

8612 Eagle Creek Parkway, Savage, MN 55378-1284
Tel: 952 746-5880 ◆ Fax: 952 746-5882
mailbox@FieldConsultingInc.com

February 26, 2019

ISD #831 6100 North 210th Street Forest Lake, MN 55025 Attn: Bill Schwartz

RE: Amendment to Final Report: First Draw Lead in Drinking Water Sampling (November 2018)

SITES: Lino Lakes, Linwood, Scandia and Wyoming Elementary

PROJECT #: 19044

I. INTRODUCTION

Field Environmental Consulting, Inc. (FIELD ENVIRONMENTAL) tested drinking water outlets for lead concentration at Lino Lakes, Linwood, Scandia and Wyoming Elementary per District request in October 2018. In a *Final Report* dated November 14, 2018, the following results were communicated to ISD #831:

Lino Lakes Elementary:

Two (2) out of the seventy-seven (77) samples collected were above the recommended limit of 20 ppb. A sink faucet located in Classroom 207 and the kettle located within the Kitchen were above the action level.

Linwood Elementary:

Four (4) out of the forty-three (43) samples collected were above the recommended limit of 20 ppb. A sink faucet and kettle located within the Kitchen and sink faucets located in Copy Room 102 and Classroom 106 were above the action level.

Scandia Elementary:

Four (4) out of the seventy (70) samples collected were above the recommended limit of 20 ppb. Two (2) sink faucets and the kettle located within the Kitchen and a drinking fountain located in Classroom 178 were above the action level.

Wyoming Elementary:

Two (2) out of the sixty-five (65) samples collected were above the recommended limit of 20 ppb. A sink faucet within the Kitchen and a sink faucet located in Classroom 103 were above the action level.

Since the *Final Report* provided in November 2018, the District either cleaned aerators or replaced fixtures for these identified taps. After such tasks were completed, FIELD ENVIRONMENTAL resampled these fixtures on February 12, 2019.

II. METHODOLOGY

FIELD ENVIRONMENTAL collected first draw samples. First draw samples consist of water emitted from a fixture after the outlet has been sitting for a period of 8 hours or more (not exceeding 18 hours). Water was collected immediately in the morning before it could be used for other purposes. First draw samples were collected using clean 250 milliliter (mL) sampling bottles. The bottles were filled to the top, capped, recorded, and transported to a certified drinking water laboratory. Results from first draw sampling indicate lead levels for water that has been in direct contact with the faucet or drinking fountain and the section of plumbing closest to the outlet. Analysis was conducted by Pace Analytical Services, Inc. of Minneapolis, Minnesota using EPA Method 200.8 ICPMS for determination of trace elements in drinking water.

Per District request, FIELD ENVIRONMENTAL additionally collected flush draw samples. A flush sample is water

Page: 2

Client: ISD #831 Report of: Resample for Lead in Drinking Water Project No.: 19044 Location: Lino Lakes, Linwood, Scandia and Wyoming Elementary Date: February 26, 2019

emitted from an outlet after a stated flush time. This sample is representative of the water that is in the plumbing upstream from the tap. Analysis was conducted by Pace Analytical Services, Inc. of Minneapolis, Minnesota using EPA Method 200.8 ICPMS for determination of trace elements in drinking water.

III. RESULTS

Pace Analytical laboratory reports are provided in Appendix A. Updated building maps indicating resampling locations and results are provided in Appendix B.

Lino Lakes Elementary:

Both first draw samples collected for the two (2) fixtures were well below the action level of 20 ppb. Flushing the water for a minimum of thirty seconds further reduced lead concentrations.

		kes Elementary	(LINO)				
Floor	Room Number	Location	Sample ID	Type DF = Drinking Fountain S = Sink WC = Water Cooler BF = Bottle Filler K=Kettle	Lead Result 10/17/18 & 10/31/18 (ppb)	Lead Result 2/12/19 (ppb)	Flush Draw Lead Result 2/12/19 (ppb)
First	207	Classroom	17	S	24.5	0.21	0.17
First	142	Kitchen	61	K	372	5.1	0.83

Linwood Elementary:

After review of water usage, the sink faucet located in Copy Room 102 was disconnected. The three (3) collected first draw samples had results well below the action level of 20 ppb. Flushing the water for a minimum of thirty seconds further reduced lead concentrations.

	me: Linwood 7/18, 2/12/19	d Elementary (L	.W)				
Floor	Room Number	Location	Sample ID	Type DF = Drinking Fountain S = Sink WC = Water Cooler BF = Bottle Filler K=Kettle	Lead Result 10/17/18 (ppb)	Lead Result 2/12/19 (ppb)	Flush Draw Lead Result 2/12/19 (ppb)
First	-	Kitchen	1	S	45.8	4.5	3
First	-	Kitchen	5	K	20.8	2.7	1.5
First	102	Copy Room	8	S	35.7	Dis	connected
First	106	Classroom	19	S	406	6.7	0.11

Scandia Elementary:

Though only the drinking fountain previously tested above the action level, the District requested both the fountain and sink be resampled within Classroom 178. Both of these samples collected in Classroom 178 and the kettle located within the Kitchen had first draw results well below the action level of 20ppb. However, the two (2) sink faucets residing in the Kitchen continue to have first draw lead concentrations above the recommended limit. Flushing the water for a minimum of thirty seconds reduced lead concentrations to below the action level for all resampled taps.

