



# CERTIFICATE OF ANALYSIS

**Chain of Custody:** 633582  
**Client:** Howard County Public School System  
**Address:** 10910 Route 108  
Ellicott City, MD 21042  
**Attention:** Jeff Klenk

**Job Name:** Manor Woods Elementary School  
**Job Location:** 11575 Frederick Road, Ellicott City,  
MD 21042  
**Job Number:** 13.052  
**P.O. Number:** Not Provided

**Date Submitted:** 03/04/2022  
**Date Analyzed:** 03/14/2022  
**Report Date:** 03/14/2022  
**Date Sampled:** 03/01/2022 - 03/02/2022  
**Person Submitting:** Dana Hudson

## 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					
633582-1	MWES-1A First-Draw	03/02/2022 5:40 pm	Faucet, Cold, Consumption, Kitchen, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	8.1 ug/L	8.1 ug/L. This result meets or exceeds the 5.5ppb action level as established by MDE for schools
all times are a.m. JK								
633582-2	MWES-1B Flush	03/02/2022 5:40 pm	Faucet, Cold, Consumption, Kitchen, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	4.5 ug/L	
633582-3	MWES-2 First-Draw	03/01/2022 5:20 pm	Drinking Water Fountain - Cooler/Chiller Style (Refrigerated), Consumption, Hallway, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	4.4 ug/L	
633582-4	MWES-4F First-Draw	03/01/2022 5:20 pm	Combination Sink - Fountain - Bubbler Style (Non-Refrigerated), Consumption, Classroom, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	24 ug/L	23.7 ug/L. This result meets or exceeds the 5.5ppb action level as established by MDE for schools
633582-5	MWES-4S First-Draw	03/02/2022 5:40 pm	Combination Sink - Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	1.2 ug/L	
633582-6	MWES-5 First-Draw	03/02/2022 5:40 pm	Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	2.2 ug/L	
633582-7	MWES-6F First-Draw	03/01/2022 5:20 pm	Combination Sink - Fountain - Bubbler Style (Non-Refrigerated), Consumption, Classroom, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	1.6 ug/L	
633582-8	MWES-6S First-Draw	03/02/2022 5:40 pm	Combination Sink - Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	3.3 ug/L	



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633582-9	MWES-8F First-Draw	03/01/2022 5:20 pm	Combination Sink - Fountain - Bubbler Style (Non-Refrigerated), Consumption, Classroom, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	1.2 ug/L	
633582-10	MWES-8S First-Draw	03/02/2022 5:40 pm	Combination Sink - Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	2.6 ug/L	
633582-11	MWES-9 First-Draw	03/01/2022 5:20 pm	Drinking Water Fountain - Cooler/Chiller Style (Refrigerated), Consumption, Hallway, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	< 1 ug/L	
633582-12	MWES-11F First-Draw	03/01/2022 5:20 pm	Combination Sink - Fountain - Bubbler Style (Non-Refrigerated), Consumption, Classroom, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	2.9 ug/L	
633582-13	MWES-11S First-Draw	03/02/2022 5:40 pm	Combination Sink - Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	2.6 ug/L	
633582-14	MWES-12 First-Draw	03/02/2022 5:40 pm	Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	2.1 ug/L	
633582-15	MWES-15 First-Draw	03/01/2022 5:20 pm	Drinking Water Fountain - Cooler/Chiller Style (Refrigerated), Consumption, Hallway, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	1.9 ug/L	
633582-16	MWES-16 First-Draw	03/02/2022 5:40 pm	Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	2.2 ug/L	
633582-17	MWES-17 First-Draw	03/02/2022 5:40 pm	Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	2.4 ug/L	
633582-18	MWES-18 First-Draw	03/02/2022 5:40 pm	Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	1.5 ug/L	
633582-19	MWES-20 First-Draw	03/01/2022 5:20 pm	Drinking Water Fountain - Cooler/Chiller Style (Refrigerated), Consumption, Hallway, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	2 ug/L	2.0 ug/L
633582-20	MWES-22F First-Draw	03/01/2022 5:20 pm	Combination Sink - Fountain - Bubbler Style (Non-Refrigerated), Consumption, Classroom, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	2.9 ug/L	
633582-21	MWES-22S First-Draw	03/02/2022 5:40 pm	Combination Sink - Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	3 ug/L	3.0 ug/L
633582-22	MWES-23 First-Draw	03/02/2022 5:40 pm	Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	2.9 ug/L	



