



**Engineering +
Environmental**

December 30, 2016

Jeremy Miller
Maintenance Manager
Department of Administrative Services
Enterprise Asset Management Division
1225 Ferry Street SE
Salem, Oregon 97301

Via email: Jeremy.W.MILLER@oregon.gov

Regarding: Drinking Water Sampling for Lead
 Portland State Office Building
 800 NE Oregon Street
 Portland, Oregon 97232
 PBS Project # 25103.003 Phase 0040

Dear Mr. Miller:

On October 19, 2016, PBS Engineering and Environmental Inc. (PBS) performed drinking water sampling at the Portland State office building located at 800 NE Oregon Street in Portland, Oregon. The testing was requested by State of Oregon Department of Administrative Services in an effort to ensure that concentrations of lead in drinking water remain below the EPA action level.

Sampling methodology and the interpretation of laboratory results were based on the EPA Lead and Copper Rule (LCR). Following LCR sampling guidelines, PBS collected the first 1000 milliliters (mL) of water from each test location (first draw) early in the morning following an overnight stagnation period. The LCR's stagnation period, and sampling protocol specifying the first 1000 mL samples, is designed to maximize the likelihood that the highest concentrations of lead are identified in water used for consumption. At each sample location, immediately following first draw sampling, a flush sample was collected after the water had been allowed to run for 30 seconds.

The water sampling process was supervised by a certified industrial hygienist (CIH) who is also an Oregon Health Authority certified lead risk assessor.

The action level set by the EPA for lead is 15 parts per billion (ppb). If the action level is exceeded in more than 10 percent of taps sampled, then action must be taken to control plumbing-material corrosion.

Sixty-six first draw and flush drinking water samples were collected and delivered under chain of custody to BSK Laboratories in Vancouver, Washington for lead analysis. Initially, only first draw samples were analyzed. Any first draw sample that exceeded the EPA action level for lead had its associated flush sample analyzed.

Concentrations of lead in the first draw samples ranged from none detected to 18 ppb. Laboratory analysis indicates that one drinking water sample contained lead at a concentration above the EPA action level. The associated flush sample taken at the same location fell below the action level at 7.4 ppb. PBS is recommending that the fixture be replaced followed by re-testing.

The following tables present all first draw samples that fell below and exceeded the EPA action level of 15 ppb.

4412 SW Corbett Avenue, Portland, OR 97239
503.248.1939 Main
866.727.0140 Fax
888.248.1939 Toll-Free
www.pbsenv.com

Lead Concentrations below 15 ppb

Sample Number	Sample Location	Lead Concentration (ppb)
SK-POSO-001-FD	Break room eleventh floor, suite 1125 kitchen sink	1.4
WF-POSO-003-FD	Water fountain eleventh floor between men's and women's bathrooms near suite 1125	2.0
SK-POSO-005-FD	Break room tenth floor BOLI near suite 1030 entrance, kitchen sink	1.8
WF-POSO-007-FD	Water fountain tenth floor between men's and women's bathrooms across from suite 1030	2.0
SK-POSO-009-FD	Break room ninth floor across from suite 918 kitchen sink	1.5
WF-POSO-011-FD	Water fountain ninth floor between men's and women's bathrooms near suite 925	4.7
SK-POSO-013-FD	Break room eighth floor across from suite 825 kitchen sink	1.3
WF-POSO-015-FD	Water fountain eighth floor between men's and women's bathrooms across from suite 825	ND
WF-POSO-017-FD	Water fountain eighth floor, suite 800 fitness room spigot	ND
SK-POSO-019-FD	Break room seventh floor across from suite 710 kitchen sink	1.9
WF-POSO-021-FD	Water fountain seventh floor between men's and women's bathrooms, suite 730	ND
SK-POSO-023-FD	Break room sixth floor across from suite 618 conference room kitchen sink	1.6
WF-POSO-025-FD	Water fountain sixth floor, suite 640 between men's and women's bathrooms	1.0
SK-POSO-027-FD	Break room fifth floor across from suite 507, kitchen sink	1.7
SK-POSO-029-FD	Break room fourth floor across from suite 425, kitchen sink	2.3
WF-POSO-031-FD	Water fountain fourth floor between men's and women's bathrooms	6.7
SK-POSO-033-FD	Break room third floor kitchen sink	ND
WF-POSO-035-FD	Water fountain third floor between men's and women's bathrooms	1.1
SK-POSO-037-FD	Kitchenette second floor mail room kitchen sink	3.3
WF-POSO-039-FD	Water fountain second floor across suite 215	ND
SK-POSO-041-FD	Break room first floor kitchen sink with server/computer and files, suite 150 Oregon Board of Pharmacy	ND

Sample Number	Sample Location	Lead Concentration (ppb)
WF-POSO-043-FD	Water fountain first floor between men's and women's bathrooms across from suite 150 Oregon Board of Pharmacy	ND
SK-POSO-045-FD	Employee lunch/break room basement kitchen sink	ND
SK-POSO-047-FD	Water fountain fifth floor between men's/women's bathrooms	ND
SK-POSO-049-FD	Cafe kitchen sink next to elevator	ND
SK-POSO-051-FD	Water fill station kitchen sink adjacent to conference room 1D	ND
SK-POSO-055-FD	Kitchen sink (middle sink) dish wash area	13
SK-POSO-057-FD	Kitchen sink left of dishwasher, dish wash area	3.2
SK-POSO-059-FD	Kitchen sink left of ice machine food prep area	2.3
SK-POSO-061-FD	Kitchen sink middle food prep area	1.3
SK-POSO-063-FD	Kitchen sink west food prep area	1.4
SK-POSO-065-FD	Kitchen sink far left/east food prep area	1.4

ND: None Detected

Lead Concentration above 15 ppb and Associated Flush Sample

Sample Location	First Draw Sample Number	First Draw Lead Concentration (ppb)	Flush Draw Sample Number	Flush Draw Lead Concentration (ppb)
Kitchen sink (left/south) dish wash area	SK-POSO-053-FD	18	SK-POSO-054-FL	7.4

ND: None Detected

Please refer to the attached Chain of Custody form and laboratory data for greater details. It should be noted that quality control (QC) sample results are included at the end of laboratory information. The QC samples are both laboratory blanks and spiked samples used internally by the laboratory to assess accuracy.

Please feel free to contact me at 503.417.7602 or derek.may@pbsenv.com with any questions or comments.

Sincerely,
PBS Engineering and Environmental Inc.

A handwritten signature in black ink that reads "S. Derek May". The signature is written in a cursive, slightly slanted style.

