Pace Analytical Services, Inc.
400 W. Bethany Drive, Suite 190
Allen, TX 75013
(972) 727-1123

June 26, 2013

Rusty Simpson
Southwest Geoscience
2351 W. Northwest Hwy
Suite 3321
Dallas, TX 75220

RE: Pace Project 756036
Project ID: 0111C278A/SC Sediment Sampling

Dear Rusty Simpson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 13, 2013. Results reported herin conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

SC-Sed-41, SC-Sed-42 and SC-Sed-43 were canceled by the customer on 06/17/13.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Shelly Connelly

Shelly Connelly
shelly.connelly@pacelabs.com

**Laboratory Certifications**
**Pace Dallas :** Texas Certification #: T104704232-12-4

**REPORT OF LABORATORY ANALYSIS**



06/26/2013 15:50:08

# Sample Cross Reference

Pace Analytical Services, Inc.
400 W. Bethany Drive, Suite 190
Allen, TX 75013
(972) 727-1123

**Pace Project No.:** 756036

**Client:** Southwest Geoscience
**Project ID:** 0111C278A/SC Sediment Sampling

| Client Sample ID | Lab ID | Matrix | Collection Date/Time | Received Date/Time |
|---|---|---|---|---|
| SC-Sed-31-1/2/3 | 756036001 | Solid | 06/12/2013 13:42 | 06/13/2013 13:25 |
| SC-Sed-32-1/2/3 | 756036002 | Solid | 06/12/2013 14:13 | 06/13/2013 13:25 |
| SC-Sed-33-1/2/3 | 756036003 | Solid | 06/12/2013 14:44 | 06/13/2013 13:25 |
| SC-Sed-34-1/2/3 | 756036004 | Solid | 06/12/2013 15:12 | 06/13/2013 13:25 |
| SC-Sed-35-1/2/3 | 756036005 | Solid | 06/12/2013 16:02 | 06/13/2013 13:25 |
| SC-Sed-36-1/2/3 | 756036006 | Solid | 06/12/2013 16:28 | 06/13/2013 13:25 |
| SC-Sed-37-1/2/3 | 756036007 | Solid | 06/12/2013 17:56 | 06/13/2013 13:25 |
| SC-Sed-38-1/2/3 | 756036008 | Solid | 06/12/2013 18:14 | 06/13/2013 13:25 |
| SC-Sed-39-1/2/3 | 756036009 | Solid | 06/12/2013 18:35 | 06/13/2013 13:25 |
| SC-Sed-40-1/2/3 | 756036010 | Solid | 06/12/2013 18:54 | 06/13/2013 13:25 |

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**Pace Project No.:** 756036

Holding Times:

All holding times were met.

Blanks:

All blank results were below reporting limits.

Laboratory Control Samples:

All LCS recoveries were within QC limits.

Matrix Spikes and Duplicates:

MS or MSD recoveries outside of QC limits are qualified in the Report of Quality Control section.

Surrogate:

All surrogate recoveries were within QC limits.

## Appendix A
## LABORATORY DATA PACKAGE COVER PAGE

This data package is for Job No. 756036 and consists of:

This signature page, the laboratory review checklist, and the following reportable data:

- [X] R1 - Field chain-of-custody documentation;
- [X] R2 - Sample identification cross-reference;
- [X] R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. Dilution factors,
  - c. Preparation methods,
  - d. Cleanup methods, and
  - e. If required for the project, tentatively identified compounds (TICs).
- [X] R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- [X] R5 - Test reports/summary forms for blank samples;
- [X] R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- [X] R7 - Test reports/summary forms for matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences, and
  - e. The laboratory's MS/MSD QC limits.
- [X] R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and,
  - c. The laboratory's QC limits for analytical duplicated.
- [X] R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte and
- [X] R10 - Other problems or anomalies.

  The exception Report for each "No" or "Not Reviewed (NR) " item in the Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accredidation under the Texas Laboratory Accreditation Program.

**Release Statement:** I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

**Check, if applicable:** [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspected by [X] TCEQ on 02/24/2012

Any findings affecting the data in this laboratory data package are noted in the Exception Reports herin. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

| Name (Printed) | Signature | Official Title (Printed) | Date |
|---|---|---|---|
| Shelly Connelly | Shelly Connelly | Project Manager | 06/26/2013 |

# Sample Results

Pace Analytical Services, Inc.
400 W. Bethany Drive, Suite 190
Allen, TX 75013
(972) 727-1123

**Client:** Southwest Geoscience

**Client ID:** SC-Sed-31-1/2/3 **Project ID:** 0111C278A/SC Sediment
**Lab ID:** 756036001 **Moisture:** 22.9% **Pace Project No.:** 756036
**Collected:** 06/12/2013 13:42 **Received:** 06/13/2013 13:25 **Matrix:** Solid

| Parameters | DF | Results | Qual | Units | MQL | SDL | Analysis Date | Prep Date | Batch | Instr. |
|---|---|---|---|---|---|---|---|---|---|---|
| **6010 Metals, Total** | Analytical Method: EPA 6010 | | | | Preparation Method: EPA 3050 | | | | | |
| Arsenic | 1 | 19.2 | | mg/kg | 0.31 | 0.12 | 06/19/2013 16:54 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Cadmium | 1 | 0.38 | | mg/kg | 0.12 | 0.025 | 06/19/2013 16:54 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Lead | 1 | 12.7 | | mg/kg | 0.25 | 0.062 | 06/19/2013 16:54 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| **Extractable Organic Carbon** | Analytical Method: EPA 9060M | | | | Preparation Method: EPA 9060M | | | | | |
| Total Organic Carbon | 1 | 33.0 | | mg/kg | 6.5 | 3.3 | 06/24/2013 11:31 | 06/21/2013 12:14 | 6975 | 75WTA1 |

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**Client:** Southwest Geoscience

**Client ID:** SC-Sed-32-1/2/3 **Project ID:** 0111C278A/SC Sediment
**Lab ID:** 756036002 **Moisture:** 14.7% **Pace Project No.:** 756036
**Collected:** 06/12/2013 14:13 **Received:** 06/13/2013 13:25 **Matrix:** Solid

| Parameters | DF | Results | Qual | Units | MQL | SDL | Analysis Date | Prep Date | Batch | Instr. |
|---|---|---|---|---|---|---|---|---|---|---|
| **6010 Metals, Total** | Analytical Method: EPA 6010 | | | | Preparation Method: EPA 3050 | | | | | |
| Arsenic | 1 | 19.3 | | mg/kg | 0.29 | 0.12 | 06/19/2013 17:00 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Cadmium | 1 | 0.64 | | mg/kg | 0.12 | 0.023 | 06/19/2013 17:00 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Lead | 1 | 12.3 | | mg/kg | 0.23 | 0.059 | 06/19/2013 17:00 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| **Extractable Organic Carbon** | Analytical Method: EPA 9060M | | | | Preparation Method: EPA 9060M | | | | | |
| Total Organic Carbon | 1 | 18.7 | | mg/kg | 6.0 | 3.0 | 06/24/2013 13:33 | 06/21/2013 12:14 | 6975 | 75WTA1 |

