

0082128

RECEIVED DECEMBER 10, 2008



9 December 2008

Mr. Michael Neeley  
CH2M Hill Plateau Remediation Company  
P.O. Box 1600  
Mail Stop - B6-06  
Richland, WA 99352

**Subject: Contract No. 630  
Analytical Data Package**

Dear Mr. Neely:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

|               |          |
|---------------|----------|
| LvL Batch #   | 0810L162 |
| SDG #         | H3922    |
| SAF #         | F08-086  |
| Date Received | 10/29/08 |
| # Samples     | 1        |
| Matrix        | WATER    |
| Volatiles     | 2        |
| Semivolatiles | X        |
| Pest/PCB      | X        |
| DRO/GRO/KRO   |          |
| Herbicides    |          |
| GC Alcohol    |          |
| Metals        |          |
| Inorganics    | X        |

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,

Lionville Laboratory  
(A-Division of Eberline Analytical Corporation)

Orlette S. Johnson  
Project Manager

**RECEIVED**  
JUN 24 2009  
EDMC

# CHAIN OF CUSTODY

000000002



|  |  |   |                            |                                      |   |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
|--|--|---|----------------------------|--------------------------------------|---|---|---------------|--------------------------------------|--|--|--|--|--|--|--|--|--|--|--|
| Fluor Hanford Inc.   |  | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST  |                            |                                      |   | F08-086-064   | PAGE 1 OF 1   |                                      |  |  |  |  |  |  |  |  |  |  |  |
| COLLECTOR<br>NCO Sampler <i>ED Kraus / Steve Stumper</i>   |  | COMPANY CONTACT<br>Trent, SJ  |                            | TELEPHONE NO.<br>373-5869            | PROJECT COORDINATOR<br>WIDRIG, DL                           |   | PRICE CODE 7N | DATA TURNAROUND<br>45 Days / 45 Days |  |  |  |  |  |  |  |  |  |  |  |
| SAMPLING LOCATION<br>I-C6375-M   |  | PROJECT DESIGNATION<br>Aquifer Tube Installation Sampling and Analysis in the 200-PO-1 OU (Shore) |                            |                                      | SAF NO.<br>F08-086  | AIR QUALITY <input type="checkbox"/>  |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
| ICE CHEST NO.<br><i>GWO-07-009</i>   |  | FIELD LOGBOOK NO.<br><i>HNF-N-451-3</i>   | ACTUAL SAMPLE DEPTH        |                                      | COA<br>122588ES10   | METHOD OF SHIPMENT<br>FEDERAL EXPRESS   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
| SHIPPED TO<br>Lionville Laboratory Incorporated.   |  | OFFSITE PROPERTY NO.<br>See PTR <i>22736</i>  |                            |                                      | BILL OF LADING/AIR BILL NO.<br>See PTR <i>79213512 5243</i> |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
| MATRIX*<br>A=Air<br>DL=Drum<br>L=Liquid<br>O=Oil<br>S=Soil<br>SE=Sediment<br>T=Tissue<br>V=Vegetation<br>W=Water<br>WI=Wipe<br>X=Other | <b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b><br>Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993) |   | <b>PRESERVATION</b>        | Cool-4C                              | Cool-4C   |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
|  |  |   | <b>TYPE OF CONTAINER</b>   | aG                                   | aG  |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
|  |  |   | <b>NO. OF CONTAINER(S)</b> | 4                                    | 2   |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
|  |  |   | <b>VOLUME</b>              | 1000ml                               | 1000ml  |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
|  | <b>SPECIAL HANDLING AND/OR STORAGE</b>   |   | <b>SAMPLE ANALYSIS</b>     | SEE ITEM (1) IN SPECIAL INSTRUCTIONS | SEE ITEM (2) IN SPECIAL INSTRUCTIONS                        |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
| <b>SAMPLE NO.</b>  | <b>MATRIX*</b>   | <b>SAMPLE DATE</b>  | <b>SAMPLE TIME</b>         |                                      |   |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
| B1TRH2   | WATER  | <i>10-28-08</i>   | <i>0925</i>                | ✓                                    | ✓   |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
|  |  |   |                            |                                      |   |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
|  |  |   |                            |                                      |   |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
|  |  |   |                            |                                      |   |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
| <b>CHAIN OF POSSESSION</b>   |  | <b>SIGN/ PRINT NAMES</b>  |                            |                                      |   | <b>SPECIAL INSTRUCTIONS</b>   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
| RELINQUISHED BY/REMOVED FROM   |  | DATE/TIME   | RECEIVED BY/STORED IN      |                                      | DATE/TIME   | <b>** The 200 Area S&amp;GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.</b><br>(1)Pesticides - 8081 {Dieldrin, Heptachlor, Heptachlor epoxide}<br>(2)Semi-VOA - 8270B (TCL) {2,4-Dinitrophenol, Bis(2-ethylhexyl) phthalate, Nitrobenzene, Pentachlorophenol} Semi-VOA - 8270B (Add-On) {1,4-Dioxane, Dimethoate} |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
| <i>CFU Hg / On 5</i>   |  | <i>10-14-08/150</i>   | <i>FED - ET</i>            |                                      |   |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
| RELINQUISHED BY/REMOVED FROM   |  | DATE/TIME   | RECEIVED BY/STORED IN      |                                      | DATE/TIME   |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
| <i>Fed</i>   |  | <i>10-29-08 0935</i>  | <i>But Henry</i>           |                                      | <i>10-29-08 0935</i>  |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
| RELINQUISHED BY/REMOVED FROM   |  | DATE/TIME   | RECEIVED BY/STORED IN      |                                      | DATE/TIME   |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
| RELINQUISHED BY/REMOVED FROM   |  | DATE/TIME   | RECEIVED BY/STORED IN      |                                      | DATE/TIME   |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
| RELINQUISHED BY/REMOVED FROM   |  | DATE/TIME   | RECEIVED BY/STORED IN      |                                      | DATE/TIME   |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
| RELINQUISHED BY/REMOVED FROM   |  | DATE/TIME   | RECEIVED BY/STORED IN      |                                      | DATE/TIME   |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
| RELINQUISHED BY/REMOVED FROM   |  | DATE/TIME   | RECEIVED BY/STORED IN      |                                      | DATE/TIME   |   |               |                                      |  |  |  |  |  |  |  |  |  |  |  |
| <b>LABORATORY SECTION</b>  |  | <b>RECEIVED BY</b>  |                            |                                      |   | <b>TITLE</b>  |               | <b>DATE/TIME</b>                     |  |  |  |  |  |  |  |  |  |  |  |
| <b>FINAL SAMPLE DISPOSITION</b>  |  | <b>DISPOSAL METHOD</b>  |                            |                                      |   | <b>DISPOSED BY</b>  |               | <b>DATE/TIME</b>                     |  |  |  |  |  |  |  |  |  |  |  |

