

2024 Summary Report

LRI Landfill Residential Drinking Water Well Sampling

January 2025
Drinking Water Program
Residential Water Sampling Project

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Summary

BACKGROUND

This report summarizes the water quality sampling event conducted in 2024.

All drinking water wells within one-half (1/2) mile of the LRI Landfill boundary are eligible for free water quality sampling once a year. Substances chosen for testing by the Health Department are to assess groundwater quality. These tests can show information about possible groundwater impacts from the landfill.

Property owners have their well water sampled in the Fall of each year and participation is voluntary.

Water samples are tested annually for twenty characteristics and substances, including conductivity, pH, ammonia, nitrate, chloride, iron, manganese, magnesium and coliform bacteria. In addition to the annual water quality tests, participants will have their water tested every five years for 'Volatile Organic Compounds' (VOCs). Starting in Spring 2015, members of the Woodbrook Homeowners Association are eligible for annual VOC testing because of their legal settlement over the relocation of Woodbrook Road (317th Street East).

Although coliform bacteria in groundwater from a landfill is unusual, the Health Department included coliform bacteria testing as part of the sampling program. These tests are included because of the known health effects of bacterial contamination in drinking water.

The Health Department requires the landfill operator to maintain an on-site groundwater monitoring program. This on-site monitoring program has been in effect since 1999 and every 3 months the landfill samples and tests nine wells around the perimeter of the landfill property. All groundwater monitoring data from these wells is available from the Health Department.

2024 SAMPLING EVENT

The 2024 event collected water samples at 41 properties between September 30 and October 3, 2024. Am Test Laboratories performed bacteriological, organic and inorganic chemical analyses. Participants received detailed water quality test results in December 2024. No landfill-related impacts to groundwater quality were identified from the water quality test results.

A complete list of water quality test results is in **Table 1**.

The 2024 sampling event tested VOC water samples from 26 residential wells. Two properties had detections of VOCs. The sample result is below contamination limits at both properties. Health Department staff contacted the property owners and discussed their results.

The remaining 2024 water quality test results are consistent with water quality test results from previous sampling events. The results show groundwater near the landfill is still typical of groundwater chemistry in Pierce County. Iron and manganese levels are consistently above the secondary standards set by the Washington State Department of Health. Elevated iron and

manganese levels are typical of groundwater conditions throughout much of Pierce County due to the underlying geology.

The Washington State Department of Health considers iron and manganese a “secondary contaminant.” Secondary contaminants pose aesthetic problems rather than health concerns. High levels of iron and manganese can give water a metallic taste, cause odors and can cause brown or black staining of porcelain fixtures exposed to the water.

Tables 1 and 2 show the water quality sample results. Results that exceed the state water quality standards are shown in bold and highlighted. For quality control purposes, duplicate samples were taken at four locations. **Tables 3 and 4** show the results of the quality control samples.

BACTERIA

During this sampling event, 4 of the 41 wells tested had bacteria present in their well water (bacteria in the water is shown as an “unsatisfactory” test result and indicated as a “U” on Table 1). Coliform bacteria can be a common problem in drinking water wells. If there is concern about bacteria in a well, we recommend shock chlorination as this will typically resolve the issue.

CONTACTS

For questions about this report or the sample results, please contact the Health Department’s Drinking Water Program.

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TABLE 1: 2024 Water Quality Result

