Analytical Data Package Prepared For

# Pacific Northwest National Lab

Radiochemical Analysis By

## STL Richland STLRL

*2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.*

*Data Package Contains _____ Pages*

Report Nbr: 34621

| SDG Nbr | ORDER Nbr | CLIENT ID NUMBER | LOT Nbr | WORK ORDER | RPT DB ID | BATCH |
|---|---|---|---|---|---|---|
| W05099 | I07-019 | B1LN79 | J7A200173-1 | JM5M91AA | 9JM5M910 | 7026384 |
| | S07-001 | B1LNW1 | J7A200176-1 | JM5PC1AA | 9JM5PC10 | 7026396 |
| | | B1LNV6 | J7A200176-2 | JM5PE1AA | 9JM5PE10 | 7026396 |
| | I07-016 | B1LK81 | J7A220119-1 | JM6FX1AA | 9JM6FX10 | 7026400 |
| | W07-012 | B1LJF6 | J7A220134-1 | JM6JQ1AC | 9JM6JQ10 | 7026402 |
| | | B1LJF6 | J7A220134-1 | JM6JQ1AD | 9JM6JQ10 | 7026396 |
| | | B1LJF6 | J7A220134-1 | JM6JQ2AA | 9JM6JQ20 | 7026401 |
| | | B1LJH1 | J7A220134-2 | JM6J21AA | 9JM6J210 | 7026396 |
| | | B1LJ93 | J7A230123-1 | JM7NK1AA | 9JM7NK10 | 7026396 |
| | I07-021 | B1LPJ8 | J7A230125-1 | JM7PP1AA | 9JM7PP10 | 7026384 |
| | S07-001 | B1LNM1 | J7A230129-1 | JM71V1AA | 9JM71V10 | 7026384 |
| | | B1LNM2 | J7A230129-2 | JM72X1AA | 9JM72X10 | 7026384 |
| | A07-001 | B1LN27 | J7A230163-1 | JM7311AA | 9JM73110 | 7026400 |
| | | B1LN27 | J7A230163-1 | JM7311AC | 9JM73110 | 7026396 |
| | | B1LN35 | J7A230163-2 | JM7381AA | 9JM73810 | 7026385 |

Comments:

# Report Nbr: 34621

| SDG Nbr | ORDER Nbr | CLIENT ID NUMBER | LOT Nbr | WORK ORDER | RPT DB ID | BATCH |
|---|---|---|---|---|---|---|
| W05099 | A07-001 | B1LN35 | J7A230163-2 | JM7381AC | 9JM73810 | 7026400 |
| | | B1LN35 | J7A230163-2 | JM7381AD | 9JM73810 | 7026396 |
| | | B1LN38 | J7A230163-3 | JM74E1AA | 9JM74E10 | 7026385 |
| | | B1LN38 | J7A230163-3 | JM74E1AC | 9JM74E10 | 7026400 |
| | | B1LN38 | J7A230163-3 | JM74E1AD | 9JM74E10 | 7026396 |
| | | B1LN42 | J7A230163-4 | JM7401AA | 9JM74010 | 7026385 |
| | | B1LN42 | J7A230163-4 | JM7401AC | 9JM74010 | 7026400 |
| | | B1LN42 | J7A230163-4 | JM7401AD | 9JM74010 | 7026396 |
| | | B1LN42 | J7A230163-4 | JM7401AE | 9JM74010 | 7026383 |
| | | B1LN43 | J7A230163-5 | JM7421AA | 9JM74210 | 7026385 |
| | | B1LN43 | J7A230163-5 | JM7421AC | 9JM74210 | 7026400 |
| | | B1LN43 | J7A230163-5 | JM7421AD | 9JM74210 | 7026396 |
| | | B1LN43 | J7A230163-5 | JM7421AE | 9JM74210 | 7026383 |
| | W07-011 | B1L6J0 | J7A230259-1 | JM8V01AA | 9JM8V010 | 7026382 |
| | | B1L6D8 | J7A230259-1 | JM8V21AA | 9JM8V210 | 7026382 |
| | | B1L6H6 | J7A230259-1 | JM8VH1AA | 9JM8VH10 | 7026382 |

Comments:

SEVERN TRENT STL

**STL Richland**
2800 George Washington Way
Richland, WA 99354

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www.stl-inc.com

# Certificate of Analysis

Pacific Northwest National Laboratories
Sigma V Building
Richland, WA 99352

March 8, 2007

Attention: Dot Stewart

| | | |
|---|---|---|
| SAF Number | : | A07-001, S07-001, W07-011, I07-021, I07-019, I07-016, W07-012 |
| Date SDG Closed | : | January 22, 2007 |
| Number of Samples | : | Twenty (20) |
| Sample Type | : | Water |
| SDG Number | : | W05099 |
| Data Deliverable | : | 45-Day / Summary |

## CASE NARRATIVE

### I. Introduction

Between January 18, 2007 and January 22, 2007, twenty one water samples were received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Pacific Northwest National Laboratories (PGW) specific IDs:

| PGW ID# | STLR ID# | MATRIX | DATE OF RECEIPT |
|---|---|---|---|
| B1LN79 | JM5M9 | WATER | 1/18/07 |
| B1LNW1 | JM5PC | WATER | 1/18/07 |
| B1LNV6 | JM5PE | WATER | 1/18/07 |
| B1LK81 | JM6FX | WATER | 1/19/07 |
| B1LJF9 | JM6JQ | WATER | 1/19/07 |
| B1LJHI | JM6J2 | WATER | 1/19/07 |
| B1LJ93 | JM7NK | WATER | 1/22/07 |
| B1LPJ8 | JM7PP | WATER | 1/22/07 |
| B1LNM1 | JM71V | WATER | 1/22/07 |
| B1LNM2 | JM72X | WATER | 1/22/07 |
| B1LN27 | JM731 | WATER | 1/22/07 |
| B1LN35 | JM738 | WATER | 1/22/07 |

| | | | |
|---|---|---|---|
| B1LN38 | JM74E | WATER | 1/22/07 |
| B1LN42 | JM740 | WATER | 1/22/07 |
| B1LN43 | JM742 | WATER | 1/22/07 |
| B1L6H6 | JM8VH | WATER | 1/23/07 |
| B1L6J0 | JM8V0 | WATER | 1/23/07 |
| B1L6D8 | JM8V2 | WATER | 1/23/07 |
| B1LBT8 | JM820 | WATER | 1/23/07 |
| B1LC67 | JM822 | WATER | 1/23/07 |

## II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

## III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

**Gas Proportional Counting**
Gross Alpha by method RICH-RC-5014
Gross Beta by method RICH-RC-5014
Strontium-90 by method RICH-RC-5006
**Gamma Spectroscopy**
Gamma Spec (LL) by method RICH-RC-5017
Iodine-129 (LL) by method RICH-RC-5025
**Liquid Scintillation Counting**
Enriched Tritium by method RICH-RC-5024
Technetium-99 by TEVA method RICH-RC-5065
Tritium by method RICH-RC-5007
**Laser Induced Phosphorimetry**
Total Uranium by method RICH-RC-5058

## IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

## V. Comments

**Gas Proportional Counting**

Gross Alpha by method RICH-RC-5014:
In the original batch the duplicate was out. It was rerun with good results. Except as noted, the LCS, batch blank, samples and sample duplicate (B1LJF9) results are within contractual requirements.

Gross Beta by method RICH-RC-5014:
The sample and the duplicate have extremely high results due to high dissolved solids. Except as noted, the LCS, batch blank, samples and sample duplicate (B1LJF9) results are within contractual requirements.

Strontium-90 by method RICH-RC-5006
The LCS, batch blank, samples and sample duplicate (B1LNM1) results are within contractual requirements.

**Gamma Spectroscopy**

Iodine-129 (LL) by method RICH-RC-5025:
The LCS, batch blank, samples and sample duplicate (B1LN27) results are within contractual requirements.

**Liquid Scintillation Counting**

Technetium-99 by TEVA method RICH-RC-5065:
The LCS, batch blank, samples, sample duplicate (B1LN35), and sample matrix spike (B1LN27) results are within contractual requirements.

Tritium by method RICH-RC-5007:
The LCS, batch blank, samples and sample duplicate (B1LN35) results are within contractual requirements.

Enriched Tritium by method RICH-RC-5024
The enriched tritium analysis was not completed at the time of reporting.

**Total Uranium**

Total Uranium by method RICH-RC-5058:
The LCS, batch blank, samples, sample duplicate (B1LN43), and sample matrix spike (B1LN42) results are within contractual requirements.

**Chemical Analysis**

Total Coliform by method 9223
The LCS, batch blank, samples and sample duplicate (B1L6J0) results are within contractual requirements.

Pacific Northwest National Laboratories
March 8, 2007

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I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sherryl A. Adam
Project Manager

## Drinking Water Method Cross References

| | DRINKING WATER ASTM METHOD CROSS REFERENCES | |
|---|---|---|
| | | |
| **Referenced Method** | **Isotope(s)** | **STL Richland's SOP number** |
| EPA 901.1 | Cs-134, I-131 | RICH-RC-5017 |
| EPA 900.0 | Alpha & Beta | RICH-RC-5014 |
| EPA 903.1 | Ra-226 | RICH-RC-5005 |
| EPA 904.0 | Ra-228 | RICH-RC-5005 |
| EPA 905.0 | Sr89/90 | RICH-RC-5006 |
| ASTM D2460 | Total Radium | RICH-RC-5027 |
| Standard Method 7500-U-C & ASTM D5174 | Uranium | RICH-RC-5058 |
| EPA 906.0 | Tritium | RICH-RC-5007 |
| | | |
| | | |
| | | |
| | | |
| NOTE: | | |
| The Gross Alpha LCS is prepared with Am-241 (unless otherwise specified in the case narrative) | | |
| The Gross Beta LCS is prepared with Sr/Y-90 (unless otherwise specified in the case narrative) | | |

## Uncertainty Estimation

STL Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties ($u_i$) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty ($u_c$) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/vn), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

# Report Definitions

| | |
|---|---|
| **Action Lev** | An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit. |
| **Batch** | The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together. |
| **Bias** | Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30. |
| **COC No** | Chain of Custody Number assigned by the Client or STL Richland. |
| **Count Error (#s)** | Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background. |
| **Total Uncert (#s)** ***$u_c$ - Combined Uncertainty.*** | All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, *$u_c$ the combined uncertainty.* The uncertainty is absolute and in the same units as the result. |
| **(#s), Coverage Factor** | The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations. |
| **CRDL (RL)** | Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL) |
| **Lc** | Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero. |
| **Lot-Sample No** | The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot. |
| **MDC\|MDA** | Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. |
| **Primary Detector** | The instrument identifier associated with the analysis of the sample aliquot. |
| **Ratio U-234/U-238** | The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038. |
| **Rst/MDC** | Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result. |
| **Rst/TotUcert** | Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result. |
| **Report DB No** | Sample Identifier used by the report system. The number is based upon the first five digits of the **Work Order** Number. |
| **RER** | The equation Replicate Error Ratio = (S-D)/[sqrt($TPUs^2$ + $TPUd^2$)] as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample. |
| **SDG** | Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt. |
| **Sum Rpt Alpha Spec Rst(s)** | The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units. |
| **Work Order** | The LIMS software assign test specific identifier. |
| **Yield** | The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method. |

# STL Richland Report

Lab Code: STLRL

FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 34621 File Name: h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

| Lab Sample Id: | Client Id: | Test User | Contract Nbr | SAF Nbr | Sdg Nbr: | QC Type: | Moisture/ Solids%*: | Distilled Volume | Sample On Date: | Collection Date: |
|---|---|---|---|---|---|---|---|---|---|---|
| 9JM5M910 | B1LN79 | | MW6-SBB-A1 | I07-019 | W05099 | | | | | 01/18/2007 12:54 |

| Batch | Analyte | CAS# | Result | Unit | CntU 2S | TotU 2S | Qual | MDA | TrcYield | Method | Alq Size | Unit | Analy Date/Time | Act |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026384 | SR-90 | 10098-97-2 | 2.14E+02 | pCi/L | 3.3E+00 | 3.1E+01 | | 4.57E-01 | 72.5 | SRISO_SEP_PRE | 1.0035E+00 | L | 02/11/2007 09:25 | I |

| Lab Sample Id: | Client Id: | Test User | Contract Nbr | SAF Nbr | Sdg Nbr: | QC Type: | Moisture/ Solids%*: | Distilled Volume | Sample On Date: | Collection Date: |
|---|---|---|---|---|---|---|---|---|---|---|
| 9JM5PC10 | B1LNW1 | | MW6-SBB-A1 | S07-001 | W05099 | | | | | 01/18/2007 12:54 |

| Batch | Analyte | CAS# | Result | Unit | CntU 2S | TotU 2S | Qual | MDA | TrcYield | Method | Alq Size | Unit | Analy Date/Time | Act |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026396 | TC-99 | 14133-76-7 | 1.66E+00 | pCi/L | 4.0E+00 | 5.7E+00 | U | 9.65E+00 | 100.0 | TC99_ETVDSK_LS | 1.252E-01 | L | 02/03/2007 15:12 | I |

| Lab Sample Id: | Client Id: | Test User | Contract Nbr | SAF Nbr | Sdg Nbr: | QC Type: | Moisture/ Solids%*: | Distilled Volume | Sample On Date: | Collection Date: |
|---|---|---|---|---|---|---|---|---|---|---|
| 9JM5PE10 | B1LNV6 | | MW6-SBB-A1 | S07-001 | W05099 | | | | | 01/18/2007 11:14 |

| Batch | Analyte | CAS# | Result | Unit | CntU 2S | TotU 2S | Qual | MDA | TrcYield | Method | Alq Size | Unit | Analy Date/Time | Act |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026396 | TC-99 | 14133-76-7 | 1.09E+01 | pCi/L | 4.4E+00 | 6.3E+00 | | 9.71E+00 | 100.0 | TC99_ETVDSK_LS | 1.263E-01 | L | 02/03/2007 15:12 | I |

| Lab Sample Id: | Client Id: | Test User | Contract Nbr | SAF Nbr | Sdg Nbr: | QC Type: | Moisture/ Solids%*: | Distilled Volume | Sample On Date: | Collection Date: |
|---|---|---|---|---|---|---|---|---|---|---|
| 9JM6FX10 | B1LK81 | | MW6-SBB-A1 | I07-016 | W05099 | | | | | 01/19/2007 13:21 |

| Batch | Analyte | CAS# | Result | Unit | CntU 2S | TotU 2S | Qual | MDA | TrcYield | Method | Alq Size | Unit | Analy Date/Time | Act |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026400 | I-129L | 15046-84-1 | 1.05E-01 | pCi/L | 1.5E-01 | 1.5E-01 | U | 2.95E-01 | 100.3 | I129LL_SEP_LEPS | 3.9541E+00 | L | 02/21/2007 14:34 | I |

| Lab Sample Id: | Client Id: | Test User | Contract Nbr | SAF Nbr | Sdg Nbr: | QC Type: | Moisture/ Solids%*: | Distilled Volume | Sample On Date: | Collection Date: |
|---|---|---|---|---|---|---|---|---|---|---|
| 9JM6J210 | B1LJH1 | | MW6-SBB-A1 | W07-012 | W05099 | | | | | 01/19/2007 10:20 |

| Batch | Analyte | CAS# | Result | Unit | CntU 2S | TotU 2S | Qual | MDA | TrcYield | Method | Alq Size | Unit | Analy Date/Time | Act |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026396 | TC-99 | 14133-76-7 | 2.38E+00 | pCi/L | 4.1E+00 | 5.8E+00 | U | 9.69E+00 | 100.0 | TC99_ETVDSK_LS | 1.249E-01 | L | 02/03/2007 15:12 | I |

| Lab Sample Id: | Client Id: | Test User | Contract Nbr | SAF Nbr | Sdg Nbr: | QC Type: | Moisture/ Solids%*: | Distilled Volume | Sample On Date: | Collection Date: |
|---|---|---|---|---|---|---|---|---|---|---|
| 9JM6JQ10 | B1LJF6 | | MW6-SBB-A1 | W07-012 | W05099 | | | | | 01/19/2007 09:09 |

| Batch | Analyte | CAS# | Result | Unit | CntU 2S | TotU 2S | Qual | MDA | TrcYield | Method | Alq Size | Unit | Analy Date/Time | Act |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026402 | BETA | 12587-47-2 | 1.07E+04 | pCi/L | 6.1E+01 | 1.4E+03 | | 5.04E+00 | 100.0 | 9310_ALPHABETA | 1.251E-01 | L | 02/13/2007 14:56 | I |
| 7026396 | TC-99 | 14133-76-7 | 4.63E+04 | pCi/L | 1.2E+02 | 3.1E+03 | | 9.67E+00 | 100.0 | TC99_ETVDSK_LS | 1.25E-01 | L | 02/03/2007 15:12 | I |

| Lab Sample Id: | Client Id: | Test User | Contract Nbr | SAF Nbr | Sdg Nbr: | QC Type: | Moisture/ Solids%*: | Distilled Volume | Sample On Date: | Collection Date: |
|---|---|---|---|---|---|---|---|---|---|---|
| 9JM6JQ20 | B1LJF6 | | MW6-SBB-A1 | W07-012 | W05099 | | | | | 01/19/2007 09:09 |



U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland Report

Lab Code: STLRL

FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 34621 File Name: h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

| Batch | Analyte | CAS# | Result | Unit | CntU 2S | TotU 2S | Qual | MDA | TrcYield | Method | Alq Size | Unit | Analy Date/Time | Act |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026401 | ALPHA | 12587-46-1 | 4.70E+00 | pCi/L | 1.9E+00 | 2.2E+00 | | 1.86E+00 | 100.0 | 9310_ALPHABETA | 1.108E-01 | L | 02/14/2007 11:53 | I |

| Lab Sample Id: | Client Id: | Test User | Contract Nbr | SAF Nbr | Sdg Nbr: | QC Type: | Moisture/ Solids%*: | Distilled Volume | Sample On Date: | Collection Date: |
|---|---|---|---|---|---|---|---|---|---|---|
| 9JM71V10 | B1LNM1 | | MW6-SBB-A1 | S07-001 | W05099 | | | | | 01/22/2007 12:53 |

| Batch | Analyte | CAS# | Result | Unit | CntU 2S | TotU 2S | Qual | MDA | TrcYield | Method | Alq Size | Unit | Analy Date/Time | Act |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026384 | SR-90 | 10098-97-2 | 1.50E+01 | pCi/L | 8.8E-01 | 2.3E+00 | | 4.37E-01 | 75.4 | SRISO_SEP_PRE | 1.0062E+00 | L | 02/11/2007 09:25 | I |

| Lab Sample Id: | Client Id: | Test User | Contract Nbr | SAF Nbr | Sdg Nbr: | QC Type: | Moisture/ Solids%*: | Distilled Volume | Sample On Date: | Collection Date: |
|---|---|---|---|---|---|---|---|---|---|---|
| 9JM72X10 | B1LNM2 | | MW6-SBB-A1 | S07-001 | W05099 | | | | | 01/22/2007 12:53 |

| Batch | Analyte | CAS# | Result | Unit | CntU 2S | TotU 2S | Qual | MDA | TrcYield | Method | Alq Size | Unit | Analy Date/Time | Act |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026384 | SR-90 | 10098-97-2 | 1.50E+01 | pCi/L | 8.2E-01 | 2.3E+00 | | 3.94E-01 | 79.6 | SRISO_SEP_PRE | 1.0051E+00 | L | 02/11/2007 09:20 | I |

| Lab Sample Id: | Client Id: | Test User | Contract Nbr | SAF Nbr | Sdg Nbr: | QC Type: | Moisture/ Solids%*: | Distilled Volume | Sample On Date: | Collection Date: |
|---|---|---|---|---|---|---|---|---|---|---|
| 9JM73110 | B1LN27 | | MW6-SBB-A1 | A07-001 | W05099 | | | | | 01/22/2007 13:25 |

| Batch | Analyte | CAS# | Result | Unit | CntU 2S | TotU 2S | Qual | MDA | TrcYield | Method | Alq Size | Unit | Analy Date/Time | Act |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026400 | I-129L | 15046-84-1 | -6.85E-02 | pCi/L | 1.5E-01 | 1.5E-01 | U | 2.65E-01 | 97.0 | I129LL_SEP_LEPS | 3.9176E+00 | L | 02/21/2007 14:39 | I |
| 7026396 | TC-99 | 14133-76-7 | 1.99E+02 | pCi/L | 8.6E+00 | 1.9E+01 | | 9.62E+00 | 100.0 | TC99_ETVDSK_LS | 1.26E-01 | L | 02/03/2007 15:12 | I |

| Lab Sample Id: | Client Id: | Test User | Contract Nbr | SAF Nbr | Sdg Nbr: | QC Type: | Moisture/ Solids%*: | Distilled Volume | Sample On Date: | Collection Date: |
|---|---|---|---|---|---|---|---|---|---|---|
| 9JM73810 | B1LN35 | | MW6-SBB-A1 | A07-001 | W05099 | | | | | 01/22/2007 12:05 |

| Batch | Analyte | CAS# | Result | Unit | CntU 2S | TotU 2S | Qual | MDA | TrcYield | Method | Alq Size | Unit | Analy Date/Time | Act |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026385 | H-3 | 10028-17-8 | 1.36E+03 | pCi/L | 1.7E+02 | 2.0E+02 | | 2.94E+02 | 100.0 | 906.0_H3_LSC | 5.00E-03 | L | 02/03/2007 20:32 | I |
| 7026400 | I-129L | 15046-84-1 | -1.21E-01 | pCi/L | 1.4E-01 | 1.4E-01 | U | 2.24E-01 | 100.0 | I129LL_SEP_LEPS | 3.919E+00 | L | 02/21/2007 16:25 | I |
| 7026396 | TC-99 | 14133-76-7 | 1.40E+02 | pCi/L | 7.5E+00 | 1.5E+01 | | 9.46E+00 | 100.0 | TC99_ETVDSK_LS | 1.28E-01 | L | 02/03/2007 15:12 | I |

| Lab Sample Id: | Client Id: | Test User | Contract Nbr | SAF Nbr | Sdg Nbr: | QC Type: | Moisture/ Solids%*: | Distilled Volume | Sample On Date: | Collection Date: |
|---|---|---|---|---|---|---|---|---|---|---|
| 9JM74010 | B1LN42 | | MW6-SBB-A1 | A07-001 | W05099 | | | | | 01/22/2007 11:39 |

| Batch | Analyte | CAS# | Result | Unit | CntU 2S | TotU 2S | Qual | MDA | TrcYield | Method | Alq Size | Unit | Analy Date/Time | Act |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026385 | H-3 | 10028-17-8 | 1.65E+03 | pCi/L | 1.8E+02 | 2.1E+02 | | 2.93E+02 | 100.0 | 906.0_H3_LSC | 5.00E-03 | L | 02/04/2007 00:37 | I |
| 7026400 | I-129L | 15046-84-1 | -7.92E-02 | pCi/L | 9.8E-02 | 9.8E-02 | U | 1.61E-01 | 96.8 | I129LL_SEP_LEPS | 3.8424E+00 | L | 02/21/2007 16:30 | I |
| 7026396 | TC-99 | 14133-76-7 | 3.43E+02 | pCi/L | 1.1E+01 | 2.9E+01 | | 9.64E+00 | 100.0 | TC99_ETVDSK_LS | 1.25E-01 | L | 02/03/2007 15:12 | I |
| 7026383 | Uranium | 7440-61-1 | 2.13E+01 | ug/L | 2.6E+00 | 2.6E+00 | | 8.25E-02 | | UTOT_KPA | 2.54E-02 | ML | 02/28/2007 14:34 | I |



