



Tonawanda Landfill Vicinity Property
Environmental Monitoring Data Release
2012 Sampling Event
Tonawanda, NY

U.S. Army Corps of Engineers
Buffalo District

Building Strong®

December 2012

Formerly Utilized Sites Remedial Action Program (FUSRAP)

FUSRAP was initiated in 1974 to identify, investigate, and clean up or control sites throughout the United States that were contaminated as the result of activities related to the Nation's early atomic energy and weapons program in the 1940s, 1950s and 1960s. When implementing FUSRAP, the U.S. Army Corps of Engineers follows the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The Tonawanda Landfill Vicinity Property was designated into FUSRAP in 1992, and is currently in the Feasibility Study phase of the CERCLA investigation process.

Site Description

The Tonawanda Landfill Vicinity Property consists of two parcels owned by the Town of Tonawanda: the Town of Tonawanda Landfill (Landfill Operable Unit [OU]) and the North Youngmann Commerce Center (formerly known as the Mudflats). The Tonawanda Landfill Vicinity Property covers approximately 170 acres in the Town of Tonawanda, Erie County, New York. The vicinity property is bordered by a residential area within the City of Tonawanda, a railroad line, Interstate 290 and East Park Drive. A National Grid utility corridor separates the Landfill OU and the North Youngmann Commerce Center.

Purpose

The purpose of this environmental data release is to provide groundwater, surface water, and sediment monitoring data that is collected annually at the site. The Corps of Engineers is posting this data at <http://www.lrb.usace.army.mil/Missions/HTRW/FUSRAP/TonawandaLandfill.aspx> on the Tonawanda Landfill Vicinity Property web page. Included on the web page are annual environmental monitoring data and the Corps' interpretation of these data, and a fact sheet describing the annual environmental monitoring program.

Results and Interpretation

Figure 1 shows the location of the groundwater and surface water and collocated sediment locations sampled at the Landfill OU in the spring of 2012. Groundwater surface elevations were measured during the 2012 monitoring event and are presented in Table 1. These elevations were plotted as groundwater contours, shown in Figure 2. The data indicate that groundwater flow in the Landfill OU is generally towards the south or southwest.

Groundwater analytical results for the 2012 annual monitoring event, for non-filtered and filtered samples, are presented in Tables 2 and 3, respectively. The U.S. Environmental Protection Agency (USEPA) Maximum Contaminant Levels (MCLs) are the accepted contaminant guidelines for drinking water; and while groundwater at the Landfill OU is not a drinking water source, the MCLs were used for screening purposes to identify elevated levels of radionuclides in the sample results. The MCL for radium-226 (Ra-226) and radium-228 (Ra-228) combined is 5 pCi/L, which none of the 2012 non-filtered or filtered groundwater samples exceeded. There is no MCL specifically for thorium, so thorium results are instead compared to the MCL for gross alpha (15 pCi/L), since thorium isotopes all emit alpha radiation. None of the thorium results in the non-filtered or filtered groundwater samples exceeded this level. The MCL for total uranium is 30 µg/L, which was exceeded in the non-filtered and filtered groundwater samples from wells BM-4, BM-16, TWP-6, TWP-7, and TWP-13. These results are consistent with the previous round of sampling conducted by the Corps in 2009 and 2010. Wells BM-17, BM-18 and L-2 had non-filtered and filtered total uranium results that were below the MCL, but appeared elevated above background levels. Figure 3 shows the total uranium concentrations in filtered groundwater samples from the 2012 and previous Corps of Engineers sampling events. Exceedances of the total uranium MCL do not indicate an impact to human health, because the groundwater is not utilized for drinking water.

Surface water analytical results are presented in Table 4. While surface water at the Landfill OU poses minimal human health risk as it is not a drinking water source, it could pose a potential risk to aquatic life (which include aquatic plants, fish, and insects and other invertebrates which live in the water). While the Landfill OU is not currently managed for ecological purposes and is not expected to be in the future, for comparison purposes surface water results were screened against the Canadian surface water quality guideline (CWQG) for protection of aquatic life, developed by the Canadian Council of Ministers of the Environment in 2011. No corresponding surface water quality criteria for uranium have been developed by the U.S. Environmental Protection Agency or individual States. The CWQG for total uranium is 15 µg/L, which was exceeded in surface water samples from locations SW-01, SW-05, SW-06, SW-07, SW-08, SW-09, SW-10 and SW-11. The sample result from location SW-13 was just under the CWQG. With the exception of the near exceedance at location SW-13 which is just outside of the property line, all of the surface water samples that exceeded the total uranium CWQG are located on the Landfill OU. All of the other samples collected from the drainage ditch locations between the landfill boundary and Two Mile Creek were below the CWQG.