		Dissolved Metals										Total Metals										
Site	Sample Date	Arsenic	Barium	Calcium	Copper	Iron	Magnesium	Manganese	Potassium	Sodium	Zinc	Arsenic	Barium	Calcium	Copper	Iron	Magnesium	Manganese	Potassium	Sodium	Zinc	
MCL		0.01	2		1.3							0.3					0.05					
SR0117362	10/2/2024	0.000792	0.004498	10.1	0.000983	ND	6.09	0.000616	1.44	7.32	0.000946	0.001	0.005	11.7	0.001	0.143	7.02	0.002	1.82	8.15	0.001	
SR0117447	9/30/2024	0.000197	0.0036	11.3	0.04156	0.038	8.24	0.00244	1.84	7.19	0.01108	0.0004	0.004	14.4	0.044	0.03	10.3	0.003	2.16	8.41	0.012	
SR0117451	10/1/2024	0.000553	0.007737	20.6	0.003053	0.044	16.1	0.6598	1.73	16.5	0.004113	0.002	0.01	27.5	0.027	0.973	19.1	0.736	2.21	20.5	0.006	
SR0117455	10/2/2024	0.000189	0.003432	14.3	0.000889	0.901	6.26	0.2869	1.88	6.6	0.000642	0.0005	0.004	18.5	0.002	1.41	7.89	0.344	2.69	8.1	0.0006	
SR0117458	10/3/2024	0.003116	0.008577	19.5	0.001095	0.09	5.21	0.06155	1.2	17.5	0.01485	0.004	0.013	19.4	0.003	0.29	5.18	0.082	1.14	17.7	0.021	
SR0117459	10/1/2024	0.000523	0.01563	12.5	ND	0.296	6.73	0.1555	1.25	10.9	ND	0.0004	0.018	16.6	0.0008	0.519	8.5	0.172	1.58	12.6	ND	
SR0117460	10/1/2024	0.00581	0.006849	19.3	ND	1.24	7.42	0.4476	2.44	8.9	0.003015	0.007	0.008	26	0.0006	1.84	9.55	0.546	3.11	10.7	0.018	
SR0117478	9/30/2024	0.000661	0.01731	13.6	0.000737	0.767	6.46	0.1728	1.35	10.5	0.007203	0.001	0.019	17.5	0.001	1.08	8.05	0.189	1.65	12.2	0.006	
SR0117479	10/3/2024	0.00012	0.008617	15.5	ND	0.864	7.76	0.129	1.48	10.7	ND	0.0003	0.011	14.4	0.002	0.941	7.24	0.169	1.3	9.76	0.001	
SR0117480	9/30/2024	0.000749	0.004238	12.7	ND	0.361	7.46	0.528	0.94	14.5	0.007804	0.001	0.005	18.6	0.002	0.567	10.2	0.651	1.31	18.7	0.011	
SR0120518	10/2/2024	0.00372	ND	ND	0.00133	ND	ND	0.000594	ND	46.2	0.00232	0.004	ND	ND	0.002	ND	ND	0.0005	ND	51.5	0.003	
SR0120525	10/1/2024	0.000756	0.003221	11.5	ND	0.238	5.3	0.05839	1.42	13.9	ND	0.0009	0.003	15.8	0.025	0.249	7.04	0.067	1.93	16.7	0.023	
