

Evaluation of Lead
in
Drinking Water
in
PLU Campus Buildings

Conducted for

**Pacific Lutheran University
Environmental Health and Safety**

by



Sound Environmental Solutions, inc.
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A handwritten signature in blue ink, reading "David M. Kernan".

David M. Kernan, CIH, CSP

President

Certified Industrial Hygienist, Certificate Number 3424 CP

June 14, 2016

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PLU Campus Buildings

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Executive Summary

Pacific Lutheran University (PLU) contracted with Sound Environmental Solutions, Inc. to conduct drinking water sampling in PLU buildings to address concerns about the potential for lead in drinking water. The concerns came from reports that drinking water in Tacoma schools and some City of Tacoma locations contained excessive levels of lead.

Field work for the sampling was performed from May 3 to May 10, 2016. A total of sixty-eight (68) one (1) liter samples were collected from thirty-eight (38) PLU buildings along with one (1) field blank. After the samples were submitted to a local laboratory, results for lead samples collected by Parkland Light and Water, PLU's water system distributor, between 2005 and 2014 were reviewed for comparison purposes.

No lead was detected in thirty-three (33) of the samples collected during this evaluation, or in the field blank. Lead concentrations in the other samples ranged from one (1) microgram per liter $\mu\text{g/L}$ to five (5) $\mu\text{g/L}$. All samples were below the 15 $\mu\text{g/L}$ Action Level (AL) set by EPA for lead in drinking water.

The results from this evaluation were similar to results of samples collected by Parkland Light and Water from 2005 through 2014. For this reason, it was determined that no additional action would be needed in PLU campus buildings.

Background

This lead in drinking water evaluation was initiated at the request of the Pacific Lutheran University (PLU) Environmental Health and Safety Department (EHS) to address concerns arising from recently published news about lead contamination reportedly found in City of Tacoma and Tacoma School District drinking water.

This evaluation was requested to determine whether lead may be present in PLU building drinking water sources at levels exceeding statutory or recommended limits for lead in water. The PLU Environmental Health and Safety Department contracted with Sound Environmental Solutions, Inc. (SESI) to perform the evaluation.

The evaluation was performed from May 3 to May 24, 2016, with samples collected on May 9 and 10, 2016.

Methodology

This evaluation was performed using standard industrial hygiene procedures and practices and environmental sampling methodology. Potential drinking water sources, including drinking fountains (bubblers), bottler fillers and sinks in break rooms or kitchens were identified in each of thirty-nine PLU buildings. From these sources, sample locations in each building were randomly selected. At least one sample location was identified for each building. Where more than one type of source was present in a building, at least one sample was collected from each type of source when feasible.

Prior to sampling, the PLU EHS Director placed signs on all sources to be sampled notifying building occupants about water testing and to not use the source until after the signs were removed. See Photos 1 and 2 in Appendix A for examples of the signs.

All samples were collected as one (1) liter “first draw” samples. First draw samples are samples collected after the water faucet, bubbler or bottle filler was not used for at least 6 hours. The purpose of the first draw sample is to represent the maximum concentration of lead that may leach from regularly used source pipes, solder or fixtures into the water contained in them. The samples were collected over the course of two days.

Each one (1) liter drinking water sample was collected in a clean and sterilized wide mouth plastic sample bottle obtained from the laboratory. After each sample was collected the sample bottle was sealed. Then identifying sample information, including sample number, date, and time were recorded on the sample bottle label. The sample was held with other samples until sample collection was completed.

After all samples were collected, the samples were hand delivered with a chain of custody to SPECTRA Laboratories (Spectra) in Tacoma, Washington for lead analysis using EPA Method 200.8, *Determination of Trace Elements in Waters and Wastes by*

Inductively Coupled Plasma – Mass Spectrometry. The Method Detection Limit (MDL) for lead set in the EPA Lead and Copper Rule (LCR) [40 CFR 141.89] is 0.001 milligrams per liter (mg/L). The required Practical Quantitation Limit (PQL) in the LCR is 0.005 mg/L. The LCR only requires laboratories to determine MDLs when composite samples are analyzed. Spectra did not analyze composite samples so did not determine or report the MDL.

The Lower Limit of Quantitation (LLOQ) reported by Spectra for this project was 0.11 micrograms per liter ($\mu\text{g/L}$). The Reporting Limit (RL) for this project was 0.001 mg/L per the LCR. Spectra is accredited by the Washington State Department of Ecology (WA-DOE) and the Washington State Department of Health WA-DOH (WA-DOE Lab ID - WA00052 & WA-DOH Lab # 118).

After the samples were delivered to the laboratory, drinking water sample data collected by PLU's water system provider, Parkland Light and Water (PL&W) was reviewed. When sample results were received from the laboratory, sample results, field data and PL&W data were reviewed and analyzed. This report was then prepared summarizing the results of the sampling and data review.

Results

The drinking water sample sources were selected on May 3, 2016. One (1) liter drinking water samples were collected on May 9 and 10, 2016. A total of sixty-nine (69) samples were collected, sixty-eight (68) samples from drinking water sources in thirty-eight (38) PLU buildings, and one (1) field blank. Representative photographs of the sampled sources are included in Appendix A.

No lead was detected in thirty-three (33) of the drinking water samples or in the field blank. Lead concentrations in the other samples ranged from one (1) microgram per liter ($\mu\text{g/L}$) to five (5) $\mu\text{g/L}$. One (1) $\mu\text{g/L}$ of lead was reported for twelve samples; two (2) $\mu\text{g/L}$ of lead was reported for fifteen samples; three (3) $\mu\text{g/L}$ was reported for six samples; four (4) $\mu\text{g/L}$ of lead was reported for two samples; and five (5) $\mu\text{g/L}$ of lead was reported for one sample.

See Table 1 in Appendix B for detailed drinking water sample results, including building, sample source location, drinking fountain manufacturer and model number (when found), whether the source water was filtered, date and time the sample was collected, and the lead analysis result. A copy of the laboratory analysis report is in Appendix C.