Sediment sample analytical results are presented in Table 5. Although cleanup criteria have not been established for the Landfill OU, for comparison purposes the sediment results were screened against the standard in Title 40 of the Code of Federal Regulations, Part 192 (40CFR192), Subpart B, for cleanup of Ra-226 in surface soils of 5 pCi/g above background. Sediment results were also compared to an ecological screening level for total uranium of 100 mg/kg. None of the sediment samples exceeded either the Ra-226 or the total uranium screening levels, which is consistent with the previous round of sediment sampling conducted by the Corps of Engineers.

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1776 NIAGARA STREET, BUFFALO, N.Y. 14207





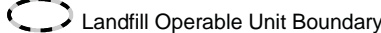
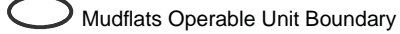
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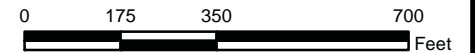
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Legend

-  Monitoring Well
-  Temporary Well Point
-  Surface Water Sample Location
-  Northern Drainage Ditch
-  Landfill Operable Unit Boundary
-  Mudflats Operable Unit Boundary



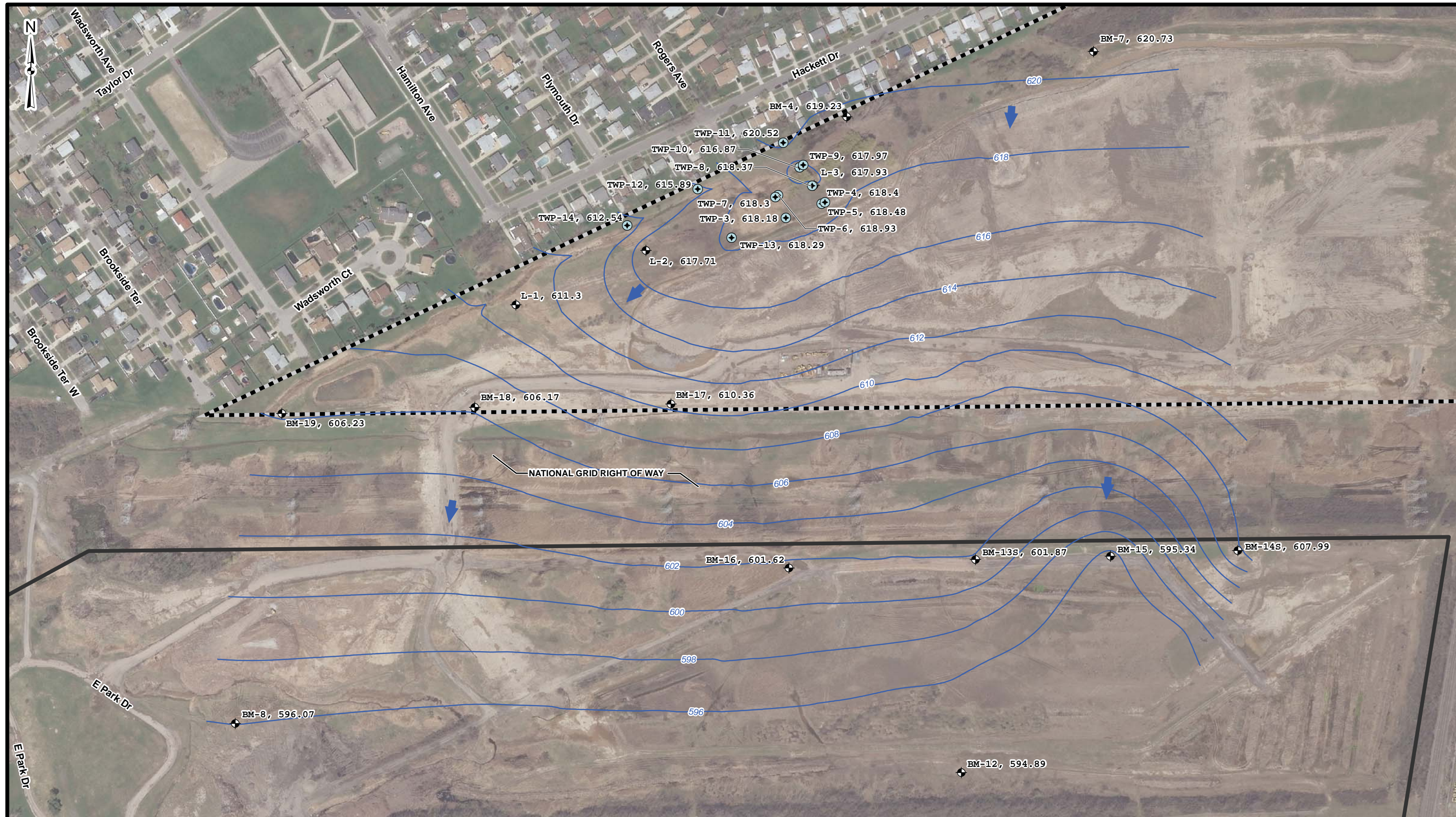
U.S. ARMY ENGINEER DISTRICT
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BUFFALO, NY