Page: 3

Project No.: 19044

Date: February 26, 2019

Client: ISD #831
Report of: Resample for Lead in Drinking Water
Location: Lino Lakes, Linwood, Scandia and Wyoming Elementary

School Na	me: Scandia	Elementary (S	C)				
Date: 10/23	3/18, 2/12/19						
Floor	Room Number	Location	Sample ID	Type DF = Drinking Fountain S = Sink WC = Water Cooler BF = Bottle Filler K=Kettle	Lead Result 10/23/18 (ppb)	Lead Result 2/12/19 (ppb)	Flush Draw Lead Result 2/12/19 (ppb)
First	178	Classroom	3	S	8	2.4	1.2
First	178	Classroom	4	DF	33.2	3.7	1.7
First	-	Kitchen	6	S	79.5	50.3	3
First	-	Kitchen	7	S	78.1	179	3.5
First	-	Kitchen	10	K	24.2	8.1	0.49

Wyoming Elementary:

Both first draw samples collected for the two (2) fixtures were below the action level of 20 ppb. Flushing the water for a minimum of thirty seconds further reduced lead concentrations.

	me: Wyomin 7/18, 2/12/19	g Elementary (WY)				
Floor	Room Number	Location	Sample ID	Type DF = Drinking Fountain S = Sink WC = Water Cooler BF = Bottle Filler K=Kettle	Lead Result 10/17/2018 (ppb)	Lead Result 2/12/2019 (ppb)	Flush Draw Lead Result 2/12/19 (ppb)
First	-	Kitchen	2	S	21	16.5	1.3
First	103	Classroom	57	S	23	2.1	0.11

IV. CONCLUSIONS

All resampled taps at Lino Lakes, Linwood and Wyoming Elementary had first draw results below the action level of 20 ppb. Two (2) sink faucets located within Scandia Elementary continue to be above the recommended limit for lead. However, in all instances, flushing the water for a minimum of thirty seconds reduced lead concentrations to well below the action level of 20 ppb. Therefore, flushing the water prior to consumption would be an allowable option. ISD #831 posted "flush water prior to use" signs on the two (2) sink faucets at Scandia Elementary.

ISD #831 should continue practices to keep lead in drinking water concentrations as low as possible. Recommended tasks include cleaning aerator screens on a periodic basis and flushing outlets after extended breaks.

Minnesota Statutes section 121A.335, subdivision 5 requires a school district to "make the results of testing available to the public for review and must notify parents of the availability of the information."

V. REMARKS

The environmental services performed by FIELD ENVIRONMENTAL's technicians, analysts and project managers for this

Field Environmental Consulting, Inc.

Client: ISD #831 Page: 4
Report of: Resample for Lead in Drinking Water Project No.: 19044
Location: Lino Lakes, Linwood, Scandia and Wyoming Elementary Date: February 26, 2019

project have been conducted in a manner consistent with the degree of care and technical skill exercised by environmental professionals currently practicing in this area under similar budget and time constraints. Recommendations contained in this report represent our professional judgment at the time the project was performed.

No warranty or guarantee, expressed or implied, is made regarding the findings, conclusions, or recommendations contained in this report.

FIELD ENVIRONMENTAL appreciates the opportunity to provide services to meet your environmental needs. Any questions regarding the fieldwork, sample results or presented findings should be directed to Field Environmental Consulting, Inc.

PREPARED and REVIEWED BY:

Field Environmental Consulting, Inc.

Amy Weinzierl, CSP (#27824)

EHS & IAQ Manager

Amy@fieldconsultinginc.com

Attachments

Appendix A: Laboratory Reports

Appendix B: Drawings

APPENDIX A

LABORATORY REPORTS





February 20, 2019

Amy Weinzierl Field Environmental Consulting 8612 Eagle Creek Parkway Savage, MN 55378

RE: Project: 19044 ISD 831 ISD 831 Resampl-Revised Report

Pace Project No.: 10463976

Dear Amy Weinzierl:

Enclosed are the analytical results for sample(s) received by the laboratory on February 12, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This report was revised on February 20, 2019 to change the sample IDs for samples 001-004.

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

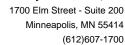
Sincerely,

Jared Dickinson jared.dickinson@pacelabs.com (612)607-1700 Project Manager

Enclosures

cc: General Mailbox, Field Environmental Consulting







CERTIFICATIONS

Project: 19044 ISD 831 ISD 831 Resampl-Revised Report

Pace Project No.: 10463976

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01 Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014 Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680 California Certification #: 2929 CNMI Saipan Certification #: MP0003 Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-

053-137

Florida Certification #: E87605 Georgia Certification #: 959

Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086

Maine Certification #: MN00064 Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Louisiana DW Certification #: MN00064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647

North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064

Washington Certification #: C486 West Virginia DW Certification #: 9952 C West Virginia DEP Certification #: 382 Wisconsin Certification #: 999407970

