	06/12/2013 10:30	N/A	06/28/2013 14:10	No
S13T006627	1AY-13-07	Iodine-129/GEA	Separation	06/11/2013 13:23	06/12/2013 10:30	N/A	06/28/2013 14:10	No
S13T006636	1AY-13-08	Iodine-129/GEA	Separation	06/11/2013 13:30	06/12/2013 10:30	N/A	06/28/2013 14:10	No
S13T006645	1AY-13-09	Iodine-129/GEA	Separation	06/11/2013 13:51	06/12/2013 10:30	N/A	06/28/2013 14:10	No
S13T006668	1AY-13-10	Iodine-129/GEA	Separation	06/13/2013 10:04	06/13/2013 11:07	N/A	06/28/2013 14:10	No

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S13T006565	1AY-13-01	ICP/MS Actinides	N/A	06/11/2013 10:17	06/11/2013 14:00	N/A	07/02/2013 11:33	No
S13T006577	1AY-13-01DUP	ICP/MS Actinides	N/A	06/11/2013 10:37	06/11/2013 14:00	N/A	07/02/2013 11:46	No
S13T006587	1AY-13-02	ICP/MS Actinides	N/A	06/11/2013 10:46	06/11/2013 14:00	N/A	07/02/2013 11:52	No
S13T006597	1AY-13-04	ICP/MS Actinides	N/A	06/11/2013 10:59	06/11/2013 14:00	N/A	07/02/2013 11:58	No
S13T006606	1AY-13-05	ICP/MS Actinides	N/A	06/11/2013 13:11	06/12/2013 10:30	N/A	07/02/2013 12:04	No
S13T006615	1AY-13-06	ICP/MS Actinides	N/A	06/11/2013 13:17	06/12/2013 10:30	N/A	07/02/2013 12:11	No
S13T006624	1AY-13-07	ICP/MS Actinides	N/A	06/11/2013 13:23	06/12/2013 10:30	N/A	07/02/2013 12:17	No
S13T006633	1AY-13-08	ICP/MS Actinides	N/A	06/11/2013 13:30	06/12/2013 10:30	N/A	07/02/2013 12:47	No
S13T006642	1AY-13-09	ICP/MS Actinides	N/A	06/11/2013 13:51	06/12/2013 10:30	N/A	07/02/2013 12:53	No
S13T006642	1AY-13-09	ICP/MS Actinides	N/A	06/11/2013 13:51	06/12/2013 10:30	N/A	07/03/2013 10:58	No
S13T006665	1AY-13-10	ICP/MS Actinides	N/A	06/13/2013 10:04	06/13/2013 11:07	N/A	07/02/2013 13:00	No
S13T007044	1AY-13-10	ICP/MS Actinides	Acid Digest, Solid	06/13/2013 10:04	06/13/2013 11:07	07/01/2013 09:45	07/29/2013 13:46	No
S13T006565	1AY-13-01	ICP/MS Sn-126	N/A	06/11/2013 10:17	06/11/2013 14:00	N/A	07/03/2013 13:49	No
S13T006577	1AY-13-01DUP	ICP/MS Sn-126	N/A	06/11/2013 10:37	06/11/2013 14:00	N/A	07/03/2013 13:59	No
S13T006587	1AY-13-02	ICP/MS Sn-126	N/A	06/11/2013 10:46	06/11/2013 14:00	N/A	07/03/2013 14:04	No
S13T006597	1AY-13-04	ICP/MS Sn-126	N/A	06/11/2013 10:59	06/11/2013 14:00	N/A	07/03/2013 14:09	No
S13T006606	1AY-13-05	ICP/MS Sn-126	N/A	06/11/2013 13:11	06/12/2013 10:30	N/A	07/03/2013 14:14	No
S13T006615	1AY-13-06	ICP/MS Sn-126	N/A	06/11/2013 13:17	06/12/2013 10:30	N/A	07/03/2013 14:19	No
S13T006624	1AY-13-07	ICP/MS Sn-126	N/A	06/11/2013 13:23	06/12/2013 10:30	N/A	07/03/2013 14:24	No
S13T006633	1AY-13-08	ICP/MS Sn-126	N/A	06/11/2013 13:30	06/12/2013 10:30	N/A	07/03/2013 14:39	No
S13T006642	1AY-13-09	ICP/MS Sn-126	N/A	06/11/2013 13:51	06/12/2013 10:30	N/A	07/03/2013 14:44	No
S13T006665	1AY-13-10	ICP/MS Sn-126	N/A	06/13/2013 10:04	06/13/2013 11:07	N/A	07/03/2013 14:49	No
S13T006559	1AY-13-01FB	ICP/MS Total Metals	N/A	06/11/2013 10:10	06/11/2013 14:00	N/A	07/26/2013 12:52	No
S13T006565	1AY-13-01	ICP/MS Total Metals	N/A	06/11/2013 10:17	06/11/2013 14:00	N/A	07/26/2013 11:45	No
S13T006577	1AY-13-01DUP	ICP/MS Total Metals	N/A	06/11/2013 10:37	06/11/2013 14:00	N/A	07/26/2013 11:54	No
S13T006587	1AY-13-02	ICP/MS Total Metals	N/A	06/11/2013 10:46	06/11/2013 14:00	N/A	07/26/2013 11:59	No
S13T006597	1AY-13-04	ICP/MS Total Metals	N/A	06/11/2013 10:59	06/11/2013 14:00	N/A	07/26/2013 12:03	No
S13T006606	1AY-13-05	ICP/MS Total Metals	N/A	06/11/2013 13:11	06/12/2013 10:30	N/A	07/26/2013 12:08	No
S13T006615	1AY-13-06	ICP/MS Total Metals	N/A	06/11/2013 13:17	06/12/2013 10:30	N/A	07/26/2013 12:12	No
S13T006624	1AY-13-07	ICP/MS Total Metals	N/A	06/11/2013 13:23	06/12/2013 10:30	N/A	07/26/2013 12:17	No
S13T006633	1AY-13-08	ICP/MS Total Metals	N/A	06/11/2013 13:30	06/12/2013 10:30	N/A	07/26/2013 12:39	No
S13T006642	1AY-13-09	ICP/MS Total Metals	N/A	06/11/2013 13:51	06/12/2013 10:30	N/A	07/26/2013 12:43	No
S13T006665	1AY-13-10	ICP/MS Total Metals	N/A	06/13/2013 10:04	06/13/2013 11:07	N/A	07/26/2013 12:48	No
S13T007044	1AY-13-10	ICP/MS Total Metals	Acid Digest, Solid	06/13/2013 10:04	06/13/2013 11:07	07/01/2013 09:45	07/29/2013 13:34	No
S13T006565	1AY-13-01	ICP/MS Tc-99 - SW-846 6020A	N/A	06/11/2013 10:17	06/11/2013 14:00	N/A	06/27/2013 14:04	No
S13T006577	1AY-13-01DUP	ICP/MS Tc-99 - SW-846 6020A	N/A	06/11/2013 10:37	06/11/2013 14:00	N/A	06/27/2013 14:13	No

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S13T006587	1AY-13-02	ICP/MS Tc-99 - SW-846 6020A	N/A	06/11/2013 10:46	06/11/2013 14:00	N/A	06/27/2013 14:18	No
S13T006597	1AY-13-04	ICP/MS Tc-99 - SW-846 6020A	N/A	06/11/2013 10:59	06/11/2013 14:00	N/A	06/27/2013 14:22	No
S13T006606	1AY-13-05	ICP/MS Tc-99 - SW-846 6020A	N/A	06/11/2013 13:11	06/12/2013 10:30	N/A	06/27/2013 14:46	No
S13T006615	1AY-13-06	ICP/MS Tc-99 - SW-846 6020A	N/A	06/11/2013 13:17	06/12/2013 10:30	N/A	06/27/2013 14:51	No
S13T006624	1AY-13-07	ICP/MS Tc-99 - SW-846 6020A	N/A	06/11/2013 13:23	06/12/2013 10:30	N/A	06/27/2013 14:56	No
S13T006633	1AY-13-08	ICP/MS Tc-99 - SW-846 6020A	N/A	06/11/2013 13:30	06/12/2013 10:30	N/A	06/27/2013 15:00	No
S13T006642	1AY-13-09	ICP/MS Tc-99 - SW-846 6020A	N/A	06/11/2013 13:51	06/12/2013 10:30	N/A	06/27/2013 15:05	No
S13T006665	1AY-13-10	ICP/MS Tc-99 - SW-846 6020A	N/A	06/13/2013 10:04	06/13/2013 11:07	N/A	07/29/2013 11:23	No
S13T006565	1AY-13-01	OH - Titration	N/A	06/11/2013 10:17	06/11/2013 14:00	N/A	06/13/2013 09:07	N/A
S13T006577	1AY-13-01DUP	OH - Titration	N/A	06/11/2013 10:37	06/11/2013 14:00	N/A	06/13/2013 09:07	N/A
S13T006587	1AY-13-02	OH - Titration	N/A	06/11/2013 10:46	06/11/2013 14:00	N/A	06/13/2013 09:07	N/A
S13T006597	1AY-13-04	OH - Titration	N/A	06/11/2013 10:59	06/11/2013 14:00	N/A	06/13/2013 09:07	N/A
S13T006606	1AY-13-05	OH - Titration	N/A	06/11/2013 13:11	06/12/2013 10:30	N/A	06/13/2013 09:07	N/A
S13T006615	1AY-13-06	OH - Titration	N/A	06/11/2013 13:17	06/12/2013 10:30	N/A	06/13/2013 09:07	N/A
S13T006624	1AY-13-07	OH - Titration	N/A	06/11/2013 13:23	06/12/2013 10:30	N/A	06/13/2013 09:07	N/A
S13T006633	1AY-13-08	OH - Titration	N/A	06/11/2013 13:30	06/12/2013 10:30	N/A	06/18/2013 09:44	N/A
S13T006642	1AY-13-09	OH - Titration	N/A	06/11/2013 13:51	06/12/2013 10:30	N/A	06/18/2013 09:44	N/A
S13T006665	1AY-13-10	OH - Titration	N/A	06/13/2013 10:04	06/13/2013 11:07	N/A	06/18/2013 09:44	N/A
S13T006572	1AY-13-01	SW-846 8082A - PCB Aroclors	SW-846 3520C	06/11/2013 10:17	06/11/2013 14:00	06/17/2013 14:38	06/19/2013 17:38	N/A
S13T006582	1AY-13-01DUP	SW-846 8082A - PCB Aroclors	SW-846 3520C	06/11/2013 10:37	06/11/2013 14:00	06/17/2013 14:38	06/20/2013 02:59	N/A
S13T006592	1AY-13-02	SW-846 8082A - PCB Aroclors	SW-846 3520C	06/11/2013 10:46	06/11/2013 14:00	06/17/2013 14:38	06/20/2013 04:33	N/A
S13T006602	1AY-13-04	SW-846 8082A - PCB Aroclors	SW-846 3520C	06/11/2013 10:59	06/11/2013 14:00	06/17/2013 14:38	06/20/2013 06:06	N/A
S13T006611	1AY-13-05	SW-846 8082A - PCB Aroclors	SW-846 3520C	06/11/2013 13:11	06/12/2013 10:30	06/17/2013 14:38	06/20/2013 10:48	N/A
S13T006620	1AY-13-06	SW-846 8082A - PCB Aroclors	SW-846 3520C	06/11/2013 13:17	06/12/2013 10:30	06/17/2013 14:38	06/20/2013 12:22	N/A
S13T006629	1AY-13-07	SW-846 8082A - PCB Aroclors	SW-846 3520C	06/11/2013 13:23	06/12/2013 10:30	06/17/2013 14:38	06/20/2013 13:55	N/A
S13T006638	1AY-13-08	SW-846 8082A - PCB Aroclors	SW-846 3520C	06/11/2013 13:30	06/12/2013 10:30	06/24/2013 14:41	06/27/2013 13:50	N/A
S13T006647	1AY-13-09	SW-846 8082A - PCB Aroclors	SW-846 3520C	06/11/2013 13:51	06/12/2013 10:30	06/24/2013 14:41	06/27/2013 21:38	N/A
S13T006670	1AY-13-10	SW-846 8082A - PCB Aroclors	SW-846 3520C	06/13/2013 10:04	06/13/2013 11:07	06/24/2013 14:41	06/27/2013 23:11	N/A
S13T006558	1AY-13-01FB	SW-846 9040C pH	N/A	06/11/2013 10:10	06/11/2013 14:00	N/A	06/13/2013 14:36	N/A
S13T006562	1AY-13-01	SW-846 9040C pH	N/A	06/11/2013 10:17	06/11/2013 14:00	N/A	06/13/2013 14:37	N/A
S13T006574	1AY-13-01DUP	SW-846 9040C pH	N/A	06/11/2013 10:37	06/11/2013 14:00	N/A	06/13/2013 14:37	N/A
S13T006584	1AY-13-02	SW-846 9040C pH	N/A	06/11/2013 10:46	06/11/2013 14:00	N/A	06/13/2013 14:37	N/A
S13T006594	1AY-13-04	SW-846 9040C pH	N/A	06/11/2013 10:59	06/11/2013 14:00	N/A	06/13/2013 14:37	N/A
S13T006603	1AY-13-05	SW-846 9040C pH	N/A	06/11/2013 13:11	06/12/2013 10:30	N/A	06/13/2013 14:37	N/A
S13T006612	1AY-13-06	SW-846 9040C pH	N/A	06/11/2013 13:17	06/12/2013 10:30	N/A	06/13/2013 14:37	N/A
S13T006621	1AY-13-07	SW-846 9040C pH	N/A	06/11/2013 13:23	06/12/2013 10:30	N/A	06/13/2013 14:37	N/A

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date	Received Date	Preparation Date	Analysis Date	Missed Hold Time
S13T006630	1AY-13-08	SW-846 9040C pH	N/A	06/11/2013 13:30	06/12/2013 10:30	N/A	06/13/2013 14:37	N/A
S13T006639	1AY-13-09	SW-846 9040C pH	N/A	06/11/2013 13:51	06/12/2013 10:30	N/A	06/13/2013 14:37	N/A
S13T006660	1AY-13-10	SW-846 9040C pH	N/A	06/13/2013 10:04	06/13/2013 11:07	N/A	06/14/2013 14:39	N/A
S13T006568	1AY-13-01	AEA Pu-238, 239/240	Separation	06/11/2013 10:17	06/11/2013 14:00	N/A	06/26/2013 17:03	No
S13T006580	1AY-13-01DUP	AEA Pu-238, 239/240	Separation	06/11/2013 10:37	06/11/2013 14:00	N/A	06/26/2013 17:03	No
S13T006590	1AY-13-02	AEA Pu-238, 239/240	Separation	06/11/2013 10:46	06/11/2013 14:00	N/A	06/26/2013 17:03	No
S13T006600	1AY-13-04	AEA Pu-238, 239/240	Separation	06/11/2013 10:59	06/11/2013 14:00	N/A	06/26/2013 17:03	No
S13T006609	1AY-13-05	AEA Pu-238, 239/240	Separation	06/11/2013 13:11	06/12/2013 10:30	N/A	06/26/2013 17:03	No
S13T006618	1AY-13-06	AEA Pu-238, 239/240	Separation	06/11/2013 13:17	06/12/2013 10:30	N/A	06/26/2013 17:03	No
S13T006627	1AY-13-07	AEA Pu-238, 239/240	Separation	06/11/2013 13:23	06/12/2013 10:30	N/A	06/26/2013 17:03	No
S13T006636	1AY-13-08	AEA Pu-238, 239/240	Separation	06/11/2013 13:30	06/12/2013 10:30	N/A	06/26/2013 17:03	No
S13T006645	1AY-13-09	AEA Pu-238, 239/240	Separation	06/11/2013 13:51	06/12/2013 10:30	N/A	06/26/2013 17:03	No
S13T006668	1AY-13-10	AEA Pu-238, 239/240	Separation	06/13/2013 10:04	06/13/2013 11:07	N/A	06/26/2013 17:03	No
S13T006568	1AY-13-01	LSC Pu-241	Separation	06/11/2013 10:17	06/11/2013 14:00	N/A	06/26/2013 15:30	No
S13T006580	1AY-13-01DUP	LSC Pu-241	Separation	06/11/2013 10:37	06/11/2013 14:00	N/A	06/26/2013 15:30	No
S13T006590	1AY-13-02	LSC Pu-241	Separation	06/11/2013 10:46	06/11/2013 14:00	N/A	06/26/2013 15:30	No
S13T006600	1AY-13-04	LSC Pu-241	Separation	06/11/2013 10:59	06/11/2013 14:00	N/A	06/26/2013 15:30	No
S13T006609	1AY-13-05	LSC Pu-241	Separation	06/11/2013 13:11	06/12/2013 10:30	N/A	06/26/2013 15:30	No
S13T006618	1AY-13-06	LSC Pu-241	Separation	06/11/2013 13:17	06/12/2013 10:30	N/A	06/26/2013 15:30	No
S13T006627	1AY-13-07	LSC Pu-241	Separation	06/11/2013 13:23	06/12/2013 10:30	N/A	07/08/2013 10:15	No
S13T006636	1AY-13-08	LSC Pu-241	Separation	06/11/2013 13:30	06/12/2013 10:30	N/A	07/08/2013 10:15	No
S13T006645	1AY-13-09	LSC Pu-241	Separation	06/11/2013 13:51	06/12/2013 10:30	N/A	07/08/2013 10:15	No
S13T006668	1AY-13-10	LSC Pu-241	Separation	06/13/2013 10:04	06/13/2013 11:07	N/A	07/08/2013 10:15	No
S13T006568	1AY-13-01	LSC Se-79	Separation	06/11/2013 10:17	06/11/2013 14:00	N/A	06/27/2013 13:18	No
S13T006580	1AY-13-01DUP	LSC Se-79	Separation	06/11/2013 10:37	06/11/2013 14:00	N/A	06/27/2013 13:18	No
S13T006590	1AY-13-02	LSC Se-79	Separation	06/11/2013 10:46	06/11/2013 14:00	N/A	06/27/2013 13:18	No
S13T006600	1AY-13-04	LSC Se-79	Separation	06/11/2013 10:59	06/11/2013 14:00	N/A	06/27/2013 13:18	No
S13T006609	1AY-13-05	LSC Se-79	Separation	06/11/2013 13:11	06/12/2013 10:30	N/A	06/27/2013 13:18	No
S13T006618	1AY-13-06	LSC Se-79	Separation	06/11/2013 13:17	06/12/2013 10:30	N/A	06/27/2013 13:18	No
S13T006627	1AY-13-07	LSC Se-79	Separation	06/11/2013 13:23	06/12/2013 10:30	N/A	06/27/2013 13:18	No
S13T006636	1AY-13-08	LSC Se-79	Separation	06/11/2013 13:30	06/12/2013 10:30	N/A	06/27/2013 13:18	No
S13T006645	1AY-13-09	LSC Se-79	Separation	06/11/2013 13:51	06/12/2013 10:30	N/A	06/27/2013 13:18	No
S13T006668	1AY-13-10	LSC Se-79	Separation	06/13/2013 10:04	06/13/2013 11:07	N/A	06/27/2013 13:18	No
S13T006568	1AY-13-01	GPC Strontium, Sr89/90	Separation	06/11/2013 10:17	06/11/2013 14:00	N/A	06/25/2013 13:53	No
S13T006580	1AY-13-01DUP	GPC Strontium, Sr89/90	Separation	06/11/2013 10:37	06/11/2013 14:00	N/A	06/25/2013 13:53	No
S13T006590	1AY-13-02	GPC Strontium, Sr89/90	Separation	06/11/2013 10:46	06/11/2013 14:00	N/A	06/25/2013 13:53	No

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date	Received Date	Preparation Date	Analysis Date	Missed Hold Time
S13T006600	1AY-13-04	GPC Strontium, Sr89/90	Separation	06/11/2013 10:59	06/11/2013 14:00	N/A	06/25/2013 13:53	No
S13T006609	1AY-13-05	GPC Strontium, Sr89/90	Separation	06/11/2013 13:11	06/12/2013 10:30	N/A	06/25/2013 13:53	No
S13T006618	1AY-13-06	GPC Strontium, Sr89/90	Separation	06/11/2013 13:17	06/12/2013 10:30	N/A	06/25/2013 13:53	No
S13T006627	1AY-13-07	GPC Strontium, Sr89/90	Separation	06/11/2013 13:23	06/12/2013 10:30	N/A	06/25/2013 13:53	No
S13T006636	1AY-13-08	GPC Strontium, Sr89/90	Separation	06/11/2013 13:30	06/12/2013 10:30	N/A	06/25/2013 13:53	No
S13T006645	1AY-13-09	GPC Strontium, Sr89/90	Separation	06/11/2013 13:51	06/12/2013 10:30	N/A	06/25/2013 13:53	No
S13T006668	1AY-13-10	GPC Strontium, Sr89/90	Separation	06/13/2013 10:04	06/13/2013 11:07	N/A	06/25/2013 13:53	No
S13T006568	1AY-13-01	TC-99	N/A	06/11/2013 10:17	06/11/2013 14:00	N/A	07/09/2013 14:18	No
S13T006580	1AY-13-01DUP	TC-99	N/A	06/11/2013 10:37	06/11/2013 14:00	N/A	07/09/2013 14:18	No
S13T006590	1AY-13-02	TC-99	N/A	06/11/2013 10:46	06/11/2013 14:00	N/A	07/09/2013 14:18	No
S13T006600	1AY-13-04	TC-99	N/A	06/11/2013 10:59	06/11/2013 14:00	N/A	07/09/2013 14:18	No
S13T006609	1AY-13-05	TC-99	N/A	06/11/2013 13:11	06/12/2013 10:30	N/A	07/09/2013 14:18	No
S13T006618	1AY-13-06	TC-99	N/A	06/11/2013 13:17	06/12/2013 10:30	N/A	07/09/2013 14:18	No
S13T006627	1AY-13-07	TC-99	N/A	06/11/2013 13:23	06/12/2013 10:30	N/A	07/09/2013 14:18	No
S13T006636	1AY-13-08	TC-99	N/A	06/11/2013 13:30	06/12/2013 10:30	N/A	07/09/2013 14:18	No
S13T006645	1AY-13-09	TC-99	N/A	06/11/2013 13:51	06/12/2013 10:30	N/A	07/09/2013 14:18	No
S13T006668	1AY-13-10	TC-99	N/A	06/13/2013 10:04	06/13/2013 11:07	N/A	07/09/2013 14:18	No
S13T006568	1AY-13-01	TC-99 No Oxidation	N/A	06/11/2013 10:17	06/11/2013 14:00	N/A	07/03/2013 14:00	No
S13T006580	1AY-13-01DUP	TC-99 No Oxidation	N/A	06/11/2013 10:37	06/11/2013 14:00	N/A	07/03/2013 14:00	No
S13T006590	1AY-13-02	TC-99 No Oxidation	N/A	06/11/2013 10:46	06/11/2013 14:00	N/A	07/03/2013 14:00	No
S13T006600	1AY-13-04	TC-99 No Oxidation	N/A	06/11/2013 10:59	06/11/2013 14:00	N/A	07/03/2013 14:00	No
S13T006609	1AY-13-05	TC-99 No Oxidation	N/A	06/11/2013 13:11	06/12/2013 10:30	N/A	07/03/2013 14:00	No
S13T006618	1AY-13-06	TC-99 No Oxidation	N/A	06/11/2013 13:17	06/12/2013 10:30	N/A	07/03/2013 14:00	No
S13T006627	1AY-13-07	TC-99 No Oxidation	N/A	06/11/2013 13:23	06/12/2013 10:30	N/A	07/03/2013 14:00	No
S13T006636	1AY-13-08	TC-99 No Oxidation	N/A	06/11/2013 13:30	06/12/2013 10:30	N/A	07/03/2013 14:00	No
S13T006645	1AY-13-09	TC-99 No Oxidation	N/A	06/11/2013 13:51	06/12/2013 10:30	N/A	07/03/2013 14:00	No
S13T006668	1AY-13-10	TC-99 No Oxidation	N/A	06/13/2013 10:04	06/13/2013 11:07	N/A	07/03/2013 14:00	No
S13T006565	1AY-13-01	Thermogavimetric Analysis	N/A	06/11/2013 10:17	06/11/2013 14:00	N/A	06/19/2013 10:17	N/A
S13T006577	1AY-13-01DUP	Thermogavimetric Analysis	N/A	06/11/2013 10:37	06/11/2013 14:00	N/A	07/18/2013 08:37	N/A
S13T006587	1AY-13-02	Thermogavimetric Analysis	N/A	06/11/2013 10:46	06/11/2013 14:00	N/A	07/18/2013 08:37	N/A
S13T006597	1AY-13-04	Thermogavimetric Analysis	N/A	06/11/2013 10:59	06/11/2013 14:00	N/A	07/18/2013 08:37	N/A
S13T006606	1AY-13-05	Thermogavimetric Analysis	N/A	06/11/2013 13:11	06/12/2013 10:30	N/A	07/18/2013 08:37	N/A
S13T006615	1AY-13-06	Thermogavimetric Analysis	N/A	06/11/2013 13:17	06/12/2013 10:30	N/A	07/18/2013 08:37	N/A
S13T006624	1AY-13-07	Thermogavimetric Analysis	N/A	06/11/2013 13:23	06/12/2013 10:30	N/A	07/22/2013 09:28	N/A
S13T006633	1AY-13-08	Thermogavimetric Analysis	N/A	06/11/2013 13:30	06/12/2013 10:30	N/A	07/22/2013 09:28	N/A
S13T006642	1AY-13-09	Thermogavimetric Analysis	N/A	06/11/2013 13:51	06/12/2013 10:30	N/A	07/22/2013 09:28	N/A

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date	Received Date	Preparation Date	Analysis Date	Missed Hold Time
S13T006665	1AY-13-10	Thermogavimetric Analysis	N/A	06/13/2013 10:04	06/13/2013 11:07	N/A	07/22/2013 09:28	N/A
S13T006566	1AY-13-01	SM-5310C TIC-TOC	SM-5310C	06/11/2013 10:17	06/11/2013 14:00	N/A	07/11/2013 14:00	Yes
S13T006578	1AY-13-01DUP	SM-5310C TIC-TOC	SM-5310C	06/11/2013 10:37	06/11/2013 14:00	N/A	06/19/2013 09:45	No
S13T006588	1AY-13-02	SM-5310C TIC-TOC	SM-5310C	06/11/2013 10:46	06/11/2013 14:00	N/A	06/19/2013 09:45	No
S13T006598	1AY-13-04	SM-5310C TIC-TOC	SM-5310C	06/11/2013 10:59	06/11/2013 14:00	N/A	06/19/2013 09:45	No
S13T006607	1AY-13-05	SM-5310C TIC-TOC	SM-5310C	06/11/2013 13:11	06/12/2013 10:30	N/A	06/19/2013 09:45	No
S13T006616	1AY-13-06	SM-5310C TIC-TOC	SM-5310C	06/11/2013 13:17	06/12/2013 10:30	N/A	07/11/2013 14:00	Yes
S13T006625	1AY-13-07	SM-5310C TIC-TOC	SM-5310C	06/11/2013 13:23	06/12/2013 10:30	N/A	06/25/2013 09:15	No
S13T006634	1AY-13-08	SM-5310C TIC-TOC	SM-5310C	06/11/2013 13:30	06/12/2013 10:30	N/A	06/27/2013 09:15	No
S13T006643	1AY-13-09	SM-5310C TIC-TOC	SM-5310C	06/11/2013 13:51	06/12/2013 10:30	N/A	07/12/2013 14:00	Yes
S13T006666	1AY-13-10	SM-5310C TIC-TOC	SM-5310C	06/13/2013 10:04	06/13/2013 11:07	N/A	06/25/2013 09:15	No
S13T006566	1AY-13-01	SM-5310B Total Carbon	SM-5310B	06/11/2013 10:17	06/11/2013 14:00	N/A	07/09/2013 09:00	No
S13T006578	1AY-13-01DUP	SM-5310B Total Carbon	SM-5310B	06/11/2013 10:37	06/11/2013 14:00	N/A	07/09/2013 09:00	No
S13T006588	1AY-13-02	SM-5310B Total Carbon	SM-5310B	06/11/2013 10:46	06/11/2013 14:00	N/A	07/09/2013 09:00	No
S13T006598	1AY-13-04	SM-5310B Total Carbon	SM-5310B	06/11/2013 10:59	06/11/2013 14:00	N/A	07/09/2013 09:00	No
S13T006607	1AY-13-05	SM-5310B Total Carbon	SM-5310B	06/11/2013 13:11	06/12/2013 10:30	N/A	07/09/2013 09:00	No
S13T006616	1AY-13-06	SM-5310B Total Carbon	SM-5310B	06/11/2013 13:17	06/12/2013 10:30	N/A	07/09/2013 09:00	No
S13T006625	1AY-13-07	SM-5310B Total Carbon	SM-5310B	06/11/2013 13:23	06/12/2013 10:30	N/A	07/09/2013 09:00	No
S13T006634	1AY-13-08	SM-5310B Total Carbon	SM-5310B	06/11/2013 13:30	06/12/2013 10:30	N/A	07/09/2013 09:00	No
S13T006643	1AY-13-09	SM-5310B Total Carbon	SM-5310B	06/11/2013 13:51	06/12/2013 10:30	N/A	07/09/2013 09:00	No
S13T006666	1AY-13-10	SM-5310B Total Carbon	SM-5310B	06/13/2013 10:04	06/13/2013 11:07	N/A	06/25/2013 11:15	No
S13T006566	1AY-13-01	SM-5310B Total Organic Carbon	SM-5310B	06/11/2013 10:17	06/11/2013 14:00	N/A	06/20/2013 10:15	No
S13T006578	1AY-13-01DUP	SM-5310B Total Organic Carbon	SM-5310B	06/11/2013 10:37	06/11/2013 14:00	N/A	06/20/2013 10:15	No
S13T006588	1AY-13-02	SM-5310B Total Organic Carbon	SM-5310B	06/11/2013 10:46	06/11/2013 14:00	N/A	06/20/2013 10:15	No
S13T006598	1AY-13-04	SM-5310B Total Organic Carbon	SM-5310B	06/11/2013 10:59	06/11/2013 14:00	N/A	06/20/2013 10:15	No
S13T006607	1AY-13-05	SM-5310B Total Organic Carbon	SM-5310B	06/11/2013 13:11	06/12/2013 10:30	N/A	06/20/2013 10:15	No
S13T006616	1AY-13-06	SM-5310B Total Organic Carbon	SM-5310B	06/11/2013 13:17	06/12/2013 10:30	N/A	06/20/2013 10:15	No
S13T006625	1AY-13-07	SM-5310B Total Organic Carbon	SM-5310B	06/11/2013 13:23	06/12/2013 10:30	N/A	06/20/2013 10:15	No
S13T006634	1AY-13-08	SM-5310B Total Organic Carbon	SM-5310B	06/11/2013 13:30	06/12/2013 10:30	N/A	06/20/2013 10:15	No
S13T006643	1AY-13-09	SM-5310B Total Organic Carbon	SM-5310B	06/11/2013 13:51	06/12/2013 10:30	N/A	06/20/2013 10:15	No
S13T006666	1AY-13-10	SM-5310B Total Organic Carbon	SM-5310B	06/13/2013 10:04	06/13/2013 11:07	N/A	07/01/2013 13:45	No
S13T006568	1AY-13-01	LSC Tritium	Distillation	06/11/2013 10:17	06/11/2013 14:00	N/A	07/01/2013 14:09	No
S13T006580	1AY-13-01DUP	LSC Tritium	Distillation	06/11/2013 10:37	06/11/2013 14:00	N/A	07/01/2013 14:09	No
S13T006590	1AY-13-02	LSC Tritium	Distillation	06/11/2013 10:46	06/11/2013 14:00	N/A	07/01/2013 14:09	No
S13T006600	1AY-13-04	LSC Tritium	Distillation	06/11/2013 10:59	06/11/2013 14:00	N/A	07/01/2013 14:09	No
S13T006609	1AY-13-05	LSC Tritium	Distillation	06/11/2013 13:11	06/12/2013 10:30	N/A	07/01/2013 14:09	No

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date	Received Date	Preparation Date	Analysis Date	Missed Hold Time
S13T006618	1AY-13-06	LSC Tritium	Distillation	06/11/2013 13:17	06/12/2013 10:30	N/A	07/01/2013 14:09	No
S13T006627	1AY-13-07	LSC Tritium	Distillation	06/11/2013 13:23	06/12/2013 10:30	N/A	07/01/2013 14:09	No
S13T006636	1AY-13-08	LSC Tritium	Distillation	06/11/2013 13:30	06/12/2013 10:30	N/A	07/01/2013 14:09	No
S13T006645	1AY-13-09	LSC Tritium	Distillation	06/11/2013 13:51	06/12/2013 10:30	N/A	07/01/2013 14:09	No
S13T006668	1AY-13-10	LSC Tritium	Distillation	06/13/2013 10:04	06/13/2013 11:07	N/A	07/01/2013 14:09	No

Attachment 5

CORRESPONDENCE

CHARACTERIZATION CHANGE NOTICE

Document: RPP-PLAN-54804, Rev 0 **Change Number:** 13-CCN-09 **DRF to TSAP Required?** No

Requestor: Scott Luke **Date:** 04/10/2013

Samples Affected: Samples planned to be taken from tank 241-AY-101 in 2013.

Proposed Change(s):

1. Table A-1, Maximum Concentration column, units: Replace μg/mL with μCi/mL.

2. Table A-1, Footnotes, Footnote 1: Replace μg/mL with μCi/mL.

Justification:

1. The correct unit of measure for radionuclides in tank waste liquids is μCi/mL.

Date Change Effective: 04/10/2013

Schedule Impact: None

Authorization (print and sign):

Tank Coordinator: D. M. Nguyen **Date:** 4/10/13

Sampling: NA **Date:**

222-S Project Coordinator: NA **Date:**

222-S Sample Management Office NA **Date:**

222-S ATL Project Manager: NA **Date:**

Other: NA **Date:**

cc: G. P. Ritenour

S. G. McKinney

CHARACTERIZATION CHANGE NOTICE

Document: RPP-PLAN-54804, Rev 1 **Change Number:** 13-CCN-10 **DRF to TSAP Required?** No

Requestor: Scott Luke **Date:** 06/6/2013

Samples Affected: Samples planned to be taken from tank 241-AY-101 in 2013.

Proposed Change(s):

1. Delete sample 1AY-13-03 as shown on Tables 3-1 and 3-2 below. This sample number will be deleted with no other sample number being affected.
2. Revise the location of samples 1AY-13-04 and 1AY-13-06 as shown on Tables 3-1 and 3-2 below.
3. Revise Section 4.1 bullets to perform NH_4 analysis on samples 1AY-13-10 and 1AY-13-10A before centrifuging and compositing these samples.

Table 3-1. Sampling Design for Tank 241-AY-101 Grab Sampling

Sample Identification Number[(1)]	Riser Number	Sample Location[(2)]	Comment
1AY-13-01FB	054	Approximately 24 inches above the aqueous surface level.	Field blank
1AY-13-01 1AY-13-01A[1] 1AY-13-01B[1] 1AY-13-01DUP[3]	054	1/4 inch below the surface. See sampling direction in the following document text.	Aqueous surface samples and duplicate. Taken without stopper.
1AY-13-02 1AY-13-02A[1]	054	Approximately 10 inches below the aqueous surface level.	Subsurface grabs.
1AY-13-03	N/A	N/A	This sample has been deleted. Sample number reserved.
1AY-13-04	054	Approximately 67 inches (5 feet, 7 inches) below the aqueous surface level.	Subsurface grabs.
1AY-13-05	054	Approximately 125 inches (10 feet, 5 inches) below the aqueous surface level.	Subsurface grabs.
1AY-13-06	054	Approximately 180 inches (15 feet) below the aqueous surface level.	Subsurface grabs.
1AY-13-07	054	Approximately 199 inches (16 feet, 7 inches) below the aqueous surface level.	Subsurface grabs.
1AY-13-08	054	Approximately 249 inches (20 feet, 9 inches) below the aqueous surface level.	Subsurface grabs. Determine solids level after this sample.

Table 3-1. Sampling Design for Tank 241-AY-101 Grab Sampling

Sample Identification Number[1]	Riser Number	Sample Location[2]	Comment
1AY-13-09	054	Approximately 10 inches above the solids level as measured by the zip cord.	Subsurface grab.
1AY-13-10 1AY-13-10A	054	Near the supernatant and solids interface and, if possible, approximately 4 inches to 8 inches below the zip cord solids reading to maximize the amount of solids obtained. If the specified depth range cannot be achieved, collect this sample as deep in the sludge as possible.	Bottom subsurface sample. For this sample location, the operator may manipulate the sampling assembly to the extent possible to reach the sample location and to maximize the quantity of solids obtained. Sample 1AY-13-10A will only be collected if 1AY-13-10 contains approximately 50% or more solids.

Notes:

[1]These samples are dedicated to corrosion potential testing.

