



August 6, 2024

Steve Alrdich
Director of Facilities and Grounds
Liberty Public School District
801 Kent Street
Liberty, Missouri 64068

Project: Limited Lead in Drinking Water Testing
Address: 1000 Midjay Drive, Liberty, Missouri 64068

Mr. Steve Alrdich

On June 27, 2024, Jeff Hurst of Axiom Service Professionals (ASP), conducted lead in drinking water resampling at the above referenced address. Inspector certification is provided in Appendix A. Sampling locations were derived from previously elevated water sources selected for retesting by the Liberty School District. A total of 9 samples were collected from various potential drinking water outlets including sources used for drinking, cooking, or cleaning of cooking and eating utensils throughout the building.

Drinking Water Standards

The use of lead solder and other lead-containing materials as defined in the EPA Safe Drinking Water Act in connecting household plumbing to public water supplies was prohibited as of 1986. The act established the definition of "lead free" to be less than 8% as a weighted average across wetted surfaces of a pipe, pipe fitting, plumbing fitting, and fixture and 0.2% lead for solder and flux. In 2011, the definition of "lead free" as it applied to wetted surfaces of a pipe, pipe fitting, and plumbing fitting and fixture was reduced from 8% to 0.25% as a weighted average. Many older structures still have lead pipe or lead-soldered plumbing internally, which may substantially increase the lead content of water at the tap. Nationwide regulations controlling the lead content of drinking-water coolers in schools went into effect in 1989.

In 1991, the EPA published the Lead and Copper Rule establishing limits on the amount of lead and copper in drinking water. This regulation can be found under 40 CFR Part 141, Subpart I. Reference: <https://www.epa.gov/dwreginfo/lead-and-copper-rule>

The EPA has set lead in drinking water standards as outlined below.

- For lead, the maximum contaminant level goal (MCLG) is zero. This is the levels determined to be safe by toxicological and biomedical considerations, independent of feasibility. EPA's National Primary Drinking Water Regulations for Lead establish a treatment level of **0.015 mg/L** or **15 ppb** (parts per billion) in municipal drinking water systems.

The Missouri Senate Bill 681 “Get the Lead Out of School Drinking Water Act”, passed in 2022, has set the standard summarized below.

Reference: https://www.senate.mo.gov/22info/BTS_Web/Bill.aspx?SessionType=R&BillID=71259862

- On or before January 1, 2024, each school shall conduct an inventory of all drinking water outlets and all outlets that are used for dispensing water for cooking or for cleaning cooking and eating utensils in each of the school’s buildings. A plan for testing should then be developed, prioritizing early childhood education programs and elementary schools, and made available to the public.
- The bill outlines that beginning in the 2023-2024 school year and for each subsequent school year, each school shall provide drinking water with a lead concentration below five parts per billion (**5 ppb**). Any school with greater than or equal to 5 ppb shall provide results and remediation plans to parents and staff within 7 business days of receiving results.

Water Sampling Methods:

Water samples were collected from each selected location as “first draw” and/or “flush”. First draw samples typically represent worst case sample results. A flush sample is typically collected to determine if an elevation is originating beyond the fixture in the fixture supply line or beyond. Samples were deposited into a non-preserved 250-milliliter sterile Nalgene screw top bottle. Immediately following sample collection, the samples were delivered to Keystone Laboratories located at 8857 Long Street, Lenexa, Kansas 66215. Upon arrival at the laboratory, samples were preserved through addition of nitric acid.

Keystone Laboratories is accredited through the Missouri Department of Natural Resources for analysis of lead in water.

Below is a summary of the water sampling results as reported in Appendix C by Keystone Laboratories. Results exceeding the applicable drinking water standards are shown in red text.

June 27, 2024 Water Sampling Results:

Sample #	Location	Source Under Test	Test Type	Lead Result (ppb)
1000-110-RDF	South Valley - 002198-Room 302	Sink Tap	Retest - First Draw	0.8
1000-40-RDF	South Valley - 002183-Room 222	Sink Tap	Retest - First Draw	1
1000-42-RDF	South Valley - 002184-Room 224	Sink Tap	Retest - First Draw	1
1000-71-RDF	South Valley - 004714-Room 124	Sink Tap	Retest - First Draw	3.8
1000-73-RDF	South Valley - 004719-Room 125	Sink Tap	Retest - First Draw	1.6
1000-75-RDF	South Valley - 004716-Room 122	Sink Tap	Retest - First Draw	1
1000-91-RDF	South Valley - 004745-Room 111	Sink Tap	Retest - First Draw	<0.4
1000-93-RDF	South Valley - 004747-Room 109	Sink Tap	Retest - First Draw	1
1000-148-RDF	South Valley - 004677-Kitchen East Wall- Next to Fridge	Sink Tap	Retest - First Draw	1

Photos of the sampling locations are provided in Appendix D. A diagram containing identifiers on the outlets tested is provided in Appendix E.