GROUNDWATER AND SURFACE WATER SAMPLING LOCATIONS
(MARCH - APRIL 2012)

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TONAWANDA LANDFILL
FUSRAP VICINITY PROPERTY
TONAWANDA, NEW YORK

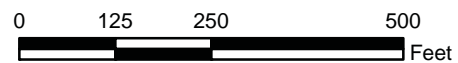
FIGURE 1



- Legend**
- ⊕ Monitoring Well
 - ⊕ Temporary Well Point
 - Groundwater Elevation Contour (ft amsl)
 - ← Groundwater Flow Direction

- ⊕ Landfill Operable Unit Boundary
- ⊕ Mudflats Operable Unit Boundary

NOTES:
1) Groundwater elevations measured in ft amsl.



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GROUNDWATER ELEVATION CONTOUR MAP
MARCH 26, 2012

**TONAWANDA LANDFILL
FUSRAP VICINITY PROPERTY
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FIGURE 2

Table 1: Groundwater Elevations for 2012 Monitoring Event

Well ID	Top of Casing Elevation (ft AMSL¹)	Depth to Water (ft from TOC²)	Groundwater Elevation (ft AMSL¹)
BM-4	621.6	2.37	619.23
BM-7 ³	625.24	4.51	620.73
BM-8 ³	600.54	4.47	596.07
BM-12 ³	603.24	8.35	594.89
BM-13S ³	605.78	3.91	601.87
BM-14S ³	610.9	2.91	607.99
BM-15	606.2	10.86	595.34
BM-16	613.86	12.24	601.62
BM-17	621.73	11.37	610.36
BM-18	619.51	13.34	606.17
BM-19	610.2	3.97	606.23
L-1	616.12	4.82	611.3
L-2	622.03	4.32	617.71
L-3	621.34	3.41	617.93
TWP-1 ⁴	NA	3.69	NA
TWP-3 ³	621.03	2.85	618.18
TWP-4	622.47	4.07	618.4
TWP-5	622.93	4.45	618.48
TWP-6	619.92	0.99	618.93
TWP-7	619.62	1.32	618.3
TWP-8	620.36	1.99	618.37
TWP-9	620.56	2.59	617.97
TWP-11	622.43	1.91	620.52
TWP-12 ³	620.87	4.98	615.89
TWP-13	622.27	3.98	618.29
TWP-14 ³	618.81	6.27	612.54

1. AMSL = Above Mean Sea Level
2. TOC = Top of Casing
3. These wells are not sampled as part of the environmental monitoring program, but groundwater elevations were recorded
4. Temporary well point TWP-1 was accidentally destroyed sometime after the 2012 monitoring event, before the TOC elevation could be measured.

