



## NEW MEXICO ENVIRONMENT DEPARTMENT



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### **Groundwater Monitoring at Sandia National Laboratories/New Mexico Burn Site Conducted by NMED DOE OB for FFY 2009 Q-4**

The New Mexico Environment Department (NMED) DOE Oversight Bureau (Bureau) has compiled and assessed groundwater data collected in September 2009. The Bureau collected groundwater samples from Burn Site groundwater monitoring wells CYN-MW3, CYN-MW4, and CYN-MW6. Split samples were collected using standard Sandia National Laboratories/ New Mexico (SNL/NM or Sandia) sampling procedures and equipment. Bureau samples were submitted to an independent analytical laboratory for metals, inorganics, radionuclides and organics analyses. Corrected gross alpha (total gross alpha activity excluding total uranium activity) was detected above the EPA MCL of 15 pCi/L at monitoring well CYN-MW4. Nitrate plus nitrite (NPN) was also detected above the EPA MCL of 10 mg/L at monitoring wells CYN-MW3 and CYN-MW6.

#### Data Assessment

All groundwater samples were collected and analyzed in accordance with U.S. Environmental Protection Agency (EPA) protocols. Data results are compared to applicable Maximum Allowable Concentrations (MACs) from the New Mexico Water Quality Control Commission (WQCC) (20.6.2.3103A NMAC Human Health Standards) and Maximum Contaminant Levels (MCLs) from the EPA National Primary Drinking Water Regulations (40 CFR 141).

#### Results

Analytical results for total metals are listed in Table 1. Samples were analyzed for total (unfiltered) target analyte list (TAL) metals plus uranium. All metals concentrations were below established MCLs.

Analytical results for non-metal inorganics are listed in Table 2. Samples were analyzed for major anions (bromide, chloride, fluoride and sulfate) and nitrate plus nitrite (NPN). All major anions were detected below established MCLs. Nitrate plus nitrite was detected above the MCL of 10 mg/L at monitoring wells CYN-MW3 and CYN-MW6. Concentrations were 11 mg/L and 39 mg/L, respectively.

Analytical results for radionuclides are listed in Table 3. Samples were analyzed for gamma-emitting isotopes and gross alpha and beta. All radionuclide activities were below MCLs, except for gross alpha in monitoring wells CYN-MW4 and CYN-MW6. Corrected gross alpha values

were obtained by subtracting the total uranium alpha contribution, as shown in the table below. When the total uranium activity was subtracted from the uncorrected gross alpha, CYN-MW4 exceeded the MCL of 15 pCi/L. Corrected gross alpha at CYN-MW6 was below the MCL.

#### Gross Alpha Correction

Well Name	Uncorrected Gross Alpha Activity (pCi/L)	Total Uranium Concentration (µg/L)	Total Uranium Activity <sup>a</sup> (pCi/L)	Corrected Gross Alpha Activity (pCi/L)
CYN-MW4	30	13	11.7	18.3
CYN-MW6	15	11	9.9	5.1
CYN-MW6*	16	11	9.9	6.1

<sup>a</sup> Total Uranium activity is obtained by multiplying total uranium concentration by 0.9 pCi/µg (40 CFR Parts 9, 141, 142 National Primary Drinking Water Regulations, Radionuclides; Final Rule)

\* Unflamed

Analytical results for organic compounds detected above their method detection limits (MDLs) are listed in Table 4. Samples were analyzed for diesel range organics, gasoline range organics and volatile organic compounds. Constituents detected above their associated method detection limit were below established MCLs.

#### Conclusions

When analytical data are received from Sandia for this sampling event, Bureau staff will compare results for verification.

Nitrate concentrations exceeded the MCL of 10 mg/L at monitoring wells CYN-MW3 and CYN-MW6 during this sampling event. Concentrations at CYN-MW3 compare well with historical Sandia data. Based on this historical trend, NPN concentrations at CYN-MW3 have been steady to slightly decreasing over time (Figure 1). Nitrate concentrations from CYN-MW6 have consistently exceeded the MCL of 10 mg/L. The Bureau NPN data from CYN-MW6 show a strong increase over the years and concentrations have been slightly higher than those indicated from the Sandia data. Historical data from Sandia (2006-2008) indicate NPN concentrations have been steady to slightly increasing over time. The Bureau also included a trend line that combines both NMED and SNL data (Figure 2). The combined data set shows NPN concentrations have been increasing at CYN-MW6.