[2]The sample assembly must be placed such that the mouth of the sample bottle is at the specified location.

[3]Samples designated with "DUP" will be used for duplicate analyses.

Table 3-1. Summary of Sampling Requirements (3 sheets)

Required Preparation for Sampling

The following activities are required prior to sampling:

- Clean sample bottles and caps (or make sure certified clean bottles are available).
- Clean sampling equipment (bottle holder and stopper).
- Prepare the field blank.
- During cold weather (below approximately 60 degree Fahrenheit), store sample carriers in a heated facility until they are staged to the field just prior to sampling.

Sampling Design Requirements

The sampling design is summarized below.

- Samples shall be taken in the order shown except the field blank may be taken at any time during sampling.
- The sample assembly must be placed such that the mouth of the sample bottle is at the specified location.
- The sample bottle should be held at each elevation for approximately 30 seconds to allow the bottle to fill.

Sample Id. Number	Riser No.	Sample Type	Sample Bottles/Caps	Sample Location	Additional Requirements
1AY-13-01FB	054	Field blank	250-mL, clear glass bottle with Teflon® cap	In the tank head space, approximately 24 inches (2 feet) above the aqueous surface level.	• Measure the liquid surface level prior to obtaining the field blank. A measurement device with a resolution of 1/8 inch shall be used with the zip cord. • The field blank is to be taken by uncapping the bottle and lowering to the specified head space depth.
1AY-13-01 1AY-13-01A 1AY-13-01B 1AY-13-01DUP	054	Surface grabs	250-mL, clear glass bottles with Teflon® cap	¼ inch below the surface. See sampling direction in the following document text.	• The bottles should be approximately 90% or more full. • Sample taken without stopper.
1AY-13-02 1AY-13-02A	054	Subsurface grabs	250-mL clear glass bottle with Teflon® cap	Approximately 10 inches below the aqueous surface level.	The bottles should be approximately 90% or more full.
1AY-13-03	N/A	N/A	N/A	N/A	This sample has been deleted. Sample number reserved.
1AY-13-04	054	Subsurface grab	250-mL, clear glass bottle with Teflon® cap	Approximately 67 inches (5 feet, 7 inches) below the aqueous surface level.	The bottles should be approximately 90% or more full.
1AY-13-05	054	Subsurface grab	250-mL, clear glass bottle with Teflon® cap	Approximately 125 inches (10 feet, 5 inches) below the aqueous surface level.	The bottles should be approximately 90% or more full.

Table 3-1. Summary of Sampling Requirements (3 sheets)

Sample Id. Number	Riser No.	Sample Type	Sample Bottles/Caps	Sample Location	Additional Requirements
1AY-13-06	054	Subsurface grab	250-mL, clear glass bottle with Teflon® cap	Approximately180 inches (15 feet) below the aqueous surface level.	The bottles should be approximately 90% or more full.
1AY-13-07	054	Subsurface grab	250-mL, clear glass bottle with Teflon® cap	Approximately 199 inches (16 feet, 7 inches) below the aqueous surface level.	The bottles should be approximately 90% or more full.
1AY-13-08	054	Subsurface grab	250-mL, clear glass bottle with Teflon® cap	Approximately 249 inches (20 feet, 9 inches) below the aqueous surface level.	The bottles should be approximately 90% or more full.
1AY-13-09	054	Subsurface grab	250-mL, clear glass bottle with Teflon® cap	Approximately 10 inches above the solids level as measured by the zip cord.	• Measure the solids surface level prior to obtaining this sample. A measurement device with a resolution of 1/8 inch shall be used with the zip cord. • The bottles should be approximately 90% or more full.
1AY-13-10 1AY-13-10A	054	Bottom subsurface grabs	250-mL, clear glass bottle with Teflon® cap	Near the supernatant and solids interface, approximately 4 inches to 8 inches below the solids zip cord reading to maximize the amount of solids obtained. If the specified depth range cannot be achieved, collect this sample as deep in the sludge as possible.	• Bottom subsurface grab sample. For this sample location, the operator may manipulate the sampling assembly to the extent possible to reach the sample location and to maximize the quantity of solids obtained. • The bottles should be approximately 90% or more full. • After collecting sample 1AY-13-10, visually determine the quantity of solids obtained and collect sample 1AY-13-10A only if 1AY-13-10 contains approximately 50% or more solids. • If 1AY-13-10A will be collected, wait approximately one-half hour or longer after 1AY-13-10 is collected to obtain the suffix A sample.

Chain of Custody Requirements

A chain-of-custody form shall be prepared for each sample. The following information is required on the completed chain-of-custody as a minimum:

- Project designation (e.g., tank number)
- Name and signature of sampler

Table 3-1. Summary of Sampling Requirements (3 sheets)

• An identification number unique to each sample as assigned in this table • Date and time at which the sample was obtained • Name and signature of individual(s) involved in the chain of possession • Date and time of possession
Sampling Data Requirements The following information shall be recorded on the Sampling Data Sheet, as applicable: • Liquid and solids level measurements, with or without top hat, (to the resolution of the measuring instrument) • Actual sample depths, with or without top hat, (to ¼ inch) • A visual description of each sample [e.g., a rough estimate of percent full, presence of a separable organic layer, solids settling characteristics (such as suspended or settled), and a rough estimate of the volume of solids present].
Sample Shipping Requirements • Tank Farm Sampling shall use waste tank sample seals to deter tampering of the samples during shipping. • During cold weather (below approximately 60 degree Fahrenheit), each sample shall be transported to the laboratory on the same date the sample is collected or stored in a heated facility to minimize solids precipitation. • A verbal notification by Tank Farm Sampling is to be made to the 222-S Laboratory at 373-2435 at least 24 hours in advance of an expected shipment.

- Samples 1AY-13-10 and 1AY-13-10A (if collected) will contain significant solids and are planned to be composited to ensure that sufficient liquid is available for Table 4-1 analyses. Before compositing, the liquid of each sample will be analyzed for density, particle size distribution (PSD), pH, OH^-, NO_2, ammonia (NH_4), and NO_3. The Corrosion Mitigation technical POC will determine if the material is suitable for compositing based on the pre-compositing analytical results, including PSD results if available when this determination is made. If the material is determined to not be suitable for compositing, further direction will be provided.
- If 1AY-13-10 and 1AY-13-10A are determined to be suitable for compositing, the liquids and solids in each sample will be separated through centrifugation or filtration. The wt% centrifuged solids will be reported. Composite the liquids together and perform Table 4-1 liquids analyses, except for NH_4. Composite the solids together and perform Table 4-1 solids analyses.
-

Justification:

1. Recirculation of Tank AY-101 was completed 6/5/2013 and is expected to result in a semi-uniform supernatant layer above the pump inlet. Sample 1AY-13-03 was chosen to identify a specific layer interface that no longer exists due the recirculation and so can be deleted.
2. Samples 1AY-13-04 and 1AY-13-06 are relocated to more equally space these samples in the supernatant to meet RPP-8532 requirements.

Date Change Effective: 06/6/2013

Schedule Impact: None

Authorization (print and sign):

Tank Coordinator: D. M. Nguyen **Date:** 6/10/13

Sampling: S. L. Kooiker **Date:** 6-10-13

222-S Project Coordinator: NA **Date:**

222-S Sample Management Office NA **Date:**

222-S ATL Project Manager: Edward Soto **Date:** 6/10/13

Other: NA **Date:**

cc: G. P. Ritenour

S. G. McKinney

CHARACTERIZATION CHANGE NOTICE

-12 ~~N~~ 6/24/13

Document: RPP-PLAN-54804, Rev 1 **Change Number:** 13-CCN-~~N~~ **DRF to TSAP Required?** Yes

Requestor: Scott Luke **Date:** 06/13/2013

Samples Affected: Samples planned to be taken from tank 241-AY-101 in 2013.

Proposed Change(s):

1. Analyze solids sample 1AY-13-10 as shown on revised Table 4-1 below.

Table 4-1. Analytical Requirements for AY-101 Grab Sampling (3 Sheets)

Analysis	Analytical Technique	Reference[6]	Samples to be Analyzed			Units		Report Formats[7]
			Liquid	Solid[17]	Field Blank	Liquid	Solid	
Organic Layer	Visual	N/A	X	–	–	N/A	N/A	I[1],VI
Suspended solids	Visual	N/A	X	–	–	N/A	N/A	VI
Volume % settled solids	Visual	N/A	X	–	–	%	N/A	VI
Wt% solids[5]	Gravimetric	N/A	X[18]	X	–	N/A	N/A	VI
Density	Gravimetry[4]	N/A	X[18, 19]	–	–	g/mL	N/A	II, VI
Bulk Density	Gravimetry[4]	N/A	–	X	–	N/A	g/mL	II, VI
%Water	TGA[3]	N/A	X[18]	X	–	wt%	wt%	VI
TC/TOC	Combustion/ Coulometry	5310B[8]	X[18]	–	–	µg/mL	µg/g	VI
TIC/TOC/TC[20]	Silver Catalyzed Oxidation/ Coulometric Autotitration	5310C[8]	X[18]	X	–	µg/mL	µg/g	VI
$[H^+]$	pH	9040	X[18, 19]	–[11]	X	pH	N/A	I[1], II, VI
OH^-	Titration	N/A	X[18, 19]	–	–	µg/mL	µg/g	I[1], II, VI
NH_4^+	IC	EPA-300.7[10]	X[18]	–	X	µg/mL	N/A	VI
Br^-, Cl^-, $C_2O_4^{2-}$, F^-, PO_4^{3-}, SO_4^{2-}	IC	9056	X[18]	X	X	µg/mL	µg/g	VI
^{99}Tc (see footnote 12)	No peroxide oxidation/ Separation/ Liquid Scintillation[12]	N/A	X[18]	–	–	µCi/mL	N/A	VI
NO_2^-, NO_3^-	IC	9056	X[18, 19]	X	X	µg/mL	µg/g	I[1], II, VI

Table 4-1. Analytical Requirements for AY-101 Grab Sampling (3 Sheets)

Analysis	Analytical Technique	Reference[6]	Samples to be Analyzed			Units		Report Formats[7]
			Liquid	Solid[17]	Field Blank	Liquid	Solid	
Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cu, Fe, K, La, Li, Mg, Mn, Mo, Na, Nd, Ni, P, Pb, Pd, Pr, Rb, Rh, Ru, S, Sb, Se, Si, Sr, Ta, Te, Th, Ti, Tl, U, V, W, Y, Zn, Zr	ICP/AES	6010	X[18]	X	X	µg/mL	µg/g	VI
Hg	CVAA	7470	X[18]	–	–	µg/mL	N/A	VI
Cyanide (CN^-)	Spectrophoto-metric	9014	X[18]	–	–	µg/mL	N/A	VI
PCB	GC/ECD	8082	X[18]	–	–	µg/L	N/A	VI
^{90}Sr, ^{90}Y (see note 2)	Sep & β Counting	N/A	X[18]	–	–	µCi/mL	N/A	VI
^{3}H	Distillation/ Liquid Scintillation	N/A	X[18]	–	–	µCi/mL	N/A	VI
^{14}C	Persulfate Oxidation/ Liquid Scintillation	N/A	X[18]	–	–	µCi/mL	N/A	VI
^{79}Se	Anion-Cation Exchange/ Liquid Scintillation	N/A	X[18]	–	–	µCi/mL	N/A	VI
^{144}Ce, ^{60}Co, ^{134}Cs, ^{137}Cs, ^{94}Nb, ^{106}Ru, ^{125}Sb, ^{152}Eu, ^{154}Eu, ^{155}Eu	GEA	N/A	X[18]	–	X	µCi/mL	N/A	VI
^{99}Tc, ^{237}Np, ^{232}Th, ^{126}Sn	ICP/MS	6020	X[18]	–	–	µg/mL	N/A	VI
^{99}Tc	Separation/ Liquid Scintillation	N/A	X[18]	–	–	µCi/mL	N/A	VI
^{233}U, ^{235}U, ^{238}U	ICP/MS	6020	X[18]	–	–	µg/mL	N/A	I[1], VI
^{234}U, ^{236}U	ICP/MS	6020	X[18]	–	–	µg/mL	N/A	VI
^{232}U	Method not available[16]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
^{129}I	Extraction/ Filtration/GEA	N/A	X[18]	–	X	µCi/mL	N/A	VI
^{238}Pu	Extraction Chromatography/ AEA	N/A	X[18]	–	–	µCi/mL	N/A	VI
$^{239/240}Pu$	Extraction Chromatography/ AEA	N/A	X[18]	–	–	µCi/mL	N/A	I[1], VI
^{241}Pu	Extraction/Liquid Scintillation	N/A	X[18]	–	–	µCi/mL	N/A	VI

Table 4-1. Analytical Requirements for AY-101 Grab Sampling (3 Sheets)

Analysis	Analytical Technique	Reference[6]	Samples to be Analyzed			Units		Report Formats [7]
			Liquid	Solid[17]	Field Blank	Liquid	Solid	
^{241}Am	Extraction Chromatography/ AEA	N/A	X[18]	–	–	µCi/mL	N/A	VI
$^{243/244}Cm$	Extraction Chromatography/ AEA	N/A	X[18]	–	–	µCi/mL	N/A	VI
Viscosity	Rheology[13]	N/A	X[14,18]	–	–	cP	N/A	VI
Corrosion Potential[15]	Technical Procedure[9]	N/A	X	–	–	N/A	N/A	II, VI
Caustic Demand	Test Plan (TBD)	N/A	–	–	–	N/A	N/A	II, VI
PSD	Test Plan (TBD)	N/A	X[19]	–	–	N/A	N/A	VI
Solids Mineralogy	PLM, SEM, XRD (Test Plan TBD)	N/A	–	X	–	N/A	N/A	VI

Table 4-1. Analytical Requirements for AY-101 Grab Sampling (3 Sheets)

Analysis	Analytical Technique	Reference[6]	Samples to be Analyzed			Units		Report Formats [7]
			Liquid	Solid[17]	Field Blank	Liquid	Solid	

Table acronyms, abbreviations, and units:

AEA = alpha energy analysis

β = beta

cP = centipoise

CVAA = cold vapor atomic absorption

GC/ECD = gas chromatography/electron capture detector

GEA = Gamma energy analysis

IC = ion chromatography

ICP/AES = inductively coupled plasma/atomic emission spectroscopy

ICP/MS = inductively coupled plasma/mass spectrometry

N/A = not applicable

PCB = polychlorinated biphenyl

PLM = polarized light microscopy

PSD = particle size distribution

SEM = scanning electron microscopy

Sep. = Separation

TBD = to be determined

TGA = thermogravimetric analysis

TC/TOC = total carbon/total organic carbon

TIC/TOC = total inorganic carbon/total organic carbon

wt% = weight percent

XRD = X-ray diffraction

% = percent

μg/mL = micrograms per milliliter

μCi/mL = microcuries per milliliter

μg/L = micrograms per liter

Table 4-1. Analytical Requirements for AY-101 Grab Sampling (3 Sheets)

Analysis	Analytical Technique	Reference[6]	Samples to be Analyzed			Units		Report Formats [7]
			Liquid	Solid[17]	Field Blank	Liquid	Solid	

Notes:

[1]Notifications for Format I to be made per Section 8 .1. Notification limits do not apply to field blanks.

[2]Y-90 calculated from Sr-90.

[3]wt% water by gravimetry may be performed in hot cell instead of wt% water by TGA if activity of the samples is too high for TGA analysis outside of the hot cell.

[4]Use sample size of at least 1 mL to improve precision of density measurement.

[5]Performed for the solids of sample 1AY-13-10 and for other solids-containing samples that are centrifuged and the wt% is measured (see Section 4.1, 5th bullet).

[6]Reference refers to SW-846 procedures unless otherwise noted. Latest revisions are preferred.

[7]Format I = notification; Format II = early reporting; Format VI = technical report.

[8]Standard Methods 5310B and 5310C as referenced in Rice, Baird, Eaton, and Clesceri, 2012.

[9]ATS-LT-512-101, "222-S Laboratory Electrochemical Corrosion Measurements."

[10]EPA Method 300.7, *Dissolved Sodium, Ammonium, Potassium, Magnesium, and Calcium in Wet Deposition by Chemically Suppressed Ion Chromatography.*

[11] The Corrosion Mitigation technical POC and Tank Coordinator have determined that this analysis will not be required for the solids.

[12] See Section 6.1 of this plan for discussion of ^{99}Tc analysis using this method instead of TcO_4^- analysis.

[13]ATS-LT-519-108, "222-S Laboratory Rheology Measurements Using Malvern Gemini Rheometers."

[14]The Corrosion Mitigation POC will identify which samples will undergo viscosity testing based on initial sample results.

[15]Corrosion potential testing is only planned to be performed on samples 1AY-13-01A, 1AY-13-01B, and 1AY-13-02A. However, if testing identifies potential corrosion pitting, testing on additional supernatant samples, including composite samples, could be requested by the Corrosion Mitigation POC.

[16]The laboratory currently does not have a method for this analyte. See section 6.1 identifying this analytical exception.

[17]These solids are the centrifuged or filtered solids of samples 1AY-13-10. The analyses for solids from other samples (if any) will be determined by the Tank Coordinator and the Corrosion Mitigation technical POC.

[18]This analysis could be performed on any supernatant sample except for 1AY-13-01A, 1AY-13-01B, and 1AY-13-02A that will be collected solely for corrosion potential testing.

[19]As described in Section 4.1, 4th bullet, this analysis will be performed on liquid samples 1AY-13-10 and 1AY-13-10A (if collected) before the liquids and solids from these samples are separated and composited.

[20]TC analysis using this method applies only to the solids.

Justification:

1. In accordance with the current TSAP (RPP-PLAN-54804, Rev 1), sample 1AY-13-10A was not required to be collected because only limited solids were obtained from sample 1AY-13-10. Analyses initially called out for sample 1AY-13-10 are no longer considered appropriate for the small quantity of solids that will be obtained from centrifugation of this sample.
2. Analytical method 5310B is not appropriate for Total Carbon (TC) analysis of solids. Analysis of sample 1AY-13-10 solids for TC will be performed using 5310C.

Date Change Effective: 06/13/2013

Schedule Impact: None

Authorization (print and sign):

Tank Coordinator: D. M. Nguyen **Date:** 6/18/2013

Sampling: N/A **Date:**

222-S Project Coordinator: N/A **Date:**

222-S Sample Management Office: J. M. Johnson **Date:** 6/18/13

222-S ATL Project Coordinator: E. Soto **Date:** 6/18/13

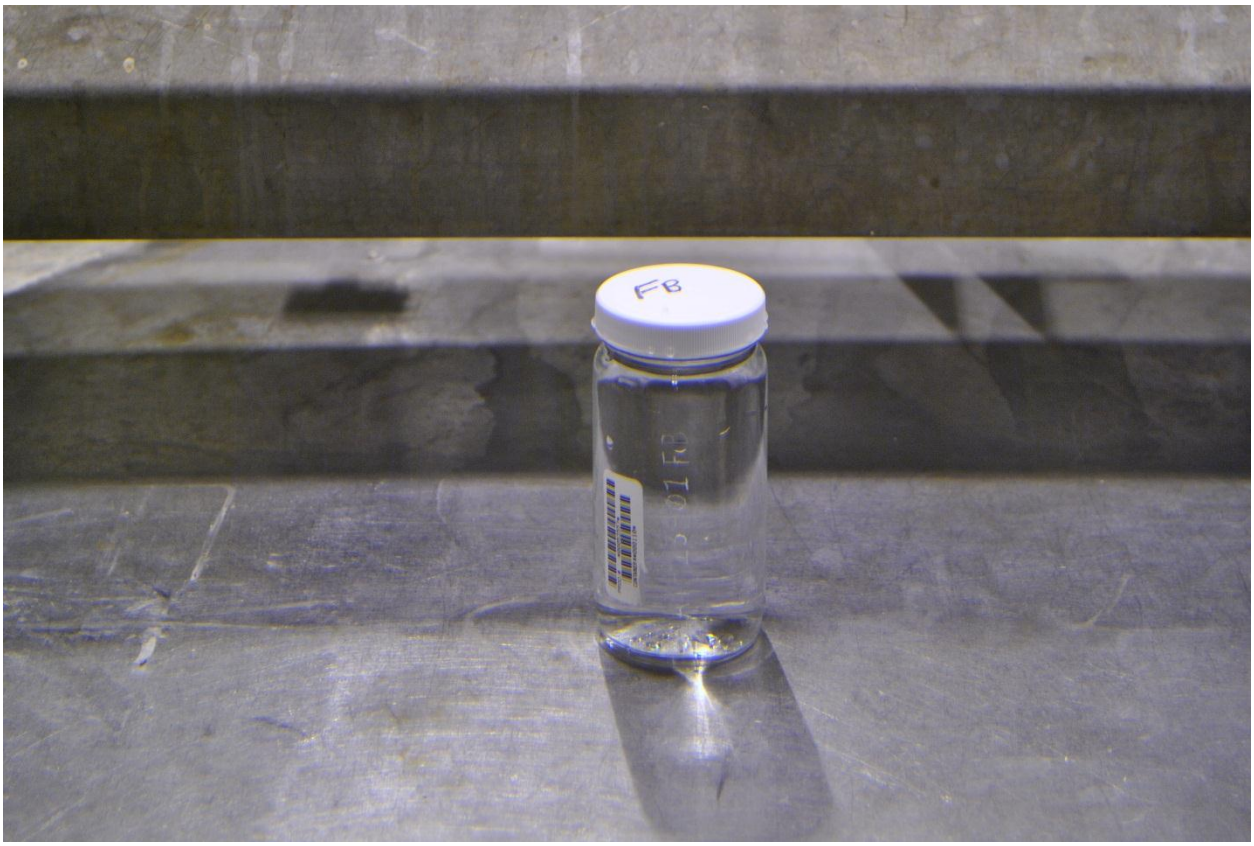
Other: N/A **Date:**

cc: G. P. Ritenour

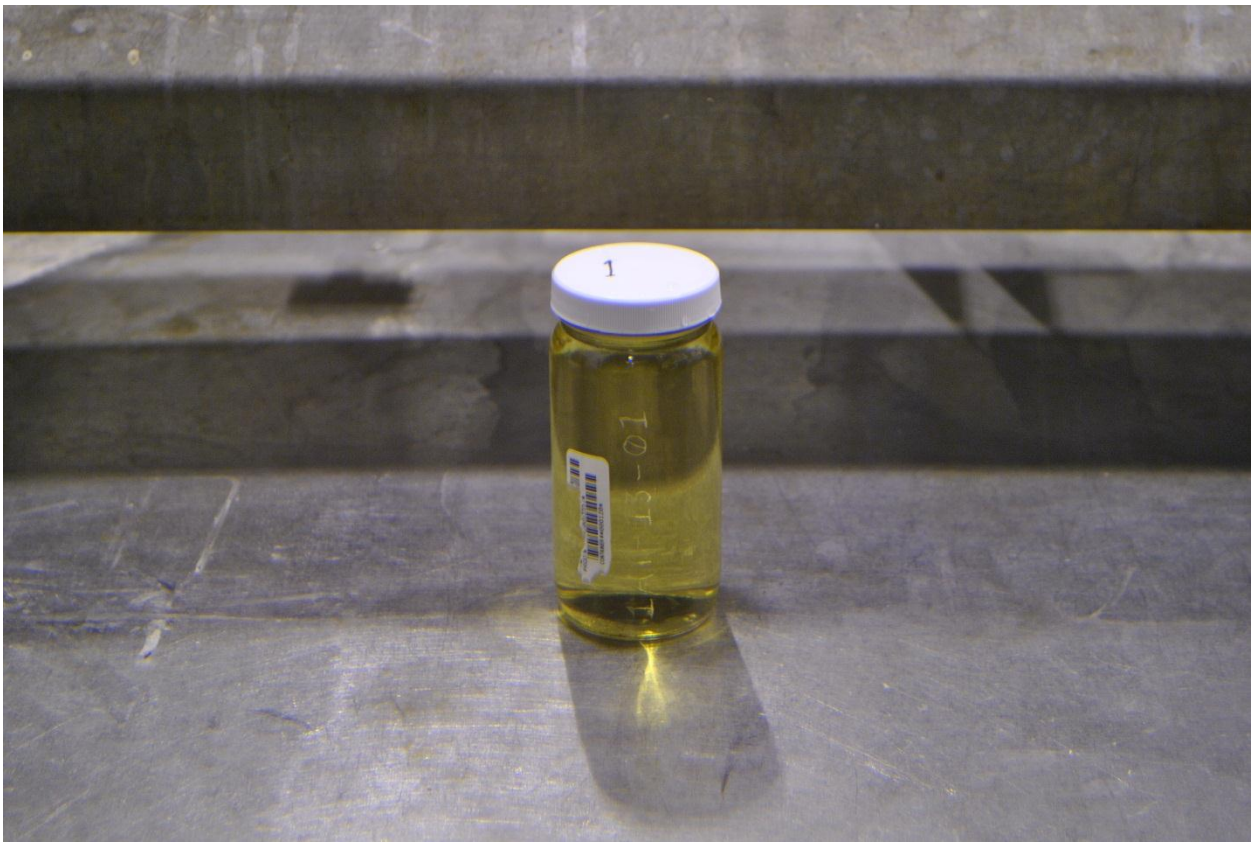
C. S. Menjivar

Attachment 6

SAMPLE PHOTOGRAPHS



1AY-13-01FB



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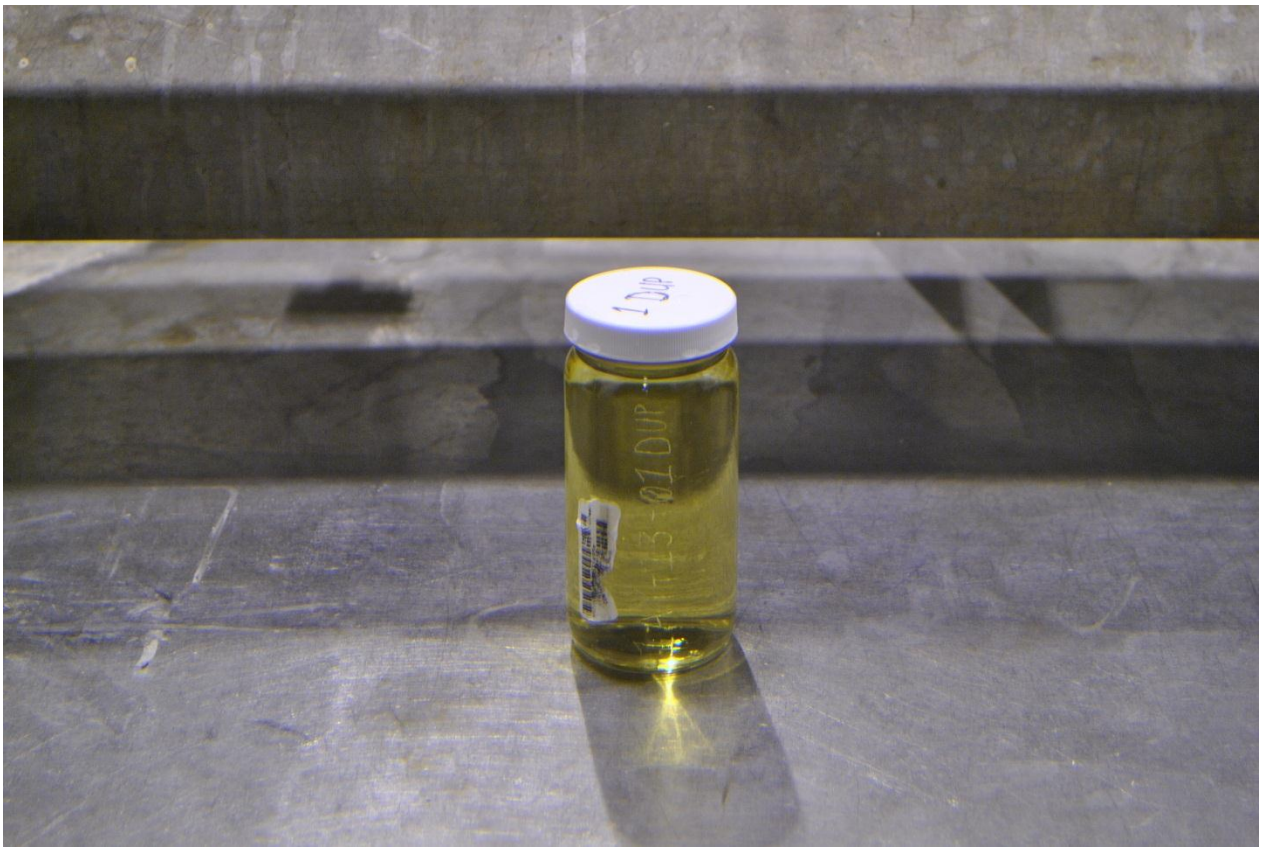
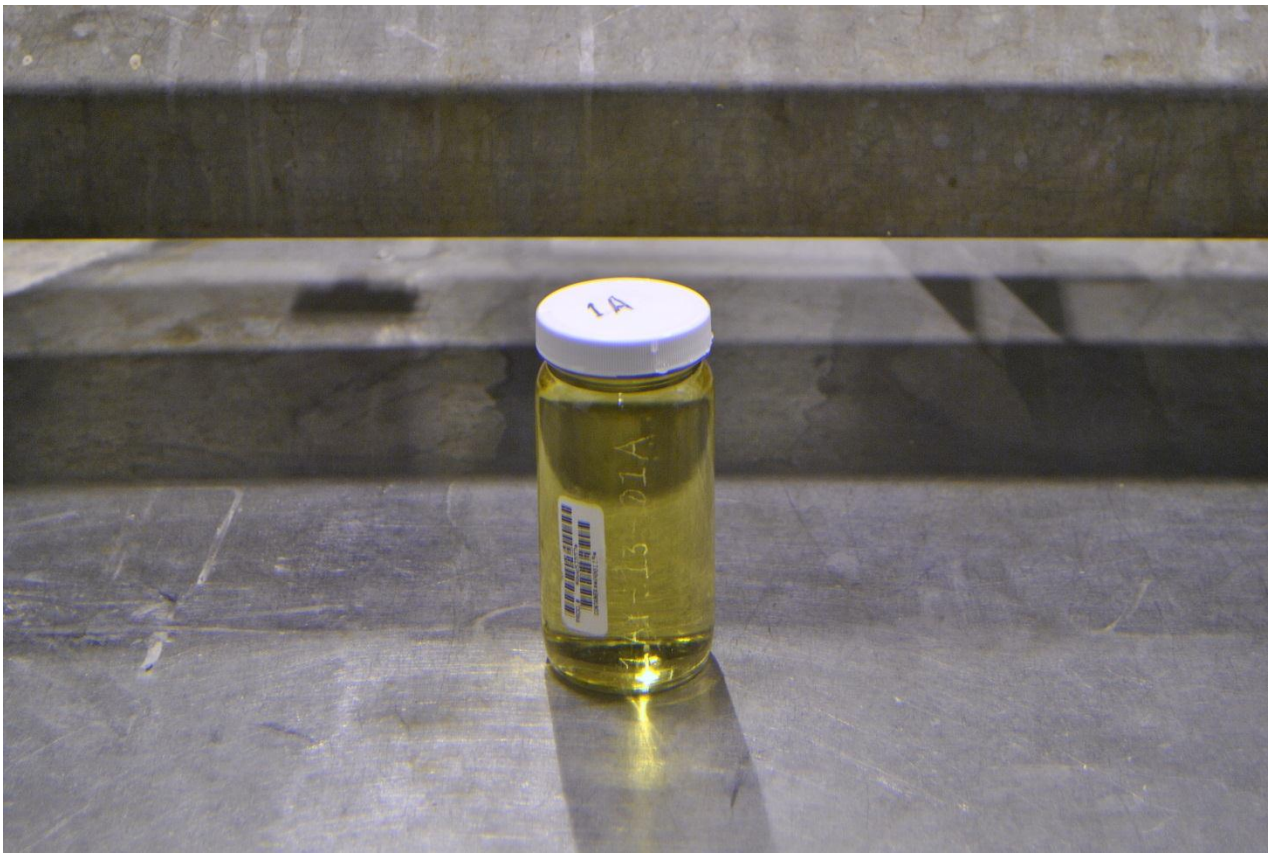
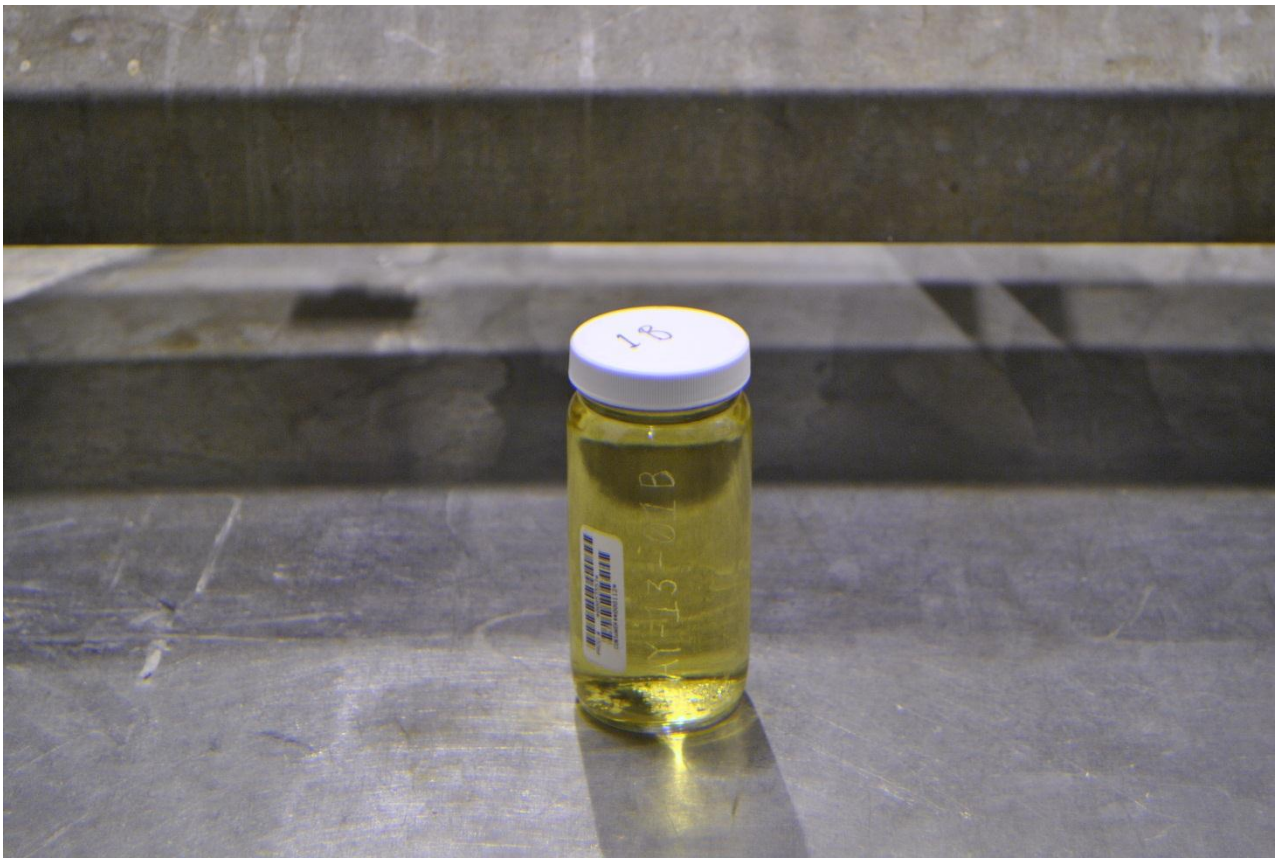