Required Communication

- Contact staff and parents via written notification within seven (7) business days after receiving the test result.
- The notification shall include at least:
 - The test results and a summary that explains such results;
 - A description of any remedial steps taken; and
 - A description of general health effects of lead contamination and community specific resources; and
- Provide bottled water if there is not enough water to meet the drinking water needs of the students, teachers, and staff.
- Submit such annual testing results to the Missouri Department of Health and Senior Services (DHSS).
- Before August 1, 2024, or the first day on which students will be present in the building, whichever is later, and annually thereafter, each school shall conduct testing for lead by first-draw and follow-up flush samples of a random sampling of at least twenty-five percent (25%) of remediated drinking water outlets until all remediated sources have been tested as recommended by the 2018 version of the United States Environmental Protection Agency's "Training, Testing, and Taking Action" program. The testing shall be conducted and the results analyzed for both types of tests by an entity or entities approved by the department.
- Any measures taken to remediate any elevated lead levels identified must be recorded and documented.

General Recommendations

- Retesting of all potential cooking and drinking water sources is required five (5) years from previous testing completed.
- If the condition changes or significant alterations to existing plumbing is undertaken, consider performing additional lead in drinking water sampling.
- Ensure that the plumbing system is not used as an electrical ground.
- If equipment is added that could affect water pH, alkalinity, or hardness, consider performing lead in drinking water sampling.

Any work resulting from this report should be conducted in accordance with the EPA Safe Drinking Water Act, Missouri SB 681 & 662, HUD Lead Regulations 24 CFR 35, EPA Lead Regulations 40 CFR 745, and Consumer Product Safety Commission document #5056.

If you have any questions concerning this report, please contact me at 816-678-7894.

Sincerely,



Jeff Hurst
Axiom Service Professionals LLC
jeffh@axiomservicepros.com

Limitations Drinking Water Testing

The presence or absence of lead and copper (if collected) in drinking water applies only to the test locations on the date of the field visit and it should be understood that conditions may change due to deterioration, pH, alkalinity, hardness, use levels, or maintenance. The results noted within this report were accurate at the time of the evaluation and in no way reflect the conditions at the property before or after the date of the evaluation. No other environmental concerns or conditions were addressed during this evaluation.

Appendix A Certifications

**STATE OF MISSOURI
DEPARTMENT OF HEALTH AND SENIOR SERVICES**

LEAD OCCUPATION LICENSE REGISTRATION

Issued to:

Jeffrey A. Hurst

The person, firm or corporation whose name appears on this certificate has fulfilled the requirements for licensure as set forth in the Missouri Revised Statutes 701.300-701.338, as long as not suspended or revoked, and is hereby authorized to engage in the activity listed below.

Lead Risk Assessor
Category of License

Issuance Date: **8/1/2022**
Expiration Date: **8/1/2024**
License Number: **000801-200166567**



Missouri Department of Health
and Senior Services

Lead Occupation License - ID Badge

License Number:

000801-200166567

Lead Risk Assessor

**Jeffrey
Hurst**

Expiration Date: **8/1/2024**

Paula F. Nickelson
Acting Director

Department of Health and Senior Services

Columbia, MO 65102

Appendix B
EPA Listed Lead Containing Drinking Fountains

Table C-1
Water Coolers With Other Lead Components

EBCO Manufacturing

- All pressure bubbler water coolers with shipping dates from 1962 through 1977 have a bubbler valve containing lead. The units contain a single, 50-50 tin-lead solder joint on the bubbler valve. Model numbers for coolers in this category are not available.
- The following models of pressure bubbler coolers produced from 1978 through 1981 contain one 50-50 tin-lead solder joint each.