After the samples were collected and submitted to the laboratory, lead results for drinking water sampling done by Parkland Light and Water (PL&W) [WA-DOE System ID 66200U], PLU's water system, were reviewed. A total of 122 sample results from 2005 through 2014 were found. Lead concentrations reported for these samples ranged from 1 $\mu\text{g/L}$ to 30 $\mu\text{g/L}$. All results were below 15 $\mu\text{g/L}$ except for one sample collected in September 2008 that was reported at 30 $\mu\text{g/L}$.

Discussion and Conclusions

This evaluation was performed to address concerns that arose from reports about elevated levels of lead in drinking water reportedly found in water provided to some the City of Tacoma and in some Tacoma School District school building drinking fountains.

Elevated concentrations of lead in drinking water can cause adverse health effects for both children and adults. Impacts on children include delays in physical or mental development, including deficits in learning abilities and attention span. Impacts on adults may include kidney problems and high blood pressure. Because of these concerns, the US EPA developed standards for public water systems to limit the levels of lead and other potential contaminants in drinking water.

These standards included the Lead and Copper Rule (LCR), first published in 1991. The LCR restricted the use of lead in solder and other metal materials used in plumbing fixtures and piping, and set limits for the amount of lead and copper in drinking water. These limits, or Maximum Contaminant Levels (MCL) are referred to in the LCR as action levels (AL). The AL for lead in drinking water is 15 µg/L.

Sampling requirements for public drinking water systems, like Parkland Light and Water, were also included in the LCR. Each public water system is required to periodically collect one (1) liter samples from all drinking water sources as well as from randomly selected connected households. The number of connected households sampled is based on the size (number of connections) of the water system.

The public water system is required to determine the 90th percentile of lead sample results. This is calculated by sorting all the sample results in numerical order from lowest lead result to highest lead result, with the highest result at the bottom of the list. After sorting from lowest to highest, the sample are numbered sequentially, starting with 1 for the lowest result and finishing with the highest sequential number for the highest sample result. The total number of samples collected is then multiplied by 0.9.

This calculation result identifies the sequentially numbered sample on the list that is the 90th percentile. If the lead concentration for this 90th percentile sample exceeds the 15 µg/L AL, then the water system is required to report (within 60 days of receipt of results), and to develop a treatment plan for the water system. In some cases, additional or more frequent testing may be required.

Parkland Light and Water (PL&W) provides drinking water to all PLU buildings. PL&W is required to sample for lead every three years. PL&W drinking water sampling results from 1979 to present have been consistently below the 15 µg/L lead AL. The results can be viewed in the on-line WA-DOH Office of Drinking Water Sentry Internet database through the following link: <https://fortress.wa.gov/doh/eh/portal/odw/si/Intro.aspx>

To address concerns about lead contamination in PLU campus buildings, samples were collected during this evaluation from randomly selected sources in PLU buildings throughout the campus. All samples were collected as “first draw” samples to represent

the highest concentration of lead likely to leach into water in regularly used sources. Prior to sampling, the decision was made to take action for each source if that sample reached the 15 µg/L AL, which is a more conservative approach than EPA's 90th percentile action requirement in the LCR.

Notification signs were placed on each source the evening prior to sample collection to prevent usage. Before each sample was collected, the source was inspected to determine whether it had been used after the sign had been placed. Only one source, the drinking fountain on the third floor of Pflueger Hall, showed evidence that it had been used.

A total of sixty-eight (68) drinking water sources in thirty-eight (38) buildings were sampled. Lead concentrations in all sixty-eight (68) samples were below 15 µg/L. The 90th percentile concentration was calculated to be 3 µg/L.

The sample results from this evaluation were all below 15 µg/L and were similar to historical results from samples collected by PL&W. For this reason, no action is necessary to address the potential for lead in PLU drinking water sources.

Recommendations

Based on the results of this evaluation, no additional actions need to be taken other than providing the results of the evaluation to PLU campus building occupants.

Limitations

This evaluation was performed in accordance with recognized industrial hygiene standards procedures and practices. Samples were collected and analyzed in accordance with recognized and accepted industrial hygiene sample collection methods and industrial hygiene laboratory analytical procedures. The results of this evaluation are limited to conditions identified during the evaluation and to data provided and reported by others. It was intended solely for the purpose of evaluating lead concentrations in drinking water from sources in PLU campus buildings.

This report was not intended to identify or conclude as to extent of occupational exposures related to existing or previous conditions or to diagnose disease. Conclusions, opinions and recommendations developed during this evaluation were based on currently recognized sources and data. Other than this no other warranty is intended or implied.

*** end of report ***

Appendix A Photographs



Photo 1, Example of water testing signs placed on dual bubbler with bottle filler



Photo 2, Example of water testing sign on recessed wall mounted bubbler



Photo 3, Payroll House kitchen sink faucet with filtered bottle filler, Sample FD-19



Photo 4, Payroll House kitchen sink water filter in cabinet below sink



Photo 5, Stuen Hall Room 303, unfiltered kitchen sink faucet, Sample FD-49



Photo 6, Stuen Hall Room 303, unfiltered water lines below sink



Photo 7, Pflueger Hall, 3rd floor, wall mounted unfiltered bubbler, Sample FD-34. The notice sign was wet, indicating the fountain was used less than 6 hours before sampling



Photo 8, Pflueger Hall 1st floor lobby, wall mounted water cooler with filtered bottle filler, Sample FD-31



Photo 9, South Hall 1st floor by N entry, dual bubbler without bottle filler, Sample FD-26 taken from upper bubbler



Photo 10, Morken Center 1st floor lobby, Dual bubbler with filtered bottle filler, Sample FD-44 taken from bottle filler



Photo 11, Morken Center School of Business staff break room filtered sink faucet, Sample FD-43



Photo 12, Morken Center School of Business staff break room, water filters for faucet and coffee pot in cabinet under sink



Photo 13, Olson Auditorium, wall mounted unfiltered bubbler next to wall mounted filtered bottle filler, Sample FD-47 taken from bottle filler



Photo 14, Swimming Pool, unfiltered wall mounted ceramic bubbler, Sample FD-40



Photo 15, Hong Hall, 3rd floor, recessed unfiltered ceramic bubbler, Sample FD-60