000000004

| Fluor Hanford Inc.   |   | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST  |   |  |                   | F08-086-063                             | PAGE 1 OF 1                                |  |
|--|---|---|---|--|-------------------|---|--|--|
| COLLECTOR<br>NCO Sampler <i>ED Krauer / Steve Stanger</i>  |   | COMPANY CONTACT<br>Trent, SJ  | TELEPHONE NO.<br>373-5869                         | PROJECT COORDINATOR<br>WIDRIG, DL  |                   | PRICE CODE<br>7N                        | DATA<br>TURNAROUND<br>45 Days / 45<br>Days |  |
| SAMPLING LOCATION<br>I-C6375-M   |   | PROJECT DESIGNATION<br>Aquifer Tube Installation Sampling and Analysis in the 200-PO-1 OU (Shore) |   | SAF NO.<br>F08-086   |                   | AIR QUALITY<br><input type="checkbox"/> |  |  |
| ICE CHEST NO.<br><i>GWO-07-005</i>   |   | FIELD LOGBOOK NO.<br><i>HNF-N-451-3</i>   | ACTUAL SAMPLE DEPTH                               |  | COA<br>122588E510 | METHOD OF SHIPMENT<br>FEDERAL EXPRESS   |  |  |
| SHIPPED TO<br>Lionville Laboratory Incorporated  |   | OFFSITE PROPERTY NO.<br>See PTR <i>2273L</i>  |   | BILL OF LADING/AIR BILL NO.<br>See PTR <i>7921 3512 5243</i>   |                   |   |  |  |
| MATRIX*<br>A=Air<br>DL=Drum<br>Liquids<br>DS=Drum<br>Solids<br>L=Liquid<br>O=Oil<br>S=Soil<br>SE=Sediment<br>T=Tissue<br>V=Vegetation<br>W=Water<br>WI=Wipe<br>X=Other | POSSIBLE SAMPLE HAZARDS/ REMARKS<br>Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993) | PRESERVATION  | Cool-4C   |  |                   |   |  |  |
|  |   | TYPE OF CONTAINER   | P   |  |                   |   |  |  |
|  |   | NO. OF CONTAINER(S)   | 1   |  |                   |   |  |  |
|  |   | VOLUME  | 500mL   |  |                   |   |  |  |
|  | SPECIAL HANDLING AND/OR STORAGE   | SAMPLE ANALYSIS   | IC Anions - 300.0<br>(Fluoride, Nitrate, Nitrite) |  |                   |   |  |  |
| SAMPLE NO.   | MATRIX*   | SAMPLE DATE   | SAMPLE TIME                                       |  |                   |   |  |  |
| B1TRT6   | WATER   | <i>10-28-08</i>   | <i>0925</i>                                       | <input checked="" type="checkbox"/>  |                   |   |  |  |
|  |   |   |   |  |                   |   |  |  |
|  |   |   |   |  |                   |   |  |  |
|  | <i>25th</i>   |   |   |  |                   |   |  |  |
|  |   |   |   | <i>007809</i>  |                   |   |  |  |
| CHAIN OF POSSESSION  |   | SIGN/ PRINT NAMES   |   | SPECIAL INSTRUCTIONS   |                   |   |  |  |
| RELINQUISHED BY/REMOVED FROM<br><i>C. Fulton</i>   | DATE/TIME<br><i>10-29-08 0935</i>   | RECEIVED BY/STORED IN<br><i>EDK</i>   | DATE/TIME   | ** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. |                   |   |  |  |
| RELINQUISHED BY/REMOVED FROM<br><i>Steve Stanger</i>   | DATE/TIME<br><i>10-29-08 0935</i>   | RECEIVED BY/STORED IN<br><i>Steve Stanger</i>   | DATE/TIME<br><i>10-29-08 0935</i>                 |  |                   |   |  |  |
| RELINQUISHED BY/REMOVED FROM   | DATE/TIME   | RECEIVED BY/STORED IN   | DATE/TIME   |  |                   |   |  |  |
| RELINQUISHED BY/REMOVED FROM   | DATE/TIME   | RECEIVED BY/STORED IN   | DATE/TIME   |  |                   |   |  |  |
| RELINQUISHED BY/REMOVED FROM   | DATE/TIME   | RECEIVED BY/STORED IN   | DATE/TIME   |  |                   |   |  |  |
| LABORATORY SECTION   | RECEIVED BY   | TITLE   |   | DATE/TIME  |                   |   |  |  |
| FINAL SAMPLE DISPOSITION   | DISPOSAL METHOD   | DISPOSED BY   |   | DATE/TIME  |                   |   |  |  |

000000005

|  |   |                           |                                   |   |                                      |
|--|---|---------------------------|-----------------------------------|---|--------------------------------------|
| COLLECTOR<br>NCO Sampler <i>ED Kraver / Steve Stampfer</i> | COMPANY CONTACT<br>Trent, SJ  | TELEPHONE NO.<br>373-5869 | PROJECT COORDINATOR<br>WIDRIG, DL | PRICE CODE<br>7N                        | DATA TURNAROUND<br>45 Days / 45 Days |
| SAMPLING LOCATION<br>I-C6375-M                             | PROJECT DESIGNATION<br>Aquifer Tube Installation Sampling and Analysis in the 200-PO-1 OU (Shore) |                           | SAF NO.<br>F08-086                | AIR QUALITY<br><input type="checkbox"/> |                                      |
| ICE CHEST NO.<br><i>GW0-07-009</i>                         | FIELD LOGBOOK NO.<br><i>HNF-N-451-3</i>   | ACTUAL SAMPLE DEPTH       | COA<br>122588ES10                 | METHOD OF SHIPMENT<br>FEDERAL EXPRESS   |                                      |

|   |   |  |
|---|---|--|
| SHIPPED TO<br>Lionville Laboratory Incorporated | OFFSITE PROPERTY NO.<br>See PTR <i>2236</i> | BILL OF LADING/AIR BILL NO.<br>See PTR <i>7921 3512 5243</i> |
|---|---|--|