SR0120529	10/3/2024	0.000581	0.01164	14.4	ND	0.779	7.6	0.1555	1.43	9.48	0.02045	0.0007	0.012	14.6	ND	0.896	7.72	0.168	1.38	9.82	0.033	
SR0120545	10/1/2024	0.000205	ND	ND	0.001848	ND	ND	ND	ND	45.2	0.001132	0.0005	ND	ND	0.002	ND	ND	0.0002	ND	54.9	0.001	
SR0120549	10/3/2024	0.002405	0.00933	17.9	ND	0.341	8.04	0.1175	1.48	12.8	0.05418	0.003	0.012	16.7	ND	0.368	7.47	0.154	1.33	11.9	0.084	
SR0120557	10/2/2024	0.000381	ND	ND	0.00108	0.031	ND	ND	ND	39.5	0.000553	0.0005	ND	ND	0.004	ND	ND	ND	ND	45.4	0.002	
SR0120559	10/3/2024	0.00402	0.008146	17.7	0.000532	0.4	6.68	0.08496	1.26	13.7	0.000889	0.004	0.009	17.3	0.0007	0.479	6.51	0.103	1.19	13.2	0.002	
SR0120633	10/1/2024	0.000722	0.01557	12.3	ND	0.17	5.04	0.1371	0.985	11.3	0.003993	0.001	0.017	17.5	ND	0.287	6.81	0.161	1.33	14	0.01	
SR0120634	10/2/2024	0.001776	0.00285	9.05	0.000857	0.091	5.87	0.00307	1.44	6.88	0.00116	0.002	0.003	10.9	0.0008	0.247	7.04	0.003	1.93	7.97	0.001	
SR0120939	10/2/2024	0.00097	0.0153	10.8	ND	0.245	5.31	0.1838	1.22	7.31	0.03905	0.001	0.016	14.3	ND	0.338	6.86	0.2	1.77	9.09	0.005	
SR0126808	10/1/2024	0.000768	0.00098	10.4	0.01843	ND	12.2	0.000414	1.55	7.59	0.002748	0.0009	0.001	14.3	0.021	ND	16.1	0.0004	2.02	9.07	0.003	
SR0126809	10/3/2024	0.004395	0.004376	17.7	ND	0.145	6.55	0.08762	1.4	9.56	0.000509	0.004	0.005	17.3	0.0006	0.153	6.27	0.113	1.33	9.1	0.0009	
SR0133431	10/3/2024	0.000778	0.001859	15.1	ND	1.4	7.66	0.0597	1.63	16.8	0.002092	0.001	0.003	15.1	0.001	1.71	7.65	0.075	1.63	17.2	0.002	
SR0142928	10/3/2024	0.002884	0.002546	12.3	ND	1.18	8.8	0.07169	2.32	8.62	0.009811	0.004	0.004	12.2	0.001	1.74	8.72	0.092	2.23	8.79	0.011	
SR0154487	10/2/2024	0.001881	ND	ND	ND	0.034	ND	0.001045	ND	38.5	0.00053	0.003	ND	ND	0.0007	0.036	ND	0.001	ND	43.4	ND	
SR0169553	9/30/2024	0.007397	0.01171	24.2	ND	0.602	10.2	0.1637	3.06	12.2	0.002009	0.008	0.012	27.6	0.0006	0.812	11.3	0.181	3.25	12.7	0.003	
SR0170781	9/30/2024	0.006875	0.01022	27.4	ND	0.712	15.5	0.5828	3.47	12	0.01425	0.009	0.019	33.4	ND	2.02	18	0.638	4.09	13.5	0.026	