Appendix B Table 1, PLU Campus Lead in Drinking Water Sample Results

**Table 1
Pacific Lutheran University Campus Lead in Drinking Water Sample Results**

Sample Number	Building	Sample Location	Fountain Mfr./Model	Filter	Date	Time	Result (µg/L)
FD-1	208 Garfield	Barista station, sink faucet	NA	Unk	5/9/2016	6:34 AM	2
FD-2	Graduate & Continuing Education	2nd floor breakroom, sink faucet	NA	Unk	5/9/2016	6:52 AM	2
FD-3	Anderson University Center	Prep sink faucet by office & cooler # 23	NA	N	5/9/2016	7:04 AM	1
FD-4	Anderson University Center	Fountain by east hall restrooms (from bottle filler)	Elkay EZH ₂ O	Y	5/9/2016	7:06 AM	ND
FD-5	East Campus/High School	1st floor drinking fountain across from gym	Halsey Taylor SCWT8A0 1N	N	5/9/2016	7:18 AM	ND
FD-6	Hauge Admin. Building	Break room 122, sink faucet	NA	N	5/9/2016	7:32 AM	1
FD-7	Hauge Administration Building	Drinking fountain, hall outside room 102	Halsey Taylor WM8AQ 1L	N	5/9/2016	7:35 AM	1
FD-8	Xavier Hall	Sink, room 101 office area	NA	Unk	5/9/2016	7:42 AM	2
FD-9	Mortvedt Library, 1st floor	Drinking fountain by elevator (from bottle filler)	Unk. SR-WF	Y	5/9/2016	7:48 AM	ND
FD-10	Mortvedt Library, ground floor	Breakroom sink faucet	NA	Y	5/9/2016	7:53 AM	3
FD-11	Karen Hillie Phillips Center for Performing Arts	Lobby drinking fountain, east side (from bottle filler)	Elkay EZH ₂ O EZWSRNF_1	Y	5/9/2016	8:03 AM	ND
FD-12	Ramstad Hall	Room 108 kitchen sink (from bottle filler)	NA	Y	5/9/2016	8:12 AM	4
FD-13	Harstad Hall, ground floor	Outdoor rec kitchen, sink faucet	NA	N	5/9/2016	8:20 AM	ND
FD-14	Harstad Hall, 1st floor	Drinking fountain across from welcome desk (from bottle filler)	SunRoc Corp. NSW-8	Y	5/9/2016	8:29 AM	ND
FD-15	Harstad Hall, 2nd floor	Room 226 kitchen sink faucet	NA	N	5/9/2016	8:36 AM	ND
FD-16	Harstad Hall, 4th floor	Room 409 kitchen sink faucet	NA	N	5/9/2016	8:41 AM	ND
FD-17	Nesvig House	First floor, break room sink faucet	NA	Y	5/9/2016	8:54 AM	2
FD-18	CCES	Bathroom sink faucet	NA	N	5/9/2016	9:02 AM	2
FD-19	Payroll House	Kitchen sink (from bottle filler)	NA	Y	5/9/2016	9:12 AM	ND

**Table 1
Pacific Lutheran University Campus Lead in Drinking Water Sample Results**

Sample Number	Building	Sample Location	Fountain Mfr./Model	Filter	Date	Time	Result (µg/L)
FD-20	Music House	2nd floor kitchen sink faucet	NA	N	5/9/2016	9:18 AM	2
FD-21	Health Center	Kitchen sink faucet	NA	N	5/9/2016	9:26 AM	3
FD-22	Blomquist House	First floor restroom sink (from bottle filler)	NA	Y	5/9/2016	9:38 AM	2
FD-23	Women's Center	Kitchen sink faucet	NA	N	5/9/2016	9:46 AM	1
FD-24	Garfield Station	West entry drinking fountain (from bottle filler)	Elkay EZH ₂ O	Y	5/9/2016	9:58 AM	1
FD-25	Neeb Center	Drinking fountain, first floor restroom (from bottle filler)	Elkay Mfg. Co. No model #	Y	5/9/2016	10:11 AM	ND
FD-26	South Residence Hall, 1st floor	Drinking fountain by main entry restrooms (upper fountain)	Elkay Mfg. Co. EBFATL8_1D	Y	5/9/2016	10:32 AM	ND
FD-27	Tingelstad Residence Hall, 1st floor	Drinking fountain in lobby (from bottle filler)	Elkay Mfg. Co. LZSTL8WS_1D	Y	5/9/2016	10:41 AM	ND
FD-28	Tingelstad Residence Hall, 2nd floor	Room 228 kitchen sink faucet	NA	Y	5/9/2016	10:48 AM	ND
FD-29	Tingelstad Residence Hall, 8th floor	Room 828 kitchen sink faucet	NA	Y	5/9/2016	10:58 AM	1
FD-30	South Residence Hall, 1st floor	Kitchen next to lobby, sink faucet	NA	N	5/9/2016	10:26 AM	2
FD-31	Pflueger Residence Hall, 1st floor	Drinking fountain, lobby by room 101 (from bottle filler)	Halsey Taylor HAC8FSQ_1F	Y	5/9/2016	11:22 AM	1
FD-32	Pflueger Residence Hall, 1st floor	Kitchen sink faucet, room 168	NA	Y	5/9/2016	11:28 AM	5
FD-33	Pflueger Residence Hall, 2nd floor	Kitchen sink faucet, room 266	NA	Y	5/9/2016	11:36 AM	2
FD-34	Pflueger Residence Hall, 3rd floor	Drinking fountain outside room 330 lounge [†]	Halsey Taylor WM8A-3	N	5/9/2016	11:39 AM	2
FD-35	NA	Blank sample (distilled water)	NA	NA	5/9/2016	1:58 PM	ND
FD-36	Facilities Management	Lunchroom sink faucet	NA	N	5/10/2016	6:36 AM	1
FD-37	Columbia Center	2nd floor kitchen, cooking sink faucet	NA	N	5/10/2016	6:45 AM	1
FD-38	Memorial Gymnasium	Drinking fountain in hall by southeast entry	Halsey Taylor WM14A-2	N	5/10/2016	6:58 AM	ND