|  |   |                     |                                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|---|---------------------|--------------------------------------|--------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| MATRIX*<br>A=Air<br>DL=Drum<br>L=Liquids<br>DS=Drum<br>S=Solids<br>L=Liquid<br>O=Oil<br>S=Soil<br>SE=Sediment<br>T=Tissue<br>V=Vegetation<br>W=Water<br>WI=Wipe<br>X=Other | POSSIBLE SAMPLE HAZARDS/ REMARKS<br>Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993) | PRESERVATION        | Cool-4C                              | Cool-4C                              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |   | TYPE OF CONTAINER   | aG                                   | aG                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |   | NO. OF CONTAINER(S) | 4                                    | 2                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |   | VOLUME              | 1000mL                               | 1000mL                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SPECIAL HANDLING AND/OR STORAGE  |   | SAMPLE ANALYSIS     | SEE ITEM (1) IN SPECIAL INSTRUCTIONS | SEE ITEM (2) IN SPECIAL INSTRUCTIONS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| SAMPLE NO. | MATRIX* | SAMPLE DATE | SAMPLE TIME |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------|---------|-------------|-------------|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| B1TRR8     | WATER   | 10-28-08    | 0925        | ✓ | ✓ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|            |         |             |             |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|            |         |             |             |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|            |         |             |             |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|            |         |             |             |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|            |         |             |             |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|  |                            |                                      |                            |  |  |
|--|----------------------------|--------------------------------------|----------------------------|--|--|
| CHAIN OF POSSESSION                        |                            | SIGN/ PRINT NAMES                    |                            | SPECIAL INSTRUCTIONS   |  |
| RELINQUISHED BY/REMOVED FROM<br><i>CFU</i> | DATE/TIME<br>10-28-08 1200 | RECEIVED BY/STORED IN<br><i>FED</i>  | DATE/TIME                  | ** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.<br>(1)Pesticides - 8081 {Dieldrin, Heptachlor, Heptachlor epoxide}<br>(2)Semi-VOA - 8270B (TCL) {2,4-Dinitrophenol, Bis(2-ethylhexyl) phthalate, Nitrobenzene, Pentachlorophenol} Semi-VOA - 8270B (Add-On) {1,4-Dioxane, Dimethoate} |  |
| RELINQUISHED BY/REMOVED FROM<br><i>FWD</i> | DATE/TIME<br>10-29-08 0935 | RECEIVED BY/STORED IN<br><i>Paul</i> | DATE/TIME<br>10-29-08 0935 |  |  |
| RELINQUISHED BY/REMOVED FROM               | DATE/TIME                  | RECEIVED BY/STORED IN                | DATE/TIME                  |  |  |
| RELINQUISHED BY/REMOVED FROM               | DATE/TIME                  | RECEIVED BY/STORED IN                | DATE/TIME                  |  |  |
| RELINQUISHED BY/REMOVED FROM               | DATE/TIME                  | RECEIVED BY/STORED IN                | DATE/TIME                  |  |  |
| RELINQUISHED BY/REMOVED FROM               | DATE/TIME                  | RECEIVED BY/STORED IN                | DATE/TIME                  |  |  |

|                          |                 |             |           |
|--------------------------|-----------------|-------------|-----------|
| LABORATORY SECTION       | RECEIVED BY     | TITLE       | DATE/TIME |
| FINAL SAMPLE DISPOSITION | DISPOSAL METHOD | DISPOSED BY | DATE/TIME |

000000006

Lionville Laboratory Incorporated  
**SAMPLE RECEIPT CHECKLIST (SRC)**

CLIENT: Flour Hanford  
 Project/SAR/SOW/Release #: F08-086

Date: 10/29/08

LvLI Batch #: 0810L162

Sample Custodian: V. Heenan

NOTE: EXPLAIN ALL DISCREPANCIES

- |   |  |   |
|---|--|---|
| 1. Samples Hand Delivered or <u>Shipped?</u>  | Carrier <u>Fed Ex</u>  | Airbill # <u>7921 35125243</u>  |
| 2. Custody Seals on coolers or shipping containers intact, signed & dated?  | <input checked="" type="checkbox"/> Yes <sup>10-29-08</sup> <input type="checkbox"/> No  | <input checked="" type="checkbox"/> No Seals <u>Seal Broken and cooler not sealed. Bags in cooler intact.</u> |
| 3. Outside of coolers or shipping containers are free from damage?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  | Comments:   |
| 4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible?                   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |   |
| 5. Samples received cooled or ambient?  | Temp <u>3-2°</u> °C  | Cooler # <u>GW0-07-009</u>  |
| How was the temperature taken?  | <input checked="" type="checkbox"/> IR <input type="checkbox"/> Temp. Blank  | <input type="checkbox"/> Other (Specify):   |
| Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |   |
| 6. Custody seals on sample containers intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  | <input type="checkbox"/> No Seals   |
| 7. COC (Client & LvLI) signed & dated?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |   |
| 8. Sample containers are intact?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |   |
| 9. All samples on COC received?<br>All samples received on COC?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 10. All sample label information matches COC?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |   |
| 11. Samples properly preserved? (If #5 is no, then this is no.)   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |   |
| 12. Samples received within hold times?<br>Short holds taken to wet lab?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> N/A  |
| 13. VOA, TOC, TOX free of headspace?  | <input type="checkbox"/> Yes <input type="checkbox"/> No   | <input checked="" type="checkbox"/> N/A   |
| 14. QC stickers placed on bottles designated by client?   | <input type="checkbox"/> Yes <input type="checkbox"/> No   | <input checked="" type="checkbox"/> N/A   |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.) | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  |   |
| 16. Project Manager contacted concerning any discrepancies?<br>Person Contacted <u>O. JOHNSON</u>   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  | <input type="checkbox"/> N/A  |

Date 10-29-08



000000007

# INORGANICS

000000000



**Analytical Report**

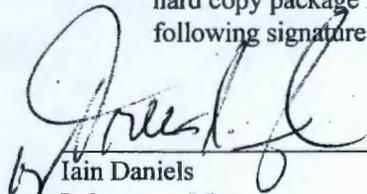
**Client:** CHPRC-HANFORD F08-086 *H3922*  
**LVL#:** 0810L162

**W.O.#:** 60197-001-001-0001-00  
**Date Received:** 10-29-08

**INORGANIC NARRATIVE**

1. This narrative covers the analyses of 1 water sample.
2. The sample was prepared and analyzed in accordance with the method checked on the attached glossary.  

Lionville Lab (LvL) is NELAP accredited by the State of Pennsylvania. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.
3. Sample holding times as required by the method and/or contract were met (see the sample chronology summary for analyses times for short hold samples).
4. The results presented in this report are derived from a sample that met LvL's sample acceptance policy.
5. The method blanks were within the method criteria.
6. The Laboratory Control Samples (LCS) were within the laboratory control limits.
7. The matrix spike recoveries were within the 75-125% control limits.
8. The replicate analyses were within the 20% Relative Percent Difference (RPD) control limit.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

  
by Iain Daniels  
Laboratory Manager  
Lionville Laboratory  
npj110-162

*12/9/08*  
Date

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1.3 pages.