U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland Report

Lab Code: STLRL

FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 34621 File Name: h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

| Lab Sample Id: | Client Id: | Test User | Contract Nbr | SAF Nbr | Sdg Nbr: | QC Type: | Moisture/ Solids%*: | Distilled Volume | Sample On Date: | Collection Date: |
|---|---|---|---|---|---|---|---|---|---|---|
| 9JM74210 | B1LN43 | | MW6-SBB-A1 | A07-001 | W05099 | | | | | 01/22/2007 08:00 |

| Batch | Analyte | CAS# | Result | Unit | CntU 2S | TotU 2S | Qual | MDA | TrcYield | Method | Alq Size | Unit | Analy Date/Time | Act |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026385 | H-3 | 10028-17-8 | 3.08E+02 | pCi/L | 1.3E+02 | 1.5E+02 | | 2.96E+02 | 100.0 | 906.0_H3_LSC | 5.00E-03 | L | 02/04/2007 01:59 | I |
| 7026400 | I-129L | 15046-84-1 | -7.19E-02 | pCi/L | 1.6E-01 | 1.6E-01 | U | 2.82E-01 | 97.0 | I129LL_SEP_LEPS | 3.8244E+00 | L | 02/21/2007 18:16 | I |
| 7026396 | TC-99 | 14133-76-7 | 6.44E-01 | pCi/L | 4.0E+00 | 5.6E+00 | U | 9.60E+00 | 100.0 | TC99_ETVDSK_LS | 1.257E-01 | L | 02/03/2007 15:12 | I |
| 7026383 | Uranium | 7440-61-1 | 9.65E-04 | ug/L | 7.8E-04 | 7.8E-04 | U | 8.22E-02 | | UTOT_KPA | 2.55E-02 | ML | 02/28/2007 14:38 | I |

| Lab Sample Id: | Client Id: | Test User | Contract Nbr | SAF Nbr | Sdg Nbr: | QC Type: | Moisture/ Solids%*: | Distilled Volume | Sample On Date: | Collection Date: |
|---|---|---|---|---|---|---|---|---|---|---|
| 9JM74E10 | B1LN38 | | MW6-SBB-A1 | A07-001 | W05099 | | | | | 01/22/2007 10:44 |

| Batch | Analyte | CAS# | Result | Unit | CntU 2S | TotU 2S | Qual | MDA | TrcYield | Method | Alq Size | Unit | Analy Date/Time | Act |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026385 | H-3 | 10028-17-8 | 1.70E+03 | pCi/L | 1.8E+02 | 2.1E+02 | | 2.93E+02 | 100.0 | 906.0_H3_LSC | 5.00E-03 | L | 02/03/2007 23:15 | I |
| 7026400 | I-129L | 15046-84-1 | 1.12E-01 | pCi/L | 1.5E-01 | 1.5E-01 | U | 2.96E-01 | 97.8 | I129LL_SEP_LEPS | 3.9099E+00 | L | 02/21/2007 16:29 | I |
| 7026396 | TC-99 | 14133-76-7 | 1.12E+02 | pCi/L | 7.0E+00 | 1.3E+01 | | 9.64E+00 | 100.0 | TC99_ETVDSK_LS | 1.25E-01 | L | 02/03/2007 15:12 | I |

| Lab Sample Id: | Client Id: | Test User | Contract Nbr | SAF Nbr | Sdg Nbr: | QC Type: | Moisture/ Solids%*: | Distilled Volume | Sample On Date: | Collection Date: |
|---|---|---|---|---|---|---|---|---|---|---|
| 9JM7NK10 | B1LJ93 | | MW6-SBB-A1 | W07-012 | W05099 | | | | | 01/22/2007 10:06 |

| Batch | Analyte | CAS# | Result | Unit | CntU 2S | TotU 2S | Qual | MDA | TrcYield | Method | Alq Size | Unit | Analy Date/Time | Act |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026396 | TC-99 | 14133-76-7 | 1.34E+02 | pCi/L | 7.4E+00 | 1.5E+01 | | 9.68E+00 | 100.0 | TC99_ETVDSK_LS | 1.253E-01 | L | 02/03/2007 15:12 | I |

| Lab Sample Id: | Client Id: | Test User | Contract Nbr | SAF Nbr | Sdg Nbr: | QC Type: | Moisture/ Solids%*: | Distilled Volume | Sample On Date: | Collection Date: |
|---|---|---|---|---|---|---|---|---|---|---|
| 9JM7PP10 | B1LPJ8 | | MW6-SBB-A1 | I07-021 | W05099 | | | | | 01/22/2007 13:25 |

| Batch | Analyte | CAS# | Result | Unit | CntU 2S | TotU 2S | Qual | MDA | TrcYield | Method | Alq Size | Unit | Analy Date/Time | Act |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026384 | SR-90 | 10098-97-2 | 6.74E-02 | pCi/L | 2.0E-01 | 2.0E-01 | U | 4.26E-01 | 82.2 | SRISO_SEP_PRE | 1.0006E+00 | L | 02/11/2007 09:25 | I |



U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland QC Blank Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

| | | | | | |
|---|---|---|---|---|---|
| **Lab Sample Id:** | JNG061AB | **Sdg/Rept Nbr:** | W05099 34621 | **Collection Date:** | 01/22/2007 13:25 |
| **Client Id:** | NA | **Matrix:** | WATER WATER | **Sample On Date:** | |
| **Moisture/Solids%*:** | | **QC Type:** | BLK | **Received Date:** | 01/22/2007 |

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW6-SBB-A19981 | | | | | | | | AZ | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026396 | TC-99 | 4.49E-01 | pCi/L | 3.5E+00 | U | 6.09E+00 | 100.0 | | TC99_ETVDSK | 2.021E-01 | 02/03/2007 | | | | D |
| **BLK** | 14133-76-7 | | | 2.5E+00 | | | | | | L | 15:12 | | | | |



**U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.**
**J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).**
**B Qual- Analyte was found in the associated laboratory blank above the MDC.**

# STL Richland QC Blank Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

| | | | | | |
|---|---|---|---|---|---|
| **Lab Sample Id:** | JNG081AB | **Sdg/Rept Nbr:** | W05099 | 34621 | **Collection Date:** 01/22/2007 13:25 |
| **Client Id:** | NA | **Matrix:** | WATER | WATER | **Sample On Date:** |
| **Moisture/Solids%*:** | | **QC Type:** | **BLK** | | **Received Date:** 01/22/2007 |

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW6-SBB-A19981 | | | | | | | | BB | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026400 | I-129L | -5.70E-02 | pCi/L | 1.3E-01 | U | 2.32E-01 | 98.1 | | I129LL_SEP_L | 3.9978E+00 | 02/21/2007 | | | | D |
| **BLK** | 15046-84-1 | | | 1.3E-01 | | | | | | L | 18:22 | | | | |



U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland QC Blank Report

Lab Code: STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

| | | | | | |
|---|---|---|---|---|---|
| **Lab Sample Id:** | JNG091AB | **Sdg/Rept Nbr:** | W05099 34621 | **Collection Date:** | 01/19/2007 09:09 |
| **Client Id:** | NA | **Matrix:** | WATER WATER | **Sample On Date:** | |
| **Moisture/Solids%*:** | | **QC Type:** | BLK | **Received Date:** | 01/19/2007 |

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW6-SBB-A19981 | | | | | | | | BD | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026401 | ALPHA | -1.39E-01 | pCi/L | 2.3E-01 | U | 7.39E-01 | 100.0 | | 9310_ALPHAB | 2.028E-01 | 02/13/2007 | | | | D |
| **BLK** | 12587-46-1 | | | 2.3E-01 | | | | | | L | 15:05 | | | | |



**U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.**
**J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).**
**B Qual- Analyte was found in the associated laboratory blank above the MDC.**

# STL Richland QC Blank Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

| | | | | | |
|---|---|---|---|---|---|
| **Lab Sample Id:** | JNG0E1AB | **Sdg/Rept Nbr:** | W05099 | 34621 | **Collection Date:** 01/22/2007 12:05 |
| **Client Id:** | NA | **Matrix:** | WATER | WATER | **Sample On Date:** |
| **Moisture/Solids%*:** | | **QC Type:** | **BLK** | | **Received Date:** 01/22/2007 |

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW6-SBB-A19981 | | | | | | | | BF | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026385 | H-3 | 5.68E+01 | pCi/L | 1.4E+02 | U | 2.94E+02 | 100.0 | | 906.0_H3_LSC | 5.00E-03 | 02/03/2007 | | | | D |
| **BLK** | 10028-17-8 | | | 1.2E+02 | | | | | | L | 15:05 | | | | |



U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland QC Blank Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

| | | | | | |
|---|---|---|---|---|---|
| **Lab Sample Id:** | JNG0E1DX | **Sdg/Rept Nbr:** | W05099 34621 | **Collection Date:** | 01/22/2007 12:05 |
| **Client Id:** | NA | **Matrix:** | WATER WATER | **Sample On Date:** | |
| **Moisture/Solids%*:** | | **QC Type:** | **BLK** | **Received Date:** | 01/22/2007 |

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW6-SBB-A19981 | | | | | | | | BH | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026385 | H-3 | 1.01E+02 | pCi/L | 1.4E+02 | U | 2.98E+02 | 100.0 | | 906.0_H3_LSC | 5.00E-03 | 02/03/2007 | | | | D |
| **BLK** | 10028-17-8 | | | 1.3E+02 | | | | | | L | 17:49 | | | | |



**U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.**
**J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).**
**B Qual- Analyte was found in the associated laboratory blank above the MDC.**

# STL Richland QC Blank Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

| | | | | | |
|---|---|---|---|---|---|
| **Lab Sample Id:** | JNG1A1AB | **Sdg/Rept Nbr:** | W05099 34621 | **Collection Date:** | 01/19/2007 09:09 |
| **Client Id:** | NA | **Matrix:** | WATER WATER | **Sample On Date:** | |
| **Moisture/Solids%*:** | | **QC Type:** | **BLK** | **Received Date:** | 01/19/2007 |

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW6-SBB-A19981 | | | | | | | | BJ | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026402 | BETA | 3.40E+00 | pCi/L | 1.5E+00 | | 2.49E+00 | 100.0 | | 9310_ALPHAB | 2.003E-01 | 02/13/2007 | | | | D |
| **BLK** | 12587-47-2 | | | 1.4E+00 | | | | | | L | 14:56 | | | | |



**U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.**
**J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).**
**B Qual- Analyte was found in the associated laboratory blank above the MDC.**

# STL Richland QC Blank Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

| | | | | | |
|---|---|---|---|---|---|
| **Lab Sample Id:** | JNGX31AB | **Sdg/Rept Nbr:** | W05099 | 34621 | **Collection Date:** 01/22/2007 12:53 |
| **Client Id:** | NA | **Matrix:** | WATER | WATER | **Sample On Date:** |
| **Moisture/Solids%*:** | | **QC Type:** | **BLK** | | **Received Date:** 01/22/2007 |

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW6-SBB-A19981 | | | | | | | | BL | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026384 | SR-90 | 4.89E-02 | pCi/L | 1.9E-01 | U | 4.18E-01 | 77.8 | | SRISO_SEP_P | 1.0004E+00 | 02/11/2007 | | | | D |
| **BLK** | 10098-97-2 | | | 1.9E-01 | | | | | | L | 09:20 | | | | |



**U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.**
**J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).**
**B Qual- Analyte was found in the associated laboratory blank above the MDC.**

# STL Richland QC Blank Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

| | | | | | |
|---|---|---|---|---|---|
| **Lab Sample Id:** | JNGXV1AB | **Sdg/Rept Nbr:** | W05099 | 34621 | **Collection Date:** 01/22/2007 11:39 |
| **Client Id:** | NA | **Matrix:** | WATER | WATER | **Sample On Date:** |
| **Moisture/Solids%*:** | | **QC Type:** | **BLK** | | **Received Date:** 01/22/2007 |

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW6-SBB-A19981 | | | | | | | | BN | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026383 | Uranium | 2.30E-03 | ug/L | 6.6E-04 | U | 8.25E-02 | | | UTOT_KPA | 2.54E-02 | 02/28/2007 | | | | D |
| **BLK** | 7440-61-1 | | | 6.6E-04 | | | | | | ML | 14:16 | | | | |



**U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.**
**J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).**
**B Qual- Analyte was found in the associated laboratory blank above the MDC.**

# STL Richland QC Control Sample Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

| | | | | | |
|---|---|---|---|---|---|
| **Lab Sample Id:** | JNG061CS | **Sdg/Rept Nbr:** | W05099 | 34621 | **Collection Date:** 01/22/2007 13:25 |
| **Client Id:** | NA | **Matrix:** | WATER | WATER | **Sample On Date:** |
| **Moisture/Solids%*:** | | **QC Type:** | **BS** | | **Received Date:** 01/22/2007 |

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW6-SBB-A19981 | | | | | | | | BA | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026396 | TC-99 | 3.25E+02 | pCi/L | 2.5E+01 | | 6.00E+00 | 100.0 | 3.31E+02 | TC99_ETVDSK | 2.017E-01 | 02/03/2007 | | | 70 | D |
| **BS** | 14133-76-7 | | | 8.1E+00 | | | | 98.0 | | L | 15:12 | | | 130 | |



U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland QC Control Sample Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

**Lab Sample Id:** JNG081CS **Sdg/Rept Nbr:** W05099 34621 **Collection Date:** 01/22/2007 13:25
**Client Id:** NA **Matrix:** WATER WATER **Sample On Date:**
**Moisture/Solids%*:** **QC Type:** BS **Received Date:** 01/22/2007

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW6-SBB-A19981 | | | | | | | | BC | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026400 | I-129L | 7.52E+00 | pCi/L | 1.0E+00 | | 3.74E-01 | 97.6 | 9.96E+00 | I129LL_SEP_L | 3.8701E+00 | 02/21/2007 | | | 70 | D |
| BS | 15046-84-1 | | | 1.0E+00 | | | | 75.5 | | L | 18:22 | | | 130 | |



U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland QC Control Sample Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

**Lab Sample Id:** JNG091CS **Sdg/Rept Nbr:** W05099 34621 **Collection Date:** 01/19/2007 09:09

**Client Id:** NA **Matrix:** WATER WATER **Sample On Date:**

**Moisture/Solids%*:** **QC Type:** BS **Received Date:** 01/19/2007

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW6-SBB-A19981 | | | | | | | | BE | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026401 | ALPHA | 2.00E+01 | pCi/L | 5.0E+00 | | 6.14E-01 | 100.0 | 2.20E+01 | 9310_ALPHAB | 2.05E-01 | 02/13/2007 | | | 70 | D |
| BS | 12587-46-1 | | | 2.0E+00 | | | | 90.7 | | L | 15:05 | | | 130 | |



U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland QC Control Sample Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

**Lab Sample Id:** JNG0E1CS **Sdg/Rept Nbr:** W05099 34621 **Collection Date:** 01/22/2007 12:05

**Client Id:** NA **Matrix:** WATER WATER **Sample On Date:**

**Moisture/Solids%*:** **QC Type:** BS **Received Date:** 01/22/2007

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW6-SBB-A19981 | | | | | | | | BG | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026385 | H-3 | 2.63E+03 | pCi/L | 2.5E+02 | | 2.94E+02 | 100.0 | 2.71E+03 | 906.0_H3_LSC | 5.00E-03 | 02/03/2007 | | | 70 | D |
| BS | 10028-17-8 | | | 2.0E+02 | | | | 96.9 | | L | 16:27 | | | 130 | |



U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland QC Control Sample Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

**Lab Sample Id:** JNG0E1EM **Sdg/Rept Nbr:** W05099 34621 **Collection Date:** 01/22/2007 12:05

**Client Id:** NA **Matrix:** WATER WATER **Sample On Date:**

**Moisture/Solids%*:** **QC Type:** BS **Received Date:** 01/22/2007

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW6-SBB-A19981 | | | | | | | | BI | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026385 | H-3 | 2.46E+03 | pCi/L | 2.4E+02 | | 2.97E+02 | 100.0 | 2.71E+03 | 906.0_H3_LSC | 5.00E-03 | 02/03/2007 | | | 70 | D |
| BS | 10028-17-8 | | | 2.0E+02 | | | | 90.9 | | L | 19:10 | | | 130 | |



U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland QC Control Sample Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

**Lab Sample Id:** JNG1A1CS **Sdg/Rept Nbr:** W05099 34621 **Collection Date:** 01/19/2007 09:09
**Client Id:** NA **Matrix:** WATER WATER **Sample On Date:**
**Moisture/Solids%*:** **QC Type:** BS **Received Date:** 01/19/2007

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW6-SBB-A19981 | | | | | | | | BK | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026402 | BETA | 2.23E+01 | pCi/L | 3.7E+00 | | 2.53E+00 | 100.0 | 2.24E+01 | 9310_ALPHAB | 2.002E-01 | 02/13/2007 | | | 70 | D |
| **BS** | 12587-47-2 | | | 2.4E+00 | | | | 99.4 | | L | 14:56 | | | 130 | |



U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland QC Control Sample Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

**Lab Sample Id:** JNGX31CS **Sdg/Rept Nbr:** W05099 34621 **Collection Date:** 01/22/2007 12:53

**Client Id:** NA **Matrix:** WATER WATER **Sample On Date:**

**Moisture/Solids%*:** **QC Type:** BS **Received Date:** 01/22/2007

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW6-SBB-A19981 | | | | | | | | BM | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026384 | SR-90 | 1.41E+01 | pCi/L | 2.2E+00 | | 4.75E-01 | 70.2 | 1.35E+01 | SRISO_SEP_P | 9.992E-01 | 02/11/2007 | | | 70 | D |
| BS | 10098-97-2 | | | 8.6E-01 | | | | 104.5 | | L | 09:20 | | | 130 | |



U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland QC Control Sample Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

**Lab Sample Id:** JNGXV1CS **Sdg/Rept Nbr:** W05099 34621 **Collection Date:** 01/22/2007 11:39

**Client Id:** NA **Matrix:** WATER WATER **Sample On Date:**

**Moisture/Solids%*:** **QC Type:** BS **Received Date:** 01/22/2007

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW6-SBB-A19981 | | | | | | | | BO | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026383 | Uranium | 3.35E+01 | ug/L | 4.1E+00 | | 8.32E-02 | | 3.54E+01 | UTOT_KPA | 2.52E-02 | 02/28/2007 | | | 70 | D |
| BS | 7440-61-1 | | | 4.1E+00 | | | | 94.6 | | ML | 14:29 | | | 130 | |



U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland QC Control Sample Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

**Lab Sample Id:** JNGXV1DS **Sdg/Rept Nbr:** W05099 34621 **Collection Date:** 01/22/2007 11:39

**Client Id:** NA **Matrix:** WATER WATER **Sample On Date:**

**Moisture/Solids%*:** **QC Type:** BS **Received Date:** 01/22/2007

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW6-SBB-A19981 | | | | | | | | BP | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026383 | Uranium | 3.69E+00 | ug/L | 3.8E-01 | | 8.28E-02 | | 3.58E+00 | UTOT_KPA | 2.53E-02 | 02/28/2007 | | | 70 | D |
| **BS** | 7440-61-1 | | | 3.8E-01 | | | | 103.0 | | ML | 14:31 | | | 130 | |



**U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.**
**J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).**
**B Qual- Analyte was found in the associated laboratory blank above the MDC.**

# STL Richland QC Duplicate Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

**Lab Sample Id:** JM6JQ1FR **Sdg/Rept Nbr:** W05099 34621 **Collection Date:** 01/19/2007 09:09
**Client Id:** B1LJF6 **Matrix:** WATER WATER **Sample On Date:**
**Moisture/Solids%*:** **QC Type:** DUP **Received Date:** 01/19/2007

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| W07-012 | MW6-SBB-A19981 | | | | | | | | AQ | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026402 | BETA | 1.06E+04 | pCi/L | 1.3E+03 | | 4.75E+00 | 100.0 | | 9310_ALPHAB | 1.251E-01 | 02/13/2007 | .8 | 0.1 | | D |
| DUP | 12587-47-2 | 1.07E+04 | | 6.1E+01 | | | | | | L | 14:56 | 20.0 | 3 | | |



U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland QC Duplicate Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

**Lab Sample Id:** JM6JQ2ER **Sdg/Rept Nbr:** W05099 34621 **Collection Date:** 01/19/2007 09:09
**Client Id:** B1LJF6 **Matrix:** WATER WATER **Sample On Date:**
**Moisture/Solids%*:** **QC Type:** DUP **Received Date:** 01/19/2007

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| W07-012 | MW6-SBB-A19981 | | | | | | | | AR | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026401 | ALPHA | 6.79E+00 | pCi/L | 2.7E+00 | | 2.27E+00 | 100.0 | | 9310_ALPHAB | 1.134E-01 | 02/14/2007 | 36.3 | 1.1 | | D |
| **DUP** | 12587-46-1 | 4.70E+00 | | 2.2E+00 | | | | | | L | 11:53 | 20.0 | 3 | | |



**U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.**
**J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).**
**B Qual- Analyte was found in the associated laboratory blank above the MDC.**

# STL Richland QC Duplicate Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

**Lab Sample Id:** JM71V1CR **Sdg/Rept Nbr:** W05099 34621 **Collection Date:** 01/22/2007 12:53
**Client Id:** B1LNM1 **Matrix:** WATER WATER **Sample On Date:**
**Moisture/Solids%*:** **QC Type:** DUP **Received Date:** 01/22/2007

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| S07-001 | MW6-SBB-A19981 | | | | | | | | AS | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026384 | SR-90 | 1.40E+01 | pCi/L | 2.2E+00 | | 3.62E-01 | 86.2 | | SRISO_SEP_P | 1.0074E+00 | 02/11/2007 | 6.6 | 0.6 | | D |
| DUP | 10098-97-2 | 1.50E+01 | | 7.7E-01 | | | | | | L | 09:20 | 20.0 | 3 | | |



U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland QC Duplicate Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

| | | | | | |
|---|---|---|---|---|---|
| **Lab Sample Id:** | JM7311ER | **Sdg/Rept Nbr:** | W05099 34621 | **Collection Date:** | 01/22/2007 13:25 |
| **Client Id:** | B1LN27 | **Matrix:** | WATER WATER | **Sample On Date:** | |
| **Moisture/Solids%*:** | | **QC Type:** | DUP | **Received Date:** | 01/22/2007 |

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| A07-001 | MW6-SBB-A19981 | | | | | | | | AU | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026400 | I-129L | 4.69E-03 | pCi/L | 1.4E-01 | U | 2.62E-01 | 94.9 | | I129LL_SEP_L | 3.9024E+00 | 02/21/2007 | 0.0 | 0.7 | | D |
| DUP | 15046-84-1 | -6.85E-02 | | 1.4E-01 | | | | | | L | 14:39 | 20.0 | 3 | | |



U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland QC Duplicate Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

| | | | | | |
|---|---|---|---|---|---|
| **Lab Sample Id:** | JM7381ER | **Sdg/Rept Nbr:** | W05099 34621 | **Collection Date:** | 01/22/2007 12:05 |
| **Client Id:** | B1LN35 | **Matrix:** | WATER WATER | **Sample On Date:** | |
| **Moisture/Solids%*:** | | **QC Type:** | DUP | **Received Date:** | 01/22/2007 |

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| A07-001 | MW6-SBB-A19981 | | | | | | | | AV | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026385 | H-3 | 1.21E+03 | pCi/L | 1.9E+02 | | 2.93E+02 | 100.0 | | 906.0_H3_LSC | 5.00E-03 | 02/03/2007 | 11.9 | 1.1 | | D |
| **DUP** | 10028-17-8 | 1.36E+03 | | 1.6E+02 | | | | | | L | 21:54 | 20.0 | 3 | | |



**U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.**
**J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).**
**B Qual- Analyte was found in the associated laboratory blank above the MDC.**