Derek May, Principal

Attachments: Laboratory Results
Chain of Custody Form

DM::bmp

The information contained in this document is proprietary and shall not be duplicated, used, or disclosed in whole or in part to other parties without the permission of PBS.



BSK Associates Fresno
1414 Stanislaus St
Fresno, CA 93706
559-497-2888 (Main)
559-485-6935 (FAX)



A6J2625
11/02/2016

Derek May
PBS Environmental
4412 SW Corbett Ave
Portland, OR 97239

RE: Report for A6J2625 Oregon DAS - Lead

Dear Derek May,

Thank you for using BSK Associates for your analytical testing needs. In the following pages, you will find the test results for the samples submitted to our laboratory on 10/20/2016. The results have been approved for release by our Laboratory Director as indicated by the authorizing signature below.

The samples were analyzed for the test(s) indicated on the Chain of Custody (see attached) and the results relate only to the samples analyzed. BSK certifies that the testing was performed in accordance with the quality system requirements specified in the 2009 TNI Standard. Any deviations from this standard or from the method requirements for each test procedure performed will be annotated alongside the analytical result or noted in the Case Narrative. Unless otherwise noted, the sample results are reported on an "as received" basis.

If additional clarification of any information is required, please contact your Project Manager, Debra Karlsson, at 559-497-2888.

Thanks again for using BSK Associates. We value your business and appreciate your loyalty.

Sincerely,

Debra Karlsson, Project Coordinator



Accredited in Accordance with NELAP
ORELAP #4021

Case Narrative

Project and Report Details **Invoice Details**

Client: PBS Environmental	Invoice To: PBS Environmental
Report To: Derek May	Invoice Attn: Accounts Payable
Project #: Portland State Office Building #25103.003 PH 40	Project PO#: -
Received: 10/20/2016 - 09:00	
Report Due: 11/03/2016	

Sample Receipt Conditions

Cooler: Default Cooler	Containers Intact
Temperature on Receipt °C: 19.6	COC/Labels Agree
	Received with no thermal preservation.
	Sample(s) split after receipt at the laboratory.
	Initial receipt at BSK-VAL

Data Qualifiers

The following qualifiers have been applied to one or more analytical results:

None applied

Report Distribution

<u>Recipient(s)</u>	<u>Report Format</u>	<u>CC:</u>
Derek May	FINAL.RPT	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-01

Sampled By: Client

Sample Description: SK-POSO-001-FD // Breakroom 11th Floor Suite 1125 kitchen sink

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0014	0.0010	mg/L	1	A614769	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-03

Sampled By: Client

Sample Description: WF-POSO-003-FD // Water fountain 11th Floor between men's/women's bathrooms near Suite 1125

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0020	0.0010	mg/L	1	A614769	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-05

Sampled By: Client

Sample Description: SK-POSO-005-FD // Breakroom 10th Floor BOLI near Suite 1030 entrance, kitchen sink

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0018	0.0010	mg/L	1	A614769	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-07

Sampled By: Client

Sample Description: WF-POSO-007-FD // Water fountain 10th Floor between men's/women's bathrooms across from Suite 1030

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0020	0.0010	mg/L	1	A614769	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-09

Sampled By: Client

Sample Description: SK-POSO-009-FD // Breakroom 9th Floor across from Suite 918 kitchen sink

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0015	0.0010	mg/L	1	A614769	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-11

Sampled By: Client

Sample Description: WF-POSO-011-FD // Water fountain 9th Floor between men's/women's bathrooms near Suite 925

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0047	0.0010	mg/L	1	A614769	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-13

Sampled By: Client

Sample Description: SK-POSO-013-FD // Breakroom 8th Floor across from Suite 825 kitchen sink

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0013	0.0010	mg/L	1	A614769	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-15

Sampled By: Client

Sample Description: WF-POSO-015-FD // Water fountain 8th Floor between men's/women's bathrooms across from Suite 825

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	ND	0.0010	mg/L	1	A614769	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-17

Sampled By: Client

Sample Description: WF-POSO-017-FD // Water fountain 8th Floor Suite 800 Fitness room spigot

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	ND	0.0010	mg/L	1	A614769	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-19

Sampled By: Client

Sample Description: SK-POSO-019-FD // Breakroom 7th Floor across from Suite 710 kitchen sink

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0019	0.0010	mg/L	1	A614769	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-21

Sampled By: Client

Sample Description: WF-POSO-021-FD // Water fountain 7th Floor between men's/women's bathrooms Suite 730

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	ND	0.0010	mg/L	1	A614769	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-23

Sampled By: Client

Sample Description: SK-POSO-023-FD // Breakroom 6th Floor across from Suite 618
Conf. Room kitchen sink

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0016	0.0010	mg/L	1	A614769	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-25

Sampled By: Client

Sample Description: WF-POSO-025-FD // Water fountain 6th Floor Suite 640
between men's/women's bathrooms

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0010	0.0010	mg/L	1	A614770	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-27

Sampled By: Client

Sample Description: SK-POSO-027-FD // Breakroom 5th Floor across Suite 507
kitchen sink

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0017	0.0010	mg/L	1	A614770	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-29

Sampled By: Client

Sample Description: SK-POSO-029-FD // Breakroom 4th Floor across from Suite 425 kitchen sink

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0023	0.0010	mg/L	1	A614770	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-31

Sampled By: Client

Sample Description: WF-POSO-031-FD // Water fountain 4th Floor between men's/women's bathrooms

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0067	0.0010	mg/L	1	A614770	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-33

Sampled By: Client

Sample Description: SK-POSO-033-FD // Breakroom 3rd Floor kitchen sink

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	ND	0.0010	mg/L	1	A614770	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-35

Sampled By: Client

Sample Description: WF-POSO-035-FD // Water fountain 3rd Floor between men's/women's bathrooms

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0011	0.0010	mg/L	1	A614770	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-37

Sampled By: Client

Sample Description: SK-POSO-037-FD // Kitchenette 2nd Floor mail room kitchen sink

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0033	0.0010	mg/L	1	A614770	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-39

Sampled By: Client

Sample Description: WF-POSO-039-FD // Water fountain 2nd Floor across Suite 215

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	ND	0.0010	mg/L	1	A614770	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-41

Sampled By: Client

Sample Description: SK-POSO-041-FD // Breakroom 1st Floor kitchen sink with server/computer & files Suite 150 Oregon Board of Pharmacy

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	ND	0.0010	mg/L	1	A614770	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-43

Sampled By: Client

Sample Description: WF-POSO-043-FD // Water fountain 1st Floor between men's/women's bathrooms across from Suite 150 Oregon Board of Pharm