CP3	DP15W	DPM8	7P	13P	DPM8H	DP15M	DP3R	DP8A
DP16M	DP5S	C10E	PX-10	DP7S	DP13SM	DP7M	DP7MH	DP7WD
WTC10	DP13M-60	DP14M	CP10-50	CP5	CP5M	DP15MW	DP3R	DP14S
DP20-50	DP7SM	DP10X	DP13A	DP13A-50	EP10F	DP5M	DP10F	CP3H
CP3-50	DP13M	DP3RH	DP5F	CP3M	EP5F	13PL	DP8AH	DP13S
CP10	DP20	DP12N	DP7WM	DP14A-50/60				

Halsey Taylor

- Lead solder was used in these models of water coolers manufactured between 1978 and the last week of 1987:

WMA-1	SCWT/SCWT-A	SWA-1	DC/DHC-1
S3/5/10D	BFC-4F/7F/4FS/7FS	S300/500/100D	

- The following coolers manufactured for Haws Drinking Faucet Company (Haws) by Halsey Taylor from November 1984 through December 18, 1987 are not lead-free because they contain 2 tin-lead solder joints. The model designations for these units are as follows:

HC8WT	HC14F	HC6W	HWC7D	HC8WTH	HC14FH	HC8W	HC2F	HC14WT
HC14FL	HC14W	HC2FH	HC14WTH	HC8FL	HC4F	HC5F	HC14WL	HCBF7D
HC4FH	HC10F	HC16WT	HCBF7HO	HC8F	HC8FH	HC4W	HWC7	

Table C-2
Halsey Taylor Water Coolers With Lead-Lined Tanks

- The following six model numbers have one or more units in the model series with lead-lined tanks:

WM8A	WT8A	GC10ACR	GC10A	GC5A	RWM13A
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- The following models and serial numbers contain lead-lined tanks:

WM14A Serial No. 843034	WM14A Serial No. 843006	WT11A Serial No. 222650
WT21A Serial No. 64309550	WT21A Serial No. 64309542	LL14A Serial No. 64346908

Appendix C
Laboratory Analytical Report



Microbac Laboratories, Inc., Lenexa

CERTIFICATE OF ANALYSIS

3HG0105

AXIOM Service Professionals

Project Name: 1000 Midjay Drive

Jeff Hurst
PO Box 47166
Kansas City, MO 64188

Project / PO Number: 1000 Midjay Drive
Received: 07/10/2024
Reported: 07/24/2024

Work Order Special Information

Client
1000 Midjay Drive

Analytical Testing Parameters

Client Sample ID: 1000-110-RDF
Sample Matrix: Drinking Water
Lab Sample ID: 3HG0105-01
Collected By: Client
Collection Date: 06/27/2024 10:50

Analyses Performed by: Microbac Laboratories, Inc., Newton

Table with 9 columns: Determination of Total Metals, Result, RL, Units, DF, Note, Prepared, Analyzed, Analyst. Row 1: 200.8 Lead, total, 0.8, 0.4, ppb, 2, 07/24/24 0126, 07/24/24 0126, RVV

Client Sample ID: 1000-40-RDF
Sample Matrix: Drinking Water
Lab Sample ID: 3HG0105-02
Collected By: Client
Collection Date: 06/27/2024 10:53

Analyses Performed by: Microbac Laboratories, Inc., Newton

Table with 9 columns: Determination of Total Metals, Result, RL, Units, DF, Note, Prepared, Analyzed, Analyst. Row 1: 200.8 Lead, total, 1.0, 0.4, ppb, 2, 07/24/24 0135, 07/24/24 0135, RVV

Client Sample ID: 1000-42-RDF
Sample Matrix: Drinking Water
Lab Sample ID: 3HG0105-03
Collected By: Client
Collection Date: 06/27/2024 10:54

Analyses Performed by: Microbac Laboratories, Inc., Newton

Table with 9 columns: Determination of Total Metals, Result, RL, Units, DF, Note, Prepared, Analyzed, Analyst. Row 1: 200.8 Lead, total, 1.0, 0.4, ppb, 2, 07/24/24 0138, 07/24/24 0138, RVV

Client Sample ID: 1000-71-RDF
Sample Matrix: Drinking Water
Lab Sample ID: 3HG0105-04
Collected By: Client
Collection Date: 06/27/2024 10:58