Lionville Laboratory, Inc.  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 CHPRC-HANFORD F08-086

DATE RECEIVED: 10/29/08

LVL LOT # :0810L162

| CLIENT ID /ANALYSIS | LVL #   | MTX | PREP #   | COLLECTION | EXTR/PREP | ANALYSIS | ANALYSIS<br>TIME |
|---------------------|---------|-----|----------|------------|-----------|----------|------------------|
| B1TRT6              |         |     |          |            |           |          |                  |
| FLUORIDE BY IC      | 002     | W   | 08LIC083 | 10/28/08   | 10/29/08  | 10/29/08 |                  |
| FLUORIDE BY IC      | 002 REP | W   | 08LIC083 | 10/28/08   | 10/29/08  | 10/29/08 |                  |
| FLUORIDE BY IC      | 002 MS  | W   | 08LIC083 | 10/28/08   | 10/29/08  | 10/29/08 |                  |
| NITRITE BY IC       | 002     | W   | 08LICB83 | 10/28/08   | 10/29/08  | 10/29/08 | 1558             |
| NITRITE BY IC       | 002 REP | W   | 08LICB83 | 10/28/08   | 10/29/08  | 10/29/08 | 1613             |
| NITRITE BY IC       | 002 MS  | W   | 08LICB83 | 10/28/08   | 10/29/08  | 10/29/08 | 1640             |
| NITRATE BY IC       | 002     | W   | 08LICD83 | 10/28/08   | 10/29/08  | 10/29/08 | 1504             |
| NITRATE BY IC       | 002 REP | W   | 08LICD83 | 10/28/08   | 10/29/08  | 10/29/08 | 1527             |
| NITRATE BY IC       | 002 MS  | W   | 08LICD83 | 10/28/08   | 10/29/08  | 10/29/08 | 1542             |

LAB QC:

|                |        |   |          |     |          |          |  |
|----------------|--------|---|----------|-----|----------|----------|--|
| FLUORIDE BY IC | MB1    | W | 08LIC083 | N/A | 10/27/08 | 10/27/08 |  |
| FLUORIDE BY IC | MB1 BS | W | 08LIC083 | N/A | 10/27/08 | 10/27/08 |  |
| NITRITE BY IC  | MB1    | W | 08LICB83 | N/A | 10/27/08 | 10/27/08 |  |
| NITRITE BY IC  | MB1 BS | W | 08LICB83 | N/A | 10/27/08 | 10/27/08 |  |
| NITRATE BY IC  | MB1    | W | 08LICD83 | N/A | 10/27/08 | 10/27/08 |  |
| NITRATE BY IC  | MB1 BS | W | 08LICD83 | N/A | 10/27/08 | 10/27/08 |  |

# Lionville Laboratory Incorporated

## WET CHEMISTRY

### METHODS GLOSSARY FOR WATER SAMPLE ANALYSIS

|   | <u>EPA /600</u>                           | <u>SW846</u>                          | <u>OTHER</u>                  |
|---|---|---------------------------------------|-------------------------------|
| Acidity   | 305.1                                     |                                       |                               |
| ___ Alkalinity ___ Bicarbonate ___ Carbonate  | 310.1                                     |                                       |                               |
| BOD   | 405.1                                     |                                       | ___ 5210B (b)                 |
| Ion Chromatography:   |   |                                       |                               |
| ___ Bromide ___ Chloride <input checked="" type="checkbox"/> Fluoride                                 | <input checked="" type="checkbox"/> 300.0 | ___ 9056                              |                               |
| <input checked="" type="checkbox"/> Nitrate <input checked="" type="checkbox"/> Nitrite ___ Phosphate | <input checked="" type="checkbox"/> 300.0 | ___ 9056                              |                               |
| ___ Sulfate ___ Formate ___ Acetate ___ Oxalate   | ___ 300.0                                 | ___ 9056                              |                               |
| Chloride  | ___ 325.2                                 | ___ 9251                              |                               |
| Chlorine, Residual  | ___ 330.5 (mod)                           |                                       |                               |
| Cyanide, Amenable to Chlorination   | ___ 335.2                                 | ___ 9010B                             |                               |
| Cyanide, Total  | ___ 335.2                                 | ___ 9010B                             | ___ 9014 ___ ILMO4.0 (e)      |
| Cyanide, Weak Acid Dissociable  |   |                                       | ___ 412 (a) ___ 4500CN-I (b)  |
| COD   | ___ 410.4(mod)                            |                                       | ___ 5220C (b)                 |
| Color   | ___ 110.2                                 |                                       |                               |
| Corrosivity by Coupon   |   | ___ 1110(mod)                         |                               |
| Chromium VI   |   | ___ 7196A                             | ___ 3500Cr-D (b)              |
| Fluoride  | ___ 340.2                                 |                                       | ___ 4500-FC                   |
| Hardness, Calcium   | ___ 215.2                                 |                                       |                               |
| Hardness, Total   | ___ 130.2                                 |                                       |                               |
| Iodide  |   |                                       | ___ ASTM D19P202 (1)          |
| Surfactant  | ___ 425.1                                 |                                       |                               |
| ___ Nitrate-Nitrite ___ Nitrate ___ Nitrite   | ___ 353.2                                 |                                       |                               |
| Ammonia   | ___ 350.3                                 |                                       |                               |
| Total ___ Kjeldahl ___ Organic Nitrogen   | ___ 351.3                                 |                                       |                               |
| Total ___ Organic ___ Inorganic Carbon  | ___ 415.1                                 | ___ 9060                              |                               |
| Oil & Grease  | ___ 413.1                                 | ___ 9070                              |                               |
| ___ pH ___ pH; paper  | ___ 150.1                                 | ___ 9040B ___ 9041A                   |                               |
| Petroleum Hydrocarbons, Total Recoverable   | ___ 418.1                                 |                                       |                               |
| Phenol  | ___ 420.1                                 | ___ 420.2 ___ 9065 ___ 9066           |                               |
| ___ Ortho ___ Total Phosphate   | ___ 365.2                                 |                                       | ___ 4500-P B ___ C            |
| Salinity  |   |                                       | ___ 210A (a) ___ 2520 (b)     |
| Settleable Solids   | ___ 160.5                                 |                                       |                               |
| Sulfide   | ___ 376.1                                 |                                       | ___ 9030B/9034 (acid soluble) |
| Reactive ___ Cyanide ___ Sulfide  |   | ___ Section 7.3 ( ___ 9014 ___ 9030B) |                               |
| Silica  | ___ 370.1                                 |                                       |                               |
| Sulfite   | ___ 377.1                                 |                                       |                               |
| Sulfate   | ___ 375.4                                 | ___ 9038                              |                               |
| Specific Conductance  | ___ 120.1                                 | ___ 9050A                             |                               |
| Specific Gravity  |   |                                       | ___ D5057-90 ___ 213E (a)     |
| Synthetic Precipitation Leach   |   | ___ 1312                              |                               |
| Total ___ Dissolved ___ Suspended ___ Solids  | 160 ___ .1 ___ .2 ___ .3                  |                                       |                               |
| Total Organic Halides   | ___ 450.1                                 | ___ 9020B                             |                               |
| Turbidity   | ___ 180.1                                 |                                       |                               |
| Volatile Solids:  |   |                                       |                               |
| ___ Total ___ Dissolved ___ Suspended   | ___ 160.4                                 |                                       |                               |
| Other:  |   | Method:                               |                               |

## Lionville Laboratory Incorporated

### METHOD REFERENCES AND DATA QUALIFIERS

#### DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

\* = Indicates that the original sample result is greater than 4x the spike amount added.

#### ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LC = Laboratory Control Sample.

NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

#### ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.
2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
  - a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
  - b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
  - c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
  - d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
  - e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
  - f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 11/07/08

CLIENT: CHPRC-HANFORD F08-086

LVL LOT #: 0810L162

WORK ORDER: 60197-001-001-0001-00

| SAMPLE | SITE ID | ANALYTE        | RESULT | UNITS  | REPORTING<br>LIMIT | DILUTION<br>FACTOR |
|--------|---------|----------------|--------|--------|--------------------|--------------------|
| -002   | B1TRT6  | Fluoride by IC | 0.25   | u MG/L | 0.25               | 1.0                |
|        |         | Nitrite by IC  | 0.25   | u MG/L | 0.25               | 1.0                |
|        |         | Nitrate by IC  | 27.2   | MG/L   | 2.50               | 10.0               |

000000013

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/07/08

CLIENT: CHPRC-HANFORD F08-086  
WORK ORDER: 60197-001-001-0001-00

LVL LOT #: 0810L162

| SAMPLE  | SITE ID      | ANALYTE        | RESULT | UNITS | REPORTING<br>LIMIT | DILUTION<br>FACTOR |
|---------|--------------|----------------|--------|-------|--------------------|--------------------|
| BLANK10 | 08LIC083-MB1 | Fluoride by IC | 0.25 u | MG/L  | 0.25               | 1.0                |
| BLANK10 | 08LIC83-MB1  | Nitrite by IC  | 0.25 u | MG/L  | 0.25               | 1.0                |
| BLANK10 | 08LIC83-MB1  | Nitrate by IC  | 0.25 u | MG/L  | 0.25               | 1.0                |

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 11/07/08

CLIENT: CHPRC-HANFORD F08-086

LVL LOT #: 0810L162

WORK ORDER: 60197-001-001-0001-00

| SAMPLE  | SITE ID      | ANALYTE        | SPIKED<br>SAMPLE | INITIAL<br>RESULT | SPIKED<br>AMOUNT | %RECOV | DILUTION<br>FACTOR (SPK) |
|---------|--------------|----------------|------------------|-------------------|------------------|--------|--------------------------|
| -002    | B1TRT6       | Fluoride by IC | 9.9              | 0.17              | 10.0             | 97.8   | 2.0                      |
|         |              | Nitrite by IC  | 9.93             | 0.25u             | 10.0             | 99.3   | 2.0                      |
|         |              | Nitrate by IC  | 128              | 27.2              | 100              | 101.2  | 20.0                     |
| BLANK10 | 08LIC083-MB1 | Fluoride by IC | 4.7              | 0.25u             | 5.0              | 94.6   | 1.0                      |
| BLANK10 | 08LICB83-MB1 | Nitrite by IC  | 4.67             | 0.25u             | 5.00             | 93.4   | 1.0                      |
| BLANK10 | 08LICD83-MB1 | Nitrate by IC  | 4.87             | 0.25u             | 5.00             | 97.5   | 1.0                      |

000000015

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 11/07/08

CLIENT: CHPRC-HANFORD F08-086

LVL LOT #: 0810L162

WORK ORDER: 60197-001-001-0001-00

| SAMPLE  | SITE ID | ANALYTE        | INITIAL<br>RESULT | REPLICATE | RPD   | DILUTION<br>FACTOR (REP) |
|---------|---------|----------------|-------------------|-----------|-------|--------------------------|
| -002REP | B1TRT6  | Fluoride by IC | 0.25u             | 0.25u     | NC    | 1.0                      |
|         |         | Nitrite by IC  | 0.25u             | 0.25u     | NC    | 1.0                      |
|         |         | Nitrate by IC  | 27.2              | 27.2      | 0.066 | 10.0                     |

000000016

# PESTICIDES

Lionville Laboratory, Inc.  
PEST/PCB ANALYTICAL DATA PACKAGE FOR  
CHPRC-HANFORD F08-086

H3922

DATE RECEIVED: 10/29/08

LVL LOT # :0810L162

| CLIENT ID | LVL #   | MTX | PREP #   | COLLECTION | EXTR/PREP | ANALYSIS |
|-----------|---------|-----|----------|------------|-----------|----------|
| B1TRH2    | 001     | W   | 08LE0556 | 10/28/08   | 11/04/08  | 11/10/08 |
| B1TRR8    | 003     | W   | 08LE0556 | 10/28/08   | 11/04/08  | 11/10/08 |
| B1TRR8    | 003 MS  | W   | 08LE0556 | 10/28/08   | 11/04/08  | 11/10/08 |
| B1TRR8    | 003 MSD | W   | 08LE0556 | 10/28/08   | 11/04/08  | 11/10/08 |

LAB QC:

|        |        |   |          |     |          |          |
|--------|--------|---|----------|-----|----------|----------|
| PBLKWX | MB1    | W | 08LE0556 | N/A | 11/04/08 | 11/10/08 |
| PBLKWX | MB1 BS | W | 08LE0556 | N/A | 11/04/08 | 11/10/08 |



## Case Narrative

Client: CHPRC-HANFORD F08-086  
LVL #: 0810L162  
SDG/SAF # F08-086 / H3922

W.O. #: 60197-001-001-0001-00  
Date Received: 10-29-2008

### CHLORINATED PESTICIDES

Two (2) water samples were collected on 10-28-2008.

The samples and their associated QC samples were extracted on 11-04-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 11-10-2008. The extraction procedure was based on method 3520C and the extracts were analyzed based on method 8081A.

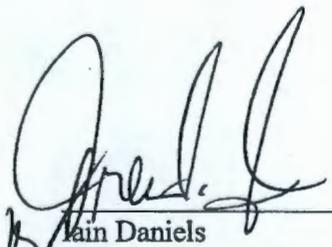
The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. Discrepancies from the Sample Acceptance Policy have been recorded on the Sample Receipt checklist.
2. All required holding times for extraction and analysis have been met.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

r:\group\data\2008\pest-pcb\wc-hanford\0810-162cw2.pest.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of \_\_\_\_\_ pages.

9. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, 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.

  
\_\_\_\_\_  
Brian Daniels  
Laboratory Manager  
Lionville Laboratory

12/3/08  
Date





## GLOSSARY OF DATA

### DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.
- .I** = Indicates an interference on one analytical column only. Result is reported from remaining analytical column.

### ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- 
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- NS** = Not Spiked.
- SP** = Indicates Spiked Compound.
- P** = This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC/MS.
- NPM** = No pattern match for multi-component target analytes.

Lionville Laboratory, Inc.

Pesticides/PCB by GC, Special List

Report Date: 11/16/08 07:47

RFW Batch Number: 0810L162

Client: CHPRC-HANFORD F08-086

Work Order: 60197001001 Page: 1

| Sample Information | Cust ID:             | B1TRH2       | B1TRR8       | B1TRR8       | B1TRR8       | PBLKW        | PBLKW BS     |
|--------------------|----------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| RFW#:              | 001                  | 003          | 003 MS       | 003 MSD      | 08LE0556-MB1 | 08LE0556-MB1 |              |
| Matrix:            | WATER                | WATER        | WATER        | WATER        | WATER        | WATER        |              |
| D.F.:              | 1.00                 | 1.00         | 1.00         | 1.00         | 1.00         | 1.00         |              |
| Units:             | UG/L                 | UG/L         | UG/L         | UG/L         | UG/L         | UG/L         |              |
| Surrogate:         | Decachlorobiphenyl   | 106 %        | 114 %        | 113 %        | 119 %        | 111 %        | 98 %         |
|                    | Tetrachloro-m-xylene | 84 %         | 88 %         | 86 %         | 85 %         | 85 %         | 86 %         |
|                    |                      | -----fl----- | -----fl----- | -----fl----- | -----fl----- | -----fl----- | -----fl----- |
| Dieldrin           |                      | 0.10 U       | 0.10 U       | 109 %        | 106 %        | 0.10 U       | 111 %        |
| Heptachlor         |                      | 0.050 U      | 0.050 U      | 102 %        | 103 %        | 0.050 U      | 104 %        |
| Heptachlor epoxide |                      | 0.050 U      | 0.050 U      | 107 %        | 104 %        | 0.050 U      | 109 %        |

00000022

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.  
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 11/04/08

Extraction Batch No: 08LE0556

Analyst: MF

Method: CONT3520

Test: 0608

Cleanup Date:

Analyst:

Client: CHPRC-HANFORD F08-086

LIMS Report Date: 11/07/08

Solvent: DCM,HEXANE

Adsorbent:

| Sample No:       | Client Name<br>Client ID | pH | Initial<br>WT/VOL | Surr.<br>Mult. | Spike<br>Mult. | Final<br>VOL | Final<br>VOL | Split<br>Mult. | GPC<br>Y/N | %<br>Solids | C/D<br>FACTOR |
|------------------|--------------------------|----|-------------------|----------------|----------------|--------------|--------------|----------------|------------|-------------|---------------|
| 0810L162-        | CHPRC-HANFORD F08-086    |    |                   |                |                |              |              |                |            |             |               |
| 001 X✓           | B1TRH2                   | 7  | 1000              | 1.0            |                | 10           |              | 1.0            | N          | 0.0         | 10.00         |
| 003 X✓           | B1TRR8                   | 7  | 1000              | 1.0            |                | 10           |              | 1.0            | N          | 0.0         | 10.00         |
| 003 XS✓          | B1TRR8                   | 7  | 1000              | 1.0            | 1.0            | 10           |              | 1.0            | N          | 0.0         | 10.00         |
| 003 XT✓          | B1TRR8                   | 7  | 1000              | 1.0            | 1.0            | 10           |              | 1.0            | N          | 0.0         | 10.00         |
| 0810L172-        | WC-HANFORD RC-115        |    |                   |                |                |              |              |                |            |             |               |
| 001 H✓           | J17RH7                   | 7  | 1000              | 1.0            |                | 10           |              | 1.0            | N          | 0.0         | 10.00         |
| 001 HS           | J17RH7                   | 7  | 1000              | 1.0            | 1.0            | 10           |              | 1.0            | N          | 0.0         | 10.00         |
| 001 HT           | J17RH7                   | 7  | 1000              | 1.0            | 1.0            | 10           |              | 1.0            | N          | 0.0         | 10.00         |
| 08LE0556-MB1 H✓  | PBLKWX                   | 7  | 1000              | 1.0            |                | 10           |              | 1.0            | N          | 0.0         | 10.00         |
| 08LE0556-MB1 HS✓ | PBLKWX                   | 7  | 1000              | 1.0            | 1.0            | 10           |              | 1.0            | N          | 0.0         | 10.00         |
| 08LE0556-MB1 X   | PBLKWX                   | 7  | 1000              | 1.0            |                | 10           |              | 1.0            | N          | 0.0         | 10.00         |
| 08LE0556-MB1 XS  | PBLKWX                   | 7  | 1000              | 1.0            | 1.0            | 10           |              | 1.0            | N          | 0.0         | 10.00         |

Comments:

Surrogate: 250 UL OLM PSURR 89916408

Spike: 250 UL FULL LIST PEST SPIKE 89915510

| Extracts Transferred | Relinquished By | Date Time           | Received By | Date Time | Reason for Transfer |
|----------------------|-----------------|---------------------|-------------|-----------|---------------------|
| <i>all</i>           | <i>MF</i>       | <i>11/7/08 1630</i> |             |           |                     |

000000023

**SEMIVOLATILES**

Lionville Laboratory, Inc.  
BNA ANALYTICAL DATA PACKAGE FOR  
CHPRC-HANFORD F08-086 *43922*

DATE RECEIVED: 10/29/08

LVL LOT # :0810L162

| CLIENT ID | LVL #   | MTX | PREP #   | COLLECTION | EXTR/PREP | ANALYSIS |
|-----------|---------|-----|----------|------------|-----------|----------|
| B1TRH2    | 001     | W   | 08LE0555 | 10/28/08   | 11/04/08  | 11/07/08 |
| B1TRH2    | 001 MS  | W   | 08LE0555 | 10/28/08   | 11/04/08  | 11/07/08 |
| B1TRH2    | 001 MSD | W   | 08LE0555 | 10/28/08   | 11/04/08  | 11/07/08 |
| B1TRR8    | 003     | W   | 08LE0555 | 10/28/08   | 11/04/08  | 11/07/08 |

LAB QC:

|        |        |   |          |     |          |          |
|--------|--------|---|----------|-----|----------|----------|
| SBLKZQ | MB1    | W | 08LE0555 | N/A | 11/04/08 | 11/07/08 |
| SBLKZQ | MB1 BS | W | 08LE0555 | N/A | 11/04/08 | 11/07/08 |



## Case Narrative

Client: CHPRC-HANFORD F08-086  
LVL #: 0810L162 H3922

W.O. #: 60197-001-001-0001-00  
Date Received: 10-29-2008

### SEMIVOLATILE

Two (2) water samples were collected on 10-28-2008.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3520C on 11-04-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for client specified Semivolatile target compounds on 11-07-2008.