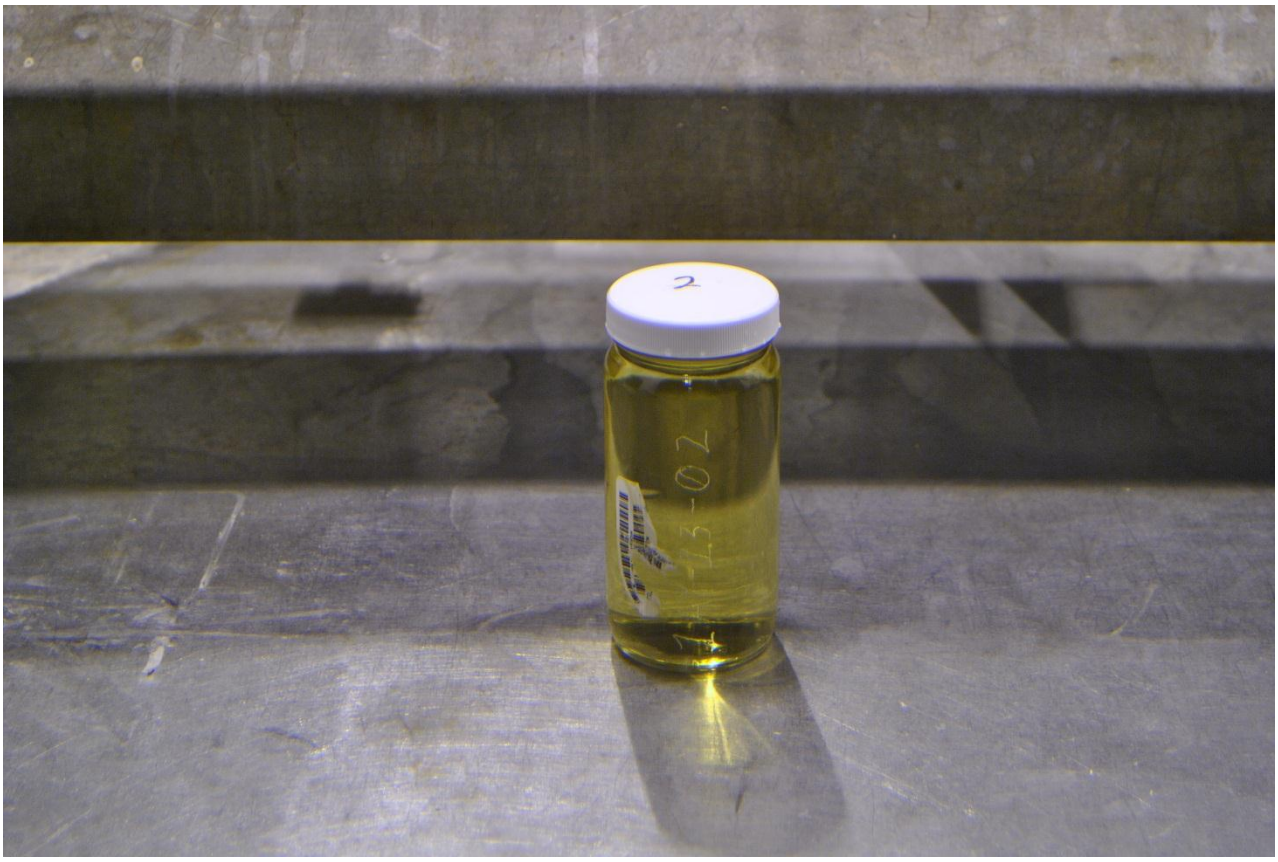
1AY-13-01DUP



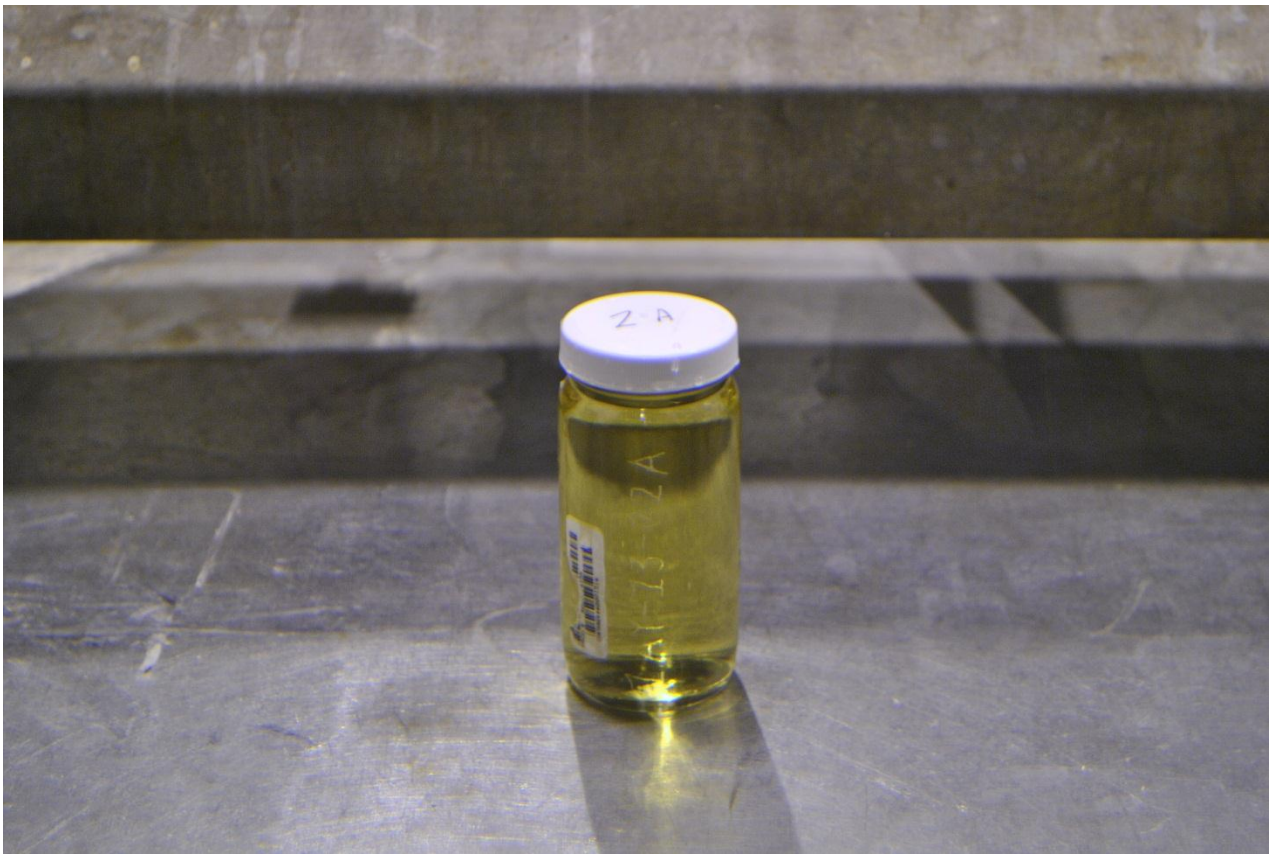
1AY-13-01A



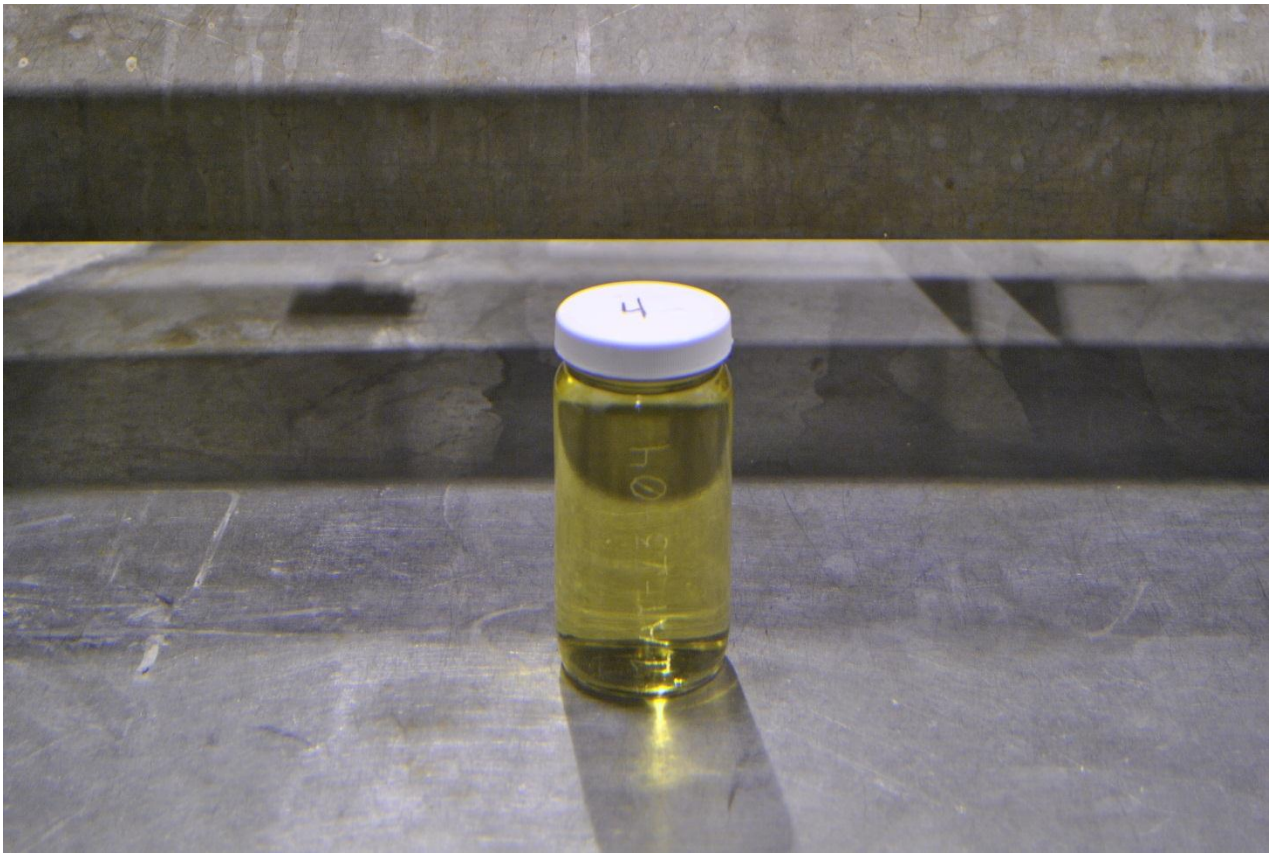
1AY-13-01B



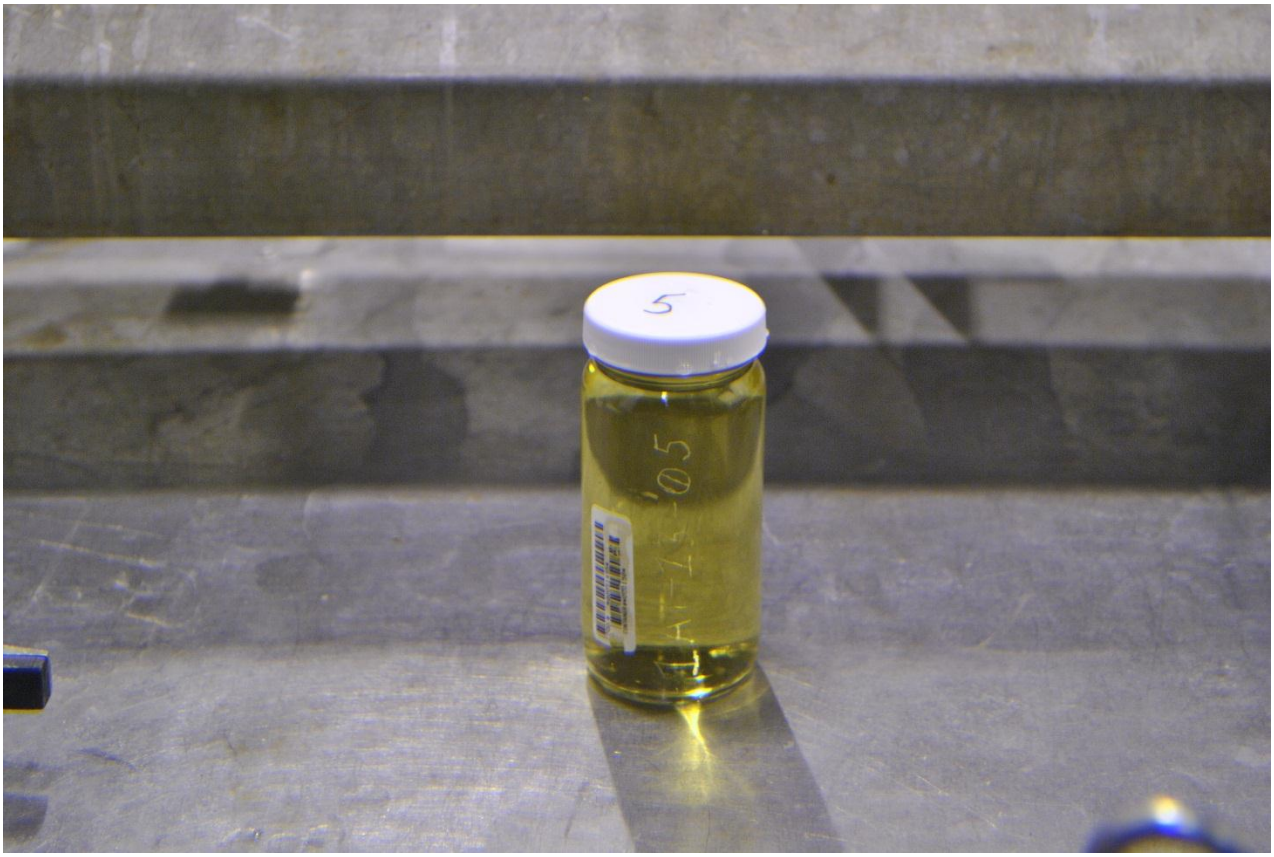
1AY-13-02



1AY-13-02A

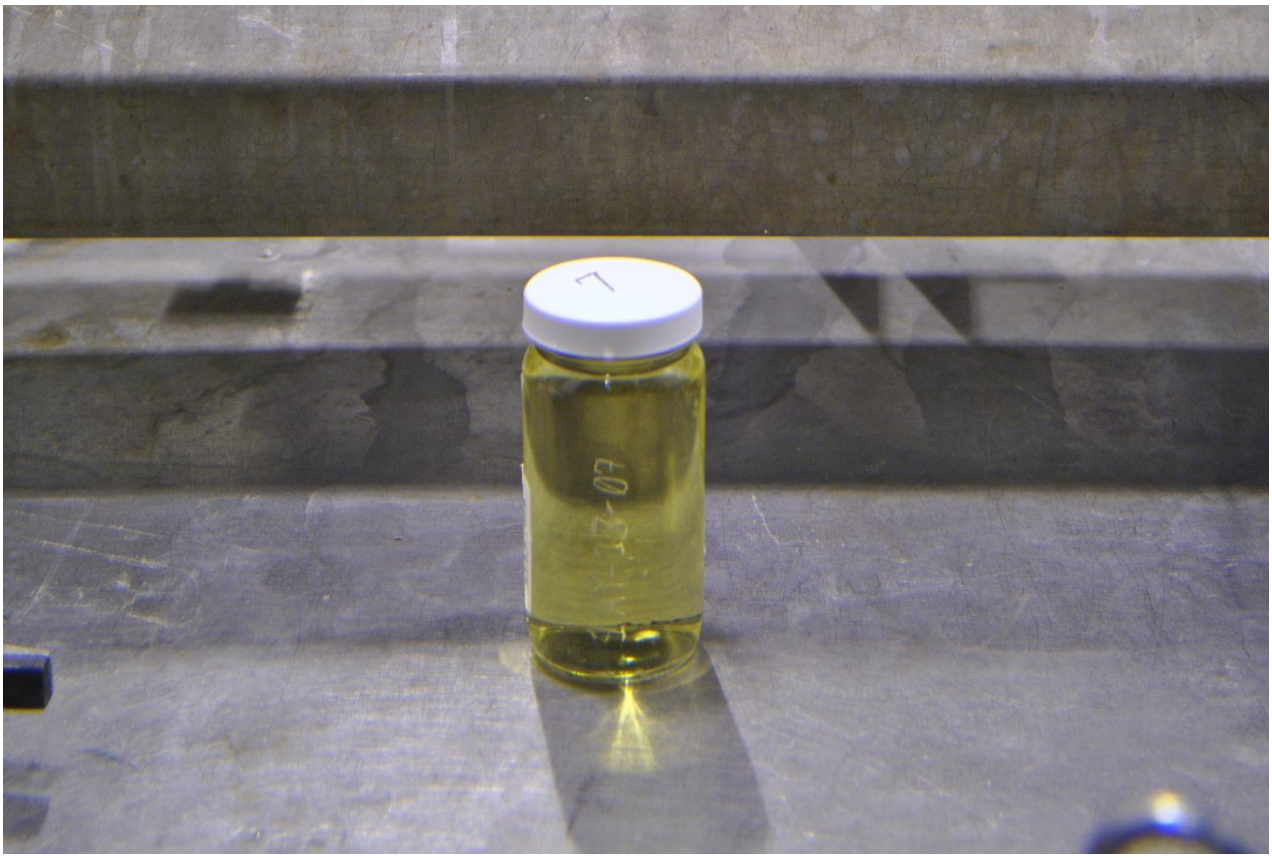


1AY-13-04



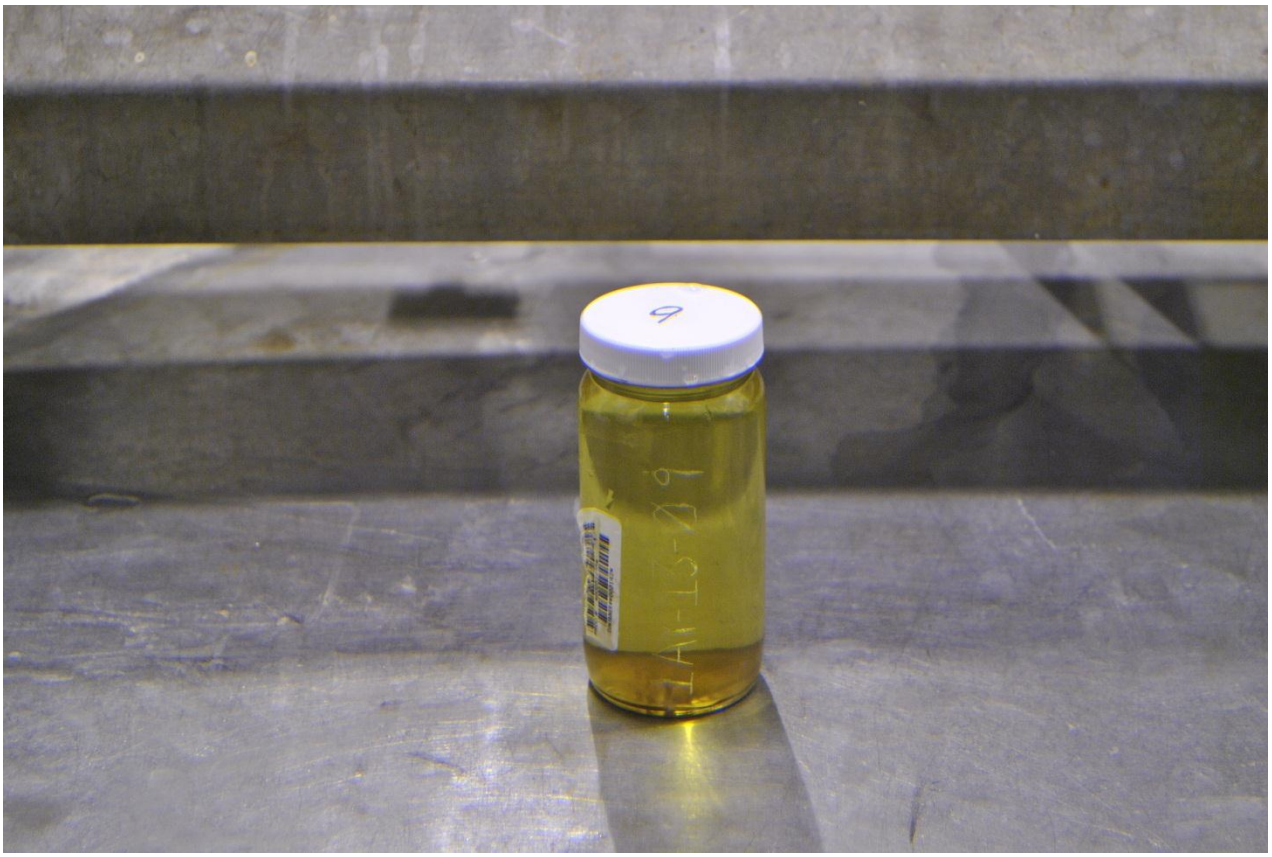
1AY-13-05

1AY-13-06



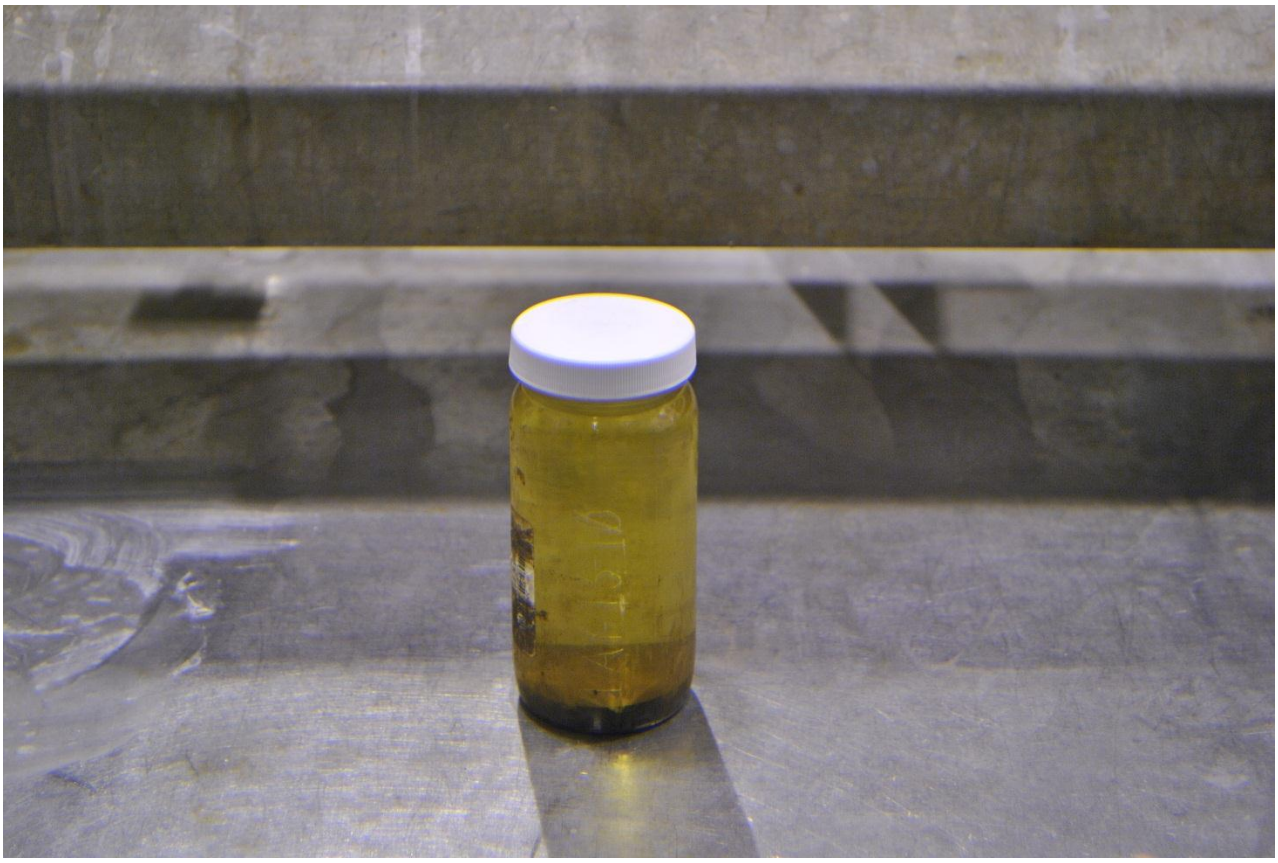
1AY-13-07

1AY-13-08



1AY-13-09

1AY-13-10 (2:00pm 06/13/2013)



1AY-13-10 (9:00am 06/14/2013)

Attachment 7

RECEIPT PAPERWORK

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev 6.6.0

Date Samples Received: 6.11.13 Group #: 20130628

Number of Samples: 7 Samples + 1 FB (AY-101)

Sample Custodian: R Hetal

Sample Custodian to Complete:

Action	Yes	No	N/A	Comments
RSA/COC provided?	✓			
RSR provided?	✓			
Verify GKI is complete		✓		☑ In Project File
Received from an alpha facility?		✓		☐ Contact PM for approval to release
Check that outer custody seal is intact, if present	✓			
Record cooler temperature in centigrade, as appropriate			✓	☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓			If No, provide comments below
Verify that COC or RSA is accurate and complete, containing the following information:				
• Client name and client sample number	✓			
• Date and time of sampling	✓			
• Sampling location or origin	✓			
• Container type, size, and number	✓			
• Preservatives (if used) are noted on the COC/RSA and sample bottle			✓	
• Analysis request is clear	✓			
• Signature of persons relinquishing and receiving samples	✓			
• Date and/or time of sample custody exchange	✓			
Verify that sample numbers on containers match the COC and/or RSA	✓			
Samples stored properly (e.g., refrigeration)	✓			11 A Ante Room

Notify the PM immediately if any problems are noted.

Samples acceptable for release? Yes Initials RA Date 6.11.13

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 3)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 1AY-13-01F3	(2) Supervisor/Sampler: R. Plunkett	(9) Seal Intact Upon Release? ☑ Yes ☐ No
(3) Tank: AY-101 / (4) Riser: 054	(5) Cask/Pig Serial No.: 130/HC050	(10) Seal Intact Upon Receipt? ☑ Yes ☐ No
(6) Shipment Description:	(7) Sampling Data (Y / N)	(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☑ Yes ☐ No

(6) Shipment Description:

A. Work Package Number: TFC-WO-13-1832

B. Cask/Pig Seal Number: 14100

C. Date Sample Collected: 6-11-13

D. Time Sample Collected: 1010

(7) Sampling Data (Y / N)

- Lithium Bromide ☐ ☐
- Amount
- Concentration
- X-Ray ☐ ☐
- Partial Sample ☐ ☐
- Retrieved Partial Sample Stroke Length

N A

(12) Laboratory Comments:

GRP # 20130628

Sample # S13T006558

MARS N/A

OMNI ✓

RHTerlo 6.11.13

(8) Field Comments:

UNCORRECTE DOSE RATE: 1.5 mr/hr

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Roy Plunkett	Steve Collins	6/11/13 1520	
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
Steve Collins	Todd McCollock	6/11/13 1400	
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

BC-6001-326 (01/04)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 1AY-13-01	(2) Supervisor/Sampler: Plunkett	(9) Seal Intact Upon Release? ☑ Yes ☐ No
(3) Tank: AY-101 / (4) Riser: 054	(5) Cask/Pig Serial No.: 15/HC028	(10) Seal Intact Upon Receipt? ☑ Yes ☐ No
(6) Shipment Description:	(7) Sampling Data	(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☑ Yes ☐ No

(6) Shipment Description:

A. Work Package Number: TFC-WO-13-1832

B. Cask/Pig Seal Number: 14099

C. Date Sample Collected: 6-11-13

D. Time Sample Collected: 1017

(7) Sampling Data

	Y	N
- Lithium Bromide	☐	☑
Amount		
Concentration		
- X-Ray	☐	☐
- Partial Sample	☐	☐
- Retrieved Partial Sample Stroke Length		

N A

(8) Field Comments:

UNCORRECTED DOSE RATE: 300mR/hr WC / 200 mR/hr WC

(12) Laboratory Comments:

GRP# 20130628

SAMPLE # S13T006562

OMNI ✓

MARS ✓

R Hatch 6-11-13

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Ray Plunkett	Steve Collins	6/11/13 13:21	
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
Steve Collins	Todd McCollock	6/11/13 1400	
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

BC-6001-326 (01/04)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 1AY-13-01A

(2) Supervisor/Sampler: Plunkett

(3) Tank: AY-101

(4) Riser: 054

(5) Cask/Pig Serial No.: 126/HC021

(6) Shipment Description:

A. Work Package Number: TFC-WO-13-1832

B. Cask/Pig Seal Number: 14098

C. Date Sample Collected: 6-11-13

D. Time Sample Collected: 1026

(7) Sampling Data

	Y	N
- Lithium Bromide	☐	☐
Amount		
Concentration		
- X-Ray	☐	☐
- Partial Sample	☐	☐
- Retrieved Partial Sample Stroke Length		

N

A

(8) Field Comments:

UNCORRECTED DOSE RATE: 300 mR/hr

(9) Seal Intact Upon Release? ☑ Yes ☐ No

(10) Seal Intact Upon Receipt? ☑ Yes ☐ No

(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☑ Yes ☐ No

(12) Laboratory Comments:

GROUP # 20130628

SAMPLE # 513T006573

OMNI ✓

MARS ✓

RHTeich 6.11.13

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Ken Plunkett	Steve Collins /	6/11/13 13:23	
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
Steve Collins /	Todd McCulloch	6/11/13 1400	
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

BC-6001-326 (01/04)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 1AY-13-01DUP	(2) Supervisor/Sampler: Plunkett	(9) Seal Intact Upon Release? ☒ Yes ☐ No
(3) Tank: AY-101 / (4) Riser: 054	(5) Cask/Pig Serial No.: 115 / HC015	(10) Seal Intact Upon Receipt? ☒ Yes ☐ No
(6) Shipment Description:	(7) Sampling Data (Y / N)	(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☒ Yes ☐ No
A. Work Package Number: TFC-W0-13-1832	- Lithium Bromide: ☐ ☒	(12) Laboratory Comments:
B. Cask/Pig Seal Number: 14096	Amount: N	
C. Date Sample Collected: 6-11-13 ✓	Concentration: A	
D. Time Sample Collected: 1037 ✓	- X-Ray: ☐ ☐	
	- Partial Sample: ☐ ☐	
	- Retrieved Partial Sample Stroke Length:	

(12) Laboratory Comments:

GROUP # 20130628 ✓
Sample # S13T006574 ✓
OMNI ✓
MARS ✓
RHtuck 6.11.13

(8) Field Comments:

uncorrected dose RATE: 300 mR/hr

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Roy Plunkett	Steve Collins	6/11/13 13:17	
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
Steve Collins	Todd McCollock	6/11/13 1400 ✓	
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

BC-6001-326 (01/04)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 1AY-13-01B	(2) Supervisor/Sampler: Plunkett	(9) Seal Intact Upon Release? ☑ Yes ☐ No
(3) Tank: AY-101 / (4) Riser: 054	(5) Cask/Pig Serial No.: 120/HC020	(10) Seal Intact Upon Receipt? ☑ Yes ☐ No
(6) Shipment Description:	(7) Sampling Data (Y / N)	(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☑ Yes ☐ No

(6) Shipment Description:

A. Work Package Number: TFC-WO-13-1832

B. Cask/Pig Seal Number: 14097

C. Date Sample Collected: 6-11-13

D. Time Sample Collected: 1031

(7) Sampling Data

	Y	N
- Lithium Bromide	☐	☑
Amount		
Concentration		
- X-Ray	☐	☐
- Partial Sample	☐	☐
- Retrieved Partial Sample Stroke Length		

N A

(12) Laboratory Comments:

Group # 20130628
Sample # S13T006583
Omni ✓
MARS ✓
RtSteele 6-11-13

(8) Field Comments:

uncorrected dose rate: 300 mR/hr

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Roy Plunkett	Steve Collins	6/11/13 13:18	
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
Steve Collins	Todd McCollock	6/11/13 1400	
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

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BC-6001-326 (01/04)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 1AY-13-02

(2) Supervisor/Sampler: Plunkett

(3) Tank: AY-101

(4) Riser: 054

(5) Cask/Pig Serial No.: 125/HC009

(6) Shipment Description:

A. Work Package Number: IFC-WO-13-1832

B. Cask/Pig Seal Number: 14095

C. Date Sample Collected: 6-11-13

D. Time Sample Collected: 1046

(7) Sampling Data

	Y	N
- Lithium Bromide	☐	☐
Amount		
Concentration		
- X-Ray	☐	☐
- Partial Sample	☐	☐
- Retrieved Partial Sample Stroke Length		

N

A

(8) Field Comments:

UNCORRECTED DOSE RATE: 300 mR/hr

(9) Seal Intact Upon Release? ☑ Yes ☐ No

(10) Seal Intact Upon Receipt? ☑ Yes ☐ No

(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☑ Yes ☐ No

(12) Laboratory Comments:

GROUP # 20130628

SAMPLE # S13T006584

OMNI ✓

MARS ✓

RHBlack 6.11.13

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Roy Plunkett	Steve Collins	6/11/13 18:16	
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
Steve Collins	Todd McCulloch	6/11/13 1400	
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

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BC-6001-326 (01/04)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 1AY-13-02A	(2) Supervisor/Sampler: Plunkett	(9) Seal Intact Upon Release? ☒ Yes ☐ No
(3) Tank: AY-101 / (4) Riser: 054	(5) Cask/Pig Serial No.: 102/HC012	(10) Seal Intact Upon Receipt? ☒ Yes ☐ No
(6) Shipment Description:	(7) Sampling Data (Y / N)	(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☒ Yes ☐ No
A. Work Package Number: TFC-WO-13-1832	- Lithium Bromide ☐ ☐	(12) Laboratory Comments:
B. Cask/Pig Seal Number: 14094	Amount: N	GROUP # 20130628 ✓
C. Date Sample Collected: 6-11-13 ✓	Concentration: A	SAMPLE # 513T006593
D. Time Sample Collected: 1053 ✓	- X-Ray ☐ ☐	OMNI ✓
	- Partial Sample ☐ ☐	MARS ✓
	- Retrieved Partial Sample Stroke Length	RH Stub 6.11.13

(8) Field Comments:

UNCORRECTED DOSE RATE: 300 mR/hr

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Roy Plunkett	Steve Collins / Steve Collins	6/11/13 15:15	
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
Steve Collins / Steve Collins	Tonia McCollock	6/11/13 1400	
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

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BC-6001-326 (01/04)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 1AY-13-04	(2) Supervisor/Sampler: Plunkett	(9) Seal Intact Upon Release? ☒ Yes ☐ No
(3) Tank: AY-101 / (4) Riser: 054	(5) Cask/Pig Serial No.: 129/HC001	(10) Seal Intact Upon Receipt? ☑ Yes ☐ No
(6) Shipment Description:	(7) Sampling Data (Y / N)	(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☒ Yes ☐ No
A. Work Package Number: TFC-WO-13-1832	- Lithium Bromide ☐ ☒	(12) Laboratory Comments:
B. Cask/Pig Seal Number: 14092	Amount: N/A	
C. Date Sample Collected: 6-11-13	Concentration:	
D. Time Sample Collected: 1059	- X-Ray ☐ ☐	
	- Partial Sample ☐ ☐	
	- Retrieved Partial Sample Stroke Length:	

(12) Laboratory Comments:

GROUP # 20130628 ✓
SAmple # S13T006594 ✓
OMNI ✓
MARS ✓
RHTeb 6.11.13

(8) Field Comments:

Uncorrected dose RATE: 400 mr/hr

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Ray Plunkett	Steve Collins / Steve Collins	6/11/13 13:12	
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
Steve Collins / Steve Collins	Todd W Gilbert	6/11/13 1400	
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

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BC-6001-326 (01/04)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev 6.6.0

Date Samples Received: 6.12.13 Group #: 20130628

Number of Samples: 5 AY101 Grabs

Sample Custodian: RHSteele

Sample Custodian to Complete:

Action	Yes	No	N/A	Comments
RSA/COC provided?	✓			
RSR provided?	✓			
Verify GKI is complete	✓			☑ In Project File
Received from an alpha facility?		✓		☐ Contact PM for approval to release
Check that outer custody seal is intact, if present	✓			
Record cooler temperature in centigrade, as appropriate			✓	☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓			If No, provide comments below
Verify that COC or RSA is accurate and complete, containing the following information:				
• Client name and client sample number	✓			
• Date and time of sampling	✓			
• Sampling location or origin	✓			
• Container type, size, and number	✓			
• Preservatives (if used) are noted on the COC/RSA and sample bottle			✓	
• Analysis request is clear	✓			
• Signature of persons relinquishing and receiving samples	✓			
• Date and/or time of sample custody exchange	✓			
Verify that sample numbers on containers match the COC and/or RSA	✓			
Samples stored properly (e.g., refrigeration)	✓			11 A

Notify the PM immediately if any problems are noted.

Samples acceptable for release? yes Initials RH Date 6.12.13

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 3)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 1AY-13-05

(2) Supervisor/Sampler: Plunkett

(3) Tank: AY-101

(4) Riser: 054

(5) Cask/Pig Serial No.: 124/HC014

(6) Shipment Description:

A. Work Package Number: TFC-WO-13-1832

B. Cask/Pig Seal Number: 14091

C. Date Sample Collected: 6-11-13

D. Time Sample Collected: 1311

(7) Sampling Data

	Y	N
- Lithium Bromide	☐	☐
Amount		
Concentration		
- X-Ray	☐	☐
- Partial Sample	☐	☐
- Retrieved Partial Sample Stroke Length		

(8) Field Comments:

uncorrected dose RATE! 300 mr/hr.

