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Groundwater Monitoring at Sandia National Laboratories/New Mexico Burn Site Groundwater Conducted by the New Mexico Environment Department DOE Oversight Bureau for FFY 2012 Q-3

The New Mexico Environment Department (NMED) DOE Oversight Bureau (DOE-OB or Bureau) has compiled and assessed groundwater data collected during April 2012. The Bureau collected groundwater samples from Burn Site Groundwater monitoring wells CYN-MW4, CYN-MW6, CYN-MW7, CYN-MW8, CYN-MW9, CYN-MW10, CYN-MW11 and CYN-MW12. Split samples were collected using standard Sandia National Laboratories/New Mexico (SNL/NM) sampling equipment and procedures. The samples were submitted to an independent analytical laboratory where they were analyzed for organics, metals, general chemistry and radiochemistry. Several samples analyzed for nitrate-nitrite were detected above the EPA MCL of 10 mg/L.

Data Assessment

Data results are compared to applicable Maximum Contaminant Levels (MCLs) established by the U.S. Environmental Protection Agency (EPA) National Primary Drinking Water Regulations (40 CFR 141), National Primary Drinking Water Standards, EPA, July 2002. Perchlorate results are compared to the *Compliance Order on Consent (COOC) Pursuant to the New Mexico Hazardous Waste Act 74-4-10: Sandia National Laboratories Consent Order*, New Mexico Environment Department, April 19, 2004.

Results

Analytical results for Target Analyte List (TAL) metals are presented in Table-1. Samples were analyzed for total TAL metals plus uranium. All metal concentrations were detected below established EPA MCLs.

Analytical results for anions (bromide, chloride, fluoride and sulfate), nitrate-nitrite and perchlorate are presented in Table-2. No anions were detected above established EPA MCLs. Nitrate concentrations were detected above the EPA MCL of 10 mg/L at monitoring wells CYN-MW6 (20.2 mg/L), CYN-MW9 (31.5 mg/L) and CYN-MW12 (13 mg/L). Perchlorate was analyzed from samples collected at CYN-MW6 only. The perchlorate concentration from CYN-MW6 was 5.8 µg/L. Currently, no MCL exists for perchlorate. However, the concentration exceeds the NMED COOC screening level of 4 µg/L.

Analytical results for high explosives (HE) are listed in Table-3. Samples were analyzed for HE compounds at monitoring wells CYN-MW9, CYN-MW10, CYN-MW11 and CYN-MW12. No compounds were detected above the laboratory method detection limit (MDL).

No volatile organic compounds (VOC) or semi-volatile organic compounds (SVOC) were detected above the MDLs. Associated laboratory MDLs and analytical methods for VOCs and SVOCs are presented in Table-4 and Table-5, respectively.

Analytical results for total petroleum hydrocarbons (TPH) are listed for diesel range organics (DRO) and gasoline range organics (GRO) in Table-6. The sample taken from monitoring well CYN-MW6 detected TPH DRO. The concentration was detected equal to the laboratory MDL, but below the practical quantitation limit (PQL). As a result, the value reported by the laboratory was qualified with "J" as an estimated concentration.

Radiochemistry results are listed in Table-7. Samples were analyzed for gross alpha, gross beta, gamma emitting isotopes, isotopic uranium and tritium. Unadjusted gross alpha activity ranged from 7.11 ± 3.4 pCi/L at CYN-MW11 to 43 ± 11 pCi/L at CYN-MW4. The EPA MCL for gross alpha activity of 15 pCi/L is based on a corrected gross alpha value, which excludes both total uranium and radon from initial gross alpha count. When the total uranium activity was subtracted from the gross alpha value, the gross activity was below the MCL. No tritium samples were detected above the minimum detectable activity (MDA). All other gamma emitters were detected below established MCLs.

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, or to the address in the letterhead.

Enclosure: (1) Table-1 Total Target Analyte List Metals plus Uranium Results
 (2) Table-2 Anions, Nitrate-Nitrite and Perchlorate Results
 (3) Table-3 High Explosive Compounds Results
 (4) Table-4 Method Detection Limits for Volatile Organic Compounds
 (5) Table-5 Method Detection Limits for Semi-Volatile Organic Compounds
 (6) Table-6 Diesel Range Organics and Gasoline Range Organics Results
 (7) Table-7 Gamma Spectroscopy, Gross Alpha, Gross Beta, Isotopic Uranium
 and Tritium Results

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Table-1 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: Total Target Analyte List Metals plus Uranium