Analyses Performed by: Microbac Laboratories, Inc., Newton

Table with 9 columns: Determination of Total Metals, Result, RL, Units, DF, Note, Prepared, Analyzed, Analyst. Row 1: 200.8 Lead, total, 3.8, 0.4, ppb, 2, 07/24/24 0141, 07/24/24 0141, RVV



Microbac Laboratories, Inc., Lenexa

CERTIFICATE OF ANALYSIS

3HG0105

Client Sample ID:	1000-73-RDF	Collected By:	Client
Sample Matrix:	Drinking Water	Collection Date:	06/27/2024 11:00
Lab Sample ID:	3HG0105-05		

Analyses Performed by: Microbac Laboratories, Inc., Newton

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
200.8								
Lead, total	1.6	0.4	ppb	2		07/24/24 0144	07/24/24 0144	RVV

Client Sample ID:	1000-75-RDF	Collected By:	Client
Sample Matrix:	Drinking Water	Collection Date:	06/27/2024 11:02
Lab Sample ID:	3HG0105-06		

Analyses Performed by: Microbac Laboratories, Inc., Newton

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
200.8								
Lead, total	1.0	0.4	ppb	2		07/24/24 0147	07/24/24 0147	RVV

Client Sample ID:	1000-91-RDF	Collected By:	Client
Sample Matrix:	Drinking Water	Collection Date:	06/27/2024 11:07
Lab Sample ID:	3HG0105-07		

Analyses Performed by: Microbac Laboratories, Inc., Newton

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
200.8								
Lead, total	<0.4	0.4	ppb	2		07/24/24 0150	07/24/24 0150	RVV

Client Sample ID:	1000-93-RDF	Collected By:	Client
Sample Matrix:	Drinking Water	Collection Date:	06/27/2024 11:09
Lab Sample ID:	3HG0105-08		

Analyses Performed by: Microbac Laboratories, Inc., Newton

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
200.8								
Lead, total	1.0	0.4	ppb	2		07/24/24 0153	07/24/24 0153	RVV

Client Sample ID:	1000-148-RDF	Collected By:	Client
Sample Matrix:	Drinking Water	Collection Date:	06/27/2024 11:15
Lab Sample ID:	3HG0105-09		

Analyses Performed by: Microbac Laboratories, Inc., Newton

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
200.8								
Lead, total	1.0	0.4	ppb	2		07/24/24 0156	07/24/24 0156	RVV



Microbac Laboratories, Inc., Lenexa

CERTIFICATE OF ANALYSIS

3HG0105

Definitions

RL: Reporting Limit

Report Comments

*The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. **The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.***

Reviewed and Approved By:

Carolyn Jackson
Project Manager
carolyn.jackson@microbac.com
07/24/24 12:04



600 E. 17th St. S
Newton, IA 50208
Phone: 641-792-8451

3012 Ansborough Ave
Waterloo, IA 50701
Phone: 319-235-4440



835 S St. Paul
Kansas City, KS 66105
Phone: 913-321-7856

205 E Van Buren St
Centerville, IA 52544
Phone: 641-437-7023

PRINT OR TYPE INFO BELOW:		REPORT TO:		BILL TO:	
SAMPLER:		NAME:	Jeff Hurst	NAME:	Jeff Hurst
SITE NAME:	South Valley MS	CO. NAME:		CO. NAME:	
ADDRESS:	1000 Midjay Drive	ADDRESS:	PO Box 47166	ADDRESS:	PO Box 47166
CITY/ST/ZIP:	Liberty MO	CITY/ST/ZIP:	Kansas City, Missouri 64188	CITY/ST/ZIP:	Kansas City, Missouri 64188
PHONE:		PHONE:	816-678-7894	PHONE:	816-678-7894
		EMAIL:	jeffh@axiomservicepros.com	EMAIL:	jeffh@axiomservicepros.com