# STL Richland QC Duplicate Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

| | | | | | |
|---|---|---|---|---|---|
| **Lab Sample Id:** | JM7381FR | **Sdg/Rept Nbr:** | W05099 34621 | **Collection Date:** | 01/22/2007 12:05 |
| **Client Id:** | B1LN35 | **Matrix:** | WATER WATER | **Sample On Date:** | |
| **Moisture/Solids%*:** | | **QC Type:** | DUP | **Received Date:** | 01/22/2007 |

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| A07-001 | MW6-SBB-A19981 | | | | | | | | AW | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026396 | TC-99 | 1.33E+02 | pCi/L | 1.5E+01 | | 9.70E+00 | 100.0 | | TC99_ETVDSK | 1.249E-01 | 02/03/2007 | 5.2 | 0.7 | | D |
| DUP | 14133-76-7 | 1.40E+02 | | 7.4E+00 | | | | | | L | 15:12 | 20.0 | 3 | | |



U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland QC Duplicate Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

| | | | | | |
|---|---|---|---|---|---|
| **Lab Sample Id:** | JM7421FR | **Sdg/Rept Nbr:** | W05099 34621 | **Collection Date:** | 01/22/2007 08:00 |
| **Client Id:** | B1LN43 | **Matrix:** | WATER WATER | **Sample On Date:** | |
| **Moisture/Solids%*:** | | **QC Type:** | DUP | **Received Date:** | 01/22/2007 |

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| A07-001 | MW6-SBB-A19981 | | | | | | | | AY | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026383 | Uranium | 1.98E-02 | ug/L | 2.2E-03 | U | 7.68E-02 | | | UTOT_KPA | 2.73E-02 | 02/28/2007 | 181.5 | 12.1 | | D |
| **DUP** | 7440-61-1 | 9.65E-04 | | 2.2E-03 | | | | | | ML | 15:46 | 20.0 | 3 | | |



**U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.**
**J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).**
**B Qual- Analyte was found in the associated laboratory blank above the MDC.**

# STL Richland Qc Matrix Spike Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

**Lab Sample Id:** JM7311DW **Sdg/Rept Nbr:** W05099 34621 **Collection Date:** 01/22/2007 13:25

**Client Id:** B1LN27 **Matrix:** WATER WATER **Sample On Date:**

**Moisture/Solids%*:** **QC Type:** MS **Received Date:** 01/22/2007

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| A07-001 | MW6-SBB-A19981 | | | | | | | | AT | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026396 | TC-99 | 3.38E+03 | pCi/L | 2.5E+02 | | 9.55E+00 | 100.0 | 3.57E+03 | TC99_ETVDSK | 1.267E-01 | 02/03/2007 | | | 60 | D |
| MS | 14133-76-7 | | | 3.2E+01 | | | | 94.5 | | L | 15:12 | | | 140 | |



U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland Qc Matrix Spike Report

**Lab Code:** STLRL

**FormNbr:** R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05099.Edd, h:\Reportdb\edd\FeadIV\Rad\34621.Edd

**Lab Sample Id:** JM7401FW **Sdg/Rept Nbr:** W05099 34621 **Collection Date:** 01/22/2007 11:39

**Client Id:** B1LN42 **Matrix:** WATER WATER **Sample On Date:**

**Moisture/Solids%*:** **QC Type:** MS **Received Date:** 01/22/2007

| SAF Nbr | Contract Nbr | Test User | Case Nbr | SAS Nbr | Suffix | Decant | Distilled Volume | File Id | FSuffix | RTyp |
|---|---|---|---|---|---|---|---|---|---|---|
| A07-001 | MW6-SBB-A19981 | | | | | | | | AX | H |

| Batch # / Qc Type | Analyt/ CAS# | Result/ Orig Rst | Unit | Tot/Cnt Uncert 2S | Qu-al | MDC | Tracer Yield | Spk Conc/ %Rec | Analy Method | Aliq Size/ | Date/Time Analyzed | RPD/ UCL | RER/ UCL | LCS LCL/UCL | R Typ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7026383 | Uranium | 3.49E+01 | ug/L | 7.3E+00 | | 8.45E-02 | | 3.61E+01 | UTOT_KPA | 2.48E-02 | 02/28/2007 | | | 60 | D |
| **MS** | 7440-61-1 | | | 7.3E+00 | | | | 96.7 | | ML | 14:36 | | | 140 | |



**U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.**
**J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).**
**B Qual- Analyte was found in the associated laboratory blank above the MDC.**

| FormN | FormS | Recd | FormatTy | Versio | SampleNbr | Contract | LabCode | LabC | Case | SAS | SDGNbr |
|---|---|---|---|---|---|---|---|---|---|---|---|
| W | AA | H | FEAD | 05 | B1L6J0 | MW6-SBB-A19981 | STLRL | | | | W05099 |
| W | AB | H | FEAD | 05 | B1L6D8 | MW6-SBB-A19981 | STLRL | | | | W05099 |
| W | AC | H | FEAD | 05 | B1L6H6 | MW6-SBB-A19981 | STLRL | | | | W05099 |
| W | AD | H | FEAD | 05 | B1L6J0 DUP | MW6-SBB-A19981 | STLRL | | | | W05099 |
| W | AE | H | FEAD | 05 | NA | MW6-SBB-A19981 | STLRL | | | | W05099 |
| W | AF | H | FEAD | 05 | NA | MW6-SBB-A19981 | STLRL | | | | W05099 |

| AnalyticalMatrix | LabReceivedDate | CollectedDate | PercentSd | Decante | LabSampleId | LabFileId | SafNbr |
|---|---|---|---|---|---|---|---|
| WATER | 01/23/2007 | 01/23/2007 | | | 9JM8V010 | | |
| WATER | 01/23/2007 | 01/23/2007 | | | 9JM8V210 | | |
| WATER | 01/23/2007 | 01/23/2007 | | | 9JM8VH10 | | |
| WATER | 01/23/2007 | 01/23/2007 | | | JM8V01ER | | |
| WATER | 01/23/2007 | | | | JNGXQAB | | |
| WATER | 01/23/2007 | | | | JNGXQAC | | |

| CollectedTime | PercentM | Filename | SpecificMat |
|---|---|---|---|
| 09:51 | | h:\Reportdb\edd\FeadIV\Wet\W0509 | |
| 09:01 | | h:\Reportdb\edd\FeadIV\Wet\W0509 | |
| 10:36 | | h:\Reportdb\edd\FeadIV\Wet\W0509 | |
| 09:51 | | h:\Reportdb\edd\FeadIV\Wet\W0509 | |
| | | h:\Reportdb\edd\FeadIV\Wet\W0509 | |
| | | h:\Reportdb\edd\FeadIV\Wet\W0509 | |

| FormNbr | FormSuffix | RecordType | CASNbr | Isotope | Result |
|---|---|---|---|---|---|
| W | AA | D | COLIFORM | COLIFORM | +1.00E+00 |
| W | AB | D | COLIFORM | COLIFORM | +1.00E+00 |
| W | AC | D | COLIFORM | COLIFORM | +1.00E+00 |
| W | AD | D | COLIFORM | COLIFORM | +1.00E+00 |
| W | AE | D | COLIFORM | COLIFORM | +1.00E+00 |
| W | AF | D | COLIFORM | COLIFORM | +1.35E+01 |

| OrigResult | ConcentrationUr | ActionCode | AnalysisMethod | SampleAliquotS | SampleAliquotU |
|---|---|---|---|---|---|
| | Col/100ml | I | 9223 COLIFO | +1.00E+02 | ML |
| | Col/100ml | I | 9223 COLIFO | +1.00E+02 | ML |
| | Col/100ml | I | 9223 COLIFO | +1.00E+02 | ML |
| | Col/100ml | I | 9223 COLIFO | +1.00E+02 | ML |
| | Col/100ml | I | 9223 COLIFO | +1.00E+02 | ML |
| | Col/100ml | I | 9223 COLIFO | +1.00E+02 | ML |

| LabQualifier | DilutionFactor | DateAnalyzed | TimeAnalyzed | BatchNbr | QcType |
|---|---|---|---|---|---|
| U | 1 | 01/23/2007 | 14:33 | 7026382 | |
| UJ | 1 | 01/23/2007 | 14:33 | 7026382 | |
| U | 1 | 01/23/2007 | 14:33 | 7026382 | |
| U | 1 | 01/23/2007 | 14:35 | 7026382 | DUP |
| U | 1 | 01/23/2007 | 14:36 | 7026382 | BLK |
| | 1 | 01/23/2007 | 14:36 | 7026382 | BS |

| SpikeConc | PercentRecover | Rpd | RpdMaximum | Rpd_UCL | LCSMS_LCL |
|---|---|---|---|---|---|
| | | 0 | | | |

| LCS_UCL | TracerYield | DetectionLimit | RL | RLType | CommentCode |
|---|---|---|---|---|---|
| | | 1.00E+00 | 1.00E+00 | BDL | |
| | | 1.00E+00 | 1.00E+00 | BDL | |
| | | 1.00E+00 | 1.00E+00 | BDL | |
| | | 1.00E+00 | 1.00E+00 | BDL | |
| | | 1.00E+00 | 1.00E+00 | BDL | |
| | | 1.00E+00 | 1.00E+00 | BDL | |

SEVERN TRENT STL

# Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

2/14/2007 1:27:04 PM

**Lot No., Due Date:** J7A220134; 03/05/2007

**Client, Site:** 384868; PGW 615HANFORD HANFORD

**QC Batch No., Method Test:** 7026401; RALPHA-A Alpha by GPC-Am

**SDG, Matrix:** W05099; WATER

| | Yes | No | N/A |
|---|---|---|---|
| 8.0 Correction Calculation Protocol Used.<br>OK | ✓ | | |
| 8.01 The Appropriate Methods Were Used To Analyze the Samples<br>OK | ✓ | | |
| 8.02 Final Results Are in the Appropriate Activity Units<br>OK | ✓ | | |
| 8.03 Batch Contains the Required QC Appropriate for the Method<br>OK | ✓ | | |
| 8.04 The Correct Tracer and QC Vials Where Used in the Samples<br>OK | ✓ | | |
| 8.05 Sample was Appropriately Traced Before or After Fractionating the Sample<br>OK | ✓ | | |
| 8.06 At Least the Minimum Sample Volume Was Used<br>Analysis Volume => JM6JQ1AA 110.80<200.00<br>JM6JQ2AA 110.80<200.00 Q:VB | | ✓ | |
| 8.07 The Correct Count Geometry was Used.<br>OK | ✓ | | |
| 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved.<br>OK | ✓ | | |
| 8.09 Method Blank is within Control Limits.<br>OK | ✓ | | |
| 8.1 Comments: | | | |
| 8.11 Matrix Blank is within Control Limits.<br>No Matrix Blanks (MBlks) found in Batch! | | | ✓ |
| 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary).<br>OK | ✓ | | |
| 8.13 QAS Specified Duplicate Equation Value within Control Limits. NCM ID-09446<br>RPD > UCL : 20.0=> JM6JQ1AE ALPHA 53.0<br>JM6JQ2AE ALPHA 44.0 (RPD) | | ✓ | |
| 8.14 LCS within Control Limits.<br>OK | ✓ | | |
| 8.15 MLCS within Control Limits.<br>No Matrix Spikes (MLCS) found in Batch! | | | ✓ |
| 8.16 MS within Control Limits.<br>No Matrix Spike Samples (MS) found in Batch! | | | ✓ |
| 8.17 Tracer within Control Limits.<br>OK | ✓ | | |
| 8.18 Samples are above Minimum Tracer Yield (No Failed Samples)<br>OK | ✓ | | |
| 8.19 Sample Specific MDC <= CRDL.<br>OK | ✓ | | |
| 8.2 Comments: | | | |
| 8.21 Result < Lc, Activity Not Detected, U Flag.<br>No Limit Specified! | | | ✓ |
| 8.22 Result < Mdc, Activity Not Detected, U Flag.<br>Batch Positive Result =><br>JM6JQ1AA ALPHA 4.3E+00 L:2.1E+00<br>JM6JQ2AA ALPHA 4.7E+00 L:1.9E+00 | | ✓ | |
| 8.23 Result <= Action Level, when Defined.<br>OK; No Action Level Found => ALPHA<br>OK; No Callin Level Found => ALPHA | ✓ | | |
| 8.24 Result + 3s >=0, Not Too Negative.<br>OK | ✓ | | |

| | | | |
|---|---|---|---|
| 8.25 Counting Spectrum are within FWHM Limits.<br>No FWHM found in Batch Data! | Yes | No | N/A ✓ |
| 8.26 Instruments have Current Calibrations. | Yes | No | N/A |
| 8.27 Correct Count Library Used.<br>No Count Library found in Batch Data! | Yes | No | N/A ✓ |
| 8.28 Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later versions) | Yes | No | N/A |
| 8.29 Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later versions) | Yes | No | N/A |
| 8.3 Comments: | | | |
| 8.31 Results Blank Subtracted as Appropriate.<br>OK | Yes ✓ | No | N/A |

**First Level Review** Pam Andersen **Date** 2-14-07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7026401
W05099

| Review Item | Yes (√) | No (√) | N/A (√) |
|---|---|---|---|
| A. Sample Analysis<br>1. Are the sample yields within acceptance criteria? | ✓ | | |
| 2. Is the sample Minimum Detectable Activity < the Contract Detection Limit? | ✓ | | |
| 3. Are the correct isotopes reported? | ✓ | | |
| B. QC Samples<br>1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit? | ✓ | | |
| 2. Does the blank result meet the Contract criteria? | ✓ | | |
| 3. Is the blank result < the Contract Detection Limit? | ✓ | | |
| 4, Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit? | | | ✓ |
| 5. Is the LCS recovery with contract acceptance criteria? | ✓ | | |
| 7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit? | ✓ | | |
| 8. Do the MS/MSD results and yields meet acceptance criteria? | ✓ | | |
| 9. Do the duplicate sample results and yields meet acceptance criteria? | ✓ | | |
| C. Other<br>1. Are all Nonconformances included and noted? | ✓ | | |
| 2. Are all required forms filled out? | ✓ | | |
| 3. Was the correct methodology used? | ✓ | | |
| 4. Was transcription checked? | ✓ | | |
| 5. Were all calculations checked at a minimum frequency? | ✓ | | |
| 6. Were units checked? | ✓ | | |

Comments on any "No" response: See NCM

Second Level Review: Sheryl A Adam Date: 2-20-07

# Clouseau
# Nonconformance Memo

SEVERN TRENT SERVICES

NCM #: 10-09446
NCM Initiated By: Pam Anderson
Date Opened: 02/14/2007
Date Closed:

Classification: **Anomaly**
Status: **GLREVIEW**
Production Area: Environmental - Sep
Tests: Alpha by GPC-Am
Lot #'s (Sample #'s): J7A220134 (1),
QC Batches: 7026401

Nonconformance: Other (describe in detail)
Subcategory: Other (explanation required)

## Problem Description / Root Cause

| Name | Date | Description |
|---|---|---|
| Pam Anderson | 02/14/2007 | The dupicate in this alpha in water batch was out. A recount brings the sample and duplicate in agreement. |

## Corrective Action

| Name | Date | Corrective Action |
|---|---|---|
| Pam Anderson | 02/14/2007 | The sample and duplicate were recounted. |

## Client Notification Summary

| Client | Project Manager | Notified | Response | How Notified | Note |
|---|---|---|---|---|---|
| | Response | Response Note | | | |

## Quality Assurance Verification

| Verified By | Due Date | Status | Notes |
|---|---|---|---|
| | | This section not yet completed by QA. | |

## Approval History

| Date Approved | Approved By | Position |
|---|---|---|

SEVERN TRENT STL

# Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

2/14/2007 12:33:06 PM

**Lot No., Due Date:** J7A220134; 03/05/2007

**Client, Site:** 384868; PGW 615HANFORD HANFORD

**QC Batch No., Method Test:** 7026402; RBETA-SR Beta by GPC-Sr/Y

**SDG, Matrix:** W05099; WATER

| | Yes | No | N/A |
|---|---|---|---|
| 8.0 Correction Calculation Protocol Used.<br>OK | ✓ | | |
| 8.01 The Appropriate Methods Were Used To Analyze the Samples<br>OK | ✓ | | |
| 8.02 Final Results Are in the Appropriate Activity Units<br>OK | ✓ | | |
| 8.03 Batch Contains the Required QC Appropriate for the Method<br>OK | ✓ | | |
| 8.04 The Correct Tracer and QC Vials Where Used in the Samples<br>OK | ✓ | | |
| 8.05 Sample was Appropriately Traced Before or After Fractionating the Sample<br>OK | ✓ | | |
| 8.06 At Least the Minimum Sample Volume Was Used<br>Analysis Volume => JM6JQ1AC 125.10<200.00 Q:VB | | ✓ | |
| 8.07 The Correct Count Geometry was Used.<br>OK | ✓ | | |
| 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved.<br>OK | ✓ | | |
| 8.09 Method Blank is within Control Limits.<br>OK | ✓ | | |
| 8.1 Comments: | | | |
| 8.11 Matrix Blank is within Control Limits.<br>No Matrix Blanks (MBlks) found in Batch! | | | ✓ |
| 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary).<br>OK | ✓ | | |
| 8.13 QAS Specified Duplicate Equation Value within Control Limits.<br>OK (RPD) | ✓ | | |
| 8.14 LCS within Control Limits.<br>OK | ✓ | | |
| 8.15 MLCS within Control Limits.<br>No Matrix Spikes (MLCS) found in Batch! | | | ✓ |
| 8.16 MS within Control Limits.<br>No Matrix Spike Samples (MS) found in Batch! | | | ✓ |
| 8.17 Tracer within Control Limits.<br>OK | ✓ | | |
| 8.18 Samples are above Minimum Tracer Yield (No Failed Samples)<br>OK | ✓ | | |
| 8.19 Sample Specific MDC <= CRDL.<br>MDC/MDA > CRDL => JM6JQ1AC BETA 5.0E+00>4.0E+00<br>JM6JQ1AF BETA 4.8E+00>4.0E+00 Q:C1 | | ✓ | |
| 8.2 Comments: | | | |
| 8.21 Result < Lc, Activity Not Detected, U Flag.<br>No Limit Specified! | | | ✓ |
| 8.22 Result < Mdc, Activity Not Detected, U Flag.<br>Batch Positive Result =><br>JM6JQ1AC BETA 1.1E+04 L:5.0E+00 | | ✓ | |
| 8.23 Result <= Action Level, when Defined.<br>OK; No Action Level Found => BETA<br>OK; No Callin Level Found => BETA | ✓ | | |
| 8.24 Result + 3s >=0, Not Too Negative.<br>OK | ✓ | | |
| 8.25 Counting Spectrum are within FWHM Limits.<br>No FWHM found in Batch Data! | | | ✓ |



NCM # 10-09445

| | | | |
|---|---|---|---|
| 8.26 Instruments have Current Calibrations. | Yes | No | N/A |
| 8.27 Correct Count Library Used.<br>No Count Library found in Batch Data! | Yes | No | N/A ✓ |
| 8.28 Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later versions) | Yes | No | N/A |
| 8.29 Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later versions) | Yes | No | N/A |

8.3 Comments:

| | | | |
|---|---|---|---|
| 8.31 Results Blank Subtracted as Appropriate.<br>OK | Yes ✓ | No | N/A |

**First Level Review** Pam Anderson **Date** 2-14-07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7026402
W05099

| Review Item | Yes (√) | No (√) | N/A (√) |
|---|---|---|---|
| A. Sample Analysis<br>1. Are the sample yields within acceptance criteria? | / | | |
| 2. Is the sample Minimum Detectable Activity < the Contract Detection Limit? | / | | |
| 3. Are the correct isotopes reported? | / | | |
| B. QC Samples<br>1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit? | / | | |
| 2. Does the blank result meet the Contract criteria? | / | | |
| 3. Is the blank result < the Contract Detection Limit? | / | | |
| 4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit? | | | / |
| 5. Is the LCS recovery with contract acceptance criteria? | / | | |
| 7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit? | / | | |
| 8. Do the MS/MSD results and yields meet acceptance criteria? | / | | |
| 9. Do the duplicate sample results and yields meet acceptance criteria? | / | | |
| C. Other<br>1. Are all Nonconformances included and noted? | / | | |
| 2. Are all required forms filled out? | / | | |
| 3. Was the correct methodology used? | / | | |
| 4. Was transcription checked? | / | | |
| 5. Were all calculations checked at a minimum frequency? | / | | |
| 6. Were units checked? | / | | |

Comments on any "No" response: See NCM

Second Level Review: Sheryl A Adam Date: 2-20-07

# Clouseau
# Nonconformance Memo

SEVERN TRENT SERVICES

NCM #: 10-09445
NCM Initiated By: Pam Anderson
Date Opened: 02/14/2007
Date Closed:

Classification: **Anomaly**
Status: **GLREVIEW**
Production Area: Environmental - Sep
Tests: Beta by GPC-Sr/Y
Lot #'s (Sample #'s): J7A220134 (1), J7A260000 (402),
QC Batches: 7026402

Nonconformance: Blank result above Contract Limit
Subcategory: Matrix effect

## Problem Description / Root Cause

| Name | Date | Description |
|---|---|---|
| Pam Anderson | 02/14/2007 | The blank in this beta batch of water is above 1/2 CRDL but below CRDL. The sample and duplicate in the batch have extremely high results, to the fouth power. Data will be accepted. |

## Corrective Action

| Name | Date | Corrective Action |
|---|---|---|
| Pam Anderson | 02/14/2007 | None at this time. |

## Client Notification Summary

| Client | Project Manager | Notified | Response | How Notified | Note | Response | Response Note |
|---|---|---|---|---|---|---|---|

## Quality Assurance Verification

| Verified By | Due Date | Status | Notes |
|---|---|---|---|
| | | This section not yet completed by QA. | |

## Approval History

| Date Approved | Approved By | Position |
|---|---|---|

SEVERN TRENT STL

# Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

2/12/2007 2:48:09 PM

Lot No., Due Date: J7A200173,J7A230129,J7A230125; 03/05/2007,03/08/2007

Client, Site: 384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 7026384; RSR85907 Sr-85/90 by GPC-7

SDG, Matrix: W05099; WATER

| | | | |
|---|---|---|---|
| **1.0 COC** | | | |
| 1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions? | ✓ Yes | No | N/A |
| **2.0 QC Batch** | | | |
| 2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet? | ✓ Yes | No | N/A |
| 2.2 Are the QC appropriate for the analysis included in the batch? | ✓ Yes | No | N/A |
| 2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc? | ✓ Yes | No | N/A |
| 2.4 Does the Worksheets include a Tracer Vial label for each sample? | ✓ Yes | No | N/A |
| **3.0 QC & Samples** | | | |
| 3.1 Is the blank results, yield, and MDA within contract limits? | ✓ Yes | No | N/A |
| 3.2 Is the LCS result, yield, and MDA within contract limits? | ✓ Yes | No | N/A |
| 3.3 Are the MS/MSD results, yields, and MDA within contract limits? | Yes | No | ✓ N/A |
| 3.4 Are the duplicate result, yields, and MDAs within contract limits? | ✓ Yes | No | N/A |
| 3.5 Are the sample yields and MDAs within contract limits? | ✓ Yes | No | N/A |
| **4.0 Raw Data** | | | |
| 4.1 Were results calculated in the correct units? | ✓ Yes | No | N/A |
| 4.2 Were analysis volumes entered correctly? | ✓ Yes | No | N/A |
| 4.3 Were Yields entered correctly? | ✓ Yes | No | N/A |
| 4.4 Were spectra reviewed/meet contractual requirements? | ✓ Yes | No | N/A |
| 4.5 Were raw counts reviewed for anomalies? | ✓ Yes | No | N/A |
| **5.0 Other** | | | |
| 5.1 Are all nonconformances included and noted? | Yes | No | ✓ N/A |
| 5.2 Are all required forms filled out? | ✓ Yes | No | N/A |
| 5.3 Was the correct methodology used? | ✓ Yes | No | N/A |
| 5.4 Was transcription checked? | ✓ Yes | No | N/A |
| 5.5 Were all calculations checked at a minimum frequency? | ✓ Yes | No | N/A |
| 5.6 Are worksheet entries complete and correct? | ✓ Yes | No | N/A |