(9) Seal Intact Upon Release? ☒ Yes ☐ No

(10) Seal Intact Upon Receipt? ☒ Yes ☐ No

(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☒ Yes ☐ No

(12) Laboratory Comments:

GROUP # 20130628

Sample # S13T006603

OMNI ✓

MARS ✓

RHSteele ATL 6.12.13

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Roy Plunkett	R.D. Julian	1000 6-12-13	NA
(17) Relinquished By (Sign and PRINT)	**(18) Received By (Sign and PRINT)**	**(19) Date/Time**	**(20) Receiver Comments**
R.D. Julian	RHSteele ATL	1030 6.12.13	NA
(21) Relinquished By (Sign and PRINT)	**(22) Received By (Sign and PRINT)**	**(23) Date/Time**	**(24) Receiver Comments**
(25) Relinquished By (Sign and PRINT)	**(26) Received By (Sign and PRINT)**	**(27) Date/Time**	**(28) Receiver Comments**

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BC-6001-326 (01/04)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 1AY-13-06

(2) Supervisor/Sampler: Plunkett

(3) Tank: AY-101

(4) Riser: 054

(5) Cask/Pig Serial No.: 132 | HC034

(6) Shipment Description:

A. Work Package Number: TFC-WO-13-1832

B. Cask/Pig Seal Number: 14090

C. Date Sample Collected: 6-11-13

D. Time Sample Collected: 1317

(7) Sampling Data

	Y	N
- Lithium Bromide	☐	☒
Amount		
Concentration		
- X-Ray	☐	☐
- Partial Sample	☐	☐
- Retrieved Partial Sample Stroke Length		

N A

(8) Field Comments:

Uncorrected dose rate: 400 mR/hr

(9) Seal Intact Upon Release? ☒ Yes ☐ No

(10) Seal Intact Upon Receipt? ☒ Yes ☐ No

(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☒ Yes ☐ No

(12) Laboratory Comments:

Group # 20130628 ✓
Sample # S13T006612 ✓
OMNI ✓
MARS ✓
RTSteele ATL 6.12.13

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Ray Plunkett	R.D. Julian	1000 6-12-13	NA
(17) Relinquished By (Sign and PRINT)	**(18) Received By (Sign and PRINT)**	**(19) Date/Time**	**(20) Receiver Comments**
R.D. Julian	RTSteele RTSteele ATL	1030 ✓ 6.12.13	NA
(21) Relinquished By (Sign and PRINT)	**(22) Received By (Sign and PRINT)**	**(23) Date/Time**	**(24) Receiver Comments**
(25) Relinquished By (Sign and PRINT)	**(26) Received By (Sign and PRINT)**	**(27) Date/Time**	**(28) Receiver Comments**

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

BC-6001-326 (01/04)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 1AY-13-07

(2) Supervisor/Sampler: Plunkett

(3) Tank: AY-101

(4) Riser: 054

(5) Cask/Pig Serial No.: 117/HC.018

(6) Shipment Description:

A. Work Package Number: TFC-WO-13-1832

B. Cask/Pig Seal Number: 14088

C. Date Sample Collected: 6-11-13

D. Time Sample Collected: 1323

(7) Sampling Data

	Y	N
- Lithium Bromide	☐	☑
Amount		
Concentration		
- X-Ray	☐	☐
- Partial Sample	☐	☐
- Retrieved Partial Sample Stroke Length		

N A

(8) Field Comments:

UNCORRECTED DOSE RATE: 500 mR/hr

(9) Seal Intact Upon Release? ☑ Yes ☐ No

(10) Seal Intact Upon Receipt? ☑ Yes ☐ No

(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☑ Yes ☐ No

(12) Laboratory Comments:

GROUP # 20130628 ✓
SAMPLE # S13T006621 ✓
OMNI ✓
MARS ✓
R+Steele ATL
6.12.13

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Ray Plunkett	R.D. Julian	1000 6-12-13	N/A
(17) Relinquished By (Sign and PRINT)	**(18) Received By (Sign and PRINT)**	**(19) Date/Time**	**(20) Receiver Comments**
R.D. Julian	R+Steele R+Steele ATL	1030 ✓ 6.12.13	NA
(21) Relinquished By (Sign and PRINT)	**(22) Received By (Sign and PRINT)**	**(23) Date/Time**	**(24) Receiver Comments**
(25) Relinquished By (Sign and PRINT)	**(26) Received By (Sign and PRINT)**	**(27) Date/Time**	**(28) Receiver Comments**

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

BC-6001-326 (01/04)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 1AY-13-08	(2) Supervisor/Sampler: Plunkett	(9) Seal Intact Upon Release? ☒ Yes ☐ No
(3) Tank: AY-101 / (4) Riser: 054	(5) Cask/Pig Serial No.: 118/HC 013	(10) Seal Intact Upon Receipt? ☒ Yes ☐ No
(6) Shipment Description:	(7) Sampling Data (Y / N)	(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☒ Yes ☐ No

(6) Shipment Description:

A. Work Package Number: TFC-WO-13-1832

B. Cask/Pig Seal Number: 14089

C. Date Sample Collected: 6-11-13

D. Time Sample Collected: 1330

(7) Sampling Data (Y / N)

- Lithium Bromide ☐ ☐
- Amount ____
- Concentration ____
- X-Ray ☐ ☐
- Partial Sample ☐ ☐
- Retrieved Partial Sample Stroke Length ____

N/A

(12) Laboratory Comments:

GROUP # 20130628
Sample # 513T00 6630
OMNI
MARS
RT Steele ATL 6.12.13

(8) Field Comments:

UNCORRECTED dose RATE: 600 mr/hr

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Ray Plunkett	R.D. Julian	1000 6-12-13	N/A
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
R.D. Julian	RTSteele RTSteele ATL	1030 6.12.13	N/A
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

BC-6001-326 (01/04)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 1A4-13-09	(2) Supervisor/Sampler: Plunkett	(9) Seal Intact Upon Release? ☒ Yes ☐ No
(3) Tank: A4-101 / (4) Riser: 054	(5) Cask/Pig Serial No.: 19/HC035	(10) Seal Intact Upon Receipt? ☒ Yes ☐ No
(6) Shipment Description:	(7) Sampling Data (Y / N)	(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☒ Yes ☐ No

(6) Shipment Description:

A. Work Package Number: IFC-WO-13-1832

B. Cask/Pig Seal Number: 14087

C. Date Sample Collected: 6-11-13 ✓

D. Time Sample Collected: 1351 ✓

(7) Sampling Data (Y / N)

- Lithium Bromide ☐ ☐
- Amount N A
- Concentration
- X-Ray ☐ ☐
- Partial Sample ☐ ☐
- Retrieved Partial Sample Stroke Length

(8) Field Comments:

UNCORRECTED DOSE RATE: 1.1 R/hr

(12) Laboratory Comments:

Group # 20130628 ✓
Sample # S13T006639 ✓
Omni ✓
MARS ✓
RTSteele ATL 6.12.13

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Roy Plunkett	R.D. Julian	1000 6-12-13	N/A
(17) Relinquished By (Sign and PRINT)	**(18) Received By (Sign and PRINT)**	**(19) Date/Time**	**(20) Receiver Comments**
R.D. Julian	RTSteele RTSteele ATL	1030 ✓ 6.12.13	N/A
(21) Relinquished By (Sign and PRINT)	**(22) Received By (Sign and PRINT)**	**(23) Date/Time**	**(24) Receiver Comments**
(25) Relinquished By (Sign and PRINT)	**(26) Received By (Sign and PRINT)**	**(27) Date/Time**	**(28) Receiver Comments**

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

BC-6001-326 (01/04)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev 6.6.0

Date Samples Received: 6.13.13 Group #: 20130628

Number of Samples: 1 1 AY101 Grab (Solid)

Sample Custodian: [illegible]

Sample Custodian to Complete:

Action	Yes	No	N/A	Comments
RSA/COC provided?	✓			
RSR provided?	✓			
Verify GKI is complete	✓			☑ In Project File
Received from an alpha facility?		✓		☐ Contact PM for approval to release
Check that outer custody seal is intact, if present	✓			
Record cooler temperature in centigrade, as appropriate			✓	☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓			If No, provide comments below
Verify that COC or RSA is accurate and complete, containing the following information:				
• Client name and client sample number	✓			
• Date and time of sampling	✓			
• Sampling location or origin	✓			
• Container type, size, and number	✓			
• Preservatives (if used) are noted on the COC/RSA and sample bottle			✓	
• Analysis request is clear	✓			
• Signature of persons relinquishing and receiving samples	✓			
• Date and/or time of sample custody exchange	✓			
Verify that sample numbers on containers match the COC and/or RSA	✓			
Samples stored properly (e.g., refrigeration)	✓			11 A

Notify the PM immediately if any problems are noted.

Samples acceptable for release? Yes Initials PH Date 6.13.13

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 3)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 1A4-13-10	(2) Supervisor/Sampler: Roy Plunkett	(9) Seal Intact Upon Release? ☑ Yes ☐ No
(3) Tank: A4-101 / (4) Riser: 054	(5) Cask/Pig Serial No.: 13	(10) Seal Intact Upon Receipt? ☑ Yes ☐ No
(6) Shipment Description:	(7) Sampling Data (Y / N)	(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☑ Yes ☐ No

(6) Shipment Description:

A. Work Package Number: TFC-WO-13-1832

B. Cask/Pig Seal Number: 14086

C. Date Sample Collected: 6-13-13

D. Time Sample Collected: 1004

(7) Sampling Data (Y / N)

- Lithium Bromide ☐ ☐
- Amount: N
- Concentration: A
- X-Ray ☐ ☐
- Partial Sample ☐ ☐
- Retrieved Partial Sample Stroke Length

(12) Laboratory Comments:

GROUP # 20130628
SAMPLE # 513T006648
OMNI ✓
MARS ✓
RTSteele 6.13.13

(8) Field Comments:

UNCORRECTED DOSE RATE: 260 R/hr

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Roy Plunkett / Roy Plunkett	Dan Harris Dan Harris	6-13-13 10:20	N/A
(17) Relinquished By (Sign and PRINT)	**(18) Received By (Sign and PRINT)**	**(19) Date/Time**	**(20) Receiver Comments**
Dan Harris Dan Harris	RTSteele RTSteele ATL	6.13.13, 1107	N/A
(21) Relinquished By (Sign and PRINT)	**(22) Received By (Sign and PRINT)**	**(23) Date/Time**	**(24) Receiver Comments**
(25) Relinquished By (Sign and PRINT)	**(26) Received By (Sign and PRINT)**	**(27) Date/Time**	**(28) Receiver Comments**

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

BC-6001-326 (01/04)

GENERATOR KNOWLEDGE INFORMATION

1. Chain of Custody Number N/A CACN/COA N/A Customer Identification Number 241-AY-101

2. List generator knowledge or description of process that produced sample. Or list description of sample source:
Supernatant samples to be taken from tank 241-AY-101.

MSDS Available? (●) No ( ) Yes Hanford MSDS No. _____

3. List all waste codes and constituents associated with the waste or media that was sampled, regardless of CERCLA status.

a) Does the sample contain any of the following listed waste codes?
By checking "unknown" the customer understands that no knowledge is available following a careful search.

	List Federal Waste Code(s):	List Constituent(s):			
P Codes:			( ) Yes	(●) No	
U Codes:			( ) Yes	(●) No	
K Codes:			( ) Yes	(●) No	( ) Unknown
F Codes:	F001 - F005		(●) Yes	( ) No	( ) Unknown

b) List applicable characteristic waste codes, flash point, pH, constituents, and concentrations as appropriate.

D001:	☐ FP <100°F	☐ FP ≥100 <140°F	☐ DOT Oxidizer	(●) Yes	( ) No	( ) Unknown
D002:	☐ pH ≤2	☐ pH ≥12.5	☐ Solid Corrosive (WSC2)	(●) Yes	( ) No	( ) Unknown
D003:	☒ Cyanide	☒ Sulfide	☐ Water Reactive	☐ Other _____ (i.e., peroxide former, explosive, air reactive)	(●) Yes	( ) No	( ) Unknown
D004-D043 (Identify applicable waste codes and concentrations):					( ) Yes	( ) No	( ) Unknown

D004-D011, D018, D019, D022, D028-D030, D033-D036, D038-D041, D043

c) If characteristic, list any known underlying hazardous constituents (UHCs) reasonably expected to be present, and their concentrations that may be present above the LDR treatment standard (40 CFR 268.48):
Not needed per 222-S Environmental Compliance Officer (ECO) since waste will be returned to the tank farms via 219-S.

d) List any known Land Disposal Restrictions (LDR) subcategories, if applicable (40 CFR 268.40):
Not needed per 222-S ECO since waste will be returned to the tank farms via 219-S.

e) List any applicable Washington State dangerous waste codes: (not required if federally regulated)

WT01:	( ) Yes	( ) No	( ) Unknown
WT02:	( ) Yes	( ) No	( ) Unknown
W001:	( ) Yes	( ) No	( ) Unknown

List constituents and concentrations:

(*State mixture rule for ignitability)

WP01:	( ) Yes	( ) No	( ) Unknown
WP02:	( ) Yes	( ) No	( ) Unknown
WP03:	( ) Yes	( ) No	( ) Unknown
F003:*	( ) Yes	( ) No	( ) Unknown

4. Is this material TSCA regulated for PCBs? (●) Yes ( ) No ( ) Unknown ( ) Analysis Requested

List concentration if applicable: Liquid: 0.001 ug/mL Solid: 0.125 ug/g

If yes, what is the source of the PCBs? (see TSCA PCB Hanford Site User Guide, DOE/RL-2001-50)

☐ PCB Liquid Waste	☐ PCB Bulk Product Waste	☐ PCB Transformer ≥500 ppm	☐ Unknown
☒ PCB Remediation Waste	☐ PCB R&D Waste	☐ PCB contaminated electrical equipment (capacitor/ballast) <500 ppm	
☐ PCB Spill Material	☐ PCB Item	☐ Other PCB Waste (list) _____	

5. Is this material TRU? (●) Yes ( ) No ( ) Unknown Liquid: No Solids: Yes

6. ACCURACY OF INFORMATION

Based on my inquiry of those individuals immediately responsible for obtaining this information, that to the best of my knowledge, the information entered in this document is true, accurate, and complete.

Print & Sign DUC M. NGUYEN Duc M. Nguyen Date 6/10/13

Attachment 8

RAW DATA FOR TGA AND OH

LABCORE Completed Batch Report for Batch# 00041824

Analyst: Casey, Adam **Book#:** 32N26A
Instrument: DSC12/TGA11 Analyzer
Method: TGA-TA, LA-514-115 Rev/Mod H-0
Specification: AY101 CC8
Prep Batch: N/A
Batch Comment: NONE

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	LCS-INST	S1306190075		0	0		%WATER	LIQUID	58.035	58.33			0.01	%	100.51	% Recovery	
Sample Sequence 2																	
2	SAMPLE	S13T006565		0	0		%WATER	LIQUID	N/A	91.38			0.01	%			
Sample Sequence 3																	
3	DUP	S1306190076	S13T006565	0	0		%WATER	LIQUID	91.38	91.2			0.01	%	0.19717	% RPD	

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041824

7/3/13
Reviewer Signature Date

2nd Review 7/8/13

PC Review: 7/9/13

LABCORE Completed Batch Report for Batch# 00041824

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1306190075	LCS-INST			TGA-TA		
2	S13T006565	SAMPLE		20130628	TGA-TA	1AY-13-01	AY101 CC8
3	S1306190076	DUP	S13T006565		TGA-TA		

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

6/19/2013 4:23:17PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041824

Analyst: Casey, Adam **Standard ID / Book#:** 32N26A

Instrument: DSC12/TGA11 Analyzer

Method: TGA-TA, LA-514-115 Rev/Mod H-0

Prep Batch: N/A

Batch Comment: N/A

CACN:3A.22

S	Type	Sample	R	A	Matrix	Group#	Project
1	LCS-INST	S1306190075	0		LIQUID		
	Analytes Requested:	%WATER					
2	SAMPLE	S13T006565	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	%WATER					
3	DUP	S1306190076	0		LIQUID		
	Analytes Requested:	%WATER					

Final Page for Batch# 00041824

Adam Casey 06-19-13
Analyst Signature **Date**

Adam Casey 06-19-13
Data Entry Signature **Date**

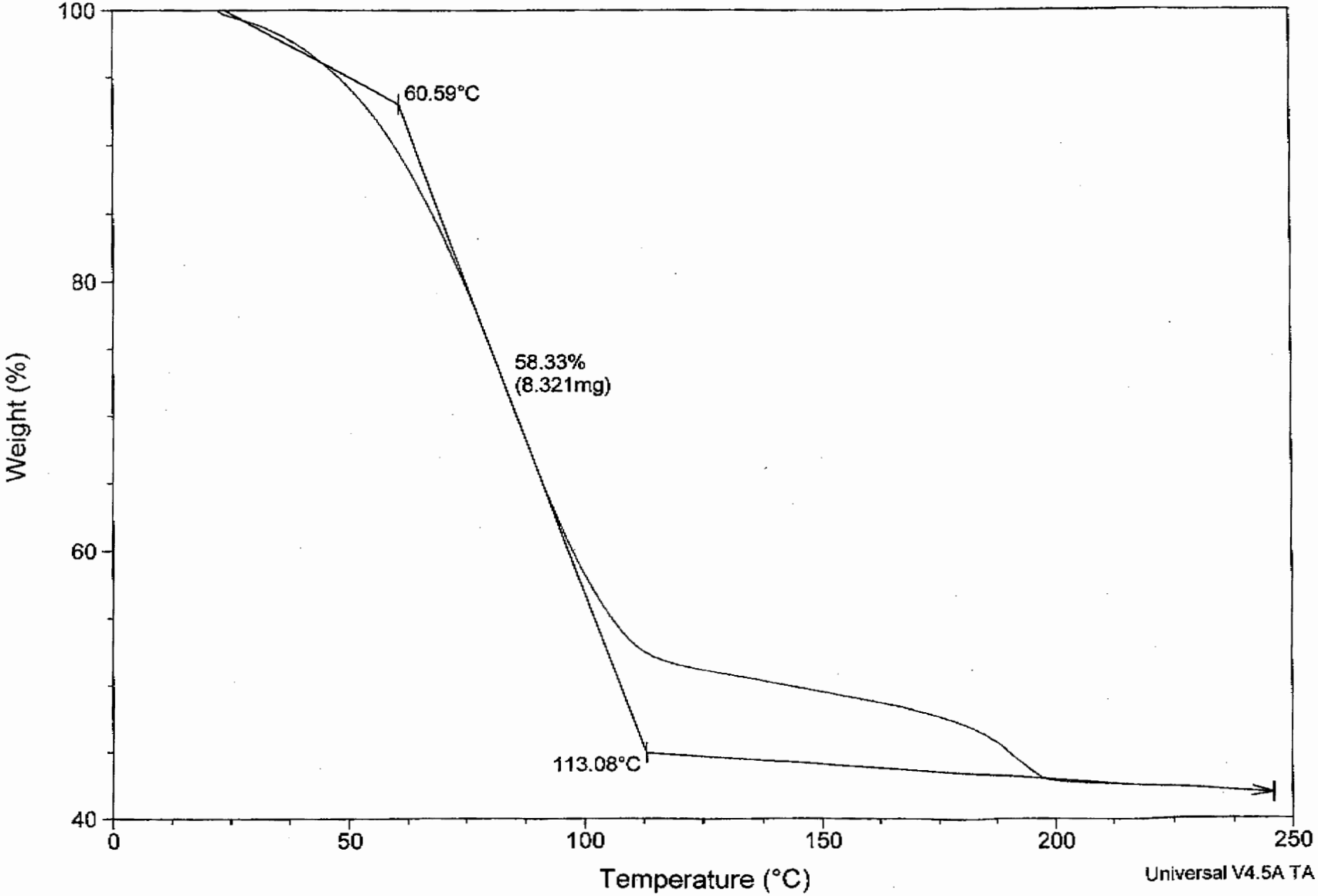
Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

Sample: ICV (LCS-NST 7/8/13)
Size: 14.2650 mg
Method: Ramp
Comment: AY101 CC8

TGA

File: C:\TA\Data\TGA\2013\TER130619.001
Operator: ACC
Run Date: 19-Jun-2013 10:17
Instrument: TGA Q50 V20.13 Build 39



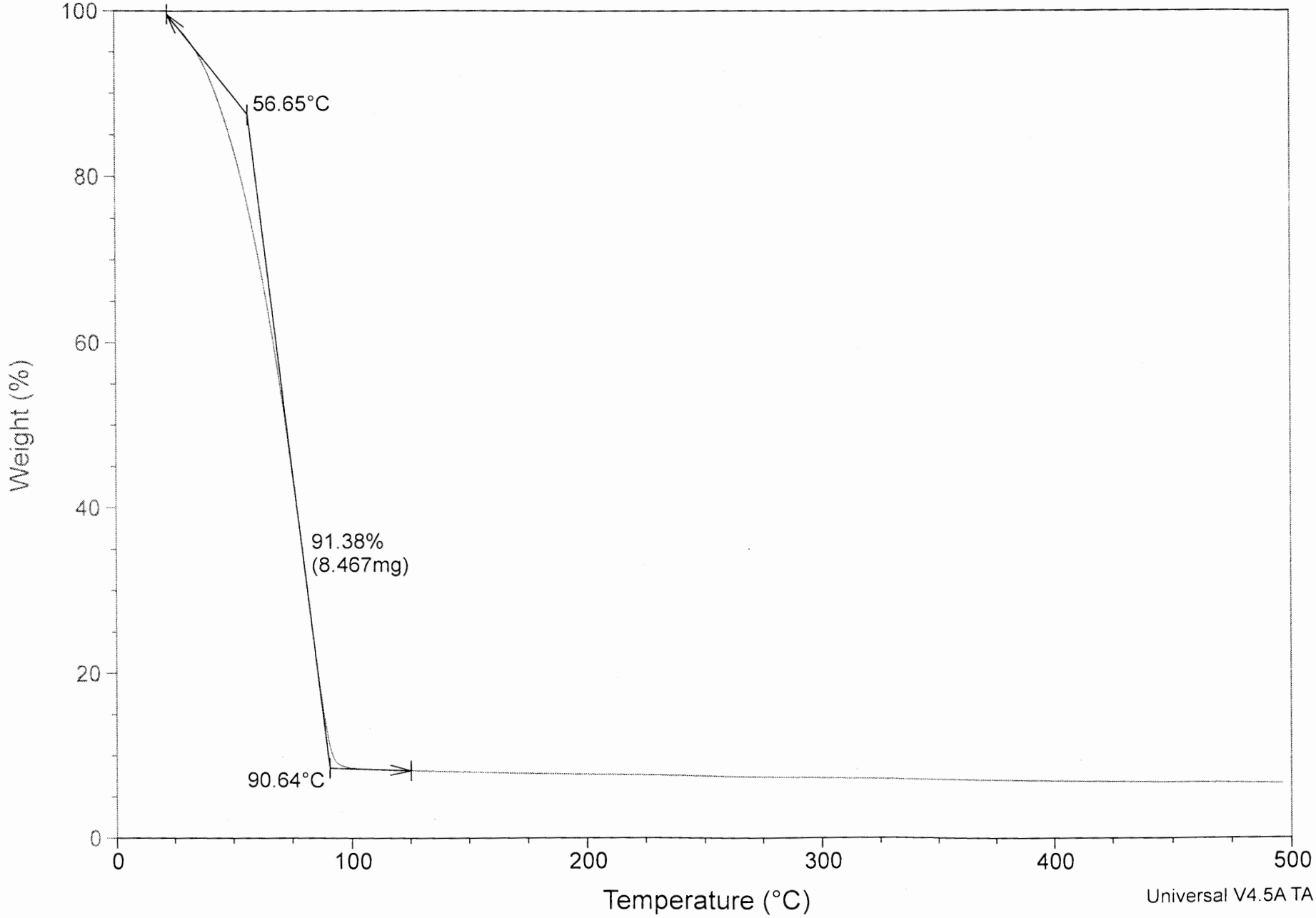
Universal V4.5A TA Instruments

06/19/2013 15:57 15093721142 2225/8C PAGE 24/26

Sample: S13T006565
Size: 9.2660 mg
Method: Sample
Comment: AY101 CC8

TGA

File: C:\TA\Data\TGA-12\SAM130619.001
Operator: ACC
Run Date: 19-Jun-2013 11:30
Instrument: TGA Q50 V20.13 Build 39

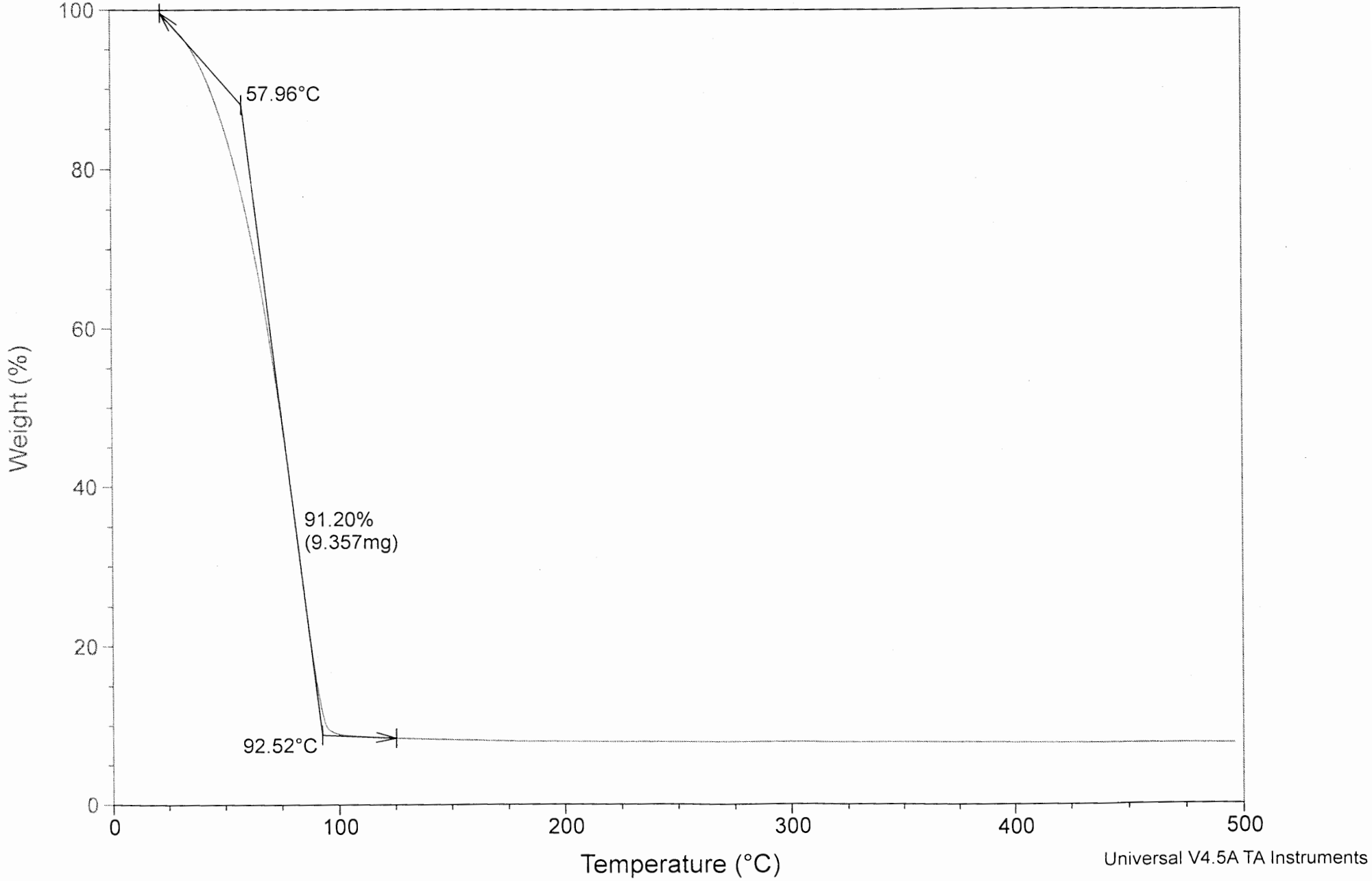


Universal V4.5A TA Instruments

Sample: S13T006565 DUP
Size: 10.2600 mg
Method: Sample
Comment: AY101 CC8

TGA

File: C:\TA\Data\TGA-12\SAM130619.002
Operator: ACC
Run Date: 19-Jun-2013 13:53
Instrument: TGA Q50 V20.13 Build 39



7/22/2013 10:05:21AM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00042227

Analyst: Casey, Adam **Book#:** 32N26A
Instrument: DSC12/TGA11 Analyzer
Method: TGA-TA, LA-514-115 Rev/Mod H-0
Specification: AY101 CC8
Prep Batch: N/A
Batch Comment: NONE

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	LCS-INST	S1307180063		0	0		%WATER	LIQUID	58.035	57.19			0.01	%	98.544	% Recovery	
Sample Sequence 2																	
2	SAMPLE	S13T006577		0	0		%WATER	LIQUID	N/A	89.91			0.01	%			
Sample Sequence 3																	
3	DUP	S1307180064	S13T006577	0	0		%WATER	LIQUID	89.91	91.63			0.01	%	1.8949	% RPD	
Sample Sequence 4																	
4	SAMPLE	S13T006587		0	0		%WATER	LIQUID	N/A	92.08			0.01	%			
Sample Sequence 5																	
5	SAMPLE	S13T006597		0	0		%WATER	LIQUID	N/A	91.71			0.01	%			
Sample Sequence 6																	
6	SAMPLE	S13T006606		0	0		%WATER	LIQUID	N/A	90.57			0.01	%			
Sample Sequence 7																	
7	SAMPLE	S13T006615		0	0		%WATER	LIQUID	N/A	93.07			0.01	%			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00042227

7/22/13
Reviewer Signature Date
2ND REVIEW 07/23/13
PC REVIEW: 7/24/13

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N. A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00042227

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1307180063	LCS-INST			TGA-TA		
2	S13T006577	SAMPLE		20130628	TGA-TA	1AY-13-01DUP	AY101 CC8
3	S1307180064	DUP	S13T006577		TGA-TA		
4	S13T006587	SAMPLE		20130628	TGA-TA	1AY-13-02	AY101 CC8
5	S13T006597	SAMPLE		20130628	TGA-TA	1AY-13-04	AY101 CC8
6	S13T006606	SAMPLE		20130628	TGA-TA	1AY-13-05	AY101 CC8
7	S13T006615	SAMPLE		20130628	TGA-TA	1AY-13-06	AY101 CC8

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Data Entry Template for Batch# 00042227

Analyst: Casey, Adam **Standard ID / Book#:** 32N26A

Instrument: DSC12/TGA11 Analyzer

Method: TGA-TA, LA-514-115 Rev/Mod H-0

Prep Batch: N/A

Batch Comment: NONE

CACN:3A.22

S	Type	Sample	R	A	Matrix	Group#	Project
1	LCS-INST	S1307180063	0		LIQUID		
	Analytes Requested:	%WATER					
2	SAMPLE	S13T006577	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	%WATER					
3	DUP	S1307180064	0		LIQUID		
	Analytes Requested:	%WATER					
4	SAMPLE	S13T006587	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	%WATER					
5	SAMPLE	S13T006597	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	%WATER					
6	SAMPLE	S13T006606	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	%WATER					
7	SAMPLE	S13T006615	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	%WATER					

Final Page for Batch# 00042227

Adam Casey 07-22-13
Analyst Signature **Date**

Adam Casey 07-22-13
Data Entry Signature **Date**

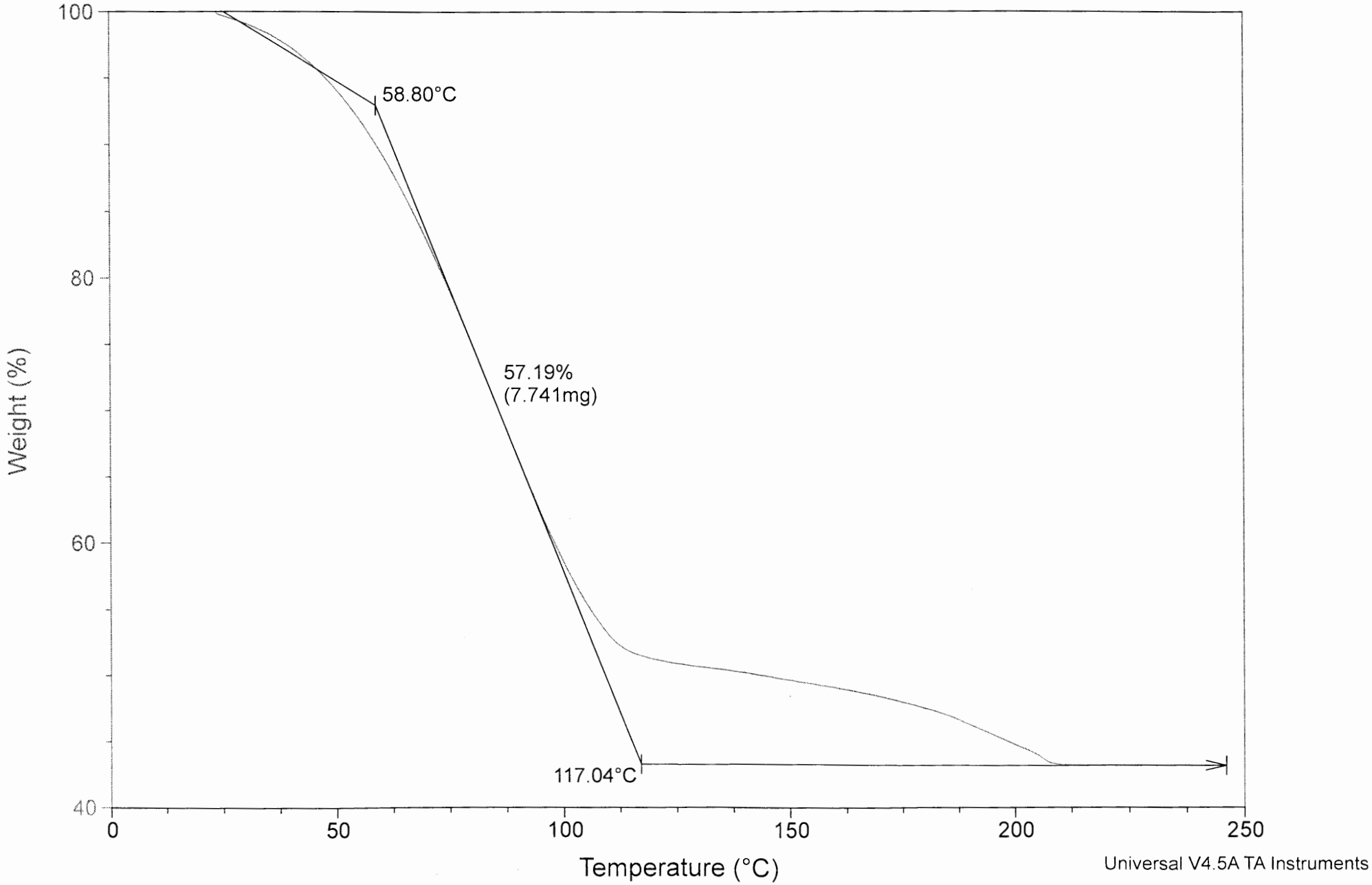
Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

Sample: STD
Size: 13.5350 mg
Method: Ramp
Comment: 32N26A, project AY101 CC8

TGA

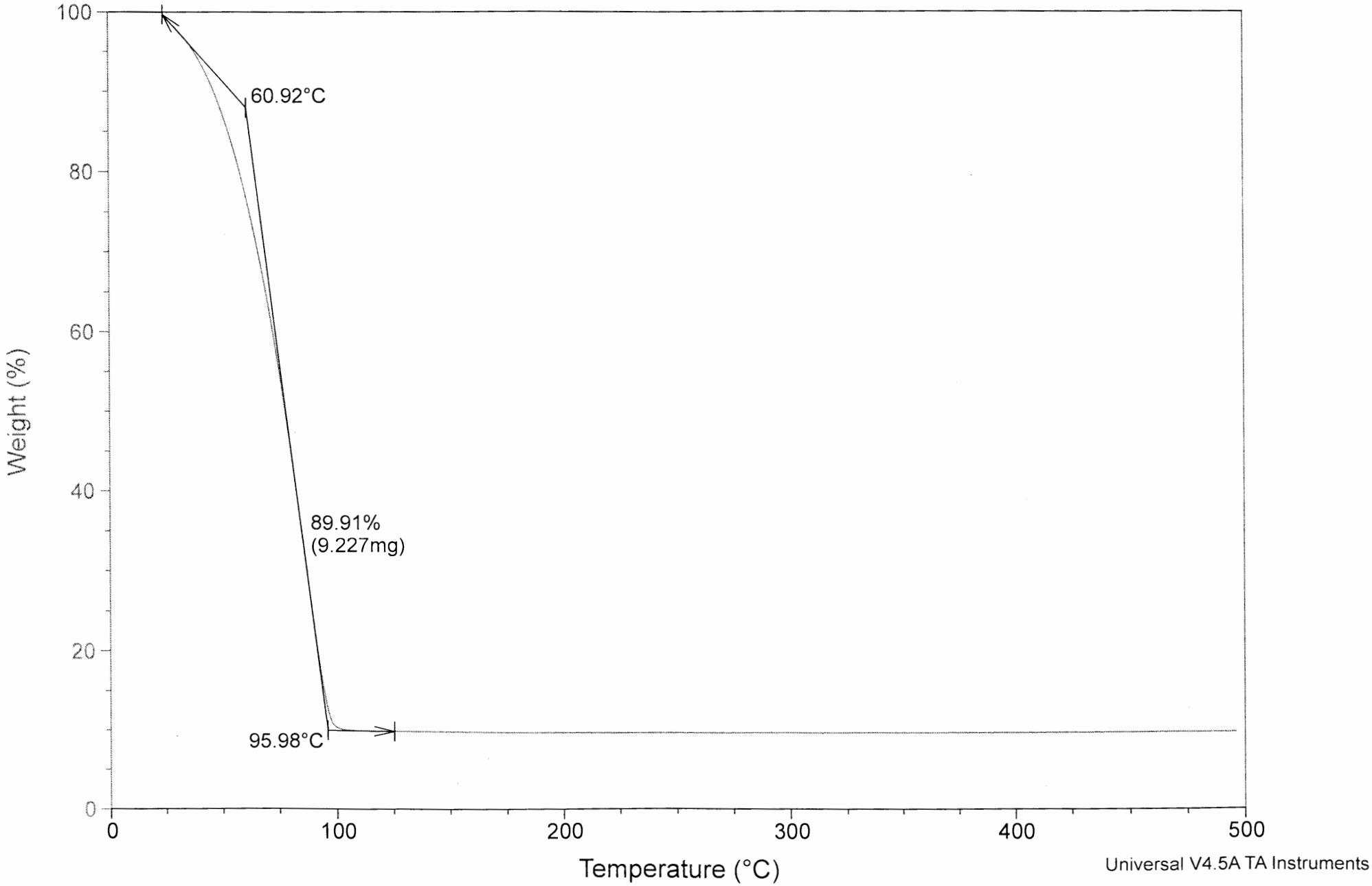
File: C:\TA\Data\TGA-12\TER130718.001
Operator: ACC
Run Date: 18-Jul-2013 08:37
Instrument: TGA Q50 V20.13 Build 39