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
CYN-MW4 2-Apr-12	Aluminum	0.048	NE	0.2	0.048	U	SW-846:6010B
	Antimony	0.0098	0.006	0.02	0.0098	U	SW-846:6010B
	Arsenic	0.012	0.01	0.02	0.012	U	SW-846:6010B
	Barium	0.048	2	0.005	0.0025		SW-846:6010B
	Beryllium	0.0003	0.004	0.002	0.0003	U	SW-846:6010B
	Cadmium	0.0005	0.005	0.002	0.0005	U	SW-846:6010B
	Calcium	65.4	NE	0.5	0.05		SW-846:6010B
	Chromium	0.0012	0.1	0.008	0.0012	U	SW-846:6010B
	Cobalt	0.003	NE	0.005	0.003	U	SW-846:6010B
	Copper	0.0021	1.3	0.01	0.0021	U	SW-846:6010B
	Iron	0.02	NE	0.1	0.02	U	SW-846:6010B
	Lead	0.0025	0.015	0.005	0.0025	U	SW-846:6010B
	Magnesium	34.5	NE	0.5	0.04		SW-846:6010B
	Manganese	0.0025	NE	0.005	0.0025	U	SW-846:6010B
	Mercury	0.0001	0.002	0.0002	0.0001	U	SW-846:7470A
	Nickel	0.0024	NE	0.005	0.0024	U	SW-846:6010B
	Potassium	6.1	NE	1	0.093		SW-846:6010B
	Selenium	0.015	0.05	0.02	0.013	B	SW-846:6010B
	Silver	0.00084	NE	0.005	0.00084	U	SW-846:6010B
	Sodium	40.3	NE	1	0.25		SW-846:6010B
Thallium	0.009	0.002	0.02	0.009	U	SW-846:6010B	
Uranium	0.011	0.03	0.001	0.0002		SW-846:6020	
Vanadium	0.0024	NE	0.005	0.0019	B	SW-846:6010B	
Zinc	0.0048	NE	0.01	0.003	B	SW-846:6010B	

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

NE = Not Established

U = Result is less than the sample selection limit.

**Table-1 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: Total Target Analyte List
Metals plus Uranium**

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
CYN-MW6 16-Apr-12	Aluminum	0.091	NE	0.2	0.048	B	SW-846:6010B
	Antimony	0.0098	0.006	0.02	0.0098	U	SW-846:6010B
	Arsenic	0.012	0.01	0.02	0.012	U	SW-846:6010B
	Barium	0.066	2	0.005	0.0025		SW-846:6010B
	Beryllium	0.0003	0.004	0.002	0.0003	U	SW-846:6010B
	Cadmium	0.0005	0.005	0.002	0.0005	U	SW-846:6010B
	Calcium	148	NE	0.5	0.05		SW-846:6010B
	Chromium	0.0052	0.1	0.008	0.0012	B	SW-846:6010B
	Cobalt	0.003	NE	0.005	0.003	U	SW-846:6010B
	Copper	0.0022	1.3	0.01	0.0021	B	SW-846:6010B
	Iron	0.11	NE	0.1	0.02		SW-846:6010B
	Lead	0.0025	0.015	0.005	0.0025	U	SW-846:6010B
	Magnesium	37.8	NE	0.5	0.04		SW-846:6010B
	Manganese	0.0027	NE	0.005	0.0025	B	SW-846:6010B
	Mercury	0.0001	0.002	0.0002	0.0001	U	SW-846:7470A
	Nickel	0.0048	NE	0.005	0.0024	B	SW-846:6010B
	Potassium	2.5	NE	1	0.093		SW-846:6010B
	Selenium	0.015	0.05	0.02	0.013	B	SW-846:6010B
	Silver	0.00084	NE	0.005	0.00084	U	SW-846:6010B
	Sodium	47.1	NE	1	0.25		SW-846:6010B
Thallium	0.009	0.002	0.02	0.009	U	SW-846:6010B	
Uranium	0.0075	0.03	0.001	0.0002		SW-846:6020	
Vanadium	0.002	NE	0.005	0.0019	B	SW-846:6010B	
Zinc	0.029	NE	0.01	0.003		SW-846:6010B	

B = Estimated result. Result is less than RL.