SR0192658	9/30/2024	0.00424	ND	ND	0.007169	0.039	ND	0.000578	ND	47.4	0.003681	0.005	ND	ND	0.003	ND	ND	0.0007	ND	55.5	0.0009	
SR0198408	10/2/2024	0.000734	0.002803	17.5	0.001607	0.124	8.93	0.5388	1.19	12.6	0.00781	0.001	0.003	20.5	0.001	0.133	10.1	0.597	1.56	14	0.007	
SR0198809	10/2/2024	0.000469	0.002673	15.8	0.000649	0.172	8.18	0.1152	0.762	8.23	0.008653	0.0006	0.003	19.2	0.045	0.44	9.8	0.13	1.03	9.62	0.064	
SR0205003	10/1/2024	0.000548	0.002954	11	ND	0.034	7.48	0.009914	1.7	7.2	0.01853	0.002	0.004	14.9	0.002	2.17	9.53	0.022	2.12	8.58	0.02	
SR0217737	10/3/2024	0.001641	ND	ND	0.000677	0.049	ND	0.000425	ND	42.8	0.002657	0.002	ND	ND	0.041	0.05	ND	0.0003	ND	43.3	0.01	
SR0217738	9/30/2024	0.002025	0.003991	14	ND	0.494	8.02	0.4958	0.8	15.5	0.001506	0.002	0.005	18.7	0.0006	0.987	10.3	0.535	1.04	18.9	0.002	
SR0219859	10/2/2024	0.002195	0.000889	20.2	0.000952	0.033	13.3	0.3842	2.64	7.65	0.01276	0.003	0.001	24.7	0.003	ND	15.8	0.42	3.53	9.07	0.019	
SR0254903	9/30/2024	0.000662	0.002643	12.7	0.02478	ND	10.1	0.000285	2.01	7.59	0.01295	0.0008	ND	15.3	0.001	ND	11.9	0.0004	2.28	8.65	0.002	
SR0254905	10/2/2024	0.001077	ND	ND	0.005905	ND	ND	0.000493	ND	62.9	0.02325	0.001	ND	ND	0.007	ND	ND	0.0006	ND	66.3	0.029	
SR0277945	9/30/2024	0.000442	0.001639	13.7	0.001968	0.032	7.1	0.05924	1.59	7.08	0.002151	0.0008	0.001	17.8	0.003	0.095	8.96	0.064	1.97	8.29	0.002	
SR0278346	9/30/2024	0.005049	ND	ND	0.00495	0.033	ND	0.000563	ND	65.2	0.01165	0.006	ND	ND	0.006	ND	ND	0.0005	ND	78.2	0.011	
SR0278347	9/30/2024	0.003618	0.004435	9.59	ND	0.044	5.77	0.1193	1.3	5.52	0.003203	0.005	0.005	13.6	ND	0.336	7.9	0.139	1.79	7.03	0.005	
SR0299986	10/3/2024	0.000461	0.003925	32.3	ND	0.475	15.6	1.055	1.92	10	0.03477	0.001	0.005	31.6	ND	0.363	15.1	1.343	1.87	10	0.006	
SR0300313	10/3/2024	0.000386	0.001924	15.3	ND	0.197	8.1	0.2955	1.48	16.3	0.006932	0.001	0.003	15.8	0.002	2.68	8.26	0.364	1.54	17.1	0.013	