**Table 1
Pacific Lutheran University Campus Lead in Drinking Water Sample Results**

Sample Number	Building	Sample Location	Fountain Mfr./Model	Filter	Date	Time	Result (µg/L)
FD-39	Names Fitness Center	Drinking fountain between restrooms (from bottle filler)	Elkay Mfg. Co. EDFP19C_B	N	5/10/2016	7:03 AM	ND
FD-40	Swimming Pool	North hall drinking fountain (by women's locker room)	Ceramic Bubbler No Mfr./Model #	N	5/10/2016	7:11 AM	2
FD-41	Wang Center for Global Education	First floor kitchen sink faucet	NA	Y	5/10/2016	7:27 AM	ND
FD-42	Print & Mail Services	Print shop sink faucet	NA	N	5/10/2016	7:40 AM	1
FD-43	Morken Center	School of Business breakroom sink faucet	NA	Y	5/10/2016	7:51 AM	ND
FD-44	Morken Center	First floor drinking fountain/refill station by restrooms	Elkay Mfg. Co. LZWSR_1B	Y	5/10/2016	7:56 AM	ND
FD-45	Rieke Science Center	1st floor drinking fountain, south hall by vending (from bottle filler)	SS Bubbler + filler	Y	5/10/2016	8:06 AM	1
FD-46	Rieke Science Center	Room 156 work room sink faucet	NA	Y	5/10/2016	8:11 AM	3
FD-47	Olson Auditorium	East hall by NE gym door, from bottle filler	Elkay Mfg. Co. EZH ₂ O filler	Y	5/10/2016	8:20 AM	ND
FD-48	Olson Auditorium	Drinking fountain by 1st floor men's locker room	Ceramic Bubbler No Mfr./Model #	N	5/10/2016	8:25 AM	ND
FD-49	Stuen Residence Hall, 3rd floor	Room 303 kitchen sink faucet	NA	N	5/10/2016	8:43 AM	ND
FD-50	Stuen Residence Hall, 2nd floor	Fountain, hall next to room 225, from filler	Elkay Mfg. Co. LZWSR_1C	Y	5/10/2016	8:49 AM	ND
FD-51	Stuen Residence Hall, 1st floor	Room 104 kitchen sink faucet	NA	N	5/10/2016	8:55 AM	3
FD-53	Ordal Residence Hall, 3rd floor	Drinking fountain, hall next to room 300-1-1 (from bottle filler)	Elkay Mfg. Co. LZSWR_1C	Y	5/10/2016	9:02 AM	ND
FD-52	Ordal Residence Hall, 2nd floor	Room 201 kitchen sink faucet	NA	N	5/10/2016	9:07 AM	ND
FD-54	Ordal Residence Hall, 1st floor	Drinking fountain, lobby by front desk (from bottle filler)	Elkay Mfg. Co. LZSWR_1C	Y	5/10/2016	9:10 AM	ND
FD-55	Kreidler Hall, 3rd floor	Room 329 kitchen sink (from bottle filler)	NA	Y	5/10/2016	9:24 AM	ND
FD-56	Kreidler Hall, 2nd floor	Drinking fountain next to room 209 (from bottle filler)	Ceramic Bubbler No Mfr./Model #	N	5/10/2016	9:29 AM	2

**Table 1
Pacific Lutheran University Campus Lead in Drinking Water Sample Results**

Sample Number	Building	Sample Location	Fountain Mfr./Model	Filter	Date	Time	Result (µg/L)
FD-57	Kreidler Hall, 1st floor	Drinking fountain next to room 121	Ceramic Bubbler No Mfr./Model #	N	5/10/2016	9:36 AM	4
FD-58	Kreidler Hall, 1st floor	First floor kitchen sink faucet	NA	Y	5/10/2016	9:48 AM	3
FD-59	Hong Hall, 3rd floor	Room 324 kitchen sink faucet	NA	N	5/10/2016	9:58 AM	ND
FD-60	Hong Hall, 3rd floor	Fountain, hall outside room 315	Ceramic Bubbler No Mfr./Model #	N	5/10/2016	10:04 AM	1
FD-61	Hong Hall, first floor	Room 100 kitchen sink faucet	NA	N	5/10/2016	10:09 AM	ND
FD-62	Hong Hall, first floor	Drinking fountain by lobby desk (from bottle filler)	Halsey Taylor SCWT8A	N	5/10/2016	10:15 AM	ND
FD-63	Hinderlie Hall, 3rd floor	Fountain in hall across from room 315	Ceramic Bubbler No Mfr./Model #	N	5/10/2016	10:28 AM	ND
FD-64	Hinderlie Hall, 2nd floor	Room 201 kitchen sink (from bottle filler)	NA	Y	5/10/2016	10:33 AM	ND
FD-65	Hinderlie Hall, ground floor	Room 021 kitchen sink faucet	NA	N	5/10/2016	10:37 AM	2
FD-66	Hinderlie Hall, 1st floor	Fountain in lobby by room 122	Elkay Mfg. Co. FD-700-3-3	N	5/10/2016	10:48 AM	ND
FD-67	Mary Baker Russell Center	Drinking fountain across from room 321	Sunroc Corp. HCWC8F	N	5/10/2016	10:52 AM	ND
FD-68	Ingram Hall, office	Sink faucet in office area	NA	Y	5/10/2016	11:06 AM	2
FD-69	Ingram Hall, corridor	Fountain across from room 134	Ceramic Bubbler	N	5/10/2016	11:15 AM	2

µg/L = micrograms per liter Mfr. = manufacturer NA= Not Applicable ND = no lead detected

† The notification sign for the Pflueger 3rd floor drinking fountain was down and wet, indicating the fountain was recently used

Laboratory Lower Limit of Quantification (LLOQ) = 0.11 µg/L Method Reporting Limit (RL) = 0.001 mg/L

Appendix C Laboratory Analysis Report

SPECTRA Laboratories

2221 Ross Way Tacoma, WA 98421 Phone (253) 272-4850 Fax (253) 572-9838
 www.spectra-lab.com info@spectra-lab.com

INORGANIC CHEMICALS(IOC's) REPORT FOR LEAD & COPPER

System ID No:	System Name: PLU Drinking Water	Group:
DOH Source NO: S93 (Dist. Samples)	Sample Purpose:	County:
Sampled by:	Sample Type:	Date Received: 05/10/2016
Analyst:	Supervisor:	Date Analyzed: 05/16/2016
Comments:		Date Reported: 06/06/2016
Report to: Sound Environmental Solutions, Inc.		
P.O. Box 731082 Puyallup, WA 98372		Spectra Project # 2016050358