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	ND	0.0010	mg/L	1	A614770	10/26/16	10/27/16	



A6J2625

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J2625-45

Sampled By: Client

Sample Description: SK-POSO-045-FD // Employee lunch/breakroom basement kitchen sink

Sample Date - Time: 10/19/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	ND	0.0010	mg/L	1	A614770	10/26/16	10/27/16	

BSK Associates Fresno
Metals Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 200.8 - Quality Control

Batch: A614769

Prepared: 10/26/2016

Prep Method: EPA 200.2 - Pb/Cu Rule

Analyst: GNG

Blank (A614769-BLK1)

Lead	ND	0.0010	mg/L							10/27/16	
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Blank Spike (A614769-BS1)

Lead	0.094	0.0010	mg/L	0.10		94	85-115			10/27/16	
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Blank Spike Dup (A614769-BSD1)

Lead	0.098	0.0010	mg/L	0.10		98	85-115	4	20	10/27/16	
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Matrix Spike (A614769-MS1), Source: A6J2562-01

Lead	0.21	0.0020	mg/L	0.20	0.023	95	70-130			10/27/16	
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Matrix Spike (A614769-MS2), Source: A6J2625-05

Lead	0.18	0.0020	mg/L	0.20	ND	91	70-130			10/27/16	
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Matrix Spike Dup (A614769-MSD1), Source: A6J2562-01

Lead	0.22	0.0020	mg/L	0.20	0.023	97	70-130	2	20	10/27/16	
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Matrix Spike Dup (A614769-MSD2), Source: A6J2625-05

Lead	0.19	0.0020	mg/L	0.20	ND	92	70-130	0	20	10/27/16	
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EPA 200.8 - Quality Control

Batch: A614770

Prepared: 10/26/2016

Prep Method: EPA 200.2 - Pb/Cu Rule

Analyst: GNG

Blank (A614770-BLK1)

Lead	ND	0.0010	mg/L							10/27/16	
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Blank Spike (A614770-BS1)

Lead	0.096	0.0010	mg/L	0.10		96	85-115			10/27/16	
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Blank Spike Dup (A614770-BSD1)

Lead	0.096	0.0010	mg/L	0.10		96	85-115	0	20	10/27/16	
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Matrix Spike (A614770-MS1), Source: A6J2625-25

Lead	0.18	0.0020	mg/L	0.20	ND	91	70-130			10/27/16	
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Matrix Spike (A614770-MS2), Source: A6J2625-45

Lead	0.20	0.0020	mg/L	0.20	ND	98	70-130			10/27/16	
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Matrix Spike Dup (A614770-MSD1), Source: A6J2625-25

Lead	0.19	0.0020	mg/L	0.20	ND	96	70-130	5	20	10/27/16	
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Matrix Spike Dup (A614770-MSD2), Source: A6J2625-45

Lead	0.20	0.0020	mg/L	0.20	ND	98	70-130	1	20	10/27/16	
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Certificate of Analysis

Notes:

- The Chain of Custody document and Sample Integrity Sheet are part of the analytical report.
- Any remaining sample(s) for testing will be disposed of according to BSK's sample retention policy unless other arrangements are made in advance.
- All positive results for EPA Methods 504.1 and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed.
- Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.
- J-value is equivalent to DNQ (Detected, not quantified) which is a trace value. A trace value is an analyte detected between the MDL and the laboratory reporting limit. This result is of an unknown data quality and is only qualitative (estimated). Baseline noise, calibration curve extrapolation below the lowest calibrator, method blank detections, and integration artifacts can all produce apparent DNQ values, which contribute to the un-reliability of these values.
- (1) - Residual chlorine and pH analysis have a 15 minute holding time for both drinking and waste water samples as defined by the EPA and 40 CFR 136. Waste water and ground water (monitoring well) samples must be field filtered to meet the 15 minute holding time for dissolved metals.
- Summations of analytes (i.e. Total Trihalomethanes) may appear to add individual amounts incorrectly, due to rounding of analyte values occurring before or after the total value is calculated, as well as rounding of the total value.
- RL Multiplier is the factor used to adjust the reporting limit (RL) due to variations in sample preparation procedures and dilutions required for matrix interferences.
- Due to the subjective nature of the Threshold Odor Method, all characterizations of the detected odor are the opinion of the panel of analysts. The characterizations can be found in Standard Methods 2170B Figure 2170:1.
- The MCLs provided in this report (if applicable) represent the primary MCLs for that analyte.

Definitions

mg/L:	Milligrams/Liter (ppm)	MDL:	Method Detection Limit	MDA95:	Min. Detected Activity
mg/Kg:	Milligrams/Kilogram (ppm)	RL:	Reporting Limit: DL x Dilution	MPN:	Most Probable Number
µg/L:	Micrograms/Liter (ppb)	ND:	None Detected at RL	CFU:	Colony Forming Unit
µg/Kg:	Micrograms/Kilogram (ppb)	pCi/L:	Picocuries per Liter	Absent:	Less than 1 CFU/100mLs
%:	Percent Recovered (surrogates)	RL Mult:	RL Multiplier	Present:	1 or more CFU/100mLs
NR:	Non-Reportable	MCL:	Maximum Contaminant Limit		

Please see the individual Subcontract Lab's report for applicable certifications.

BSK is not accredited under the NELAP program for the following parameters:

****NA****

Certifications: Please refer to our website for a copy of our Accredited Fields of Testing under each certification.

Fresno

State of California - ELAP	1180	State of Hawaii	4021
State of Nevada	CA000792016-1	State of Oregon - NELAP	4021
EPA - UCMR3	CA00079	State of Washington	C997-16

Sacramento

State of California - ELAP	2435
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San Bernardino

State of California - ELAP	2993	State of Oregon - NELAP	4119-001
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Vancouver

State of Oregon - NELAP	WA100008-008	State of Washington	C824-16
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Engineering + Environmental

A6J2625
PBSEN1939



10/20/2016
10

OREGON DAS

LEAD IN DRINKING WATER TESTING PROGRAM

25103.003

FACILITY NAME: Portland State Office Building PROJECT #: [REDACTED] PH 40

ANALYSIS REQUESTED:

- LEAD (PB) IN DRINKING WATER
- COPPER (CU) IN DRINKING WATER

DATE: 10/19/16

RELINQ'D BY/SIGNATURE: Mike Golden

DATE/TIME: 10/19/16 1700

19.6°

RECEIVED BY/SIGNATURE: Jenea Kangel

DATE/TIME: 10/20/16 0900

EMAIL RESULTS TO: derek.may@pbsenv.com

TURN AROUND TIME: 7-10 days

SAMPLE DATA FORM

LAB	SAMPLE #	BUILDING	ROOM	LOCATION IN ROOM
1	SK-POSD-001-FO			Breakroom, 11 th Floor, Suite
2	SK-POSD-002-FL			1125 Kitchen Sink
*3	WF-POSD-003-FO			Water Fountain, 11 th Floor,
4	WF-POSD-004-FL			between Mens/Womans bathroom near Suite 1125
5	SK-POSD-005-FO			Breakroom, 10 th Floor, BOLT
6	SK-POSD-006-FL			near Suite 1030 entrance, Kitchen Sink
7	WF-POSD-007-FO			Water Fountain, 10 th Floor
8	WF-POSD-008-FL			between Mens/Woman bathroom across Suite 1030
9	SK-POSD-009-FO			Breakroom, 9 th Floor, across
10	SK-POSD-010-FL			from Suite 918, Kitchen Sink
11	WF-POSD-011-FO			Water Fountain, 9 th Floor, between
12	WF-POSD-012-FL			mens/womans bathrooms, near suite 925
13	SK-POSD-013-FO			Breakroom, 8 th Floor, across from
14	SK-POSD-014-FL			Suite 825, Kitchen Sink
15	WF-POSD-015-FO			Water Fountain, 8 th Floor, between
16	WF-POSD-016-FL			Mens/Womans bathrooms, across from Suite 835
17	WF-POSD-017-FO			Water Fountain, 8 th Floor, Suite 800
18	WF-POSD-018-FL			Fitness room (Spigot)
19	SK-POSD-019-FO			Breakroom, 7 th Floor, across from
20	SK-POSD-020-FL			Suite 710, Kitchen Sink
21	WF-POSD-021-FO			Water Fountain, 7 th Floor, Suite 730
22	WF-POSD-022-FL			between Mens/Womans bathrooms, 730
23	SK-POSD-023-FO			Breakroom, 6 th Floor, across from suite
24	SK-POSD-024-FL			018 (Conf. room) Kitchen Sink
25	WF-POSD-025-FO			Water Fountain 6 th Floor,
26	WF-POSD-026-FL			Suite 640, between mens/womans bathrooms.



Engineering + Environmental

A6J2625
PBSEN1939

10/20/2016
10

OREGON DAS
LEAD IN DRINKING WATER
TESTING PROGRAM



25103.003

FACILITY NAME: PORTLAND STATE OFFICE BUILDING

PROJECT #: [REDACTED] PH 40

ANALYSIS REQUESTED:

- LEAD (PB) IN DRINKING WATER
- COPPER (CU) IN DRINKING WATER

DATE: 10/19/2016

RELINQ'D BY/SIGNATURE: Mike Golden

DATE/TIME: 10/19/16 1700

19.6° RECEIVED BY/SIGNATURE: Renee Rangel

DATE/TIME: 10/20/16 0900

EMAIL RESULTS TO: derek.may@pbsenv.com

TURN AROUND TIME: 7-10 days

SAMPLE DATA FORM

LAB	SAMPLE #	BUILDING	ROOM	LOCATION IN ROOM
27	SK-POSO-027-FD			Breakroom 5th Floor, across
28	SK-POSO-028-FL			Suite 507, Kitchen Sink
29	SK-POSO-029-FD			Breakroom 4th Floor across from
30	SK-POSO-030-FL			suite 425, Kitchen Sink
31	WF-POSO-031-FD			Water Fountain, 4th Floor, between
32	WF-POSO-032-FL			mens/womans bathrooms
33	SK-POSO-033-FD			Breakroom, 3rd Floor, Kitchen
34	SK-POSO-034-FL			Sink
35	WF-POSO-035-FD			Water Fountain, 3rd Floor,
36	WF-POSO-036-FL			between mens/womans bathrooms
37	SK-POSO-037-FD			Kitchenette, 2nd Floor, Mail
38	SK-POSO-038-FL			Room, Kitchen Sink
39	WF-POSO-039-FD			Water Fountain, 2nd Floor,
40	WF-POSO-040-FL			across suite 215
41	SK-POSO-041-FD			Breakroom 1st Floor, Kitchen
42	SK-POSO-042-FL			Sink (with server/computer & files) Suite 150 (Oregon Board of Pharmacy)
43	WF-POSO-043-FD			Water Fountain, 1st Floor, between
44	WF-POSO-044-FL			mens/womans bathrooms, across from suite 150 (Oregon Board of Pharmacy)
45	SK-POSO-045-FD			Employee Lunch/Breakroom, Basement
46	SK-POSO-046-FL			Kitchen Sink

Sample Integrity

BSK Bottles: Yes No Page 1 of 1



COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$	Yes	No	<u>NA</u>	Were correct co received for the tests requested?	<u>Yes</u>	No	NA
	If samples were taken today, is there evidence that chilling has begun?	Yes	No	<u>NA</u>	Were there bubbles in the VOA vials? (Volatiles Only)	Yes	No	<u>NA</u>
	Did all bottles arrive unbroken and intact?	<u>Yes</u>	No		Was a sufficient amount of sample received?	<u>Yes</u>	No	
	Did all bottle labels agree with COC?	<u>Yes</u>	No		Do samples have a hold time <72 hours?	Yes	<u>No</u>	
	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes	No	<u>NA</u>	Was PM notified of discrepancies? PM: _____ By/Time: _____	Yes	No	<u>NA</u>