# Sample Results

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**Client:** Southwest Geoscience

**Client ID:** SC-Sed-33-1/2/3 **Project ID:** 0111C278A/SC Sediment
**Lab ID:** 756036003 **Moisture:** 19.3% **Pace Project No.:** 756036
**Collected:** 06/12/2013 14:44 **Received:** 06/13/2013 13:25 **Matrix:** Solid

| Parameters | DF | Results | Qual | Units | MQL | SDL | Analysis Date | Prep Date | Batch | Instr. |
|---|---|---|---|---|---|---|---|---|---|---|
| **6010 Metals, Total** | Analytical Method: EPA 6010 | | | | Preparation Method: EPA 3050 | | | | | |
| Arsenic | 1 | 18.5 | | mg/kg | 0.31 | 0.12 | 06/19/2013 17:06 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Cadmium | 1 | 0.42 | | mg/kg | 0.12 | 0.025 | 06/19/2013 17:06 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Lead | 1 | 14.6 | | mg/kg | 0.25 | 0.062 | 06/19/2013 17:06 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| **Extractable Organic Carbon** | Analytical Method: EPA 9060M | | | | Preparation Method: EPA 9060M | | | | | |
| Total Organic Carbon | 1 | 34.3 | | mg/kg | 6.3 | 3.2 | 06/24/2013 14:08 | 06/21/2013 12:14 | 6975 | 75WTA1 |

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**Client:** Southwest Geoscience

**Client ID:** SC-Sed-34-1/2/3 **Project ID:** 0111C278A/SC Sediment
**Lab ID:** 756036004 **Moisture:** 17.6% **Pace Project No.:** 756036
**Collected:** 06/12/2013 15:12 **Received:** 06/13/2013 13:25 **Matrix:** Solid

| Parameters | DF | Results | Qual | Units | MQL | SDL | Analysis Date | Prep Date | Batch | Instr. |
|---|---|---|---|---|---|---|---|---|---|---|
| **6010 Metals, Total** | Analytical Method: EPA 6010 | | | | Preparation Method: EPA 3050 | | | | | |
| Arsenic | 1 | 16.0 | | mg/kg | 0.32 | 0.13 | 06/19/2013 17:11 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Cadmium | 1 | 0.67 | | mg/kg | 0.13 | 0.025 | 06/19/2013 17:11 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Lead | 1 | 14.3 | | mg/kg | 0.25 | 0.063 | 06/19/2013 17:11 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| **Extractable Organic Carbon** | Analytical Method: EPA 9060M | | | | Preparation Method: EPA 9060M | | | | | |
| Total Organic Carbon | 1 | 20.1 | | mg/kg | 6.2 | 3.1 | 06/24/2013 14:41 | 06/21/2013 12:14 | 6975 | 75WTA1 |

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**Client:** Southwest Geoscience

**Client ID:** SC-Sed-35-1/2/3 **Project ID:** 0111C278A/SC Sediment
**Lab ID:** 756036005 **Moisture:** 22% **Pace Project No.:** 756036
**Collected:** 06/12/2013 16:02 **Received:** 06/13/2013 13:25 **Matrix:** Solid

| Parameters | DF | Results | Qual | Units | MQL | SDL | Analysis Date | Prep Date | Batch | Instr. |
|---|---|---|---|---|---|---|---|---|---|---|
| **6010 Metals, Total** | Analytical Method: EPA 6010 | | | | Preparation Method: EPA 3050 | | | | | |
| Arsenic | 1 | 17.8 | | mg/kg | 0.31 | 0.13 | 06/19/2013 17:17 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Cadmium | 1 | 0.45 | | mg/kg | 0.13 | 0.025 | 06/19/2013 17:17 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Lead | 1 | 13.0 | | mg/kg | 0.25 | 0.063 | 06/19/2013 17:17 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| **Extractable Organic Carbon** | Analytical Method: EPA 9060M | | | | Preparation Method: EPA 9060M | | | | | |
| Total Organic Carbon | 1 | 21.9 | | mg/kg | 6.5 | 3.2 | 06/24/2013 15:15 | 06/21/2013 12:14 | 6975 | 75WTA1 |

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**Client:** Southwest Geoscience

**Client ID:** SC-Sed-36-1/2/3 **Project ID:** 0111C278A/SC Sediment
**Lab ID:** 756036006 **Moisture:** 15.8% **Pace Project No.:** 756036
**Collected:** 06/12/2013 16:28 **Received:** 06/13/2013 13:25 **Matrix:** Solid

| Parameters | DF | Results | Qual | Units | MQL | SDL | Analysis Date | Prep Date | Batch | Instr. |
|---|---|---|---|---|---|---|---|---|---|---|
| **6010 Metals, Total** | Analytical Method: EPA 6010 | | | | Preparation Method: EPA 3050 | | | | | |
| Arsenic | 1 | 17.7 | | mg/kg | 0.30 | 0.12 | 06/19/2013 17:22 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Cadmium | 1 | 0.61 | | mg/kg | 0.12 | 0.024 | 06/19/2013 17:22 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Lead | 1 | 11.5 | | mg/kg | 0.24 | 0.061 | 06/19/2013 17:22 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| **Extractable Organic Carbon** | Analytical Method: EPA 9060M | | | | Preparation Method: EPA 9060M | | | | | |
| Total Organic Carbon | 1 | 62.8 | | mg/kg | 8.2 | 4.1 | 06/24/2013 15:50 | 06/21/2013 12:14 | 6975 | 75WTA1 |

# Sample Results

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**Client:** Southwest Geoscience

**Client ID:** SC-Sed-37-1/2/3 **Project ID:** 0111C278A/SC Sediment
**Lab ID:** 756036007 **Moisture:** 19.9% **Pace Project No.:** 756036
**Collected:** 06/12/2013 17:56 **Received:** 06/13/2013 13:25 **Matrix:** Solid

| Parameters | DF | Results | Qual | Units | MQL | SDL | Analysis Date | Prep Date | Batch | Instr. |
|---|---|---|---|---|---|---|---|---|---|---|
| **6010 Metals, Total** | Analytical Method: EPA 6010 | | | | Preparation Method: EPA 3050 | | | | | |
| Arsenic | 1 | 16.2 | | mg/kg | 0.32 | 0.13 | 06/19/2013 17:44 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Cadmium | 1 | 0.57 | | mg/kg | 0.13 | 0.025 | 06/19/2013 17:44 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Lead | 1 | 12.1 | | mg/kg | 0.25 | 0.064 | 06/19/2013 17:44 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| **Extractable Organic Carbon** | Analytical Method: EPA 9060M | | | | Preparation Method: EPA 9060M | | | | | |
| Total Organic Carbon | 1 | 28.6 | | mg/kg | 6.5 | 3.2 | 06/24/2013 17:00 | 06/21/2013 12:14 | 6975 | 75WTA1 |

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**Client:** Southwest Geoscience