CLIENT SAMPLE #	DATE	TIME		# OF CONTAINERS	MATRIX	GRAB/COMPOSITE	Lead	ANALYSES REQUIRED								LAB USE ONLY	
								Temp: oC	Sample Condition	Sample #							
1000-110-RDF	6/27/2024	10:50	Classroom 302 - Sink Tap - 002198-Room 302	1		Grab	X									Wk Order #:	3HG0105
1000-40-RDF	6/27/2024	10:53	Classroom 302 - Sink Tap - 002183-Room 222	1		Grab	X									Short Hold:	
1000-42-RDF	6/27/2024	10:54	Classroom 302 - Sink Tap - 002184-Room 224	1		Grab	X									Rush:	
1000-71-RDF	6/27/2024	10:58	Classroom 302 - Sink Tap - 004714-Room 124	1		Grab	X									Temp: oC	23.5
1000-73-RDF	6/27/2024	11:00	Classroom 302 - Sink Tap - 004719-Room 125	1		Grab	X									Sample Condition	
1000-75-RDF	6/27/2024	11:02	Classroom 302 - Sink Tap - 004716-Room 122	1		Grab	X									Sample #	3HG0105-01
1000-91-RDF	6/27/2024	11:07	Classroom 302 - Sink Tap - 004745-Room 111	1		Grab	X										02
																	03
																	04
																	05
																	06
																	07

Relinquished by: (Signature)	Date:	Received by: (Signature)	Date:	Remarks:
<i>[Signature]</i>	7/9/24			
Relinquished by: (Signature)	Date:	Received by: (Signature)	Date:	
		<i>[Signature]</i>	07/10/24	
			14:00	





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Waterloo, IA 50701
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835 S St. Paul
Kansas City, KS 66105
Phone: 913-321-7856

205 E Van Buren St
Centerville, IA 52544
Phone: 641-437-7023

PRINT OR TYPE INFO BELOW: SAMPLER: _____ SITE NAME: _____ ADDRESS: 1000 Midjay Drive CITY/ST/ZIP: Liberty MO PHONE: _____	REPORT TO: NAME: Jeff Hurst CO. NAME: _____ ADDRESS: PO Box 47166 CITY/ST/ZIP: Kansas City, Missouri 64188 PHONE: 816-678-7894 EMAIL: jeffh@axiomservicepros.com	BILL TO: NAME: Jeff Hurst CO. NAME: _____ ADDRESS: PO Box 47166 CITY/ST/ZIP: Kansas City, Missouri 64188 PHONE: 816-678-7894 EMAIL: jeffh@axiomservicepros.com
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CLIENT SAMPLE #	DATE	TIME		# OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED							LAB USE ONLY		
							Lead								Wk Order #:	Sample #
1000-93-RDF	6/27/2024	11:09	Classroom 302 - Sink Tap - 004747-Room 109	1		Grab	X								3HG0105	
1000-148-RDF	6/27/2024	11:15	Classroom 302 - Sink Tap - 004677-Kitchen East Wall- Near Freezer	1		Grab	X									09

Relinquished by: (Signature)	Date:	Received by: (Signature)	Date:	Remarks:
	Time:		Time:	
Relinquished by: (Signature)	Date:	Received by: (Signature)	Date:	
	Time:	<i>Carolyn Jackson</i>	07/10/24 14:00	