Gross alpha activity from CYN-MW4 exceeded the MCL of 15 pCi/L. Results obtained by NMED compare well to historical Sandia gross alpha activities (Figure 3).

#### Response

Questions or comments should be addressed to Chris Armijo by phone at (505) 383-2070, by e-mail at [chris.armijo1@state.nm.us](mailto:chris.armijo1@state.nm.us), or to the address in the letterhead.

- Enclosure:
- (1) Table 1 Total TAL Metals Results
  - (2) Table 2 Major Anions/ Nitrate plus Nitrite Results
  - (3) Table 3 Gamma Spectroscopy & Gross Alpha/Beta Results
  - (4) Table 4 Detected Organic Compounds
  - (5) Figure 1 Nitrate plus Nitrite Concentrations, CYN-MW3
  - (6) Figure 2 Nitrate plus Nitrite Concentrations, CYN-MW6

(7) Figure 3 Gross Alpha Activities, CYN-MW4

(8) Figure 4 Map of SNL/NM Burn Site Wells

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**Table 1- NMED DOE Oversight Bureau FFY 2009 Q-4 Burn Site Groundwater Quality Results: Total TAL Metals**

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	WQCC MAC (mg/L)	MDL (mg/L)	Quantitation Limit (mg/L)	Laboratory Qualifier	Analytical Method
CYN-MW3 28-Sep-09	Aluminum	0.019	NE	NE	0.0082	0.1	B	SW-846:6010
	Antimony	0.000039	0.006	NE	0.000079	0.0003	B	SW-846:6020
	Arsenic	0.00054	0.01	0.1	0.00016	0.002	B	SW-846:6020
	Barium	0.049	2	1	0.00014	0.002		SW-846:6010
	Beryllium	0.00025	0.004	NE	0.0001	0.001	B	SW-846:6010
	Cadmium	0.000041	0.005	NE	0.00003	0.0003	B	SW-846:6020
	Calcium	140	NE	NE	0.014	0.5		SW-846:6010
	Chromium	0.00071	0.1	0.05	0.00073	0.005	U	SW-846:6010
	Cobalt	0.00064	NE	NE	0.00068	0.002	U	SW-846:6010
	Copper	0.00072	1.3	NE	0.00055	0.002	U	SW-846:6010
	Iron	0.0016	NE	NE	0.0036	0.05	U	SW-846:6010
	Lead	0.000014	0.015	0.05	0.000024	0.0005	U	SW-846:6020
	Magnesium	34	NE	NE	0.0052	0.5		SW-846:6010
	Manganese	0.0001	NE	NE	0.00013	0.002	U	SW-846:6010
	Mercury	0.000021	0.002	0.002	0.0000081	0.0001	B	SW-846:7470
	Nickel	0.001	NE	NE	0.0009	0.005	U	SW-846:6010
	Potassium	2.5	NE	NE	0.03	0.5		SW-846:6010
	Selenium	0.0076	0.05	0.05	0.00018	0.001		SW-846:6020
	Silver	0.000012	NE	0.05	0.0000085	0.0001	U	SW-846:6020
	Sodium	37	NE	NE	0.006	0.5		SW-846:6010
Thallium	0.0000089	0.002	NE	0.000018	0.0002	B	SW-846:6020	
Uranium	0.006	0.03	0.03	0.0000041	0.0001		SW-846:6020	
Vanadium	0.0034	NE	NE	0.0006	0.005	B	SW-846:6010	
Zinc	0.00075	NE	NE	0.0039	0.005	U	SW-846:6010	

Note:

- B Result is an estimated value above MDL/IDL but less than reporting limit.
- NE Not Established
- U Analyte was analyzed for but was not detected