DOH #	23 (Copper)	9 (Lead)
State Reporting Level (SRL)	0.02 mg/l	0.001 mg/l
Action Level (AL)	1.3 mg/L	0.015 mg/l
Test Method	EPA 200.8	EPA 200.8

SAMPLE RESULTS

Lab Sample #	Date Collected	Site/Location	Copper mg/L	Lead mg/L
	05/09/2016	FD-1		0.002
	05/09/2016	FD-2		0.002
	05/09/2016	FD-3		0.001
	05/09/2016	FD-4		ND
	05/09/2016	FD-5		ND
	05/09/2016	FD-6		0.001
	05/09/2016	FD-7		0.001
	05/09/2016	FD-8		0.002
	05/09/2016	FD-9		ND
	05/09/2016	FD-10		0.003
	05/09/2016	FD-11		ND
	05/09/2016	FD-12		0.004
	05/09/2016	FD-13		ND
	05/09/2016	FD-14		ND
	05/09/2016	FD-15		ND

NOTES:

- SRL (State Reporting Level):** The minimum reporting level established by the Washington State Department of Health (DOH)
- Trigger Level:** DOH Drinking Water response level. Systems with compounds detected at concentrations in excess of this level may be required to take additional samples or monitor more frequently. Please contact your DOH drinking water regional office for further information.
- MCL (maximum contaminant level):** If the contaminant amount exceeds the MCL, please contact your regional DOH office to determine follow-up actions.
- NA (Not Analyzed):** In the results column, indicates this compound was not included in the current analysis.
- ND (Not Detected):** In the results column, indicates this compound was analyzed and not detected at a level greater than or equal to the SRL
- < (0.00X) :** The compound was not detected in the sample at or above the concentration indicated (usually the lab MRL).

DOH #	23 (Copper)	9 (Lead)
State Reporting Level (SRL)	0.02 mg/l	0.001 mg/l
Action Level (AL)	1.3 mg/L	0.015 mg/l
Test Method	EPA 200.8	EPA 200.8

SAMPLE RESULTS

Lab Sample #	Date Collected	Site/Location	Copper mg/L	Lead mg/L
	05/09/2016	FD-16		ND
	05/09/2016	FD-17		0.002
	05/09/2016	FD-18		0.002
	05/09/2016	FD-19		ND
	05/09/2016	FD-20		0.002
	05/09/2016	FD-21		0.003
	05/09/2016	FD-22		0.002
	05/09/2016	FD-23		0.001
	05/09/2016	FD-24		0.001
	05/09/2016	FD-25		ND
	05/09/2016	FD-26		ND
	05/09/2016	FD-27		ND
	05/09/2016	FD-28		ND
	05/09/2016	FD-29		0.001
	05/09/2016	FD-30		0.002
	05/09/2016	FD-31		0.001
	05/09/2016	FD-32		0.005
	05/09/2016	FD-33		0.002
	05/09/2016	FD-34		0.002
	05/09/2016	FD-35		ND
	05/09/2016	FD-36		0.001
	05/09/2016	FD-37		0.001
	05/09/2016	FD-38		ND
	05/09/2016	FD-39		ND
	05/09/2016	FD-40		0.002
	05/09/2016	FD-41		ND
	05/09/2016	FD-42		0.001
	05/09/2016	FD-43		ND
	05/09/2016	FD-44		ND
	05/09/2016	FD-45		0.001
	05/09/2016	FD-46		0.003
	05/09/2016	FD-47		ND

NOTES:

SRL (State Reporting Level): The minimum reporting level established by the Washington State Department of Health (DOH)

Trigger Level: DOH Drinking Water response level. Systems with compounds detected at concentrations in excess of this level may be required to take additional samples or monitor more frequently. Please contact your DOH drinking water regional office for further information.

MCL (maximum contaminant level): If the contaminant amount exceeds the MCL, please contact your regional DOH office to determine follow-up actions.

NA (Not Analyzed): In the results column, indicates this compound was not included in the current analysis.

ND (Not Detected): In the results column, indicates this compound was analyzed and not detected at a level greater than or equal to the SRL

< (0.00X): The compound was not detected in the sample at or above the concentration indicated (usually the lab MRL).

DOH #	23 (Copper)	9 (Lead)
State Reporting Level (SRL)	0.02 mg/l	0.001 mg/l
Action Level (AL)	1.3 mg/L	0.015 mg/l
Test Method	EPA 200.8	EPA 200.8

SAMPLE RESULTS

Lab Sample #	Date Collected	Site/Location	Copper mg/L	Lead mg/L
	05/09/2016	FD-48		ND
	05/09/2016	FD-49		ND
	05/09/2016	FD-50		ND
	05/09/2016	FD-51		0.003
	05/09/2016	FD-52		ND
	05/09/2016	FD-53		ND
	05/09/2016	FD-54		ND
	05/09/2016	FD-55		ND
	05/09/2016	FD-56		0.002
	05/09/2016	FD-57		0.004
	05/09/2016	FD-58		0.003
	05/09/2016	FD-59		ND
	05/09/2016	FD-60		0.001
	05/09/2016	FD-61		ND
	05/09/2016	FD-62		ND
	05/09/2016	FD-63		ND
	05/09/2016	FD-64		ND
	05/09/2016	FD-65		0.002
	05/09/2016	FD-66		ND
	05/09/2016	FD-67		ND
	05/09/2016	FD-68		0.002
	05/09/2016	FD-69		0.002
	05/09/2016	FD-70		0.032

NOTES:

SRL (State Reporting Level): The minimum reporting level established by the Washington State Department of Health (DOH)

Trigger Level: DOH Drinking Water response level. Systems with compounds detected at concentrations in excess of this level may be required to take additional samples or monitor more frequently. Please contact your DOH drinking water regional office for further information.

MCL (maximum contaminant level): If the contaminant amount exceeds the MCL, please contact your regional DOH office to determine follow-up actions.

NA (Not Analyzed): In the results column, indicates this compound was not included in the current analysis.

ND (Not Detected): In the results column, indicates this compound was analyzed and not detected at a level greater than or equal to the SRL

< (0.00X): The compound was not detected in the sample at or above the concentration indicated (usually the lab MRL).