**Client ID:** SC-Sed-38-1/2/3 **Project ID:** 0111C278A/SC Sediment
**Lab ID:** 756036008 **Moisture:** 23% **Pace Project No.:** 756036
**Collected:** 06/12/2013 18:14 **Received:** 06/13/2013 13:25 **Matrix:** Solid

| Parameters | DF | Results | Qual | Units | MQL | SDL | Analysis Date | Prep Date | Batch | Instr. |
|---|---|---|---|---|---|---|---|---|---|---|
| **6010 Metals, Total** | Analytical Method: EPA 6010 | | | | Preparation Method: EPA 3050 | | | | | |
| Arsenic | 1 | 12.7 | | mg/kg | 0.33 | 0.13 | 06/19/2013 17:50 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Cadmium | 1 | 0.33 | | mg/kg | 0.13 | 0.026 | 06/19/2013 17:50 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Lead | 1 | 9.7 | | mg/kg | 0.26 | 0.066 | 06/19/2013 17:50 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| **Extractable Organic Carbon** | Analytical Method: EPA 9060M | | | | Preparation Method: EPA 9060M | | | | | |
| Total Organic Carbon | 1 | 25.8 | | mg/kg | 6.5 | 3.3 | 06/24/2013 17:34 | 06/21/2013 12:14 | 6975 | 75WTA1 |

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**Client:** Southwest Geoscience

**Client ID:** SC-Sed-39-1/2/3 **Project ID:** 0111C278A/SC Sediment
**Lab ID:** 756036009 **Moisture:** 20.5% **Pace Project No.:** 756036
**Collected:** 06/12/2013 18:35 **Received:** 06/13/2013 13:25 **Matrix:** Solid

| Parameters | DF | Results | Qual | Units | MQL | SDL | Analysis Date | Prep Date | Batch | Instr. |
|---|---|---|---|---|---|---|---|---|---|---|
| **6010 Metals, Total** | Analytical Method: EPA 6010 | | | | Preparation Method: EPA 3050 | | | | | |
| Arsenic | 1 | 11.6 | | mg/kg | 0.32 | 0.13 | 06/19/2013 17:56 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Cadmium | 1 | 0.47 | | mg/kg | 0.13 | 0.025 | 06/19/2013 17:56 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Lead | 1 | 10.6 | | mg/kg | 0.25 | 0.064 | 06/19/2013 17:56 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| **Extractable Organic Carbon** | Analytical Method: EPA 9060M | | | | Preparation Method: EPA 9060M | | | | | |
| Total Organic Carbon | 1 | 51.1 | | mg/kg | 6.3 | 3.2 | 06/24/2013 18:09 | 06/21/2013 12:14 | 6975 | 75WTA1 |

# Sample Results

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**Client:** Southwest Geoscience

**Client ID:** SC-Sed-40-1/2/3 **Project ID:** 0111C278A/SC Sediment
**Lab ID:** 756036010 **Moisture:** 29.2% **Pace Project No.:** 756036
**Collected:** 06/12/2013 18:54 **Received:** 06/13/2013 13:25 **Matrix:** Solid

| Parameters | DF | Results | Qual | Units | MQL | SDL | Analysis Date | Prep Date | Batch | Instr. |
|---|---|---|---|---|---|---|---|---|---|---|
| **6010 Metals, Total** | Analytical Method: EPA 6010 | | | | Preparation Method: EPA 3050 | | | | | |
| Arsenic | 1 | 7.0 | | mg/kg | 0.36 | 0.14 | 06/19/2013 18:01 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Cadmium | 1 | 0.16 | | mg/kg | 0.14 | 0.029 | 06/19/2013 18:01 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| Lead | 1 | 12.9 | | mg/kg | 0.29 | 0.072 | 06/19/2013 18:01 | 06/18/2013 17:33 | 6806 | 75ICP1 |
| **Extractable Organic Carbon** | Analytical Method: EPA 9060M | | | | Preparation Method: EPA 9060M | | | | | |
| Total Organic Carbon | 1 | 38.4 | | mg/kg | 7.4 | 3.7 | 06/24/2013 18:44 | 06/21/2013 12:14 | 6975 | 75WTA1 |

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**Batch:** 6885
**Method:** ASTM D2974-87

**Pace Project No.:** 756036
**Instrument ID:** 75BAL3

**Duplicate:** 27658

**Original for Sample:** Client sample F-10 (0-1)

| Parameters | Original Result | Dup Result | Units | RPD | Max RPD | Quals |
|---|---|---|---|---|---|---|
| Percent Moisture | 19.1 | 21.2 | % | 11 | 20 | |

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**Batch:** 6806
**Method:** EPA 6010
**Prep Method:** EPA 3050

**Pace Project No.:** 756036
**Instrument ID:** 75ICP1

**Blank:** 27347

| Parameters | Dilution | Quals | Result | Units | MQL | SDL | Analysis Date | Prep Date |
|---|---|---|---|---|---|---|---|---|
| Arsenic | 1 | U | <0.10 | mg/kg | 0.25 | 0.10 | 06/19/2013 14:20 | 06/18/2013 17:33 |
| Cadmium | 1 | U | <0.020 | mg/kg | 0.10 | 0.020 | 06/19/2013 14:20 | 06/18/2013 17:33 |
| Lead | 1 | U | <0.050 | mg/kg | 0.20 | 0.050 | 06/19/2013 14:20 | 06/18/2013 17:33 |

**Laboratory Control Sample:** 27348

| Parameters | Spk Amt | LCS Result | Units | LCS %Rec | % Rec Limits | LCS Quals |
|---|---|---|---|---|---|---|
| Arsenic | 50 | 48.4 | mg/kg | 97 | 80-120 | |
| Cadmium | 50 | 48.1 | mg/kg | 96 | 80-120 | |
| Lead | 50 | 51.0 | mg/kg | 102 | 80-120 | |

**Matrix Spike:** 27349 **Matrix Spike Duplicate:** 27350

**Original for Sample:** Batch sample 754768017

| Parameters | Original Result | MS Spk | MSD Spk | MS Result | MSD Result | Units | MS %Rec | MSD %Rec | % Rec Limits | RPD | Max RPD | Quals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 4.3 | 56.1 | 55.1 | 37.8 | 38.0 | mg/kg | 60 | 61 | 75-125 | 0 | 20 | M1 |
| Cadmium | 0.076J | 56.1 | 55.1 | 33.8 | 34.3 | mg/kg | 60 | 62 | 75-125 | 1 | 20 | M1 |
| Lead | 8.9 | 56.1 | 55.1 | 39.2 | 39.0 | mg/kg | 54 | 55 | 75-125 | 0 | 20 | M1 |