6.0 Comments on any No response:

First Level Review Pam Anderson Date 2·12·07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7026384
W05099

| Review Item | Yes (√) | No (√) | N/A (√) |
|---|---|---|---|
| A. Sample Analysis<br>1. Are the sample yields within acceptance criteria? | ✓ | | |
| 2. Is the sample Minimum Detectable Activity < the Contract Detection Limit? | ✓ | | |
| 3. Are the correct isotopes reported? | ✓ | | |
| B. QC Samples<br>1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit? | ✓ | | |
| 2. Does the blank result meet the Contract criteria? | ✓ | | |
| 3. Is the blank result < the Contract Detection Limit? | ✓ | | |
| 4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit? | | | ✓ |
| 5. Is the LCS recovery with contract acceptance criteria? | ✓ | | |
| 7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit? | ✓ | | |
| 8. Do the MS/MSD results and yields meet acceptance criteria? | | | ✓ |
| 9. Do the duplicate sample results and yields meet acceptance criteria? | ✓ | | |
| C. Other<br>1. Are all Nonconformances included and noted? | | | ✓ |
| 2. Are all required forms filled out? | ✓ | | |
| 3. Was the correct methodology used? | ✓ | | |
| 4. Was transcription checked? | ✓ | | |
| 5. Were all calculations checked at a minimum frequency? | ✓ | | |
| 6. Were units checked? | ✓ | | |

Comments on any "No" response:

Second Level Review: Sherryl A Adam Date: 2-12-07

SEVERN TRENT STL

# Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

2/22/2007 1:22:52 PM

**Lot No., Due Date:** J7A220119,J7A230163; 03/05/2007,03/08/2007

**Client, Site:** 384868; PGW 615HANFORD HANFORD

**QC Batch No., Method Test:** 7026400; RGAMLEPS Gamma by LEPS

**SDG, Matrix:** W05099; WATER

| | Yes | No | N/A |
|---|---|---|---|
| **1.0 COC** | | | |
| 1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions? | ✓ | | |
| **2.0 QC Batch** | | | |
| 2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet? | ✓ | | |
| 2.2 Are the QC appropriate for the analysis included in the batch? | ✓ | | |
| 2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc? | ✓ | | |
| 2.4 Does the Worksheets include a Tracer Vial label for each sample? | ✓ | | |
| **3.0 QC & Samples** | | | |
| 3.1 Is the blank results, yield, and MDA within contract limits? | ✓ | | |
| 3.2 Is the LCS result, yield, and MDA within contract limits? | ✓ | | |
| 3.3 Are the MS/MSD results, yields, and MDA within contract limits? | | | ✓ |
| 3.4 Are the duplicate result, yields, and MDAs within contract limits? | ✓ | | |
| 3.5 Are the sample yields and MDAs within contract limits? | ✓ | | |
| **4.0 Raw Data** | | | |
| 4.1 Were results calculated in the correct units? | ✓ | | |
| 4.2 Were analysis volumes entered correctly? | ✓ | | |
| 4.3 Were Yields entered correctly? | ✓ | | |
| 4.4 Were spectra reviewed/meet contractual requirements? | ✓ | | |
| 4.5 Were raw counts reviewed for anomalies? | ✓ | | |
| **5.0 Other** | | | |
| 5.1 Are all nonconformances included and noted? | | | ✓ |
| 5.2 Are all required forms filled out? | ✓ | | |
| 5.3 Was the correct methodology used? | ✓ | | |
| 5.4 Was transcription checked? | ✓ | | |
| 5.5 Were all calculations checked at a minimum frequency? | ✓ | | |
| 5.6 Are worksheet entries complete and correct? | ✓ | | |

6.0 Comments on any No response:

**First Level Review** Thomas E. Mikland **Date** 2/22/07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7026400
W05099

| Review Item | Yes (√) | No (√) | N/A (√) |
|---|---|---|---|
| A. Sample Analysis<br>1. Are the sample yields within acceptance criteria? | √ | | |
| 2. Is the sample Minimum Detectable Activity < the Contract Detection Limit? | √ | | |
| 3. Are the correct isotopes reported? | √ | | |
| B. QC Samples<br>1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit? | √ | | |
| 2. Does the blank result meet the Contract criteria? | √ | | |
| 3. Is the blank result < the Contract Detection Limit? | √ | | |
| 4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit? | | | √ |
| 5. Is the LCS recovery with contract acceptance criteria? | √ | | |
| 7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit? | √ | | |
| 8. Do the MS/MSD results and yields meet acceptance criteria? | | | √ |
| 9. Do the duplicate sample results and yields meet acceptance criteria? | √ | | |
| C. Other<br>1. Are all Nonconformances included and noted? | | | √ |
| 2. Are all required forms filled out? | √ | | √ |
| 3. Was the correct methodology used? | √ | | |
| 4. Was transcription checked? | √ | | |
| 5. Were all calculations checked at a minimum frequency? | √ | | |
| 6. Were units checked? | √ | | |

SAA 2-23-07

Comments on any "No" response:

Second Level Review: Sheryl A Adam Date: 2-23-07

SEVERN TRENT STL

# Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

2/5/2007 4:23:18 PM

**Lot No., Due Date:** J7A200176,J7A220134,J7A230163,J7A230123; 03/05/2007,03/08/2007

**Client, Site:** 384868; PGW 615HANFORD HANFORD

**QC Batch No., Method Test:** 7026396; RTC99 Tc-99 by LSC

**SDG, Matrix:** W05099; WATER

| | Yes | No | N/A |
|---|---|---|---|
| 8.0 Correction Calculation Protocol Used.<br>OK | ✓ | | |
| 8.01 The Appropriate Methods Were Used To Analyze the Samples<br>OK | ✓ | | |
| 8.02 Final Results Are in the Appropriate Activity Units<br>OK | ✓ | | |
| 8.03 Batch Contains the Required QC Appropriate for the Method<br>OK | ✓ | | |
| 8.04 The Correct Tracer and QC Vials Where Used in the Samples<br>Incorrect Tracer/Vial => JM7311AD TCSG<>TCSE Q:V9 | | ✓ | |
| 8.05 Sample was Appropriately Traced Before or After Fractionating the Sample<br>OK | ✓ | | |
| 8.06 At Least the Minimum Sample Volume Was Used<br>OK | ✓ | | |
| 8.07 The Correct Count Geometry was Used.<br>OK | ✓ | | |
| 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved.<br>OK | ✓ | | |
| 8.09 Method Blank is within Control Limits.<br>OK | ✓ | | |
| 8.1 Comments: | | | |
| 8.11 Matrix Blank is within Control Limits.<br>No Matrix Blanks (MBlks) found in Batch! | | | ✓ |
| 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary).<br>OK | ✓ | | |
| 8.13 QAS Specified Duplicate Equation Value within Control Limits.<br>OK (RPD) | ✓ | | |
| 8.14 LCS within Control Limits.<br>OK | ✓ | | |
| 8.15 MLCS within Control Limits.<br>No Matrix Spikes (MLCS) found in Batch! | | | ✓ |
| 8.16 MS within Control Limits.<br>OK | ✓ | | |
| 8.17 Tracer within Control Limits.<br>No Tracers found in Batch! | | | ✓ |
| 8.18 Samples are above Minimum Tracer Yield (No Failed Samples)<br>No Tracers found in Batch! | | | ✓ |
| 8.19 Sample Specific MDC <= CRDL.<br>OK | ✓ | | |
| 8.2 Comments: | | | |
| 8.21 Result < Lc, Activity Not Detected, U Flag.<br>No Limit Specified! | | | ✓ |
| 8.22 Result < Mdc, Activity Not Detected, U Flag.<br>No Positive Results<br>OK Calc_IDL Not Calculated | ✓ | | |
| 8.23 Result <= Action Level, when Defined.<br>OK; No Action Level Found => TC-99<br>OK; No Callin Level Found => TC-99 | ✓ | | |
| 8.24 Result + 3s >=0, Not Too Negative.<br>OK | ✓ | | |
| 8.25 Counting Spectrum are within FWHM Limits.<br>No FWHM found in Batch Data! | | | ✓ |

| | | | |
|---|---|---|---|
| 8.26 Instruments have Current Calibrations. | Yes | No | N/A |
| 8.27 Correct Count Library Used.<br>No Count Library found in Batch Data! | Yes | No | N/A ✓ |
| 8.28 Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later versions) | Yes | No | N/A |
| 8.29 Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later versions) | Yes | No | N/A |
| 8.3 Comments: | | | |
| 8.31 Results Blank Subtracted as Appropriate.<br>OK | Yes ✓ | No | N/A |

**First Level Review** Pam Anderson **Date** 2-5-07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7026396
W05099

| Review Item | Yes (√) | No (√) | N/A (√) |
|---|---|---|---|
| A. Sample Analysis<br>1. Are the sample yields within acceptance criteria? | ✓ | | |
| 2. Is the sample Minimum Detectable Activity < the Contract Detection Limit? | ✓ | | |
| 3. Are the correct isotopes reported? | ✓ | | |
| B. QC Samples<br>1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit? | ✓ | | |
| 2. Does the blank result meet the Contract criteria? | ✓ | | |
| 3. Is the blank result < the Contract Detection Limit? | ✓ | | |
| 4, Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit? | | | ✓ |
| 5. Is the LCS recovery with contract acceptance criteria? | ✓ | | |
| 7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit? | ✓ | | |
| 8. Do the MS/MSD results and yields meet acceptance criteria? | | | ✓ |
| 9. Do the duplicate sample results and yields meet acceptance criteria? | ✓ | | |
| C. Other<br>1. Are all Nonconformances included and noted? | | | ✓ |
| 2. Are all required forms filled out? | ✓ | | |
| 3. Was the correct methodology used? | ✓ | | |
| 4. Was transcription checked? | ✓ | | |
| 5. Were all calculations checked at a minimum frequency? | ✓ | | |
| 6. Were units checked? | ✓ | | |

Comments on any "No" response:

Second Level Review: Sheryl A Adam Date: 2-6-07

SEVERN TRENT STL

# Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

2/7/2007 8:27:51 AM

**Lot No., Due Date:** J7A230163; 03/08/2007

**Client, Site:** 384868; PGW 615HANFORD HANFORD

**QC Batch No., Method Test:** 7026385; RTRITIUM H-3 by LSC

**SDG, Matrix:** W05099; WATER

| | Yes | No | N/A |
|---|---|---|---|
| 8.0 Correction Calculation Protocol Used.<br>OK | ✓ | | |
| 8.01 The Appropriate Methods Were Used To Analyze the Samples<br>OK | ✓ | | |
| 8.02 Final Results Are in the Appropriate Activity Units<br>OK | ✓ | | |
| 8.03 Batch Contains the Required QC Appropriate for the Method<br>OK | ✓ | | |
| 8.04 The Correct Tracer and QC Vials Where Used in the Samples<br>OK | ✓ | | |
| 8.05 Sample was Appropriately Traced Before or After Fractionating the Sample<br>OK | ✓ | | |
| 8.06 At Least the Minimum Sample Volume Was Used<br>Analysis Volume => JM7381AA 5.00<10.00<br>JM74E1AA 5.00<10.00<br>JM7401AA 5.00<10.00<br>JM7421AA 5.00<10.00 Q:VB<br>ok AL 2/7/07 | | ✓ | |
| 8.07 The Correct Count Geometry was Used.<br>Count Geometry => JNG0E1AF SVP15/5<>SVP10/10<br>JNG0E1AG SVP15/5<>SVP10/10<br>JNG0E1AA SVP15/5<>SVP10/10<br>JNG0E1AC SVP15/5<>SVP10/10<br>JNG0E1AD SVP15/5<>SVP10/10<br>JNG0E1AE SVP15/5<>SVP10/10<br>JM7381AA SVP15/5<>SVP10/10<br>JM7381AE SVP15/5<>SVP10/10<br>JM74E1AA SVP15/5<>SVP10/10<br>JM7401AA SVP15/5<>SVP10/10<br>JM7421AA SVP15/5<>SVP10/10 Q:VC<br>ok AL 2/7/07 | | ✓ | |
| 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved.<br>OK | ✓ | | |
| 8.09 Method Blank is within Control Limits.<br>OK | ✓ | | |
| 8.1 Comments: | | | |
| 8.11 Matrix Blank is within Control Limits.<br>OK | ✓ | | |
| 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary).<br>OK | ✓ | | |
| 8.13 QAS Specified Duplicate Equation Value within Control Limits.<br>OK (RPD) | ✓ | | |
| 8.14 LCS within Control Limits.<br>OK | ✓ | | |
| 8.15 MLCS within Control Limits.<br>OK | ✓ | | |
| 8.16 MS within Control Limits.<br>No Matrix Spike Samples (MS) found in Batch! | | | ✓ |
| 8.17 Tracer within Control Limits.<br>No Tracers found in Batch! | | | ✓ |
| 8.18 Samples are above Minimum Tracer Yield (No Failed Samples)<br>No Tracers found in Batch! | | | ✓ |
| 8.19 Sample Specific MDC <= CRDL.<br>OK | ✓ | | |
| 8.2 Comments: | | | |
| 8.21 Result < Lc, Activity Not Detected, U Flag.<br>No Limit Specified! | | | ✓ |

| | | | |
|---|---|---|---|
| 8.22 Result < Mdc, Activity Not Detected, U Flag.<br>No Positive Results<br>OK Calc_IDL Not Calculated | Yes ✓ | No | N/A |
| 8.23 Result <= Action Level, when Defined.<br>OK; No Action Level Found => H-3<br><br>OK; No Callin Level Found => H-3 | Yes ✓ | No | N/A |
| 8.24 Result + 3s >=0, Not Too Negative.<br>OK | Yes ✓ | No | N/A |
| 8.25 Counting Spectrum are within FWHM Limits.<br>No FWHM found in Batch Data! | Yes | No | N/A ✓ |
| 8.26 Instruments have Current Calibrations. | Yes | No | N/A |
| 8.27 Correct Count Library Used.<br>No Count Library found in Batch Data! | Yes | No | N/A ✓ |
| 8.28 Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later versions) | Yes | No | N/A |
| 8.29 Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later versions) | Yes | No | N/A |
| 8.3 Comments: | | | |
| 8.31 Results Blank Subtracted as Appropriate.<br>OK | Yes ✓ | No | N/A |

**First Level Review** Angela Long **Date** 2-7-07

2/7/07 Pam Anderson

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7026385
W05099

| Review Item | Yes (√) | No (√) | N/A (√) |
|---|---|---|---|
| A. Sample Analysis<br>1. Are the sample yields within acceptance criteria? | ✓ | | |
| 2. Is the sample Minimum Detectable Activity < the Contract Detection Limit? | ✓ | | |
| 3. Are the correct isotopes reported? | ✓ | | |
| B. QC Samples<br>1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit? | ✓ | | |
| 2. Does the blank result meet the Contract criteria? | ✓ | | |
| 3. Is the blank result < the Contract Detection Limit? | ✓ | | |
| 4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit? | | | ✓ |
| 5. Is the LCS recovery with contract acceptance criteria? | ✓ | | |
| 7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit? | ✓ | | |
| 8. Do the MS/MSD results and yields meet acceptance criteria? | | | ✓ |
| 9. Do the duplicate sample results and yields meet acceptance criteria? | ✓ | | |
| C. Other<br>1. Are all Nonconformances included and noted? | | | ✓ |
| 2. Are all required forms filled out? | ✓ | | |
| 3. Was the correct methodology used? | ✓ | | |
| 4. Was transcription checked? | ✓ | | |
| 5. Were all calculations checked at a minimum frequency? | ✓ | | |
| 6. Were units checked? | ✓ | | |

Comments on any "No" response:

Second Level Review: Sheryl R Adam Date: 2-7-07

SEVERN TRENT STL

# Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

2/28/2007 4:16:19 PM

**Lot No., Due Date:** J7A230163; 03/08/2007

**Client, Site:** 384868; PGW 615HANFORD HANFORD

**QC Batch No., Method Test:** 7026383; RUNAT UNat by KPA

**SDG, Matrix:** W05099; WATER

| | Yes | No | N/A |
|---|---|---|---|
| **1.0 COC** | | | |
| 1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions? | ✓ | | |
| **2.0 QC Batch** | | | |
| 2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet? | ✓ | | |
| 2.2 Are the QC appropriate for the analysis included in the batch? | ✓ | | |
| 2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc? | ✓ | | |
| 2.4 Does the Worksheets include a Tracer Vial label for each sample? | ✓ | | |
| **3.0 QC & Samples** | | | |
| 3.1 Is the blank results, yield, and MDA within contract limits? | ✓ | | |
| 3.2 Is the LCS result, yield, and MDA within contract limits? | ✓ | | |
| 3.3 Are the MS/MSD results, yields, and MDA within contract limits? | ✓ | | |
| 3.4 Are the duplicate result, yields, and MDAs within contract limits? | ✓ | | |
| 3.5 Are the sample yields and MDAs within contract limits? | ✓ | | |
| **4.0 Raw Data** | | | |
| 4.1 Were results calculated in the correct units? | ✓ | | |
| 4.2 Were analysis volumes entered correctly? | ✓ | | |
| 4.3 Were Yields entered correctly? | ✓ | | |
| 4.4 Were spectra reviewed/meet contractual requirements? | ✓ | | |
| 4.5 Were raw counts reviewed for anomalies? | ✓ | | |
| **5.0 Other** | | | |
| 5.1 Are all nonconformances included and noted? | | | ✓ |
| 5.2 Are all required forms filled out? | ✓ | | |
| 5.3 Was the correct methodology used? | ✓ | | |
| 5.4 Was transcription checked? | ✓ | | |
| 5.5 Were all calculations checked at a minimum frequency? | ✓ | | |
| 5.6 Are worksheet entries complete and correct? | ✓ | | |

6.0 Comments on any No response:

**First Level Review** _____ **Date** 2/28/07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7026383
W05099

| Review Item | Yes (√) | No (√) | N/A (√) |
|---|---|---|---|
| A. Sample Analysis<br>1. Are the sample yields within acceptance criteria? | / | | |
| 2. Is the sample Minimum Detectable Activity < the Contract Detection Limit? | / | | |
| 3. Are the correct isotopes reported? | / | | |
| B. QC Samples<br>1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit? | / | | |
| 2. Does the blank result meet the Contract criteria? | / | | |
| 3. Is the blank result < the Contract Detection Limit? | / | | |
| 4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit? | | | / |
| 5. Is the LCS recovery with contract acceptance criteria? | / | | |
| 7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit? | / | | |
| 8. Do the MS/MSD results and yields meet acceptance criteria? | / | | |
| 9. Do the duplicate sample results and yields meet acceptance criteria? | / | | |
| C. Other<br>1. Are all Nonconformances included and noted? | | | / |
| 2. Are all required forms filled out? | / | | |
| 3. Was the correct methodology used? | / | | |
| 4. Was transcription checked? | / | | |
| 5. Were all calculations checked at a minimum frequency? | / | | |
| 6. Were units checked? | / | | |

Comments on any "No" response:

Second Level Review: Sheryl A Adam Date: 3-1-07

SEVERN TRENT STL

# Richland Laboratory
# Data Review Check List
# Hexavalent Chromium

Work Order Number(s): **JM8VH, JM8V0, JM8V2, JNGXQ**

Lab Sample Numbers or SDG: **W05099**

Method/Test/Parameter: **Coliform**

| Review Item | Yes (✓) | No (✓) | N/A (✓) | 2nd Level Review (✓) |
|---|---|---|---|---|
| **A. Initial Calibration**<br>1. Performed at required frequency with required number of levels? | | | ✓ | |
| 2. Correlation coefficient within QC limits? | | | ✓ | |
| 3. Initial calibration verification (ICV) analyzed immediately after calibration and results within QC limits? | | | ✓ | |
| 4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters ≤ reporting limit? | | | ✓ | |
| **B. Continuing Calibration**<br>1. CCV analyzed at required frequency and all parameters within QC limits? | | | ✓ | |
| 2. CCB analyzed at required frequency and all results ≤ reporting limit? | | | ✓ | |
| **C. Sample Analysis**<br>1. Were any samples with concentrations above the linear range for any parameter diluted and reanalyzed? | ✓ | | | |
| 2. Were all sample holding times met? | ✓ | | | |
| **D. QC Samples**<br>1. All results for the preparation blank below limits? | ✓ | | | |
| 2. MS or MS/MSD recoveries within QC limits and %RPD (for MSD) acceptable? | | | ✓ | |
| 3. LCS percent recovery within QC limits and %RPD (for LCSD) acceptable? | ✓ | | | |
| 4. Analytical spikes within QC limits where applicable? | | | ✓ | |
| 5. ICP only: One serial dilution performed per SDG? | | | ✓ | |
| 6. ICP only: CRDL standard (CRI or CRA) analyzed at required frequency? | | | ✓ | |
| 7. ICP only: Interference check samples (ICSA, ICSAB) and HICAL analyzed at the required frequencies and within QC limits? | | | ✓ | |

| Review Item | Yes (✓) | No (✓) | N/A (✓) | 2nd Level Review (✓) |
|---|---|---|---|---|
| **E. Other**<br><br>1. Are all nonconformances included and noted? | ✓ | | | |
| 2. Is the correct date and time of analysis shown? | ✓ | | | |
| 3. Did the analyst sign and date the front page of the analytical run? | ✓ | | | |
| 4. Correct methodology used? | ✓ | | | |
| 5. Transcriptions checked? | ✓ | | | |
| 6. Calculations checked at minimum frequency? | ✓ | | | |
| 7. Units checked? | ✓ | | | |

Comments on any "No" response

Analyst: [illegible] Date: 2/28/07

Second-Level Review: Sherryl R Aden Date: 2-28-07

PNNL J7A200173
W05099
Due 03.05.07

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # I07-019-10

Page 1 of 1

| | | |
|---|---|---|
| **Collector** Fluor Hanford F. M. HALL | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** I07-019 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** 100KR4IAM(1/2)-LOI, JANUARY 2007 | Logbook: HNF-N-506-2 | **Ice Chest No.** AFS-04-005 **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** CERCLA | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1LN79 | | W | 1/18/07 | 1254 | 1x20-mL P | Activity Scan | None |
| B1LN79 | | W | ↓ | ↓ | 3x1000-mL G/P | SRISO_SEP_PRECIP_GPC: Sr-90 (1) | HNO3 to pH <2 |

JMSM9

L. Wall 1/18/07

| | | | |
|---|---|---|---|
| Relinquished By Fluor Hanford F. M. HALL Print Sign JAN 18 2007 | Date/Time 1510 | Received By S. Smith Print S. Smith Sign JAN 18 2007 | Date/Time 1510 |
| Relinquished By | Date/Time | Received By | Date/Time |
| Relinquished By | Date/Time | Received By | Date/Time |
| Relinquished By | Date/Time | Received By | Date/Time |

**Matrix ***

| | | | |
|---|---|---|---|
| S | = Soil | DS | = Drum Solid |
| SE | = Sediment | DL | = Drum Liqui |
| SO | = Solid | T | = Tissue |
| SL | = Sludge | WI | = Wine |
| W | = Water | L | = Liquid |
| O | = Oil | V | = Vegetation |
| A | = Air | X | = Other |