3 H G 0 1 0 5
AXIOM Service Professionals
PM: Carolyn Jackson

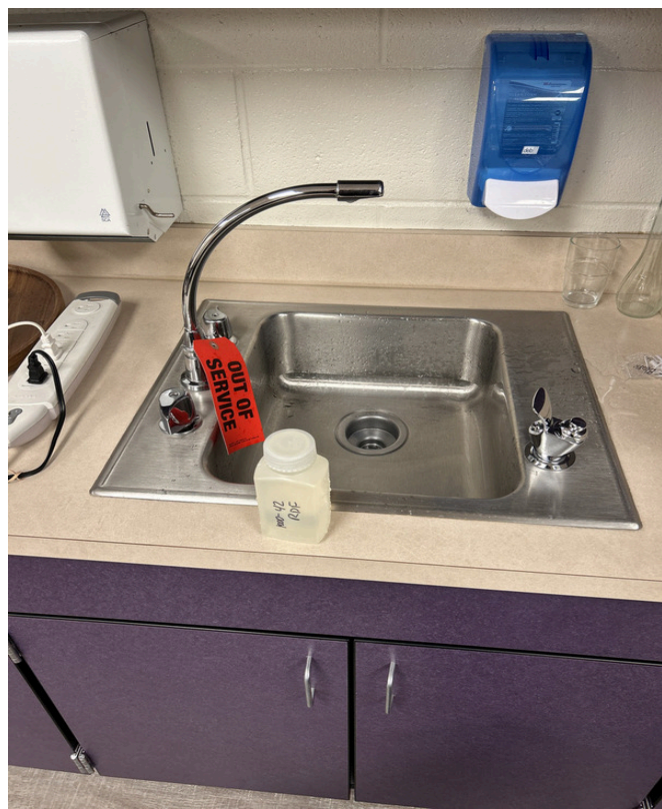
Appendix D Photo Log



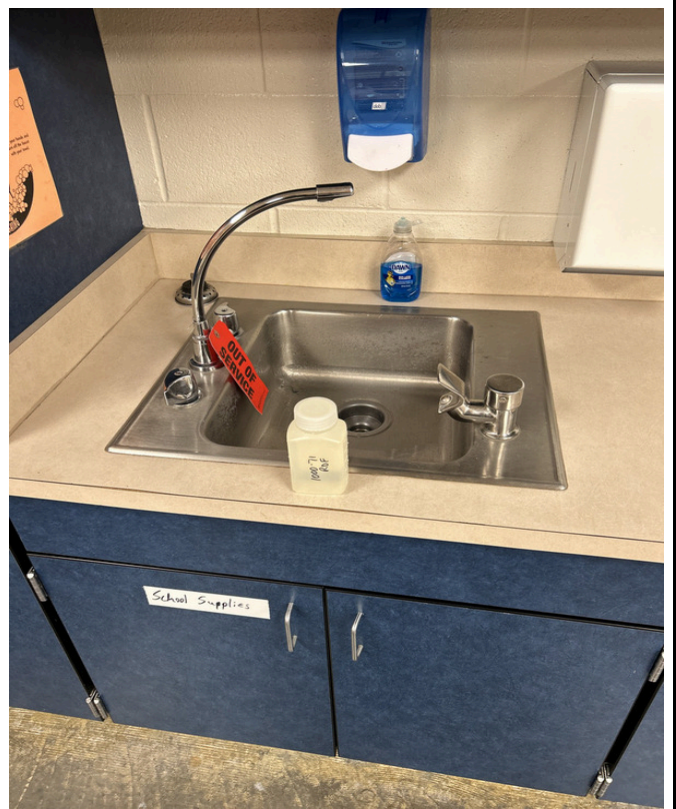
6/27/2024 - 1000-110 - South Valley - 002198-
Room 302



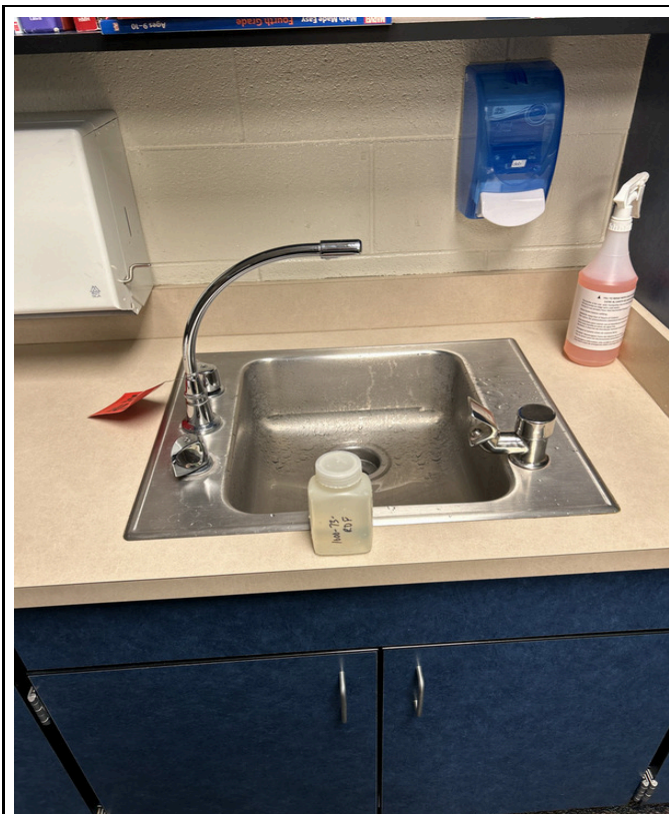
6/27/2024 - 1000-40 - South Valley - 002183-
Room 222



