



# CERTIFICATE OF ANALYSIS

**Chain of Custody:** 612594  
**Client:** Howard County Public School System  
**Address:** 10910 Route 108  
Ellicott City, MD 21042  
**Attention:** Jeff Klenk

**Job Name:** Veterans Elementary School  
**Job Location:** 4355 Montgomery Road, Ellicott City  
MD 21043  
**Job Number:** 13.084  
**P.O. Number:** Not Provided

**Date Submitted:** 01/18/2019  
**Date Analyzed:** 01/28/2019  
**Report Date:** 01/28/2019  
**Date Sampled:** 01/10/2019 - 01/25/2019  
**Person Submitting:** Jeff Klenk

## Summary of Drinking Water Analysis for Metals

AMA Sample Number	Client Sample Number	Sample Collection Information		Analysis Type	Sample Analyte	Reporting Limit	Final Result	Comments
		Date/Time	Location					
612594-1	VES 2 1st Draw	01/10/2019 5:13 am	DF/C	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-2	VES 3 1st Draw	01/10/2019 5:13 am	DF/C	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-3	VES 4 1st Draw	01/10/2019 5:13 am	DF/C	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-4	VES 5F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-5	VES 6F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-6	VES 7F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-7	VES 8F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-8	VES 9F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	0.51 ug/L	
612594-9	VES 10 1st Draw	01/10/2019 5:13 am	DF/C	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-10	VES 12F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-11	VES 13F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-12	VES 14F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-13	VES 15F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	0.56 ug/L	
612594-14	VES 16 1st Draw	01/10/2019 5:13 am	DF/C	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-15	VES 17F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-16	VES 18F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-17	VES 19F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-18	VES 20F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-19	VES 21F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	0.86 ug/L	
612594-20	VES 22F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	



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612594-21	VES 23F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-22	VES 24F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-23	VES 25 1st Draw	01/10/2019 5:13 am	DF/C	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-24	VES 28F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	0.71 ug/L	
612594-25	VES 29 1st Draw	01/10/2019 5:13 am	DF/C	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-26	VES 30F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-27	VES 31F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-28	VES 32F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-29	VES 33F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-30	VES 34F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-31	VES 35F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-32	VES 36F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-33	VES 37F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	0.67 ug/L	
612594-34	VES 40F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-35	VES 41F 1st Draw	01/10/2019 5:13 am	CC/B	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-36	VES 45 1st Draw	01/10/2019 5:13 am	DF/C	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-37	VES 46 1st Draw	01/10/2019 5:13 am	DF/C	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-38	VES 57 1st Draw	01/10/2019 5:13 am	DF/C	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-39	VES 63 1st Draw	01/10/2019 5:13 am	DF/C	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-40	VES 70 1st Draw	01/10/2019 5:13 am	DF/C	ICP	Lead	0.5 ug/L	< 0.5 ug/L	



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		Date/Time	Location					
612594-41	VES 76 1st Draw	01/10/2019 5:13 am	DF/C	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-42	VES 84 1st Draw	01/10/2019 5:13 am	DF/C	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-43	VES 85 1st Draw	01/10/2019 5:13 am	DF/C	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-44	VES 88 1st Draw	01/10/2019 5:13 am	DF/C	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-45	VES 89 1st Draw	01/10/2019 5:13 am	DF/C	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-46	VES 1 1st Draw	01/11/2019 5:05 am	KS	ICP	Lead	0.5 ug/L	1.7 ug/L	
612594-47	VES 5S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	3 ug/L	
612594-48	VES 6S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	0.95 ug/L	
612594-49	VES 7S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	1.1 ug/L	
612594-50	VES 8S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	1.3 ug/L	
612594-51	VES 11 1st Draw	01/11/2019 5:05 am	TL	ICP	Lead	0.5 ug/L	0.76 ug/L	
612594-52	VES 12S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	2.2 ug/L	
612594-53	VES 13S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	1.3 ug/L	
612594-54	VES 14S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	2.3 ug/L	
612594-55	VES 15S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	1.2 ug/L	
612594-56	VES 17S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	1.1 ug/L	
612594-57	VES 18S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	2.6 ug/L	
612594-58	VES 19S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	0.97 ug/L	
612594-59	VES 20S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	2 ug/L	
612594-60	VES 21S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	2.5 ug/L	