Units of measurement = Parts Per Million (mg/L), except for bacteria, conductivity, and pH
ND = Not detected at the specified laboratory detection limit
U = Unsatisfactory (bacteria are present in the sample)
S = Satisfactory
MCL = Maximum Contamination Level
Please refer to the “Water Quality and Abbreviation and Notes” page for information about the terms used on this table.

TABLE 1: 2024 Water Quality Result

		General Chemistry									
Site	Sample Date	Ammonia	Chloride	Nitrate Nitrogen	Nitrite Nitrogen	Sulfate	Total Dissolved Solids	Total Nitrate + Nitrite	Conductivity	pH	Total Coliform
MCL			250	10	1	250	500		700 umhos/cm		
SR0117362	10/2/2024	ND	3.34	0.796	ND	1.71	122	0.796	149	6.9	S
SR0117447	9/30/2024	ND	2.9	1.58	ND	2.03	130	1.58	170	6.2	S
SR0117451	10/1/2024	0.027	5.48	0.568	0.027	36.5	241	0.595	370	6.7	S
SR0117455	10/2/2024	0.063	2.61	ND	ND	3.22	141	ND	190	6.6	S
SR0117458	10/3/2024	0.025	2.99	ND	ND	1.69	111	ND	282	8.1	S
SR0117459	10/1/2024	ND	2.24	ND	ND	1.84	100	ND	179	6.8	S
SR0117460	10/1/2024	0.354	4.97	ND	ND	8.6	149	ND	209	6.8	S
SR0117478	9/30/2024	0.031	2.49	ND	ND	3.15	81	ND	186	6.7	S
SR0117479	10/3/2024	ND	2.3	ND	ND	1.73	98	ND	159	7.1	S
SR0117480	9/30/2024	0.034	2.73	ND	ND	1.21	130	ND	205	6.9	U
SR0120518	10/2/2024	ND	2.62	ND	ND	2.68	136	ND	213	7.6	S
SR0120525	10/1/2024	ND	2.46	ND	ND	2.34	108	ND	184	7.3	S
SR0120529	10/3/2024	ND	2.36	ND	ND	1.58	114	ND	157	7	S
SR0120545	10/1/2024	ND	10.6	6.04	ND	4.97	196	6.04	233	6.9	S
SR0120549	10/3/2024	0.03	2.08	ND	ND	2.53	96	ND	173	7	S
SR0120557	10/2/2024	ND	2.43	ND	ND	2.9	132	ND	190	7	U
SR0120559	10/3/2024	ND	2.25	ND	ND	2.63	113	ND	184	7.3	S
SR0120633	10/1/2024	0.046	2.12	ND	ND	2.12	116	ND	167	6.5	S
SR0120634	10/2/2024	ND	2.17	0.075	ND	2.54	122	ND	142	6.2	S
SR0120939	10/2/2024	0.087	2.44	ND	ND	2.31	125	ND	164	7.2	S
SR0126808	10/1/2024	ND	7.44	4.35	ND	4.06	177	4.35	218	6.7	S
SR0126809	10/3/2024	0.026	2.48	ND	ND	2.62	98	ND	162	7.1	S
SR0133431	10/3/2024	ND	2.23	ND	ND	0.93	125	ND	196	6.8	S
SR0142928	10/3/2024	ND	2.02	ND	ND	1.33	118	ND	162	7.1	S
SR0154487	10/2/2024	ND	2.33	ND	ND	2.1	99	ND	183	7.3	S
SR0169553	9/30/2024	0.161	8.7	ND	ND	3.72	150	ND	259	7.1	U
SR0170781	9/30/2024	0.795	5.06	ND	ND	4.19	179	ND	343	6.9	S
SR0192658	9/30/2024	ND	7.28	ND	ND	4.42	121	ND	234	7.2	S
SR0198408	10/2/2024	ND	2.14	ND	ND	0.67	117	ND	237	7.1	S
SR0198809	10/2/2024	ND	5.57	ND	ND	3.11	109	ND	207	6.2	S
SR0205003	10/1/2024	ND	2.44	0.136	ND	1.16	118	ND	154	7.2	S
SR0217737	10/3/2024	ND	2.17	ND	ND	3.26	97	ND	165	7.5	S
SR0217738	9/30/2024	0.17	2.31	ND	ND	0.66	103	ND	226	7.2	S
SR0219859	10/2/2024	0.033	9.64	ND	ND	10.9	154	ND	294	7.2	S
SR0254903	9/30/2024	ND	3.78	1.69	ND	3.29	138	1.69	192	6.2	S
SR0254905	10/2/2024	ND	2.43	ND	ND	0.93	167	ND	286	8.4	S
SR0277945	9/30/2024	ND	2.25	1.92	ND	1.3	148	1.92	166	6.4	S
SR0278346	9/30/2024	0.045	9.45	ND	ND	3.56	193	ND	315	7.4	S
SR0278347	9/30/2024	ND	2.42	0.064	ND	3.87	94	ND	142	6.9	U
SR0299986	10/3/2024	ND	14	ND	ND	6.84	183	ND	294	6.8	S
SR0300313	10/3/2024	ND	2.55	ND	ND	1.41	128	ND	183	6.8	S

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MCL = Maximum Contamination Level
Please refer to the “Water Quality and Abbreviation and Notes” page for information about the terms used on this table.

TABLE 2: 2024 Water Quality Result VOC Results

	SR0117362	SR0117447	SR0117451	SR0117455	SR0117458	SR0117478	SR0120518	SR0120529	SR0120549	SR0120557	SR0120559	SR0120634	SR0120939	SR0126809	SR0133431	SR0142928	SR0154487	SR0169553	SR0198408	SR0198809	SR0205003	SR0217737	SR0219859	SR0254905	SR0299986	SR0300313
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane (DBCP)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.530	ND	ND
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.520	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total THM	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Units of measurement = Parts per Billion (ug/L)
ND = Not detected at the specified laboratory detection limit