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Metals plus Uranium**

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
CYN-MW7 5-Apr-12	Aluminum	0.048	NE	0.2	0.048	U	SW-846:6010B
	Antimony	0.0098	0.006	0.02	0.0098	U	SW-846:6010B
	Arsenic	0.012	0.01	0.02	0.012	U	SW-846:6010B
	Barium	0.11	2	0.005	0.0025		SW-846:6010B
	Beryllium	0.0003	0.004	0.002	0.0003	U	SW-846:6010B
	Cadmium	0.0005	0.005	0.002	0.0005	U	SW-846:6010B
	Calcium	95.1	NE	0.5	0.05		SW-846:6010B
	Chromium	0.0012	0.1	0.008	0.0012	U	SW-846:6010B
	Cobalt	0.003	NE	0.005	0.003	U	SW-846:6010B
	Copper	0.0025	1.3	0.01	0.0021	B	SW-846:6010B
	Iron	0.02	NE	0.1	0.02	U	SW-846:6010B
	Lead	0.0025	0.015	0.005	0.0025	U	SW-846:6010B
	Magnesium	20.9	NE	0.5	0.04		SW-846:6010B
	Manganese	0.0025	NE	0.005	0.0025	U	SW-846:6010B
	Mercury	0.0001	0.002	0.0002	0.0001	U	SW-846:7470A
	Nickel	0.0024	NE	0.005	0.0024	U	SW-846:6010B
	Potassium	2.6	NE	1	0.093		SW-846:6010B
	Selenium	0.013	0.05	0.02	0.013	U	SW-846:6010B
	Silver	0.00084	NE	0.005	0.00084	U	SW-846:6010B
	Sodium	41.2	NE	1	0.25		SW-846:6010B
Thallium	0.009	0.002	0.02	0.009	U	SW-846:6010B	
Uranium	0.0058	0.03	0.001	0.0002		SW-846:6020	
Vanadium	0.0042	NE	0.005	0.0019	B	SW-846:6010B	
Zinc	0.025	NE	0.01	0.003		SW-846:6010B	

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Metals plus Uranium**

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
CYN-MW8 6-Apr-12	Aluminum	0.048	NE	0.2	0.048	U	SW-846:6010B
	Antimony	0.0098	0.006	0.02	0.0098	U	SW-846:6010B
	Arsenic	0.012	0.01	0.02	0.012	U	SW-846:6010B
	Barium	0.06	2	0.005	0.0025		SW-846:6010B
	Beryllium	0.0003	0.004	0.002	0.0003	U	SW-846:6010B
	Cadmium	0.0005	0.005	0.002	0.0005	U	SW-846:6010B
	Calcium	107	NE	0.5	0.05		SW-846:6010B
	Chromium	0.0012	0.1	0.008	0.0012	U	SW-846:6010B
	Cobalt	0.003	NE	0.005	0.003	U	SW-846:6010B
	Copper	0.0021	1.3	0.01	0.0021	U	SW-846:6010B
	Iron	0.02	NE	0.1	0.02	U	SW-846:6010B
	Lead	0.0025	0.015	0.005	0.0025	U	SW-846:6010B
	Magnesium	25.3	NE	0.5	0.04		SW-846:6010B
	Manganese	0.0038	NE	0.005	0.0025	B	SW-846:6010B
	Mercury	0.0001	0.002	0.0002	0.0001	U	SW-846:7470A
	Nickel	0.0024	NE	0.005	0.0024	U	SW-846:6010B
	Potassium	2.3	NE	1	0.093		SW-846:6010B
	Selenium	0.013	0.05	0.02	0.013	U	SW-846:6010B
	Silver	0.00084	NE	0.005	0.00084	U	SW-846:6010B
	Sodium	43	NE	1	0.25		SW-846:6010B
	Thallium	0.009	0.002	0.02	0.009	U	SW-846:6010B
Uranium	0.0069	0.03	0.001	0.0002		SW-846:6020	
Vanadium	0.0043	NE	0.005	0.0019	B	SW-846:6010B	
Zinc	0.0051	NE	0.01	0.003	B	SW-846:6010B	