Bottles Received	250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V)	Checks	Passed?						
	Bacti Na ₂ S ₂ O ₃	—	—						
	None (P) White Cap	—	—						
	Cr6 (P) Lt. Green Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ DW	Cl, pH > 8	Y N						
	Cr6 (P) Pink Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ WW	pH 9.3-9.7	Y N						
	Cr6 (P) Black Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ 7199 ***24 HOUR HOLD TIME***	pH 9.0-9.5	Y N						
	HNO ₃ (P) Red Cap or HCl (P) Purple Cap/Lt. Blue Label	—	—						
	H ₂ SO ₄ (P) or (AG) Yellow Cap/Label	pH < 2	Y N						
	NaOH (P) Green Cap	Cl, pH > 10	Y N						
	NaOH + ZnAc (P)	pH > 9	Y N						
	Dissolved Oxygen 300ml (g)	—	—						
	None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270	—	—						
	HCl (AG) Lt. Blue Label O&G, Diesel	—	—						
	Ascorbic, EDTA, KH ₂ Ct (AG) Pink Label 525	—	—						
	Na ₂ O ₃ S 250mL (AG) Neon Green Label 515	—	—						
	Na ₂ S ₂ O ₃ 1 Liter (Brown P) 549	—	—						
	Na ₂ S ₂ O ₃ (AG) Blue Label 548, THM, 524	—	—						
	Na ₂ S ₂ O ₃ (CG) Blue Label 504, 505, 547	—	—						
	Na ₂ S ₂ O ₃ + MCAA (CG) Orange Label 531	pH < 3	Y N						
	NH ₄ Cl (AG) Purple Label 552	—	—						
	EDA (AG) Brown Label DBPs	—	—						
	HCL (CG) 524.2, BTEX, Gas, MTBE, 8260/624	—	—						
	Buffer pH 4 (CG)	—	—						
	H ₃ PO ₄ (CG) Salmon Label	—	—						
	Other:								
	Asbestos 1Liter Plastic w/ Foil	—	—						
	Low Level Hg / Metals Double Baggie	—	—						
	Bottled Water	—	—						
	Clear Glass 250mL / 500mL / 1 Liter	—	—						
	Soil Tube Brass / Steel / Plastic	—	—						
	Tedlar Bag / Plastic Bag	—	—						

Split	Container	Preservative	Date/Time/Initials	Container	Preservative	Date/Time/Initials
	<u>S</u> P	250*			S P	
S P				S P		

Comments: * Odd numbers only. RIR
** Half Full RIR



A6J2625



10212016

PBSEN1939

Turnaround: Standard

Due Date: 11/3/2016



PBS Environmental



Sample Integrity

BSK Bottles: Yes No Page 1 of 1



COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$	Yes	No	<u>NA</u>	Were correct co received for the tests requested?	Yes	No	<u>NA</u>
	If samples were taken today, is there evidence that chilling has begun?	Yes	No	<u>NA</u>	Were there bubbles in the VOA vials? (Volatiles Only)	Yes	No	<u>NA</u>
	Did all bottles arrive unbroken and intact?	<u>Yes</u>	No		Was a sufficient amount of sample received?	<u>Yes</u>	No	<u>No</u>
	Did all bottle labels agree with COC?	<u>Yes</u>	No		Do samples have a hold time <72 hours?	Yes	No	<u>No</u>
	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes	No	<u>NA</u>	Was PM notified of discrepancies? PM:	Yes	No	<u>NA</u>

Bottles Received	250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V)	Checks	Passed?						
	Bacti Na ₂ S ₂ O ₃	—	—	1-40					
	None (P) White Cap	—	—						
	Cr6 (P) Lt. Green Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ DW	Cl, pH > 8	Y N						
	Cr6 (P) Pink Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ WW	pH 9.3-9.7	Y N						
	Cr6 (P) Black Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ 7199 ***24 HOUR HOLD TIME***	pH 9.0-9.5	Y N						
	HNO ₃ (P) Red Cap or HCl (P) Purple Cap/Lt. Blue Label	—	—	10					
	H ₂ SO ₄ (P) or (AG) Yellow Cap/Label	pH < 2	Y N						
	NaOH (P) Green Cap	Cl, pH > 10	Y N						
	NaOH + ZnAc (P)	pH > 9	Y N						
	Dissolved Oxygen 300ml (g)	—	—						
	None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270	—	—						
	HCl (AG) Lt. Blue Label O&G, Diesel	—	—						
	Ascorbic, EDTA, KH ₂ Ct (AG) Pink Label 525	—	—						
	Na ₂ O ₃ S 250mL (AG) Neon Green Label 515	—	—						
	Na ₂ S ₂ O ₃ 1 Liter (Brown P) 549	—	—						
	Na ₂ S ₂ O ₃ (AG) Blue Label 548, THM, 524	—	—						
	Na ₂ S ₂ O ₃ (CG) Blue Label 504, 505, 547	—	—						
	Na ₂ S ₂ O ₃ + MCAA (CG) Orange Label 531	pH < 3	Y N						
	NH ₄ Cl (AG) Purple Label 552	—	—						
	EDA (AG) Brown Label DBPs	—	—						
	HCL (CG) 524.2, BTEX, Gas, MTBE, 8260/624	—	—						
	Buffer pH 4 (CG)	—	—						
	H ₃ PO ₄ (CG) Salmon Label	—	—						
	Other:								
	Asbestos 1Liter Plastic w/ Foil	—	—						
	Low Level Hg / Metals Double Baggie	—	—						
	Bottled Water	—	—						
	Clear Glass 250mL / 500mL / 1 Liter	—	—						
	Soil Tube Brass / Steel / Plastic	—	—						
	Tedlar Bag / Plastic Bag	—	—						

Split	Container		Preservative	Date/Time/Initials	Container		Preservative	Date/Time/Initials
	S	P			S	P		
	S	P			S	P		

Comments: * Odd numbers only. RUL All containers received intact 10/25
** Half Full RUL



BSK Associates Fresno
 1414 Stanislaus St
 Fresno, CA 93706
 559-497-2888 (Main)
 559-485-6935 (FAX)



A6J3197
 11/11/2016

Derek May
 PBS Environmental
 4412 SW Corbett Ave
 Portland, OR 97239

RE: Report for A6J3197 Oregon DAS - Lead

Dear Derek May,

Thank you for using BSK Associates for your analytical testing needs. In the following pages, you will find the test results for the samples submitted to our laboratory on 10/27/2016. The results have been approved for release by our Laboratory Director as indicated by the authorizing signature below.

The samples were analyzed for the test(s) indicated on the Chain of Custody (see attached) and the results relate only to the samples analyzed. BSK certifies that the testing was performed in accordance with the quality system requirements specified in the 2009 TNI Standard. Any deviations from this standard or from the method requirements for each test procedure performed will be annotated alongside the analytical result or noted in the Case Narrative. Unless otherwise noted, the sample results are reported on an "as received" basis.

If additional clarification of any information is required, please contact your Project Manager, Debra Karlsson, at 559-497-2888.

Thanks again for using BSK Associates. We value your business and appreciate your loyalty.