Table 2: Groundwater Analytical Results for Non-Filtered Samples

Well	Month & Year	Ra-226 (pCi/L) ¹	Ra-228 (pCi/L) ¹	Th-228 (pCi/L) ¹	Th-230 (pCi/L) ¹	Th-232 (pCi/L) ¹	U-234 (pCi/L) ¹	U-235 (pCi/L) ¹	U-238 (pCi/L) ¹	Total U (µg/L) ²
BM-4	Sep-01	1.5	3.2	NA ³	0.3	0.3	14.4	0.4	12.3	30.1
	Jul-09	0.3121	0.9054	-0.046	0.2477	0.0639	13.06	1.312	14.24	27.978
	Apr-12	0	1.78	0.267	0.001	0.034	11.2	0.733	9.74	32.1
BM-15	Sep-01	0.6	0.6	NA ³	0.1	0.2	7.4	0.4	6.0	14.8
	Jul-09	NC ⁴	NC ⁴	NC ⁴	NC ⁴	NC ⁴	NC ⁴	NC ⁴	NC ⁴	NC ⁴
	Apr-12	0.356	0.184	0.21	0.157	0.019	7.84	0.201	5.95	16.1
BM-16	Sep-01	0.4	1.0	NA ³	0.0	0.0	13.2	0.6	9.9	27.0
	Jul-09	0.7119	0.1399	0.0313	0.1695	0.049	14.25	0.9395	11.31	26.456
	Apr-12	0.315	0.746	0.494	0.066	-0.02	13.6	0.499	12	36.3
BM-17	Sep-01	1.5	2.5	NA ³	0.3	0.1	9.2	0.7	8.0	22.5
	Jul-09	1.6162	0.9427	0.1217	0.3508	0.038	9.582	0.3404	8.078	20.157
	Apr-12	0.47	0.343	0.147	0.037	0.007	5.96	0.4	5.97	17.2
BM-18	Sep-01	2.2	1.5	NA ³	0.4	0.2	12.2	0.6	10.0	30.7
	Jul-09	0.9944	0.7521	0.0324	0.138	0.1148	10.02	0.7921	7.566	47.134
	Apr-12	0.055	-0.09	0.178	0.276	0.015	10.5	0.548	8.74	25.2
BM-19	Sep-01	0.7	1.3	NA ³	0.1	0.0	12.1	0.7	10.6	34.8
	Jul-09	0.3379	0.5561	0.0508	0.0779	0.0164	11.96	0.6103	10.6	27.068
	Apr-12	0.118	0.846	0.121	0.506	0	9.98	0.36	9.28	27.6
L-1	Sep-01	0.3	0.3	NA ³	0.3	0.2	1.8	0.1	1.4	3.6
	Jul-09	0.8733	2.7538	0.0389	0.1717	0.1105	0.5705	0.13	0.568	1.0144
	Apr-12	0.056	0.484	0.366	0.077	0.017	0.744	0.036	0.921	1.43
L-2	Sep-01	0.7	1.6	NA ³	1.1	1.1	1.1	0.1	1.6	4.5
	Jul-09	0.4527	0.888	0.0437	0.1236	-0.005	2.745	0.3509	1.778	6.398
	Apr-12	0.349	1	0.549	0.201	0.061	11.1	0.723	9.48	29.8
L-3	Sep-01	0.9	0.7	NA ³	3.0	0.3	58.2	2.5	58.3	175.0
	Jul-09	1.3522	0.9074	-0.023	0.2611	-0.009	3.543	0.2719	2.985	7.3748
	Apr-12	0.148	0.471	0.183	0.112	-0.02	1.62	0.08	1.61	5.13
TWP-1	Apr-12	0.273	-0.29	0.394	-0.01	0.111	2.97	0.16	2.78	8.72
TWP-4	Apr-12	0.304	1.12	0.402	0.218	-0.01	0.159	0.009	0.11	0.386
TWP-5	Apr-12	0.174	0.419	0.239	0.181	0.032	0.113	-0.01	0.064	0.434
TWP-6	Apr-12	0.208	0.86	0.329	0.039	0.059	44.3	2.8	45.2	128
TWP-7	Apr-12	0.422	0.725	0.14	0.175	-0.01	30.2	1.53	32	91.7
TWP-8	Apr-12	0.145	0.185	0.171	0.219	-0.02	5.03	0.238	4.77	13.5
TWP-9	Apr-12	-0.05	0.625	0.451	0.053	0.023	3.35	0.17	2.92	9.17
TWP-11	Apr-12	-0.12	1.09	0.467	0.234	-0.01	2.68	0.109	2.42	3.23
TWP-13	Apr-12	0.149	1.33	0.326	0.024	0.008	15.5	0.488	15.9	57.5

1. pCi/L = pico Curies per liter
2. µg/L = micrograms per liter
3. NA = Not analyzed
4. NC = Not collected