Virginia Certification #: 460163

Wyoming UST Certification #: via A2LA 2926.01

(612)607-1700



SAMPLE SUMMARY

Project: 19044 ISD 831 ISD 831 Resampl-Revised Report

Pace Project No.: 10463976

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10463976001	17R-LINO-S	Drinking Water	02/12/19 06:00	02/12/19 13:40
10463976002	17R-LINO-S-30SEC	Drinking Water	02/12/19 06:00	02/12/19 13:40
10463976003	61R-LINO-K	Drinking Water	02/12/19 06:00	02/12/19 13:40
10463976004	61R-LINO-K-30SEC	Drinking Water	02/12/19 06:00	02/12/19 13:40
10463976005	IR-LW-S	Drinking Water	02/12/19 06:30	02/12/19 13:40
10463976006	5R-LW-K	Drinking Water	02/12/19 06:30	02/12/19 13:40
10463976007	5R-LW-K-30SEC	Drinking Water	02/12/19 06:30	02/12/19 13:40
10463976008	19R-LW-S-Class 106	Drinking Water	02/12/19 06:30	02/12/19 13:40
10463976009	19R-LW-S- 30SEC-Class 106	Drinking Water	02/12/19 06:30	02/12/19 13:40
10463976010	2R-WY-S	Drinking Water	02/12/19 07:00	02/12/19 13:40
10463976011	2R-WY-S-30SEC	Drinking Water	02/12/19 07:00	02/12/19 13:40
10463976012	57R-WY-S	Drinking Water	02/12/19 07:00	02/12/19 13:40
10463976013	57R-WY-S-30SEC	Drinking Water	02/12/19 07:00	02/12/19 13:40
10463976014	4R-SC-DF	Drinking Water	02/12/19 08:00	02/12/19 13:40
10463976015	4R-SC-DF-30SEC	Drinking Water	02/12/19 08:00	02/12/19 13:40
10463976016	3R-SC-S	Drinking Water	02/12/19 08:00	02/12/19 13:40
10463976017	3R-SC-S-30SEC	Drinking Water	02/12/19 08:00	02/12/19 13:40
10463976018	6R-SC-S-Left	Drinking Water	02/12/19 08:00	02/12/19 13:40
10463976019	6R-SC-S-30SEC-Left	Drinking Water	02/12/19 08:00	02/12/19 13:40
10463976020	7R-SC-S-Right	Drinking Water	02/12/19 08:00	02/12/19 13:40
10463976021	7R-SC-S-30SEC-Right	Drinking Water	02/12/19 08:00	02/12/19 13:40
10463976022	10R-SC-K	Drinking Water	02/12/19 08:00	02/12/19 13:40
10463976023	10R-SC-K-30SEC	Drinking Water	02/12/19 08:00	02/12/19 13:40
10463976024	IR-LW-S-30SEC	Drinking Water	02/12/19 06:30	02/12/19 13:40



SAMPLE ANALYTE COUNT

Project: 19044 ISD 831 ISD 831 Resampl-Revised Report

Pace Project No.: 10463976

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10463976001	17R-LINO-S	EPA 200.8	PW1	1
10463976002	17R-LINO-S-30SEC	EPA 200.8	PW1	1
10463976003	61R-LINO-K	EPA 200.8	PW1	1
10463976004	61R-LINO-K-30SEC	EPA 200.8	PW1	1
10463976005	IR-LW-S	EPA 200.8	PW1	1
10463976006	5R-LW-K	EPA 200.8	PW1	1
10463976007	5R-LW-K-30SEC	EPA 200.8	PW1	1
10463976008	19R-LW-S-Class 106	EPA 200.8	PW1	1
10463976009	19R-LW-S- 30SEC-Class 106	EPA 200.8	PW1	1
10463976010	2R-WY-S	EPA 200.8	PW1	1
10463976011	2R-WY-S-30SEC	EPA 200.8	PW1	1
10463976012	57R-WY-S	EPA 200.8	PW1	1
10463976013	57R-WY-S-30SEC	EPA 200.8	PW1	1
10463976014	4R-SC-DF	EPA 200.8	PW1	1
10463976015	4R-SC-DF-30SEC	EPA 200.8	PW1	1
10463976016	3R-SC-S	EPA 200.8	PW1	1
10463976017	3R-SC-S-30SEC	EPA 200.8	PW1	1
10463976018	6R-SC-S-Left	EPA 200.8	PW1	1
10463976019	6R-SC-S-30SEC-Left	EPA 200.8	PW1	1
10463976020	7R-SC-S-Right	EPA 200.8	PW1	1
10463976021	7R-SC-S-30SEC-Right	EPA 200.8	PW1	1
10463976022	10R-SC-K	EPA 200.8	PW1	1
10463976023	10R-SC-K-30SEC	EPA 200.8	PW1	1
10463976024	IR-LW-S-30SEC	EPA 200.8	PW1	1