**FINAL SAMPLE DISPOSITION** Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 01-18-07 1510

Client: POW SDG #: W05099 NA [ ] SAF #: I07-019 NA [ ]

Work Order Number: JJA200123 Chain of Custody # I07-019-10

Shipping Container ID: _____ Air Bill # _____

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? Yes [✓] No [ ]
4. Cooler temperature: _____ NA [✓] 5. Vermiculite/packing materials is NA [✓] Wet [ ] Dry [ ]
6. Number of samples in shipping container: 1
7. Sample holding times exceeded? NA [✓] Yes [ ] No [ ]
8. Samples have:
   - ____ tape
   - ____ custody seals
   - ____ hazard labels
   - 1 appropriate samples labels
9. Samples are:
   - 1 in good condition
   - ____ broken
   - ____ leaking.
   - ____ have air bubbles (Only for samples requiring head space)
10. Sample pH taken? NA [ ] pH<2 [✓] pH>2 [ ] pH>9 [ ]
11. Sample Location, Sample Collector Listed? * Yes [✓] No [ ]
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: S. Smith Date: 01-18-07 1510

| Client Sample ID | Analysis Requested | Condition | Comments/Action |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 9/03, Rev. 5

PNNL J7A200176
W05099
Due 03-05-07
Fluor Hanford

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S07-001-92**

Page 1 of 1

| | | |
|---|---|---|
| **Collector** F. M. HALL | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** S07-001 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** SURV, JANUARY 2007 | Logbook: HNF-N-506-2 | **Ice Chest No.** AFS-04-005 **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** SURV | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1LNW1 | | W | 1/18/07 | 1254 | 1x20-mL P | Activity Scan | None |
| B1LNW1 | | W | ↓ | ↓ | 1x500-mL P | TC99_ETVDSK_LSC: Tc-99 (1) | HCl to pH <2 |

JM5PC

R. Wotell 1/18/07

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| Fluor Hanford F. M. HALL | | | JAN 18 2007 1510 | S. Smith | S. Smith | | JAN 18 2007 1510 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S = Soil | | DS = Drum Solid | |
| SE = Sediment | | DL = Drum Liqui | |
| SO = Solid | | T = Tissue | |
| SL = Sludge | | WI = Wine | |
| W = Water | | L = Liquid | |
| O = Oil | | V = Vegetation | |
| A = Air | | X = Other | |

| **FINAL SAMPLE DISPOSITION** | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

PNNL J7A200176
W05099
due 03.05.07

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S07-001-82**

Page 1 of 1

| | | |
|---|---|---|
| **Collector** Fluor Hanford F. M. HALL | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** S07-001 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** SURV, JANUARY 2007 | Logbook: HNF-N-506-2 | **Ice Chest No.** AFS-04-05 **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** SURV | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1LNV6 | | W | 1/18/07 | 1114 | 1x20-mL P | Activity Scan | None |
| B1LNV6 | | W | ↓ | ↓ | 1x500-mL P | TC99_ETVDSK_LSC: Tc-99 (1) | HCl to pH <2 |
| | | | | | | JM5PE | |

R. Wall 1/18/07

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| Fluor Hanford F. M. HALL | | | JAN 18 2007 1510 | S. Smith | S. Smith | | JAN 18 2007 1510 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S = Soil | | DS = Drum Solid | |
| SE = Sediment | | DL = Drum Liqui | |
| SO = Solid | | T = Tissue | |
| SL = Sludge | | WI = Wine | |
| W = Water | | L = Liquid | |
| O = Oil | | V = Vegetation | |
| A = Air | | X = Other | |

| **FINAL SAMPLE DISPOSITION** | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 07-18-07 1510

Client: PGW SDG #: W05099 NA [ ] SAF #: 507-001 NA [ ]

Work Order Number: J7A200176 Chain of Custody # 507-001-92, 82

Shipping Container ID: _____ Air Bill # _____

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? Yes [✓] No [ ]
4. Cooler temperature: _____ NA [✓] 5. Vermiculite/packing materials is NA [✓] Wet [ ] Dry [ ]
6. Number of samples in shipping container: 2
7. Sample holding times exceeded? NA [✓] Yes [ ] No [ ]
8. Samples have:
   _____ tape
   _____ custody seals
   _____ hazard labels
   ✓ appropriate samples labels
9. Samples are:
   ✓ in good condition
   _____ broken
   _____ leaking
   _____ have air bubbles
   (Only for samples requiring head space)
10. Sample pH taken? NA [ ] pH<2 [✓] pH>2 [ ] pH>9 [ ]
11. Sample Location, Sample Collector Listed? * Yes [✓] No [ ]
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: S. Smith Date: 07-18-07 1510

| Client Sample ID | Analysis Requested | Condition | Comments/Action |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 9/03, Rev. 5

PNNL J7A220119
W05099
Due 03-05-07

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **I07-016-2**

Page 1 of 1

| | | |
|---|---|---|
| **Collector** Fluor Hanford F. M. HALL | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** I07-016 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** 2ZP1-LOI, DECEMBER 2006 | HNF-N-506-2 | **Ice Chest No.** ERC-FS-001 **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** CERCLA | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1LK81 | | W | 1-19-07 | 1321 | 1x20-mL P | Activity Scan | None |
| B1LK81 | | W | 1-19-07 | 1321 | 2x4000-mL G/P | I129LL_SEP_LEPS_GS_LL: I-129 (1) | None |
| | | | | | | JM6FX | |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| Fluor Hanford F. M. HALL | | JAN 19 2007 | 1350 | ERIC | Darby | | 1-19-07 1350 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S | = Soil | DS | = Drum Solid |
| SE | = Sediment | DL | = Drum Liqui |
| SO | = Solid | T | = Tissue |
| SL | = Sludge | WI | = Wine |
| W | = Water | L | = Liquid |
| O | = Oil | V | = Vegetation |
| A | = Air | X | = Other |

| **FINAL SAMPLE DISPOSITION** | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 1/19/07 1350

Client: PNL SDG #: W05099 NA [ ] SAF #: I07-016 NA [ ]

Work Order Number: J7A220119 Chain of Custody # I07-016-2

Shipping Container ID: _____ Air Bill # _____

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? Yes [✓] No [ ]
4. Cooler temperature: _____ NA [✓] 5. Vermiculite/packing materials is NA [✓] Wet [ ] Dry [ ]
6. Number of samples in shipping container: 1
7. Sample holding times exceeded? NA [✓] Yes [ ] No [ ]
8. Samples have:
   _____tape
   _____custody seals
   _____hazard labels
   ✓ appropriate samples labels
9. Samples are:
   ✓ in good condition
   _____broken
   _____leaking.
   _____have air bubbles
   (Only for samples requiring head space)
10. Sample pH taken? NA [ ] pH<2 [✓] pH>2 [ ] pH>9 [ ]
11. Sample Location, Sample Collector Listed? *
    *For documentation only. No corrective action needed. Yes [✓] No [ ]
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: Eric Davis D. Smith Date: 1/19/07 1350

| Client Sample ID | Analysis Requested | Condition | Comments/Action |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 9/03, Rev. 5

PNNL J7A220134
W05099
due 03.05.07

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W07-012-420**



| | | |
|---|---|---|
| **Collector** K B HUSE | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** W07-012 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** RCRA, DECEMBER 2006 | HNF-N-506 3 | **Ice Chest No.** **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** RCRA | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1LJF6 | | W | 1-19-07 | 0909 | 1x20-mL P | Activity Scan | None |
| B1LJF6 | | W | ↓ | ↓ | 1x1000-mL P | 9310_ALPHABETA_GPC: Alpha + Beta (2) | HNO3 to pH <2 |
| B1LJF6 | | W | ↓ | ↓ | 1x500-mL P | TC99_ETVDSK_LSC: Tc-99 (1) | HCl to pH <2 |
| | | | | | | JM6JQ | |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| K B HUSE | | | JAN 19 2007 1040 | Fluor Hanford | F M HALL | | JAN 19 2007 1040 |
| Fluor Hanford | F. M. HALL | | JAN 19 2007 1350 | | | Eric Darby | JAN 19 2007 1350 |
| | | | | | | | |
| | | | | | | | |

Matrix *

| | | | |
|---|---|---|---|
| S = Soil | | DS = Drum Solid | |
| SE = Sediment | | DL = Drum Liquid | |
| SO = Solid | | T = Tissue | |
| SL = Sludge | | WI = Wine | |
| W = Water | | L = Liquid | |
| O = Oil | | V = Vegetation | |
| A = Air | | X = Other | |

| **FINAL SAMPLE DISPOSITION** | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

PNNL 07A220134
W05099
Due 03.05.07

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W07-012-428**

Page 1 of 1

| | | |
|---|---|---|
| **Collector** Fluor Hanford F.M. HALL | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** W07-012 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** RCRA, DECEMBER 2006 | HNF-N-506-2 | **Ice Chest No.** ERC-FS-001 **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** RCRA | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1LJH1 | | W | 1-19-07 | 1020 | 1x20-mL P | Activity Scan | None |
| B1LJH1 | | W | 1-19-07 | 1020 | 1x500-mL P | TC99_ETVDSK_LSC: Tc-99 (1) | HCl to pH <2 |
| | | | | | | JM6J2 | |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| Fluor Hanford F.M. HALL | | | JAN 19 2007 1350 | ERIC | Dunlay | | 1-19-07 1350 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | | | |
|---|---|---|---|---|---|
| S | = | Soil | DS | = | Drum Solid |
| SE | = | Sediment | DL | = | Drum Liqui |
| SO | = | Solid | T | = | Tissue |
| SL | = | Sludge | WI | = | Wine |
| W | = | Water | L | = | Liquid |
| O | = | Oil | V | = | Vegetation |
| A | = | Air | X | = | Other |

**FINAL SAMPLE DISPOSITION** Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 1/19/07 1350

Client: PNL SDG #: W05099 NA [ ] SAF #: W07-012 NA [ ]

Work Order Number: J7A220134 Chain of Custody # W07-012-420, 428

Shipping Container ID: _____ Air Bill # _____

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? Yes [✓] No [ ]
4. Cooler temperature: _____ NA [✓] 5. Vermiculite/packing materials is NA [✓] Wet [ ] Dry [ ]
6. Number of samples in shipping container: 2
7. Sample holding times exceeded? NA [✓] Yes [ ] No [ ]
8. Samples have:
   _____tape
   _____custody seals
   _____hazard labels
   ✓ appropriate samples labels
9. Samples are:
   ✓ in good condition
   _____broken
   _____leaking
   _____have air bubbles
   (Only for samples requiring head space)
10. Sample pH taken? NA [ ] pH<2 [✓] pH>2 [ ] pH>9 [ ]
11. Sample Location, Sample Collector Listed? *
    *For documentation only. No corrective action needed. Yes [✓] No [ ]
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: [signature] Date: 1/19/07 1350

| Client Sample ID | Analysis Requested | Condition | Comments/Action |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 9/03, Rev. 5

PNNL J7A230123
W05099
Due 03/08/07

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W07-012-334**

Page 1 of 1

| | | |
|---|---|---|
| **Collector** K. J. YOUNG | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** W07-012 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** RCRA, DECEMBER 2006 | #NF-N-506-1 p.46 | **Ice Chest No.** ROSS **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** RCRA | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1LJ93 | | W | 01-22-07 | 1006 | 1x20-mL P | Activity Scan | None |
| B1LJ93 | | W | 01-22-07 | 1006 | 1x500-mL P | TC99_ETVDSK_LSC: Tc-99 (1) | HCl to pH <2 |
| | | | | | | JM7NK | |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| | K. J. YOUNG | [signature] | 1510 01-22-2007 | | ERIC DARLING | [signature] | 1-22-07 1510 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S | = Soil | DS | = Drum Solid |
| SE | = Sediment | DL | = Drum Liqui |
| SO | = Solid | T | = Tissue |
| SL | = Sludge | WI | = Wine |
| W | = Water | L | = Liquid |
| O | = Oil | V | = Vegetation |
| A | = Air | X | = Other |

| **FINAL SAMPLE DISPOSITION** | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 1/22/07 1570

Client: PNL SDG #: W05099 NA [ ] SAF #: W07-012 NA [ ]

Work Order Number: J7A230123 Chain of Custody # W07-012-334

Shipping Container ID: _____ Air Bill # _____

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? Yes [✓] No [ ]
4. Cooler temperature: _____ NA [✓] 5. Vermiculite/packing materials is NA [✓] Wet [ ] Dry [ ]
6. Number of samples in shipping container: 1
7. Sample holding times exceeded? 1x500mL NA [✓] Yes [ ] No [ ]
8. Samples have:
   _____tape
   _____custody seals
   _____hazard labels
   ✓ appropriate samples labels
9. Samples are:
   ✓ in good condition
   _____broken
   _____leaking.
   _____have air bubbles
   (Only for samples requiring head space)
10. Sample pH taken? NA [ ] pH<2 [✓] pH>2 [ ] pH>9 [ ]
11. Sample Location, Sample Collector Listed? *
    *For documentation only. No corrective action needed. Yes [✓] No [ ]
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: [signature] Date: 1/22/07 1510

| Client Sample ID | Analysis Requested | Condition | Comments/Action |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 9/03, Rev. 5

PNNL J7A230125
W05099
due 03-08-07

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **I07-021-10**

Page 1 of 1

| | | |
|---|---|---|
| **Collector** Fluor Hanford D. E. PARCHEN | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** I07-021 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** 2ZP1-LOI, JANUARY 2007 | HNS IN 506-3 | **Ice Chest No.** C-4 **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** CERCLA | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1LPJ8 | | W | 1-22-07 | 1325 | 1x20-mL P | Activity Scan | None |
| B1LPJ8 | | W | ↓ | ↓ | 3x1000-mL G/P | SRISO_SEP_PRECIP_GPC: Sr-90 (1) | HNO3 to pH <2 |
| | | | | | | JMTPP | |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| Fluor Hanford D. E. PARCHEN | | | JAN 22 2007 1510 | ERIC DARGY | | | JAN 22 2007 1510 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S = Soil | | DS = Drum Solid | |
| SE = Sediment | | DL = Drum Liqui | |
| SO = Solid | | T = Tissue | |
| SL = Sludge | | WI = Wine | |
| W = Water | | L = Liquid | |
| O = Oil | | V = Vegetation | |
| A = Air | | X = Other | |

| **FINAL SAMPLE DISPOSITION** | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 1/22/07 1510

Client: PNL SDG #: W05099 NA [ ] SAF #: I07-021 NA [ ]

Work Order Number: J7A230125 Chain of Custody # I07-021-10

Shipping Container ID: _____ Air Bill # _____

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? Yes [✓] No [ ]
4. Cooler temperature: _____ NA [✓] 5. Vermiculite/packing materials is NA [✓] Wet [ ] Dry [ ]
6. Number of samples in shipping container: 1
7. Sample holding times exceeded? 3X NA [✓] Yes [ ] No [ ]
8. Samples have:
   _____tape
   _____custody seals
   _____hazard labels
   ✓ appropriate samples labels
9. Samples are:
   ✓ in good condition
   _____broken
   _____leaking.
   _____have air bubbles
   (Only for samples requiring head space)
10. Sample pH taken? NA [ ] pH<2 [✓] pH>2 [ ] pH>9 [ ]
11. Sample Location, Sample Collector Listed? * Yes [✓] No [ ]
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: Eric Daly Date: 1/22/07 1510

| Client Sample ID | Analysis Requested | Condition | Comments/Action |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 9/03, Rev. 5

PNNL J7A230129
W05099
Due 03-08-07

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S07-001-64**

Page 1 of 1

| | | |
|---|---|---|
| **Collector** Fluor Hanford D. R. BREWINGTON | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** S07-001 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** SURV, JANUARY 2007 | Logbook: HNF-N-506-2 | **Ice Chest No.** SAWS-115 **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** SURV | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1LNM1 | | W | 1/22/07 | 1253 | 1x20-mL P | Activity Scan | None |
| B1LNM1 | | W | ↓ | ↓ | 3x1000-mL G/P | SRISO_SEP_PRECIP_GPC: Sr-90 (1) | HNO3 to pH <2 |

JM7IV

RWoll 1/22/07

| | | | |
|---|---|---|---|
| Relinquished By Print Fluor Hanford D. R. BREWINGTON Sign D.R. Brewington Date/Time JAN 22 2007 1510 | Received By Print ERIC PARSON Sign Eric Parson Date/Time JAN 22 2007 1510 | Matrix * | |
| Relinquished By Date/Time | Received By Date/Time | S = Soil | DS = Drum Solid |
| Relinquished By Date/Time | Received By Date/Time | SE = Sediment | DL = Drum Liqui |
| Relinquished By Date/Time | Received By Date/Time | SO = Solid | T = Tissue |
| | | SL = Sludge | WI = Wine |
| | | W = Water | L = Liquid |
| | | O = Oil | V = Vegetation |
| | | A = Air | X = Other |

| | | | |
|---|---|---|---|
| **FINAL SAMPLE DISPOSITION** | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |

PNNL J7A230129
W05099
Due 03.08.07
Fluor Hanford

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S07-001-65**

Page 1 of 1

| | | |
|---|---|---|
| **Collector** D. R. BREWINGTON | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** S07-001 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** SURV, JANUARY 2007 | Logbook: HNF-N-506-2 | **Ice Chest No.** SAWS-115 **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** SURV | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1LNM2 | | W | 1/22/07 | 1253 | 1x20-mL P | Activity Scan | None |
| B1LNM2 | | W | ↓ | ↓ | 3x1000-mL G/P | SRISO_SEP_PRECIP_GPC: Sr-90 (1) | HNO3 to pH <2 |

JM72X

L. Wall 1/22/07

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| Fluor Hanford D. R. BREWINGTON | D. R. Brewington | D. R. Brewington | JAN 22 2007 1520 | Eric Darby | Eric Darby | Eric Darby | JAN 22 2007 1520 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Matrix *

| | | | |
|---|---|---|---|
| S = Soil | | DS = Drum Solid | |
| SE = Sediment | | DL = Drum Liqui | |
| SO = Solid | | T = Tissue | |
| SL = Sludge | | WI = Wine | |
| W = Water | | L = Liquid | |
| O = Oil | | V = Vegetation | |
| A = Air | | X = Other | |

| FINAL SAMPLE DISPOSITION | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|
| | | | |

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 11/22/07 1510

Client: PNL SDG #: W05099 NA [ ] SAF #: S07-001 NA [ ]

Work Order Number: J7A230129 Chain of Custody # S007-001-64,65

Shipping Container ID: _____ Air Bill # _____

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? Yes [✓] No [ ]
4. Cooler temperature: _____ NA [✓] 5. Vermiculite/packing materials is NA [✓] Wet [ ] Dry [ ]
6. Number of samples in shipping container: 2
7. Sample holding times exceeded? NA [✓] Yes [ ] No [ ]
8. Samples have:
   _____tape
   _____custody seals
   _____hazard labels
   ✓ appropriate samples labels
9. Samples are:
   ✓ in good condition
   _____broken
   _____leaking
   _____have air bubbles
   (Only for samples requiring head space)
10. Sample pH taken? NA [ ] pH<2 [✓] pH>2 [ ] pH>9 [ ]
11. Sample Location, Sample Collector Listed? *
    *For documentation only. No corrective action needed. Yes [✓] No [ ]
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: [signature] Date: 11/22/07 1510

| Client Sample ID | Analysis Requested | Condition | Comments/Action |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 9/03, Rev. 5

PNNL J7A230163
W05099
due 03-08-07

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **A07-001-1**

Page 1 of 1

| | | |
|---|---|---|
| **Collector** Fluor Hanford D. E. PARCHEN | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** A07-001 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** LLWMA(4)-PA, JANUARY 2007 | HNF-N-506-3 | **Ice Chest No.** C-4 **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** Other | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1LN27 | | W | 1-22-7 | 1325 | 1x20-mL P | Activity Scan | None |
| B1LN27 | | W | ↓ | ↓ | 2x4000-mL G/P | I129LL_SEP_LEPS_GS_LL: I-129 (1) | None |
| B1LN27 | | W | ↓ | ↓ | 1x500-mL P | TC99_ETVDSK_LSC: Tc-99 (1) | HCl to pH <2 |
| | | | | | | JM731 | |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| Fluor Hanford D. E. PARCHEN | | | JAN 22 2007 1510 | Eric Dirley | | | JAN 22 2007 1510 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S | = Soil | DS | = Drum Solid |
| SE | = Sediment | DL | = Drum Liqui |
| SO | = Solid | T | = Tissue |
| SL | = Sludge | WI | = Wine |
| W | = Water | L | = Liquid |
| O | = Oil | V | = Vegetation |
| A | = Air | X | = Other |

| **FINAL SAMPLE DISPOSITION** | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

PNNL J7A230163
W05099
Due 03-08-07

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **A07-001-11**

Page 1 of 1

| | | |
|---|---|---|
| **Collector** Fluor Hanford K. J. YOUNG | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** A07-001 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** LLWMA(4)-PA, JANUARY 2007 | HNF-N-546-1 p 46 | **Ice Chest No.** ROSS **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** Other | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1LN35 | | W | 01-22-07 | 1205 | 1x20-mL P | Activity Scan | None |
| B1LN35 | | W | | | 2x4000-mL G/P | I129LL_SEP_LEPS_GS_LL: I-129 (1) | None |
| B1LN35 | | W | | | 1x500-mL P | TC99_ETVDSK_LSC: Tc-99 (1) | HCl to pH <2 |
| B1LN35 | | W | | | 1x1000-mL P | 906.0_H3_LSC: Tritium (1) | None |
| | | | | | | JM138 | |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| Fluor Hanford K. J. YOUNG | | | JAN 22 2007 1510 | Eric Darby | | | 1-22-07 1510 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | | | |
|---|---|---|---|---|---|
| S | = | Soil | DS | = | Drum Solid |
| SE | = | Sediment | DL | = | Drum Liqui |
| SO | = | Solid | T | = | Tissue |
| SL | = | Sludge | WI | = | Wine |
| W | = | Water | L | = | Liquid |
| O | = | Oil | V | = | Vegetation |
| A | = | Air | X | = | Other |

| **FINAL SAMPLE DISPOSITION** | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

PNNL J7A230163
W05099
Due 03-08-07

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **A07-001-17**

Page 1 of 1

| | | |
|---|---|---|
| **Collector** Fluor Hanford K. B. HULSE | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** A07-001 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** LLWMA(4)-PA, JANUARY 2007 | | **Ice Chest No.** **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** Other | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1LN38 | | W | 1/22/07 | 1044 | 1x20-mL P | Activity Scan | None |
| B1LN38 | | W | ↓ | ↓ | 2x4000-mL G/P | I129LL_SEP_LEPS_GS_LL: I-129 (1) | None |
| B1LN38 | | W | | | 1x500-mL P | TC99_ETVDSK_LSC: Tc-99 (1) | HCl to pH <2 |
| B1LN38 | | W | | | 1x1000-mL P | 906.0_H3_LSC: Tritium (1) | None |
| | | | | | | JM74E | |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| | Fluor Hanford K. B. HULSE | | JAN 22 2007 1510 | Eric Dorley | | | 1-22-07 1810 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S | = Soil | DS | = Drum Solid |
| SE | = Sediment | DL | = Drum Liqui |
| SO | = Solid | T | = Tissue |
| SL | = Sludge | WI | = Wine |
| W | = Water | L | = Liquid |
| O | = Oil | V | = Vegetation |
| A | = Air | X | = Other |

| **FINAL SAMPLE DISPOSITION** | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