**Matrix Spike:** 27351 **Matrix Spike Duplicate:** 27352

**Original for Sample:** Batch sample 754768018

| Parameters | Original Result | MS Spk | MSD Spk | MS Result | MSD Result | Units | MS %Rec | MSD %Rec | % Rec Limits | RPD | Max RPD | Quals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | | 52.2 | 54.7 | 34.6 | 38.7 | mg/kg | 59 | 63 | 75-125 | 11 | 20 | M1 |
| Cadmium | | 52.2 | 54.7 | 31.0 | 35.5 | mg/kg | 59 | 65 | 75-125 | 13 | 20 | M1 |
| Lead | 9.0 | 52.2 | 54.7 | 36.3 | 39.8 | mg/kg | 52 | 56 | 75-125 | 9 | 20 | M1 |

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**Batch:** 6975
**Method:** EPA 9060M
**Prep Method:** EPA 9060M

**Pace Project No.:** 756036
**Instrument ID:** 75WTA1

**Blank:** 28154

| Parameters | Dilution | Quals | Result | Units | MQL | SDL | Analysis Date | Prep Date |
|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 1 | J | 3.2 | mg/kg | 5.0 | 2.5 | 06/24/2013 10:51 | 06/21/2013 12:14 |

**Laboratory Control Sample:** 28155

| Parameters | Spk Amt | LCS Result | Units | LCS %Rec | % Rec Limits | LCS Quals |
|---|---|---|---|---|---|---|
| Total Organic Carbon | 100 | 109 | mg/kg | 109 | 80-120 | |

**Matrix Spike:** 28156 **Matrix Spike Duplicate:** 28157

**Original for Sample:** Project sample SC-Sed-31-1/2/3

| Parameters | Original Result | MS Spk | MSD Spk | MS Result | MSD Result | Units | MS %Rec | MSD %Rec | % Rec Limits | RPD | Max RPD | Quals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 33.0 | 130 | 127 | 167 | 164 | mg/kg | 103 | 103 | 80-120 | 2 | 20 | |

**Matrix Spike:** 28158 **Matrix Spike Duplicate:** 28159

**Original for Sample:** Client sample SCF-Sed-9-1/2/3

| Parameters | Original Result | MS Spk | MSD Spk | MS Result | MSD Result | Units | MS %Rec | MSD %Rec | % Rec Limits | RPD | Max RPD | Quals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 18.5 | 130 | 128 | 154 | 150 | mg/kg | 105 | 103 | 80-120 | 3 | 20 | |

# Unadjusted MQL Summary

Pace Analytical Services, Inc.
400 W. Bethany Drive, Suite 190
Allen, TX 75013
(972) 727-1123

**Pace Project No.:** 756036

| Analyte | Method | Unadjusted MQL | Reporting Units |
|---|---|---|---|
| Arsenic | EPA 6010 | 0.25 | mg/kg |
| Cadmium | EPA 6010 | 0.10 | mg/kg |
| Lead | EPA 6010 | 0.20 | mg/kg |
| Total Organic Carbon | EPA 9060M | 5.0 | mg/kg |

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**Pace Project No.:** 756036

**DEFINITIONS**

| | |
|---|---|
| DF | Dilution Factor |
| J | Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit. |
| U | Indicates the compound was analyzed for, but not detected. |
| SDL | Sample Detection Limit |
| MQL | Method Quantitation Limit |
| LCS(D) | Laboratory Control Sample (Duplicate) |
| MS(D) | Matrix Spike (Duplicate) |
| DUP | Sample Duplicate |
| RPD | Relative Percent Difference |
| TNI | The Nelac Institute |

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

**ANALYTE QUALIFIERS**

| | |
|---|---|
| M1 | Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery. |

## TRRP LABORATORY REVIEW CHECKLIST

| | | | |
|---|---|---|---|
| **Laboratory** | Pace Analytical Services, Inc. | **LRC Date:** | 06/26/2013 |
| **Project Name:** | 0111C278A/SC Sediment Sampling | **Laboratory Job Number:** | 756036 |
| **Reviewer Name:** | Shelly Connelly | **Prep Batch Number(s):** | See exception report. |

| #[1] | A[2] | Description | Yes | No | NA[3] | NR[4] | ER #[5] |
|---|---|---|---|---|---|---|---|
| **R1** | **OI** | **Chain-of-custody (C-O-C)** | | | | | |
| | | Did samples meet the laboratory's standard conditions of sample acceptability upon receipt? | X | | | | |
| | | Were all departures from standard conditions described in an exception report? | X | | | | |
| **R2** | **OI** | **Sample and quality control (QC) identification** | | | | | |
| | | Are all field sample ID numbers cross-referenced to the laboratory ID numbers? | X | | | | |
| | | Are all laboratory ID numbers cross-referenced to the corresponding QC data? | X | | | | |
| **R3** | **OI** | **Test reports** | | | | | |
| | | Were all samples prepared and analyzed within holding times? | X | | | | |
| | | Other than those results < MQL, were all other raw values bracketed by calibration standards? | X | | | | |
| | | Were calculations checked by a peer or supervisor? | X | | | | |
| | | Were all analyte identifications checked by a peer or supervisor? | X | | | | |
| | | Were sample detection limits reported for all analytes not detected? | X | | | | |
| | | Were all results for soil and sediment samples reported on a dry weight basis? | X | | | | |
| | | Were % moisture (or solids) reported for all soil and sediment samples? | X | | | | |
| | | Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035? | | | X | | |
| | | If required for the project, are TICs reported? | | | X | | |
| **R4** | **O** | **Surrogate recovery data** | | | | | |
| | | Were surrogates added prior to extraction? | | | X | | |
| | | Were surrogate percent recoveries in all samples within the laboratory QC limits? | | | X | | |
| **R5** | **OI** | **Test reports/summary forms for blank samples** | | | | | |
| | | Were appropriate type(s) of blanks analyzed? | X | | | | |
| | | Were blanks analyzed at the appropriate frequency? | X | | | | |
| | | Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures? | X | | | | |
| | | Were blank concentrations < MQL? | X | | | | |
| **R6** | **OI** | **Laboratory control samples (LCS):** | | | | | |
| | | Were all COCs included in the LCS? | X | | | | |
| | | Was each LCS taken through the entire analytical procedure, including prep and cleanup steps? | X | | | | |
| | | Were LCSs analyzed at the required frequency? | X | | | | |
| | | Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits? | X | | | | |
| | | Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs? | X | | | | |
| | | Was the LCSD RPD within QC limits? | | | X | | |
| **R7** | **OI** | **Matrix spike (MS) and matrix spike duplicate (MSD) data** | | | | | |
| | | Were the project/method specified analytes included in the MS and MSD? | X | | | | |
| | | Were MS/MSD analyzed at the appropriate frequency? | X | | | | |
| | | Were MS (and MSD, if applicable) %Rs within the laboratory QC limits? | | X | | | R7.3 |
| | | Were MS/MSD RPDs within laboratory QC limits? | X | | | | |
| **R8** | **OI** | **Analytical duplicate data** | | | | | |
| | | Were appropriate analytical duplicates analyzed for each matrix? | X | | | | |
| | | Were analytical duplicates analyzed at the appropriate frequency? | X | | | | |
| | | Were RPDs or relative standard deviations within the laboratory QC limits? | X | | | | |
| **R9** | **OI** | **Method quantitation limits (MQLs):** | | | | | |
| | | Are the MQLs for each method analyte included in the laboratory data package? | X | | | | |
| | | Do the MQLs correspond to the concentration of the lowest non-zero calibration standard? | X | | | | |
| | | Are unadjusted MQLs and DCSs included in the laboratory data package? | X | | | | |
| **R10** | **OI** | **Other problems/anomalies** | | | | | |
| | | Are all known problems/anomalies/special conditions noted in this LRC and ER? | X | | | | |
| | | Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results? | X | | | | |
| | | Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package? | X | | | | |