Project: 19044 ISD 831 ISD 831 Resampl-Revised Report

Pace Project No.: 10463976

Date: 02/20/2019 09:24 AM

Pace Project No.: 10463976								
Sample: 17R-LINO-S	Lab ID: 1046	3976001	Collected: 02/12/	19 06:00	Received:	02/12/19 13:40	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Meth	od: EPA 20	00.8					
Lead	0.21	ug/L	0.10	1		02/19/19 09:0	7439-92-1	
Sample: 17R-LINO-S-30SEC	Lab ID: 1046	3976002	Collected: 02/12/	19 06:00	Received:	02/12/19 13:40	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Meth	od: EPA 20	00.8					
Lead	0.17	ug/L	0.10	1		02/19/19 09:1	14 7439-92-1	
Sample: 61R-LINO-K	Lab ID: 1046	3976003	Collected: 02/12/	19 06:00	Received:	02/12/19 13:40	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS	Analytical Meth	od: EPA 20	00.8 Preparation Me	thod: EP/	A 200.8			
Lead	5.1	ug/L	0.10	1	02/14/19 06:1	8 02/19/19 10:3	30 7439-92-1	
Sample: 61R-LINO-K-30SEC	Lab ID: 1046	3976004	Collected: 02/12/	19 06:00	Received:	02/12/19 13:40	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Meth	od: EPA 20	00.8					
Lead	0.83	ug/L	0.10	1		02/19/19 09:1	16 7439-92-1	
Sample: IR-LW-S	Lab ID: 1046	3976005	Collected: 02/12/	19 06:30	Received:	02/12/19 13:40	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Meth	od: EPA 20	00.8					
Lead	4.5	ug/L	0.10	1		02/19/19 09:2	21 7439-92-1	
Sample: 5R-LW-K	Lab ID: 1046	3976006	Collected: 02/12/	19 06:30	Received:	02/12/19 13:40	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Meth	od: EPA 20	00.8					
Lead	2.7	ug/L	0.10	1		02/19/19 09:2	23 7439-92-1	



Project: 19044 ISD 831 ISD 831 Resampl-Revised Report

Pace Project No.: 10463976

Date: 02/20/2019 09:24 AM

Pace Project No.: 10463976								
Sample: 5R-LW-K-30SEC	Lab ID: 104	63976007	Collected: 02	2/12/19 06:3	0 Received:	02/12/19 13:40	Matrix: Drinking	g Water
Parameters	Results	Units	Report Li	mit DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Met	hod: EPA 200	0.8					
Lead	1.5	ug/L	(0.10 1		02/19/19 09:2	25 7439-92-1	
Sample: 19R-LW-S-Class 106	Lab ID: 104	63976008	Collected: 02	2/12/19 06:3	0 Received:	02/12/19 13:40	Matrix: Drinking	g Water
Parameters	Results	Units	Report Li	mit DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Met	hod: EPA 200	0.8					
Lead	6.7	ug/L	(0.10 1		02/19/19 09:2	27 7439-92-1	
Sample: 19R-LW-S- 30SEC-Class 106	Lab ID: 104	63976009	Collected: 02	2/12/19 06:3	0 Received:	02/12/19 13:40	Matrix: Drinking	g Water
Parameters	Results	Units	Report Li	mit DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Met	hod: EPA 200	0.8					
Lead	0.11	ug/L	(0.10 1		02/19/19 09:2	29 7439-92-1	
Sample: 2R-WY-S	Lab ID: 104	63976010	Collected: 02	2/12/19 07:0	0 Received:	02/12/19 13:40	Matrix: Drinking	g Water
Parameters	Results	Units	Report Li	mit DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Met	hod: EPA 200	0.8					
Lead	16.5	ug/L	(0.10 1		02/19/19 09:3	30 7439-92-1	
Sample: 2R-WY-S-30SEC	Lab ID: 104	63976011	Collected: 02	2/12/19 07:0	0 Received:	02/12/19 13:40	Matrix: Drinking	g Water
Parameters	Results	Units	Report Li	mit DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Met	hod: EPA 200	0.8					
Lead	1.3	ug/L	(0.10 1		02/19/19 09:3	32 7439-92-1	
Sample: 57R-WY-S	Lab ID: 104	63976012	Collected: 02	2/12/19 07:0	0 Received:	02/12/19 13:40	Matrix: Drinking	g Water
Parameters	Results	Units	Report Li	mit DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Met	hod: EPA 200	0.8					
Lead	2.1	ug/L	C	0.10 1		02/40/40 00:3	34 7439-92-1	



Project: 19044 ISD 831 ISD 831 Resampl-Revised Report

Pace Project No.: 10463976

Date: 02/20/2019 09:24 AM

Pace Project No.: 10463976								
Sample: 57R-WY-S-30SEC	Lab ID: 1046	63976013	Collected: 02/12/1	19 07:00	Received:	02/12/19 13:40	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Meth	nod: EPA 20	0.8					
Lead	0.11	ug/L	0.10	1		02/19/19 09:4	11 7439-92-1	
Sample: 4R-SC-DF	Lab ID: 1046	63976014	Collected: 02/12/1	19 08:00	Received:	02/12/19 13:40	Matrix: Drinking	y Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Meth	nod: EPA 20	0.8					
Lead	3.7	ug/L	0.10	1		02/19/19 09:4	13 7439-92-1	
Sample: 4R-SC-DF-30SEC	Lab ID: 1046	63976015	Collected: 02/12/1	19 08:00	Received:	02/12/19 13:40	Matrix: Drinking	y Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Meth	nod: EPA 20	0.8					
Lead	1.7	ug/L	0.10	1		02/19/19 09:4	15 7439-92-1	
Sample: 3R-SC-S	Lab ID: 1046	63976016	Collected: 02/12/1	19 08:00	Received:	02/12/19 13:40	Matrix: Drinking	y Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Meth	nod: EPA 20	0.8					
Lead	2.4	ug/L	0.10	1		02/19/19 09:4	16 7439-92-1	
Sample: 3R-SC-S-30SEC	Lab ID: 1046	63976017	Collected: 02/12/1	19 08:00	Received:	02/12/19 13:40	Matrix: Drinking	y Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Meth	nod: EPA 20	0.8					
Lead	1.2	ug/L	0.10	1		02/19/19 09:4	18 7439-92-1	
Sample: 6R-SC-S-Left	Lab ID: 1046	63976018	Collected: 02/12/1	19 08:00	Received:	02/12/19 13:40	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Meth	nod: EPA 20	0.8					
Lead	50.3	ug/L	0.10	1		02/19/19 09:5	50 7439-92-1	