Sincerely,



Debra Karlsson, Project Coordinator



Accredited in Accordance with NELAP
 ORELAP #4021

Case Narrative

Project and Report Details **Invoice Details**

Client: PBS Environmental	Invoice To: PBS Environmental
Report To: Derek May	Invoice Attn: Accounts Payable
Project #: Portland State Office Building #25103.003 PH 40	Project PO#: -
Received: 10/27/2016 - 15:10	
Report Due: 11/10/2016	

Sample Receipt Conditions

Cooler: Default Cooler	Containers Intact
Temperature on Receipt °C: 20.4	COC/Labels Agree
	Received with no thermal preservation.
	Sample(s) split after receipt at the laboratory.
	Initial receipt at BSK-VAL

Data Qualifiers

The following qualifiers have been applied to one or more analytical results:

None applied

Report Distribution

<u>Recipient(s)</u>	<u>Report Format</u>	<u>CC:</u>
Derek May	FINAL.RPT	beth.powers@pbsenv.com



A6J3197

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J3197-01

Sampled By: Client

Sample Description: SK-POSO-047-FD // Water fountain 5th Floor between men's/women's bathrooms

Sample Date - Time: 10/22/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	ND	0.0010	mg/L	1	A615042	11/01/16	11/02/16	



A6J3197

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J3197-03

Sampled By: Client

Sample Description: SK-POSO-049-FD // Cafe kitchen sink next to elevator

Sample Date - Time: 10/22/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0048	0.0010	mg/L	1	A615042	11/01/16	11/02/16	



A6J3197

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J3197-05

Sampled By: Client

Sample Description: SK-POSO-051-FD // Water fill station kitchen sink adjacent to Conf. Room 1D

Sample Date - Time: 10/22/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	ND	0.0010	mg/L	1	A615042	11/01/16	11/02/16	



A6J3197

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J3197-07

Sampled By: Client

Sample Description: SK-POSO-053-FD // Kitchen sink (Left/South) dishwash area

Sample Date - Time: 10/22/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.018	0.0010	mg/L	1	A615042	11/01/16	11/02/16	



A6J3197

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J3197-08

Sampled By: Client

Sample Description: SK-POSO-054-FL // Kitchen sink (Left/South) dishwash area

Sample Date - Time: 10/22/16 - 00:00

Matrix: Drinking Water

Sample Type: First Flush

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0074	0.0010	mg/L	1	A615447	11/09/16	11/09/16	



A6J3197

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J3197-09

Sampled By: Client

Sample Description: SK-POSO-055-FD // Kitchen sink (middle sink) dishwasher area

Sample Date - Time: 10/22/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.013	0.0010	mg/L	1	A615042	11/01/16	11/02/16	



A6J3197

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J3197-11

Sampled By: Client

Sample Description: SK-POSO-057-FD // Kitchen sink left of dishwasher, dishwash area

Sample Date - Time: 10/22/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0032	0.0010	mg/L	1	A615042	11/01/16	11/02/16	



A6J3197

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J3197-13

Sampled By: Client

Sample Description: SK-POSO-059-FD // Kitchen sink left of ice machine food prep area

Sample Date - Time: 10/22/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0023	0.0010	mg/L	1	A615042	11/01/16	11/02/16	



A6J3197

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J3197-15

Sampled By: Client

Sample Description: SK-POSO-061-FD // Kitchen sink middle food prep area

Sample Date - Time: 10/22/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0013	0.0010	mg/L	1	A615042	11/01/16	11/02/16	



A6J3197

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J3197-17

Sampled By: Client

Sample Description: SK-POSO-063-FD // Kitchen sink West food prep area

Sample Date - Time: 10/22/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0014	0.0010	mg/L	1	A615042	11/01/16	11/02/16	



A6J3197

Oregon DAS - Lead

Portland State Office Building #25103.003 PH 40

Certificate of Analysis

Sample ID: A6J3197-19

Sampled By: Client

Sample Description: SK-POSO-065-FD // Kitchen sink far left/East food prep area

Sample Date - Time: 10/22/16 - 00:00

Matrix: Drinking Water

Sample Type: First Draw

BSK Associates Fresno

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Lead	EPA 200.8	0.0014	0.0010	mg/L	1	A615042	11/01/16	11/02/16	

BSK Associates Fresno
Metals Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 200.8 - Quality Control

Batch: A615042

Prepared: 11/1/2016

Prep Method: EPA 200.2

Analyst: GNG

Blank (A615042-BLK1)

Lead ND 0.0010 mg/L 11/02/16

Blank Spike (A615042-BS1)

Lead 0.10 0.0010 mg/L 0.10 100 85-115 11/02/16

Blank Spike Dup (A615042-BSD1)

Lead 0.10 0.0010 mg/L 0.10 102 85-115 2 20 11/02/16

Matrix Spike (A615042-MS1), Source: A6J3197-01

Lead 0.20 0.0020 mg/L 0.20 ND 98 70-130 11/02/16

Matrix Spike (A615042-MS2), Source: A6J3200-01

Lead 0.19 0.0020 mg/L 0.20 ND 95 70-130 11/02/16

Matrix Spike Dup (A615042-MSD1), Source: A6J3197-01

Lead 0.20 0.0020 mg/L 0.20 ND 99 70-130 1 20 11/02/16

Matrix Spike Dup (A615042-MSD2), Source: A6J3200-01

Lead 0.19 0.0020 mg/L 0.20 ND 96 70-130 1 20 11/02/16

EPA 200.8 - Quality Control

Batch: A615447

Prepared: 11/9/2016

Prep Method: EPA 200.2 - Pb/Cu Rule

Analyst: GNG

Blank (A615447-BLK1)

Lead ND 0.0010 mg/L 11/09/16

Blank Spike (A615447-BS1)

Lead 0.089 0.0010 mg/L 0.10 89 85-115 11/09/16

Blank Spike Dup (A615447-BSD1)

Lead 0.089 0.0010 mg/L 0.10 89 85-115 0 20 11/09/16

Matrix Spike (A615447-MS1), Source: A6J2696-10

Lead 0.18 0.0020 mg/L 0.20 0.0048 89 70-130 11/09/16

Matrix Spike (A615447-MS2), Source: A6J3336-12

Lead 0.23 0.0020 mg/L 0.20 0.026 101 70-130 11/09/16

Matrix Spike Dup (A615447-MSD1), Source: A6J2696-10

Lead 0.18 0.0020 mg/L 0.20 0.0048 87 70-130 2 20 11/09/16

Matrix Spike Dup (A615447-MSD2), Source: A6J3336-12

Lead 0.21 0.0020 mg/L 0.20 0.026 94 70-130 6 20 11/09/16

Certificate of Analysis

Notes:

- The Chain of Custody document and Sample Integrity Sheet are part of the analytical report.
- Any remaining sample(s) for testing will be disposed of according to BSK's sample retention policy unless other arrangements are made in advance.
- All positive results for EPA Methods 504.1 and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed.
- Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.
- J-value is equivalent to DNQ (Detected, not quantified) which is a trace value. A trace value is an analyte detected between the MDL and the laboratory reporting limit. This result is of an unknown data quality and is only qualitative (estimated). Baseline noise, calibration curve extrapolation below the lowest calibrator, method blank detections, and integration artifacts can all produce apparent DNQ values, which contribute to the un-reliability of these values.
- (1) - Residual chlorine and pH analysis have a 15 minute holding time for both drinking and waste water samples as defined by the EPA and 40 CFR 136. Waste water and ground water (monitoring well) samples must be field filtered to meet the 15 minute holding time for dissolved metals.
- Summations of analytes (i.e. Total Trihalomethanes) may appear to add individual amounts incorrectly, due to rounding of analyte values occurring before or after the total value is calculated, as well as rounding of the total value.
- RL Multiplier is the factor used to adjust the reporting limit (RL) due to variations in sample preparation procedures and dilutions required for matrix interferences.
- Due to the subjective nature of the Threshold Odor Method, all characterizations of the detected odor are the opinion of the panel of analysts. The characterizations can be found in Standard Methods 2170B Figure 2170:1.
- The MCLs provided in this report (if applicable) represent the primary MCLs for that analyte.

Definitions

mg/L:	Milligrams/Liter (ppm)	MDL:	Method Detection Limit	MDA95:	Min. Detected Activity
mg/Kg:	Milligrams/Kilogram (ppm)	RL:	Reporting Limit: DL x Dilution	MPN:	Most Probable Number
µg/L:	Micrograms/Liter (ppb)	ND:	None Detected at RL	CFU:	Colony Forming Unit
µg/Kg:	Micrograms/Kilogram (ppb)	pCi/L:	Picocuries per Liter	Absent:	Less than 1 CFU/100mLs
%:	Percent Recovered (surrogates)	RL Mult:	RL Multiplier	Present:	1 or more CFU/100mLs
NR:	Non-Reportable	MCL:	Maximum Contaminant Limit		

Please see the individual Subcontract Lab's report for applicable certifications.

BSK is not accredited under the NELAP program for the following parameters:

****NA****

Certifications: Please refer to our website for a copy of our Accredited Fields of Testing under each certification.

Fresno

State of California - ELAP	1180	State of Hawaii	4021
State of Nevada	CA000792016-1	State of Oregon - NELAP	4021
EPA - UCMR3	CA00079	State of Washington	C997-16

Sacramento

State of California - ELAP	2435
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San Bernardino

State of California - ELAP	2993	State of Oregon - NELAP	4119-001
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Vancouver

State of Oregon - NELAP	WA100008-008	State of Washington	C824-16
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Sample Integrity



BSK Bottles: Yes No

Page 1 of 1

COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$	Yes	No	<u>NA</u>	Were correct containers and preservatives received for the tests requested?	<u>Yes</u>	No	NA
	If samples were taken today, is there evidence that chilling has begun?	Yes	No	<u>NA</u>	Were there bubbles in the VOA vials? (Volatiles Only)	Yes	No	<u>NA</u>
	Did all bottles arrive unbroken and intact?	<u>Yes</u>	No		Was a sufficient amount of sample received?	<u>Yes</u>	No	
	Did all bottle labels agree with COC?	<u>Yes</u>	No		Do samples have a hold time <72 hours?	Yes	<u>No</u>	
	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes	No	<u>NA</u>	Was PM notified of discrepancies? PM: _____ By/Time: _____	Yes	No	<u>NA</u>

Bottles Received	250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V)	Checks	Passed?						
				1-20					
	Bacti Na ₂ S ₂ O ₃	—	—						
	None (P) White Cap	—	—						
	Cr6 (P) Lt. Green Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ DW	Cl, pH > 8	Y N						
	Cr6 (P) Pink Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ WW	pH 9.3-9.7	Y N						
	Cr6 (P) Black Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ 7199 ***24 HOUR HOLD TIME***	pH 9.0-9.5	Y N						
	HNO ₃ (P) ^{Red Cap} or HCl (P) ^{Purple Cap/Lt. Blue Label}	—	—						
	H ₂ SO ₄ (P) or (AG) ^{Yellow Cap/Label}	pH < 2	Y N						
	NaOH (P) ^{Green Cap}	Cl, pH > 10	Y N						
	NaOH + ZnAc (P)	pH > 9	Y N						
	Dissolved Oxygen 300ml (g)	—	—						
	None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270	—	—						
	HCl (AG) Lt. Blue Label O&G, Diesel	—	—						
	Ascorbic, EDTA, KH ₂ Ct (AG) ^{Pink Label} 525	—	—						
	Na ₂ O ₃ S 250mL (AG) ^{Neon Green Label} 515	—	—						
	Na ₂ S ₂ O ₃ 1 Liter (Brown P) 549	—	—						
	Na ₂ S ₂ O ₃ (AG) ^{Blue Label} 548, THM, 524	—	—						
	Na ₂ S ₂ O ₃ (CG) ^{Blue Label} 504, 505, 547	—	—						
	Na ₂ S ₂ O ₃ + MCAA (CG) ^{Orange Label} 531	pH < 3	Y N						
	NH ₄ Cl (AG) ^{Purple Label} 552	—	—						
	EDA (AG) ^{Brown Label} DBPs	—	—						
	HCL (CG) 524.2, BTEX, Gas, MTBE, 8260/624	—	—						
	Buffer pH 4 (CG)	—	—						
	H ₃ PO ₄ (CG) ^{Salmon Label}	—	—						
	Other:								
	Asbestos 1Liter Plastic w/ Foil	—	—						
	Low Level Hg / Metals Double Baggie	—	—						
	Bottled Water	—	—						
	Clear Glass 250mL / 500mL / 1 Liter	—	—						
	Soil Tube Brass / Steel / Plastic	—	—						
	Tedlar Bag / Plastic Bag	—	—						

Split	Container	Preservative	Date/Time/Initials	Container	Preservative	Date/Time/Initials
	S P	250*		S P		
	S P			S P		

Comments

* odd numbers only. RIL



A6J3197



10272016

PBSEN1939

Turnaround: Standard

Due Date: 11/10/2016



PBS Environmental



Printed: 10/31/2016 4:09:56PM

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Sample Integrity

PBSEN1939

10



BSK Bottles: Yes No

Page 1 of 1

COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$	Yes	No	<u>NA</u>	Were correct containers and preservatives received for the tests requested?	<u>Yes</u>	No	NA
	If samples were taken today, is there evidence that chilling has begun?	Yes	No	<u>NA</u>	Were there bubbles in the VOA vials? (Volatiles Only)	Yes	No	<u>NA</u>
	Did all bottles arrive unbroken and intact?	<u>Yes</u>	No		Was a sufficient amount of sample received?	<u>Yes</u>	No	
	Did all bottle labels agree with COC?	<u>Yes</u>	No		Do samples have a hold time <72 hours?	<u>Yes</u>	No	<u>NA</u>
	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes	No	<u>NA</u>	Was PM notified of discrepancies? PM: _____ By/Time: _____	Yes	No	<u>NA</u>

