



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
Real Estate Building
1177 Center Street NE
Salem, Oregon 97301
PBS Project # 25103.003 Phase 0024

Dear Mr. Miller:

On October 17, 2016, PBS Engineering and Environmental Inc. (PBS) performed drinking water sampling at the Real Estate Building located at 1177 Center Street NE in Salem, 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.

Four 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 two first draw samples were none detected and 1.2. Laboratory analysis indicates that both drinking water samples contained lead at concentrations below the EPA action level of 15 ppb.

The following table presents all first draw sample locations and lead concentrations in ppb.

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

First Draw Drinking Water Sample Locations and Lead Concentrations

| Sample Number | Sample Location | Lead Concentration (ppb) |
|----------------------|---|---------------------------------|
| SK-REA-001-FD | Break room kitchen sink, first floor | 1.2 |
| WF-REA-003-FD | Water fountain between men's and women' bathrooms | ND |

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.



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.

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

RE: Report for A6J2377 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 10/19/2016. 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
Report To: Derek May
Project #: Real Estate #25103.003 PH 24
Received: 10/19/2016 - 10:00
Report Due: 11/02/2016

Invoice To: PBS Environmental
Invoice Attn: Accounts Payable
Project PO#: -

Sample Receipt Conditions

Cooler: Default Cooler
Temperature on Receipt °C: 20.3

Containers Intact
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

| Recipient(s) | Report Format | CC: |
|--------------|---------------|-----|
| Derek May | FINAL.RPT | |



A6J2377

Oregon DAS - Lead
Real Estate #25103.003 PH 24

Certificate of Analysis

Sample ID: A6J2377-01

Sampled By: Client

Sample Description: SK-REA-001-FD // Breakroom kitchen sink 1st Floor

Sample Date - Time: 10/17/16 - 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 | 0.0012 | 0.0010 | mg/L | 1 | A614755 | 10/26/16 | 10/27/16 | |



A6J2377

Oregon DAS - Lead
Real Estate #25103.003 PH 24

Certificate of Analysis

Sample ID: A6J2377-03
Sampled By: Client
Sample Description: WF-REA-003-FD // Water fountain between mens/womens
bathrooms

Sample Date - Time: 10/17/16 - 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 | A614755 | 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 |
|---------|--------|----|-------|-------------|---------------|------|-------------|-----|-----------|---------------|------|
|---------|--------|----|-------|-------------|---------------|------|-------------|-----|-----------|---------------|------|

EPA 200.8 - Quality Control

Batch: A614755

Prepared: 10/26/2016

Prep Method: EPA 200.2

Analyst: GNG

Blank (A614755-BLK1)

| | | | | | | | | | | | |
|------|----|--------|------|--|--|--|--|--|--|----------|--|
| Lead | ND | 0.0010 | mg/L | | | | | | | 10/27/16 | |
|------|----|--------|------|--|--|--|--|--|--|----------|--|

Blank Spike (A614755-BS1)

| | | | | | | | | | | | |
|------|------|--------|------|------|--|-----|--------|--|--|----------|--|
| Lead | 0.10 | 0.0010 | mg/L | 0.10 | | 102 | 85-115 | | | 10/27/16 | |
|------|------|--------|------|------|--|-----|--------|--|--|----------|--|

Blank Spike Dup (A614755-BSD1)

| | | | | | | | | | | | |
|------|------|--------|------|------|--|-----|--------|---|----|----------|--|
| Lead | 0.10 | 0.0010 | mg/L | 0.10 | | 104 | 85-115 | 2 | 20 | 10/27/16 | |
|------|------|--------|------|------|--|-----|--------|---|----|----------|--|

Matrix Spike (A614755-MS1), Source: A6J2399-81

| | | | | | | | | | | | |
|------|------|--------|------|------|-------|-----|--------|--|--|----------|--|
| Lead | 0.21 | 0.0020 | mg/L | 0.20 | 0.015 | 100 | 70-130 | | | 10/27/16 | |
|------|------|--------|------|------|-------|-----|--------|--|--|----------|--|