6/27/2024 - 1000-42 - South Valley - 002184-
Room 224



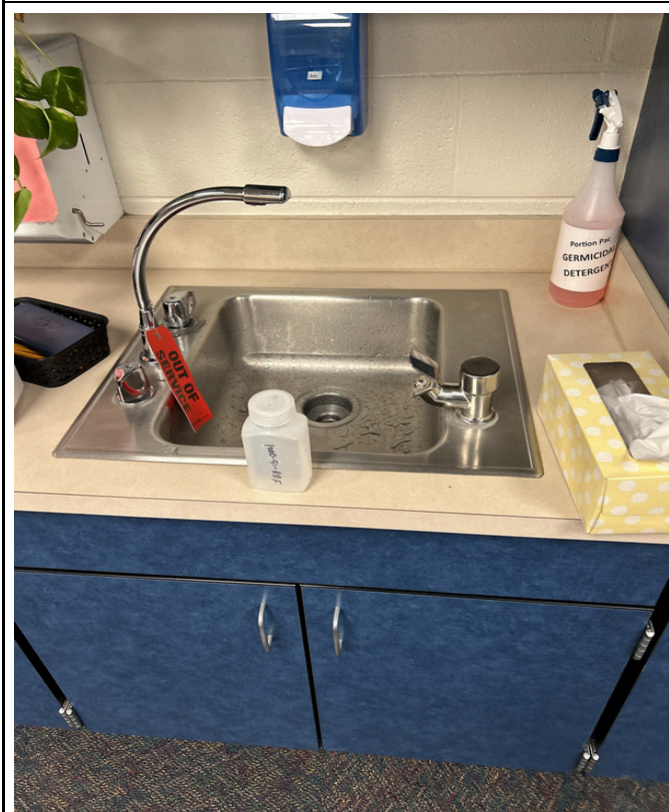
6/27/2024 - 1000-71 - South Valley - 004714-
Room 124



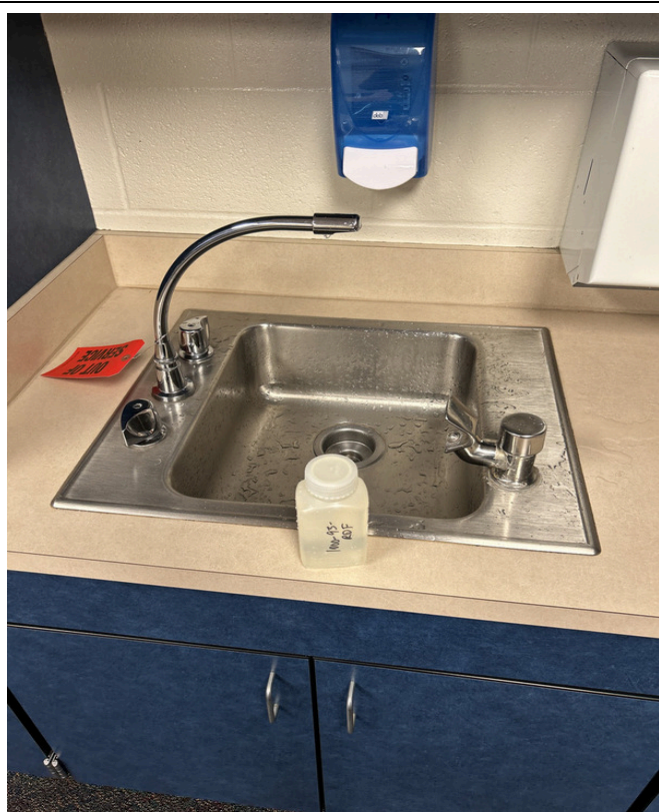
6/27/2024 - 1000-73 - South Valley - 004719-
Room 125