Table 3: Groundwater Analytical Results for Filtered Samples

Well	Month & Year	Ra-226 (pCi/L) ¹	Ra-228 (pCi/L) ¹	Th-228 (pCi/L) ¹	Th-230 (pCi/L) ¹	Th-232 (pCi/L) ¹	U-234 (pCi/L) ¹	U-235 (pCi/L) ¹	U-238 (pCi/L) ¹	Total U (µg/L) ²
BM-4	Sep-01	0.7	1.4	NA ³	0.1	0.0	12.2	0.8	11.6	32.1
	Jul-09	0.7998	-0.178	0.0189	0.2472	-0.006	12.99	0.5038	11.83	26.736
	Apr-12	0.423	0.607	0.407	0.161	0.008	12.3	0.196	10.6	30.9
BM-15	Sep-01	0.6	2.1	NA ³	0.1	0.0	6.3	0.4	5.1	15.4
	Jul-09	NC ⁴	NC ⁴	NC ⁴	NC ⁴	NC ⁴	NC ⁴	NC ⁴	NC ⁴	NC ⁴
	Apr-12	0.108	0.545	0.193	0.111	0.043	7.98	0.209	5.14	16.5
BM-16	Sep-01	0.4	-0.1	NA ³	0.1	0.0	13.3	0.9	9.6	27.0
	Jul-09	0.5484	1.2537	-0.024	0.1074	-0.012	12.26	1.31	11.92	29.342
	Apr-12	0.201	0.416	0.212	-0.01	-0.02	15.2	0.455	12.2	34.1
BM-17	Sep-01	1.0	0.3	NA ³	0.1	0.0	9.3	0.6	7.9	24.0
	Jul-09	0.3598	0.626	0.0652	0.1835	0.0095	6.71	0.6448	6.946	18.435
	Apr-12	0.695	0.42	0.352	0.074	0.015	6.15	0.402	6.38	19.9
BM-18	Sep-01	0.9	0.3	NA ³	0.0	0.0	10.4	0.7	8.9	31.0
	Jul-09	0.8983	0.9559	0.0466	0.2286	0.0047	10.53	0.6087	9.455	35.371
	Apr-12	0.159	0.518	0.161	0.18	0	9.3	0.492	8.33	23.9
BM-19	Sep-01	0.4	0.0	NA ³	0.1	0.0	13.0	0.6	10.4	31.6
	Jul-09	0.4402	0.9047	-0.006	0.2648	0	14.48	0.5543	10.78	25.403
	Apr-12	0.162	0.432	0.189	0.084	0.034	10.9	0.569	9.57	14.9
L-1	Sep-01	0.5	0.3	NA ³	0.1	0.1	1.8	0.1	2.0	2.9
	Jul-09	0.9895	2.0797	0.0211	0.2912	0.1621	1.939	0.0864	0.4811	0.9149
	Apr-12	-0.17	0.243	0.243	0.137	-0.01	0.298	0.041	0.75	1.58
L-2	Sep-01	0.5	0.1	NA ³	0.1	0.1	0.5	0.0	0.6	1.6
	Jul-09	1.3298	4.5372	0.042	0.2309	-0.004	3.878	0.2603	4.457	49.475
	Apr-12	0	0.564	0.313	0.15	0.007	10.8	0.632	9.89	29.7
L-3	Sep-01	0.5	0.7	NA ³	0.5	0.1	46.8	3.4	46.9	133.0
	Jul-09	1.1815	0.7912	-0.0007	0.2167	0.0429	2.187	0.2791	2.852	6.607
	Apr-12	0.05	0.52	0.38	-0.01	0.007	1.85	0.075	2.09	5.73
TWP-1	Apr-10	0.23	1.07	ND ⁵	0.08	ND ⁵	2.87	0.11	2.43	7.2 ⁶
	Apr-12	0.112	0.036	0.233	0.158	0.02	3.48	0.111	3.02	8.87
TWP-4	Apr-10	0.27	4.07	ND ⁵	0.11	ND ⁵	3.20	0.17	3.84	11.37 ⁶
	Apr-12	0.515	1.12	0.53	0	-0.01	0.151	0	0.097	0.461
TWP-5	Apr-10	ND ⁵	ND ⁵	ND ⁵	ND ⁵	ND ⁵	0.37	ND ⁵	0.38	1.12 ⁶
	Apr-12	0.617	0.447	0.463	0.042	-0.01	0.055	-0.01	0.104	0.462
TWP-6	Apr-10	0.28	ND ⁵	ND ⁵	0.15	ND ⁵	28.12	0.85	28.24	83.45 ⁶
	Apr-12	0.487	0.302	0.238	0.174	0.015	49.3	2.52	46.7	127
TWP-7	Apr-10	ND ⁵	ND ⁵	ND ⁵	ND ⁵	ND ⁵	50.67	1.99	51.79	153.24 ⁶
	Apr-12	0.1	-0.19	0.299	0.174	0.013	29.1	2.17	30.4	93.2
TWP-8	Apr-10	0.17	ND	0.09	0.07	ND ⁵	4.21	0.24	4.10	12.17 ⁶
	Apr-12	-0.16	0.349	0.081	0.175	-0.01	3.88	0.04	6.74	11
TWP-9	Apr-10	ND ⁵	ND ⁵	ND ⁵	0.44	ND ⁵	2.14	0.22	1.95	5.84 ⁶
	Apr-12	0.231	1.03	0.49	0.077	0.044	3.43	0.234	2.83	10.1
TWP-11	Apr-10	0.26	ND ⁵	ND ⁵	0.08	0.06	70.24	0.95	20.26	60.03 ⁶
	Apr-12	0.169	0.706	0.211	0.134	0.04	2.29	0.057	2.42	6.47
TWP-13	Apr-10	0.23	1.32	ND ⁵	0.09	ND ⁵	4.52	0.17	4.19	12.4 ⁶
	Apr-12	0.146	0.128	0.379	0.123	0.061	13.7	0.865	13.1	46.5