1. Items identified by the letter "R" must be included in the laboratory in the laboratory data package submitted in the TRRP-required reports(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period;
2. O = Organic analyses; I = inorganic analysises (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

## TRRP LABORATORY REVIEW CHECKLIST

| | | | |
|---|---|---|---|
| **Laboratory** | Pace Analytical Services, Inc. | **LRC Date:** | 06/26/2013 |
| **Project Name:** | 0111C278A/SC Sediment Sampling | **Laboratory Job Number:** | 756036 |
| **Reviewer Name:** | Shelly Connelly | **Prep Batch Number(s):** | See exception report. |

| #[1] | A[2] | Description | Yes | No | NA[3] | NR[4] | ER #[5] |
|---|---|---|---|---|---|---|---|
| **S1** | **OI** | **Initial calibration (ICAL)** | | | | | |
| | | Were response factors and/or relative response factors for each analyte within QC limits? | X | | | | |
| | | Were percent RSDs or correlation coefficient criteria met? | X | | | | |
| | | Was the number of standards recommended in the method used for all analytes? | X | | | | |
| | | Were all points generated between the lowest and highest standard used to calculate the curve? | X | | | | |
| | | Are ICAL data available for all instruments used? | X | | | | |
| | | Has the initial calibration curve been verified using an appropriate second source standard? | X | | | | |
| **S2** | **OI** | **Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):** | | | | | |
| | | Was the CCV analyzed at the method-required frequency? | X | | | | |
| | | Were precent differences for each analyte within the method-required QC limits? | X | | | | |
| | | Was the ICAL curve verified for each analyte? | X | | | | |
| | | Was the absolute value of the analyte concentration in the inorganic CCB < MDL? | X | | | | |
| **S3** | **O** | **Mass spectral tuning** | | | | | |
| | | Was the appropriate compound for the method used for tuning? | | | X | | |
| | | Were ion abundance data within the method-required QC limits? | | | X | | |
| **S4** | **O** | **Internal standards (IS)** | | | | | |
| | | Were IS area counts and retention times within the method-required QC limits? | | | X | | |
| **S5** | **OI** | **Raw data (NELAC Section 5.5.10)** | | | | | |
| | | Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst? | X | | | | |
| | | Were data associated with manual integrations flagged on the raw data? | X | | | | |
| **S6** | **O** | **Dual column confirmation** | | | | | |
| | | Did dual column confirmation results meet the method-required QC? | | | X | | |
| **S7** | **O** | **Tentatively identified compounds (TICs)** | | | | | |
| | | If TICs were requested, were the mass spectra and TIC data subject to appropriate checks? | | | X | | |
| **S8** | **I** | **Interference Check Sample (ICS) results** | | | | | |
| | | Were percent recoveries within method QC limits? | X | | | | |
| **S9** | **I** | **Serial dilutions, post digestion spikes, and method of standard additions** | | | | | |
| | | Were percent differences, recoveries, and the linearity within the QC limits specified in the method? | X | | | | |
| **S10** | **OI** | **Method detection limit (MDL) studies** | | | | | |
| | | Was a MDL study performed for each reported analyte? | X | | | | |
| | | Is the MDL either adjusted or supported by the analysis of DCSs? | X | | | | |
| **S11** | **OI** | **Proficiency test reports** | | | | | |
| | | Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies? | X | | | | |
| **S12** | **OI** | **Standards documentation** | | | | | |
| | | Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources? | X | | | | |
| **S13** | **OI** | **Compound/analyte identification procedures** | | | | | |
| | | Are the procedures for compound/analyte identification documented? | X | | | | |
| **S14** | **OI** | **Demonstration of analyst competency (DOC)** | | | | | |
| | | Was DOC conducted consistent with NELAC Chapter 5? | X | | | | |
| | | Is documentation of the analyst's competency up-to-date and on file? | X | | | | |
| **S15** | **OI** | **Verification/validation documentation for methods (NELAC Chapter 5)** | | | | | |
| | | Are all the methods used to generate the data documented, verified, and validated, where applicable? | X | | | | |
| **S16** | **OI** | **Laboratory standard operating procedures (SOPs)** | | | | | |
| | | Are laboratory SOPs current and on file for each method performed? | X | | | | |

1. Items identified by the letter "R" must be included in the laboratory in the laboratory data package submitted in the TRRP-required reports(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period;
2. O = Organic analyses; I = inorganic analysises (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

| TRRP LABORATORY REVIEW CHECKLIST | | | |
|---|---|---|---|
| **Laboratory** | Pace Analytical Services, Inc. | **LRC Date:** | 06/26/2013 |
| **Project Name:** | 0111C278A/SC Sediment Sampling | **Laboratory Job Number:** | 756036 |
| **Reviewer Name:** | Shelly Connelly | **Prep Batch Number(s):** | 6806,6885,6975 |

| ER #[1] | Description |
|---|---|
| R7.3 | MS Sample #27349: Arsenic 60% spike recovery outside laboratory QC limit of 75-125%. |
| R7.3 | MS Sample #27349: Cadmium 60% spike recovery outside laboratory QC limit of 75-125%. |
| R7.3 | MS Sample #27349: Lead 54% spike recovery outside laboratory QC limit of 75-125%. |
| R7.3 | MS Sample #27351: Arsenic 59% spike recovery outside laboratory QC limit of 75-125%. |
| R7.3 | MS Sample #27351: Cadmium 59% spike recovery outside laboratory QC limit of 75-125%. |
| R7.3 | MS Sample #27351: Lead 52% spike recovery outside laboratory QC limit of 75-125%. |
| R7.3 | MSD Sample #27350: Arsenic 61% spike recovery outside laboratory QC limit of 75-125%. |
| R7.3 | MSD Sample #27350: Cadmium 62% spike recovery outside laboratory QC limit of 75-125%. |
| R7.3 | MSD Sample #27350: Lead 55% spike recovery outside laboratory QC limit of 75-125%. |
| R7.3 | MSD Sample #27352: Arsenic 63% spike recovery outside laboratory QC limit of 75-125%. |
| R7.3 | MSD Sample #27352: Cadmium 65% spike recovery outside laboratory QC limit of 75-125%. |
| R7.3 | MSD Sample #27352: Lead 56% spike recovery outside laboratory QC limit of 75-125%. |

1. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

WO# : 756036

756036

# Southwest GEOSCIENCE

Environmental & Hydrogeologic Consultants

Laboratory: Pace Analysis

Address:

Contact: 972-727-1123

Phone:

PO/SO #:

Office Location Dallas, TX

Project Manager R. Simpson

Sampler's Name: Jason Minter, Tommy Kim, Mahlia Abaya

Sampler's Signature:

Proj. No.: 0111C278A

Project Name: SC Sediment Sampling

Temp. of coolers when received (C°): TR1 dig 1 | 2 | 3 | 4 | 5

Page 1 of 3 4

ANALYSIS REQUESTED

| Matrix | Date | Time | Comp | Grab | Identifying Marks of Sample(s) | Start Depth | End Depth | VOA | A/G 1 Lt. | 250 ml | P/O | As, Pb, Cd SW-846 #6010 | Total Organic Carbon SW-846 #9060M | Lab Sample ID (Lab Use Only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | 6/12/13 | 1336 | | X | SC-Sed-31-1 | — | | | | | 1 | X | X | 001 |
| | | 1339 | | | Sc-Sed-31-2 | — | | | | | 1 | | | 002-1 |
| | | 1342 | | | Sc-Sed-31-3 | — | | | | | 1 | | | 0031 |
| | | 1406 | | | Sc-Sed-32-1 | — | | | | | 1 | | | 004 2 |
| | | 1409 | | | Sc-Sed-32-2 | — | | | | | 1 | | | 005 2 |
| | | 1413 | | | Sc-Sed-32-3 | — | | | | | 1 | | | 006 2 |
| | | 1437 | | | Sc-Sed-33-1 | — | | | | | 1 | | | 007 3 |
| | | 1441 | | | Sc-Sed-33-2 | — | | | | | 1 | | | 008 3 |
| | | 1444 | | | Sc-Sed-33-3 | — | | | | | 1 | | | 009 3 |
| S | 6/12/13 | 1506 | | X | Sc-Sed-34-1 | — | | | | | 1 | X | X | 010 4 |

Turn around time: ☑ Normal ❑ 25% Rush ❑ 50% Rush ❑ 100% Rush

| Relinquished by (Signature) | Date: | Time: | Received by: (Signature) | Date: | Time: |
|---|---|---|---|---|---|
| | 6/13/13 | 1240 | Jackie Gibbs / Falcon | 6/13/13 | 12:40 |
| Jackie Gibbs / Falcon | 6/13/13 | 1:25 | Kathy Lehm / Pace | 6/13/13 | 1325 |
| Relinquished by (Signature) | Date: | Time: | Received by: (Signature) | Date: | Time: |
| Relinquished by (Signature) | Date: | Time: | Received by: (Signature) | Date: | Time: |

NOTES:
Please composite the following:
- Sc-Sed-31-1 through Sc-Sed-31-3
- Sc-Sed-32-1 through Sc-Sed-32-3
- Sc-Sed 33-1 through Sc-Sed-33-3

*Temp blank included

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil

Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

WO# 756036

# CHAIN OF CUSTODY RECORD

**Southwest GEOSCIENCE**
Environmental & Hydrogeologic Consultants

Office Location: Dallas, TX
Project Manager: R. Simpson

Laboratory: Pace Analytical
Address:
Contact: 972-727-1123
Phone:
PO/SO #:

Sampler's Name: Jason Minter, Tommy Kim, Mahlia Akaya
Sampler's Signature:

Proj. No.: 0111C278A
Project Name: SC Sediment Sampling

Lab use only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Page 2 of 34

| Matrix | Date | Time | Comp | Grab | Identifying Marks of Sample(s) | Start Depth | End Depth | VOA | A/G 1 Lt. | 250 ml | P/O | As, Pb, Cd SW-846 #6010 | Total Organic Carbon SW-846 #9060M | Lab Sample ID (Lab Use Only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | 6/12/13 | 1508 | | X | SC-Sed-34-2 | — | | | | | 1 | X | X | 004 |
| | | 1512 | | | SC-Sed-34-3 | — | | | | | 1 | | | 004 |
| | | 1556 | | | SC-Sed-35-1 | — | | | | | 1 | | | 005 |
| | | 1559 | | | Sc-Sed-35-2 | — | | | | | 1 | | | 005 |
| | | 1602 | | | Sc-Sed-35-3 | — | | | | | 1 | | | 005 |
| | | 1622 | | | Sc-Sed-36-1 | — | | | | | 1 | | | 006 |
| | | 1625 | | | Sc-Sed-36-2 | — | | | | | 1 | | | 006 |
| | | 1628 | | | Sc-Sed-36-3 | — | | | | | 1 | | | 006 |
| | | 1750 | | | Sc-Sed-37-1 | — | | | | | 1 | | | 007 |
| S | 6/12/13 | 1753 | | X | Sc-Sed-37-2 | — | | | | | 1 | X | X | 007 |

**Turn around time** ☑ Normal ❑ 25% Rush ❑ 50% Rush ❑ 100% Rush

| Relinquished by (Signature) | Date: | Time: | Received by: (Signature) | Date: | Time: |
|---|---|---|---|---|---|
| | 6-13-13 | 1740 | JACKIE GIBBS / FALCON | 6/13/13 | 2040 |
| Relinquished by (Signature) JACKIE GIBBS / FALCON | 6/13/13 | 1.25 | Kathy Weems / Pace | 6/13/13 | 1325 |
| Relinquished by (Signature) | Date: | Time: | Received by: (Signature) | Date: | Time: |
| Relinquished by (Signature) | Date: | Time: | Received by: (Signature) | Date: | Time: |

NOTES:
Please composite the following:
- SC-Sed-34-1 through SC-Sed-34-3
- SC-Sed-35-1 through SC-Sed-35-3
- Sc-Sed-36-1 through Sc_Sed-36-3
- Sc-Sed-37-1 through Sc_Sed-37-3

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

WO# 756036

# CHAIN OF CUSTODY RECORD

**Southwest GEOSCIENCE**
Environmental & Hydrogeologic Consultants

Office Location: Dallas, TX
Project Manager: R. Simpson

Laboratory: Pace Analytical
Address:
Contact: 972-727-1123
Phone:
PO/SO #:

Sampler's Name: Jason Minter, Tommy Kim, Makhia Abaya
Sampler's Signature:

Proj. No.: 0111C278A
Project Name: SC Sediment Sampling

Lab use only
Due Date:

Temp. of coolers when received (C°): Thaw 0.5 | 1 | 2 | 3 | 4 | 5

Page 3 of 34

ANALYSIS REQUESTED: As, Pb, Cd SW-846 #6010; Total Organic Carbon SW-846 #9060M

| Matrix | Date | Time | Comp | Grab | Identifying Marks of Sample(s) | Start Depth | End Depth | VOA | A/G 1 Lt. | 250 ml | P/O | As, Pb, Cd SW-846 #6010 | Total Organic Carbon SW-846 #9060M | Lab Sample ID (Lab Use Only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | 6/12/13 | 1756 | | X | SC-Sed-37-3 | — | | | | | 1 | X | X | 007 |
| | | 1808 | | | SC-Sed-38-1 | — | | | | | 1 | | | 008 |
| | | 1811 | | | SC-Sed-38-2 | — | | | | | 1 | | | 008 |
| | | 1814 | | | SC-Sed-38-3 | — | | | | | 1 | | | 008 |
| | | 1829 | | | SC-Sed-39-1 | — | | | | | 1 | | | 009 |
| | | 1832 | | | SC-Sed-39-2 | — | | | | | 1 | | | 009 |
| | | 1835 | | | SC-Sed-39-3 | — | | | | | 1 | | | 009 |
| | | 1848 | | | SC-Sed-40-1 | — | | | | | 1 | | | 010 |
| | | 1851 | | | SC-Sed-40-2 | — | | | | | 1 | | | 010 |
| S | 6/12/13 | 1854 | | X | SC-Sed-40-3 | — | | | | | 1 | X | X | 010 |