Project: 19044 ISD 831 ISD 831 Resampl-Revised Report

Pace Project No.: 10463976

Date: 02/20/2019 09:24 AM

Pace Project No.: 10463976								
Sample: 6R-SC-S-30SEC-Left	Lab ID: 1046	3976019	Collected: 02/12/1	19 08:00	Received:	02/12/19 13:40	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Meth	od: EPA 20	00.8					
Lead	3.0	ug/L	0.10	1		02/19/19 09:5	52 7439-92-1	
Sample: 7R-SC-S-Right	Lab ID: 1046	3976020	Collected: 02/12/1	19 08:00	Received:	02/12/19 13:40	Matrix: Drinking	y Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Meth	od: EPA 20	00.8					
<mark>Lead</mark>)	179	ug/L	0.10	1		02/19/19 09:5	54 7439-92-1	
Sample: 7R-SC-S-30SEC-Right	Lab ID: 1046	63976021	Collected: 02/12/1	19 08:00	Received:	02/12/19 13:40	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Meth	od: EPA 20	00.8					
Lead	3.5	ug/L	0.10	1		02/19/19 10:1	10 7439-92-1	
Sample: 10R-SC-K	Lab ID: 1046	3976022	Collected: 02/12/1	19 08:00	Received:	02/12/19 13:40	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Meth	od: EPA 20	00.8					
Lead	8.1	ug/L	0.10	1		02/19/19 10:1	17 7439-92-1	
Sample: 10R-SC-K-30SEC	Lab ID: 1046	3976023	Collected: 02/12/1	19 08:00	Received:	02/12/19 13:40	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Meth	od: EPA 20	00.8					
Lead	0.49	ug/L	0.10	1		02/19/19 10:1	19 7439-92-1	
Sample: IR-LW-S-30SEC	Lab ID: 1046	3976024	Collected: 02/12/1	19 06:30	Received:	02/12/19 13:40	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, DW	Analytical Meth	od: EPA 20	00.8					
Lead	3.0	ug/L	0.10	1		02/19/19 10:2	21 7439-92-1	

(612)607-1700



QUALITY CONTROL DATA

Project: 19044 ISD 831 ISD 831 Resampl-Revised Report

Pace Project No.: 10463976

Date: 02/20/2019 09:24 AM

QC Batch: 589692 Analysis Method: EPA 200.8

QC Batch Method: EPA 200.8 Analysis Description: ICPMS Metals, Drinking Water

Associated Lab Samples: 10463976021, 10463976022, 10463976023, 10463976024

METHOD BLANK: 3189494 Matrix: Water

Associated Lab Samples: 10463976021, 10463976022, 10463976023, 10463976024

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Lead ug/L ND 0.10 02/19/19 09:59

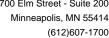
LABORATORY CONTROL SAMPLE: 3189495

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Lead ug/L 100 101 101 85-115

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3193657 3193658

MS MSD 10463976021 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual Lead 70-130 0 20 ug/L 3.5 100 100 99.9 99.5 96 96

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





QUALITY CONTROL DATA

Project: 19044 ISD 831 ISD 831 Resampl-Revised Report

Pace Project No.: 10463976

Lead

Lead

Date: 02/20/2019 09:24 AM

QC Batch: 589711 Analysis Method: EPA 200.8

QC Batch Method: EPA 200.8 Analysis Description: ICPMS Metals, Drinking Water

Associated Lab Samples: 10463976001, 10463976002, 10463976004, 10463976005, 10463976006, 10463976007, 10463976008,

 $10463976009,\,10463976010,\,10463976011,\,10463976012,\,10463976013,\,10463976014,\,10463976015,\,10463976014,\,10463976014,\,10463976015,\,10463976014,\,10463976014,\,10463976015,\,10463976014,\,10463976014,\,10463976015,\,10463976014,\,10463976014,\,10463976015,\,10463976014,\,10463976014,\,10463976015,\,10463976014,\,10463976014,\,10463976015,\,10463976014,\,10463976014,\,10463976015,\,10463976014,\,10463976014,\,10463976015,\,10463976014,\,10464014,\,10464014,\,10464014,\,10464014,\,10464014,\,10464014,\,10464014,\,10464014,\,10464014,\,10464014,\,10464014,\,10464014,\,10464014,\,104$

 $10463976016,\, 10463976017,\, 10463976018,\, 10463976019,\, 10463976020$

METHOD BLANK: 3189725 Matrix: Water

Associated Lab Samples: 10463976001, 10463976002, 10463976004, 10463976005, 10463976006, 10463976007, 10463976008,