SPECTRA Laboratories

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 (253) 272-4850 Fax (253) 572-9838
 www.spectra-lab.com info@spectra-lab.com

CHAIN OF CUSTODY

SPECTRA PROJECT #

101050958

Return Samples: Y N Page 1 of 7

STANDARD RUSH

CLIENT: Sound Environmental Solutions ADDRESS: P.O. Box 731082 Puyallup WA 98373 ADDRESS CHANGE

PROJECT: PLU Drinking Water
 CONTACT: David Kernan
 SAMPLED BY: David Kernan
 PHONE: 253-841-1314 FAX: 253-435-4881
 e-MAIL: david.kernan@soundenvironmental.org
 PURCHASE ORDER #

HYDROCARBONS		ORGANICS		METALS		OTHER	
NWTPH-HCID		8260/624 VOA		TCLP METALS RCRA 8		BOD	
BTEX		8260 CHLOR SOLVENTS		TOTAL METALS (SPECIFY)		FLASH POINT	
BTEX/NWTPH-G		8270 PAH/PNA		TCLP METALS RCRA 8		TURBIDITY	
NWTPH-G		8270-625 SEMI VOA		TOTAL METALS RCRA 8		TX/TOX/EOX	
NWTPH-DX		1664 HEM (FOG)				PH 9040/9045	
1664 SGT-HEM (TPH)							
1664 HEM (FOG)							

NUMBER OF CONTAINERS

SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	1	2	3	4	5	6	7	8	9	10
FD-1	5/9/16	6:34AM	Water	X									
FD-2	5/9/16	6:52AM		X									
FD-3	5/9/16	7:04AM		X									
FD-4	5/9/16	7:06AM		X									
FD-5	5/9/16	7:18AM		X									
FD-6	5/9/16	7:32AM		X									
FD-7	5/9/16	7:35AM		X									
FD-8	5/9/16	7:42AM		X									
FD-9	5/9/16	7:48AM		X									
FD-10	5/9/16	7:53AM		X									

LAB USE ONLY		SIGNATURE		PRINTED NAME		COMPANY		DATE		TIME	
US Mail	UPS	Shipped Via:	RELINQUISHED BY	David Kernan	David Kernan	SFSZ	5/10/16	2:15 PM			
Cooler	Box	Fed Ex	RECEIVED BY	Marie Holt	Marie Holt	Spectra	5-10-16	2:18 PM			
Shipping Container:	Envelope	Courier	RELINQUISHED BY								
Tracking #	None	Client	RECEIVED BY								
Custody Seals: Y N	Intact: Y N										
Cooler Temp. _____	Sample Temp. _____										

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2% per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. Spectra Laboratories, LLC

SPECTRA Laboratories

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 www.spectra-lab.com info@spectra-lab.com

CHAIN OF CUSTODY

SPECTRA PROJECT #
 20160250358

Return Samples: Y N Page 2 of 7

STANDARD RUSH

CLIENT: Sound Environmental Solutions
 PROJECT: PLU Drinking Water
 CONTACT: David Kernan
 SAMPLED BY: David Kernan
 PHONE: 253-841-2314 FAX: 253-435-4081
 e-MAIL: david.kernan@soundenvironmental.org
 PURCHASE ORDER #

HYDROCARBONS				ORGANICS				METALS				OTHER															
NUMBER OF CONTAINERS																											
SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	NWTFH-HClD	BTEX	BTEX/NWTFH-G	NWTFH-G	NWTFH-DX	1664 SGT-HEM (TPH)	1664 HEM (FOG)	8260/824 VOA	8260 CHLOR SOLVENTS	8270-825 SEMI VOA	8270 PAH/PNA	8082/608 PCB	TOTAL METALS RCRA 8	TOTAL METALS (SPECIFY)	TCLP METALS RCRA 8	TCLP METALS (SPECIFY)	PH 9040/9045	TX/TOX/EOX	TURBIDITY	FLASH POINT	BOD	SOLIDS (SPECIFY)		
FD-11	5/9/16	8:03 AM	Water																								
FD-12	5/9/16	8:12 AM																									
FD-13	5/9/16	8:20 AM																									
FD-14	5/9/16	8:29 AM																									
FD-15	5/9/16	8:36 AM																									
FD-16	5/9/16	8:41 AM																									
FD-17	5/9/16	8:54 AM																									
FD-18	5/9/16	9:02 AM																									
FD-19	5/9/16	9:12 AM																									
FD-20	5/9/16	7:18 AM																									

LAB USE ONLY			SIGNATURE			COMPANY			DATE			TIME		
US Mail	UPS	Fed Ex	Shipped Via:	RELINQUISHED BY	PRINTED NAME	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	
			Courier	David Kernan	David Kernan	Marie Holt	Marie Holt	Marie Holt	Marie Holt	Spectra	Spectra	Spectra	Spectra	
			Client							SEST	SEST	SEST	SEST	
										5-10-16	5-10-16	5-10-16	5-10-16	
										2:18 pm	2:18 pm	2:18 pm	2:18 pm	

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2% per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. Spectra Laboratories, LLC

SPECIAL INSTRUCTIONS/COMMENTS:

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 www.spectra-lab.com info@spectra-lab.com

CHAIN OF CUSTODY
 SPECTRA PROJECT #
 1014050958

Return Samples: Y N Page 3 of 7
 STANDARD RUSH ADDRESS CHANGE

CLIENT: Sound Environmental Solutions, ADDRESS: P.O. Box 731082, Puyallup, WA 98373

PROJECT: PLU Drinking Water

CONTACT: David Kernan

SAMPLED BY: David Kernan

PHONE: 253 841-7314 FAX: 253-435-4881

e-MAIL: davidk@soundenvironmental.org

PURCHASE ORDER #

SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	NUMBER OF CONTAINERS																				
				BTEX	BTEX/NWTPH-G	NWTPH-G	NWTPH-DX	1664 SGT-HEM (TPH)	1664 HEM (FOG)	8260/624 VOA	8260 CHLOR SOLVENTS	8270-625 SEMI VOA	8270 PAH/PNA	8082/608 PCB										
FD-21	5/9/16	9:26 AM	Water																					
FD-22	5/9/16	9:38 AM																						
FD-23	5/9/16	9:46 AM																						
FD-24	5/9/16	9:58 AM																						
FD-25	5/9/16	10:11 AM																						
FD-26	5/9/16	10:32 AM																						
FD-27	5/9/16	10:41 AM																						
FD-28	5/9/16	10:48 AM																						
FD-29	5/9/16	10:58 AM																						
FD-30	5/9/16	10:26 AM																						