The following is a summary of QC results accompanying the sample results. Lionville Laboratory (LVL) certifies that all test results meet the requirements of NELAC except as noted below:

1. All results presented in this report are derived from samples that met LVL's sample acceptance policy.
2. Samples were extracted and analyzed within holding time.
3. Non-target compounds were detected in these samples.
4. All obtainable surrogate recoveries were within acceptance criteria.
5. All matrix spike recoveries were within acceptance criteria.
6. All blank spike recoveries were within acceptance criteria.
7. The method blank contained the common laboratory contaminant Bis (2-Ethylhexy) phthalate at a level less than the CRQL.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. Internal standard area and retention time criteria were met.
11. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of \_\_\_\_\_ pages.



12. LVL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
13. I certify, that this sample data package is in compliance with SOW requirements, both technically and for completeness, 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.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory

11/18/08  
Date

## GLOSSARY

### DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I = Interference.
- NQ = Result qualitatively confirmed but not able to quantify.
- A = Indicates that a TIC is a suspected aldol-condensation product.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.

## GLOSSARY

### ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Suffix added to sample number to indicate that results are from a diluted analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- SP, Z = Indicates Spiked Compound.

## TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP - Missed Peak: manually added peak not found by automatic quan program.
- PA - Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, Special List

Report Date: 11/11/08 07:58

RFW Batch Number: 0810L162

Client: CHPRC-HANFORD F08-086

Work Order: 60197001001

Page: 1a

| Sample Information                                     | Cust ID:                   | B1TRH2 | B1TRH2 | B1TRH2  | B1TRR8 | SBLKZQ       | SBLKZQ BS    |
|--|----------------------------|--------|--------|---------|--------|--------------|--------------|
|  | RFW#:                      | 001    | 001 MS | 001 MSD | 003    | 08LE0555-MB1 | 08LE0555-MB1 |
|  | Matrix:                    | WATER  | WATER  | WATER   | WATER  | WATER        | WATER        |
|  | D.F.:                      | 1.00   | 1.00   | 1.00    | 1.00   | 1.00         | 1.00         |
|  | Units:                     | UG/L   | UG/L   | UG/L    | UG/L   | UG/L         | UG/L         |
| Surrogate  | Nitrobenzene-d5            | 61 %   | 55 %   | 70 %    | 64 %   | 79 %         | 72 %         |
| Recovery   | 2-Fluorobiphenyl           | 61 %   | 67 %   | 69 %    | 61 %   | 76 %         | 69 %         |
|  | p-Terphenyl-d14            | 74 %   | 76 %   | 82 %    | 73 %   | 79 %         | 82 %         |
|  | Phenol-d5                  | 64 %   | 68 %   | 70 %    | 64 %   | 80 %         | 49 %         |
|  | 2-Fluorophenol             | 62 %   | 66 %   | 71 %    | 64 %   | 79 %         | 70 %         |
|  | 2,4,6-Tribromophenol       | 65 %   | 75 %   | 79 %    | 73 %   | 74 %         | 76 %         |
| =====fl=====fl=====fl=====fl=====fl=====fl=====fl===== |                            |        |        |         |        |              |              |
|  | Nitrobenzene               | 10 U   | 57 %   | 71 %    | 10 U   | 10 U         | 69 %         |
|  | 2,4-Dinitrophenol          | 25 U   | 81 %   | 125 %   | 25 U   | 25 U         | 120 %        |
|  | Pentachlorophenol          | 25 U   | 105 %  | 116 %   | 25 U   | 25 U         | 110 %        |
|  | bis(2-Ethylhexyl)phthalate | 10 U   | 76 %   | 82 %    | 10 U   | 0.6 J        | 75 %         |
|  | 1,4-Dioxane                | 5 U    | 5 U    | 5 U     | 5 U    | 5 U          | 5 U          |
|  | Dimethoate                 | 10 U   | 10 U   | 10 U    | 10 U   | 10 U         | 10 U         |

\*= Outside of EPA CLP QC limits.

000000031

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B1TRH2

Lab Name: Lionville Labs, Inc. Work Order: 60197001001

Client: CHPRC-HANFORD F08-086

Matrix: (soil/water) WATER

Lab Sample ID: 0810L162-001

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: C110707

Level: (low/med) LOW

Date Received: 10/29/08

% Moisture: \_\_\_\_\_ decanted: (Y/N) \_\_\_\_\_

Date Extracted: 11/04/08

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/07/08

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 2

(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT    | EST. CONC. | Q |
|------------|---------------|-------|------------|---|
| 1.         | UNKNOWN       | 4.880 | 2          | J |
| 2.         | ALKANE        | 8.031 | 3          | J |

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B1TRR8

Lab Name: Lionville Labs, Inc. Work Order: 60197001001

Client: CHPRC-HANFORD F08-086

Matrix: (soil/water) WATER

Lab Sample ID: 0810L162-003

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: C110710

Level: (low/med) LOW

Date Received: 10/29/08

% Moisture: \_\_\_\_\_ decanted: (Y/N) \_\_\_\_\_

Date Extracted: 11/04/08

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/07/08

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 1

(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT    | EST. CONC. | Q |
|------------|---------------|-------|------------|---|
| 1.         | ALKANE        | 8.032 | 2          | J |

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKZQ

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-115 K1421

Matrix: (soil/water) WATER

Lab Sample ID: 08LE0555-MB1

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: C110705

Level: (low/med) LOW

Date Received: 11/04/08

% Moisture: \_\_\_\_\_ decanted: (Y/N) \_\_\_\_\_

Date Extracted: 11/04/08

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/07/08

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

Number TICs found: 2

| CAS NUMBER  | COMPOUND NAME | RT    | EST. CONC. | Q  |
|-------------|---------------|-------|------------|----|
| 1.          | UNKNOWN       | 4.872 | 3          | J  |
| 2. 108-90-7 | CHLOROBENZENE | 5.175 | 3          | JN |

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 11/04/08

Extraction Batch No: 08LE0555

Analyst: MF

Method: CONT3520

Test: 0625

Cleanup Date:

Analyst:

Client: WC-HANFORD RC-115 K1399

LIMS Report Date: 11/18/08

Solvent: DCM

Adsorbent:

| Sample No:      | Client Name<br>Client ID | pH | Initial<br>WT/VOL | Surr.<br>Mult. | Spike<br>Mult. | Final<br>VOL | Final<br>VOL<br>N/A | Split<br>Mult. | GPC<br>Y/N | %<br>Solids | C/D<br>FACTOR |
|-----------------|--------------------------|----|-------------------|----------------|----------------|--------------|---------------------|----------------|------------|-------------|---------------|
| 0810L103-       | WC-HANFORD RC-115 K1399  |    |                   |                |                |              |                     |                |            |             |               |
| 002 H R1        | J17K53                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 0810L162-       | CHPRC-HANFORD F08-086    |    |                   |                |                |              |                     |                |            |             |               |
| 001 X           | B1TRH2                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 001 XS          | B1TRH2                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 001 XT          | B1TRH2                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 003 X           | B1TRR8                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 0810L172-       | WC-HANFORD RC-115 K1419  |    |                   |                |                |              |                     |                |            |             |               |
| 001 H           | J17RH7                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 001 HS          | J17RH7                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 001 HT          | J17RH7                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 0810L175-       | WC-HANFORD RC-115 K1421  |    |                   |                |                |              |                     |                |            |             |               |
| 001 H           | J17RJ1                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 001 HS          | J17RJ1                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 001 HT          | J17RJ1                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 002 H           | J17RJ2                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 005 H           | J17RJ3                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 08LE0555-MB1 H  | SBLKZQ                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 08LE0555-MB1 HS | SBLKZQ                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 08LE0555-MB1 X  | SBLKZQ                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 08LE0555-MB1 XS | SBLKZQ                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |

Comments:

Surrogate: 500 UL ESU BNA 89916505 2100-150 UG/ML

Spike: 600 UL BNA LCS SPIKE 86951406

| Extracts Transferred  | Relinquished By | Date Time | Received By | Date Time | Reason for Transfer |
|-----------------------|-----------------|-----------|-------------|-----------|---------------------|
| Adjusted Extract date | Rec             | 11/18/08  |             |           |                     |

000000035

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 11/06/08

Extraction Batch No: 08LE0555

Analyst: MF

Method: CONT3520

Test: O625

Cleanup Date:

Analyst:

Client: WC-HANFORD RC-115 K1399

LIMS Report Date: 11/11/08

Solvent: DCM

Adsorbent:

000000036

| Sample No:      | Client Name<br>Client ID | pH | Initial<br>WT/VOL | Surr.<br>Mult. | Spike<br>Mult. | Final<br>VOL | Final<br>VOL<br>N/A | Split<br>Mult. | GPC<br>Y/N | %<br>Solids | C/D<br>FACTOR |
|-----------------|--------------------------|----|-------------------|----------------|----------------|--------------|---------------------|----------------|------------|-------------|---------------|
| 0810L103-       | WC-HANFORD RC-115 K1399  |    |                   |                |                |              |                     |                |            |             |               |
| 002 H R1        | J17K53                   | 7  | 1000              | 1.0            |                | 2.0          |                     | 0.5            | N          | 0.0         | 1.00          |
| 0810L162-       | CHPRC-HANFORD F08-086    |    |                   |                |                |              |                     |                |            |             |               |
| 001 X           | B1TRH2                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 001 XS          | B1TRH2                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 001 XT          | B1TRH2                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 003 X           | B1TRR8                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 0810L172-       | WC-HANFORD RC-115 K1419  |    |                   |                |                |              |                     |                |            |             |               |
| 001 H           | J17RH7                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 001 HS          | J17RH7                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 001 HT          | J17RH7                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 0810L175-       | WC-HANFORD RC-115 K1421  |    |                   |                |                |              |                     |                |            |             |               |
| 001 H           | J17RJ1                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 001 HS          | J17RJ1                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 001 HT          | J17RJ1                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 002 H           | J17RJ2                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 005 H           | J17RJ3                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 08LE0555-MB1 H  | SBLKZQ                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 08LE0555-MB1 HS | SBLKZQ                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 08LE0555-MB1 X  | SBLKZQ                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 08LE0555-MB1 XS | SBLKZQ                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |

Comments:

Surrogate: 500 UL ESU BNA 89916505 2100-150 UG/ML

Spike: 600 UL BNA LCS SPIKE 86951406

| Extracts Transferred | Relinquished By       | Date Time | Received By | Date Time | Reason for Transfer |
|----------------------|-----------------------|-----------|-------------|-----------|---------------------|
| updated              | 08LE0555-MB1 XS spike | 11/11/08  |             |           |                     |

SAMPLE EXTRACTION RECORD

847

Sheet no.: 1

Extract. Date: 11/06/08

Extraction Batch No: 08LE0555

Analyst: MF

Method: CONT3520

Test: 0625

Cleanup Date:

Analyst:

Client: WC-HANFORD RC-115 K1399

LIMS Report Date: 11/06/08

Solvent: DCM

Adsorbent:

| Sample No:      | Client Name<br>Client ID | pH | Initial<br>WT/VOL | Surr.<br>Mult. | Spike<br>Mult. | Final<br>VOL | Final<br>VOL<br>N/A | Split<br>Mult. | GPC<br>Y/N | %<br>Solids | C/D<br>FACTOR |
|-----------------|--------------------------|----|-------------------|----------------|----------------|--------------|---------------------|----------------|------------|-------------|---------------|
| 0810L103-       | WC-HANFORD RC-115 K1399  |    |                   |                |                |              |                     |                |            |             |               |
| 002 H R1        | J17K53                   | 7  | 1000              | 1.0            |                | 2.0          |                     | 0.5            | N          | 0.0         | 1.00          |
| 0810L162-       | CHPRC-HANFORD F08-086    |    |                   |                |                |              |                     |                |            |             |               |
| 001 X           | B1TRH2                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 001 XS          | B1TRH2                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 001 XT          | B1TRH2                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 003 X           | B1TRR8                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 0810L172-       | WC-HANFORD RC-115        |    |                   |                |                |              |                     |                |            |             |               |
| 001 H           | J17RH7                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 001 HS          | J17RH7                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 001 HT          | J17RH7                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 0810L175-       | WC-HANFORD RC-115        |    |                   |                |                |              |                     |                |            |             |               |
| 001 H           | J17RJ1                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 001 HS          | J17RJ1                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 001 HT          | J17RJ1                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 002 H           | J17RJ2                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 005 H           | J17RJ3                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 08LE0555-MB1 H  | SBLKZQ                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 08LE0555-MB1 HS | SBLKZQ                   | 7  | 1000              | 1.0            | 0.8            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 08LE0555-MB1 X  | SBLKZQ                   | 7  | 1000              | 1.0            |                | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |
| 08LE0555-MB1 XS | SBLKZQ                   | 7  | 1000              | 1.0            | 1.0            | 1.0          |                     | 0.5            | N          | 0.0         | 0.500         |

Comments:

Surrogate: 500 UL ESU BNA 89916505 2100-150 UG/ML

Spike: 600 UL BNA LCS SPIKE 86951406

| Extracts Transferred | Relinquished By    | Date Time           | Received By | Date Time           | Reason for Transfer |
|----------------------|--------------------|---------------------|-------------|---------------------|---------------------|
| <i>all</i>           | <i>[Signature]</i> | <i>11/6/08 1700</i> | <i>M</i>    | <i>11/6/08 1730</i> | <i>Analysis</i>     |

000000037