1. pCi/L = pico Curies per liter
2. µg/L = micrograms per liter
3. NA = Not analyzed
4. NC = Not collected

5. ND = Not detected
6. Calculated result using the specific activities for each uranium isotope from 40CFR71, Appendix A.

Figure 3: Total Uranium Concentrations in Filtered Groundwater Samples Over Time

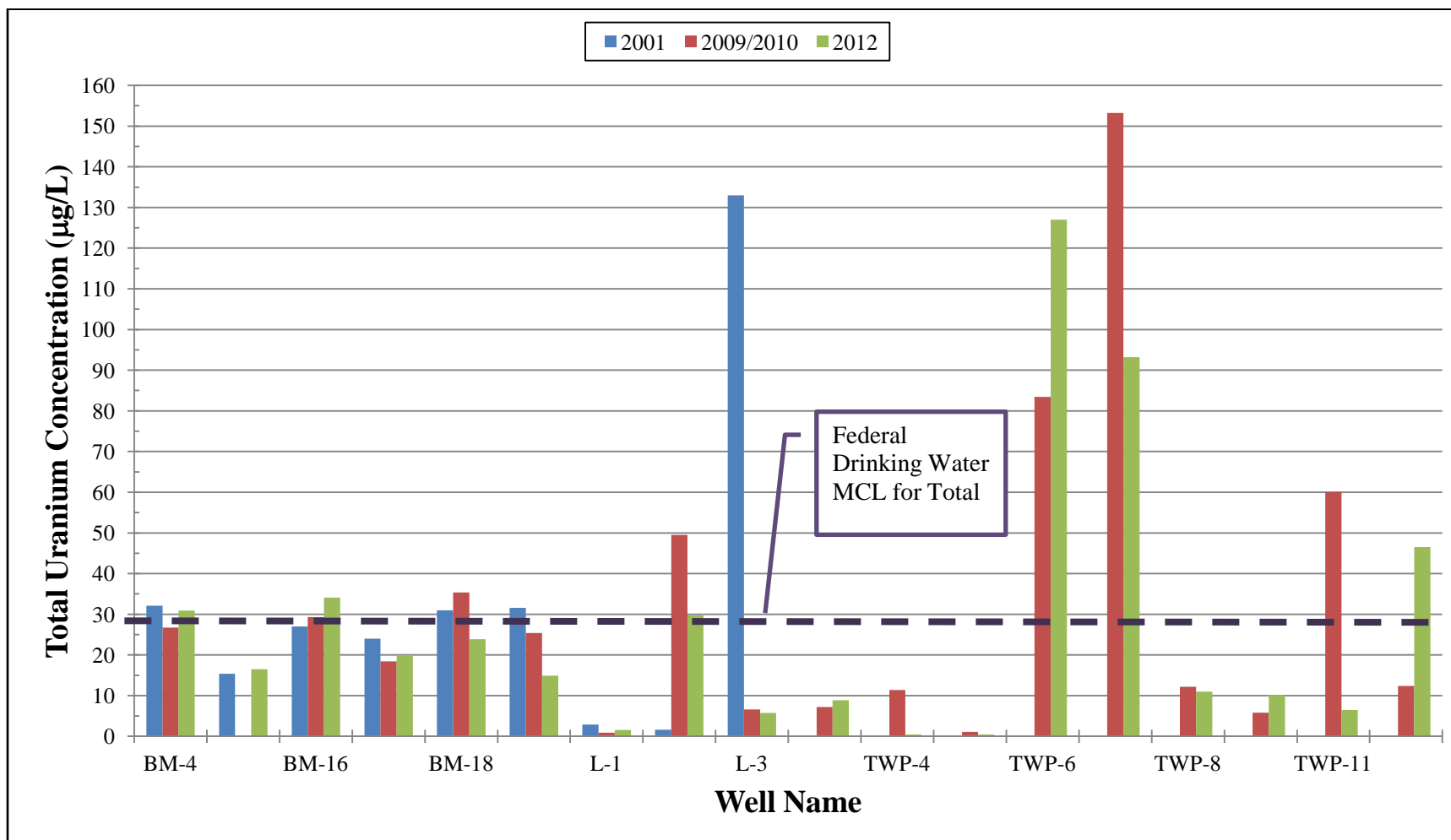


Table 4: Surface Water Analytical Results

Location	Month & Year	Ra-226 (pCi/L) ¹	Ra-228 (pCi/L) ¹	Th-228 (pCi/L) ¹	Th-230 (pCi/L) ¹	Th-232 (pCi/L) ¹	U-234 (pCi/L) ¹	U-235 (pCi/L) ¹	U-238 (pCi/L) ¹	Total U (µg/L) ²
SW-01	Jul-09	0.6082	1.026	0.047	0.0889	0.0234	57.8	4.736	56.88	144.37
	Apr-12	0.249	0.829	0.083	0.107	-0.07	70.8	3.71	68.3	252
SW-02	Jul-09	0.3422	0.414	0.0143	0.3109	-0.026	19.87	1.491	19.58	44.318
	Apr-12	0.112	1.69	0.27	0.168	0.052	2.91	0.133	2.81	9.08
SW-05	Jul-09	1.5082	1.008	-0.036	0.1637	-0.024	61.36	6.441	61.91	162.29
	Apr-12	0.597	0.667	0.094	0.173	0.058	49.8	2.46	48.2	145
SW-06	Jul-09	0.4355	0.6889	0.019	0.1037	0.0566	27.57	1.864	28.47	76.086
	Apr-12	0.083	0.968	0.047	0.206	-0.02	8.4	0.514	8.98	24.2
SW-07	Jul-09	1.2133	0.4342	0.1724	0.0579	0.0353	6.491	0.9891	5.559	23.425