HYDROCARBONS: BTEX, BTEX/NWTPH-G, NWTPH-G, NWTPH-DX, 1664 SGT-HEM (TPH), 1664 HEM (FOG)

ORGANICS: 8260/624 VOA, 8260 CHLOR SOLVENTS, 8270 PAH/PNA, 8270-625 SEMI VOA

METALS: TOTAL METALS RCRA 8, TOTAL METALS (SPECIFY), TCLP METALS RCRA 8, TCLP METALS (SPECIFY)

OTHER: PH 9040/9045, TX/TOX/EOX, TURBIDITY, FLASH POINT, BOD, SOLIDS (SPECIFY)

Signature: David Kernan, Marie Holt

Relinquished by: David Kernan, Marie Holt

Received by: Marie Holt

Relinquished by:

Received by:

LAB USE ONLY: Shipped Via: UPS, Fed Ex, Courier, Client

Shipping Container: Cooler, Box, Envelope, None

Tracking #: _____

Custody Seals: Y N Intact: Y N

Cooler Temp. _____ Sample Temp. _____

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2% per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. Spectra Laboratories, LLC

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 www.spectra-lab.com info@spectra-lab.com

CHAIN OF CUSTODY

SPECTRA PROJECT #

1016050758

Return Samples: Y N

Page 4 of 7

STANDARD RUSH

CLIENT: Sound Environmental Solutions,
 PROJECT: Plu Drinking Water
 CONTACT: David Kernan
 SAMPLED BY: David Kernan
 PHONE: 253-841-2314 FAX: 253-435-4881
 e-MAIL: davidk@soundenvironmental.org
 PURCHASE ORDER #

ADDRESS: P.O. Box 731082, Puyallup, WA 98373

ADDRESS CHANGE

HYDROCARBONS		ORGANICS		METALS		OTHER	
NWTPH-HCID		8260/624 VOA		TOTAL METALS RCRA 8		BOD	
BTEX		8260 CHLOR SOLVENTS		TOTAL METALS (SPECIFY)		FLASH POINT	
BTEX/NWTPH-G		8270 PAH/PNA		TCLP METALS RCRA 8		TURBIDITY	
NWTPH-G		8270-625 SEMI VOA		TCLP METALS (SPECIFY)		TX/TOX/EOX	
NWTPH-DX		1664 HEM (FOG)		TCLP METALS (SPECIFY)		PH 9040/9045	
1664 SGT-HEM (TPH)							

SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	NUMBER OF CONTAINERS	
FD-31	5/9/16	11:22 AM	Water	1	
FD-32	5/9/16	11:28 AM		1	
FD-33	5/9/16	11:36 AM		1	
FD-34	5/9/16	11:39 AM		1	
FD-35	5/9/16	13:08 PM		1	
FA-36	5/10/16	6:13:44 AM		1	
FD-37	5/10/16	6:47 AM		1	
FD-38	5/10/16	6:58 AM		1	
FD-39	5/10/16	7:03 AM		1	
FD-40	5/10/16	7:11 AM		1	

	HYDROCARBONS		ORGANICS		METALS		OTHER	
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

LAB USE ONLY		PRINTED NAME		COMPANY		DATE		TIME	
US Mail	UPS	Shipped Via:	David Kernan	SPECTRA	5/10/16	2:15 pm			
Cooler	Box	Envelope	None						
Tracking #			Marie Holt	Spectra	5-10-16	2:18 pm			
Custody Seals:	Y N	Intact:	Y N						
Cooler Temp.		Sample Temp.							

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2% per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. Spectra Laboratories, LLC

SPECTRA Laboratories

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SPECIAL INSTRUCTIONS/COMMENTS:

CHAIN OF CUSTODY

SPECTRA PROJECT #
 214050758

Return Samples: Y N Page 5 of 7

STANDARD RUSH

CLIENT: Sound Environmental Solutions
 PROJECT: PU Drinking Water
 CONTACT: David Kernan
 SAMPLED BY: David Kernan
 PHONE: 253-841-2914 FAX: 253-435-4881
 e-MAIL: davidk@saunderenviromental.org
 PURCHASE ORDER #

ADDRESS CHANGE
 ADDRESS: P.O. Box 731082, Payalshp, WA 98573

SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	NUMBER OF CONTAINERS																	
				HYDROCARBONS	ORGANICS	METALS			OTHER												
FD-41	5/10/16	7:27 AM	Drinking Water																		
FD-42	5/10/16	7:40 AM																			
FD-43	5/10/16	7:51 AM																			
FD-44	5/10/16	7:56 AM																			
FD-45	5/10/16	8:06 AM																			
FD-46	5/10/16	8:11 AM																			
FD-47	5/10/16	8:20 AM																			
FD-48	5/10/16	8:25 AM																			
FD-49	5/10/16	8:43 AM																			
FD-50	5/10/16	8:49 AM																			

HYDROCARBONS	ORGANICS	METALS			OTHER								
8260/624 VOA	8260 CHLOR SOLVENTS	8270 PAH/PNA	8082/608 PCB	TOTAL METALS RCRA 8	TOTAL METALS (SPECIFY)	TCLP METALS RCRA 8	TCLP METALS (SPECIFY)	PH 9040/9045	TX/TOX/EOX	TURBIDITY	FLASH POINT	BOD	SOLIDS (SPECIFY)

LAB USE ONLY		SIGNED BY		PRINTED NAME	COMPANY	DATE	TIME
Shipped Via: <input type="checkbox"/> US Mail <input type="checkbox"/> UPS <input type="checkbox"/> Fed Ex <input type="checkbox"/> Client		SIGNATURE		David Kernan	SEST	5/10/16	2:15 PM
Shipping Container: <input type="checkbox"/> Cooler <input type="checkbox"/> Box <input type="checkbox"/> Envelope <input type="checkbox"/> None				Marie Holt	Spectra	5-10-16	2:18 PM
Tracking #							
Custody Seals: Y N Intact: Y N							
Cooler Temp. Sample Temp.							