Sample: S13T006577
Size: 10.2620 mg
Method: Sample
Comment: project AY101 CC8

TGA

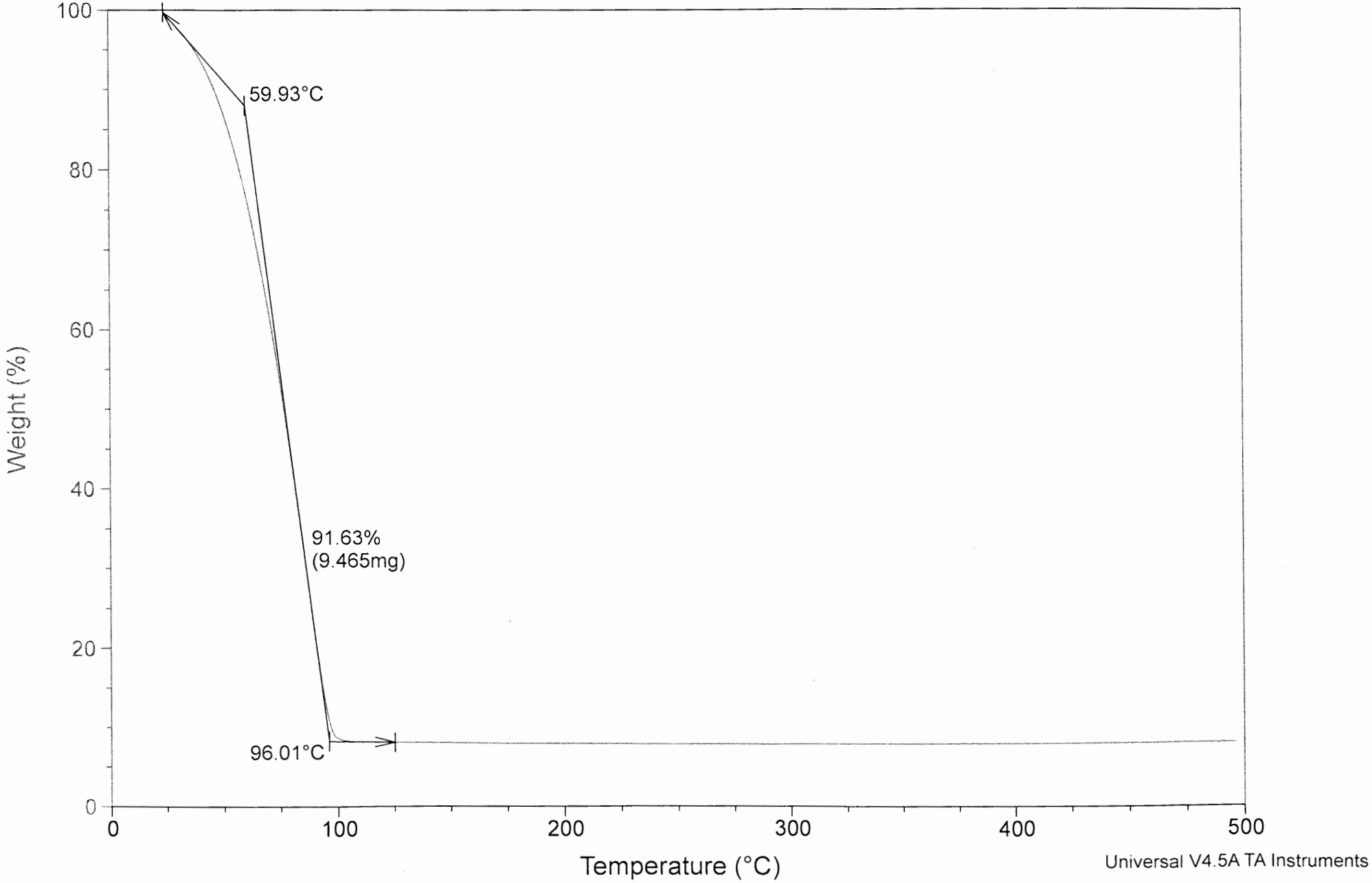
File: C:\TA\Data\TGA-12\SAM130718.001
Operator: ACC
Run Date: 18-Jul-2013 09:29
Instrument: TGA Q50 V20.13 Build 39



Sample: S13T006577 dup
Size: 10.3300 mg
Method: Sample
Comment: project AY101 CC8

TGA

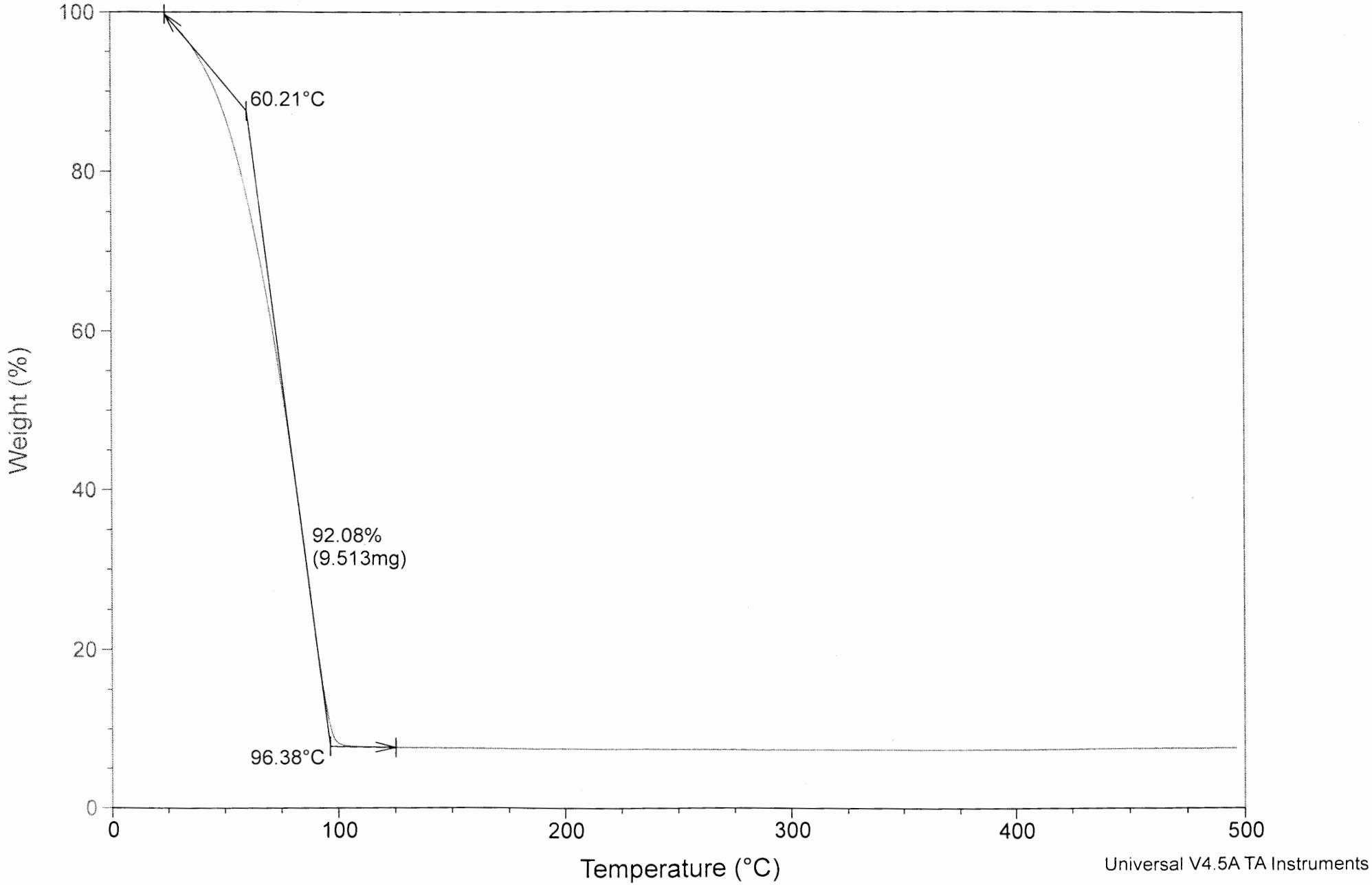
File: C:\TA\Data\TGA-12\SAM130718.002
Operator: ACC
Run Date: 18-Jul-2013 10:45
Instrument: TGA Q50 V20.13 Build 39



Sample: S13T006587
Size: 10.3310 mg
Method: Sample
Comment: project AY101 CC8

TGA

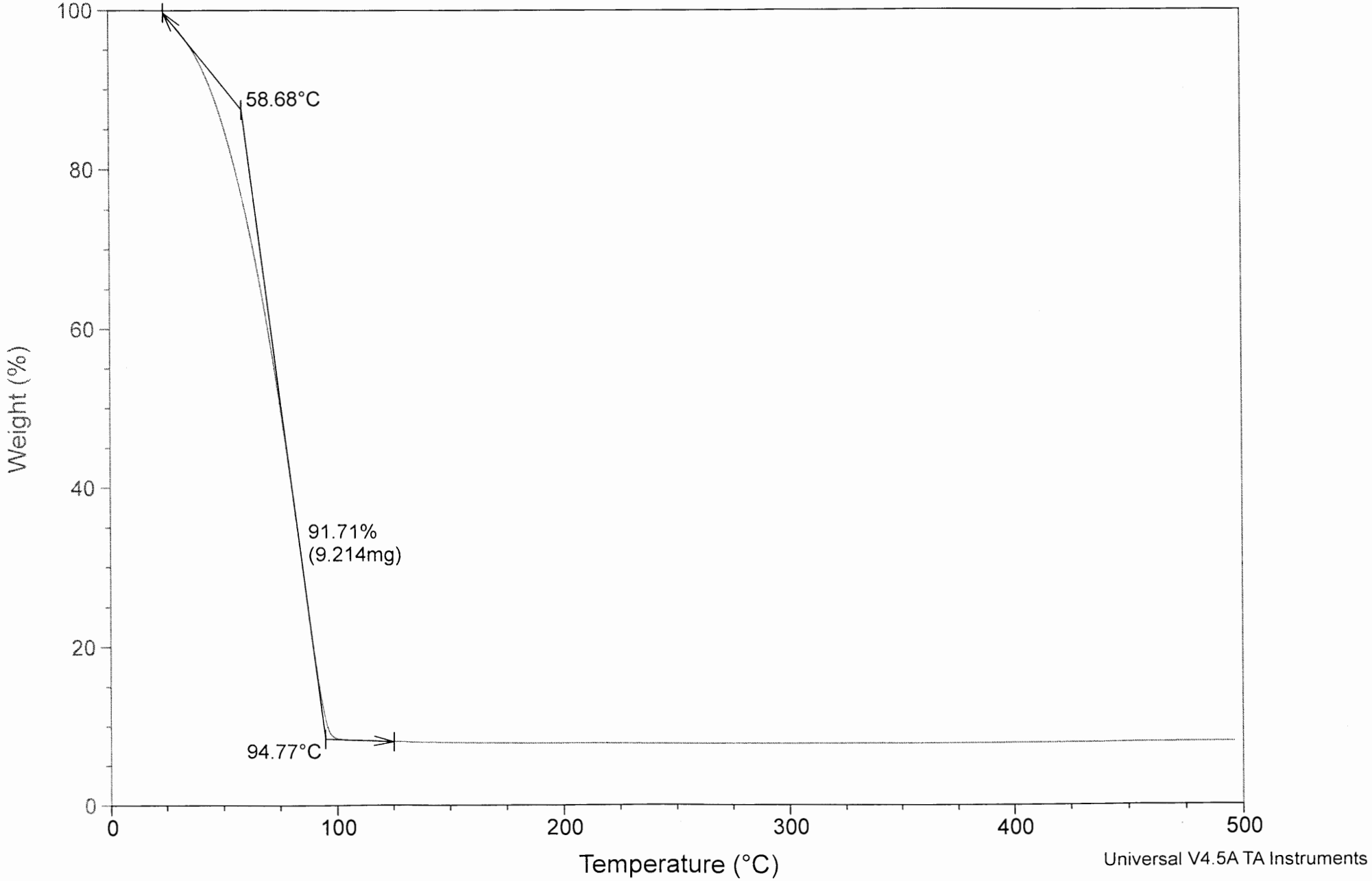
File: C:\TA\Data\TGA-12\SAM130718.003
Operator: ACC
Run Date: 18-Jul-2013 11:57
Instrument: TGA Q50 V20.13 Build 39



Sample: S13T006597
Size: 10.0470 mg
Method: Sample
Comment: project AY101 CC8

TGA

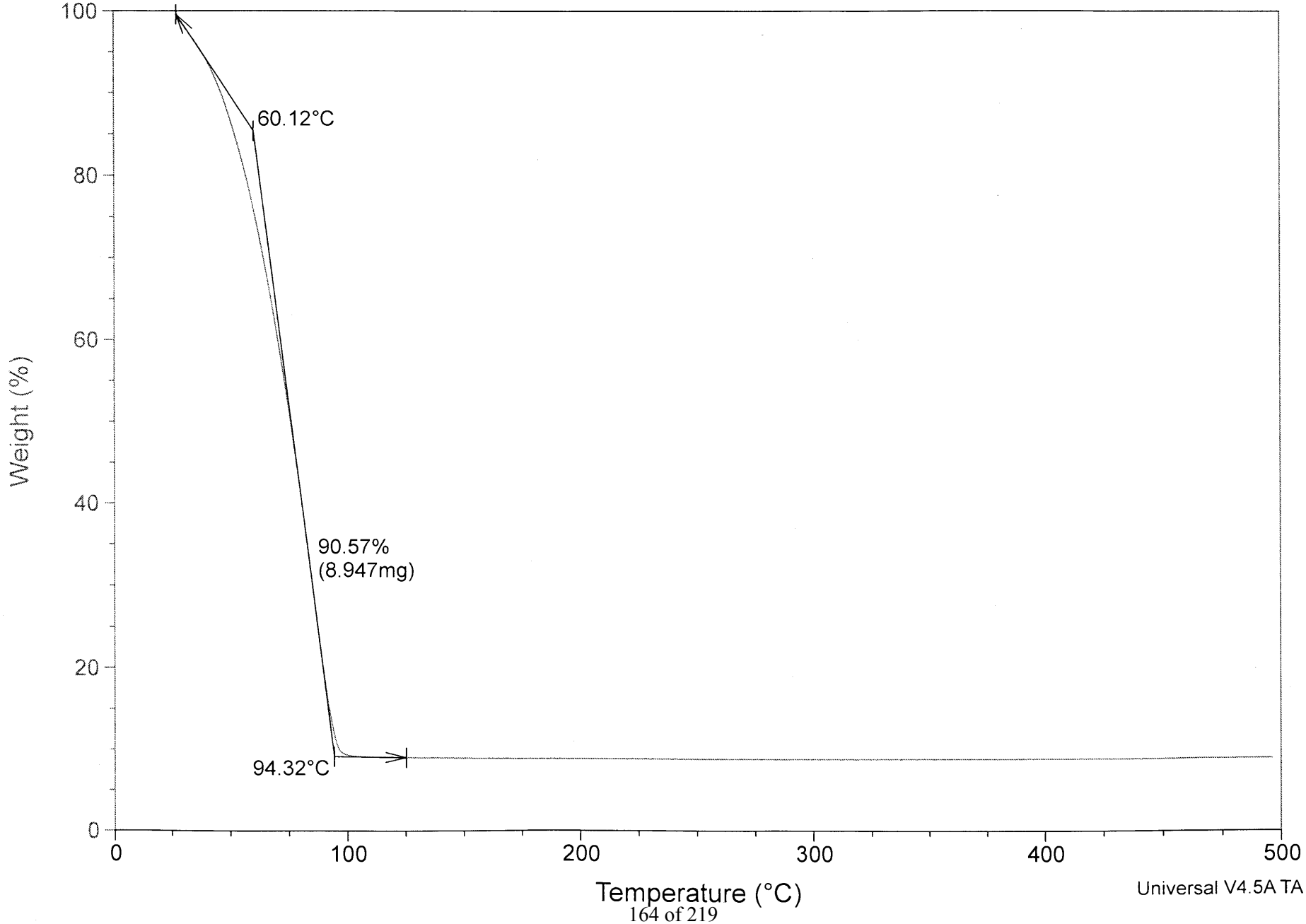
File: C:\TA\Data\TGA-12\SAM130718.004
Operator: ACC
Run Date: 18-Jul-2013 13:12
Instrument: TGA Q50 V20.13 Build 39



Sample: S13T006606
Size: 9.8790 mg
Method: Sample
Comment: project AY101 CC8

TGA

File: C:\TA\Data\TGA-12\SAM130718.005
Operator: ACC
Run Date: 18-Jul-2013 14:20
Instrument: TGA Q50 V20.13 Build 39

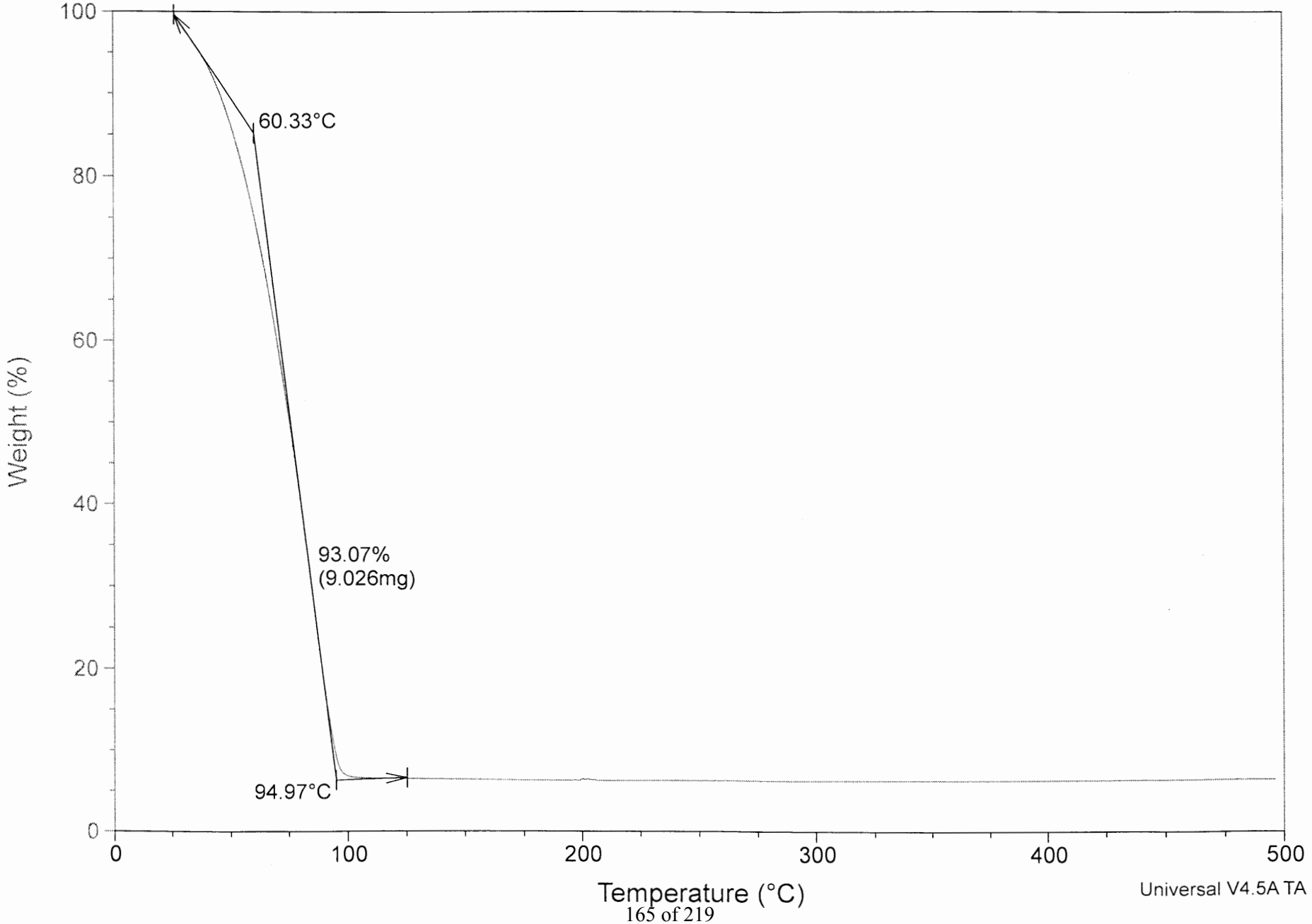


Universal V4.5A TA Instruments

Sample: S13T006615
Size: 9.6980 mg
Method: Sample
Comment: project AY101 CC8

TGA

File: C:\TA\Data\TGA-12\SAM130718.006
Operator: ACC
Run Date: 18-Jul-2013 15:27
Instrument: TGA Q50 V20.13 Build 39



Universal V4.5A TA Instruments

LABCORE Completed Batch Report for Batch# 00042235

Analyst: Casey, Adam **Book#:** 32N26A

Instrument: DSC12/TGA11 Analyzer

Method: TGA-TA, LA-514-115 Rev/Mod H-0

Specification: AY101 CC8

Prep Batch: N/A

Batch Comment: None

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	LCS-INST	S1307220025		0 0			%WATER	LIQUID	58.035	57.21			0.01	%	98.578	% Recovery	
Sample Sequence 2																	
2	SAMPLE	S13T006624		0 0			%WATER	LIQUID	N/A	85.61			0.01	%			
Sample Sequence 3																	
3	DUP	S1307220026	S13T006624	0 0			%WATER	LIQUID	85.61	87.93			0.01	%	2.6737	% RPD	
Sample Sequence 4																	
4	SAMPLE	S13T006633		0 0			%WATER	LIQUID	N/A	83.57			0.01	%			
Sample Sequence 5																	
5	SAMPLE	S13T006642		0 0			%WATER	LIQUID	N/A	80.53			0.01	%			
Sample Sequence 6																	
6	SAMPLE	S13T006665		0 0			%WATER	LIQUID	N/A	80.59			0.01	%			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00042235

Reviewer Signature 7/23/13 Date

2ND REVIEW: KAKeltner 07/23/13

QC REVIEW: Edward Soto 7/24/13

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N. A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00042235

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1307220025	LCS-INST			TGA-TA		
2	S13T006624	SAMPLE		20130628	TGA-TA	1AY-13-07	AY101 CC8
3	S1307220026	DUP	S13T006624		TGA-TA		
4	S13T006633	SAMPLE		20130628	TGA-TA	1AY-13-08	AY101 CC8
5	S13T006642	SAMPLE		20130628	TGA-TA	1AY-13-09	AY101 CC8
6	S13T006665	SAMPLE		20130628	TGA-TA	1AY-13-10	AY101 CC8

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Data Entry Template for Batch# 00042235

Analyst: Casey, Adam **Standard ID / Book#:** 32N26A

Instrument: DSC12/TGA11 Analyzer

Method: TGA-TA, LA-514-115 Rev/Mod H-0

Prep Batch: N/A

Batch Comment: NONE

CACN:3A.22

S	Type	Sample	R	A	Matrix	Group#	Project
1	LCS-INST	S1307220025	0		LIQUID		
	Analytes Requested:	%WATER					
2	SAMPLE	S13T006624	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	%WATER					
3	DUP	S1307220026	0		LIQUID		
	Analytes Requested:	%WATER					
4	SAMPLE	S13T006633	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	%WATER					
5	SAMPLE	S13T006642	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	%WATER					
6	SAMPLE	S13T006665	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	%WATER					

Final Page for Batch# 00042235

adam Casey 07-23-13
Analyst Signature **Date**

adam Casey 07-23-13
Data Entry Signature **Date**

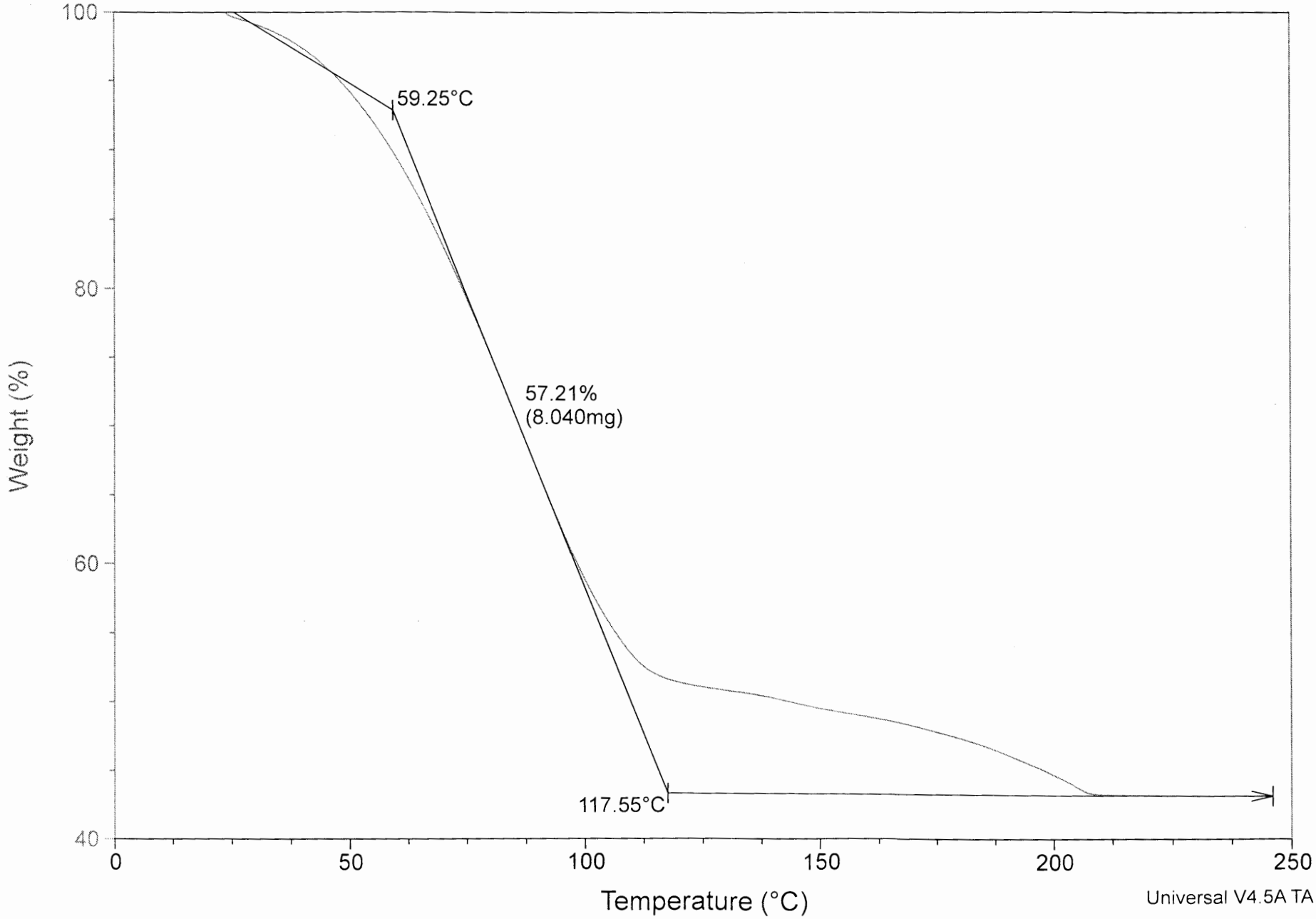
Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

Sample: STD
Size: 14.0540 mg
Method: Ramp
Comment: 32N26A, project AY101 CC8

TGA

File: C:\TA\Data\TGA-12\TER130722.001
Operator: ACC
Run Date: 22-Jul-2013 09:28
Instrument: TGA Q50 V20.13 Build 39

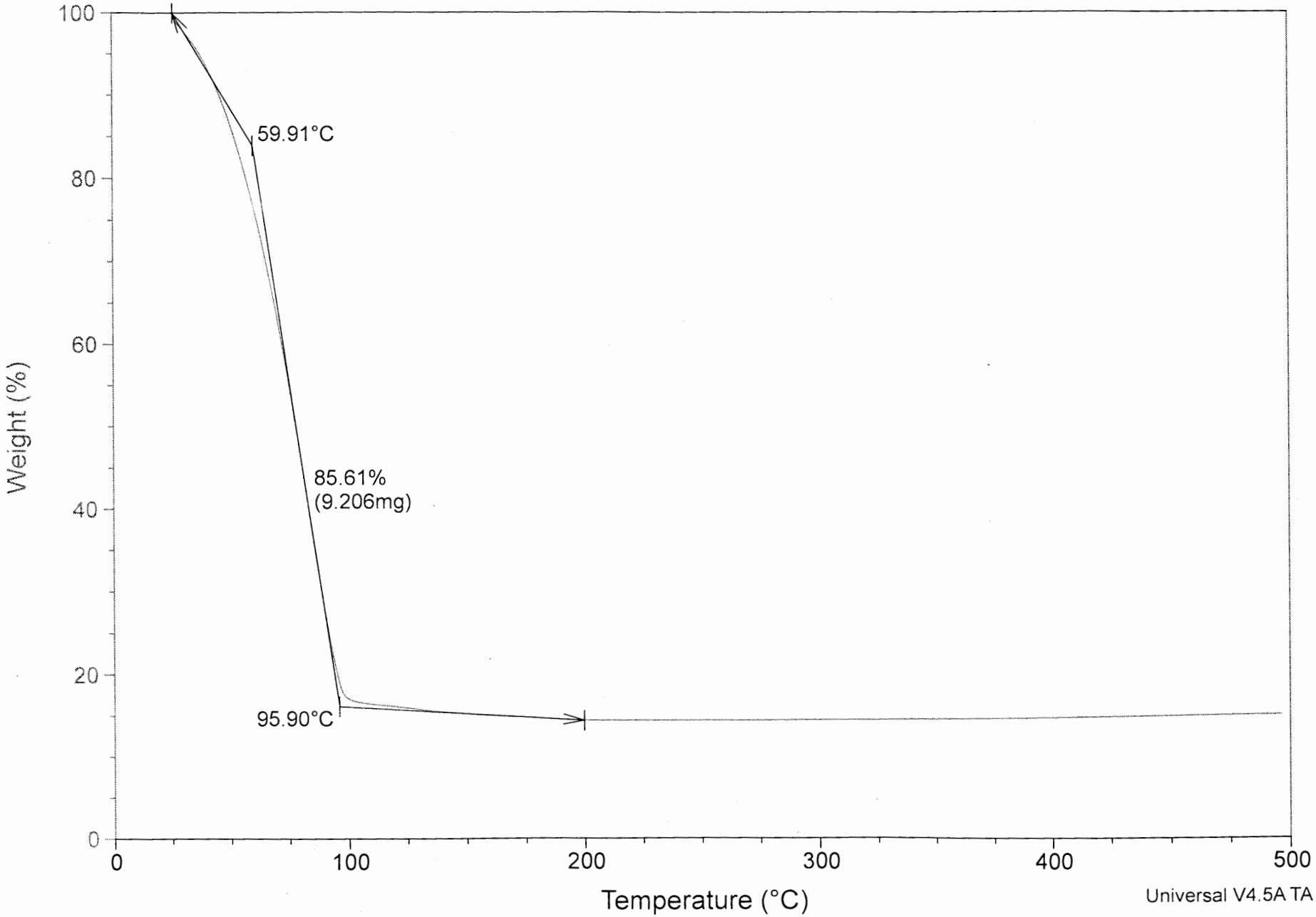


Universal V4.5A TA Instruments

Sample: S13T006624
Size: 10.7530 mg
Method: Sample
Comment: project AY101 CC8

TGA

File: C:\TA\Data\TGA-12\SAM130722.001
Operator: ACC
Run Date: 22-Jul-2013 10:13
Instrument: TGA Q50 V20.13 Build 39

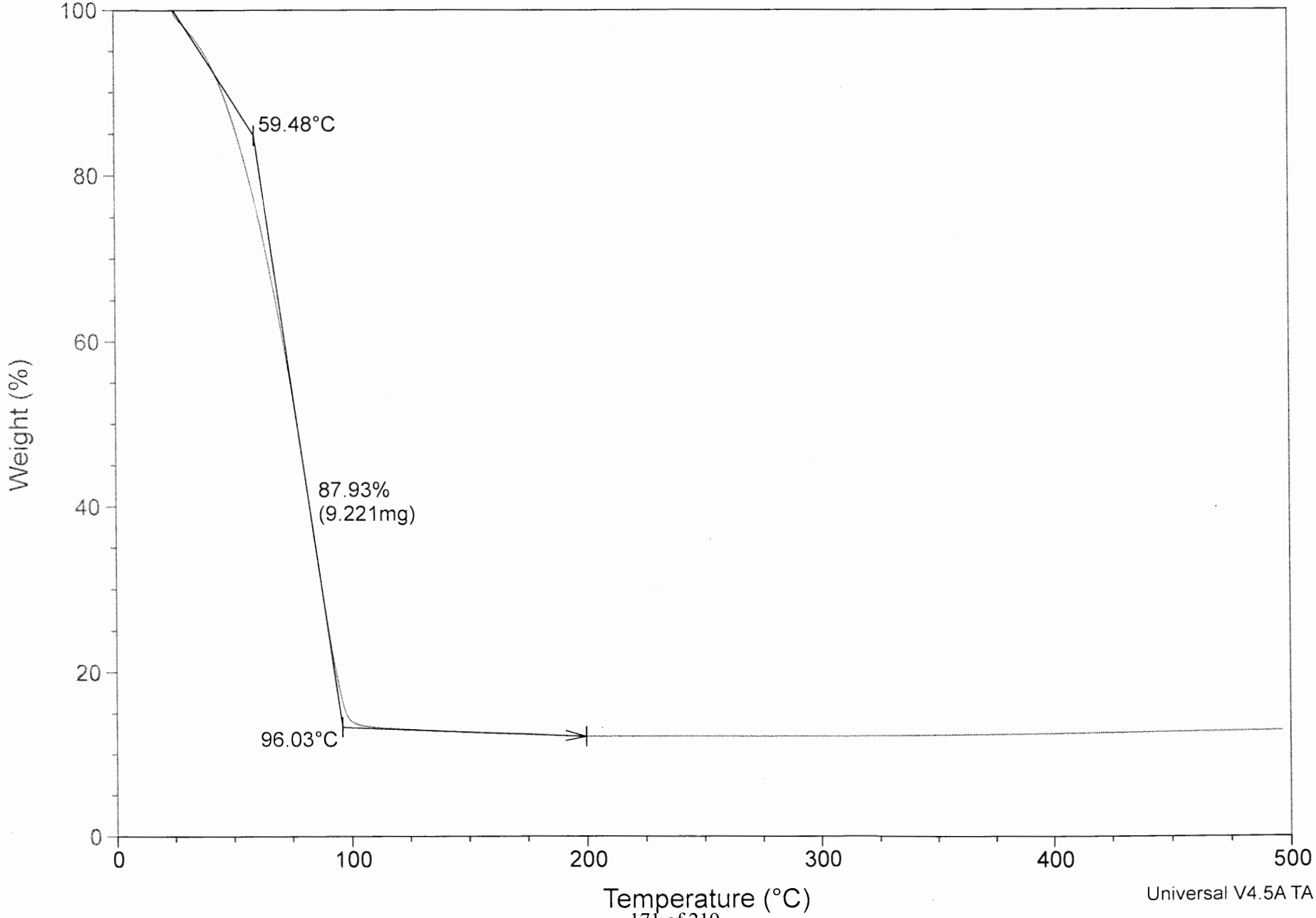


Universal V4.5A TA Instruments

Sample: S13T006624 dup
Size: 10.4860 mg
Method: Sample
Comment: project AY101 CC8