	Apr-12	0.217	0.641	-0.07	0.224	0.036	7.87	0.423	7.47	24.5
SW-08	Jul-09	0.6027	0.8067	0.0456	0.1699	-0.02	5.925	0.5647	5.525	19.318
	Apr-12	-0.13	0.118	-0.04	0.331	0.07	7.64	0.415	8.65	25.6
SW-09	Jul-09	0.3634	0.1288	-0.028	0.0722	0.0358	7.296	0.2891	6.228	107.56
	Apr-12	0.046	0.477	0.005	0.271	0.044	9.19	0.499	8.55	30.3
SW-10	Jul-09	1.9028	0.5364	0.0212	0.1574	0.0954	7.978	0.2685	8.017	49.169
	Apr-12	0.346	0.445	0.094	0.17	0.04	4.34	0.344	4.99	15.7
SW-11	Jul-09	0.7412	-0.244	0.0036	0.325	0.0625	5.442	0.4854	4.702	19.188
	Apr-12	0.333	0.312	0.181	0.124	0.001	9.83	0.548	8.74	31.3
SW-12	Nov-11	0.177	0.378	0.27	0.118	0.064	0.195	0.033	0.068	0.289
	Apr-12	-0.09	0.572	0.215	0.234	0.075	-0.07	0.012	0.143	0.356
SW-13	Nov-11	-0.089	-0.152	0.248	0.107	0.081	6.29	0.112	6.05	18.7
	Apr-12	-0.09	-0.14	0.131	0.238	0.01	4.82	0.369	4.77	14.6
SW-14	Nov-11	0.147	0.41	0.143	0.074	0.037	0.089	0	0.096	0.292
	Apr-12	0.092	0.572	0.087	0.127	0.013	0.054	0.033	0.311	0.395
SW-15	Nov-11	-0.044	0.89	0.261	0.069	0.02	0.261	0.067	0.231	0.905
	Apr-12	-0.13	0.029	0.088	0.251	-0.01	4.99	0.317	4.43	1.02
SW-16	Nov-11	0.198	0.514	0.359	0.027	0.009	0.247	0.059	0.239	0.634
	Apr-12	-0.16	0.64	0.148	0.036	0.021	0.193	0.011	0.298	0.902