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Metals plus Uranium**

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
CYN-MW9 12-Apr-12	Aluminum	0.048	NE	0.2	0.048	U	SW-846:6010B
	Antimony	0.0098	0.006	0.02	0.0098	U	SW-846:6010B
	Arsenic	0.012	0.01	0.02	0.012	U	SW-846:6010B
	Barium	0.059	2	0.005	0.0025		SW-846:6010B
	Beryllium	0.0003	0.004	0.002	0.0003	U	SW-846:6010B
	Cadmium	0.0005	0.005	0.002	0.0005	U	SW-846:6010B
	Calcium	160	NE	0.5	0.05		SW-846:6010B
	Chromium	0.0012	0.1	0.008	0.0012	U	SW-846:6010B
	Cobalt	0.003	NE	0.005	0.003	U	SW-846:6010B
	Copper	0.0021	1.3	0.01	0.0021	U	SW-846:6010B
	Iron	0.02	NE	0.1	0.02	U	SW-846:6010B
	Lead	0.0025	0.015	0.005	0.0025	U	SW-846:6010B
	Magnesium	43.3	NE	0.5	0.04		SW-846:6010B
	Manganese	0.0025	NE	0.005	0.0025	U	SW-846:6010B
	Mercury	0.0001	0.002	0.0002	0.0001	U	SW-846:7470A
	Nickel	0.0024	NE	0.005	0.0024	U	SW-846:6010B
	Potassium	2.5	NE	1	0.093		SW-846:6010B
	Selenium	0.013	0.05	0.02	0.013	U	SW-846:6010B
	Silver	0.00084	NE	0.005	0.00084	U	SW-846:6010B
	Sodium	39.4	NE	1	0.25		SW-846:6010B
	Thallium	0.009	0.002	0.02	0.009	U	SW-846:6010B
Uranium	0.0061	0.03	0.001	0.0002		SW-846:6020	
Vanadium	0.0019	NE	0.005	0.0019	U	SW-846:6010B	
Zinc	0.01	NE	0.01	0.003		SW-846:6010B	

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Metals plus Uranium**

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
CYN-MW10 9-Apr-12	Aluminum	0.048	NE	0.2	0.048	U	SW-846:6010B
	Antimony	0.0098	0.006	0.02	0.0098	U	SW-846:6010B
	Arsenic	0.012	0.01	0.02	0.012	U	SW-846:6010B
	Barium	0.06	2	0.005	0.0025		SW-846:6010B
	Beryllium	0.0003	0.004	0.002	0.0003	U	SW-846:6010B
	Cadmium	0.0005	0.005	0.002	0.0005	U	SW-846:6010B
	Calcium	126	NE	0.5	0.05	J	SW-846:6010B
	Chromium	0.0012	0.1	0.008	0.0012	U	SW-846:6010B
	Cobalt	0.003	NE	0.005	0.003	U	SW-846:6010B
	Copper	0.0021	1.3	0.01	0.0021	U	SW-846:6010B
	Iron	0.02	NE	0.1	0.02	U	SW-846:6010B
	Lead	0.0025	0.015	0.005	0.0025	U	SW-846:6010B
	Magnesium	31.6	NE	0.5	0.04		SW-846:6010B
	Manganese	0.0025	NE	0.005	0.0025	U	SW-846:6010B
	Mercury	0.00023	0.002	0.0002	0.0001		SW-846:7470A
	Nickel	0.0024	NE	0.005	0.0024	U	SW-846:6010B
	Potassium	2	NE	1	0.093		SW-846:6010B
	Selenium	0.013	0.05	0.02	0.013	U	SW-846:6010B
	Silver	0.00084	NE	0.005	0.00084	U	SW-846:6010B
	Sodium	38.3	NE	1	0.25		SW-846:6010B
	Thallium	0.009	0.002	0.02	0.009	U	SW-846:6010B
Uranium	0.005	0.03	0.001	0.0002		SW-846:6020	
Vanadium	0.0027	NE	0.005	0.0019	B	SW-846:6010B	
Zinc	0.003	NE	0.01	0.003	U	SW-846:6010B	

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Metals plus Uranium**

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
CYN-MW10 9-Apr-12 DUP	Aluminum	0.048	NE	0.2	0.048	U	SW-846:6010B
	Antimony	0.0098	0.006	0.02	0.0098	U	SW-846:6010B
	Arsenic	0.012	0.01	0.02	0.012	U	SW-846:6010B
	Barium	0.06	2	0.005	0.0025		SW-846:6010B
	Beryllium	0.0003	0.004	0.002	0.0003	U	SW-846:6010B
	Cadmium	0.0005	0.005	0.002	0.0005	U	SW-846:6010B
	Calcium	126	NE	0.5	0.05	J	SW-846:6010B
	Chromium	0.0012	0.1	0.008	0.0012	U	SW-846:6010B
	Cobalt	0.003	NE	0.005	0.003	U	SW-846:6010B
	Copper	0.0021	1.3	0.01	0.0021	U	SW-846:6010B
	Iron	0.02	NE	0.1	0.02	U	SW-846:6010B
	Lead	0.0025	0.015	0.005	0.0025	U	SW-846:6010B
	Magnesium	32.1	NE	0.5	0.04		SW-846:6010B
	Manganese	0.0025	NE	0.005	0.0025	U	SW-846:6010B
	Mercury	0.00012	0.002	0.0002	0.0001	B	SW-846:7470A
	Nickel	0.0024	NE	0.005	0.0024	U	SW-846:6010B
	Potassium	2	NE	1	0.093		SW-846:6010B
	Selenium	0.018	0.05	0.02	0.013	B	SW-846:6010B
	Silver	0.00084	NE	0.005	0.00084	U	SW-846:6010B
	Sodium	38.7	NE	1	0.25		SW-846:6010B
	Thallium	0.009	0.002	0.02	0.009	U	SW-846:6010B
Uranium	0.0049	0.03	0.001	0.0002		SW-846:6020	
Vanadium	0.0024	NE	0.005	0.0019	B	SW-846:6010B	
Zinc	0.003	NE	0.01	0.003	U	SW-846:6010B	

B = Estimated result. Result is less than RL.