TGA

File: C:\TA\Data\TGA-12\SAM130722.002
Operator: ACC
Run Date: 22-Jul-2013 11:24
Instrument: TGA Q50 V20.13 Build 39

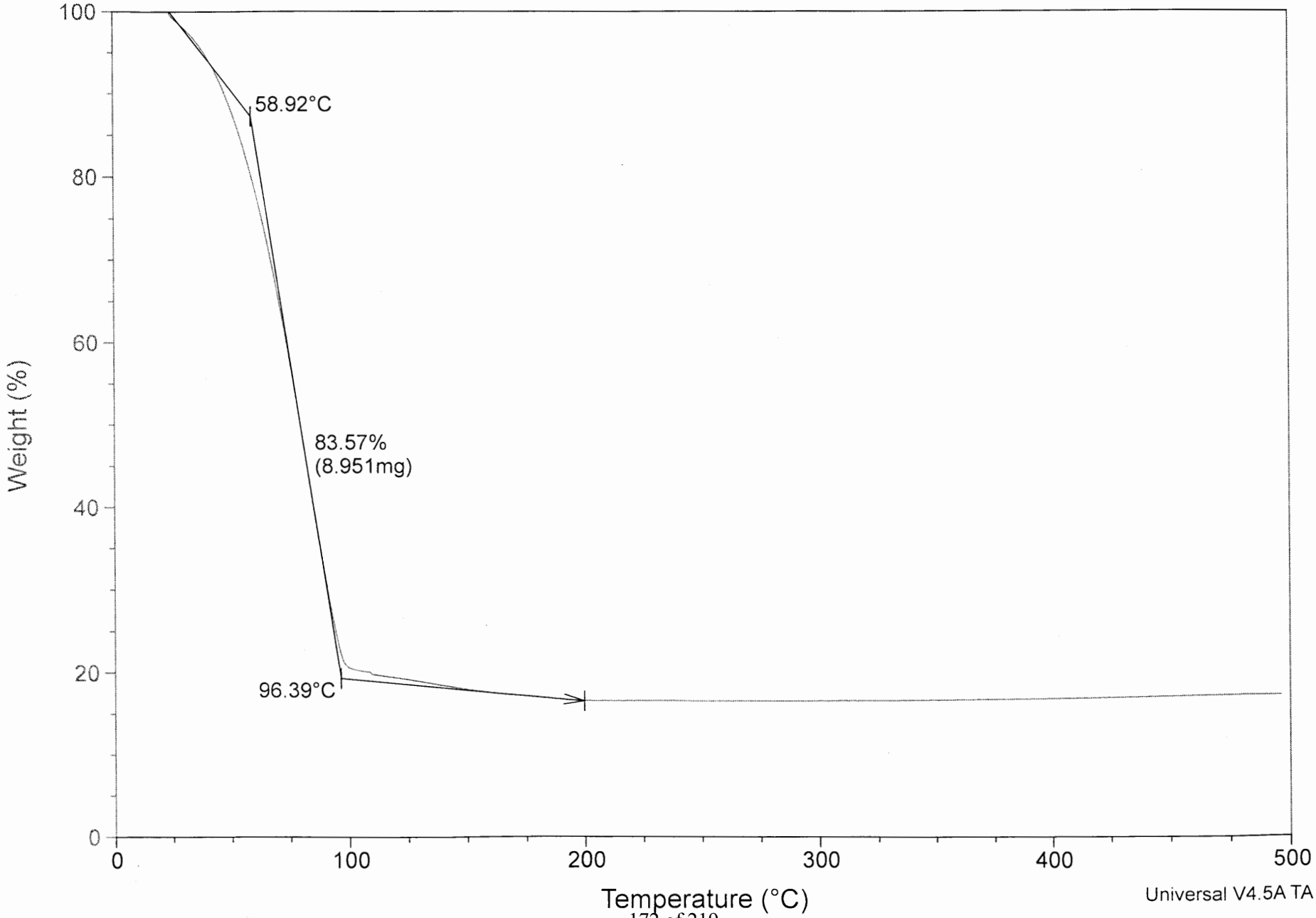


Universal V4.5A TA Instruments

Sample: S13T006633
Size: 10.7100 mg
Method: Sample
Comment: project AY101 CC8

TGA

File: C:\TA\Data\TGA-12\SAM130722.003
Operator: ACC
Run Date: 22-Jul-2013 12:53
Instrument: TGA Q50 V20.13 Build 39

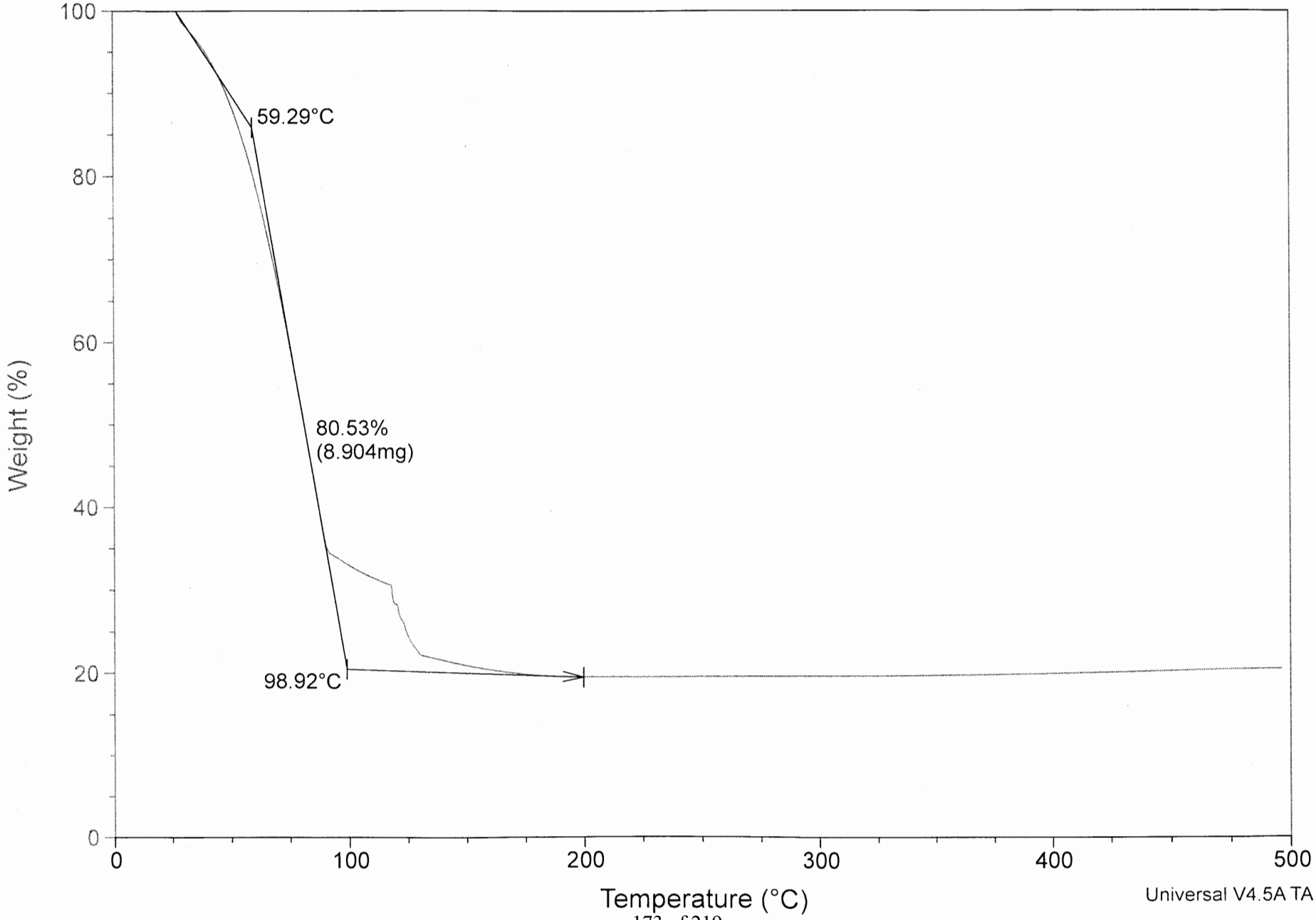


Universal V4.5A TA Instruments

Sample: S13T006642
Size: 11.0570 mg
Method: Sample
Comment: project AY101 CC8

TGA

File: C:\TA\Data\TGA-12\SAM130722.004
Operator: ACC
Run Date: 22-Jul-2013 14:01
Instrument: TGA Q50 V20.13 Build 39

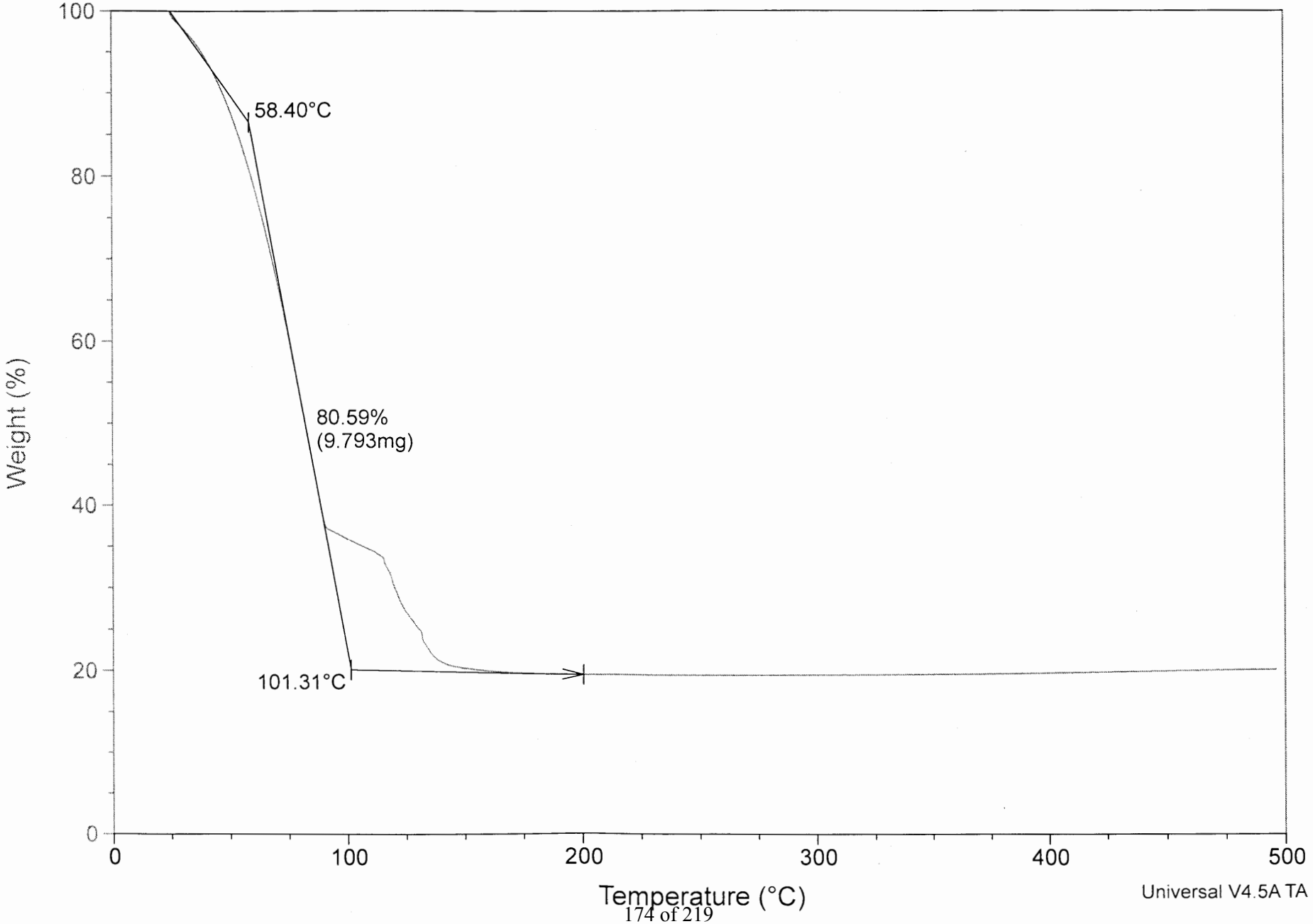


Universal V4.5A TA Instruments

Sample: S13T006665
Size: 12.1510 mg
Method: Sample
Comment: project AY101 CC8

TGA

File: C:\TA\Data\TGA-12\SAM130722.005
Operator: ACC
Run Date: 22-Jul-2013 15:16
Instrument: TGA Q50 V20.13 Build 39



Universal V4.5A TA Instruments

ATL	pH (OH) DATA REVIEW CHECKLIST

Worklist/Project Information: 41687 / A4101 CC8

Analysis Date: 6/13/13 Instrument ID: ○ pH02 ☒ Titrator1

☒ LA-211-102 Rev I-6-A (*) ○ LA-211-105 Rev _____ (*)
○ LA-212-105 Rev _____ (*) ○ LA-212-106 Rev _____ (*)

Review Items	Yes	No	N/A	2nd Review	Comments/Samples Affected (give review item letter and number)
A. Calibration, Instrument Run QC					A.4 - SAMPLES AFTER MID CCU WERE RERAN WITH ANOTHER BATCH.
1. Were the standards and reagents unexpired?	X			✓	
2. Instrument calibrated per procedure and calibration slope acceptable? *OH/Caustic ratio 94% to 102%, pH 95% to 105%*	X			✓	
3. Calibration buffers measured as samples and within limits? *±0.05 pH units of the true value or ±0.1 pH units if >pH 12 or <2 was used.*			X	✓	
4. Were ICV/CCV/LCS analyzed at appropriate frequency and were recoveries within control limits? ☐ OH: 80% to 120% Rec, ☐ Caustic ratio: ±0.05 pH units, ☐pH Limits: ±0.1 pH units, ☒ Client-Specified 90-110% Rec		X		✓	
5. Were ICB/CCB analyzed at appropriate frequency and were results < EQL?	X			✓	
B. Sample Results					
1. Were all results within calibration range?			X	✓	
2. Are all reported results bracketed by in control QC?	X			✓	
C. Matrix QC					
1. Was a DUP run at required frequency and within control limits? % RPD: ☐ <20% ☒ Client-Specified ≤5%	X			✓	
2. Was an MS run at required frequency and within control limits? Recovery: ☐ 75-125% ☒ Client-Specified 75-125%	X			✓	
D. Other					
1. Are all nonconformances documented appropriately?	X			✓	
2. Is current MDL/EQL data on file?	X			✓	
3. Correct titrant concentration on forms?	X			✓	
4. Were calculations checked for errors?	X			✓	
5. Were transcriptions and data upload checked for errors?	X			✓	
6. Were all client/project specific requirements met?	X			✓	
7. Was the date/time of analysis verified as correct?	X			✓	

1st Level Data Reviewer (sign): [signature] Date: 6/17/13 2nd Level Data Reviewer (sign): [signature] Date: 6/18/13

(*) *This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.*

PC REVIEW: [signature] 6/24/13

LABCORE Completed Batch Report for Batch# 00041687

Analyst: Dinh, Liem **Book#:** 76N15A

Instrument: Titrator-1

Method: OH, LA-211-102 Rev/Mod J-0-A

Specification: AY101 CC8

Prep Batch: N/A

Batch Comment: NONE

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1306130054		0	0		Hydroxide	LIQUID	17450	1.6380E+04			553.35	ug/mL	93.866	% Recovery	
Sample Sequence 2																	
2	BLNK	S1306130055		0	0		Hydroxide	LIQUID		<9.2225E+00			9.2225	ug/mL			
Sample Sequence 3																	
3	SAMPLE	S13T006565		0	0		Hydroxide	LIQUID	N/A	2.9334E+03			110.67	ug/mL			
Sample Sequence 4																	
4	DUP	S1306130056	S13T006565	0	0		Hydroxide	LIQUID	2.9334E+03	2.9010E+03			110.67	ug/mL	1.1120	% RPD	
Sample Sequence 5																	
5	SPK	S1306130057	S13T006565	0	0		Hydroxide	LIQUID	3490.19195	6.1025E+03			110.67	ug/mL	90.8	% Recovery	
Sample Sequence 6																	
6	SAMPLE	S13T006577		0	0		Hydroxide	LIQUID	N/A	2.7011E+03			110.67	ug/mL			
Sample Sequence 7																	
7	SAMPLE	S13T006587		0	0		Hydroxide	LIQUID	N/A	2.6279E+03			110.67	ug/mL			
Sample Sequence 8																	
8	SAMPLE	S13T006597		0	0		Hydroxide	LIQUID	N/A	2.8553E+03			110.67	ug/mL			
Sample Sequence 9																	
9	SAMPLE	S13T006615		0	0		Hydroxide	LIQUID	N/A	2.6644E+03			110.67	ug/mL			
Sample Sequence 10																	
10	SAMPLE	S13T006606		0	0		Hydroxide	LIQUID	N/A	2.7912E+03			110.67	ug/mL			
Sample Sequence 11																	
11	SAMPLE	S13T006624		0	0		Hydroxide	LIQUID	N/A	6.1992E+03			110.67	ug/mL			
Sample Sequence 12																	
12	CCV	S1306130060		0	0		Hydroxide	LIQUID	17450	1.6229E+04			553.35	ug/mL	93.001	% Recovery	
Sample Sequence 13																	
13	CCB	S1306130061		0	0		Hydroxide	LIQUID		<9.2225E+00			9.2225	ug/mL			

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041687

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041687

6/17/13
Reviewer Signature Date

2nd Reviewer 6/18/13

LABCORE Completed Batch Report for Batch# 00041687

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1306130054	STD			OH		
2	S1306130055	BLNK			OH		
3	S13T006565	SAMPLE		20130628	OH	1AY-13-01	AY101 CC8
4	S1306130056	DUP	S13T006565		OH		
5	S1306130057	SPK	S13T006565		OH		
6	S13T006577	SAMPLE		20130628	OH	1AY-13-01DUP	AY101 CC8
7	S13T006587	SAMPLE		20130628	OH	1AY-13-02	AY101 CC8
8	S13T006597	SAMPLE		20130628	OH	1AY-13-04	AY101 CC8
9	S13T006615	SAMPLE		20130628	OH	1AY-13-06	AY101 CC8
10	S13T006606	SAMPLE		20130628	OH	1AY-13-05	AY101 CC8
11	S13T006624	SAMPLE		20130628	OH	1AY-13-07	AY101 CC8
12	S1306130060	CCV			OH		
13	S1306130061	CCB			OH		
14	S13T006633	SAMPLE		20130628	OH	1AY-13-08	AY101 CC8
15	S13T006642	SAMPLE		20130628	OH	1AY-13-09	AY101 CC8
16	S1306130063	CCV			OH		
17	S1306130062	CCB			OH		

'13/2013 2:14:20PM
completeBatchShort Version 2.7.29
atchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041687

Analyst: Dinh, Liem **Standard ID / Book#:** 76N15A
Instrument: Titrator-1
Method: OH, LA-211-102 Rev/Mod J-0-A
Prep Batch: N/A
Batch Comment: N/A

CACN:3A.22

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1306130054	0		LIQUID		
	Analytes Requested:	Hydroxide					
2	BLNK	S1306130055	0		LIQUID		
	Analytes Requested:	Hydroxide					
3	SAMPLE	S13T006565	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	Hydroxide					
4	DUP	S1306130056	0		LIQUID		
	Analytes Requested:	Hydroxide					
5	SPK	S1306130057	0		LIQUID		
	Analytes Requested:	Hydroxide					
6	SAMPLE	S13T006577	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	Hydroxide					
7	SAMPLE	S13T006587	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	Hydroxide					
8	SAMPLE	S13T006597	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	Hydroxide					
9	SAMPLE	S13T006615	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	Hydroxide					
10	SAMPLE	S13T006606	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	Hydroxide					
11	SAMPLE	S13T006624	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	Hydroxide					
12	CCV	S1306130060	0		LIQUID		
	Analytes Requested:	Hydroxide					
13	CCB	S1306130061	0		LIQUID		
	Analytes Requested:	Hydroxide					
14	SAMPLE	S13T006633	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	Hydroxide					
15	SAMPLE	S13T006642	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	Hydroxide					
16	CCV	S1306130063	0		LIQUID		
	Analytes Requested:	Hydroxide					
17	CCB	S1306130062	0		LIQUID		
	Analytes Requested:	Hydroxide					

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

06/13/2013 THU 15:01 [TX/RX NO 5335] 002

LABCORE Data Entry Template for Batch# 00041687

Final Page for Batch# 00041687

Analyst Signature 6/13/13 Date

Data Entry Signature 6/13/13 Date

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

06/13/2013 14:23 15093721142 2225/BC PAGE 02/24

06/13/2013 THU 15:01 [TX/RX NO 5335] 003

ATL	DETERMINATION OF FREE OH^- / H^+

◉ LA-211-102 Rev J-0-A (OH^-) ○ LA-211-102 Rev N/A (H^+) ○ LA-211-105 Rev N/A

Project: AY

Batch #: 00041687 Analyst: LND

Date/Time Start: 6/13/13 / 0900 Date/Time End: 6/13/13 / 1117

Standard	Id or Lot #	Pipette #	Exp. Date
pH 4 Buffer	N/A	N/A	N/A
pH 7 Buffer	2095	N/A	4/30/14
pH 10 Buffer	2184	N/A	7/31/13
BaCl2	121N22E	2	8/21/13
HVOx	N/A	N/A	N/A

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 4430821 (Range/Vol: 0.1-1.0mL) ☒
(2) 4476811 (Range/Vol: 0.01-0.1mL) ☒
(3) N/A (Range/Vol: N/A) ☐
(4) N/A (Range/Vol: N/A) ☐

Standard	Concentration	Id or Lot #	Exp. Date	Buret ID
NaOH Titrant	N/A	N/A	N/A	N/A
HNO3 Titrant	0.2001	G2-MEB469071	5/1/14	T809
ITS-OH	17450	76N15A	10/17/13	
FEAL	N/A	N/A	N/A	

Slope: 96.30 (94%-102%)

Sample Number	Sample Vol. (mL)	Pipette #	Comments
~~ICV~~ SPD	0.05	2	
~~ICB~~ BK	3	1	
S13T006565	0.100	2	
S13T006565	0.250	1	
S13T006565 DUP	0.250	1	
S13T006565 SPK	0.250	1	
S13T006577	0.250	1	0.05mL of spk ITS-OH(76N15A)(2) was added
S13T006587	0.250	1	
S13T006597	0.250	1	
S13T006615	0.250	1	
S13T006606	0.250	1	
S13T006624	0.250	1	
CCV	0.05	2	
CCB	3	1	
S13T006633	0.250	2	
S13T006642	0.250	2	
CCV	0.05	2	
CCB	3	1	

Comments:

Page 1 of 1 A-6005-881 (REV 0)

06/13/2013 14:23 15093/21142 2225/BC PAGE 03/24

06/13/2013 THU 15:01 [TX/RX NO 5335] 004

tiamo™ titration and more

Program version tiamo 1.1 - 36
2013-06-13 9:17:00 AM UTC-

Calibration report

Determination

Method . . . . . pH 7-10 Calibration
Determination start 2013-06-13 09:14:26 UTC-7
User (full name) . . . . . Liem Dinh

Results

Cal Slope . . . . . 96.30 %
Temperature . . . . . 21.3 °C

Metrohm
06/13/2013 14:23 15093/21142 22225/80 PAGE 04/24

06/13/2013 THU 15:01 [TX/RX NO 5335] 006

Program version tiamo 1.1 - 36

User Ind 2013-06-13 9:27:31 AM UTC-

Results report

Sample data

6/19/13

Sample ID . . . . . ~~JCV~~ STD
Sample size, mL 0.05
Standard Number 76N15A
Standard Value 17450

Determination

Method . . . . . OH Std
Determination start 2013-06-13 09:25:28 UTC-7
User (full name) . . . . . Liem Dinh
User (short name) . . . . . Ind

End points

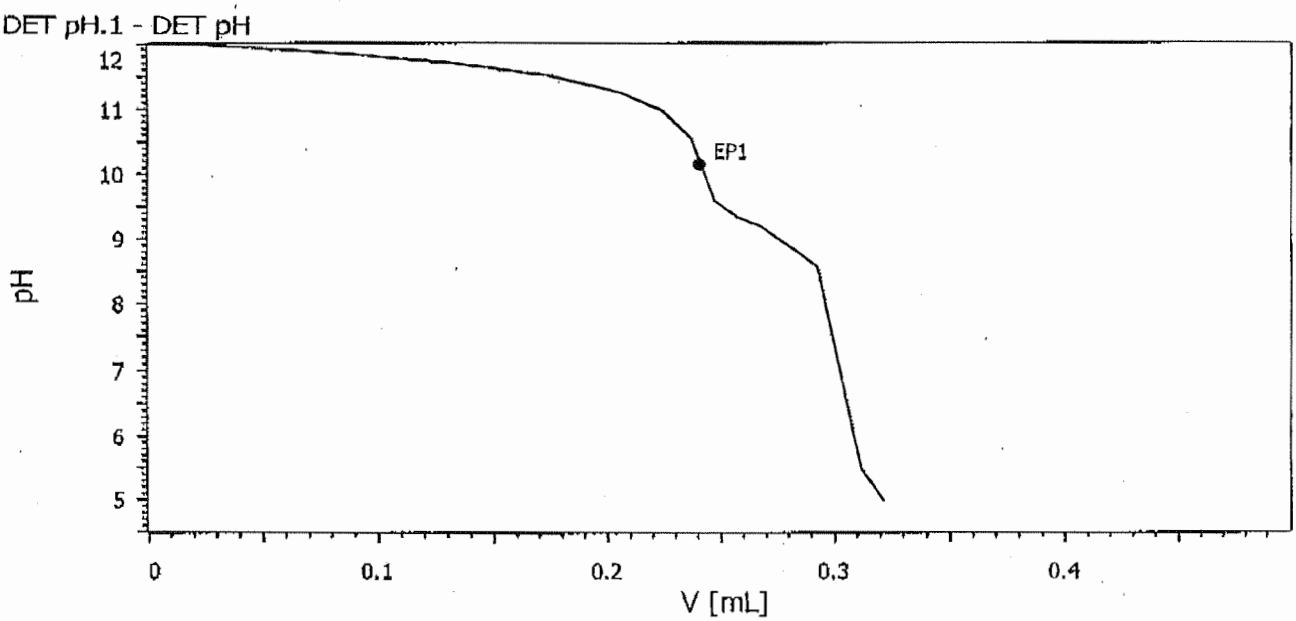
DET pH **DET pH.1**

EP1 . . . . . 10.158 pH . . . . . 0.2407 mL

Results

OH	16379.53	ppm
Molarity of Titrant	0.2001	mol/L
Temperature	20.0	°C
Detection Limit	553.35	ppm

DET pH.1 - DET pH



tiamo™ titration and more

Metrohm

06/13/2013 14:23 15093721142 2225/BC PAGE 06/24

06/13/2013 THU 15:01 [TX/RX NO 5335] 007

Program version tiamo 1.1 - 36

User Ind 2013-06-13 9:30:43 AM UTC-

Results report

Sample data

Sample ID . . . . . JOB BLK

Sample size,mL 3.0

Determination

Method . . . . . OH Blank

Determination start 2013-06-13 09:29:59 UTC-7

User (full name) . . . . . Liem Dinh

User (short name) . . . . . Ind

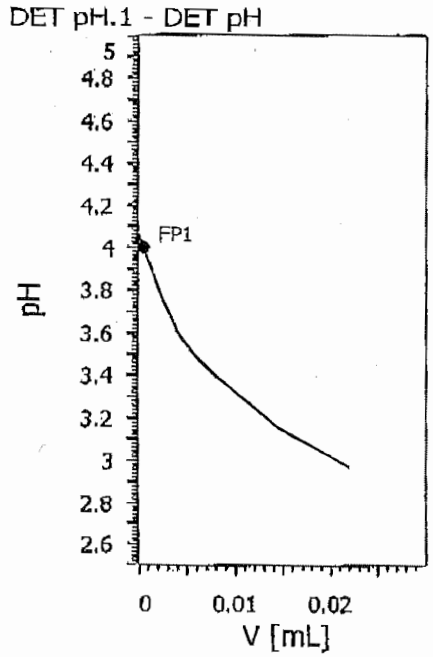
End points

DET pH — DET pH.1

FP1	4.000	pH	0.0005	mL
FP2	invalid	pH	invalid	mL
FP3	invalid	pH	invalid	mL

Results

OH	<9.2225	ppm
Molarity of Titrant	0.2001	mol/L
Temperature	20.4	°C



tiamo™ titration and more
Metrohm
PAGE 07/24
06/13/2013 14:23 15093721142
2225/80
184 of 219

06/13/2013 THU 15:01 [TX/RX NO 5335] 008

Program version tiamo 1.1 - 36

User Ind 2013-06-13 9:37:16 AM UTC-

Results report

Sample data

Sample ID **S13T006565**
Sample size, mL 0.1

Determination

Method . . . . . OH Sample
Determination start 2013-06-13 09:33:20 UTC-7
User (full name) . . . . . Liem Dinh
User (short name) . . . . . Ind

End points

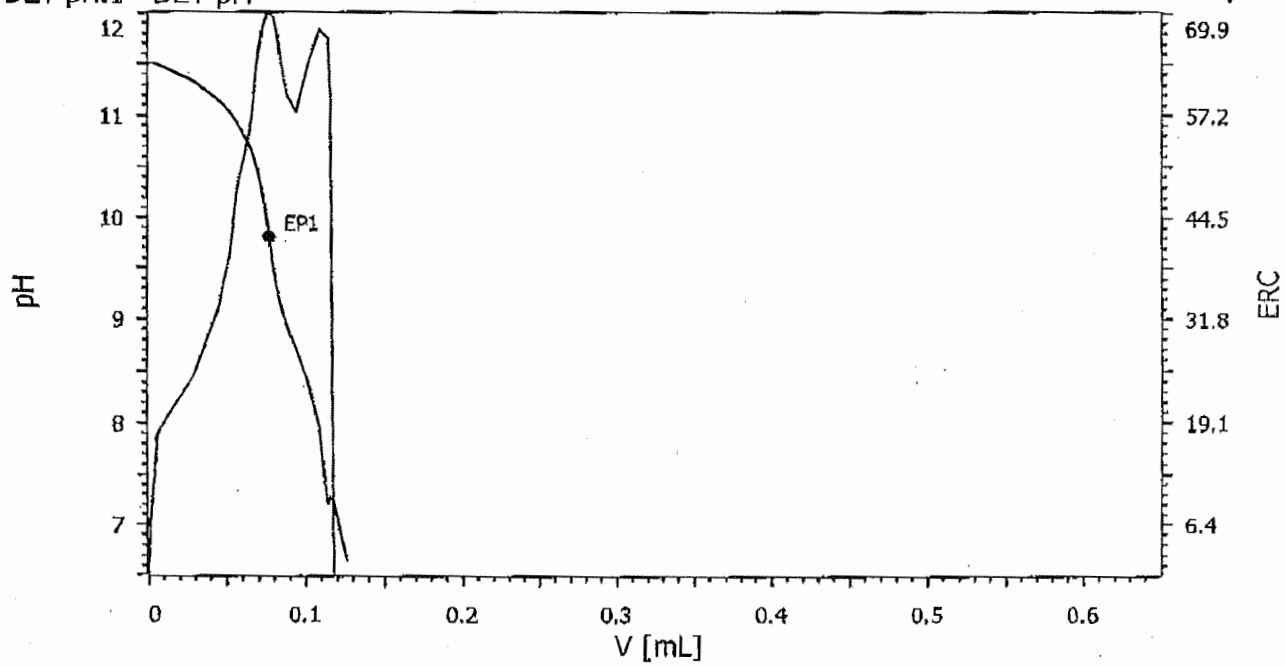
DET pH **DET pH.1**
EP1 . . . . . 9.811 pH . . . . . 0.0768 mL

Results

OH . . . . . 2613.36 ppm
Molarity of Titrant . . . . . 0.2001 mol/L
Temperature . . . . . 20.6 °C
Detection Limit . . . . . 276.68 ppm

DATA NOT USED
6/17/13

DET pH.1 - DET pH



06/13/2013 THU 15:01 [TX/RX NO 5335] 009

Program version tiamo 1.1 - 36

User Ind 2013-06-13 9:43:58 AM UTC-

Results report

Sample data

Sample ID **S13T006565**
Sample size, mL 0.25

Determination

Method . . . . . OH Sample
Determination start 2013-06-13 09:38:19 UTC-7
User (full name) . . . . . Liem Dinh
User (short name) . . . . . Ind

End points

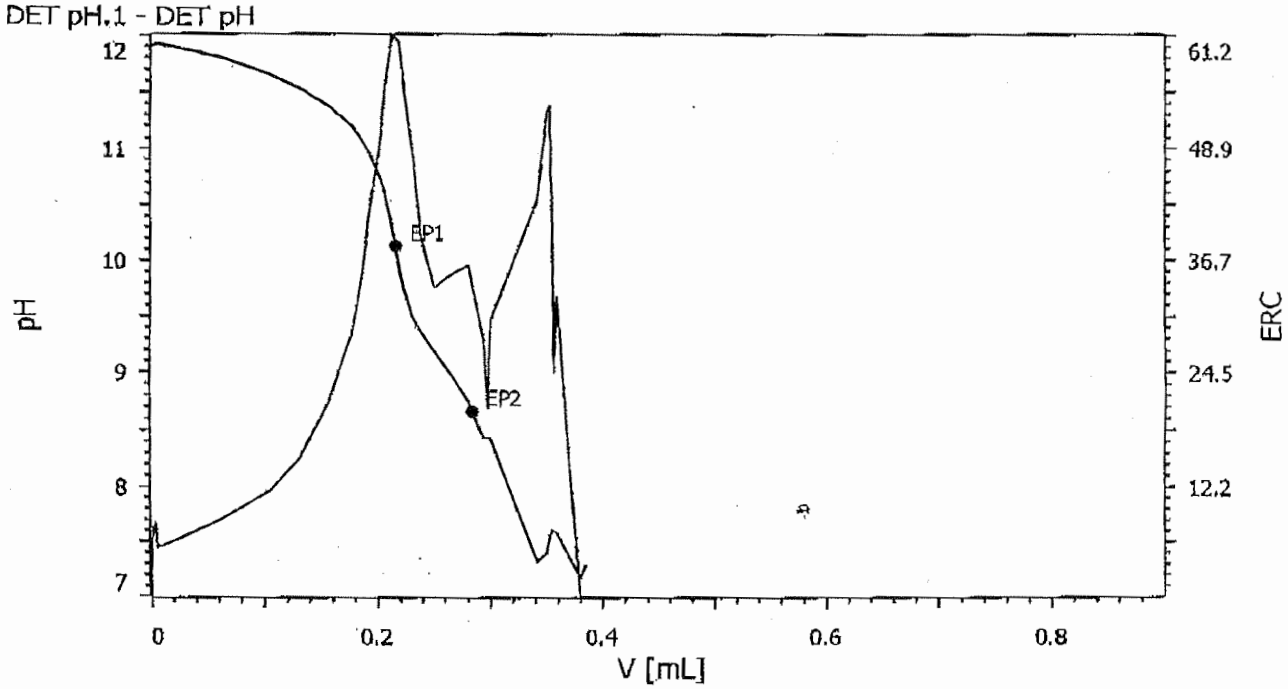
DET pH **DET pH.1**

EP1	10.127	pH	0.2155	mL
EP2	8.655	pH	0.2842	mL

Results

OH	2933.44	ppm
Molarity of Titrant	0.2001	mol/L
Temperature	20.6	°C
Detection Limit	110.67	ppm

DET pH.1 - DET pH



tiamo™ titration and more

Metrohm

06/13/2013 14:23 15093/21142 2225/BC PAGE 09/24

06/13/2013 THU 15:01 [TX/RX NO 5335] 010

Program version tiamo 1.1 - 36

User Ind 2013-06-13 9:53:27 AM UTC-

Results report

Sample data

Sample ID . . . . . **S13T006565 DUP**
Sample size, mL 0.25

Determination

Method . . . . . OH Sample
Determination start 2013-06-13 09:45:31 UTC-7
User (full name) . . . . . Liem Dinh
User (short name) . . . . . Ind