10463976009, 10463976010, 10463976011, 10463976012, 10463976013, 10463976014, 10463976015,

10463976016, 10463976017, 10463976018, 10463976019, 10463976020

Parameter Units Blank Reporting Result Limit Analyzed Qualifiers

ug/L ND 0.10 02/19/19 09:03

LABORATORY CONTROL SAMPLE: 3189726

LCS LCS % Rec Spike Parameter Units Conc. Result % Rec Limits Qualifiers Lead ug/L 100 103 103 85-115

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3193633 3193634

ug/L

MS MSD Spike MS MSD MS 10463976001 Spike MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual 0.21 100 100 102 101 102 70-130 20 Lead ug/L 103

 MATRIX SPIKE SAMPLE:
 3193635

 10463976012
 Spike
 MS
 MS
 % Rec

 Parameter
 Units
 Result
 Conc.
 Result
 % Rec
 Limits
 Qualifiers

2.1

100

107

105

70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 19044 ISD 831 ISD 831 Resampl-Revised Report

Pace Project No.: 10463976

Date: 02/20/2019 09:24 AM

QC Batch: 589908 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET

Associated Lab Samples: 10463976003

METHOD BLANK: 3190738 Matrix: Water

Associated Lab Samples: 10463976003

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Lead ug/L ND 0.10 02/19/19 10:26

LABORATORY CONTROL SAMPLE: 3190739

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Lead ug/L 100 93.9 94 85-115

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3190740 3190741

MS MSD 10463976003 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual 100 70-130 20 Lead ug/L 5.1 100 98.4 94.7 93 90

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700

QUALIFIERS

Project: 19044 ISD 831 ISD 831 Resampl-Revised Report

Pace Project No.: 10463976

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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

TNI - The NELAC Institute.

Date: 02/20/2019 09:24 AM

(612)607-1700



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 19044 ISD 831 ISD 831 Resampl-Revised Report

Pace Project No.: 10463976

Date: 02/20/2019 09:24 AM

10463976001 17R-LINO-S EPA 200.8 589711 10463976002 17R-LINO-S-30SEC EPA 200.8 589711 10463976004 61R-LINO-K-30SEC EPA 200.8 589711 10463976005 IR-LW-S EPA 200.8 589711 10463976006 5R-LW-K EPA 200.8 589711 10463976007 5R-LW-K-30SEC EPA 200.8 589711 10463976008 19R-LW-S-Class 106 EPA 200.8 589711 10463976010 2R-WY-S SSEC-Class 106 EPA 200.8 589711 10463976010 2R-WY-S SSEC-Class 106 EPA 200.8 589711 10463976011 2R-WY-S-30SEC EPA 200.8 589711 10463976012 57R-WY-S-30SEC EPA 200.8 589711 10463976013 57R-WY-S-30SEC EPA 200.8 589711 10463976014 4R-SC-DF-30SEC EPA 200.8 589711 10463976015 4R-SC-DF-30SEC EPA 200.8 589711 10463976016 3R-SC-S-30SEC-Left EPA 200.8 589711 10463976019	Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10463976004 61R-LINO-K-30SEC EPA 200.8 589711 10463976005 IR-LW-S EPA 200.8 589711 10463976006 5R-LW-K EPA 200.8 589711 10463976007 5R-LW-K-30SEC EPA 200.8 589711 10463976008 19R-LW-S-Class 106 EPA 200.8 589711 10463976010 2R-WY-S EPA 200.8 589711 10463976011 2R-WY-S-30SEC EPA 200.8 589711 10463976012 57R-WY-S EPA 200.8 589711 10463976013 57R-WY-S-30SEC EPA 200.8 589711 10463976014 4R-SC-DF EPA 200.8 589711 10463976015 4R-SC-DF-30SEC EPA 200.8 589711 10463976016 3R-SC-S EPA 200.8 589711 10463976017 3R-SC-S-30SEC EPA 200.8 589711 10463976018 6R-SC-S-Left EPA 200.8 589711 10463976020 7R-SC-S-Right EPA 200.8 589711 10463976021 7R-SC-S-30SEC-Left EPA 200.8 589711 10463976022 10R-SC-K EPA 200.8 589692<	10463976001	17R-LINO-S	EPA 200.8	589711		
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10463976007 5R-LW-K-30SEC EPA 200.8 589711 10463976008 19R-LW-S-Class 106 EPA 200.8 589711 10463976009 19R-LW-S-30SEC-Class 106 EPA 200.8 589711 10463976010 2R-WY-S EPA 200.8 589711 10463976011 2R-WY-S-30SEC EPA 200.8 589711 10463976012 57R-WY-S EPA 200.8 589711 10463976013 57R-WY-S-30SEC EPA 200.8 589711 10463976014 4R-SC-DF EPA 200.8 589711 10463976015 4R-SC-DF-30SEC EPA 200.8 589711 10463976016 3R-SC-S EPA 200.8 589711 10463976017 3R-SC-S-30SEC EPA 200.8 589711 10463976018 6R-SC-S-Left EPA 200.8 589711 10463976020 7R-SC-S-Right EPA 200.8 589711 10463976021 7R-SC-S-30SEC-Right EPA 200.8 589692 10463976023 10R-SC-K-30SEC EPA 200.8 589692 10463976024 IR-LW-S-30SEC EPA 200.8 589692	10463976005	IR-LW-S	EPA 200.8	589711		
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10463976010	10463976008	19R-LW-S-Class 106	EPA 200.8	589711		
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10463976022 10R-SC-K EPA 200.8 589692 10463976023 10R-SC-K-30SEC EPA 200.8 589692 10463976024 IR-LW-S-30SEC EPA 200.8 589692	10463976020	7R-SC-S-Right	EPA 200.8	589711		
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10463976024 IR-LW-S-30SEC EPA 200.8 589692	10463976022	10R-SC-K	EPA 200.8	589692		
	0463976023	10R-SC-K-30SEC	EPA 200.8	589692		
	10463976024	IR-LW-S-30SEC	EPA 200.8	589692		
10463976003 61R-LINO-K EPA 200.8 589908 EPA 200.8	0463976003	61R-LINO-K	EPA 200.8	589908	EPA 200.8	590475