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Metals plus Uranium**

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
CYN-MW11 10-Apr-12	Aluminum	0.048	NE	0.2	0.048	U	SW-846:6010B
	Antimony	0.0098	0.006	0.02	0.0098	U	SW-846:6010B
	Arsenic	0.012	0.01	0.02	0.012	U	SW-846:6010B
	Barium	0.085	2	0.005	0.0025		SW-846:6010B
	Beryllium	0.0003	0.004	0.002	0.0003	U	SW-846:6010B
	Cadmium	0.0005	0.005	0.002	0.0005	U	SW-846:6010B
	Calcium	135	NE	0.5	0.05		SW-846:6010B
	Chromium	0.0012	0.1	0.008	0.0012	U	SW-846:6010B
	Cobalt	0.003	NE	0.005	0.003	U	SW-846:6010B
	Copper	0.0021	1.3	0.01	0.0021	U	SW-846:6010B
	Iron	0.02	NE	0.1	0.02	U	SW-846:6010B
	Lead	0.0025	0.015	0.005	0.0025	U	SW-846:6010B
	Magnesium	38.9	NE	0.5	0.04		SW-846:6010B
	Manganese	0.42	NE	0.005	0.0025		SW-846:6010B
	Mercury	0.0001	0.002	0.0002	0.0001	U	SW-846:7470A
	Nickel	0.0024	NE	0.005	0.0024	U	SW-846:6010B
	Potassium	3.3	NE	1	0.093		SW-846:6010B
	Selenium	0.013	0.05	0.02	0.013	U	SW-846:6010B
	Silver	0.00084	NE	0.005	0.00084	U	SW-846:6010B
	Sodium	41.7	NE	1	0.25		SW-846:6010B
	Thallium	0.009	0.002	0.02	0.009	U	SW-846:6010B
Uranium	0.0049	0.03	0.001	0.0002		SW-846:6020	
Vanadium	0.0019	NE	0.005	0.0019	U	SW-846:6010B	
Zinc	0.051	NE	0.01	0.003		SW-846:6010B	

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

NE = Not Established

U = Result is less than the sample selection limit.

**Table-1 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: Total Target Analyte List
Metals plus Uranium**

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
CYN-MW12 11-Apr-12	Aluminum	0.048	NE	0.2	0.048	U	SW-846:6010B
	Antimony	0.0098	0.006	0.02	0.0098	U	SW-846:6010B
	Arsenic	0.012	0.01	0.02	0.012	U	SW-846:6010B
	Barium	0.039	2	0.005	0.0025		SW-846:6010B
	Beryllium	0.0003	0.004	0.002	0.0003	U	SW-846:6010B
	Cadmium	0.0005	0.005	0.002	0.0005	U	SW-846:6010B
	Calcium	156	NE	0.5	0.05		SW-846:6010B
	Chromium	0.0012	0.1	0.008	0.0012	U	SW-846:6010B
	Cobalt	0.003	NE	0.005	0.003	U	SW-846:6010B
	Copper	0.0021	1.3	0.01	0.0021	U	SW-846:6010B
	Iron	0.037	NE	0.1	0.02	B	SW-846:6010B
	Lead	0.0027	0.015	0.005	0.0025	B	SW-846:6010B
	Magnesium	40.2	NE	0.5	0.04		SW-846:6010B
	Manganese	0.096	NE	0.005	0.0025		SW-846:6010B
	Mercury	0.0001	0.002	0.0002	0.0001	U	SW-846:7470A
	Nickel	0.0095	NE	0.005	0.0024		SW-846:6010B
	Potassium	3.6	NE	1	0.093		SW-846:6010B
	Selenium	0.013	0.05	0.02	0.013	U	SW-846:6010B
	Silver	0.00084	NE	0.005	0.00084	U	SW-846:6010B
	Sodium	43.4	NE	1	0.25		SW-846:6010B
Thallium	0.009	0.002	0.02	0.009	U	SW-846:6010B	
Uranium	0.0075	0.03	0.001	0.0002		SW-846:6020	
Vanadium	0.0019	NE	0.005	0.0019	U	SW-846:6010B	
Zinc	0.017	NE	0.01	0.003		SW-846:6010B	

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

NE = Not Established

U = Result is less than the sample selection limit.