End points

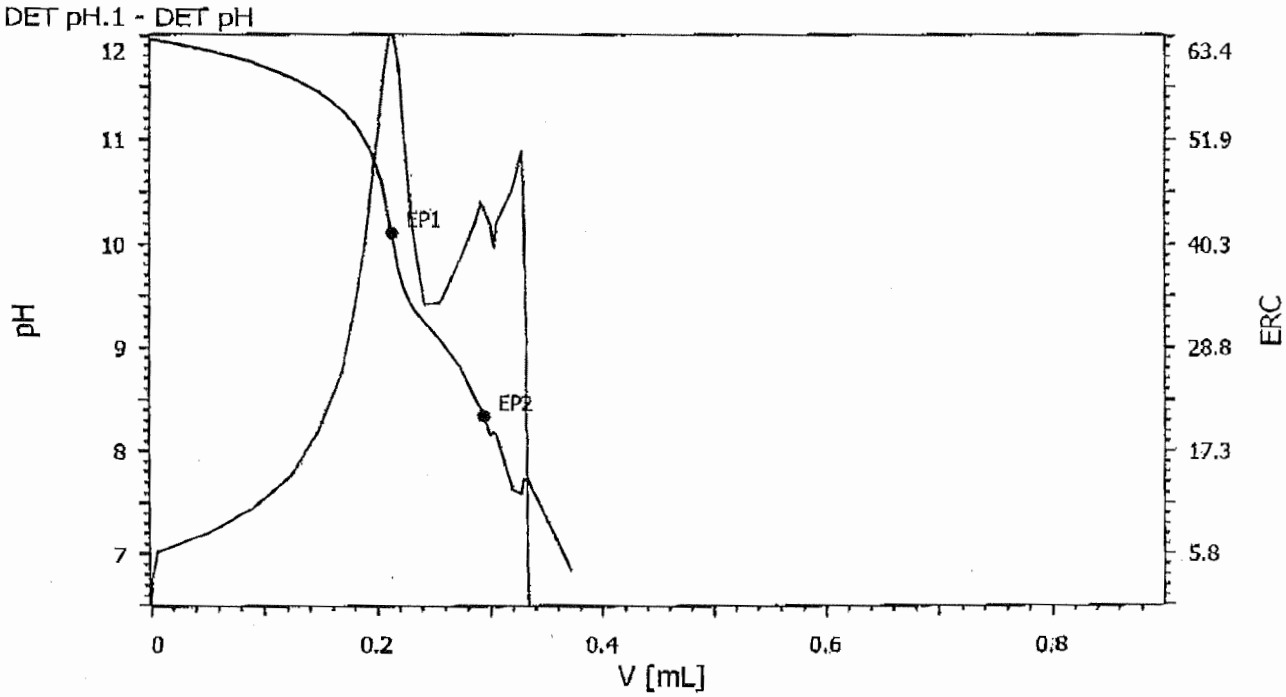
DET pH **DET pH.1**

EP1 . . . . . 10.111 pH . . . . . 0.2131 mL
EP2 . . . . . 8.336 pH . . . . . 0.2943 mL

Results

OH . . . . . 2901.02 ppm
Molarity of Titrant . . . . . 0.2001 mol/L
Temperature . . . . . 20.4 °C
Detection Limit . . . . . 110.67 ppm

DET pH.1 - DET pH



06/13/2013 THU 15:01 [TX/RX NO 5335] 011

Program version tiamo 1.1 - 36

User Ind 2013-06-13 10:01:56 AM

Results report

Sample data

Sample ID . . . . . S13T006565 SPK

Sample size, mL 0.25

Standard Number 76N15A

Standard Value 17450

Volume Spk used 0.05

Determination

Method . . . . . OH SPK

Determination start 2013-06-13 09:55:19 UTC-7

User (full name) . . . . . Liem Dinh

User (short name) . . . . . Ind

End points

DET pH **DET pH.1**

EP1 . . . . . 10.295 pH . . . . . 0.4483 mL

EP2 . . . . . 8.185 pH . . . . . 0.6005 mL

Results

OH . . . . . 6102.54 ppm

Molarity of Titrant . . . . . 0.2001 mol/L

Temperature . . . . . 21.2 °C

Detection Limit . . . . . 110.67 ppm

KNOWN: $\frac{0.05\,mL \times 1.026\,M}{0.2001\,M} = 0.2564\,mL$

$\frac{0.4483\,mL - 0.2155\,mL}{0.2564\,mL} \times 100 = 90.80\,\%\ Rec$

6/17/13

Calc ok OK

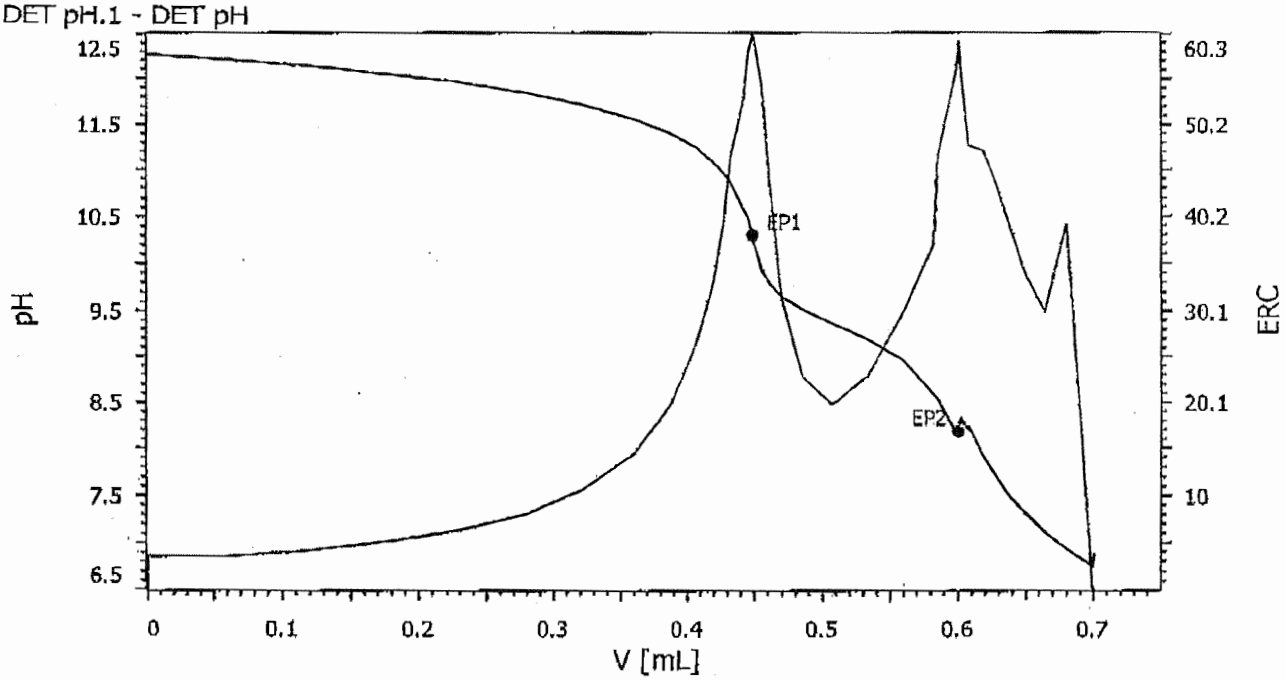
6/18/13

06/13/2013 THU 15:01 [TX/RX NO 5335] 012

Program version tiamo 1.1 - 36

User Ind 2013-06-13 10:01:56 AM

DET pH.1 - DET pH



tiamo™ titration and more

Metrohm

06/13/2013 14:23 15093/21142 22/25/BC PAGE 12/24

Program version tiamo 1.1 - 36

User Ind 2013-06-13 10:09:02 AM

Results report

Sample data

Sample ID **S13T006577**
Sample size, mL 0.25

Determination

Method . . . . . OH Sample
Determination start 2013-06-13 10:03:25 UTC-7
User (full name) . . . . . Liem Dinh
User (short name) . . . . . Ind

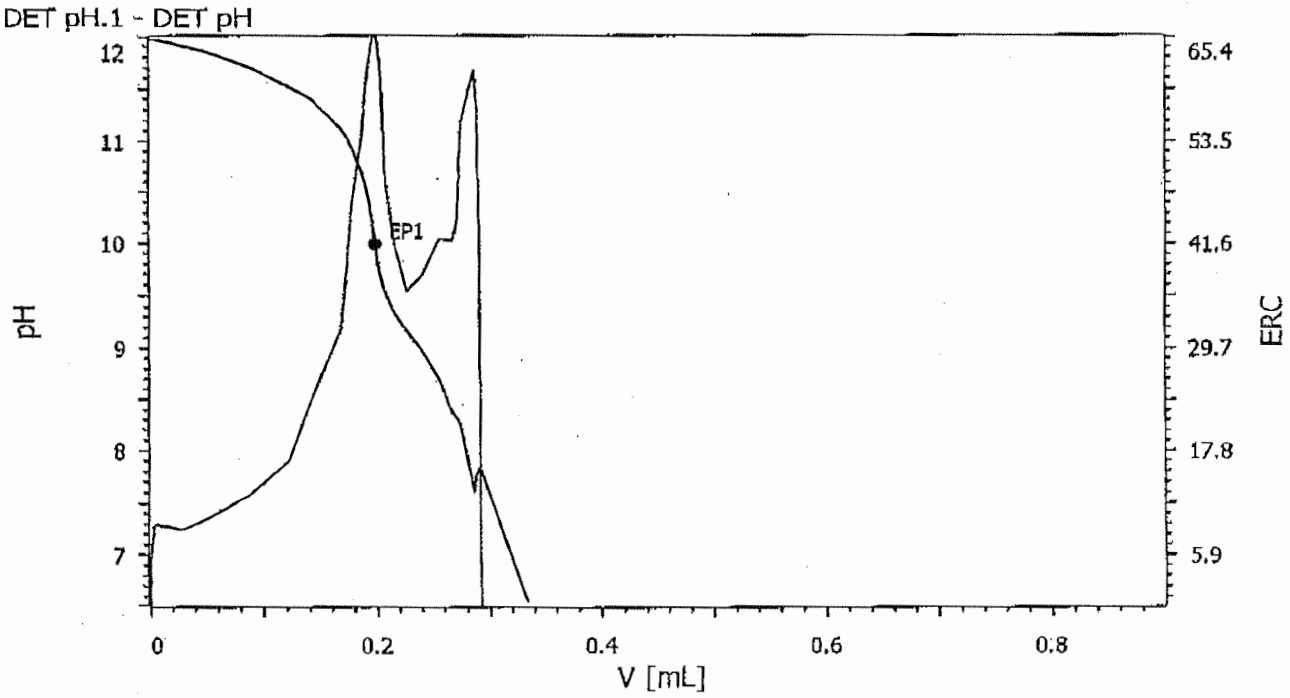
End points

DET pH **DET pH.1**
EP1 . . . . . 9.992 pH . . . . . 0.1984 mL

Results

OH . . . . . 2701.06 ppm
Molarity of Titrant . . . . . 0.2001 mol/L
Temperature . . . . . 19.9 °C
Detection Limit . . . . . 110.67 ppm

DET pH.1 - DET pH



06/13/2013 THU 15:01 [TX/RX NO 5335] 014

Program version tiamo 1.1 - 36

User Ind 2013-06-13 10:17:31 AM

Results report

Sample data

Sample ID **S13T006587**
Sample size, mL 0.25

Determination

Method . . . . . OH Sample
Determination start 2013-06-13 10:10:18 UTC-7
User (full name) . . . . . Liem Dinh
User (short name) . . . . . Ind

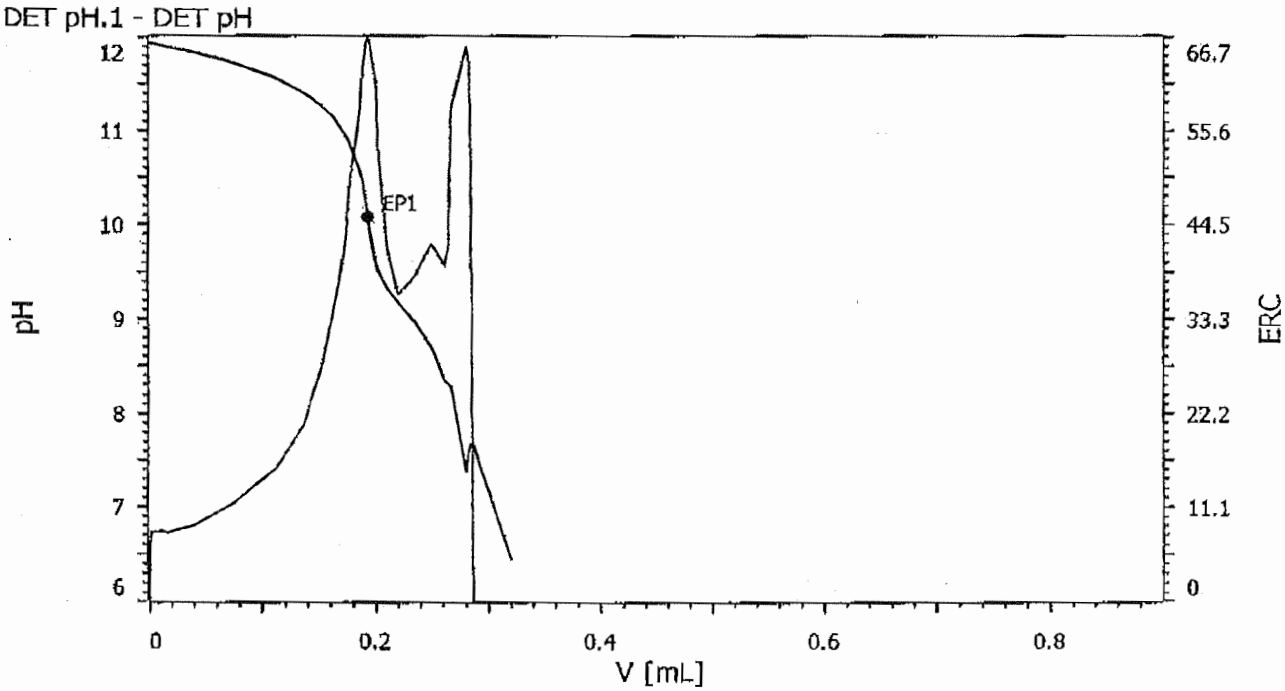
End points

DET pH **DET pH.1**
EP1 . . . . . 10.080 pH . . . . . 0.1930 mL

Results

OH . . . . . 2627.88 ppm
Molarity of Titrant . . . . . 0.2001 mol/L
Temperature . . . . . 20.3 °C
Detection Limit . . . . . 110.67 ppm

DET pH.1 - DET pH



tiamo™ titration and more

Metrohm

06/13/2013 14:23 15093721142 2225/8C PAGE 14/24

Program version tiamo 1.1 - 36

User Ind 2013-06-13 10:24:06 AM

Results report

Sample data

Sample ID **S13T006597**
Sample size, mL 0.25

Determination

Method . . . . . OH Sample
Determination start 2013-06-13 10:19:03 UTC-7
User (full name) . . . . . Liem Dinh
User (short name) . . . . . Ind

End points

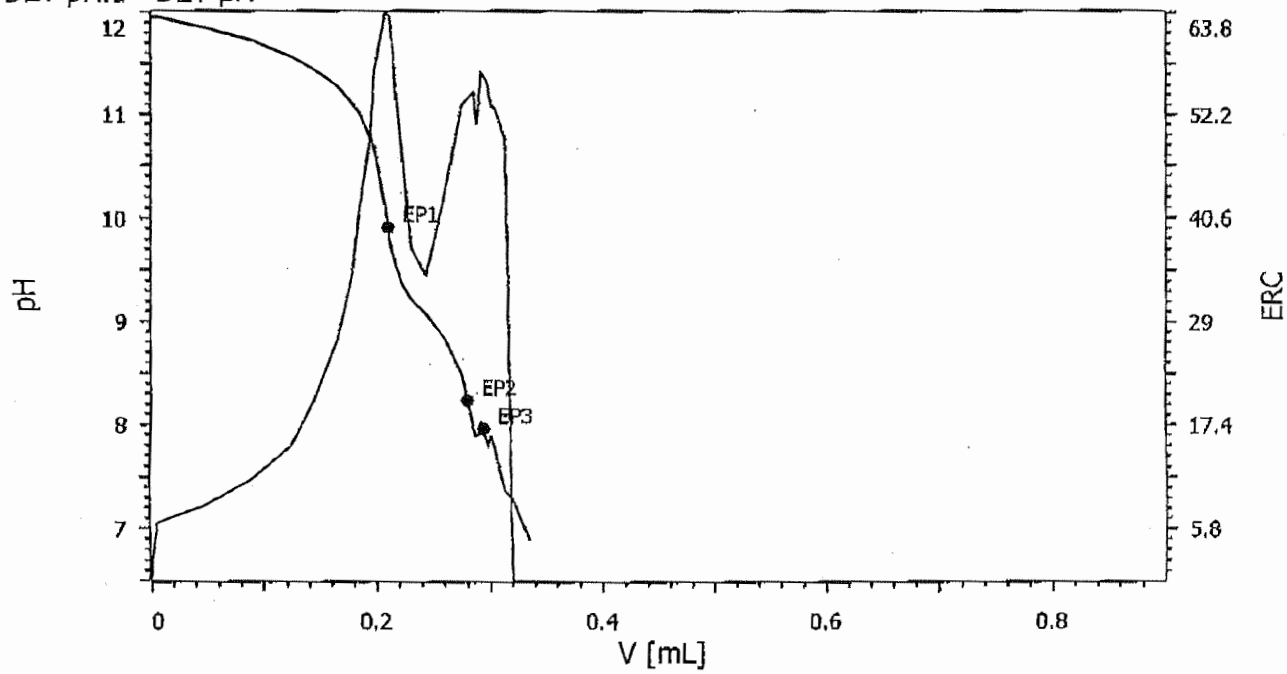
DET pH **DET pH.1**

EP1	9.906	pH	0.2098	mL
EP2	8.233	pH	0.2796	mL
EP3	7.961	pH	0.2935	mL

Results

OH	2855.34	ppm
Molarity of Titrant	0.2001	mol/L
Temperature	20.5	°C
Detection Limit	110.67	ppm

DET pH.1 - DET pH



Program version tiamo 1.1 - 36

User Ind 2013-06-13 10:39:12 AM

Results report

Sample data

Sample ID **S13T006615**
Sample size, mL 0.25

Determination

Method . . . . . OH Sample
Determination start 2013-06-13 10:31:41 UTC-7
User (full name) . . . . . Liem Dinh
User (short name) . . . . . Ind

End points

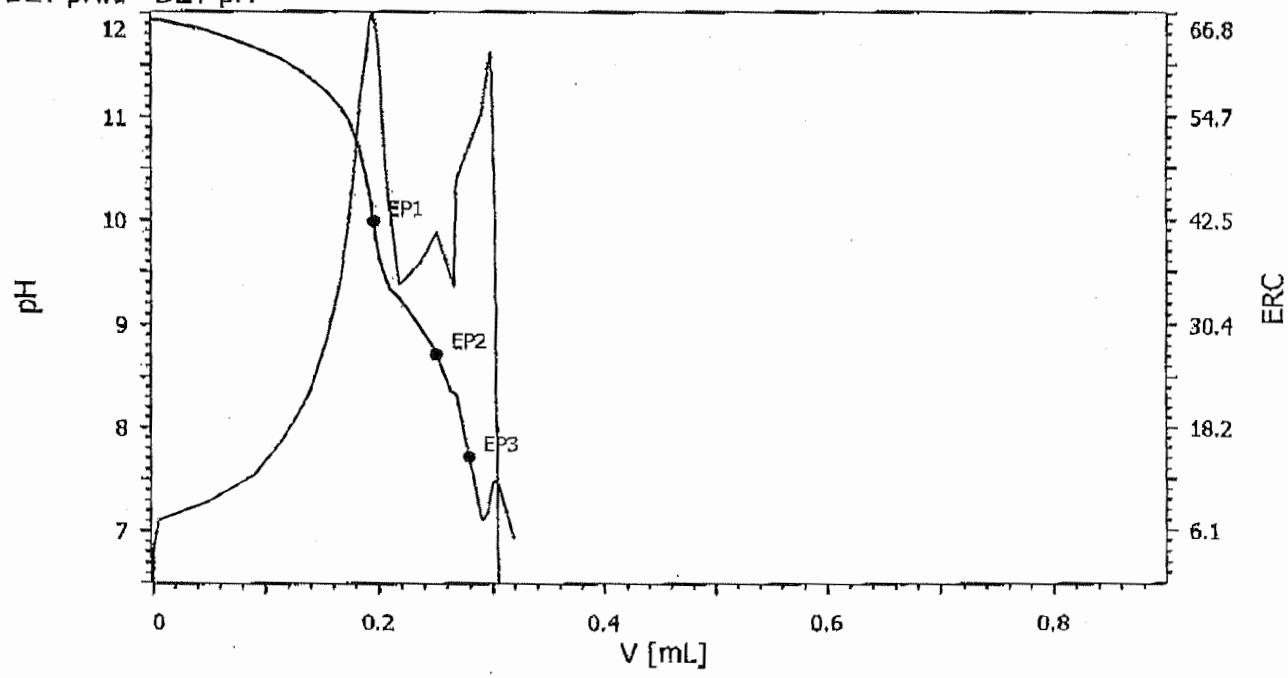
DET pH **DET pH.1**

EP1	9.979	pH	0.1957	mL
EP2	8.713	pH	0.2511	mL
EP3	7.710	pH	0.2795	mL

Results

OH	2664.41	ppm
Molarity of Titrant	0.2001	mol/L
Temperature	20.6	°C
Detection Limit	110.67	ppm

DET pH.1 - DET pH



06/13/2013 THU 15:01 [TX/RX NO 5335] 017

Program version tiamo 1.1 - 36

User Ind 2013-06-13 10:44:36 AM

Results report

Sample data

Sample ID **S13T006606**
Sample size, mL 0.25

Determination

Method . . . . . OH Sample
Determination start 2013-06-13 10:40:13 UTC-7
User (full name) . . . . . Liem Dinh
User (short name) . . . . . Ind

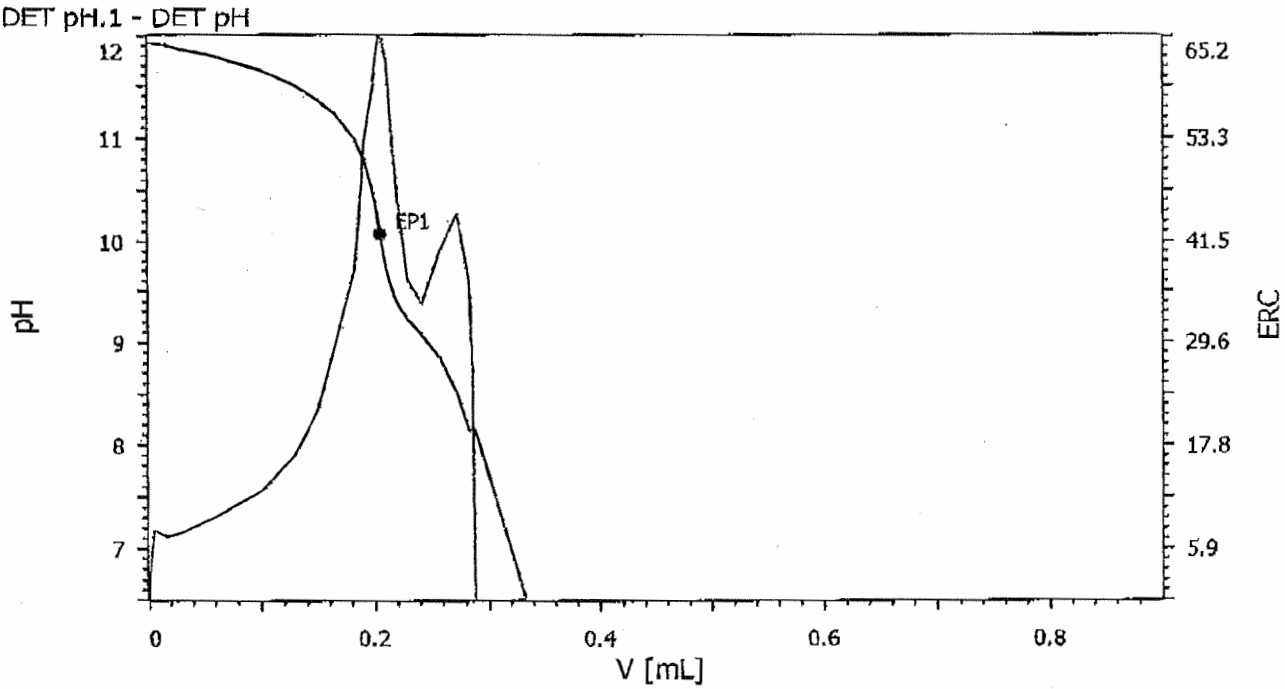
End points

DET pH **DET pH.1**
EP1 . . . . . 10.073 pH . . . . . 0.2050 mL

Results

OH . . . . . 2791.15 ppm
Molarity of Titrant . . . . . 0.2001 mol/L
Temperature . . . . . 21.0 °C
Detection Limit . . . . . 110.67 ppm

DET pH.1 - DET pH



tiamo™ titration and more

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06/13/2013 14:23 15093721142 22.25/BC PAGE 17/24

Program version tiamo 1.1 - 36

User Ind 2013-06-13 10:51:54 AM

Results report

Sample data

Sample ID **S13T006624**
Sample size, mL 0.25

Determination

Method . . . . . OH Sample
Determination start 2013-06-13 10:46:35 UTC-7
User (full name) . . . . . Liem Dinh
User (short name) . . . . . Ind

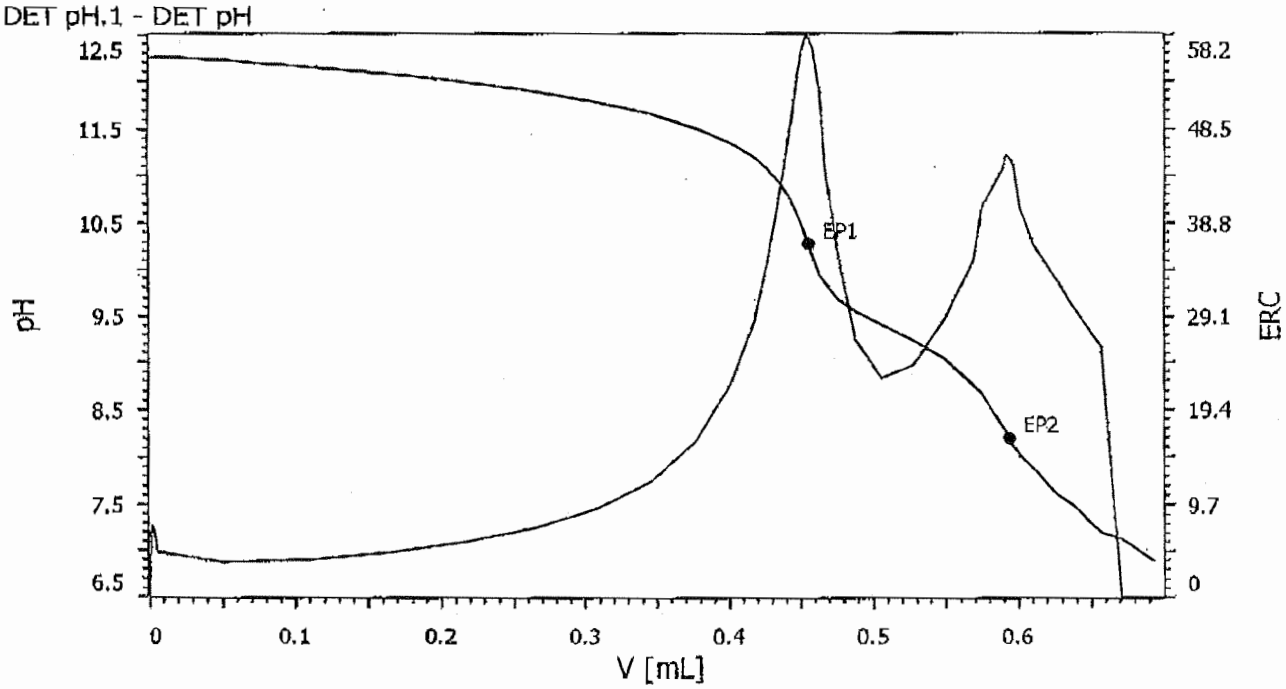
End points

DET pH **DET pH.1**

EP1 . . . . . 10.278 pH . . . . . 0.4554 mL
EP2 . . . . . 8.198 pH . . . . . 0.5935 mL

Results

OH . . . . . 6199.21 ppm
Molarity of Titrant . . . . . 0.2001 mol/L
Temperature . . . . . 20.5 °C
Detection Limit . . . . . 110.67 ppm



Program version tiamo 1.1 - 36

User Ind 2013-06-13 10:55:00 AM

Results report

Sample data

Sample ID . . . . . **CCV**
Sample size, mL 0.05
Standard Number 76N15A
Standard Value 17450

Determination

Method . . . . . OH Std
Determination start 2013-06-13 10:52:56 UTC-7
User (full name) . . . . . Liem Dinh
User (short name) . . . . . Ind

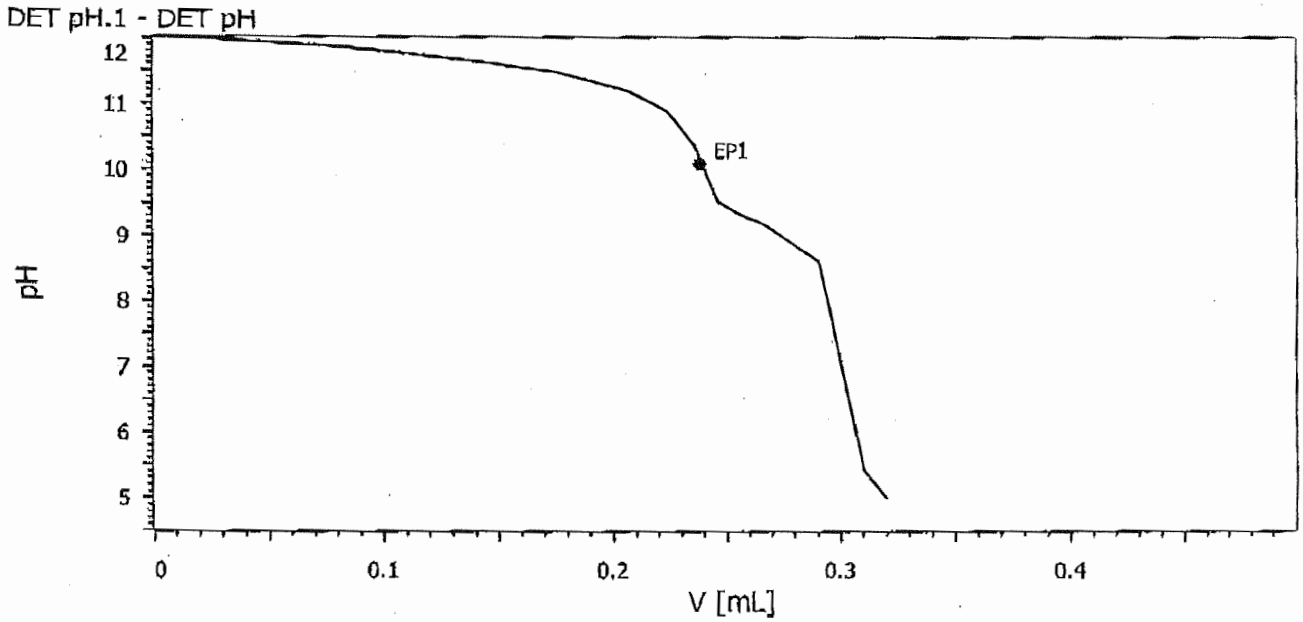
End points

DET pH **DET pH.1**
EP1 . . . . . 10.084 pH . . . . . 0.2384 mL

Results

OH . . . . . 16228.68 ppm
Molarity of Titrant . . . . . 0.2001 mol/L
Temperature . . . . . 20.6 °C
Detection Limit . . . . . 553.35 ppm

DET pH.1 - DET pH



Program version tiamo 1.1 - 36

User Ind 2013-06-13 10:57:04 AM

Results report

Sample data

Sample ID . . . . . CCB
Sample size,mL 3.0

Determination

Method . . . . . OH Blank
Determination start 2013-06-13 10:55:58 UTC-7
User (full name) . . . . . Liem Dinh
User (short name) . . . . . ind

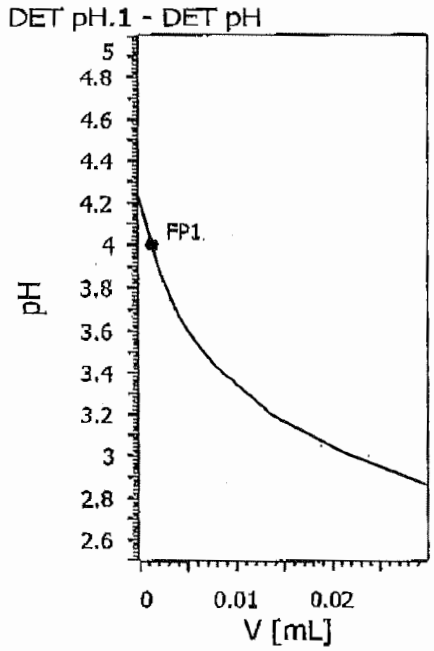
End points

DET pH DET pH.1

FP1	4.000	pH	0.0013	mL
FP2	invalid	pH	invalid	mL
FP3	invalid	pH	invalid	mL

Results

OH	<9.2225	ppm
Molarity of Titrant	0.2001	mol/L
Temperature	20.5	°C



ATL	pH / OH DATA REVIEW CHECKLIST

Worklist/Project Information: 41786 / AY101 CC 8

Analysis Date: 6/18/13 Instrument ID: ○ pH02 ☒ Titrator1

☒ LA-211-102 Rev J-0-A (*) ○ LA-211-105 Rev _____ (*)
○ LA-212-105 Rev _____ (*) ○ LA-212-106 Rev _____ (*)

Review Items	Yes	No	N/A	2nd Review	Comments/Samples Affected (give review item letter and number)
A. Calibration, Instrument Run QC					
1. Were the standards and reagents unexpired?	X			✓	
2. Instrument calibrated per procedure and calibration slope acceptable? *OH/Caustic ratio 94% to 102%, pH 95% to 105%*	X			✓	
3. Calibration buffers measured as samples and within limits? *±0.05 pH units of the true value or ±0.1 pH units if >pH 12 or <2 was used.*			X	✓	
4. Were ICV/CCV/LCS analyzed at appropriate frequency and were recoveries within control limits? ☐ OH: 80% to 120% Rec, ☐ Caustic ratio: ±0.05 pH units, ☐pH Limits: ±0.1 pH units, ☒ Client-Specified 90-110	X			✓	
5. Were ICB/CCB analyzed at appropriate frequency and were results < EQL?	X			✓	
B. Sample Results					
1. Were all results within calibration range?			X	✓	
2. Are all reported results bracketed by in control QC?	X			✓	
C. Matrix QC					
1. Was a DUP run at required frequency and within control limits? % RPD: ☐ <20% ☒ Client-Specified ≤5	X			✓	
2. Was an MS run at required frequency and within control limits? Recovery: ☐ 75-125% ☒ Client-Specified 75-125	X			✓	
D. Other					
1. Are all nonconformances documented appropriately?			X	✓	
2. Is current MDL/EQL data on file?	X			✓	
3. Correct titrant concentration on forms?	X			✓	
4. Were calculations checked for errors?	X			✓	
5. Were transcriptions and data upload checked for errors?	X			✓	
6. Were all client/project specific requirements met?	X			✓	
7. Was the date/time of analysis verified as correct?	X			✓	

1st Level Data Reviewer (sign): [signature] Date: 6/19/13 2nd Level Data Reviewer (sign): [signature] Date: 6/20/13

(*) *This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.*

PC REVIEW: ~~198 of 219~~ [signature] 6/24/13

LABCORE Completed Batch Report for Batch# 00041786

Analyst: Casey, Adam

Book#: 76N15A

Instrument: Titrator-1

Method: OH, LA-211-102 Rev/Mod J-0-A

Specification: AY101 CC8

Prep Batch: N/A

Batch Comment: NONE

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1306180078		0	0		Hydroxide	LIQUID	17450	1.6755E+04			553.35	ug/mL	96.016	% Recovery	
Sample Sequence 2																	
2	BLNK	S1306180079		0	0		Hydroxide	LIQUID		<9.2225E+00			9.2225	ug/mL			
Sample Sequence 3																	
3	SAMPLE	S13T006633		0	1		Hydroxide	LIQUID	N/A	8.8743E+03			110.67	ug/mL			
Sample Sequence 4																	
4	DUP	S1306180080	S13T006633	0	0		Hydroxide	LIQUID	8.8743E+03	8.7986E+03			110.67	ug/mL	0.85713	% RPD	
Sample Sequence 5																	
5	SPK	S1306180081	S13T006633	0	0		Hydroxide	LIQUID	3490.8725	1.1996E+04			110.67	ug/mL	89.43	% Recovery	
Sample Sequence 6																	
6	SAMPLE	S13T006642		0	1		Hydroxide	LIQUID	N/A	7.3550E+03			110.67	ug/mL			
Sample Sequence 7																	
7	SAMPLE	S13T006665		0	0		Hydroxide	LIQUID	N/A	6.8971E+03			110.67	ug/mL			
Sample Sequence 8																	
8	CCV	S1306180084		0	0		Hydroxide	LIQUID	17450	1.6879E+04			553.35	ug/mL	96.728	% Recovery	
Sample Sequence 9																	
9	CCB	S1306180085		0	0		Hydroxide	LIQUID		<9.2225E+00			9.2225	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041786