MO#: 10463976 CHAIN-OF-CUSTC Field Environmental Consulting,

section B

8612 Eagle Creek Parkway

Savage, MN 55378

Report To: opy To:

Mailbox@fieldconsultinginc.com

Attn: Amy Weinzierl 952-746-5880

The Chain-of-Custody is a LEGAI

PDRINKING WATER 2280126 OTHER GROUND WATER Page: GAY I CHIM BY COMPAGENCY AGENCY RCRA Site Location STATE: NPDES UST Dickinson 200 Same Pring 10463976 Reference: Pace Project Tamed Manager: Invoice Information: Sompany Name: ace Profile #: Attention: ace Quote Address: Resamples Project Number: 19044 ISD Project Name: TSD 83 Required Project, Information: urchase Order No.:

Requested Analysis Filtered (Y/N)

	Section D Required Clent Information	Matrix Codes MATRIX / CODE			0	COLLECTED	Ω			ır.	Preservatives	atives	↑ N/A	•			: 		·.			
		Drinking Water DW Water WT Waste Water WW Product P Soil/Solid SL	see valid codes i	=GRAB C=CC	COMPOSITE		COMPOSITE END/GRAB	ОСТЕСТЮИ	S					8.0					(N/J.)			
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Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any involves not pall within

F-ALL-C-010-rev.00, 09Nov2017

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Field Environmental Consulting,

Inc. 8612 Et Savage

Attn: Ar 952-74(Mailbox

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"Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid with

Pace Analytical®

hold, incorrect preservative, out of temp, incorrect containers).

Document Name:

Sample Condition Upon Receipt Form

Document No.: F-MN-L-213-rev.25 Document Revised: 06Feb2019 Page 1 of 1

Issuing Authority: Pace Minnesota Quality Office

Sample Condition Client Name: Upon Receipt			Pr	roject #:	WO#	: 1 (046397	6
Courier: Fed Ex UPS Pace SpeeDee Tracking Number:	Πū	SPS ommerc	Clie		PM: JD	D	Due Date:	
							<u> </u>	
Custody Seal on Cooler/Box Present?	∑ (10	Se	als Intac	t? Yes	MNo	Biolog	ical Tissue Frozen?	□Yes □No 421N/A
Packing Material: Bubble Wrap Bubble B	ags [None	□Otl	her:			Temp Blank?	Yes ☑No
Thermometer:	600254	Type of	tce: [□Wet □]Blue [None	□Dry □Melted	7
Note: Each West Virginia Sample must have temp tak		mp blar	-				□ biy □ imeited	·
Temp should be above freezing to 6°C Cooler Temp Re					· ·	°C	Average Corrected	Tomus 5
Correction Factor: Cooler Temp Correcte		·			, <u></u> .	₀	(no temp blank o	
USDA Regulated Soil: (N/A, water sample/Other:	ted States	:: AL, AR,	CA, FL, G ∏No	iA, Did san Hawaii	nples originate and Puerto R	son Exam te from a f	ining Contents:	ionally, including
					-		COMMENTS:	
Chain of Custody Present and Filled Out?	Yes	□No		1.				
Chain of Custody Relinquished?	√Yes	□No		2.				
Sampler Name and/or Signature on COC?	Yes	∭No	N/A	3.				
Samples Arrived within Hold Time?	Žl∤es	No		4	_			
Short Hold Time Analysis (<72 hr)?	∐Yes	₽₹No		5. Feca	al Coliform ☐ bidity ☐Nitra]HPC □To ite □Nitrit	tal Coliform/E coli BOI e Orthophos Othe	D/cBOD Hex Chrome
Rush Turn Around Time Requested?	Yes	No.		6.				
Sufficient Volume?	√⁄Yes	□No		7.				<u> </u>
Correct Containers Used?	Ø₹Yes	□No		8.				
-Pace Containers Used?	Z₹es	□No						
Ontainers Intact?	Yes	□No		9.	_			
ield Filtered Volume Received for Dissolved Tests?	Yes	No	ØÑ/A	10. ls sec	diment visib	le in the d	issolved container?	Yes No
s sufficient information available to reconcile the samples	_	_		11. if no, w	rite ID/ Date	/Time on C	ontainer Below:	See Exception
o the COC?	Æ∰Yes	□No		Hal Ach	mal san	re p	Mest (Jangle 2	· 4) 🗆
Matrix: ★Water □Soil □Oil □Other All containers needing acid/base preservation have been				but i	no Mie.	d un	206	<u> </u>
hecked?	Yes	□No	□N/A	12. Sample	# <i>9</i>	1-28	4	-
all containers needing preservation are found to be in ompliance with EPA recommendation?					NaOH	⊠ HNO	3 ☐H₂SO ₄	Zinc Acetate
HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	□Yes	₽₩o	□N/A		_			
xceptions: VOA, Coliform, TOC/DOC Oil and Grease, PRO/8015 (water) and Dioxin/PFAS	□Yes	` □\	M	Positive for	==			See Exception
may according browning i the	res	□No	₫ ဩN/A	Chlorine?	No			<u> </u>
leadspace in VOA Vials (greater than 6mm)?	Yes	□No	⊠N/A	13.				See Exception
rip Blank Present?	∐Yes	□No	I N/A	14.				<u></u>
rip Blank Custody Seals Present?	□Yes	□No	Z N/A │	Pace	rip Blank Lo	ot # (if pur	chased): MA	
CLIENT NOTIFICATION/RESOLUTION						Field	Data Required?	Yes No
Person Contacted:				Date/Tim	e:			1.55
Comments/Resolution:								
	,							
Project Manager Review:	vd	7/	_	.	Date: 02/	13/10	-	
ote: Whenever there is a discrepancy affecting North Carolina	complians	sample	s, a copy c	of this form wi	Il be sent to	the North	Carolina DEHNR Certific	ation Office (i.e. out o