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2% per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. Spectra Laboratories, LLC

SPECTRA Laboratories

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CHAIN OF CUSTODY

SPECTRA PROJECT #

20160503558

Return Samples: Y of 7 Page 6 of 7

STANDARD RUSH

CLIENT: Sound Environmental Solutions ADDRESS: P.O. Box 737002, Fuyahlp, WA 98373

PROJECT: PLY Drinking Water

CONTACT: David Kernan

SAMPLED BY: David Kernan

PHONE: 253-841-2314 FAX: 253-435-4881

e-MAIL: davidk@sundenvironmentsol.com Prefer FAX e-MAIL

PURCHASE ORDER #

SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX
FD-51	5/10/16	8:55 AM	with 1
FD-52	5/10/16	9:02	
FD-53	5/10/16	9:07 AM	
FD-54	5/10/16	9:10 AM	
FD-55	5/10/16	9:12 AM	
FD-56	5/10/16	9:29 AM	
FD-57	5/10/16	9:36 AM	
FD-58	5/10/16	9:48 AM	
FD-59	5/10/16	9:58 AM	
FD-60	5/10/16	10:04 AM	

HYDROCARBONS		ORGANICS		METALS		OTHER	
NUMBER OF CONTAINERS							
NWTPH-HClD		8260/624 VOA		TOTAL METALS RCRA 8		PH 9040/9045	
BTEX		8260 CHLOR SOLVENTS		TOTAL METALS (SPECIFY)		TX/TOX/EOX	
BTEX/NWTPH-G		8270 PAH/PNA		TCLP METALS RCRA 8		TURBIDITY	
NWTPH-G		1664 SGT-HEM (TPH)		TCLP METALS (SPECIFY)		FLASH POINT	
NWTPH-DX		1664 HEM (FOG)				BOD	
						SOLIDS (SPECIFY)	

LAB USE ONLY		SIGNATURE		PRINTED NAME		COMPANY		DATE		TIME	
US Mail	UPS	Shipped Via:		<i>David Kernan</i>	David M. Kernan	SB SI	5/10/16	2:15 pm			
Cooler	Box	Fed Ex	Courier	<i>Marie Holt</i>	Marie Holt	Specia	5-10-16	2:15 pm			
Shipping Container:	Envelope	None									
Tracking #											
Custody Seals:	Y N	Intact:	Y N								
Cooler Temp.		Sample Temp.									

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2% per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. Spectra Laboratories, LLC

SPECTRA Laboratories

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CHAIN OF CUSTODY

SPECTRA PROJECT #
 2016050358

Return Samples: **Y** (N) **7** of **7** Page **7**

STANDARD **X** RUSH

CLIENT: Sound Environmental Solutions, Inc. ADDRESS: P.O. Box 731082, Puyallup, WA 9918373
 PROJECT: PLU Drinking Water
 CONTACT: David Kernan
 SAMPLED BY: David Kernan
 PHONE: 253-841-2314 FAX: 253-435-4881
 e-MAIL: david.k@souanden.wicomaind.com PREFER FAX MAIL

ADDRESS CHANGE

HYDROCARBONS		ORGANICS		METALS		OTHER	
	NUMBER OF CONTAINERS	BTEX	BTEX/NWTPH-G	NWTPH-G	NWTPH-DX	1664 SGT-HEM (TPH)	1664 HEM (FOG)
		8260/624 VOA	8270-625 SEMI VOA	8270 PAH/PNA	8082/608 PCB	TCLP METALS RCRA 8	TCLP METALS RCRA 8
						TOTAL METALS (SPECIFY)	TOTAL METALS RCRA 8
						TCLP METALS (SPECIFY)	TCLP METALS RCRA 8
							TOTAL METALS (SPECIFY)
							TOTAL METALS RCRA 8
							PH 9040/9045
							TX/TOX/EOX
							TURBIDITY
							FLASH POINT
							BOD
							SOLIDS (SPECIFY)

1	2	3	4	5	6	7	8	9	10
FD-61	FD-62	FD-63	FD-64	FD-65	FD-66	FD-67	FD-68	FD-69	FD-70
5/10/16 10:09 AM Water	5/10/16 10:15 AM	5/10/16 10:28 AM	5/10/16 10:33 AM	5/10/16 10:37 AM	5/10/16 10:40 AM	5/10/16 10:52 AM	5/10/16 11:06 AM	5/10/16 11:15 AM	5/10/16 12:58 PM

LAB USE ONLY	PRINTED NAME	COMPANY	DATE	TIME
SIGNED BY	David Kernan	SPECTRA	5/10/16	2:15 pm
RECEIVED BY	MARIE HOIT	Spectra	5-10-16	2:15pm

US Mail	UPS	Fed Ex	Courier	Client
Shipping Container:				
Cooler	Box	Envelope	None	
Tracking # _____				
Custody Seals:	Y	N	Intact:	Y N
Cooler Temp.	Sample Temp. _____			

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2% per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. Spectra Laboratories, LLC

5/16/2016

Sound Environmental Solutions
PO Box 731082
Puyallup, WA 98372

Units: ug/L
Spectra Project: 2016050358
Analyst: SCJ

QUALITY CONTROL RESULTS

ICP-MS Metals - EPA Method 200.8 - Drinking Water

Initial Quality Control Standard/Calibration Blank Results

Date Analyzed: 5/16/2016

Element	Standard				Blank Result
	Value	Conc.	%Rec	QC Limit	
Lead	100	100.80	100.8	90-110%	< 0.5

Low Level Instrument Performance Check

Date Analyzed: 5/16/2016

Element	Standard			
	Value	Conc.	%Rec	QC Limit
Lead	10	9.383	93.8	70-130%


Instrument Performance Check/Continuing Calibration Blank Results

Date Analyzed: 5/16/2016


Element	Standard				Blank Result
	Value	Conc.	%Rec	QC Limit	
Lead	200	193.80	96.9	90-110%	< 0.5

Comment: LLOQ 0.11 ug/L Reporting limit per LCR: 0.001 mg/L

Spectra Laboratories



Steven G. Hibbs
Laboratory Manager



Jesse J. Bynum
QA Officer