Turn around time: ☒ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

| Relinquished by (Signature) | Date: | Time: | Received by: (Signature) | Date: | Time: |
|---|---|---|---|---|---|
| | 6/13/13 | 1200 | Jackie Gibbs / Falcon | 6/13/13 | 12:42 |
| Relinquished by (Signature): Jackie Gibbs / Falcon | 6/13/13 | 1:25 | Kathy Wiemann / Pace | 6/13/13 | 1325 |
| Relinquished by (Signature) | Date: | Time: | Received by: (Signature) | Date: | Time: |
| Relinquished by (Signature) | Date: | Time: | Received by: (Signature) | Date: | Time: |

NOTES:
Please composite the following:
- SC-Sed-38-1 through SC-Sed-38-3
- SC-Sed-39-1 through SC-Sed-39-3
- SC-Sed-40-1 through SC-Sed-40-3

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

WO # 756036

# CHAIN OF CUSTODY RECORD

**Southwest GEOSCIENCE**
Environmental & Hydrogeologic Consultants

Office Location: Dallas, TX
Project Manager: R. Simpson

Laboratory: Pace Analytical
Address:
Contact: 972-727-1123
Phone:
PO/SO #:

Sampler's Name: Jason Minter, Tommy Kim, Mahlia Abaya
Sampler's Signature:

Proj. No.: 011 IC 278A
Project Name: SC Sediment Sampling

Lab use only
Due Date:
Temp. of coolers when received (C°): 1 2 3 4 5
Page 4 of 4

ANALYSIS REQUESTED: As, Pb, Cd SW-846 #6010; Total Organic Carbon SW-846 #9060M

| Matrix | Date | Time | Comp | Grab | Identifying Marks of Sample(s) | Start Depth | End Depth | VOA | A/G 1 Lt. | 250 ml | P/O | As, Pb, Cd SW-846 #6010 | TOC SW-846 #9060M | Lab Sample ID (Lab Use Only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | 6/13/13 | 1123 | | X | ~~SED~~ SC-Sed-41-1 | — | | | | | 1 | X | X | 011 |
| | | 1126 | | | SC-Sed-41-2 | — | | | | | 1 | | | 011 |
| | | 1129 | | | SC-Sed-41-3 | — | | | | | 1 | | | 011 |
| | | 1146 | | | SC-Sed-42-1 | — | | | | | 1 | | | 012 |
| | | 1149 | | | SC-Sed-42-2 | — | | | | | 1 | | | 012 |
| | | 1152 | | | SC-Sed-42-3 | — | | | | | 1 | | | 012 |
| | | 1212 | | | SC-Sed-43-1 | — | | | | | 1 | | | 013 |
| | | 1215 | | | SC-Sed-43-2 | — | | | | | 1 | | | 013 |
| S | 6/13/13 | 1218 | | X | SC-Sed-43-3 | — | | | | | 1 | X | X | 013 |
| | | | | | NFE 6/13/13 | | | | | | | | | |

Cancel per Customer 6/17/13 SRL

**Turn around time:** ☒ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

| Relinquished by (Signature) | Date: | Time: | Received by: (Signature) | Date: | Time: |
|---|---|---|---|---|---|
| | 6/13/13 | 1240 | Jackie Gibbs/Falcon | 6/13/13 | 12:40 |
| Jackie Gibbs/Falcon | 6/13/13 | 1:25 | Kathy Wilson/Pace | 6/13/13 | 1325 |
| Relinquished by (Signature) | Date: | Time: | Received by: (Signature) | Date: | Time: |
| Relinquished by (Signature) | Date: | Time: | Received by: (Signature) | Date: | Time: |

NOTES:
Please Composite the following:
SC-Sed-41-1 through SC-Sed-41-3
SC-Sed-42-1 through SC-Sed-42-3
SC-Sed-43-1 through SC-Sed-43-3

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

# Sample Condition Upon Receipt

Pace Analytical

Client Name: Southwest Geoscience Pace #: 9560340

**Courier:** ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☒ Courier ☐ LSO ☐ Pace Other _____

**Tracking #:** Falcon-X-press

**Custody Seal on Cooler/Box Present:** ☒ yes ☐ no Seals intact: ☒ yes ☐ no ☐ N/A

**Packing Material:** ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☒ Other _____

**Thermometer Used** (IR-01) IR-02 **Type of Ice:** (Wet) Blue None ☒ Samples on ice, cooling process has begun

**Cooler Temperature** 0.8°C **Ice Visible in Sample Containers:** ☒ yes ☐ no

**(Corrected, if applicable)**

Temp should be above freezing to 6°C **Comments:**

**Date and Initials of person examining contents** MM 10-14-13

| Sample Receiving | | |
|---|---|---|
| Chain of Custody Present: | ☒Yes ☐No ☐N/A | 1. |
| Chain of Custody Filled Out: | ☑Yes ☐No ☐N/A | 2. |
| Chain of Custody Relinquished: | ☒Yes ☐No ☐N/A | 3. |
| Sampler Name & Signature on COC: | ☑Yes ☐No ☐N/A | 4. |
| **Short Hold Time Analysis (<72hr):** | ☐Yes ☒No ☐N/A | 5. |
| **Rush Turn Around Time Requested:** | ☐Yes ☑No ☐N/A | 6. |
| Containers Intact: | ☒Yes ☐No ☐N/A | 7. |
| Sample Labels match COC: -Includes date/time/ID/Analysis | ☑Yes ☐No ☐N/A | 8. |
| All containers needing acid/base pres. have been checked? exceptions: VOA, coliform, O&G | ☐Yes ☐No ☒N/A | 9. (Circle) HNO3 H2SO4 NaOH HCl If applicable see below. |
| All containers needing preservation are found to be in compliance with EPA recommendation. | ☐Yes ☐No ☒N/A | pH strip lot #: Potassium Iodide strip lot #: Lead Acetate strip lot #: |
| Headspace in VOA Vials ( >6mm): | ☐Yes ☐No ☒N/A | 10. |
| Trip Blank Present: | ☐Yes ☐No ☒N/A | 11. |
| Trip Blank Custody Seals Present | ☐Yes ☐No ☒N/A | |
| Samples Arrived within Hold Time: | ☑Yes ☐No ☐N/A | 12. |
| Sufficient Volume: | ☑Yes ☐No ☐N/A | 13. |
| Correct Containers Used: | ☑Yes ☐No ☐N/A | 14. |