1. pCi/L = pico Curies per liter
2. µg/L = micrograms per liter

Table 5: Sediment Analytical Results

Location	Month & Year	Ra-226 (pCi/g) ¹	Ra-228 (pCi/g) ¹	Th-228 (pCi/g) ¹	Th-230 (pCi/g) ¹	Th-232 (pCi/g) ¹	U-234 (pCi/g) ¹	U-235 (pCi/g) ¹	U-238 (pCi/g) ¹	Total U (mg/kg) ²
SD-01	Jul-09	1.332	0.8698	1.051	2.243	1.019	7.314	0.6152	7.918	15.569
	Apr-12	2.7	1.2	0.67	1.46	0.435	22.6	1.37	22.5	66.8 ³
SD-02	Jul-09	1.491	0.8895	0.6427	0.4853	0.4746	10.43	1.107	11.27	13.324
	Apr-12	0.975	1.29	1.3	0.932	1.02	1.71	0.057	1.82	5.38 ³
SD-05	Jul-09	1.272	1.59	0.7099	1.081	0.5145	15.27	1.387	14.11	44.426
	Apr-12	1.03	0.828	0.881	0.729	0.743	7.78	0.456	7.94	23.56 ³
SD-06	Jul-09	1.111	1.201	0.5884	0.5137	0.4849	1.539	0.1421	1.525	3.868
	Apr-12	1.47	1.12	0.943	0.923	0.804	1.4	0.146	1.27	3.8 ³
SD-07	Jul-09	0.6703	0.9673	0.8231	1.143	0.7866	2.308	0.2539	2.327	4.181
	Apr-12	1.39	1.54	1.37	1.18	0.909	2.77	0.062	2.45	7.23 ³
SD-08	Jul-09	1.185	1.129	0.981	1.02	0.8628	4.753	0.329	4.426	9.6962
	Apr-12	1.2	1.08	1.1	0.843	0.782	3.75	0.148	3.79	11.21 ³
SD-09	Jul-09	1.194	1.363	0.6252	0.9406	0.5926	1.201	0.0491	0.9948	2.3139
	Apr-12	0.872	1.17	0.966	0.747	0.85	0.558	0.013	0.675	1.99 ³
SD-10	Jul-09	1.44	1.44	1.018	0.7122	0.7485	0.9546	0.0593	1.071	2.0642
	Apr-12	1.05	1.15	0.943	0.711	0.789	0.828	0.046	1.27	3.76 ³
SD-11	Jul-09	1.112	1.261	0.8764	0.8979	0.6657	0.8336	0.1197	0.955	3.7813
	Apr-12	1.03	1	1	0.814	0.638	0.816	0.041	0.787	2.33 ³
SW-12	Nov-11	1.32	1.27	1.35	1.28	0.845	0.776	0.028	0.741	2.19 ³
	Apr-12	1.17	1.22	1.59	1.24	1.2	0.722	0.007	0.799	2.35 ³
SW-13	Nov-11	1.2	1.29	1.07	1.14	0.837	0.659	0.051	0.747	2.22 ³
	Apr-12	1.02	1.04	1.16	0.901	0.901	0.904	0.044	0.822	2.44 ³
SW-14	Nov-11	1.2	1.5	1.32	1.11	0.98	0.896	0.068	0.884	2.63 ³
	Apr-12	1.12	1.17	1.29	0.972	1.05	0.892	0.067	1.17	3.47 ³
SW-15	Nov-11	1.15	1.17	0.956	0.907	0.861	0.665	0.059	0.829	2.47 ³
	Apr-12	1.09	1.07	0.955	1.45	0.778	0.867	0.098	0.811	2.43 ³
SW-16	Nov-11	1.17	1.09	1.15	1.07	0.808	0.974	0.046	1.01	2.99 ³
	Apr-12	1.52	1.32	0.93	0.848	0.652	0.944	0.038	0.932	2.76 ³

1. pCi/g = pico Curies per gram
2. mg/kg = milligrams per kilogram

3. Calculated result using the specific activities for each uranium isotope from 40CFR71, Appendix A.