

**Portland Public Schools
Lead Water Sampling Results
Initial Flush Sample Data
Markham Site - Test 5**

Sample Identification #	Location	Date/Time Collected	Date Analyzed	Lab ID	Analyte	Results	Detecti on Limit	PPS Action Level*	Units
170-DF-6031-NA-006-A	Headstart	4/27/2023	5/1/2023	A3D1666-01	Lead	0.925	0.2	15	ppb

Analyzed by: Apex Laboratories

Reviewed by: PBS Engineering and Environmental

*OHA Action Level = 15ppb

Page 1 of 1



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Tuesday, May 2, 2023

Joel McCarthy

PBS Engineering and Environmental

4412 S Corbett Ave

Portland, OR 97239

RE: A3D1666 - Portland Public Schools - Markham/25000.219

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A3D1666, which was received by the laboratory on 4/27/2023 at 12:45:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: jwoodcock@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Default Cooler

20.1 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



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Jason Woodcock, Project Manager



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Portland, OR 97239

Project: Portland Public Schools

Project Number: Markham/25000.219
Project Manager: Joel McCarthy

Report ID:

A3D1666 - 05 02 23 1536

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
170-DF-6031-NA-006-A	A3D1666-01	Drinking Water	04/27/23 00:00	04/27/23 12:45

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ANALYTICAL SAMPLE RESULTS

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
170-DF-6031-NA-006-A (A3D1666-01)				Matrix: Drinking Water				
Batch: 23E0038								
Lead	0.925	---	0.200	ug/L	1	05/01/23 14:51	EPA 200.8	

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Portland, OR 97239Project: **Portland Public Schools**Project Number: **Markham/25000.219**Project Manager: **Joel McCarthy****Report ID:****A3D1666 - 05 02 23 1536**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23E0038 - EPA 200.8 Direct Analysis						Drinking Water						
Blank (23E0038-BLK1)		Prepared: 05/01/23 11:13			Analyzed: 05/01/23 14:48							
EPA 200.8												
Lead	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
LCS (23E0038-BS1)		Prepared: 05/01/23 11:13			Analyzed: 05/01/23 14:49							
EPA 200.8												
Lead	15.1	---	0.201	ug/L	1	15.0	---	101	85 - 115%	---	---	
Duplicate (23E0038-DUP1)		Prepared: 05/01/23 11:13			Analyzed: 05/01/23 14:52							
QC Source Sample: 170-DF-6031-NA-006-A (A3D1666-01)												
EPA 200.8												
Lead	1.05	---	0.200	ug/L	1	---	0.925	---	---	13	20%	
Matrix Spike (23E0038-MS1)		Prepared: 05/01/23 11:13			Analyzed: 05/01/23 14:53							
QC Source Sample: 170-DF-6031-NA-006-A (A3D1666-01)												
EPA 200.8												
Lead	15.4	---	0.201	ug/L	1	15.0	0.925	97	70 - 130%	---	---	

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SAMPLE PREPARATION INFORMATION

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Prep: EPA 200.8 Direct Analysis

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 23E0038</u>							
A3D1666-01	Drinking Water	EPA 200.8	04/27/23 00:00	05/01/23 11:13	10mL/10mL	10mL/10mL	1.00

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QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

There are No Qualifiers on Sample or QC Data for this report

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.
ND Analyte NOT DETECTED at or above the detection or reporting limit.
NR Result Not Reported.
RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.
"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation)

EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
<u>All reported analytes are included in Apex Laboratories' current ORELAP scope.</u>					

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

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APEX LABS 6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323		CHAIN OF CUSTODY Lab # A3D1666 of 1 COC	
Company: PBS Eng. & Env.	Project Mgr: Joel McCarthy	Project Name: Markham	Project #: 25000.219
Address: 4412 S Corbett Ave, Portland, OR 97239	Phone: 971.284.7762	Email: joel.mccarthy@pbsusa.com	PO #
Sampled by: Che Cheng Lin			
Site Location: OR WA CA AK ID			
SAMPLE ID	LAB ID #	DATE	TIME
170-DF-6031-NA-006-A	4427	6:30	
MATRIX			
# OF CONTAINERS			
NWTPH-HCID			
NWTPH-DX			
NWTPH-GX			
8260 BTEX			
8260 RBDM VOCs			
8260 Halo VOCs			
8260 VOCs Full List			
8270 SIM PAHs			
8270 Semi-Vols Full List			
8082 PCBs			
8081 Pest			
RCRA Metals (8)			
Priority Metals (13)			
AL, Sb, As, Ba, Be, Bi, Br, Cd, Cr, Cu, Fe, Hg, Mn, Mo, Ni, Pb, Se, Ag, Na, Ti, V, Zn			
TOTAL DIS. TCLP			
TCLP Metals (8)			
Archive			
Lead			
SPECIAL INSTRUCTIONS:			
Normal Turn Around Time (TAT) = 10 Business Days			
TAT Requested (circle)			
1 Day	2 Day	3 Day	Other:
4 DAY	5 DAY		
SAMPLES ARE HELD FOR 30 DAYS			
RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Che Cheng Lin	Signature: [Signature]	Signature:	Signature:
Date: 4/27/23	Date: 4/27/23	Date:	Date:
Printed Name: Che Cheng Lin	Printed Name: [Name]	Printed Name:	Printed Name:
Time: 10:00	Time: 1245	Time:	Time:
Company: PBS	Company: APEX LABS	Company:	Company:

Apex Laboratories

[Signature]

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APEX LABS COOLER RECEIPT FORM

Client: PBS Eng+ Env Element WO#: A3 D1666

Project/Project #: Markham 25000.219

Delivery Info:

Date/time received: 4/27/23 @ 1245 By: EST

Delivered by: Apex ☒ Client ☐ ESS ☐ FedEx ☐ UPS ☐ Radio ☐ Morgan ☐ SDS ☐ Evergreen ☐ Other

Cooler Inspection Date/time inspected: 4/27/23 @ 1313 By: EST

Chain of Custody included? Yes ☒ NoSigned/dated by client? Yes ☒ No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	20.1						
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	N						
Temp. blanks? (Y/N)	N						
Ice type: (Gel/Real/Other)	NA						
Condition (In/Out):	OUT						

Cooler out of temp? (Y/N) Possible reason why: Drinking water

Green dots applied to out of temperature samples? Yes ☒ NoOut of temperature samples form initiated? Yes ☒ No

Sample Inspection: Date/time inspected: 4/27/23 @ 1410 By: RHP

All samples intact? Yes ☒ No Comments:Bottle labels/COCs agree? Yes No ☒ Comments: CONTAINING REBIS DF-6031COC/container discrepancies form initiated? Yes No ☒Containers/volumes received appropriate for analysis? Yes ☒ No Comments:Do VOA vials have visible headspace? Yes No NA ☒

Comments:

Water samples: pH checked: Yes ☒ No NA pH appropriate? Yes ☒ No NA

Comments:

Additional information:

Labeled by:

RHP

Witness:

SS

Cooler Inspected by:

RHP

Form Y-003 R-00

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