**Table 1- NMED DOE Oversight Bureau FFY 2009 Q-4 Burn Site Groundwater Quality Results: Total TAL Metals**

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	WQCC MAC (mg/L)	MDL (mg/L)	Quantitation Limit (mg/L)	Laboratory Qualifier	Analytical Method
CYN-MW4 23-Sep-09	Aluminum	0.029	NE	NE	0.0082	0.1	B	SW-846:6010
	Antimony	0.00029	0.006	NE	0.000079	0.0003	B	SW-846:6020
	Arsenic	0.0006	0.01	0.1	0.00016	0.002	B	SW-846:6020
	Barium	0.048	2	1	0.00014	0.002		SW-846:6010
	Beryllium	0.00012	0.004	NE	0.0001	0.001	U	SW-846:6010
	Cadmium	0.000027	0.005	NE	0.00003	0.0003	B	SW-846:6020
	Calcium	70	NE	NE	0.014	0.5		SW-846:6010
	Chromium	0.00071	0.1	0.05	0.00073	0.005	U	SW-846:6010
	Cobalt	0.00064	NE	NE	0.00068	0.002	U	SW-846:6010
	Copper	0.00089	1.3	NE	0.00055	0.002	B	SW-846:6010
	Iron	0.018	NE	NE	0.0036	0.05	B	SW-846:6010
	Lead	0.00019	0.015	0.05	0.000024	0.0005	B	SW-846:6020
	Magnesium	33	NE	NE	0.0052	0.5		SW-846:6010
	Manganese	0.00071	NE	NE	0.00013	0.002	B	SW-846:6010
	Mercury	0.0000089	0.002	0.002	0.0000081	0.0001	U	SW-846:7470
	Nickel	0.001	NE	NE	0.0009	0.005	U	SW-846:6010
	Potassium	6.9	NE	NE	0.03	0.5		SW-846:6010
	Selenium	0.013	0.05	0.05	0.00018	0.001		SW-846:6020
	Silver	0.000017	NE	0.05	0.0000085	0.0001	B	SW-846:6020
	Sodium	42	NE	NE	0.006	0.5		SW-846:6010
Thallium	0.000012	0.002	NE	0.000018	0.0002	B	SW-846:6020	
Uranium	0.013	0.03	0.03	0.0000041	0.0001		SW-846:6020	
Vanadium	0.00088	NE	NE	0.0006	0.005	U	SW-846:6010	
Zinc	0.0099	NE	NE	0.0039	0.005		SW-846:6010	

Note:

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**Table 1- NMED DOE Oversight Bureau FFY 2009 Q-4 Burn Site Groundwater Quality Results: Total TAL Metals**

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	WQCC MAC (mg/L)	MDL (mg/L)	Quantitation Limit (mg/L)	Laboratory Qualifier	Analytical Method
CYN-MW6 30-Sep-09	Aluminum	0.0052	NE	NE	0.0082	0.1	U	SW-846:6010
	Antimony	0.00011	0.006	NE	0.000079	0.0003	B	SW-846:6020
	Arsenic	0.00071	0.01	0.1	0.00016	0.002	B	SW-846:6020
	Barium	0.08	2	1	0.00014	0.002		SW-846:6010
	Beryllium	0.00012	0.004	NE	0.0001	0.001	U	SW-846:6010
	Cadmium	0.000049	0.005	NE	0.00003	0.0003	B	SW-846:6020
	Calcium	200	NE	NE	0.014	0.5		SW-846:6010
	Chromium	0.00071	0.1	0.05	0.00073	0.005	U	SW-846:6010
	Cobalt	0.00064	NE	NE	0.00068	0.002	U	SW-846:6010
	Copper	0.0029	1.3	NE	0.00055	0.002		SW-846:6010
	Iron	0.042	NE	NE	0.0036	0.05	B	SW-846:6010
	Lead	0.00013	0.015	0.05	0.000024	0.0005	B	SW-846:6020
	Magnesium	49	NE	NE	0.0052	0.5		SW-846:6010
	Manganese	0.0027	NE	NE	0.00013	0.002		SW-846:6010
	Mercury	0.000055	0.002	0.002	0.0000081	0.0001	B	SW-846:7470
	Nickel	0.001	NE	NE	0.0009	0.005	U	SW-846:6010
	Potassium	2.1	NE	NE	0.03	0.5		SW-846:6010
	Selenium	0.0092	0.05	0.05	0.00018	0.001		SW-846:6020
	Silver	0.000019	NE	0.05	0.0000085	0.0001	B	SW-846:6020
	Sodium	42	NE	NE	0.006	0.5		SW-846:6010
Thallium	0.000036	0.002	NE	0.000018	0.0002	B	SW-846:6020	
Uranium	0.011	0.03	0.03	0.0000041	0.0001		SW-846:6020	
Vanadium	0.001	NE	NE	0.0006	0.005	B	SW-846:6010	
Zinc	0.013	NE	NE	0.0039	0.005		SW-846:6010	

Note:

- B Result is an estimated value above MDL/IDL but less than reporting limit.
- NE Not Established
- U Analyte was analyzed for but was not detected