TABLE 3: 2024 Water Quality Duplicate Results

Chemical or Analyte----->

		Dissolved Metals										Total Metals									
Site	Sample Date	Arsenic	Barium	Calcium	Copper	Iron	Magnesium	Manganese	Potassium	Sodium	Zinc	Arsenic	Barium	Calcium	Copper	Iron	Magnesium	Manganese	Potassium	Sodium	Zinc
MCL		0.01	2		1.3											0.3		0.05			
SR0117447	9/30/2024	0.000387	0.003488	10.2	0.03411	ND	7.66	0.002353	1.6	6.68	0.011	0.0005	0.004	14.4	0.045	ND	10.2	0.003	2.2	8.43	0.014
SR0117455	10/2/2024	0.000315	0.003468	14.5	0.000503	0.882	6.3	0.3002	1.89	6.67	ND	0.0006	0.004	18.4	0.002	1.4	7.83	0.337	2.64	8.09	0.0006
SR0205003	10/1/2024	0.000512	0.00269	11.5	ND	ND	7.77	0.009786	1.77	7.46	0.02489	0.002	0.004	14.8	0.001	1.85	9.51	0.015	2.11	8.54	0.032
SR0299986	10/3/2024	0.000525	0.003966	32.2	ND	0.441	15.4	0.96	1.92	9.9	0.003429	0.0009	0.005	32.1	ND	0.387	15.4	1.333	1.83	10.2	0.005

		General Chemistry									
Site	Sample Date	Ammonia	Chloride	Nitrate Nitrogen	Nitrite Nitrogen	Sulfate	Total Dissolved Solids	Total Nitrate + Nitrite	Conductivity	pH	Total Coliform
MCL			250	10	1	250	500		700 umhos/cm		
SR0117447	9/30/2024	ND	2.87	1.58	ND	2.03	137	1.58	165	6.2	S
SR0117455	10/2/2024	0.061	2.63	ND	ND	3.23	132	ND	190	6.8	S
SR0205003	10/1/2024	ND	2.12	0.157	ND	1.18	131	ND	163	7	S
SR0299986	10/3/2024	ND	14	ND	ND	6.9	187	ND	317	6.6	S

Units of measurement = Parts Per Million (mg/L)
ND = Not detected at the specified laboratory detection limit
MCL = Maximum Contamination Level
MCL exceedances for Iron and Manganese do not pose a health risk.
Please refer to the “Water Quality and Abbreviation and Notes” page for information about the terms used on this tabl

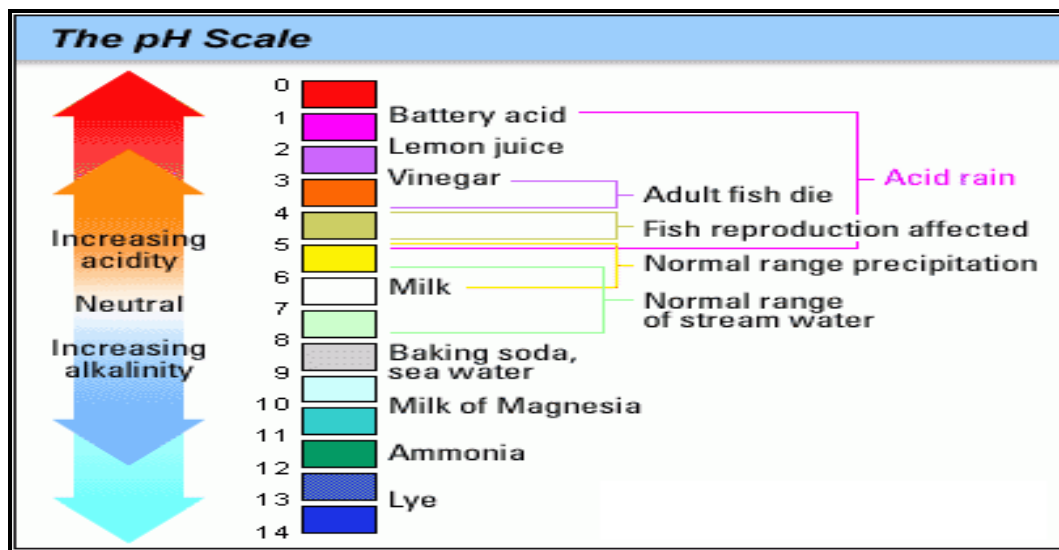
TABLE 4: 2024 Water Quality VOC Duplicate Results