**Client Notification/ Resolution:**

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

**Project Manager Review:** _____ **Date:** 10-22-13

# Sample Container Count

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COC ID# _____

Pace Project # 756036

| Sample Line Item | BP2N | AG1U | VG9U | VG9H | BP2S | BP1U | BP2U | BG1H | AG1S | BP20 | SP5T | WGFU | WGKU | _____ | _____ | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | 3 | | | | |
| 2 | | | | | | | | | | | | 3 | | | | |
| 3 | | | | | | | | | | | | 3 | | | | |
| 4 | | | | | | | | | | | | 3 | | | | |
| 5 | | | | | | | | | | | | 3 | | | | |
| 6 | | | | | | | | | | | | 3 | | | | |
| 7 | | | | | | | | | | | | 3 | | | | |
| 8 | | | | | | | | | | | | 3 | | | | |
| 9 | | | | | | | | | | | | 3 | | | | |
| 10 | | | | | | | | | | | | 3 | | | | |
| 11 | | | | | | | | | | | | 3 | | | | |
| 12 | | | | | | | | | | | | 3 | | | | |

Container Codes

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DG9H | 40mL HCL amber voa vial | AF | Air Filter | BP1N | 1 liter HNO3 plastic | DG9P | 40mL TSP amber vial |
| AG1U | 1liter unpreserved amber glass | AG1H | 1 liter HCL amber glass | BP1S | 1 liter H2SO4 plastic | DG9S | 40mL H2SO4 amber vial |
| WGFU | 4oz clear soil jar | AG1S | 1 liter H2SO4 amber glass | BP1U | 1 liter unpreserved plastic | DG9T | 40mL Na Thio amber vial |
| R | terra core kit | AG1T | 1 liter Na Thiosulfate amber gl | BP1Z | 1 liter NaOH, Zn, Ac | DG9U | 40mL unpreserved **amber** vial |
| BP2N | 500mL HNO3 plastic | AG2N | 500mL HNO3 amber glass | BP2A | 500mL NaOH, Asc Acid plastic | I | Wipe/Swab |
| BP2U | 500mL unpreserved plastic | AG2S | 500mL H2SO4 amber glass | BP2O | 500mL NaOH plastic | JGFU | 4oz unpreserved amber wide |
| BP2S | 500mL H2SO4 plastic | AG2U | 500mL unpreserved amber gla | BP2Z | 500mL NaOH, Zn Ac | U | Summa Can |
| BP3N | 250mL HNO3 plastic | AG3U | 250mL unpreserved amber gla | BP3A | 250mL NaOh, Asc Acid plastic | VG9H | 40mL HCL clear vial |
| BP3U | 250mL unpreserved plastic | BG1H | 1 liter HCL clear glass | BP3C | 250mL NaOH plastic | VG9T | 40mL Na Thio. clear vial |
| BP3S | 250mL H2SO4 plastic | BG1S | 1 liter H2SO4 clear glass | BP3Z | 250mL NaOH, Zn Ac plastic | VG9U | 40mL unpreserved **clear** vial |
| AG3S | 250mL H2SO4 glass amber | BG1T | 1 liter Na Thiosulfate clear gla | C | Air Cassettes | VSG | Headspace septa vial & HCL |
| AG1S | 1 liter H2SO4 amber glass | BG1U | 1 liter unpreserved glass | DG9B | 40mL Na Bisulfate amber vial | WGFX | 4oz wide jar w/hexane wipe |
| BP1U | 1 liter unpreserved plastic | BP1A | 1 liter NaOH, Asc Acid plastic | DG9M | 40mL MeOH clear vial | ZPLC | Ziploc Bag |
| WGKU | 8oz wide jar upreserved | SP5T | 120mL Coliform Na Thiosulfate | SP5U | 120mL Coliform unpreserved | GN | General unpreserved |
| Other | Other | | | | | | |

# Sample Container Count

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COC ID# _____

Pace Project # 7560360

| Sample Line Item | BP2N | AG1U | VG9U | VG9H | BP2S | BP1U | BP2U | BG1H | AG1S | BP20 | SP5T | WGFU | WGKU | _____ | _____ | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | 3 | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
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| 10 | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | |

Container Codes

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DG9H | 40mL HCL amber voa vial | AF | Air Filter | BP1N | 1 liter HNO3 plastic | DG9P | 40mL TSP amber vial |
| AG1U | 1liter unpreserved amber glass | AG1H | 1 liter HCL amber glass | BP1S | 1 liter H2SO4 plastic | DG9S | 40mL H2SO4 amber vial |
| WGFU | 4oz clear soil jar | AG1S | 1 liter H2SO4 amber glass | BP1U | 1 liter unpreserved plastic | DG9T | 40mL Na Thio amber vial |
| R | terra core kit | AG1T | 1 liter Na Thiosulfate amber gl | BP1Z | 1 liter NaOH, Zn, Ac | DG9U | 40mL unpreserved **amber** vial |
| BP2N | 500mL HNO3 plastic | AG2N | 500mL HNO3 amber glass | BP2A | 500mL NaOH, Asc Acid plastic | I | Wipe/Swab |
| BP2U | 500mL unpreserved plastic | AG2S | 500mL H2SO4 amber glass | BP2O | 500mL NaOH plastic | JGFU | 4oz unpreserved amber wide |
| BP2S | 500mL H2SO4 plastic | AG2U | 500mL unpreserved amber gla | BP2Z | 500mL NaOH, Zn Ac | U | Summa Can |
| BP3N | 250mL HNO3 plastic | AG3U | 250mL unpreserved amber gla | BP3A | 250mL NaOh, Asc Acid plastic | VG9H | 40mL HCL clear vial |
| BP3U | 250mL unpreserved plastic | BG1H | 1 liter HCL clear glass | BP3C | 250mL NaOH plastic | VG9T | 40mL Na Thio. clear vial |
| BP3S | 250mL H2SO4 plastic | BG1S | 1 liter H2SO4 clear glass | BP3Z | 250mL NaOH, Zn Ac plastic | VG9U | 40mL unpreserved **clear** vial |
| AG3S | 250mL H2SO4 glass amber | BG1T | 1 liter Na Thiosulfate clear gla | C | Air Cassettes | VSG | Headspace septa vial & HCL |
| AG1S | 1 liter H2SO4 amber glass | BG1U | 1 liter unpreserved glass | DG9B | 40mL Na Bisulfate amber vial | WGFX | 4oz wide jar w/hexane wipe |
| BP1U | 1 liter unpreserved plastic | BP1A | 1 liter NaOH, Asc Acid plastic | DG9M | 40mL MeOH clear vial | ZPLC | Ziploc Bag |
| WGKU | 8oz wide jar upreserved | SP5T | 120mL Coliform Na Thiosulfate | SP5U | 120mL Coliform unpreserved | GN | General unpreserved |
| Other | Other | | | | | | |