Document Name: SCUR Exception Form – Coolers Above 6°C

Document Revised: 04Feb2019 Page 1 of 1

Document No.: F-MN-C-298-Rev.01

Issuing Authority:
Pace Minnesota Quality Office

During sample triage, this form is to be placed in each cooler that arrives above 6.0 degrees Celsius

SCUR Exceptions:			_	Work	korder i	#:			
Out of Temp Sample IDs	Container Type	d in Arbeite	of ainers	PMI	lotified?	Yes N	6		
				cor	ntacted/d	e who was ate/time. reason wh			
				Λ	Dia	C			
			i. N	Aultiple C	ooler Pro	ject?	s No		
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1919 - 1111 - 11				18.1	17-	3			
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Other Issues									
Issue Type:	Container	# 0	of T	eg Village g Village Fred		Tracking	Numb	er	a enake.
Sample ID	Туре	Conta	·	<u>. 1</u>				er deutsche Abergabe ist eine	
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- 1 MAL			-+		***		*****		
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	pH Adjus	tmen	t Log for	Preser	ved Sar	nples			
Sample iD	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
1-23	MV03	76	2/14/4		1	118090		☐Yes ☐No	KV
								Yes No	
								Yes No	
			.,,					Yes No	

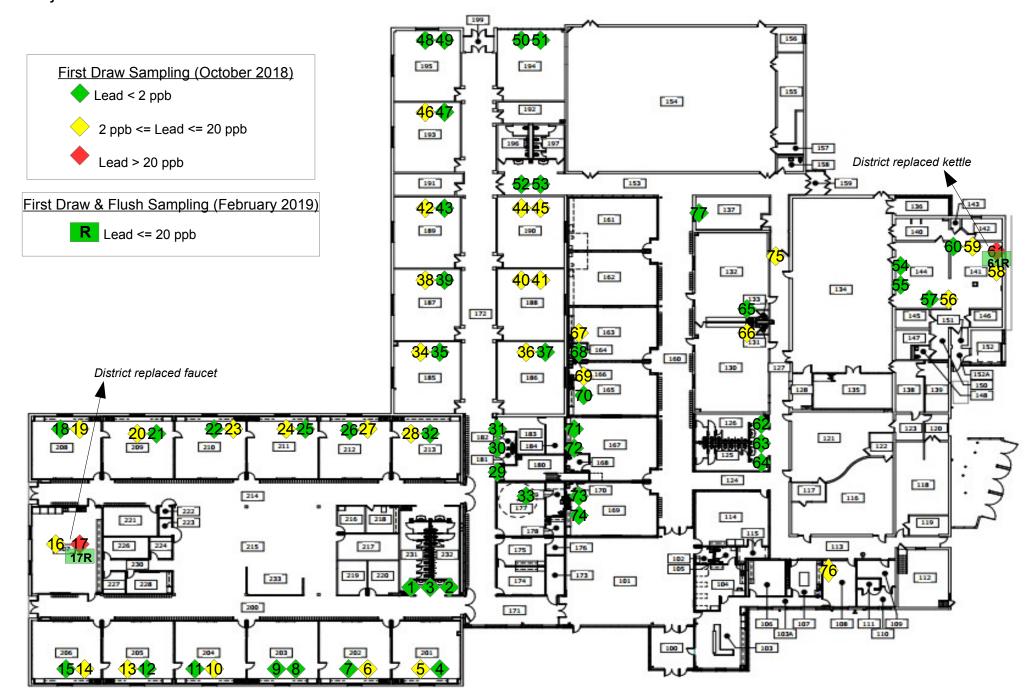
APPENDIX B

Drawings



Lino Lakes Elementary School Lead in Drinking Water Project # 19044





Linwood Elementary School Lead in Drinking Water Project # 19044