Final Page for Batch# 00041786

6/19/13

Reviewer Signature Date

2nd Review 6/20/13

LABCORE Completed Batch Report for Batch# 00041786

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1306180078	STD			OH		
2	S1306180079	BLNK			OH		
3	S13T006633	SAMPLE		20130628	OH	1AY-13-08	AY101 CC8
4	S1306180080	DUP	S13T006633		OH		
5	S1306180081	SPK	S13T006633		OH		
6	S13T006642	SAMPLE		20130628	OH	1AY-13-09	AY101 CC8
7	S13T006665	SAMPLE		20130628	OH	1AY-13-10	AY101 CC8
8	S1306180084	CCV			OH		
9	S1306180085	CCB			OH		

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

6/18/2013 3:10:47PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041786

Analyst: Casey, Adam

Standard ID / Book#: See benchsheet

Instrument: Titrator-1

Method: OH, LA-211-102 Rev/Mod J-0-A

Prep Batch: N/A

Batch Comment: N/A

CACN:3A.22

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1306180078	0		LIQUID		
	Analytes Requested:	Hydroxide					
2	BLNK	S1306180079	0		LIQUID		
	Analytes Requested:	Hydroxide					
3	SAMPLE	S13T006633	1		LIQUID	20130628	AY101 CC8
	Analytes Requested:	Hydroxide					
4	DUP	S1306180080	0		LIQUID		
	Analytes Requested:	Hydroxide					
5	SPK	S1306180081	0		LIQUID		
	Analytes Requested:	Hydroxide					
6	SAMPLE	S13T006642	1		LIQUID	20130628	AY101 CC8
	Analytes Requested:	Hydroxide					
7	SAMPLE	S13T006665	0		LIQUID	20130628	AY101 CC8
	Analytes Requested:	Hydroxide					
8	CCV	S1306180084	0		LIQUID		
	Analytes Requested:	Hydroxide					
9	CCB	S1306180085	0		LIQUID		
	Analytes Requested:	Hydroxide					

Final Page for Batch# 00041786

Adam Casey 06-18-13
Analyst Signature **Date**

Adam Casey 06-18-13
Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	DETERMINATION OF FREE OH⁻ / H⁺

(●) LA-211-102 Rev 0-0A (OH⁻) ( ) LA-211-102 Rev _____ (H⁺) ( ) LA-211-105 Rev _____

Project: AY101 CC8

Batch #: 41786 Analyst: [illegible]

Date/Time Start: 06-18-13 / 09:44 Date/Time End: 06-18-13 / 14:00

Standard	Id or Lot #	Pipette #	Exp. Date
pH 4 Buffer	N/A	N/A	N/A
pH 7 Buffer	2095	N/A	04-30-14
pH 10 Buffer	2184	N/A	07-31-13
BaCl2	SL017369	2	8-21-13
HVOx	N/A	N/A	N/A

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 4476811 (Range/Vol: 10-100/mL) [x]
(2) 4430821 (Range/Vol: 0.1-1.0/mL) [x]
(3) N/A (Range/Vol: N/A) [ ]
(4) N/A (Range/Vol: N/A) [ ]

Standard	Concentration	Id or Lot #	Exp. Date	Buret ID
NaOH Titrant	N/A	N/A	N/A	N/A
HNO3 Titrant	0.2001 N	62-MEB46907I	05-07-14	1809
ITS-OH	1.746×10^4	SL019283	10/17/13	
FEAL	N/A	N/A	N/A	

Slope: 96.30 (94%-102%)

Sample Number	Sample Vol. (mL)	Pipette #	Comments
~~ICV~~ STD	0.050	1	
~~ICB~~ BLK	3	N/A	
S13T006633	0.250	2	
S13T006633 DUP	0.250	2	
S13T006633 Spk	0.250	2	used 0.050 mL (1) of ITS-OH std.
S13T006664 [illegible] 06-18-13	0.250	2	
S13T006665	0.250	1	
CtCV [illegible] 06-18-13	0.050	1	
CCB	3	N/A	

[illegible] 6/18/13

Comments:

Program version tiamo 1.1 - 36
2013-06-18 9:47:16 AM UTC-

Calibration report

Determination

Method . . . . . pH 7-10 Calibration
Determination start 2013-06-18 09:44:30 UTC-7
User (full name) . . . . . Adam Casey

Results

Cal Slope . . . . . 96.30 %
Temperature . . . . . 22.7 °C

Metrohm

Program version tiamo 1.1 - 36

User acc 2013-06-18 10:06:13 AM

Results report

Sample data

Sample ID . . . . . ~~ICV~~ STD

Sample size, mL 0.050

Determination

Method . . . . . OH SAMPLE LONG

Determination start 2013-06-18 09:58:55 UTC-7

User (full name) . . . . . Adam Casey

User (short name) . . . . . acc

End points

DET pH **DET pH.1**

EP1 . . . . . 9.741 pH . . . . . 0.2462 mL

EP2 . . . . . 6.789 pH . . . . . 0.3046 mL

Results

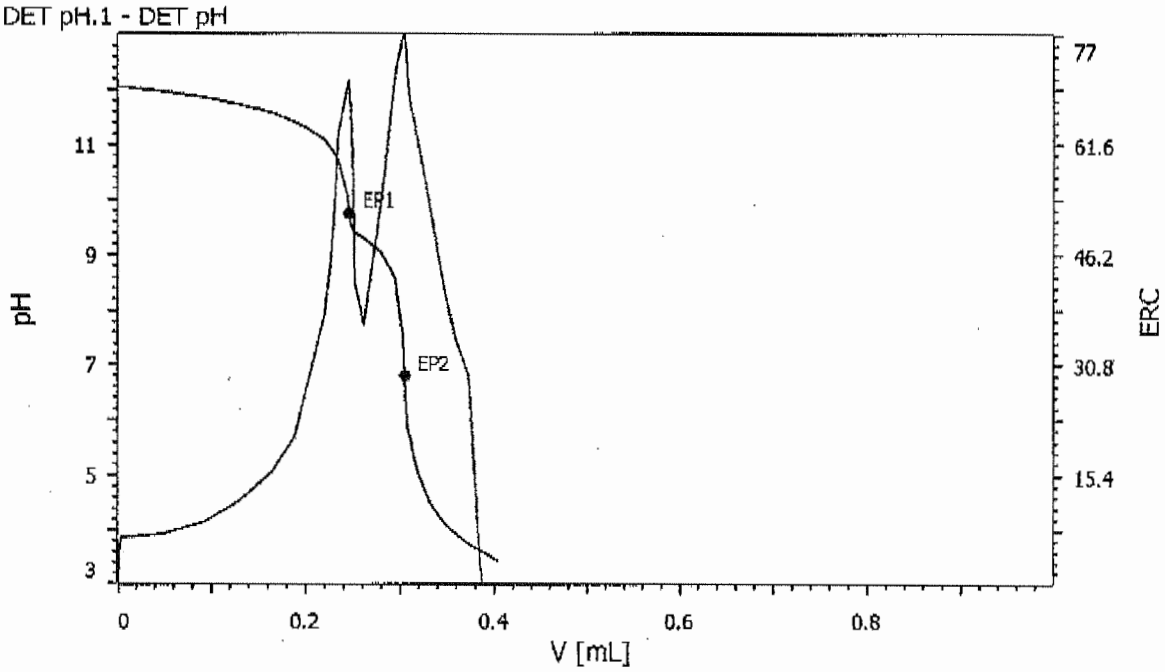
OH . . . . . 16754.73 ppm

Molarity of Titrant . . . . . 0.2001 mol/L

Temperature . . . . . 22.8 °C

Detection Limit . . . . . 553.35 ppm

DET pH.1 - DET pH



Program version tiamo 1.1 - 36

User acc 2013-06-18 10:12:24 AM

Results report

Sample data

Sample ID . . . . . ~~IGB~~ BLK

Sample size, mL 3

Determination

Method . . . . . OH SAMPLE LONG

Determination start 2013-06-18 10:11:22 UTC-7

User (full name) . . . . . Adam Casey

User (short name) . . . . . acc

End points

DET pH **DET pH.1**

Results

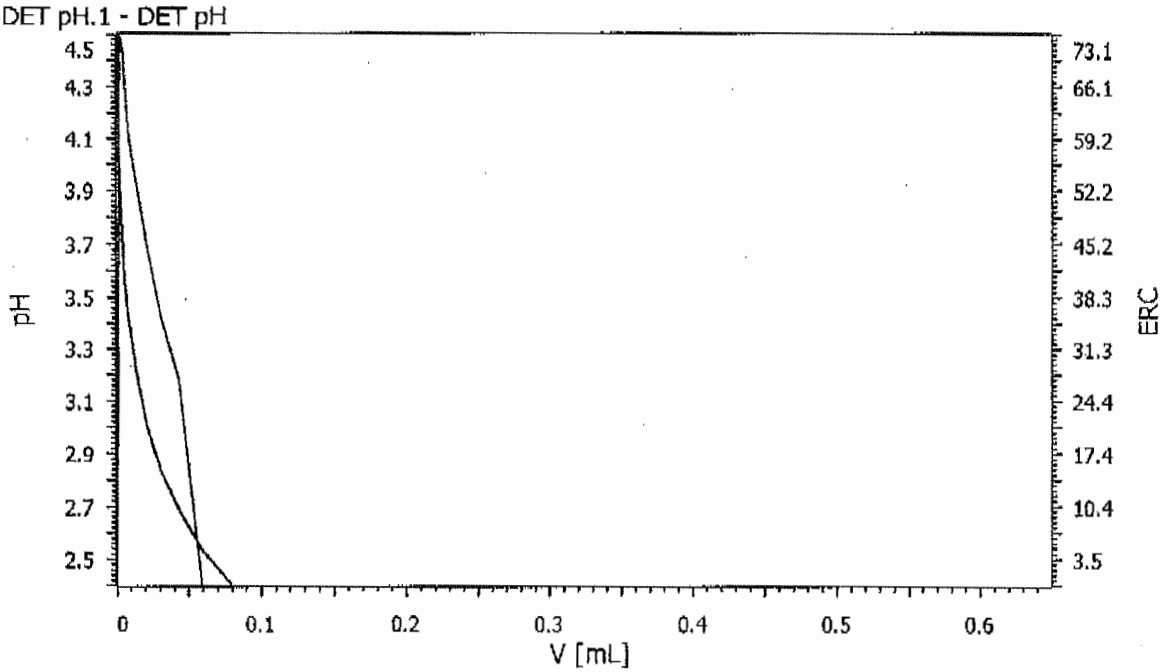
OH . . . . . invalid ppm

Molarity of Titrant . . . . . 0.2001 mol/L

Temperature . . . . . 23.0 °C

Detection Limit . . . . . 9.22 ppm

DET pH.1 - DET pH



Program version tiamo 1.1 - 36

User acc 2013-06-18 11:24:08 AM

Results report

Sample data

Sample ID **S13T006633**
Sample size, mL 0.250

Determination

Method . . . . . OH SAMPLE LONG
Determination start 2013-06-18 11:18:28 UTC-7
User (full name) . . . . . Adam Casey
User (short name) . . . . . acc

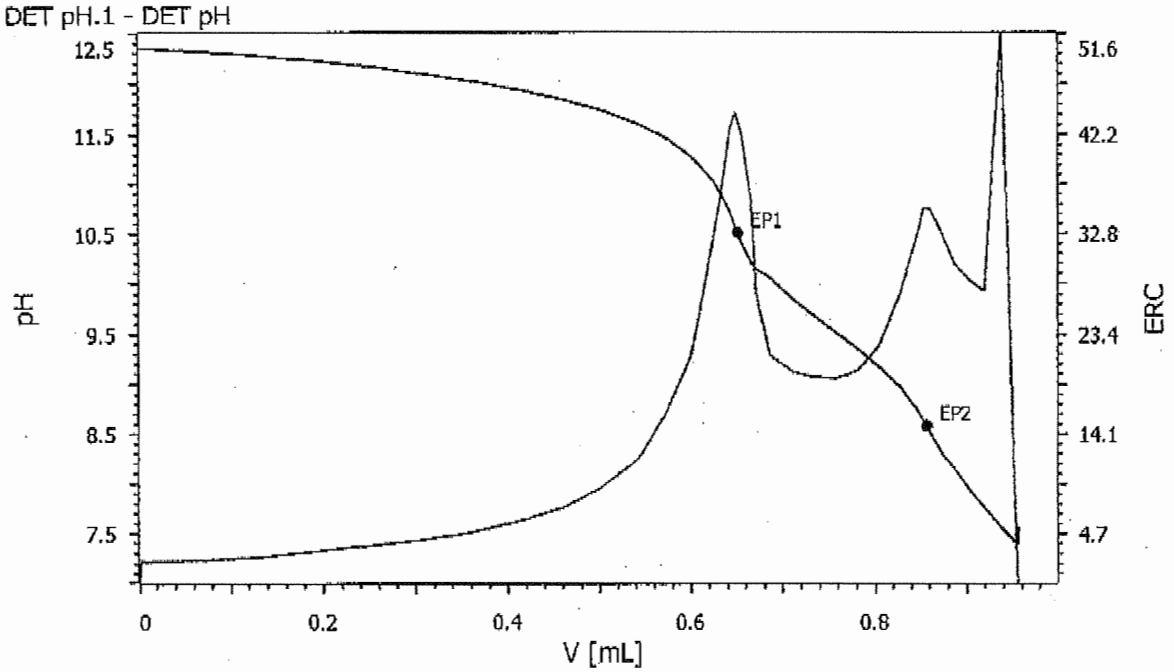
End points

DET pH **DET pH.1**

EP1	10.504	pH	0.6519	mL
EP2	8.582	pH	0.8566	mL

Results

OH	8874.29	ppm
Molarity of Titrant	0.2001	mol/L
Temperature	22.5	°C
Detection Limit	110.67	ppm



tiamo™ titration and more

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Metrohm

Program version tiamo 1.1 - 36

User acc 2013-06-18 1:21:40 PM UTC-

Results report

Sample data

Sample ID . . . . . **S13T006633 dup**
Sample size, mL 0.250

Determination

Method . . . . . OH SAMPLE LONG
Determination start 2013-06-18 13:13:25 UTC-7
User (full name) . . . . . Adam Casey
User (short name) . . . . . acc

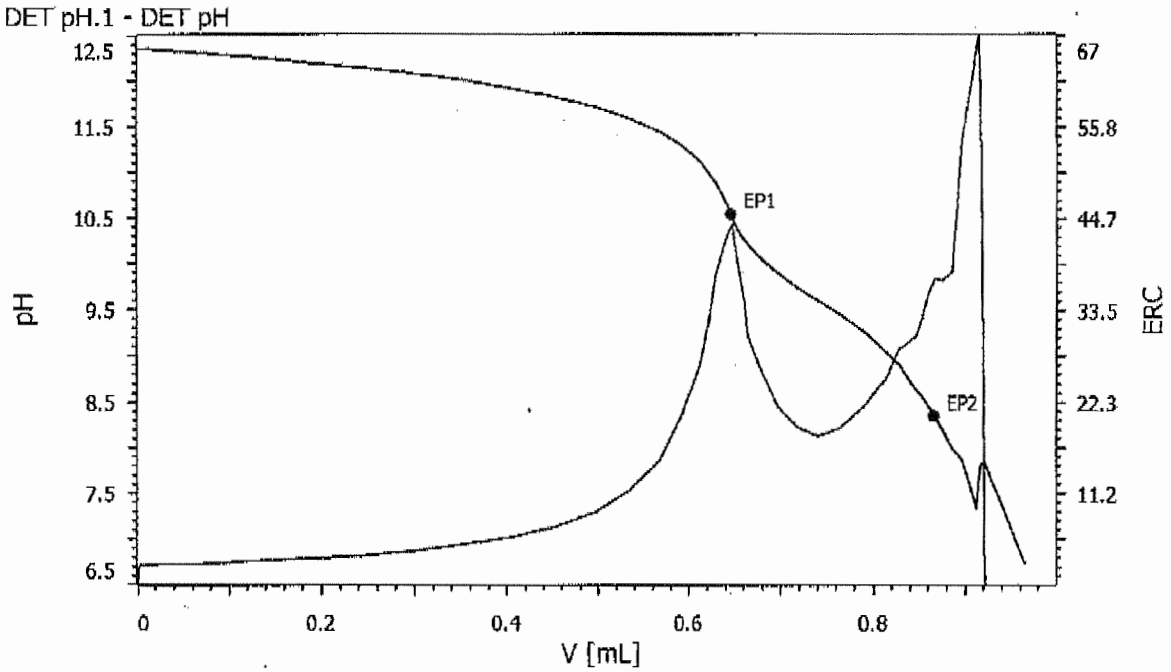
End points

DET pH **DET pH.1**

EP1 . . . . . 10.546 pH . . . . . 0.6464 mL
EP2 . . . . . 8.353 pH . . . . . 0.8654 mL

Results

OH . . . . . 8798.56 ppm
Molarity of Titrant . . . . . 0.2001 mol/L
Temperature . . . . . 22.7 °C
Detection Limit . . . . . 110.67 ppm



Program version tiamo 1.1 - 36

User acc 2013-06-18 11:39:00 AM

Results report

Sample data

Sample ID . . . . . **S13T006633 spk**
Sample size, mL 0.250

Determination

Method . . . . . OH SAMPLE LONG
Determination start 2013-06-18 11:31:12 UTC-7
User (full name) . . . . . Adam Casey
User (short name) . . . . . acc

KNOWN: $\frac{0.05mL \times 1.026gm}{0.2001gm} = 0.2564mL$ $\frac{0.8812mL - 0.6519mL}{0.2564mL} \times 100 = 89.43\%$ Rec

End points

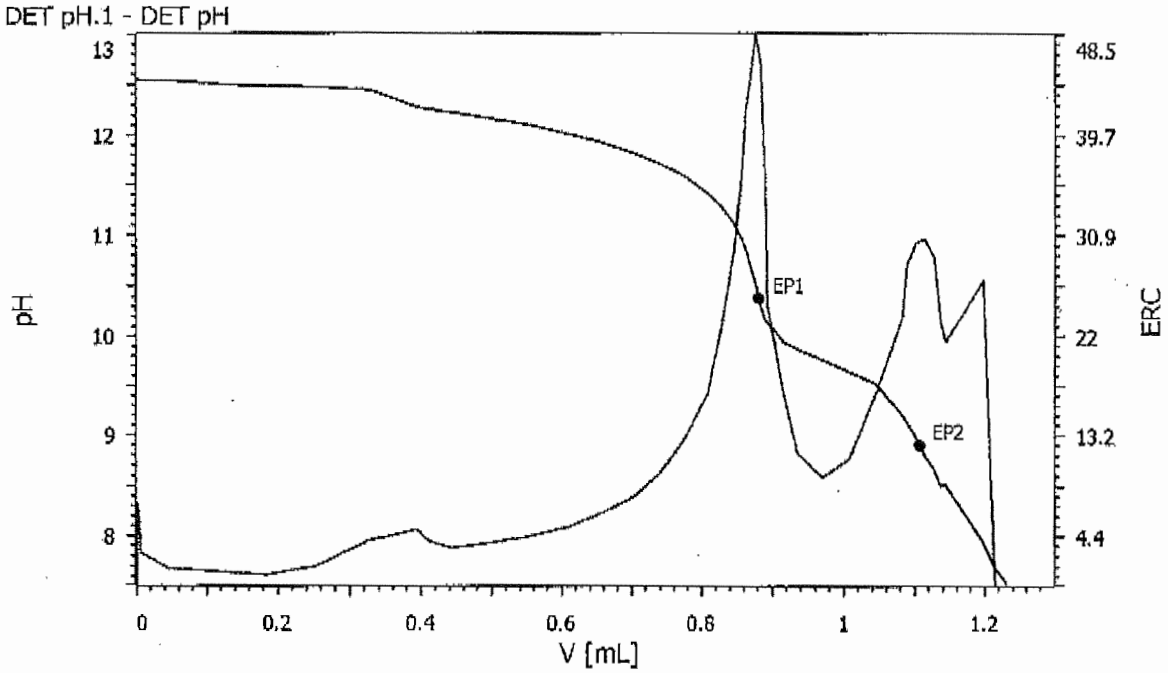
Calc. check OK 6/19/13 6/19/13

DET pH	DET pH.1				
	EP1	10.377	pH	0.8812	mL
	EP2	8.903	pH	1.1074	mL

Results

OH	11996.16	ppm
Molarity of Titrant	0.2001	mol/L
Temperature	21.7	°C
Detection Limit	110.67	ppm

DET pH.1 - DET pH



tiamo™ titration and more

Metrohm

Program version tiamo 1.1 - 36

User acc 2013-06-181:38:41 PM UTC-

Results report

Sample data

Sample ID **S13T006642**
Sample size, mL 0.250

Determination

Method . . . . . OH SAMPLE LONG
Determination start 2013-06-18 13:34:30 UTC-7
User (full name) . . . . . Adam Casey
User (short name) . . . . . acc

End points

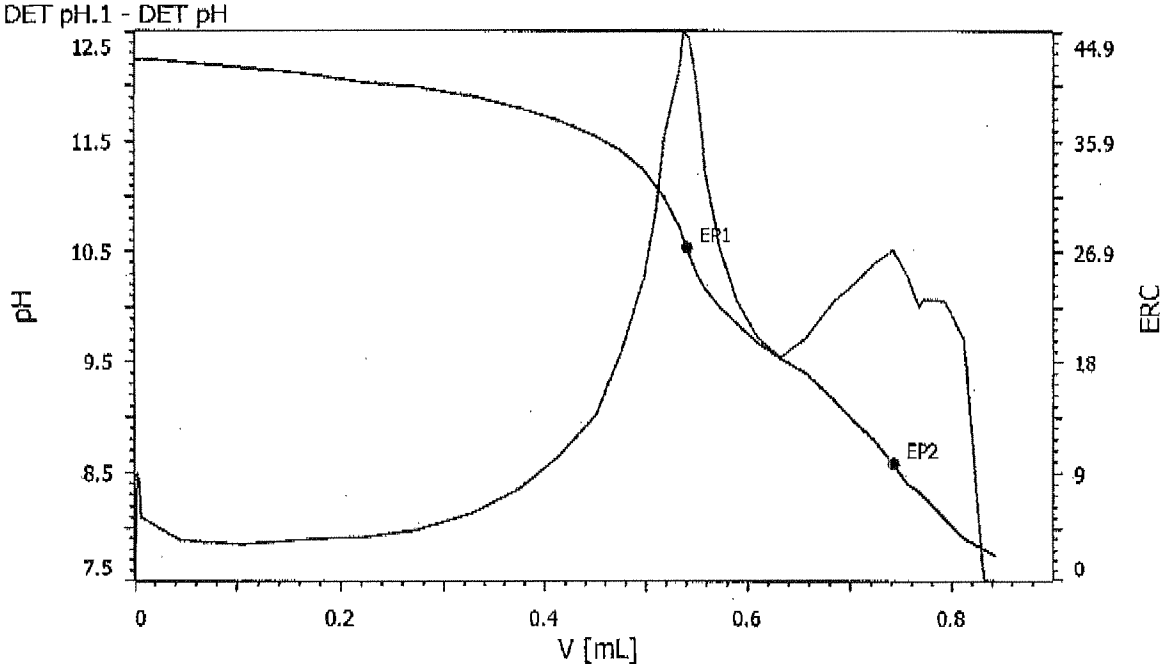
DET pH **DET pH.1**

EP1 . . . . . 10.538 pH . . . . . 0.5403 mL
EP2 . . . . . 8.578 pH . . . . . 0.7427 mL

Results

OH . . . . . 7355.03 ppm
Molarity of Titrant . . . . . 0.2001 mol/L
Temperature . . . . . 22.7 °C
Detection Limit . . . . . 110.67 ppm

DET pH.1 - DET pH



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Metrohm

Program version tiamo 1.1 - 36

User acc 2013-06-18 10:42:59 AM

Results report

Sample data

Sample ID **S13T006665**
Sample size, mL 0.250

Determination

Method . . . . . OH SAMPLE LONG
Determination start 2013-06-18 10:39:00 UTC-7
User (full name) . . . . . Adam Casey
User (short name) . . . . . acc

End points

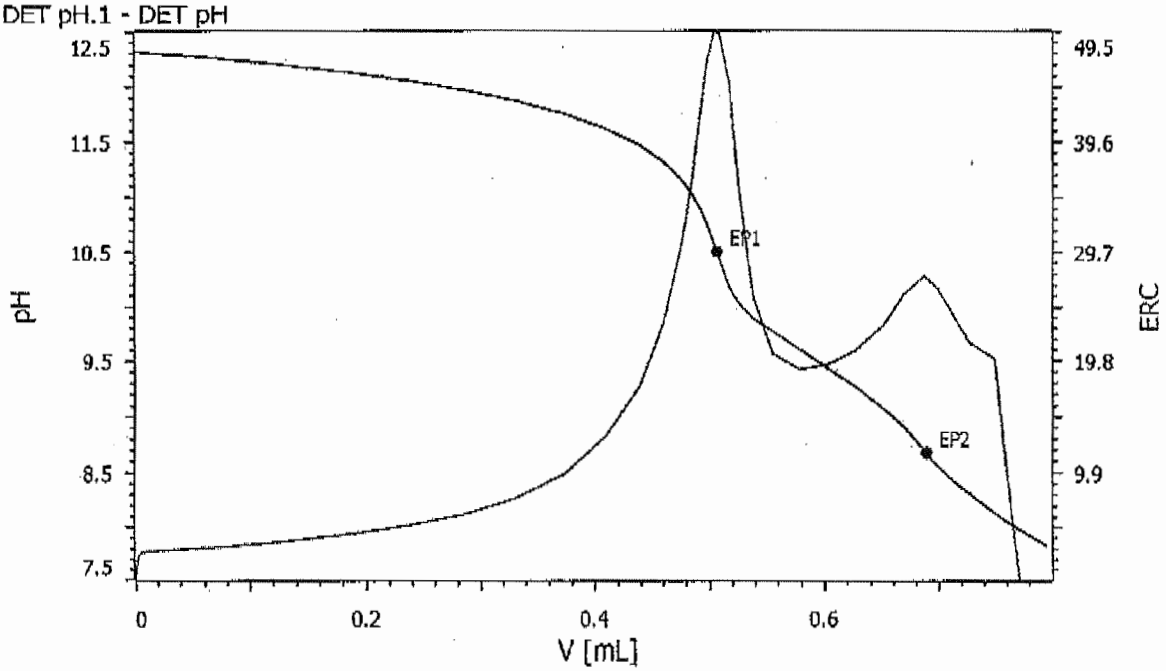
DET pH **DET pH.1**

EP1 . . . . . 10.512 pH . . . . . 0.5067 mL
EP2 . . . . . 8.678 pH . . . . . 0.6890 mL

Results

OH . . . . . 6897.09 ppm
Molarity of Titrant . . . . . 0.2001 mol/L
Temperature . . . . . 21.1 °C
Detection Limit . . . . . 110.67 ppm

DET pH.1 - DET pH



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Metrohm

Program version tiamo 1.1 - 36

User acc 2013-06-18 1:52:10 PM UTC-

Results report

Sample data

Sample ID . . . . . **ccv**
Sample size, mL 0.050

Determination

Method . . . . . OH SAMPLE LONG
Determination start 2013-06-18 13:45:18 UTC-7
User (full name) . . . . . Adam Casey
User (short name) . . . . . acc

End points

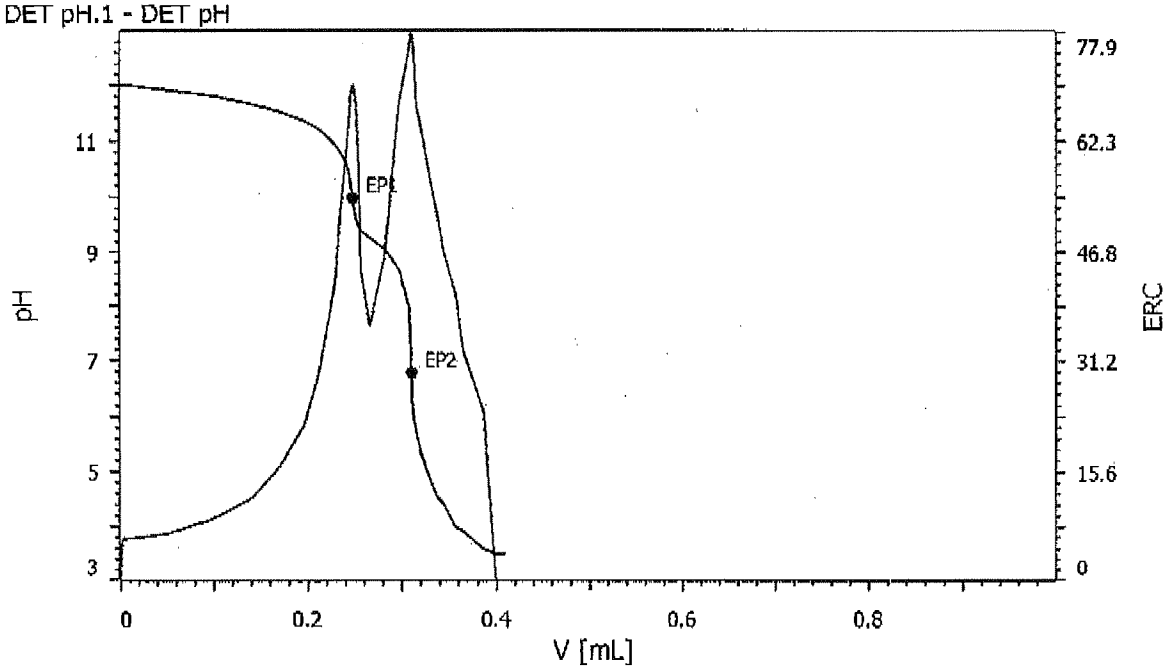
DET pH **DET pH.1**

EP1 . . . . . 9.971 pH . . . . . 0.2480 mL
EP2 . . . . . 6.781 pH . . . . . 0.3099 mL

Results

OH . . . . . 16879.08 ppm
Molarity of Titrant . . . . . 0.2001 mol/L
Temperature . . . . . 22.8 °C
Detection Limit . . . . . 553.35 ppm

DET pH.1 - DET pH



tiamo™ titration and more

Page 1 of 1

Metrohm

Program version tiamo 1.1 - 36

User acc 2013-06-182:00:08 PM UTC-

Results report

Sample data

Sample ID . . . . . ccb
Sample size, mL 3

Determination

Method . . . . . OH SAMPLE LONG
Determination start 2013-06-18 13:58:47 UTC-7
User (full name) . . . . . Adam Casey
User (short name) . . . . . acc

End points

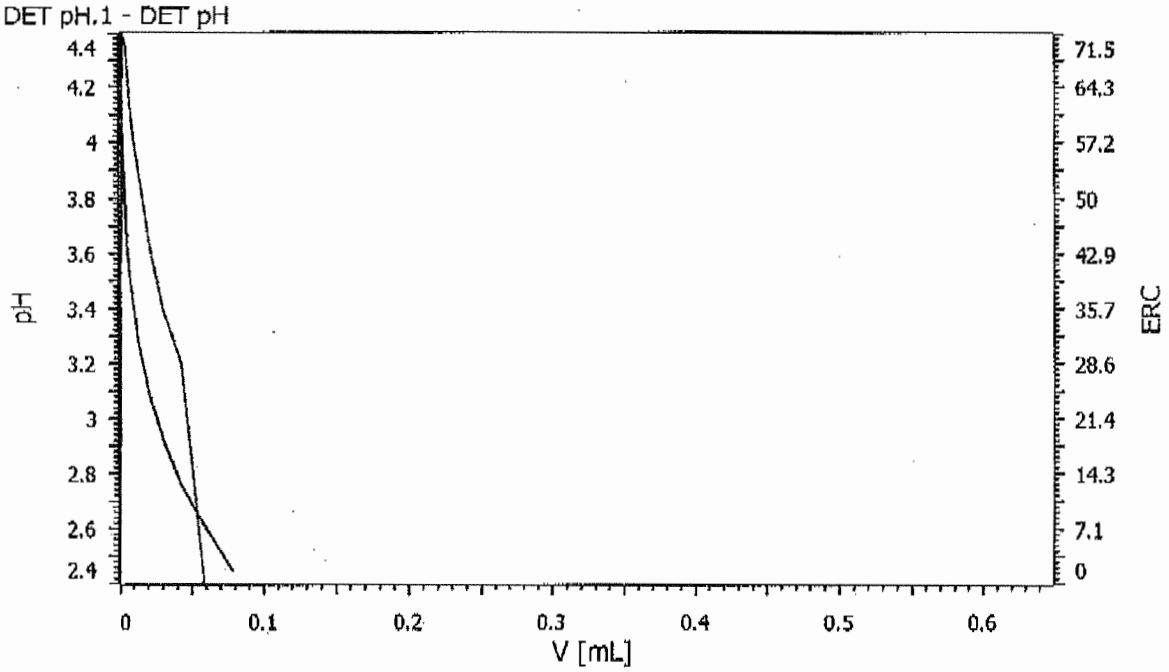
DET pH **DET pH.1**

Results

< 9.2226 µm 6/18/13

OH	invalid	ppm
Molarity of Titrant	0.2001	mol/L
Temperature	22.7	°C
Detection Limit	9.22	ppm

DET pH.1 - DET pH



tiamo™ titration and more

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Attachment 9

ADDITIONAL QC RESULTS

HG Analysis Matrix Spike/Matrix Spike Duplicate Summary for AY101 CC8

Client Sample Id	Sample Id	Analyte	MS Recovery %	MSD Recovery %	Lower Limit	Upper Limit	RPD %	RPD Limit
1AY-13-01	S13T006567	Mercury	98.2	94.5	75	125	3.84	20

2E
WATER PESTICIDE SURROGATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: AY101CC8

GC Column(1): RESTEK XTI-5 ID: 0.25 (mm)

	EPA SAMPLE NO.	S1 %REC #	TCX %REC #	S3 %REC #	S4 %REC #	S5 %REC #	S6 %REC #	TOT OUT
01	BLANK	80	34					0
02	LCS	61	36					0
03	S13T006572	31	44					0
04	S13T006572DU	37	40					0
05	S13T006572MS	30	40					0
06	S13T006572MS	33	32					0
07	S13T006582	33	45					0
08	S13T006592	33	37					0
09	S13T006602	28	46					0
10	S13T006611	32	28					0
11	S13T006620	29	33					0
12	S13T006629	48	35					0
13								
14								
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16								
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28								
29								
30								

ADVISORY
QC LIMITS

S1 = Decachlorobiphenyl (DC (21-132)
S2 (TCX) = Tetrachloro-m-Xylene (10- 83)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

3E
WATER PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: AY101CC8

Matrix Spike - EPA Sample No.: S13T006572

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Aroclor-1254	100.0	0.000	80.13	80	31-123

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1254	100.0	78.52	78	2	30	31-123

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS: _____

2E
WATER PESTICIDE SURROGATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: AY101CC8

GC Column(1): RESTEK XTI-5 ID: 0.25 (mm)

	EPA SAMPLE NO.	S1 %REC #	TCX %REC #	S3 %REC #	S4 %REC #	S5 %REC #	S6 %REC #	TOT OUT
01	BLANK	88	28					0
02	LCS	79	20					0
03	S13T006638	55	33					0
04	S13T006638MS	54	31					0
05	S13T006638MS	62	22					0
06	S13T006647	58	16					0
07	S13T006670	49	37					0
08								
09								
10								
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29								
30								

ADVISORY
QC LIMITS

S1 = Decachlorobiphenyl (DC (21-132)
S2 (TCX) = Tetrachloro-m-Xylene (10- 83)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

3E

WATER PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: AY101CC8

Matrix Spike - EPA Sample No.: S13T006638

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Aroclor-1254	100.0	0.000	70.96	71	31-123

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1254	100.0	73.96	74	4	30	31-123

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS: _____

FORM III PEST-1 OLM03.0

DISTRIBUTION SHEET

To	From	Page 1 Of 1
J. G. Reynolds	E. Soto	Date 8-19-13
Project Title/Work Order		EDT No. N/A
Final Report for Tank 241-AY-101 Grab Sampling and Characterization of Double-Shell Tank Supernate and Solids		ECN No. N/A

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
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