**Table 2- NMED DOE OB FFY 2009 Q-4 Burn Site Groundwater Quality Results: Major Anions/ Nitrate plus Nitrite**

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	NMED MAC (mg/L)	MDL (mg/L)	Quantitation Limit (mg/L)	Laboratory Qualifier	Analytical Method
CYN-MW3 28-Sep-09	Bromide	0.57	NE	NE	0.095	0.2		SW-846:9056
	Chloride	61	NE	NE	0.91	2		SW-846:9056
	Fluoride	0.62	4	1.6	0.022	0.1		SW-846:9056
	Nitrate-Nitrite as N	<b>11</b>	10	10	0.036	0.1		EPA:353.2
	Sulfate	180	NE	NE	2.3	10		SW-846:9056
CYN-MW4 23-Sep-09	Bromide	0.28	NE	NE	0.095	0.2		SW-846:9056
	Chloride	27	NE	NE	0.91	2		SW-846:9056
	Fluoride	0.64	4	1.6	0.022	0.1		SW-846:9056
	Nitrate-Nitrite as N	0.14	10	10	0.0036	0.01		EPA:353.2
	Sulfate	130	NE	NE	2.3	10		SW-846:9056
CYN-MW6 30-Sep-09	Bromide	0.93	NE	NE	0.095	0.2		SW-846:9056
	Chloride	87	NE	NE	1.8	4		SW-846:9056
	Fluoride	0.43	4	1.6	0.022	0.1		SW-846:9056
	Nitrate-Nitrite as N	<b>39</b>	10	10	0.073	0.2		EPA:353.2
	Sulfate	170	NE	NE	4.6	20		SW-846:9056

Notes:

Values in Bold have exceed the EPA MCL and/or NMED MAC  
NE = Not established



**Table 3- NMED DOE Oversight Bureau FFY 2009 Q-4 Burn Site Groundwater Quality Results: Gamma Spectroscopy & Gross Alpha/Beta**

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method	Comments
CYN-MW3 28-Sep-09	Actinium-228	14 ± 12	20	U	713R10	
	Aluminum-26	-0.88 ± 4	7.1	U	713R10	
	Americium-241	0.72 ± 2.8	4.7	U	713R10	
	Antimony-124	-0.63 ± 3.6	6.1	U	713R10	
	Antimony-125	6.3 ± 6.3	11	U	713R10	
	Beryllium-7	16 ± 25	42	U	713R10	
	Bismuth-212	-12 ± 43	74	U	713R10	
	Bismuth-214	1 ± 12	20	U,J	713R10	
	Cadmium-109	-1.7 ± 57	94	U	713R10	
	Cerium-139	-0.2 ± 1.5	2.6	U	713R10	
	Cerium-144	-9.5 ± 10	17	U	713R10	
	Cesium-134	-5 ± 3	5.2	U	713R10	
	Cesium-137	-3.6 ± 2.8	5	U,M	713R10	
	Chromium-51	-21 ± 28	48	U	713R10	
	Cobalt-56	-0.29 ± 6.3	11	U	713R10	
	Cobalt-57	0.57 ± 1.2	2	U	713R10	
	Cobalt-58	-2.5 ± 3.6	6.2	U	713R10	
	Cobalt-60	-1.8 ± 3.5	6.2	U	713R10	
	Europium-152	8.8 ± 17	28	U	713R10	
	Europium-154	-8.4 ± 18	31	U	713R10	
	Europium-155	-3.1 ± 4.6	7.8	U	713R10	
	Gross Alpha	7.5 ± 1.6	1		724R10	
	Gross Beta	4 ± 1.3	1.7	M3	724R10	
	Iodine-131	3 ± 14	24	U	713R10	
	Iron-59	0.21 ± 8.2	14	U	713R10	
	Lead-212	-1.3 ± 8.1	13	U	713R10	
	Lead-214	2.7 ± 10	17	U,J	713R10	
	Manganese-54	0.6 ± 3	5.1	U	713R10	
	Niobium-94	4.5 ± 3.2	5	U	713R10	
	Niobium-95	-1.6 ± 3.6	6.2	U	713R10	
	Potassium-40	-14 ± 72	120	U	713R10	
	Protactinium-234m	290 ± 530	880	U	713R10	
	Ruthenium-106	-5.9 ± 27	46	U	713R10	
	Scandium-46	0.83 ± 3.3	5.5	U	713R10	
	Silver-110m	1.7 ± 2.7	4.5	U	713R10	
	Sodium-22	-2.3 ± 3.4	6.1	U	713R10	
	Strontium-85	5.1 ± 4	6.2	U	713R10	
	Thallium-208	3.8 ± 3.1	5	U	713R10	
	Thorium-227	12 ± 13	20	U	713R10	
	Thorium-234	-6.7 ± 43	72	U	713R10	
Uranium-235	7 ± 9.3	17	U	713R10		
Zinc-65	-2.4 ± 7.4	13	U	713R10		