PNNL J7A230163
W05099
Due 03-08-07

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **A07-001-25**

Page 1 of 1

| | | |
|---|---|---|
| **Collector** Fluor Hanford D. E. PARCHEN | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** A07-001 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** LLWMA(4)-PA, JANUARY 2007 | HNF-N-506-3 | **Ice Chest No.** C-4 **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** Other | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1LN42 | | W | 1-22-07 | 1139 | 1x20-mL P | Activity Scan | None |
| B1LN42 | | W | ↓ | ↓ | 2x4000-mL G/P | I129LL_SEP_LEPS_GS_LL: I-129 (1) | None |
| B1LN42 | | W | ↓ | ↓ | 1x500-mL P | TC99_ETVDSK_LSC: Tc-99 (1) | HCl to pH <2 |
| B1LN42 | | W | ↓ | ↓ | 1x1000-mL P | 906.0_H3_LSC: Tritium (1) | None |
| B1LN42 | | W | ↓ | ↓ | 1x500-mL G/P | UTOT_KPA: Uranium (1) | HNO3 to pH <2 |
| | | | | | | JM740 | |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| Fluor Hanford D. E. PARCHEN | | | JAN 22 2007 1510 | | Eric Darley | | JAN 22 2007 1510 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S = Soil | | DS = Drum Solid | |
| SE = Sediment | | DL = Drum Liqui | |
| SO = Solid | | T = Tissue | |
| SL = Sludge | | WI = Wine | |
| W = Water | | L = Liquid | |
| O = Oil | | V = Vegetation | |
| A = Air | | X = Other | |

| **FINAL SAMPLE DISPOSITION** | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

PNNL J7A230163
W05099
due 03-08-07

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **A07-001-26**

Page 1 of 1

| | | |
|---|---|---|
| **Collector** D. E. PARCHEN | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** A07-001 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** LLWMA(4)-PA, JANUARY 2007 | LNG-~~SA~~-SOG 3 | **Ice Chest No.** C4 **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** Other | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1LN43 | | W | 1-22-07 | 08:00 | 1x20-mL P | Activity Scan | None |
| B1LN43 | | W | | | 2x4000-mL G/P | I129LL_SEP_LEPS_GS_LL: I-129 (1) | None |
| B1LN43 | | W | | | 1x500-mL P | TC99_ETVDSK_LSC: Tc-99 (1) | HCl to pH <2 |
| B1LN43 | | W | | | 1x1000-mL P | 906.0_H3_LSC: Tritium (1) | None |
| B1LN43 | | W | | | 1x500-mL G/P | UTOT_KPA: Uranium (1) | HNO3 to pH <2 |

JM742

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| D. E. PARCHEN | | | 1510 JAN 22 2007 | | Eric Darby | | 1510 JAN 22 2007 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S | = Soil | DS | = Drum Solid |
| SE | = Sediment | DL | = Drum Liqui |
| SO | = Solid | T | = Tissue |
| SL | = Sludge | WI | = Wine |
| W | = Water | L | = Liquid |
| O | = Oil | V | = Vegetation |
| A | = Air | X | = Other |

**FINAL SAMPLE DISPOSITION** Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 1/22/07 1510

Client: PNL SDG #: W05099 NA [ ] SAF #: A07-001 NA [ ]

Work Order Number: J7A230163 Chain of Custody # A07-001-1,11,17,25,26

Shipping Container ID: _____ Air Bill # _____

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? Yes [✓] No [ ]
4. Cooler temperature: _____ NA [✓] 5. Vermiculite/packing materials is NA [✓] Wet [ ] Dry [ ]
6. Number of samples in shipping container: 5
7. Sample holding times exceeded? NA [✓] Yes [ ] No [ ]
8. Samples have:
   _____tape
   _____custody seals
   _____hazard labels
   ✓ appropriate samples labels
9. Samples are:
   ✓ in good condition
   _____broken
   _____leaking
   _____have air bubbles
   (Only for samples requiring head space)
10. Sample pH taken? NA [ ] pH<2 [✓] pH>2 [ ] pH>9 [ ]
11. Sample Location, Sample Collector Listed? *
    *For documentation only. No corrective action needed. Yes [✓] No [ ]
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: Eric Duby Date: 1/22/07 1510

| Client Sample ID | Analysis Requested | Condition | Comments/Action |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 9/03, Rev. 5

PNNL J7A230259
W05099
Due 03.09.07

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # W07-011-574

Page 1 of 1

| | | |
|---|---|---|
| **Collector** Fluor Hanford K. B. HULSE | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** W07-011 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** RCRA, NOVEMBER 2006 | HNF-N-506-4 | **Ice Chest No.** TJ-2 **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** RCRA | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1L6H6 | | W | 1/23/7 | 1036 | 1x20-mL P | Activity Scan | None |
| B1L6H6 | | W | ↓ | ↓ | 1x500-mL P | 9223_COLIFORM: Coliform (1) | Na2S2O3 Cool 4C |
| | | | | | | JM 8VH | |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| Fluor Hanford K. B. HULSE | | | JAN 23 2007 1405 | | | | JAN 23 2007 1405 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S | = Soil | DS | = Drum Solid |
| SE | = Sediment | DL | = Drum Liqui |
| SO | = Solid | T | = Tissue |
| SL | = Sludge | WI | = Wine |
| W | = Water | L | = Liquid |
| O | = Oil | V | = Vegetation |
| A | = Air | X | = Other |

| FINAL SAMPLE DISPOSITION | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

PNNL J7A230259 W05099 due 03.09.07

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W07-011-580**

Page 1 of 1

| | | |
|---|---|---|
| **Collector** Fluor Hanford K. B. HULSE | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** W07-011 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** RCRA, NOVEMBER 2006 | HNF-N-506-4 | **Ice Chest No.** TJ-2 **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** RCRA | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1L6J0 | | W | 1/23/7 | 0951 | 1x20-mL P | Activity Scan | None |
| B1L6J0 | | W | ↓ | ↓ | 1x500-mL P | 9223_COLIFORM: Coliform (1) | Na2S2O3 Cool 4C |
| | | | | | | JM8V0 | |

| | | |
|---|---|---|
| Relinquished By Fluor Hanford K. B. HULSE Print Sign JAN 23 2007 Date/Time 1405 | Received By Print Sign JAN 23 2007 Date/Time 1405 | Matrix * |
| Relinquished By Date/Time | Received By Date/Time | S = Soil, SE = Sediment, SO = Solid, SL = Sludge, W = Water, O = Oil, A = Air, DS = Drum Solid, DL = Drum Liqui, T = Tissue, WI = Wine, L = Liquid, V = Vegetation, X = Other |
| Relinquished By Date/Time | Received By Date/Time | |
| Relinquished By Date/Time | Received By Date/Time | |

| | | | |
|---|---|---|---|
| **FINAL SAMPLE DISPOSITION** | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |

PNNL J7A230259
WO5099
Due 03-09-07

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W07-011-546**

Page 1 of 1

| | | |
|---|---|---|
| **Collector** Fluor Hanford K. B. HULSE | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** W07-011 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** RCRA, NOVEMBER 2006 | HHF-N-506-4 | **Ice Chest No.** TJ 2 **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** RCRA | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1L6D8 | | W | 1/23/7 | 0901 | 1x20-mL P | Activity Scan | None |
| B1L6D8 | | W | ↓ | ↓ | 1x500-mL P | 9223_COLIFORM: Coliform (1) | Na2S2O3 Cool 4C |
| | | | | | | JM8V2 | |

| | | | |
|---|---|---|---|
| Relinquished By Fluor Hanford K. B. HULSE | Print / Sign K. B. Hulse JAN 23 2007 Date/Time 1405 | Received By | Print / Sign S. Smith S. Smith JAN 23 2007 Date/Time 1405 |
| Relinquished By | Date/Time | Received By | Date/Time |
| Relinquished By | Date/Time | Received By | Date/Time |
| Relinquished By | Date/Time | Received By | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S = Soil | | DS = Drum Solid | |
| SE = Sediment | | DL = Drum Liqui | |
| SO = Solid | | T = Tissue | |
| SL = Sludge | | WI = Wine | |
| W = Water | | L = Liquid | |
| O = Oil | | V = Vegetation | |
| A = Air | | X = Other | |

| | | | |
|---|---|---|---|
| **FINAL SAMPLE DISPOSITION** | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 01.23.07 1405

Client: PGW SDG #: W05099 NA [ ] SAF #: W07-011 NA [ ]

Work Order Number: J7A230259 Chain of Custody # W07-011-514, 580, 546

Shipping Container ID: _____ Air Bill # _____

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? Yes [✓] No [ ]
4. Cooler temperature: _____ NA [✓] 5. Vermiculite/packing materials is NA [✓] Wet [ ] Dry [ ]
6. Number of samples in shipping container: 3
7. Sample holding times exceeded? NA [✓] Yes [ ] No [ ]
8. Samples have:
   ____ tape
   ____ custody seals
   ____ hazard labels
   ✓ appropriate samples labels
9. Samples are:
   ✓ in good condition
   ____ broken
   ____ leaking
   ____ have air bubbles
   (Only for samples requiring head space)
10. Sample pH taken? NA [ ] pH<2 [ ] pH>2 [✓] pH>9 [ ]
11. Sample Location, Sample Collector Listed? *
    *For documentation only. No corrective action needed. Yes [✓] No [ ]
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: S. Smith Date: 01.23.07 1405

| Client Sample ID | Analysis Requested | Condition | Comments/Action |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 9/03, Rev. 5

PNNL J1A230265
W05099
Due 03·09·07

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S07-012-588**

Page 1 of 1

| | | |
|---|---|---|
| **Collector** Fluor Hanford F. M. HALL | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** S07-012 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** SURV, DECEMBER 2006 | HNF-N-506 3 | **Ice Chest No.** GW0-06-8 **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** SURV | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1LBT8 | | W | 1-23-07 | 1332 | 1x20-mL P | Activity Scan | None |
| B1LBT8 | | W | ↓ | ↓ | 3x1000-mL P | TRITIUM_ELECT_LSC_LL: H-3 (1) | None |
| | | | | | | JM820 | |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| Fluor Hanford F. M. HALL | | | JAN 2 3 2007 1400 | Eric Darby | ERIC DARBY | | JAN 2 3 2007 1400 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S = Soil | | DS = Drum Solid | |
| SE = Sediment | | DL = Drum Liqui | |
| SO = Solid | | T = Tissue | |
| SL = Sludge | | WI = Wine | |
| W = Water | | L = Liquid | |
| O = Oil | | V = Vegetation | |
| A = Air | | X = Other | |

| **FINAL SAMPLE DISPOSITION** | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

PNNL J7A230265
W05099
Due 03-09-07

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S07-012-538

Page 1 of 1

| | | |
|---|---|---|
| **Collector** Fluor Hanford F.M. HALL | **Contact/Requester** Dot Stewart | **Telephone No.** 509-376-5056 **MSIN** **FAX** |
| **SAF No.** S07-012 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** |
| **Project Title** SURV, DECEMBER 2006 | HNF-N-506 3 | **Ice Chest No.** CWO-06-8 **Temp.** |
| **Shipped To (Lab)** Severn Trent Incorporated, Richland | **Method of Shipment** Govt. Vehicle | **Bill of Lading/Air Bill No.** |
| **Protocol** SURV | **Priority:** 45 Days | **Offsite Property No.** |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure.

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B1LC67 | | W | 1-23-07 | 1231 | 1x20-mL P | Activity Scan | None |
| B1LC67 | | W | ↓ | ↓ | 3x1000-mL P | TRITIUM_ELECT_LSC_LL: H-3 (1) | None |
| | | | | | | JM822 | |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| Fluor Hanford F.M. HALL | | | 1400 JAN 23 2007 | | Eric Dorby | Eric Dorby | 1400 JAN 23 2007 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S = Soil | | DS = Drum Solid | |
| SE = Sediment | | DL = Drum Liqui | |
| SO = Solid | | T = Tissue | |
| SL = Sludge | | WI = Wine | |
| W = Water | | L = Liquid | |
| O = Oil | | V = Vegetation | |
| A = Air | | X = Other | |

| **FINAL SAMPLE DISPOSITION** | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 1/23/07 1400

Client: PNL SDG #: W05099 NA [ ] SAF #: S07-012 NA [ ]

Work Order Number: J7A230265 Chain of Custody # S07-012, 538, 588

Shipping Container ID: _____ Air Bill # _____

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]

2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]

3. Chain of Custody record present? Yes [✓] No [ ]

4. Cooler temperature: _____ NA [✓] 5. Vermiculite/packing materials is NA [✓] Wet [ ] Dry [ ]

6. Number of samples in shipping container: 2

7. Sample holding times exceeded? NA [✓] Yes [ ] No [ ]

8. Samples have:
   _____tape
   _____custody seals
   _____hazard labels
   [✓] appropriate samples labels

9. Samples are:
   [✓] in good condition
   _____broken
   _____leaking
   _____have air bubbles
   (Only for samples requiring head space)

10. Sample pH taken? NA [ ] pH<2 [ ] pH>2 [✓] pH>9 [ ]

11. Sample Location, Sample Collector Listed? *
    *For documentation only. No corrective action needed. Yes [✓] No [ ]

12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]

13. Description of anomalies (include sample numbers): _____

Sample Custodian: Eric Dunby Date: 1/23/07 1400

| Client Sample ID | Analysis Requested | Condition | Comments/Action |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 9/03, Rev. 5

2/14/2007 10:44:10 AM

# Sample Preparation/Analysis

Balance Id:1120482733

384868, Pacific Northwest National Laboratory ,
Pacific Northwest National Lab

AZ Gross Alpha PrpRC5014
S7 Gross Alpha by GPC using Am-241 curve
5I CLIENT: HANFORD

Pipet #: _____

**AnalyDueDate: 03/05/2007**

Sep1 DT/Tm Tech:

**Batch: 7026401** WATER pCi/L PM, Quote: SA , 57671

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 7026396 FPS5, 7026401 AZS7, 7026402 BCS8,

Prep Tech: BockJ

| Work Order, Lot, Sample DateTime | Total Amt/Unit | Initial Aliquot Amt/Unit | QC Tracer Prep Date | Dish Size | Ppt or Geometry | Count Time Min | Detector Id | Count On \| Off (24hr) Circle | CR Analyst, Init/Date | Comments: |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 JM6JQ-1-AA<br>J7A220134-1-SAMP<br>01/19/2007 09:09 | | 110.80g,in<br>AmtRec: 20ML,500ML,LP | #Containers: 3 | | | | | Scr: Alpha: 1.33E-03 uCi/Sa | 2.0E-01L | Beta: 2.28E-04 uCi/Sa |
| 2 JM6JQ-1-AE-X<br>J7A220134-1-DUP<br>01/19/2007 09:09 | | 113.40g,in<br>AmtRec: 20ML,500ML,LP | #Containers: 3 | | | | | Scr: Alpha: 1.33E-03 uCi/Sa | 2.0E-01L | Beta: 2.28E-04 uCi/Sa |
| 3 JM6JQ-2-AA<br>J7A220134-1-SAMP<br>01/19/2007 09:09 | | 110.8g<br>AmtRec: 20ML,500ML,LP | #Containers: 3 | | 36.3 | 100 min | IJB | Scr: Alpha: 1.33E-03 uCi/Sa | 2.0E-01L | Beta: 2.28E-04 uCi/Sa |
| 4 JM6JQ-2-AE-X<br>J7A220134-1-DUP<br>01/19/2007 09:09 | | 113.4<br>AmtRec: 20ML,500ML,LP | #Containers: 3 | | 37.7 | | ISC | Scr: Alpha: 1.33E-03 uCi/Sa | 2.0E-01L | Beta: 2.28E-04 uCi/Sa |
| 5 JNG09-1-AA-B<br>J7A260000-401-BLK<br>01/19/2007 09:09 | | 202.80g,in<br>AmtRec: | #Containers: 1 | | | | | Scr: | Alpha: | Beta: |
| 6 JNG09-1-AC-C<br>J7A260000-401-LCS<br>01/19/2007 09:09 | | 205.00g,in<br>AmtRec: | ASD4116<br>01/18/07,pd<br>02/09/06,r<br>#Containers: 1 | | | | | Scr: | Alpha: | Beta: |

B43 2/14/07

CAREFUL High in Beta

2/14/2007 10:44:14 AM

# Sample Preparation/Analysis

AZ Gross Alpha PrpRC5014
S7 Gross Alpha by GPC using Am-241 curve
5I CLIENT: HANFORD

Balance Id:1120482733

Pipet #: _____

AnalyDueDate: 03/05/2007

Sep1 DT/Tm Tech:

Batch: 7026401 pCi/L
SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,BockJ

| Work Order, Lot, Sample DateTime | Total Amt/Unit | Initial Aliquot Amt/Unit | QC Tracer Prep Date | Dish Size | Ppt or Geometry | Count Time Min | Detector Id | Count On \| Off (24hr) Circle | CR Analyst, Init/Date | Comments: |
|---|---|---|---|---|---|---|---|---|---|---|

**Comments:** JM6JQ-SAMP "Comments. Aliquots reduced due to weight screen activity. JB 02/02/07"

All Clients for Batch:
384868, Pacific Northwest National Laboratory Pacific Northwest National Lab, SA , 57671

JM6JQ1AA-SAMP Constituent List:

| | | | | | |
|---|---|---|---|---|---|
| ALPHA | RDL:3 | pCi/L | LCL: | UCL: | RPD: |
| JNG091AA-BLK: | | | | | |
| ALPHA | RDL:3 | pCi/L | LCL: | UCL: | RPD: |
| JNG091AC-LCS: | | | | | |
| Am-241 | RDL: | pCi/L | LCL:70 | UCL:130 | RPD:20 |

JM6JQ1AA-SAMP Calc Info:

| | | | | |
|---|---|---|---|---|
| Uncert Level (#s).: 2 | Decay to SaDt: Y | Blk Subt.: N | Sci.Not.: Y | ODRs: B |
| JNG091AA-BLK: | | | | |
| Uncert Level (#s).: 2 | Decay to SaDt: Y | Blk Subt.: N | Sci.Not.: Y | ODRs: B |
| JNG091AC-LCS: | | | | |
| Uncert Level (#s).: 2 | Decay to SaDt: Y | Blk Subt.: N | Sci.Not.: Y | ODRs: B |

Approved By _____ Date: _____

2/2/2007 9:23:36 AM

# Sample Preparation/Analysis

Balance Id:1120482733

384868, Pacific Northwest National Laboratory ,
Pacific Northwest National Lab

BC Gross Beta PrpRC5014
S8 Gross Beta by GPC using Sr/Y-90 curve
5I CLIENT: HANFORD

Pipet #: 235

**AnalyDueDate: 03/05/2007** W05099

Sep1 DT/Tm Tech:

**Batch: 7026402 WATER pCi/L** PM, Quote: SA , 57671

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,BockJ / APA

| Work Order, Lot, Sample DateTime | Total Amt/Unit | Initial Aliquot Amt/Unit | QC Tracer Prep Date | Dish Size | Ppt or Geometry | Count Time Min | Detector Id | Count On \| Off (24hr) Circle | CR Analyst, Init/Date | Comments: |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 JM6JQ-1-AC<br>J7A220134-1-SAMP<br>01/19/2007 09:09 | | 125.10g,in<br>AmtRec: 20ML,500ML,LP | #Containers: 3 | 1.5 | 127.1 | 100 | 26A | 1544 | 2/13/07 | Scr: Alpha: 1.33E-03 uCi/Sa 2.0E-01L Beta: 2.28E-04 uCi/Sa |
| 2 JM6JQ-1-AF-X<br>J7A220134-1-DUP<br>01/19/2007 09:09 | | 125.10g,in<br>AmtRec: 20ML,500ML,LP | #Containers: 3 | | 116.4 | | 26B | | | Scr: Alpha: 1.33E-03 uCi/Sa 2.0E-01L Beta: 2.28E-04 uCi/Sa |
| 3 JNG1A-1-AA-B<br>J7A260000-402-BLK<br>01/19/2007 09:09 | | 200.30g,in<br>AmtRec: | #Containers: 1 | | 0.2 | | 26C | | | Scr: Alpha: Beta: |
| 4 JNG1A-1-AC-C<br>J7A260000-402-LCS<br>01/19/2007 09:09 | | 200.20g,in<br>AmtRec: | BESB2996<br>01/23/07,pd<br>08/08/06,r<br>#Containers: 1 | | 0.4 | | 26D | | | Scr: Alpha: Beta: |

**Comments:** Aliquots reduced due to weight screen activity. JB 2-2-07
PH <2.0 JB 2-2-07

10% collection added to ea. samp. 2/13/07 APA

All Clients for Batch:
384868, Pacific Northwest National Laboratory Pacific Northwest National Lab, SA , 57671

JM6JQ1AC-SAMP Constituent List:

| | | | | | |
|---|---|---|---|---|---|
| BETA | RDL:4 | pCi/L | LCL: | UCL: | RPD: |
| JNG1A1AA-BLK: | | | | | |
| BETA | RDL:4 | pCi/L | LCL: | UCL: | RPD: |
| JNG1A1AC-LCS: | | | | | |
| Sr-90 | RDL: | pCi/L | LCL:70 | UCL:130 | RPD:20 |

JM6JQ1AC-SAMP Calc Info:

2/9/2007 2:21:39 PM

# Sample Preparation/Analysis

Balance Id:1120482733

384868, Pacific Northwest National Laboratory ,
Pacific Northwest National Lab

CL Sr-90 Prp/SepRC5006(5071)
TL Sr-85 by NaI and Sr-90 by GPC 7 day ingrowth
5I CLIENT: HANFORD

Pipet #: _____

**AnalyDueDate: 03/05/2007**

Sep1 DT/Tm Tech: 02/02/2007 16:21,ManisD

**Batch: 7026384 WATER pCi/L** PM, Quote: SA , 57671

Sep2 DT/Tm Tech: 02/09/2007 08:45,ManisD

SEQ Batch, Test: None

Prep Tech: ,BockJ

| Work Order, Lot, Sample DateTime | Total Amt/Unit | Initial Aliquot Amt/Unit | QC Tracer Prep Date | Tracer Yield | Dish Size | Ppt or Geometry | Count Time Min | Detector Id | Count On \| Off (24hr) Circle | CR Analyst, Init/Date | Comments: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 JM5M9-1-AA<br>J7A200173-1-SAMP | | 1003.50g,in | srtb14462<br>01/24/07,pd<br>09/11/06,r | | 1.0 | 22.9 | 100 | 2b | 1059 | 2/10/07 R | |
| | | | | | | ~~02/02/2007 16:21,s1, 02/09/2007~~ | | 2A | 1012 | 2/11/07 R | |
| 01/18/2007 12:54 | | AmtRec: 20ML,3XLP | #Containers: 4 | | | | | Scr: | Alpha: 1.24E-04 uCi/Sa | Beta: -1.83E-04 uCi/Sa | |
| 2 JM7PP-1-AA<br>J7A230125-1-SAMP | | 1000.60g,in | srtb14463<br>01/24/07,pd<br>09/11/06,r | | 1.0 | 23.1 | 100 | 2c | 1059 | 2/10/07 R | |
| | | | | | | ~~02/02/2007 16:21,s1, 02/09/2007~~ | | 2c | 1012 | 2/11/07 R | |
| 01/22/2007 13:25 | | AmtRec: 20ML,3XLP | #Containers: 4 | | | | | Scr: | Alpha: -3.42E-04 uCi/Sa | Beta: 3.82E-04 uCi/Sa | |
| 3 JM71V-1-AA<br>J7A230129-1-SAMP | | 1006.20g,in | srtb14464<br>01/24/07,pd<br>09/11/06,r | | 1.0 | 23.5 | 100 | 2d | 1059 | 2/10/07 R | |
| | | | | | | ~~02/02/2007 16:21,s1, 02/09/2007~~ | | 2d | 1012 | 2/11/07 R | |
| 01/22/2007 12:53 | | AmtRec: 20ML,3XLP | #Containers: 4 | | | | | Scr: | Alpha: -3.23E-04 uCi/Sa | Beta: 2.40E-04 uCi/Sa | |
| 4 JM71V-1-AC-X<br>J7A230129-1-DUP | | 1007.40g,in | srtb14465<br>01/24/07,pd<br>09/11/06,r | | 1.0 | 24.7 | 100 | 3A | 1059 | 2/10/07 R | |
| | | | | | | ~~02/02/2007 16:21,s1, 02/09/2007~~ | | 3A | 1012 | 2/11/07 R | |
| 01/22/2007 12:53 | | AmtRec: 20ML,3XLP | #Containers: 4 | | | | | Scr: | Alpha: -3.23E-04 uCi/Sa | Beta: 2.40E-04 uCi/Sa | |