Matrix Spike (A614755-MS2), Source: A6J2381-07

| | | | | | | | | | | | |
|------|------|--------|------|------|----|----|--------|--|--|----------|--|
| Lead | 0.20 | 0.0020 | mg/L | 0.20 | ND | 99 | 70-130 | | | 10/27/16 | |
|------|------|--------|------|------|----|----|--------|--|--|----------|--|

Matrix Spike Dup (A614755-MSD1), Source: A6J2399-81

| | | | | | | | | | | | |
|------|------|--------|------|------|-------|-----|--------|---|----|----------|--|
| Lead | 0.22 | 0.0020 | mg/L | 0.20 | 0.015 | 100 | 70-130 | 0 | 20 | 10/27/16 | |
|------|------|--------|------|------|-------|-----|--------|---|----|----------|--|

Matrix Spike Dup (A614755-MSD2), Source: A6J2381-07

| | | | | | | | | | | | |
|------|------|--------|------|------|----|----|--------|---|----|----------|--|
| Lead | 0.20 | 0.0020 | mg/L | 0.20 | ND | 99 | 70-130 | 0 | 20 | 10/27/16 | |
|------|------|--------|------|------|----|----|--------|---|----|----------|--|

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 |
|----------------------------|------|

San Bernardino

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

Vancouver

| | | | |
|-------------------------|--------------|---------------------|---------|
| State of Oregon - NELAP | WA100008-008 | State of Washington | C824-16 |
|-------------------------|--------------|---------------------|---------|



Engineering + Environmental

A6J2377
PBSEN1939

10/19/2016
10

OREGON DAS
LEAD IN DRINKING WATER TESTING PROGRAM

25103.003

FACILITY NAME: REAL ESTATE

PROJECT #: [REDACTED] PH 24

ANALYSIS REQUESTED:

- LEAD (Pb) IN DRINKING WATER
- COPPER (Cu) IN DRINKING WATER

DATE: 10/17/16 MG +500

RELINQ'D BY/SIGNATURE: Mike Golden / [Signature]

DATE/TIME: 10/17/16 1500

20.3°

RECEIVED BY/SIGNATURE: [Signature]

DATE/TIME: 10/19/16 1000

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-REA-001-FO | | | Breakroom, Kitchen Sink |
| 2 | SK-REA-002-FL | | | 1st Floor |
| 3 | SK-REA-003-FO | | | |
| 3 | WF-REA-003-FO | | | Water Fountain between mens/womans bathroom. |
| 4 | WF-REA-004-FL | | | |
| | | | | |
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| | | | | |
| | | | | |

Sample Integrity

BSK Bottles: Yes No

Page 1 of 1



| COC Info | | Yes | No | NA | Were correct co received for the tests requested? | | Yes | No | NA |
|--|-------------------------|--------------|--------------------|-----------|---|--------------|--------------------|-----------|-----------|
| Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 10^{\circ}\text{C}$ | | | | <u>NA</u> | | | <u>Yes</u> | | |
| If samples were taken today, is there evidence that chilling has begun? | | | | <u>NA</u> | Were there bubbles in the VOA vials? (Volatiles Only) | | | | <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> |
| 250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V) | | Checks | Passed? | | 1-4 | | | | |
| 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) ^{Brown 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 250* | | | | S P | | | | |
| Comments | * odd numbers only. RIL | | | | | | | | |



A6J2377



10192016

PBSEN1939

Turnaround: Standard

Due Date: 11/2/2016



PBS Environmental



Printed: 10/24/2016 12:17:44PM

Page 1 of 1

Page 9 of 10

Sample Integrity

A6J2377
PBSEN1939

10/19/2016
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 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? | <u>Yes</u> | 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: _____ By/Time: _____ | Yes | No | <u>NA</u> |

| Bottles Received | 250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V) | Checks | | Passed? | | | | | |
|-------------------------|--|-------------|---|---------|---|---|---|--|--|
| | | Y | N | Y | N | | | | |
| | Bacti Na ₂ S ₂ O ₃ | — | — | — | — | 1 | 1 | | |
| | 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) ^{Blue Cap} or HCl (P) Purple Cap/Lt. Blue Label | — | — | | | 1 | 0 | | |
| | 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) 608/808/1/8082, 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. RUL
all bottles accounted for EUC

Labeled by: _____ @ _____ Labels checked by: eva @ 1606 RUSH Paged by: _____ @ _____