Notes:

- J Activity is an estimated value
- LT Result is less than requested MDC but greater than sample specific MDC.
- M The requested MDC not met.
- M3 The requested MDC was not met, but the reported activity is greater than the reported MDC.
- TI Gamma: Nuclide identification is tentative.
- U Result is less than the sample specific MDC.

**Table 3- NMED DOE Oversight Bureau FFY 2009 Q-4 Burn Site Groundwater Quality Results: Gamma Spectroscopy & Gross Alpha/Beta**

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method	Comments
CYN-MW4 23-Sep-09	Actinium-228	24 ± 13	21	TI	713R10	
	Aluminum-26	-2.1 ± 4.2	7.5	U	713R10	
	Americium-241	1.9 ± 2.8	4.6	U	713R10	
	Antimony-124	2.4 ± 3.8	6.2	U	713R10	
	Antimony-125	3.8 ± 6.4	12	U	713R10	
	Beryllium-7	9.7 ± 27	45	U	713R10	
	Bismuth-212	21 ± 43	72	U	713R10	
	Bismuth-214	-0.32 ± 12	20	U,J	713R10	
	Cadmium-109	11 ± 29	48	U	713R10	
	Cerium-139	0.62 ± 1.6	2.7	U	713R10	
	Cerium-144	-2 ± 10	17	U	713R10	
	Cesium-134	-0.92 ± 2.9	4.9	U	713R10	
	Cesium-137	-3.3 ± 3.9	6.9	U,M	713R10	
	Chromium-51	2.1 ± 33	56	U	713R10	
	Cobalt-56	4.4 ± 6.2	10	U	713R10	
	Cobalt-57	-0.27 ± 1.3	2.2	U	713R10	
	Cobalt-58	-0.59 ± 3.7	6.4	U	713R10	
	Cobalt-60	0.73 ± 3.4	5.8	U	713R10	
	Europium-152	1 ± 17	29	U	713R10	
	Europium-154	-3.5 ± 17	29	U	713R10	
	Europium-155	-0.63 ± 4.7	7.9	U	713R10	
	Gross Alpha	30 ± 5	0.69		724R10	
	Gross Beta	8.4 ± 1.7	1.5		724R10	
	Iodine-131	9.3 ± 24	40	U	713R10	
	Iron-59	3.2 ± 8.8	15	U	713R10	
	Lead-212	1.2 ± 8.1	13	U	713R10	
	Lead-214	4.7 ± 11	18	U,J	713R10	
	Manganese-54	-1.5 ± 3	5.2	U	713R10	
	Niobium-94	-2.9 ± 3.3	5.8	U	713R10	
	Niobium-95	-1.9 ± 3.8	6.7	U	713R10	
	Potassium-40	44 ± 75	120	U	713R10	
	Protactinium-234m	240 ± 510	860	U	713R10	
	Ruthenium-106	-26 ± 27	48	U	713R10	
	Scandium-46	-0.79 ± 3.3	5.7	U	713R10	
	Silver-110m	2.1 ± 2.8	4.7	U	713R10	
	Sodium-22	0.85 ± 3.3	5.6	U	713R10	
	Strontium-85	2.5 ± 4.3	7.1	U	713R10	
	Thallium-208	2.9 ± 3.1	5	U	713R10	
	Thorium-227	-8.9 ± 12	21	U	713R10	
	Thorium-234	33 ± 36	72	U	713R10	
Uranium-235	6.9 ± 9.4	17	U	713R10		
Zinc-65	-2.7 ± 7.4	13	U	713R10		

Notes:

- J Activity is an estimated value
- LT Result is less than requested MDC but greater than sample specific MDC.
- M The requested MDC not met.
- M3 The requested MDC was not met, but the reported activity is greater than the reported MDC.
- TI Gamma: Nuclide identification is tentative.
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Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method	Comments
CYN-MW6 30-Sep-09	Actinium-228	15 ± 10	16	U	713R10	
	Aluminum-26	-0.75 ± 3.2	5.6	U	713R10	
	Americium-241	-6.9 ± 22	37	U	713R10	
	Antimony-124	9.4 ± 3.1	4.5	TI	713R10	
	Antimony-125	3.4 ± 6	11	U	713R10	
	Beryllium-7	4.3 ± 22	37	U	713R10	
	Bismuth-212	26 ± 37	60	U	713R10	
	Bismuth-214	7.7 ± 12	20	U,J	713R10	
	Cadmium-109	58 ± 37	59	U	713R10	
	Cerium-139	0.96 ± 1.8	3	U	713R10	
	Cerium-144	10 ± 12	20	U	713R10	
	Cesium-134	-2.7 ± 2.7	4.7	U	713R10	
	Cesium-137	-5.2 ± 2.8	4.8	U	713R10	
	Chromium-51	-14 ± 27	45	U	713R10	
	Cobalt-56	8 ± 4.9	7.7	TI	713R10	
	Cobalt-57	0.45 ± 1.5	2.5	U	713R10	
	Cobalt-58	2.7 ± 2.8	4.6	U	713R10	
	Cobalt-60	-2.9 ± 2.9	5.1	U	713R10	
	Europium-152	2.1 ± 14	23	U	713R10	
	Europium-154	9.1 ± 14	24	U	713R10	
	Europium-155	1.3 ± 6.6	11	U	713R10	
	Gross Alpha	15 ± 2.9	1.4		724R10	
	Gross Alpha	16 ± 3.2	1.8	M3	724R10	Unflamed
	Gross Beta	4.4 ± 1.7	2.4	M3	724R10	
	Gross Beta	3.7 ± 1.6	2.4	M3	724R10	Unflamed
	Iodine-131	0.79 ± 11	19	U	713R10	
	Iron-59	11 ± 6.9	11	U	713R10	
	Lead-212	-2.4 ± 7.9	13	U	713R10	
	Lead-214	13 ± 10	16	U,J	713R10	
	Manganese-54	-0.43 ± 2.6	4.4	U	713R10	
	Niobium-94	-0.17 ± 2.8	4.7	U	713R10	
	Niobium-95	-0.37 ± 2.6	4.5	U	713R10	
	Potassium-40	17 ± 64	110	U	713R10	
	Protactinium-234m	320 ± 440	730	U	713R10	
	Ruthenium-106	-14 ± 24	42	U	713R10	
	Scandium-46	-0.73 ± 2.8	4.7	U	713R10	
	Silver-110m	-0.11 ± 2.5	4.2	U	713R10	
	Sodium-22	-0.19 ± 3	5.1	U	713R10	
	Strontium-85	2.2 ± 3.8	6.2	U	713R10	
	Thallium-208	4.1 ± 2.7	4.2	U	713R10	
Thorium-227	2.8 ± 18	29	U	713R10		
Thorium-234	50 ± 93	150	U	713R10		
Uranium-235	-5.2 ± 17	28	U	713R10		
Zinc-65	0.54 ± 8.2	14	U	713R10		

Notes:

- J Activity is an estimated value
- LT Result is less than requested MDC but greater than sample specific MDC.
- M The requested MDC not met.
- M3 The requested MDC was not met, but the reported activity is greater than the reported MDC.
- TI Gamma: Nuclide identification is tentative.
- U Result is less than the sample specific MDC.

**Table 4- NMED DOE Oversight Bureau FFY 2009 Q-4 Burn Site Groundwater Quality Results: Detected Organic Compounds**

Monitoring Well/ Sample Date	Analyte	Result	EPA MCL	NMED MAC	MDL	Quantitation Limit	Units	Laboratory Qualifier	Analytical Method
CYN-MW3 28-Sep-09	Diesel Range Organics	0.18	NE	NE	0.17	0.5	mg/L	J,B	SW-846:8015M
CYN-MW4 23-Sep-09	Diesel Range Organics	0.17	NE	NE	0.17	0.5	mg/L	J	SW-846:8015M
CYN-MW6 30-Sep-09	Toluene	0.22	1000	750	0.17	1	µg/L	J	SW8260_25

Notes:

- B = Analyte is detected in blank as well as sample.
- J = Result is an estimated value.
- NE = Not established