2/9/2007 2:21:41 PM

# Sample Preparation/Analysis

384868, Pacific Northwest National Laboratory ,
Pacific Northwest National Lab

**AnalyDueDate: 03/05/2007**

**CL Sr-90 Prp/SepRC5006(5071)**
**TL Sr-85 by NaI and Sr-90 by GPC 7 day ingrowth**
**5I CLIENT: HANFORD**

**Balance Id:1120482733**

**Pipet #:** _____

**Sep1 DT/Tm Tech: 02/02/2007 16:21,ManisD**

**Sep2 DT/Tm Tech: 02/09/2007 08:45,ManisD**

**Prep Tech: ,BockJ**

**Batch: 7026384 WATER pCi/L PM, Quote: SA , 57671**
SEQ Batch, Test: None

| Work Order, Lot, Sample DateTime | Total Amt/Unit | Initial Aliquot Amt/Unit | QC Tracer Prep Date | Tracer Yield | Dish Size | Ppt or Geometry | Count Time Min | Detector Id | Count On \| Off (24hr) Circle | CR Analyst, Init/Date | Comments: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 JM72X-1-AA<br>J7A230129-2-SAMP | | 1005.10g,in | srtb14466<br>01/24/07,pd<br>09/11/06,r | | 1.0 | 24.4 | 100 | | 3b | 1059 2/10/07 K | |
| | | | | | | ~~02/02/2007 16:21,s1, 02/09/2007~~ | | | 3b | 1012 2/11/07 K | |
| 01/22/2007 12:53 | | AmtRec: 20ML,3XLP | #Containers: 4 | | | | | Scr: | Alpha: -5.70E-04 uCi/Sa | | Beta: 2.40E-04 uCi/Sa |
| 6 JNGX3-1-AA-B<br>J7A260000-384-BLK | | 1000.40g,in | srtb14467<br>01/24/07,pd<br>09/11/06,r | | 1.0 | 23.9 | 100 | | 3c | 1059 2/10/07 K | |
| | | | | | | ~~02/02/2007 16:21,s1, 02/09/2007~~ | | | 3c | 1012 2/11/07 K | |
| 01/22/2007 12:53 | | AmtRec: | #Containers: 1 | | | | | Scr: | Alpha: | | Beta: |
| 7 JNGX3-1-AC-C<br>J7A260000-384-LCS | | 999.20g,in | srsg1310<br>12/20/06,pd<br>09/11/06,r | | 1.0 | 23.7 | 100 | | 3d | 1059 2/10/07 K | |
| | | | | | | ~~02/02/2007 16:21,s1, 02/09/2007~~ | | | 3d | 1012 2/11/07 K | |
| 01/22/2007 12:53 | | AmtRec: | #Containers: 1 | | | | | Scr: | Alpha: | | Beta: |

**Comments:**

All Clients for Batch:
384868, Pacific Northwest National Laboratory Pacific Northwest National Lab, SA , 57671

JM5M91AA-SAMP Constituent List:

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sr-85 | RDL: | pCi/L | LCL:20 | UCL:105 | RPD:20 | Sr-90 | RDL:2 | pCi/L | LCL:70 | UCL:130 | RPD:20 |

2/15/2007 12:26:40 PM

# Sample Preparation/Analysis

Balance Id:1120482733

384868, Pacific Northwest National Laboratory ,
Pacific Northwest National Lab

BN I-129 Prp/SepRC5025
TB Gamma by LEPD
5I CLIENT: HANFORD

Pipet #: _____

**AnalyDueDate: 03/05/2007** W05099

Sep1 DT/Tm Tech:

**Batch: 7026400 WATER pCi/L** PM, Quote: SA , 57671

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,BockJ

| Work Order, Lot, Sample DateTime | Total Amt/Unit | Initial Aliquot Amt/Unit | QC Tracer Prep Date | Dish Size | Ppt or Geometry | Count Time Min | Detector Id | Count On \| Off (24hr) Circle | CR Analyst, Init/Date | Comments: |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 JM6FX-1-AA<br>J7A220119-1-SAMP<br>01/19/2007 13:21 | | 3954.10g,in<br>AmtRec: 20ML,2X4LP #Containers: 3 | ITA6013<br>01/17/07 | | 37.1 | 100 | L2 | 1614 | 2/21/07 R | Scr: Alpha: -1.62E-03 uCi/Sa Beta: 1.39E-03 uCi/Sa |
| 2 JM731-1-AA<br>J7A230163-1-SAMP<br>01/22/2007 13:25 | | 3917.60g,in<br>AmtRec: 20ML,500ML,2X4LP #Containers: 4 | ITA6014<br>01/17/07 | | 35.9 | | L4 | 1618 | | Scr: Alpha: 1.70E-04 uCi/Sa Beta: -1.02E-03 uCi/Sa |
| 3 JM731-1-AE-X<br>J7A230163-1-DUP<br>01/22/2007 13:25 | | 3902.40g,in<br>AmtRec: 20ML,500ML,2X4LP #Containers: 4 | ITA6015<br>01/17/07 | | 35.1 | | RS 2/21/07 ~~L4~~ L5 | 1619 | | Scr: Alpha: 1.70E-04 uCi/Sa Beta: -1.02E-03 uCi/Sa |
| 4 JM738-1-AC<br>J7A230163-2-SAMP<br>01/22/2007 12:05 | | 3919.00g,in<br>AmtRec: 20ML,500ML,LP,2X4LP #Containers: 5 | ITA6016<br>01/17/07 | | 37.0 | | L2 | 1805 | 2/21/07 RD | Scr: Alpha: -7.69E-04 uCi/Sa Beta: 1.77E-03 uCi/Sa |
| 5 JM74E-1-AC<br>J7A230163-3-SAMP<br>01/22/2007 10:44 | | 3909.90g,in<br>AmtRec: 20ML,500ML,LP,2X4LP #Containers: 5 | ITA6017<br>01/17/07 | | 36.2 | | L4 | 1809 | | Scr: Alpha: 9.34E-04 uCi/Sa Beta: -1.25E-03 uCi/Sa |
| 6 JM740-1-AC<br>J7A230163-4-SAMP<br>01/22/2007 11:39 | | 3842.40g,in<br>AmtRec: 20ML,2X500ML,LP,2X4LP #Containers: 6 | ITA6018<br>01/17/07 | | 35.8 | | L5 | 1811 | | Scr: Alpha: 1.05E-03 uCi/Sa Beta: 1.15E-03 uCi/Sa |
| 7 JM742-1-AC<br>J7A230163-5-SAMP<br>01/22/2007 08:00 | | 3824.40g,in<br>AmtRec: 20ML,2X500ML,LP,2X4LP #Containers: 6 | ITA6019<br>01/17/07 | | 35.9 | | L2 | 1956 | | Scr: Alpha: -6.13E-04 uCi/Sa Beta: 4.47E-04 uCi/Sa |

2/15/2007 12:26:43 PM

# Sample Preparation/Analysis

**BN I-129 Prp/SepRC5025**
**TB Gamma by LEPD**
**5I CLIENT: HANFORD**

**Balance Id:1120482733**

**Pipet #:** _____

**AnalyDueDate: 03/05/2007**

**Sep1 DT/Tm Tech:**

**Batch: 7026400** **pCi/L**
SEQ Batch, Test: None

**Sep2 DT/Tm Tech:**

**Prep Tech: ,BockJ**

| Work Order, Lot, Sample DateTime | Total Amt/Unit | Initial Aliquot Amt/Unit | QC Tracer Prep Date | Dish Size | Ppt or Geometry | Count Time Min | Detector Id | Count On \| Off (24hr) Circle | CR Analyst, Init/Date | Comments: |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 JNG08-1-AA-B<br>J7A260000-400-BLK<br>01/22/2007 13:25 | | 3997.80g,in<br>AmtRec: | ITA6020<br>01/17/07<br>#Containers: 1 | | 36.3 | 100 | L4 | 2002 | 2/21/07 2020<br>Scr: | Alpha: Beta: |
| 9 JNG08-1-AC-C<br>J7A260000-400-LCS<br>01/22/2007 13:25 | | 3870.10g,in<br>AmtRec: | ISD0726<br>12/20/06<br>#Containers: 1 | | 39.4 | 4 | L5 | 2002 | Scr: | Alpha: Beta: |

**Comments:** pH < 2.0 DB 2-15-07

All Clients for Batch:
384868, Pacific Northwest National Laboratory  Pacific Northwest National Lab, SA , 57671

JM6FX1AA-SAMP Constituent List:

| | | | | | |
|---|---|---|---|---|---|
| I-129 | RDL:1.00E+00 | pCi/L | LCL: | UCL: | RPD: |
| JNG081AA-BLK: | | | | | |
| I-129 | RDL:1.00E+00 | pCi/L | LCL: | UCL: | RPD: |
| JNG081AC-LCS: | | | | | |
| I-129 | RDL:5 | pCi/L | LCL:70 | UCL:130 | RPD:20 |

JM6FX1AA-SAMP Calc Info:
Uncert Level (#s).: 2  Decay to SaDt: Y  Blk Subt.: N  Sci.Not.: Y  ODRs: B
JNG081AA-BLK:
Uncert Level (#s).: 2  Decay to SaDt: Y  Blk Subt.: N  Sci.Not.: Y  ODRs: B
JNG081AC-LCS:
Uncert Level (#s).: 2  Decay to SaDt: Y  Blk Subt.: N  Sci.Not.: Y  ODRs: B

Approved By _____  Date: _____

2/1/2007 11:10:02 AM

# Sample Preparation/Analysis

Balance Id:1120482733

384868, Pacific Northwest National Laboratory ,
Pacific Northwest National Lab

FP Tc-99 Prp/SepRC5065
S5 Technetium-99 by Liquid Scint
5I CLIENT: HANFORD

Pipet #: _____

**AnalyDueDate: 03/05/2007** W05099

Sep1 DT/Tm Tech:

**Batch: 7026396 WATER pCi/L** PM, Quote: SA , 57671

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,BockJ

| Work Order, Lot, Sample Date | Total Amt /Unit | Total Acidified/Unit | Initial Aliquot Amt/Unit | Adj Aliq Amt (Un-Acidified) | QC Tracer Prep Date | Count Time Min | Detector Id | Count On \| Off (24hr) Circle | CR Analyst, Init/Date | Comments: |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 JM5PC-1-AA<br>J7A200176-1-SAMP<br>01/18/2007 12:54 | | | 125.20g,in<br>AmtRec: 20ML,500ML | 125.20g<br>#Containers: 2 | | 60 | | Scr: | Alpha: 5.31E-05 uCi/Sa | Beta: -5.39E-05 uCi/Sa |
| 2 JM5PE-1-AA<br>J7A200176-2-SAMP<br>01/18/2007 11:14 | | | 126.30g,in<br>AmtRec: 20ML,500ML | 126.30g<br>#Containers: 2 | | | | Scr: | Alpha: 1.43E-05 uCi/Sa | Beta: -4.82E-05 uCi/Sa |
| 3 JM6JQ-1-AD<br>J7A220134-1-SAMP<br>01/19/2007 09:09 | | | 125.00g,in<br>AmtRec: 20ML,500ML,LP | 125.00g<br>#Containers: 3 | | | | Scr: | Alpha: 1.33E-03 uCi/Sa 2.0E-01L | Beta: 2.28E-04 uCi/Sa |
| 4 JM6J2-1-AA<br>J7A220134-2-SAMP<br>01/19/2007 10:20 | | | 124.90g,in<br>AmtRec: 20ML,500ML | 124.90g<br>#Containers: 2 | | | | Scr: | Alpha: -1.32E-05 uCi/Sa | Beta: 2.25E-05 uCi/Sa |
| 5 JM7NK-1-AA<br>J7A230123-1-SAMP<br>01/22/2007 10:06 | | | 125.30g,in<br>AmtRec: 20ML,500MLP | 125.30g<br>#Containers: 2 | | | | Scr: | Alpha: -7.78E-05 uCi/Sa | Beta: 8.69E-05 uCi/Sa |
| 6 JM731-1-AC<br>J7A230163-1-SAMP<br>01/22/2007 13:25 | | | 126.00g,in<br>AmtRec: 20ML,500ML,2X4LP | 126.00g<br>#Containers: 4 | | | | Scr: | Alpha: 1.70E-04 uCi/Sa | Beta: -1.02E-03 uCi/Sa |
| 7 JM731-1-AD-S<br>J7A230163-1-MS<br>01/22/2007 13:25 | | | 126.70g,in<br>AmtRec: 20ML,500ML,2X4LP | 126.70g<br>#Containers: 4 | tcsg1763<br>01/03/07,pd<br>01/10/06,r | | | Scr: | Alpha: 1.70E-04 uCi/Sa | Beta: -1.02E-03 uCi/Sa |

2/1/2007 11:10:06 AM

# Sample Preparation/Analysis

**Balance Id:1120482733**

384868, Pacific Northwest National Laboratory ,
Pacific Northwest National Lab

**FP Tc-99 Prp/SepRC5065**
**S5 Technetium-99 by Liquid Scint**
**5I CLIENT: HANFORD**

**Pipet #:** _____

**AnalyDueDate: 03/05/2007**

**Sep1 DT/Tm Tech:**

**Batch: 7026396 WATER pCi/L PM, Quote: SA , 57671**

SEQ Batch, Test: None

**Sep2 DT/Tm Tech:**

**Prep Tech: ,BockJ**

| Work Order, Lot, Sample Date | Total Amt /Unit | Total Acidified/Unit | Initial Aliquot Amt/Unit | Adj Aliq Amt (Un-Acidified) | QC Tracer Prep Date | Count Time Min | Detector Id | Count On \| Off (24hr) Circle | CR Analyst, Init/Date | Comments: |
|---|---|---|---|---|---|---|---|---|---|---|
| **8 JM738-1-AD** J7A230163-2-SAMP | | | 128.00g,in | 128.00g | | LeO | | | | |
| 01/22/2007 12:05 | | AmtRec: 20ML,500ML,LP,2X4LP | #Containers: 5 | | | | Scr: | Alpha: -7.69E-04 uCi/Sa | Beta: 1.77E-03 uCi/Sa | |
| **9 JM738-1-AF-X** J7A230163-2-DUP | | | 124.90g,in | 124.90g | | | | | | |
| 01/22/2007 12:05 | | AmtRec: 20ML,500ML,LP,2X4LP | #Containers: 5 | | | | Scr: | Alpha: -7.69E-04 uCi/Sa | Beta: 1.77E-03 uCi/Sa | |
| **10 JM74E-1-AD** J7A230163-3-SAMP | | | 125.00g,in | 125.00g | | | | | | |
| 01/22/2007 10:44 | | AmtRec: 20ML,500ML,LP,2X4LP | #Containers: 5 | | | | Scr: | Alpha: 9.34E-04 uCi/Sa | Beta: -1.25E-03 uCi/Sa | |
| **11 JM740-1-AD** J7A230163-4-SAMP | | | 125.00g,in | 125.00g | | | | | | |
| 01/22/2007 11:39 | | AmtRec: 20ML,2X500ML,LP,2X4LP | #Containers: 6 | | | | Scr: | Alpha: 1.05E-03 uCi/Sa | Beta: 1.15E-03 uCi/Sa | |
| **12 JM742-1-AD** J7A230163-5-SAMP | | | 125.70g,in | 125.70g | | | | | | |
| 01/22/2007 08:00 | | AmtRec: 20ML,2X500ML,LP,2X4LP | #Containers: 6 | | | | Scr: | Alpha: -6.13E-04 uCi/Sa | Beta: 4.47E-04 uCi/Sa | |
| **13 JNG06-1-AA-B** J7A260000-396-BLK | | | 202.10g,in | 202.10g | | | | | | |
| 01/22/2007 13:25 | | AmtRec: | #Containers: 1 | | | | Scr: | Alpha: | Beta: | |
| **14 JNG06-1-AC-C** J7A260000-396-LCS | | | 201.70g,in | 201.70g | tcse2064 01/24/07,pd 01/10/06,r | | | | | |
| 01/22/2007 13:25 | | AmtRec: | #Containers: 1 | | | | Scr: | Alpha: | Beta: | |

2/1/2007 11:10:10 AM

# Sample Preparation/Analysis

**FP Tc-99 Prp/SepRC5065**
**S5 Technetium-99 by Liquid Scint**
**5I CLIENT: HANFORD**

**Balance Id:**

**Pipet #:** _____

**AnalyDueDate: 03/05/2007**

**Sep1 DT/Tm Tech:**

**Batch: 7026396** **pCi/L**
SEQ Batch, Test: None

**Sep2 DT/Tm Tech:**

**Prep Tech:**

| Work Order, Lot, Sample Date | Total Amt /Unit | Total Acidified/Unit | Initial Aliquot Amt/Unit | Adj Aliq Amt (Un-Acidified) | QC Tracer Prep Date | Count Time Min | Detector Id | Count On \| Off (24hr) Circle | CR Analyst, Init/Date | Comments: |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 JNG06-1-AD-BN<br>J7A260000-396-IBLK<br>01/22/2007 13:25 | AmtRec: | | #Containers: 1 | | | 60 | | Scr: | Alpha: | Beta: |
| 16 JNG06-1-AE-BX<br>J7A260000-396-MBLK<br>01/22/2007 13:25 | AmtRec: | | #Containers: 1 | | | | | Scr: | Alpha: | Beta: |
| 17 JNG06-1-AF-BN<br>J7A260000-396-IBLK<br>01/22/2007 13:25 | AmtRec: | | #Containers: 1 | | | | | Scr: | Alpha: | Beta: |

Not needed Uma 2/1/07

**Comments:** pH <2.0 JB 2-1-07

```
All Clients for Batch:
   384868, Pacific Northwest National Laboratory      Pacific Northwest National Lab,  SA , 57671

JM5PC1AA-SAMP Constituent List:
  Tc-99       RDL:15          pCi/L     LCL:70      UCL:130     RPD:20
JM7311AD-MS:

JNG061AA-BLK:
  Tc-99       RDL:15          pCi/L     LCL:        UCL:        RPD:
JNG061AC-LCS:
  Tc-99       RDL:15          pCi/L     LCL:70      UCL:130     RPD:20
JNG061AD-IBLK:
  Tc-99       RDL:15          pCi/L     LCL:        UCL:        RPD:
JNG061AE-MBLK:
  Tc-99       RDL:15          pCi/L     LCL:        UCL:        RPD:
JNG061AF-IBLK:
  Tc-99       RDL:15          pCi/L     LCL:        UCL:        RPD:
```

1/26/2007 4:36:56 PM

# Sample Preparation/Analysis

384868, Pacific Northwest National Laboratory ,
Pacific Northwest National Lab

AR H-3 Prp/SepRC5007
S6 Tritium by Liquid Scint
5I CLIENT: HANFORD

**AnalyDueDate: 03/08/2007** W05099

**Batch: 7026385** **WATER** **pCi/L** **PM, Quote: SA , 57671**
SEQ Batch, Test: None

**Balance Id:** 17445
**Pipet #:**
**Sep1 DT/Tm Tech:** 22-01pm
**Sep2 DT/Tm Tech:**
**Prep Tech:**

| Work Order, Lot, Sample DateTime | Total Amt/Unit | Initial Aliquot Amt/Unit | QC Tracer Prep Date | Count Time Min | Detector Id | Count On \| Off (24hr) Circle | CR Analyst, Init/Date | Comments: |
|---|---|---|---|---|---|---|---|---|
| 1 JM738-1-AA<br>J7A230163-2-SAMP<br>01/22/2007 12:05 | AmtRec: 20ML,500ML,LP,2X4LP | #Containers: 5 | | | | Scr: | Alpha: | Beta: |
| 2 JM738-1-AE-X<br>J7A230163-2-DUP<br>01/22/2007 12:05 | AmtRec: 20ML,500ML,LP,2X4LP | #Containers: 5 | | | | Scr: | Alpha: | Beta: |
| 3 JM74E-1-AA<br>J7A230163-3-SAMP<br>01/22/2007 10:44 | AmtRec: 20ML,500ML,LP,2X4LP | #Containers: 5 | | | | Scr: | Alpha: | Beta: |
| 4 JM740-1-AA<br>J7A230163-4-SAMP<br>01/22/2007 11:39 | AmtRec: 20ML,2X500ML,LP,2X4LP | #Containers: 6 | | | | Scr: | Alpha: | Beta: |
| 5 JM742-1-AA<br>J7A230163-5-SAMP<br>01/22/2007 08:00 | AmtRec: 20ML,2X500ML,LP,2X4LP | #Containers: 6 | | | | Scr: | Alpha: | Beta: |
| 6 JNG0E-1-AA-B<br>J7A260000-385-BLK<br>01/22/2007 12:05 | AmtRec: | #Containers: 1 | | | | Scr: | Alpha: | Beta: |
| 7 JNG0E-1-AC-C<br>J7A260000-385-LCS<br>01/22/2007 12:05 | AmtRec: | #Containers: 1 | | | | Scr: | Alpha: | Beta: |

1/26/2007 4:37:00 PM

# Sample Preparation/Analysis

AR H-3 Prp/SepRC5007
S6 Tritium by Liquid Scint
5I CLIENT: HANFORD

Balance Id: 12445
Pipet #:
Sep1 DT/Tm Tech: 2-2 0 Dm
Sep2 DT/Tm Tech:
Prep Tech:

AnalyDueDate: 03/08/2007

Batch: 7026385 pCi/L
SEQ Batch, Test: None

| Work Order, Lot, Sample DateTime | Total Amt/Unit | Initial Aliquot Amt/Unit | QC Tracer Prep Date | Count Time Min | Detector Id | Count On \| Off (24hr) Circle | CR Analyst, Init/Date | Comments: |
|---|---|---|---|---|---|---|---|---|
| 8 JNG0E-1-AD-BX<br>J7A260000-385-MBLK<br>01/22/2007 12:05 | | AmtRec: | #Containers: 1 | | | Scr: | Alpha: | Beta: |
| 9 JNG0E-1-AE-CM<br>J7A260000-385-MLCS<br>01/22/2007 12:05 | | AmtRec: | #Containers: 1 | | | Scr: | Alpha: | Beta: |
| 10 JNG0E-1-AF-BN<br>J7A260000-385-IBLK<br>01/22/2007 12:05 | | AmtRec: | #Containers: 1 | | | Scr: | Alpha: | Beta: |
| 11 JNG0E-1-AG-BN<br>J7A260000-385-IBLK<br>01/22/2007 12:05 | | AmtRec: | #Containers: 1 | | | Scr: | Alpha: | Beta: |

Comments:

All Clients for Batch:
384868, Pacific Northwest National Laboratory Pacific Northwest National Lab, SA , 57671

JM7381AA-SAMP Constituent List:

| | | | | | |
|---|---|---|---|---|---|
| H-3 | RDL:400 | pCi/L | LCL:70 | UCL:130 | RPD:20 |
| JNG0E1AA-BLK: | | | | | |
| H-3 | RDL:400 | pCi/L | LCL: | UCL: | RPD: |
| JNG0E1AC-LCS: | | | | | |
| H-3 | RDL:400 | pCi/L | LCL:70 | UCL:130 | RPD:20 |
| JNG0E1AD-MBLK: | | | | | |
| H-3 | RDL:400 | pCi/L | LCL: | UCL: | RPD: |