Table-2 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: Anions, Nitrate-Nitrite and Perchlorate

Monitoring Well/ Sample Date	Analyte	Result	EPA MCL	Quantitation Limit	MDL	Units	Laboratory Qualifier	Analytical Method
CYN-MW4 2-Apr-12	Bromide	0.33	NE	0.5	0.088	mg/L	B	EPA:300.0
	Chloride	26.6	NE	5	0.18	mg/L	D,Q	EPA:300.0
	Fluoride	0.8	4	0.5	0.059	mg/L		EPA:300.0
	Nitrate-Nitrite	0.13	10	0.05	0.0053	mg/L		EPA:353.2
	Sulfate	139	NE	5	0.24	mg/L	D,Q	EPA:300.0
CYN-MW6 16-Apr-12	Bromide	0.74	NE	2.5	0.44	mg/L	D,B,G	EPA:300.0
	Chloride	62.8	NE	5	0.18	mg/L	D,Q	EPA:300.0
	Fluoride	0.79	4	2.5	0.3	mg/L	D,B,G	EPA:300.0
	Nitrate-Nitrite	20.2	10	1	0.11	mg/L	D	EPA:353.2
	Perchlorate - LC/MS/MS	5.8	NE	4	0.34	ug/L		EPA:314.0
	Sulfate	120	NE	5	0.24	mg/L	D,Q	EPA:300.0
CYN-MW7 5-Apr-12	Bromide	0.61	NE	0.5	0.088	mg/L		EPA:300.0
	Chloride	44.5	NE	5	0.18	mg/L	D,Q	EPA:300.0
	Fluoride	1.3	4	0.5	0.059	mg/L		EPA:300.0
	Nitrate-Nitrite	2	10	0.1	0.011	mg/L	D	EPA:353.2
	Sulfate	86.1	NE	5	0.24	mg/L	D,Q	EPA:300.0
CYN-MW8 6-Apr-12	Bromide	0.7	NE	0.5	0.088	mg/L		EPA:300.0
	Chloride	63.8	NE	5	0.18	mg/L	D,Q	EPA:300.0
	Fluoride	1.4	4	0.5	0.059	mg/L		EPA:300.0
	Nitrate-Nitrite	4.5	10	0.25	0.026	mg/L	D	EPA:353.2
	Sulfate	125	NE	5	0.24	mg/L	D,Q	EPA:300.0
CYN-MW9 12-Apr-12	Bromide	1.2	NE	2.5	0.44	mg/L	D,B,G	EPA:300.0
	Chloride	84.4	NE	5	0.18	mg/L	D,Q	EPA:300.0
	Fluoride	0.87	4	2.5	0.3	mg/L	D,B,G	EPA:300.0
	Nitrate-Nitrite	31.5	10	1	0.11	mg/L	D	EPA:353.2
	Sulfate	178	NE	5	0.24	mg/L	D,Q	EPA:300.0
CYN-MW10 9-Apr-12	Bromide	0.64	NE	0.5	0.088	mg/L		EPA:300.0
	Chloride	52.8	NE	5	0.18	mg/L	D,Q	EPA:300.0
	Fluoride	0.72	4	0.5	0.059	mg/L		EPA:300.0
	Nitrate-Nitrite	6.6	10	0.05	0.0053	mg/L		EPA:353.2
	Sulfate	175	NE	5	0.24	mg/L	D,Q	EPA:300.0
CYN-MW10 9-Apr-12 DUP	Bromide	0.65	NE	0.5	0.088	mg/L		EPA:300.0
	Chloride	53.4	NE	5	0.18	mg/L	D,Q	EPA:300.0
	Fluoride	0.68	4	0.5	0.059	mg/L		EPA:300.0
	Nitrate-Nitrite	6.7	10	0.5	0.053	mg/L	D	EPA:353.2
	Sulfate	177	NE	5	0.24	mg/L	D,Q	EPA:300.0

B = Estimated result. Result is less than RL and greater than or equal to the IDL.

D = Dilution

G = Elevated reporting limit. The reporting limit is elevated due to matrix interference.