**Figure 1**  
Nitrate plus Nitrite Concentrations, CYN-MW3

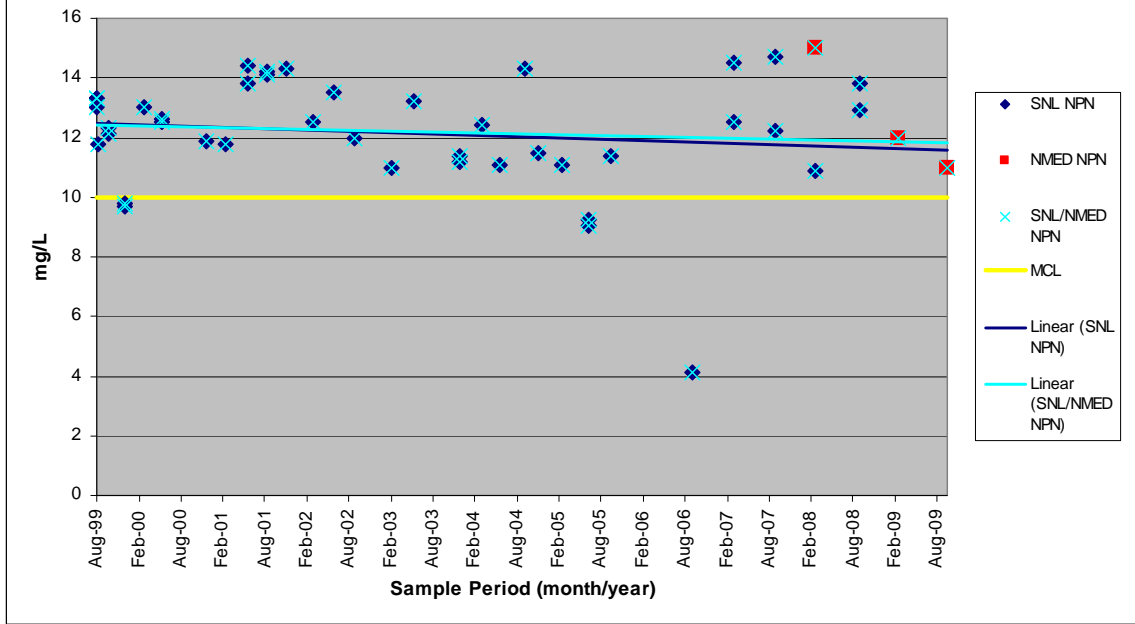
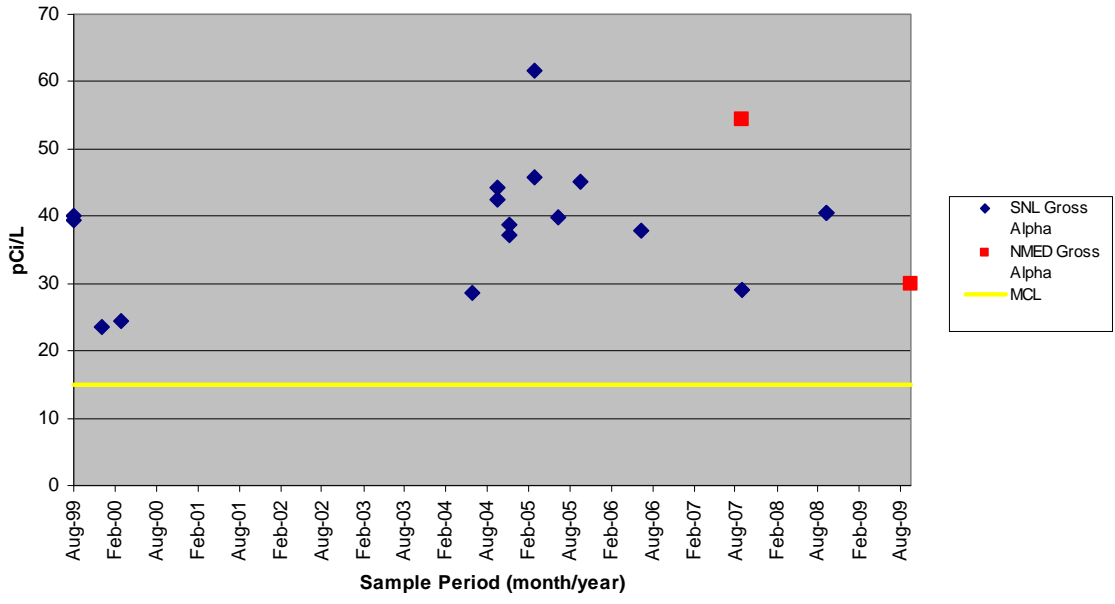
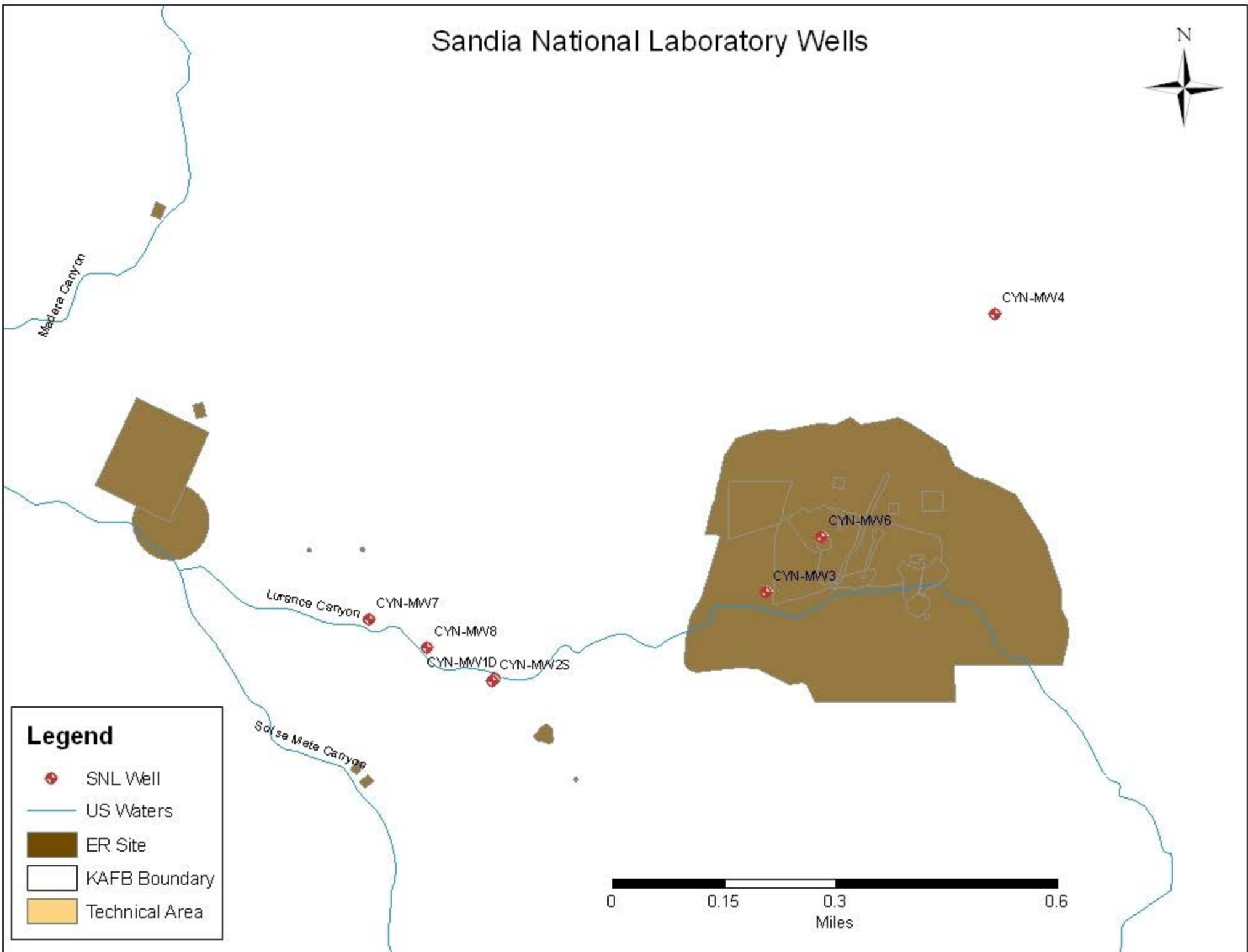







Figure 3  
Gross Alpha Activities, CYN-MW4



# Sandia National Laboratory Wells



## Legend

-  SNL Well
-  US Waters
-  ER Site
-  KAFB Boundary
-  Technical Area