6/27/2024 - 1000-75 - South Valley - 004716-
Room 122



6/27/2024 - 1000-91 - South Valley - 004745-
Room 111



6/27/2024 - 1000-93 - South Valley - 004747-
Room 109

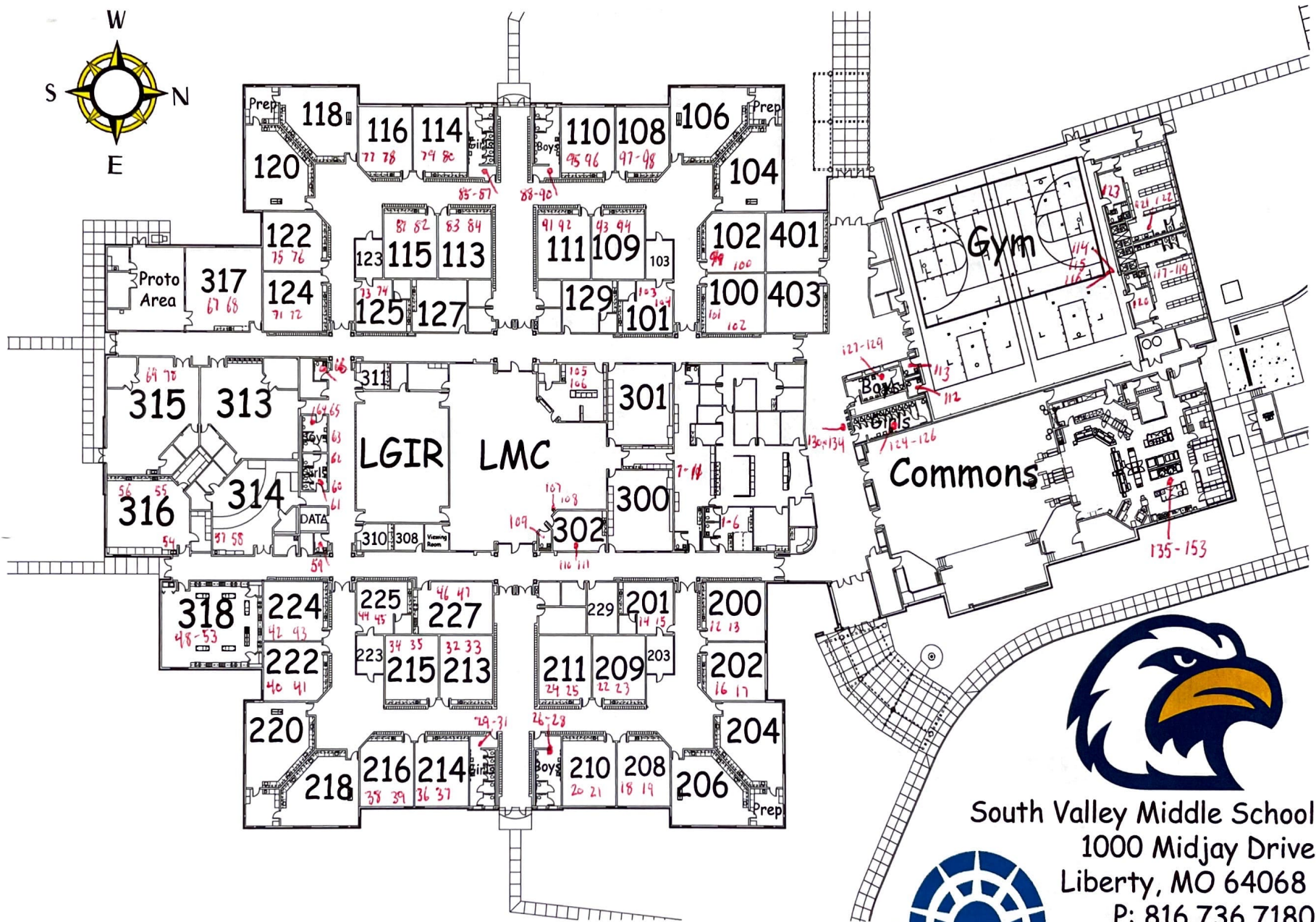


6/27/2024 - 1000-148 - South Valley - 004677-
Kitchen East Wall- Next to Fridge

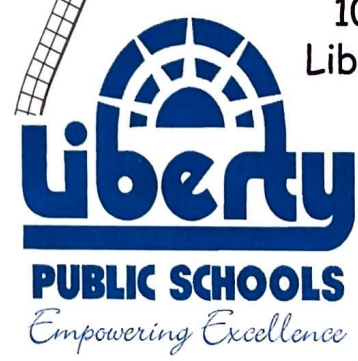
Appendix E

Source Identification Diagram

ASP was provided sample locations by
Liberty Public School District



South Valley Middle School
 1000 Midjay Drive
 Liberty, MO 64068
 P: 816.736.7180
 F: 816.736.7185



Map Design by: Curt Laven
 Last Updated: 06/17/2021