NE = Not Established

Q = Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

Table-2 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: Anions, Nitrate-Nitrite and Perchlorate

Monitoring Well/ Sample Date	Analyte	Result	EPA MCL	Quantitation Limit	MDL	Units	Laboratory Qualifier	Analytical Method
CYN-MW11 10-Apr-12	Bromide	0.99	NE	2.5	0.44	mg/L	D,B,G	EPA:300.0
	Chloride	84.4	NE	5	0.18	mg/L	D,Q	EPA:300.0
	Fluoride	0.83	4	2.5	0.3	mg/L	D,B,G	EPA:300.0
	Nitrate-Nitrite	9.8	10	0.05	0.0053	mg/L		EPA:353.2
	Sulfate	184	NE	5	0.24	mg/L	D,Q	EPA:300.0
CYN-MW12 11-Apr-12	Bromide	1	NE	2.5	0.44	mg/L	D,B,G	EPA:300.0
	Chloride	91.6	NE	5	0.18	mg/L	D,Q	EPA:300.0
	Fluoride	1.4	4	2.5	0.3	mg/L	D,B,G	EPA:300.0
	Nitrate-Nitrite	13	10	1	0.11	mg/L	D	EPA:353.2
	Sulfate	219	NE	5	0.24	mg/L	D,Q	EPA:300.0

B = Estimated result. Result is less than RL and greater than or equal to the IDL.

D = Dilution

G = Elevated reporting limit. The reporting limit is elevated due to matrix interference.

NE = Not Established

Q = Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

Table-3 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: High Explosive Compounds

Monitoring Well/ Sample Date	Analyte	Result (µg/L)	Quantitation Limit (µg/L)	MDL (µg/L)	Laboratory Qualifier	Analytical Method
CYN-MW9 12-Apr-12	1,3,5-trinitrobenzene	0.018	0.22	0.018	D,U	SW846-SW8321A
	1,3-Dinitrobenzene	0.02	0.22	0.02	D,U	SW846-SW8321A
	2,4,6-Trinitrotoluene	0.012	0.22	0.012	D,U	SW846-SW8321A
	2,4-Dinitrotoluene	0.021	0.22	0.021	D,U	SW846-SW8321A
	2,6-Dinitrotoluene	0.016	0.22	0.016	D,U	SW846-SW8321A
	2-Amino-4,6-dinitrotoluene	0.029	0.22	0.029	D,U	SW846-SW8321A
	2-nitrotoluene	0.019	0.22	0.019	D,U	SW846-SW8321A
	3-Nitrotoluene	0.026	0.22	0.026	D,U	SW846-SW8321A
	4-Amino-2,6-dinitrotoluene	0.018	0.22	0.018	D,U	SW846-SW8321A
	4-Methylnitrobenzene	0.026	0.22	0.026	D,U	SW846-SW8321A
	HMX	0.053	0.22	0.053	D,U	SW846-SW8321A
	Nitrobenzene	0.014	0.22	0.014	D,U	SW846-SW8321A
	RDX	0.022	0.22	0.022	D,U	SW846-SW8321A
	Tetryl	0.02	0.22	0.02	D,U	SW846-SW8321A
CYN-MW10 9-Apr-12	1,3,5-trinitrobenzene	0.018	0.22	0.018	D,U	SW846-SW8321A
	1,3-Dinitrobenzene	0.02	0.22	0.02	D,U	SW846-SW8321A
	2,4,6-Trinitrotoluene	0.012	0.22	0.012	D,U	SW846-SW8321A
	2,4-Dinitrotoluene	0.021	0.22	0.021	D,U	SW846-SW8321A
	2,6-Dinitrotoluene	0.016	0.22	0.016	D,U	SW846-SW8321A
	2-Amino-4,6-dinitrotoluene	0.029	0.22	0.029	D,U	SW846-SW8321A
	2-nitrotoluene	0.019	0.22	0.019	D,U	SW846-SW8321A
	3-Nitrotoluene	0.026	0.22	0.026	D,U	SW846-SW8321A
	4-Amino-2,6-dinitrotoluene	0.018	0.22	0.018	D,U	SW846-SW8321A
	4-Methylnitrobenzene	0.026	0.22	0.026	D,U	SW846-SW8321A
	HMX	0.053	0.22	0.053	D,U	SW846-SW8321A
	Nitrobenzene	0.014	0.22	0.014	D,U	SW846-SW8321A
	RDX	0.022	0.22	0.022	D,U	SW846-SW8321A
	Tetryl	0.02	0.22	0.02	D,U	SW846-SW8321A

D = Dilution

U = Analyte not detected at or above the reporting limit or MDL

Table-3 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: High Explosive Compounds