RECORD_ID	SR0117447	SR0117455	SR0205003	SR0299986
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND
1,1-Dichloroethylene	ND	ND	ND	ND
1,1-Dichloropropene	ND	ND	ND	ND
1,2,3-Trichlorobenzene	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane (DBCP)	ND	ND	ND	ND
1,2-Dibromoethane (EDB)	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND
1,3-Dichloropropane	ND	ND	ND	ND
1,3-Dichloropropene	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND
2,2-Dichloropropane	ND	ND	ND	ND
2-Chlorotoluene	ND	ND	ND	ND
4-Chlorotoluene	ND	ND	ND	ND
Benzene	ND	ND	ND	ND
Bromobenzene	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND
Carbon Tetrachloride	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND
Dibromochloroethane	ND	ND	ND	ND
Dibromomethane	ND	ND	ND	ND
Dichlorodifluoromethane	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND
Isopropylbenzene	ND	ND	ND	ND
m,p Xylenes	ND	ND	ND	ND
Methylene Chloride	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND
n-Butylbenzene	ND	ND	ND	ND
n-Propylbenzene	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND
p-Isopropyltoluene	ND	ND	ND	ND
sec-Butylbenzene	ND	ND	ND	ND
Styrene	ND	ND	ND	ND
tert-Butylbenzene	ND	ND	ND	ND
Tetrachloroethylene	ND	ND	ND	ND
Toluene	ND	ND	ND	ND
Total THM	ND	ND	ND	ND
Total Xylenes	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND
Trichloroethylene	ND	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND

Units of measurement = Parts per Billion (ug/L)
ND = Not detected at the specified laboratory detection limit
Units of measurement = Parts per Billion (ug/L)
ND = Not detected at the specified laboratory detection limit
MCL = Maximum Contamination Level

Water Quality Abbreviations and Notes:

Analyte:	The chemical or metal tested for in the water sample.
Result:	The level of the chemical or mineral detected by the laboratory in this water sample.
ND:	Non-Detect, the chemical or metal was not detected in this water sample.
Unit:	The unit of measure reported by the laboratory.
mg/l:	milligrams per liter, or 1 part per million.
MCL:	“Maximum Contaminant Level”. The water quality standard established by state or federal regulation.
#/100ml:	The number of bacteria colonies detected in 100 milliliters of water. Note: An MCL of “0.00” means that there should be no bacteria detected in the water sample.
umhos/cm:	microMhos per centimeter, a measurement of the ability of the water to conduct an electrical charge. Used to help determine the presence of some chemical ions.
ppb:	Parts per billion often expressed as micrograms per liter (ug/L)
pH:	A numerical measure of the level of acidity or alkalinity of the water. See the table below.



APPENDIX A

Sampling for Volatile Organic Compounds

In 2007, several program participants and members of the Graham Land Use Advisory Commission asked why ‘volatile organic compounds’ (VOCs) had not been included in the original LRI Landfill residential drinking water sampling program. They asked to have the sampling program modified to include testing for these volatile organic compounds. Because of the request and inquiries, the sampling program changed to include 68 VOCs for analysis.

The program modification included a provision to test each participating well every five-year period for VOCs. This modification began during the Fall 2007 sampling event with the testing of nine residential wells for VOCs.

Where do VOCs come from?

Common artificial sources of VOCs are many and varied, but can include paint thinners, dry cleaning solvents, and some constituents of petroleum-based fuels (e.g., gasoline and natural gas). Landfills, through the anaerobic digestion of waste generates methane gas, which is also considered a VOC.