# Sample Preparation/Analysis

AR H-3 Prp/SepRC5007
S6 Tritium by Liquid Scint
5I CLIENT: HANFORD

AnalyDueDate: 03/08/2007

Batch: 7026385 pCi/L
SEQ Batch, Test: None

Balance Id: 12445
Pipet #:
Sep1 DT/Tm Tech: 2-2-07 Dm
Sep2 DT/Tm Tech:
Prep Tech:

| Work Order, Lot, Sample DateTime | Total Amt/Unit | Initial Aliquot Amt/Unit | QC Tracer Prep Date | Count Time Min | Detector Id | Count On \| Off (24hr) Circle | CR Analyst, Init/Date | Comments: |
|---|---|---|---|---|---|---|---|---|

```
JNG0E1AE-MLCS:
 H-3          RDL:400          pCi/L     LCL:70       UCL:130      RPD:20
JNG0E1AF-IBLK:
 H-3          RDL:400          pCi/L     LCL:         UCL:         RPD:
JNG0E1AG-IBLK:
 H-3          RDL:400          pCi/L     LCL:         UCL:         RPD:
JM7381AA-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
JNG0E1AA-BLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
JNG0E1AC-LCS:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
JNG0E1AD-MBLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
JNG0E1AE-MLCS:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
JNG0E1AF-IBLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
JNG0E1AG-IBLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

Approved By _____ Date: _____

2/19/2007 9:01:36 AM

# Sample Preparation/Analysis

Balance Id:1120482733

384868, Pacific Northwest National Laboratory ,
Pacific Northwest National Lab

DH UNat_Laser PrpRC5015
SS Total Uranium by KPA
5I CLIENT: HANFORD

Pipet #: _____

**AnalyDueDate: 03/08/2007**

Sep1 DT/Tm Tech:

**Batch: 7026383 WATER ug/L** PM, Quote: SA , 57671

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,BockJ / APA

| Work Order, Lot, Sample DateTime | Total Amt/Unit | Initial Aliquot Amt/Unit | QC Tracer Prep Date | Count Time Min | Detector Id | Count On \| Off (24hr) Circle | CR Analyst, Init/Date | Comments: |
|---|---|---|---|---|---|---|---|---|
| 1 **JM740-1-AE**<br>J7A230163-4-SAMP<br>01/22/2007 11:39 | | 25.40g,in<br>AmtRec: 20ML,2X500ML,LP,2X4LP | #Containers: 6 | | | Scr: | Alpha: 1.05E-03 uCi/Sa | Beta: 1.15E-03 uCi/Sa |
| 2 **JM740-1-AF-S**<br>J7A230163-4-MS<br>01/22/2007 11:39 | | 24.80g,in<br>AmtRec: 20ML,2X500ML,LP,2X4LP | UNSF3577<br>01/31/07,pd<br>03/22/05,r<br>#Containers: 6 | | | Scr: | Alpha: 1.05E-03 uCi/Sa | Beta: 1.15E-03 uCi/Sa |
| 3 **JM742-1-AE**<br>J7A230163-5-SAMP<br>01/22/2007 08:00 | | 25.50g,in<br>AmtRec: 20ML,2X500ML,LP,2X4LP | #Containers: 6 | | | Scr: | Alpha: -6.13E-04 uCi/Sa | Beta: 4.47E-04 uCi/Sa |
| 4 **JM742-1-AF-X**<br>J7A230163-5-DUP<br>01/22/2007 08:00 | | 27.30g,in<br>AmtRec: 20ML,2X500ML,LP,2X4LP | #Containers: 6 | | | Scr: | Alpha: -6.13E-04 uCi/Sa | Beta: 4.47E-04 uCi/Sa |
| 5 **JNGXV-1-AA-B**<br>J7A260000-383-BLK<br>01/22/2007 11:39 | | 25.20g,in<br>AmtRec: | #Containers: 1 | | | Scr: | Alpha: | Beta: |
| 6 **JNGXV-1-AC-C**<br>J7A260000-383-LCS<br>01/22/2007 11:39 | | 25.20g,in<br>AmtRec: | UNSF3578<br>01/31/07,pd<br>03/22/05,r<br>#Containers: 1 | | | Scr: | Alpha: | Beta: |
| 7 **JNGXV-1-AD-C**<br>J7A260000-383-LCS<br>01/22/2007 11:39 | | 25.30g,in<br>AmtRec: | UNSC1480<br>01/10/07,pd<br>04/28/06,r<br>#Containers: 1 | | | Scr: | Alpha: | Beta: |

1/26/2007 4:36:46 PM

# Sample Preparation/Analysis

384868, Pacific Northwest National Laboratory ,
Pacific Northwest National Lab

88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
IZ COLIFORM BY METHOD 9223
5I CLIENT: HANFORD

**AnalyDueDate: 03/09/2007** 005099

**Batch: 7026382 WATER**
SEQ Batch, Test: None

**PM, Quote: SA , 57671**

**Balance Id:**
**Pipet #:**
**Sep1 DT/Tm Tech:**
**Sep2 DT/Tm Tech:**
**Prep Tech:**

| Work Order, Lot, Sample DateTime | Total Amt/Unit | Initial Aliquot Amt/Unit | QC Tracer Prep Date | Count Time Min | Detector Id | Count On \| Off (24hr) Circle | CR Analyst, Init/Date | Comments: |
|---|---|---|---|---|---|---|---|---|
| 1 JM8VH-1-AA<br>J7A230259-1-SAMP<br>01/23/2007 10:36 | | AmtRec: 20ML,500MLP | #Containers: 2 | | | Scr: | Alpha: | Beta: |
| 2 JM8V0-1-AA<br>J7A230259-2-SAMP<br>01/23/2007 09:51 | | AmtRec: 20ML,500MLP | #Containers: 2 | | | Scr: | Alpha: | Beta: |
| 3 JM8V0-1-AC-X<br>J7A230259-2-DUP<br>01/23/2007 09:51 | | AmtRec: 20ML,500MLP | #Containers: 2 | | | Scr: | Alpha: | Beta: |
| 4 JM8V2-1-AA<br>J7A230259-3-SAMP<br>01/23/2007 09:01 | | AmtRec: 20ML,500MLP | #Containers: 2 | | | Scr: | Alpha: | Beta: |
| 5 JNGXQ-1-AA-B<br>J7A260000-382-BLK<br>01/23/2007 09:51 | | AmtRec: | #Containers: 1 | | | Scr: | Alpha: | Beta: |
| 6 JNGXQ-1-AC-C<br>J7A260000-382-LCS<br>01/23/2007 09:51 | | AmtRec: | #Containers: 1 | | | Scr: | Alpha: | Beta: |

# Sample Preparation/Analysis

88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
IZ COLIFORM BY METHOD 9223
5I CLIENT: HANFORD

**AnalyDueDate: 03/09/2007**

**Batch: 7026382**
SEQ Batch, Test: None

Balance Id:
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

| Work Order, Lot, Sample DateTime | Total Amt/Unit | Initial Aliquot Amt/Unit | QC Tracer Prep Date | Count Time Min | Detector Id | Count On \| Off (24hr) Circle | CR Analyst, Init/Date | Comments: |
|---|---|---|---|---|---|---|---|---|

**Comments:**

All Clients for Batch:
384868, Pacific Northwest National Laboratory  Pacific Northwest National Lab, SA , 57671

JM8VH1AA-SAMP Constituent List:

JNGXQ1AA-BLK:

JNGXQ1AC-LCS:

JM8VH1AA-SAMP Calc Info:
Uncert Level (#s).: 2  Decay to SaDt: Y  Blk Subt.: N  Sci.Not.: Y  ODRs: B
JNGXQ1AA-BLK:
Uncert Level (#s).: 2  Decay to SaDt: Y  Blk Subt.: N  Sci.Not.: Y  ODRs: B
JNGXQ1AC-LCS:
Uncert Level (#s).: 2  Decay to SaDt: Y  Blk Subt.: N  Sci.Not.: Y  ODRs: B

Approved By _____ Date: _____

RQC050

Severn Trent Laboratories, Inc.
WET CHEM BATCHSHEET

Run Date: 2/28/07
Time: 11:59:35

STL Richland

PRODUCTION FIGURES - WET CHEM

| TOTAL NUMBER | SAMPLE NUMBER | QC | RE-RUN MATRIX | RE-RUN OTHER | MISC NUMBER | TOTAL HOURS | EXPANDED DELIVERABLE |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

METHOD: IZ COLIFORM BY METHOD 9223
QC BATCH #: **7026382**
PREP DATE: 1/26/07
COMP DATE: 1/26/07
USER: MILLERK2

INITIALS:
PREP _____
ANAL _____

DATA ENTRY:
INITIALS _____
DATE _____

| Work Order | Lab Number | Structured Analysis | Exp. Del. | Analysis Date | Sample ID: |
|---|---|---|---|---|---|
| JM8VH-1-AA | J-7A230259-001 | XX I 88 IZ 5I | E | <1 | B1L6H6 |
| JM8V0-1-AA | J-7A230259-002 | XX I 88 IZ 5I | E | <1 | B1L6J0 |
| JM8V0-1-AC | J-7A230259-002-X | XX I 88 IZ 5I | E | <1 | B1L6J0 DUP |
| JM8V2-1-AA | J-7A230259-003 | XX I 88 IZ 5I | E | <1 | B1L6D8 |
| JNGXQ-1-AA | J-7A260000-382-B | XX I 88 IZ 5I | | <1 | INTRA-LAB BLANK |
| JNGXQ-1-AC | J-7A260000-382-C | XX I 88 IZ 5I | | 13.5 | INTRA-LAB CHECK |

Control Limits

(0-0)

SB 2/28/07

2/14/2007 1:26:48 PM

# ICOC Fraction Transfer/Status Report

ByDate: 2/14/2006, 2/19/2007, Batch: '7026401', User: *ALL Order By DateTimeAccepting

| Q Batch | Work Ord | CurStatus | Accepting | | | Comments |
|---|---|---|---|---|---|---|
| 7026401 | | | | | | |
| AC | | CalcC | BockJ | 2/2/2007 9:24:06 AM | | |
| SC | | | andersonp | IsBatched | 1/26/2007 4:38:03 PM | ICOC_RADCALC v4.8.26 |
| SC | | | BockJ | InPrep | 2/2/2007 9:24:06 AM | RICH-RC-5014 Revision 6 |
| SC | | | BockJ | Prep1C | 2/2/2007 9:27:57 AM | RICH-RC-5014 REVISION 6 |
| SC | | | AshworthA | InPrep2 | 2/12/2007 11:43:43 AM | RICH-RC-5014 REVISION 6 |
| SC | | | AshworthA | Prep2C | 2/13/2007 1:57:39 PM | RICH-RC-5014 REVISION 6 |
| SC | | | BlackCL | InCnt1 | 2/13/2007 2:00:54 PM | RICH-RD-0003 REVISION 4 |
| SC | | | DAWKINSO | CalcC | 2/13/2007 7:28:23 PM | RICH-RD-0003 REVISION 4 |
| SC | | | BlackCL | InCnt1 | 2/14/2007 10:52:02 AM | RICH-RD-0003 REVISION 4 |
| SC | | | StringerR | CalcC | 2/14/2007 12:53:54 PM | RICH-RD-0003 REVISION 4 |
| AC | | | BockJ | 2/2/2007 9:27:57 AM | | |
| AC | | | BockJ | 2/2/2007 9:28:40 AM | | |
| AC | | | AshworthA | 2/12/2007 11:43:43 | | |
| AC | | | AshworthA | 2/13/2007 1:57:39 PM | | |
| AC | | | BlackCL | 2/13/2007 2:00:54 PM | | |
| AC | | | DAWKINSO | 2/13/2007 7:28:23 PM | | |
| AC | | | BlackCL | 2/14/2007 10:52:02 | | |
| AC | | | StringerR | 2/14/2007 12:53:54 | | |

*AC: Accepting Entry; SC: Status Change*

2/14/2007 11:08:35 AM

# ICOC Fraction Transfer/Status Report

ByDate: 2/14/2006, 2/19/2007, Batch: '7026402', User: *ALL Order By DateTimeAccepting

| Q Batch | Work Ord | CurStatus | Accepting | | | Comments |
|---|---|---|---|---|---|---|
| 7026402 | | | | | | |
| *AC* | | CalcC | BockJ | 2/2/2007 9:18:51 AM | | |
| *SC* | | | andersonp | IsBatched | 1/26/2007 4:38:03 PM | ICOC_RADCALC v4.8.26 |
| *SC* | | | BockJ | InPrep | 2/2/2007 9:18:51 AM | RICH-RC-5014 Revision 6 |
| *SC* | | | BockJ | Prep1C | 2/2/2007 9:23:42 AM | RICH-RC-5014 REVISION 6 |
| *SC* | | | AshworthA | InPrep2 | 2/12/2007 11:43:50 AM | RICH-RC-5014 REVISION 6 |
| *SC* | | | AshworthA | Prep2C | 2/13/2007 1:57:50 PM | RICH-RC-5014 REVISION 6 |
| *SC* | | | BlackCL | InCnt1 | 2/13/2007 2:00:58 PM | RICH-RD-0003 REVISION 4 |
| *SC* | | | DAWKINSO | CalcC | 2/13/2007 7:28:40 PM | RICH-RD-0003 REVISION 4 |
| *AC* | | | BockJ | 2/2/2007 9:23:42 AM | | |
| *AC* | | | BockJ | 2/2/2007 9:28:52 AM | | |
| *AC* | | | AshworthA | 2/12/2007 11:43:50 | | |
| *AC* | | | AshworthA | 2/13/2007 1:57:50 PM | | |
| *AC* | | | BlackCL | 2/13/2007 2:00:58 PM | | |
| *AC* | | | DAWKINSO | 2/13/2007 7:28:40 PM | | |

*AC: Accepting Entry; SC: Status Change*

2/12/2007 2:43:01 PM

# ICOC Fraction Transfer/Status Report

ByDate: 2/12/2006, 2/17/2007, Batch: '7026384', User: *ALL Order By DateTimeAccepting

| Q Batch | Work Ord | CurStatus | Accepting | | | Comments |
|---|---|---|---|---|---|---|
| 7026384 | | | | | | |
| *AC* | | CalcC | BockJ | 2/1/2007 9:11:20 AM | | |
| *SC* | | | andersonp | IsBatched | 1/26/2007 4:36:25 PM | ICOC_RADCALC v4.8.26 |
| *SC* | | | BockJ | InPrep | 2/1/2007 9:11:20 AM | rich-rc-5016 rEVISION 6 |
| *SC* | | | BockJ | Prep1C | 2/1/2007 9:28:32 AM | RICH-RC-5016 REVISION 6 |
| *SC* | | | ManisD | InSep1 | 2/1/2007 9:31:39 AM | RICH-RC-5006 REV 6 |
| *SC* | | | ManisD | Sep1C | 2/2/2007 4:30:42 PM | RICH-RC-5006 REV 6 |
| *SC* | | | DAWKINSO | InCnt1 | 2/2/2007 4:43:13 PM | RICH-RD-0007 REVISION 5 |
| *SC* | | | DAWKINSO | Cnt1C | 2/2/2007 7:52:09 PM | RICH-RD-0007 REVISION 5 |
| *SC* | | | ManisD | Sep2C | 2/9/2007 2:23:20 PM | RICH-RC-5071 REV 4 |
| *SC* | | | StringerR | InCnt1 | 2/9/2007 2:25:12 PM | RICH-RD-0003 REVISION 4 |
| *SC* | | | StringerR | CalcC | 2/11/2007 11:45:45 AM | RICH-RD-0003 REVISION 4 |
| *AC* | | | BockJ | 2/1/2007 9:28:32 AM | | |
| *AC* | | | BockJ | 2/1/2007 9:28:41 AM | | |
| *AC* | | | ManisD | 2/1/2007 9:31:39 AM | | |
| *AC* | | | ManisD | 2/2/2007 4:30:42 PM | | |
| *AC* | | | DAWKINSO | 2/2/2007 4:43:13 PM | | |
| *AC* | | | DAWKINSO | 2/2/2007 7:52:09 PM | | |
| *AC* | | | ManisD | 2/9/2007 2:23:20 PM | | |
| *AC* | | | StringerR | 2/9/2007 2:25:12 PM | | |
| *AC* | | | StringerR | 2/9/2007 2:25:38 PM | | |
| *AC* | | | StringerR | 2/11/2007 11:45:45 | | |

*AC: Accepting Entry; SC: Status Change*

2/22/2007 1:22:20 PM

# ICOC Fraction Transfer/Status Report

ByDate: 2/22/2006, 2/27/2007, Batch: '7026400', User: *ALL Order By DateTimeAccepting

| Q Batch | Work Ord | CurStatus | Accepting | | | Comments |
|---|---|---|---|---|---|---|
| **7026400** | | | | | | |
| *AC* | | **CalcC** | **BockJ** | 2/15/2007 11:55:55 | | |
| *SC* | | | andersonp | IsBatched | 1/26/2007 4:38:03 PM | ICOC_RADCALC v4.8.26 |
| *SC* | | | BockJ | InPrep | 2/15/2007 11:55:55 AM | rich-rc-5017 rEVISION 5 |
| *SC* | | | BockJ | Prep1C | 2/15/2007 12:28:03 PM | RICH-RC-5017 REVISION 5 |
| *SC* | | | BostedD | InPrep2 | 2/19/2007 1:14:07 PM | RICHRC5025 REV3 |
| *SC* | | | BostedD | Prep2C | 2/21/2007 2:12:04 PM | RICHRC5025 REV3 |
| *SC* | | | StringerR | InCnt1 | 2/21/2007 2:32:47 PM | RICH-RD-0007 REVISION 5 |
| *SC* | | | DAWKINSO | CalcC | 2/21/2007 8:47:02 PM | RICH-RD-0007 REVISION 5 |
| *AC* | | | **BockJ** | 2/15/2007 12:27:44 | | |
| *AC* | | | **BockJ** | 2/15/2007 12:28:03 | | |
| *AC* | | | **BostedD** | 2/19/2007 1:14:07 PM | | |
| *AC* | | | **BostedD** | 2/21/2007 2:11:45 PM | | |
| *AC* | | | **BostedD** | 2/21/2007 2:12:04 PM | | |
| *AC* | | | **StringerR** | 2/21/2007 2:32:47 PM | | |
| *AC* | | | **DAWKINSO** | 2/21/2007 8:47:02 PM | | |
| *AC* | | | **DAWKINSO** | 2/21/2007 9:10:03 PM | | |

*AC: Accepting Entry; SC: Status Change*

2/5/2007 4:16:45 PM

# ICOC Fraction Transfer/Status Report

ByDate: 2/5/2006, 2/10/2007, Batch: '7026396', User: *ALL Order By DateTimeAccepting

| Q Batch | Work Ord | CurStatus | Accepting | | | Comments |
|---|---|---|---|---|---|---|
| 7026396 | | | | | | |
| *AC* | | **CalcC** | **BockJ** | 2/1/2007 10:49:26 | | |
| *SC* | | | andersonp | IsBatched | 1/26/2007 4:38:03 PM | ICOC_RADCALC v4.8.26 |
| *SC* | | | BockJ | InPrep | 2/1/2007 10:49:26 AM | rich-rc-5016 rEVISION 6 |
| *SC* | | | BockJ | Prep1C | 2/1/2007 11:02:00 AM | RICH-RC-5016 REVISION 6 |
| *SC* | | | HarveyK | Sep1C | 2/2/2007 4:31:34 PM | RICH-RC-5065 REV5 |
| *SC* | | | DAWKINSO | InCnt1 | 2/2/2007 4:43:36 PM | RICH-RD-0001 REVISION 3 |
| *SC* | | | StringerR | CalcC | 2/4/2007 12:50:20 PM | RICH-RD-0001 REVISION 3 |
| *AC* | | | **BockJ** | 2/1/2007 11:02:00 | | |
| *AC* | | | **HarveyK** | 2/2/2007 4:31:34 PM | | |
| *AC* | | | **DAWKINSO** | 2/2/2007 4:43:36 PM | | |
| *AC* | | | **StringerR** | 2/4/2007 12:50:20 PM | | |

*AC: Accepting Entry; SC: Status Change*

2/7/2007 8:04:08 AM

# ICOC Fraction Transfer/Status Report

ByDate: 2/7/2006, 2/12/2007, Batch: '7026385', User: *ALL Order By DateTimeAccepting

| Q Batch | Work Ord | CurStatus | Accepting | | | Comments |
|---|---|---|---|---|---|---|
| 7026385 | | | | | | |
| *AC* | | CalcC | McDowellD | 2/2/2007 11:23:21 | | |
| *SC* | | | andersonp | IsBatched | 1/26/2007 4:36:25 PM | ICOC_RADCALC v4.8.26 |
| *SC* | | | McDowellD | Sep1C | 2/2/2007 11:23:21 AM | RICH-RC-5007 REVISION 6 |
| *SC* | | | BlackCL | InCnt1 | 2/2/2007 11:26:05 AM | RICH-RD-0001 REVISION 3 |
| *SC* | | | StringerR | CalcC | 2/4/2007 12:09:35 PM | RICH-RD-0001 REVISION 3 |
| *AC* | | | BlackCL | 2/2/2007 11:26:05 | | |
| *AC* | | | StringerR | 2/4/2007 12:09:35 PM | | |

*AC: Accepting Entry; SC: Status Change*

2/28/2007 4:15:37 PM

# ICOC Fraction Transfer/Status Report

ByDate: 2/28/2006, 3/5/2007, Batch: '7026383', User: *ALL Order By DateTimeAccepting

| Q Batch | Work Ord | CurStatus | Accepting | | | Comments |
|---|---|---|---|---|---|---|
| **7026383** | | | | | | |
| *AC* | | **Cnt1C** | **BockJ** | 2/1/2007 12:29:48 PM | | |
| *SC* | | | andersonp | IsBatched | 1/26/2007 4:49:02 PM | ICOC_RADCALC v4.8.26 |
| *SC* | | | BockJ | InPrep | 2/1/2007 12:29:48 PM | rich-rc-5016 rEVISION 6 |
| *SC* | | | BockJ | Prep1C | 2/1/2007 12:36:19 PM | RICH-RC-5015 REVISION 4 |
| *SC* | | | AntonsonL | InPrep2 | 2/20/2007 11:32:42 AM | RICH-RC-5015 REVISION 4 |
| *SC* | | | AshworthA | InPrep2 | 2/20/2007 11:33:03 AM | RICH-RC-5015 REVISION 4 |
| *SC* | | | AshworthA | Prep2C | 2/21/2007 2:17:22 PM | RICH-RC-5015 REVISION 4 |
| *SC* | | | AntonsonL | Prep2C | 2/21/2007 2:17:34 PM | RICH-RC-5015 REVISION 4 |
| *SC* | | | NelsonT | Cnt1C | 2/28/2007 2:54:46 PM | RICH-RC-5058 REV 7 |
| *AC* | | | **BockJ** | 2/1/2007 12:36:19 PM | | |
| *AC* | | | **AntonsonL** | 2/20/2007 11:32:42 | | |
| *AC* | | | **AshworthA** | 2/20/2007 11:33:03 | | |
| *AC* | | | **AshworthA** | 2/21/2007 2:17:22 PM | | |
| *AC* | | | AntonsonL | 2/21/2007 2:17:34 PM | | |
| *AC* | | | **NelsonT** | 2/28/2007 2:54:46 PM | | |

*AC: Accepting Entry; SC: Status Change*