Bottles Received	Description	Checks	Passed?	Notes				
	250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V)			1-20				
	Bacti Na ₂ S ₂ O ₃	—	—					
	None (P) White Cap	—	—					
	Cr6 (P) Lt. Green Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ DW	Cl, pH > 8	Y N					
	Cr6 (P) Pink Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ WW	pH 9.3-9.7	Y N					
	Cr6 (P) Black Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ 7199 ***24 HOUR HOLD TIME***	pH 9.0-9.5	Y N					
	HNO ₃ (P) Red Cap or HCl (P) Purple Cap/Lt. Blue Label	—	—	10				
	H ₂ SO ₄ (P) or (AG) Yellow Cap/Label	pH < 2	Y N					
	NaOH (P) Green Cap	Cl, pH > 10	Y N					
	NaOH + ZnAc (P)	pH > 9	Y N					
	Dissolved Oxygen 300ml (g)	—	—					
	None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270	—	—					
	HCl (AG) Lt. Blue Label O&G, Diesel	—	—					
	Ascorbic, EDTA, KH ₂ Ct (AG) Pink Label 525	—	—					
	Na ₂ O ₃ S 250mL (AG) Neon Green Label 515	—	—					
	Na ₂ S ₂ O ₃ 1 Liter (Brown P) 549	—	—					
	Na ₂ S ₂ O ₃ (AG) Blue Label 548, THM, 524	—	—					
	Na ₂ S ₂ O ₃ (CG) Blue Label 504, 505, 547	—	—					
	Na ₂ S ₂ O ₃ + MCAA (CG) Orange Label 531	pH < 3	Y N					
	NH ₄ Cl (AG) Purple Label 552	—	—					
	EDA (AG) Brown Label DBPs	—	—					
	HCL (CG) 524.2.BTEX, Gas, MTBE, 8260/624	—	—					
	Buffer pH 4 (CG)	—	—					
	H ₃ PO ₄ (CG) Salmon Label	—	—					
	Other:							
	Asbestos 1Liter Plastic w/ Foil	—	—					
	Low Level Hg / Metals Double Baggie	—	—					
	Bottled Water	—	—					
	Clear Glass 250mL / 500mL / 1 Liter	—	—					
	Soil Tube Brass / Steel / Plastic	—	—					
	Tedlar Bag / Plastic Bag	—	—					

Split	Container	Preservative	Date/Time/Initials	Container	Preservative	Date/Time/Initials
	<u>S</u> P S P	250*		S P S P		

Comments

* Odd numbers only. RIL
Rec all odd bott 10
Mj 10-31-16

Sample Integrity

BSK Bottles: Yes No Page ___ of ___



COC Info		Yes	No	NA	Were correct containers and preservatives received for the tests requested?		Yes	No	NA
Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$				<input checked="" type="radio"/>			<input checked="" type="radio"/>		
If samples were taken today, is there evidence that chilling has begun?				<input checked="" type="radio"/>	Were there bubbles in the VOA vials? (Volatiles Only)		Yes	No	<input checked="" type="radio"/>
Did all bottles arrive unbroken and intact?		<input checked="" type="radio"/>	No		Was a sufficient amount of sample received?		<input checked="" type="radio"/>	No	
Did all bottle labels agree with COC?		<input checked="" type="radio"/>	No		Do samples have a hold time <72 hours?		Yes	<input checked="" type="radio"/>	No
Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?		Yes	No	<input checked="" type="radio"/>	Was PM notified of discrepancies? PM: _____ By/Time: _____		Yes	No	<input checked="" type="radio"/>
250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V)		Checks	Passed?						
Bacti $\text{Na}_2\text{S}_2\text{O}_3$		—	—						
None (P) White Cap		—	—						
Cr6 (P) Lt. Green Label/Blue Cap $\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ DW		Cl, pH > 8	Y	N					
Cr6 (P) Pink Label/Blue Cap $\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ WW		pH 9.3-9.7	Y	N					
Cr6 (P) Black Label/Blue Cap $\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ 7199 ***24 HOUR HOLD TIME***		pH 9.0-9.5	Y	N					
HNO ₃ (P) Red Cap or HCl (P) Purple Cap/Lt. Blue Label		—	—						
H ₂ SO ₄ (P) or (AG) Yellow Cap/Label		pH < 2	Y	N					
NaOH (P) Green Cap		Cl, pH > 10	Y	N					
NaOH + ZnAc (P)		pH > 9	Y	N					
Dissolved Oxygen 300ml (g)		—	—						
None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270		—	—						
HCl (AG) Lt. Blue Label O&G, Diesel		—	—						
Ascorbic, EDTA, KH ₂ Ct (AG) Pink Label 525		—	—						
Na ₂ O ₃ S 250mL (AG) Neon Green Label 515		—	—						
Na ₂ S ₂ O ₃ 1 Liter (Brown P) 549		—	—						
Na ₂ S ₂ O ₃ (AG) Blue Label 548, THM, 524		—	—						
Na ₂ S ₂ O ₃ (CG) Blue Label 504, 505, 547		—	—						
Na ₂ S ₂ O ₃ + MCAA (CG) Orange Label 531		pH < 3	Y	N					
NH ₄ Cl (AG) Purple Label 552		—	—						
EDA (AG) Brown Label DBPs		—	—						
HCL (CG) 524.2, BTEX, Gas, MTBE, 8260/624		—	—						
Buffer pH 4 (CG)		—	—						
H ₃ PO ₄ (CG) Salmon Label		—	—						
Other:									
Asbestos 1Liter Plastic w/ Foil		—	—						
Low Level Hg / Metals Double Baggie		—	—						
Bottled Water		—	—						
Clear Glass 250mL / 500mL / 1 Liter		—	—						
Soil Tube Brass / Steel / Plastic		—	—						
Tedlar Bag / Plastic Bag		—	—						
Split	Container	Preservative	Date/Time/Initials		Container	Preservative	Date/Time/Initials		
	S P	1L → 250mL		11/7/16	S P				
	S P				S P				
Comments	FO sample exceeded MCL FL sample pulled for analysis OK *RECEIVED ALL 250ML POLY ON 11-8-16 1230 -TSJ								