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		Date/Time	Location					
612594-61	VES 22S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	0.57 ug/L	
612594-62	VES 23S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	0.82 ug/L	
612594-63	VES 24S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	0.79 ug/L	
612594-64	VES 26 1st Draw	01/11/2019 5:05 am	TL	ICP	Lead	0.5 ug/L	1.5 ug/L	
612594-65	VES 27 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	1.1 ug/L	
612594-66	VES 28S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	1.3 ug/L	
612594-67	VES 30S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	0.97 ug/L	
612594-68	VES 31S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	2.9 ug/L	
612594-69	VES 32S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	1.7 ug/L	
612594-70	VES 33S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	1.2 ug/L	
612594-71	VES 34S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	1.1 ug/L	
612594-72	VES 35S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	2.3 ug/L	
612594-73	VES 36S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	1.6 ug/L	
612594-74	VES 37S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	1.7 ug/L	
612594-75	VES 38 1st Draw	01/11/2019 5:05 am	NO	ICP	Lead	0.5 ug/L	0.83 ug/L	
612594-76	VES 39 1st Draw	01/11/2019 5:05 am	OT.2	ICP	Lead	0.5 ug/L	1.1 ug/L	
612594-77	VES 40S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	0.99 ug/L	
612594-78	VES 41S 1st Draw	01/11/2019 5:05 am	CC/S	ICP	Lead	0.5 ug/L	0.65 ug/L	
612594-79	VES 42 1st Draw	01/11/2019 5:05 am	TL	ICP	Lead	0.5 ug/L	0.96 ug/L	
612594-80	VES 47 1st Draw	01/11/2019 5:05 am	OT.7	ICP	Lead	0.5 ug/L	1.3 ug/L	



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		Date/Time	Location					
612594-81	VES 48 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	1.2 ug/L	
612594-82	VES 49 1st Draw	01/11/2019 5:05 am	TL	ICP	Lead	0.5 ug/L	1.8 ug/L	
612594-83	VES 52 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	1.4 ug/L	
612594-84	VES 53 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	0.88 ug/L	
612594-85	VES 54 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	1 ug/L	
612594-86	VES 55 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	0.57 ug/L	
612594-87	VES 56 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	1.2 ug/L	
612594-88	VES 58 1st Draw	01/11/2019 5:05 am	TL	ICP	Lead	0.5 ug/L	0.76 ug/L	
612594-89	VES 59 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	< 0.5 ug/L	
612594-90	VES 60 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	0.66 ug/L	
612594-91	VES 61 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	1.4 ug/L	
612594-92	VES 62 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	1.4 ug/L	
612594-93	VES 64 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	2.4 ug/L	
612594-94	VES 65 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	1.2 ug/L	
612594-95	VES 66 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	1.9 ug/L	
612594-96	VES 67 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	1.1 ug/L	
612594-97	VES 68 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	1 ug/L	
612594-98	VES 69 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	1.5 ug/L	
612594-99	VES 71 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	3.3 ug/L	
612594-100	VES 72 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	0.77 ug/L	



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612594-101	VES 73 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	1.3 ug/L	
612594-102	VES 74 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	0.66 ug/L	
612594-103	VES 75 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	1.5 ug/L	
612594-104	VES 77 1st Draw	01/11/2019 5:05 am	TL	ICP	Lead	0.5 ug/L	1.3 ug/L	
612594-105	VES 78 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	0.8 ug/L	
612594-106	VES 79 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	1.1 ug/L	
612594-107	VES 80 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	1.6 ug/L	
612594-108	VES 81 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	1.1 ug/L	
612594-109	VES 82 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	1.4 ug/L	
612594-110	VES 83 1st Draw	01/11/2019 5:05 am	CR	ICP	Lead	0.5 ug/L	4.4 ug/L	
612594-111	VES 86 1st Draw	01/11/2019 5:05 am	OT.5	ICP	Lead	0.5 ug/L	1.4 ug/L	
612594-112	VES 87 1st Draw	01/11/2019 5:05 am	OT.5	ICP	Lead	0.5 ug/L	6.6 ug/L	
612594-113	VES 9S 1st Draw	01/25/2019 6:20 am	TL	ICP	Lead	0.5 ug/L	0.58 ug/L	



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**Analysis Methods:** Flame AA: APHA SM3111B (1999, 22nd Ed.), Furnace AA: APHA SM3113B (2010, 22nd Ed.), ICP: EPA 200.8 (Rev. 5.4)

mg/L = Parts Per Million (ppm), N/A = Not Applicable, µg/L = Parts Per Billion, N/P = Not Provided

**Analyst(s):** Jean-Paul Littleton, Suphin Chinnapad

**Sample Collector:** Jeff Klenk  
**Certification:**

All results are to be considered preliminary and subject to change unless signed by the Technical Director or Deputy.

**Technical Director** Jean-Paul Littleton

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