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		Date/Time	Location					
633582-23	MWES-24F First-Draw	03/01/2022 5:20 pm	Combination Sink - Fountain - Bubblers Style (Non-Refrigerated), Consumption, Classroom, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	< 1 ug/L	
633582-24	MWES-24S First-Draw	03/02/2022 5:40 pm	Combination Sink - Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	1.9 ug/L	
633582-25	MWES-27F First-Draw	03/01/2022 5:20 pm	Combination Sink - Fountain - Bubblers Style (Non-Refrigerated), Consumption, Classroom, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	< 1 ug/L	
633582-26	MWES-27S First-Draw	03/02/2022 5:40 pm	Combination Sink - Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	3.4 ug/L	
633582-27	MWES-28 First-Draw	03/01/2022 5:20 pm	Drinking Water Fountain - Cooler/Chiller Style (Refrigerated), Consumption, Hallway, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	< 1 ug/L	
633582-28	MWES-32F First-Draw	03/01/2022 5:20 pm	Combination Sink - Fountain - Bubblers Style (Non-Refrigerated), Consumption, Classroom, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	< 1 ug/L	
633582-29	MWES-32S First-Draw	03/02/2022 5:40 pm	Combination Sink - Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	2.4 ug/L	
633582-30	MWES-34 First-Draw	03/01/2022 5:20 pm	Drinking Water Fountain - Cooler/Chiller Style (Refrigerated), Consumption, Hallway, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	< 1 ug/L	
633582-31	MWES-36F First-Draw	03/01/2022 5:20 pm	Combination Sink - Fountain - Bubblers Style (Non-Refrigerated), Consumption, Classroom, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	< 1 ug/L	
633582-32	MWES-36S First-Draw	03/02/2022 5:40 pm	Combination Sink - Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	2.7 ug/L	
633582-33	MWES-37 First-Draw	03/02/2022 5:40 pm	Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	1.9 ug/L	
633582-34	MWES-38F First-Draw	03/01/2022 5:20 pm	Combination Sink - Fountain - Bubblers Style (Non-Refrigerated), Consumption, Classroom, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	< 1 ug/L	
633582-35	MWES-38S First-Draw	03/02/2022 5:40 pm	Combination Sink - Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	2 ug/L	2.0 ug/L
633582-36	MWES-40F First-Draw	03/01/2022 5:20 pm	Combination Sink - Fountain - Bubblers Style (Non-Refrigerated), Consumption, Classroom, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	1.1 ug/L	



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633582-37	MWES-40S First-Draw	03/02/2022 5:40 pm	Combination Sink - Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	3.2 ug/L	
633582-38	MWES-41F First-Draw	03/01/2022 5:20 pm	Combination Sink - Fountain - Bubblers Style (Non-Refrigerated), Consumption, Classroom, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	1.8 ug/L	
633582-39	MWES-41S First-Draw	03/02/2022 5:40 pm	Combination Sink - Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	1.6 ug/L	
633582-40	MWES-42F First-Draw	03/01/2022 5:20 pm	Combination Sink - Fountain - Bubblers Style (Non-Refrigerated), Consumption, Classroom, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	1.3 ug/L	
633582-41	MWES-42S First-Draw	03/02/2022 5:40 pm	Combination Sink - Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	< 1 ug/L	
633582-42	MWES-43F First-Draw	03/01/2022 5:20 pm	Combination Sink - Fountain - Bubblers Style (Non-Refrigerated), Consumption, Classroom, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	< 1 ug/L	
633582-43	MWES-43S First-Draw	03/02/2022 5:40 pm	Combination Sink - Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	1.1 ug/L	
633582-44	MWES-44 First-Draw	03/01/2022 5:20 pm	Drinking Water Fountain - Cooler/Chiller Style (Refrigerated), Consumption, Hallway, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	< 1 ug/L	
633582-45	MWES-44BW First-Draw	03/02/2022 5:40 pm	Bottle Filler/Drinking Fountain Combo Unit - Fountain - Cooler/Chiller Style (Refrigerated), Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	< 1 ug/L	JK
633582-46	MWES-45 First-Draw	03/02/2022 5:40 pm	Faucet, Cold, Consumption, Nurse's Office/Health Room, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	2.1 ug/L	
633582-47	MWES-46 First-Draw	03/02/2022 5:40 pm	Faucet, Cold, Consumption, Staff Workroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	3.6 ug/L	
633582-48	MWES-47 First-Draw	03/02/2022 5:40 pm	Faucet, Cold, Consumption, Teachers' Lounge/Break Room, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	1 ug/L	1.0 ug/L
633582-49	MWES-49 First-Draw	03/02/2022 5:40 pm	Faucet, Cold, Consumption, Media Center, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	3.7 ug/L	
633582-50	MWES-50F First-Draw	03/01/2022 5:20 pm	Combination Sink - Fountain - Bubblers Style (Non-Refrigerated), Consumption, Classroom, , Fountain, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	< 1 ug/L	



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633582-51	MWES-50S First-Draw	03/02/2022 5:40 pm	Combination Sink - Faucet, Cold, Consumption, Classroom, , Sink, Main Bldg, 1st Floor	Furnace AA	Lead	1 ug/L	2.4 ug/L	

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

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

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

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

**Analyst(s):** Nida McGarvey

**Technical Director** Jean-Paul Littleton

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