Monitoring Well/ Sample Date	Analyte	Result (µg/L)	Quantitation Limit (µg/L)	MDL (µg/L)	Laboratory Qualifier	Analytical Method
CYN-MW10 9-Apr-12 DUP	1,3,5-trinitrobenzene	0.018	0.22	0.018	D,U	SW846-SW8321A
	1,3-Dinitrobenzene	0.019	0.22	0.019	D,U	SW846-SW8321A
	2,4,6-Trinitrotoluene	0.012	0.22	0.012	D,U	SW846-SW8321A
	2,4-Dinitrotoluene	0.021	0.22	0.021	D,U	SW846-SW8321A
	2,6-Dinitrotoluene	0.016	0.22	0.016	D,U	SW846-SW8321A
	2-Amino-4,6-dinitrotoluene	0.029	0.22	0.029	D,U	SW846-SW8321A
	2-nitrotoluene	0.019	0.22	0.019	D,U	SW846-SW8321A
	3-Nitrotoluene	0.026	0.22	0.026	D,U	SW846-SW8321A
	4-Amino-2,6-dinitrotoluene	0.017	0.22	0.017	D,U	SW846-SW8321A
	4-Methylnitrobenzene	0.026	0.22	0.026	D,U	SW846-SW8321A
	HMX	0.053	0.22	0.053	D,U	SW846-SW8321A
	Nitrobenzene	0.014	0.22	0.014	D,U	SW846-SW8321A
	RDX	0.022	0.22	0.022	D,U	SW846-SW8321A
	Tetryl	0.02	0.22	0.02	D,U	SW846-SW8321A
CYN-MW11 10-Apr-12	1,3,5-trinitrobenzene	0.018	0.22	0.018	D,U	SW846-SW8321A
	1,3-Dinitrobenzene	0.019	0.22	0.019	D,U	SW846-SW8321A
	2,4,6-Trinitrotoluene	0.011	0.22	0.011	D,U	SW846-SW8321A
	2,4-Dinitrotoluene	0.02	0.22	0.02	D,U	SW846-SW8321A
	2,6-Dinitrotoluene	0.016	0.22	0.016	D,U	SW846-SW8321A
	2-Amino-4,6-dinitrotoluene	0.028	0.22	0.028	D,U	SW846-SW8321A
	2-nitrotoluene	0.018	0.22	0.018	D,U	SW846-SW8321A
	3-Nitrotoluene	0.025	0.22	0.025	D,U	SW846-SW8321A
	4-Amino-2,6-dinitrotoluene	0.017	0.22	0.017	D,U	SW846-SW8321A
	4-Methylnitrobenzene	0.025	0.22	0.025	D,U	SW846-SW8321A
	HMX	0.051	0.22	0.051	D,U	SW846-SW8321A
	Nitrobenzene	0.014	0.22	0.014	D,U	SW846-SW8321A
	RDX	0.021	0.22	0.021	D,U	SW846-SW8321A
	Tetryl	0.019	0.22	0.019	D,U	SW846-SW8321A

D = Dilution

U = Analyte not detected at or above the reporting limit or MDL

Table-3 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: High Explosive Compounds

Monitoring Well/ Sample Date	Analyte	Result (µg/L)	Quantitation Limit (µg/L)	MDL (µg/L)	Laboratory Qualifier	Analytical Method
CYN-MW12 11-Apr-12	1,3,5-trinitrobenzene	0.018	0.22	0.018	D,U	SW846-SW8321A
	1,3-Dinitrobenzene	0.019	0.22	0.019	D,U	SW846-SW8321A
	2,4,6-Trinitrotoluene	0.011	0.22	0.011	D,U	SW846-SW8321A
	2,4-Dinitrotoluene	0.02	0.22	0.02	D,U	SW846-SW8321A
	2,6-Dinitrotoluene	0.016	0.22	0.016	D,U	SW846-SW8321A
	2-Amino-4,6-dinitrotoluene	0.028	0.22	0.028	D,U	SW846-SW8321A
	2-nitrotoluene	0.018	0.22	0.018	D,U	SW846-SW8321A
	3-Nitrotoluene	0.025	0.22	0.025	D,U	SW846-SW8321A
	4-Amino-2,6-dinitrotoluene	0.017	0.22	0.017	D,U	SW846-SW8321A
	4-Methylnitrobenzene	0.025	0.22	0.025	D,U	SW846-SW8321A
	HMX	0.051	0.22	0.051	D,U	SW846-SW8321A
	Nitrobenzene	0.014	0.22	0.014	D,U	SW846-SW8321A
	RDX	0.021	0.22	0.021	D,U	SW846-SW8321A
	Tetryl	0.019	0.22	0.019	D,U	SW846-SW8321A

D = Dilution

U = Analyte not detected at or above the reporting limit or MDL

Table-4 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: Method Detection Limits for Volatile Organic Compounds (EPA Method SW846: 8260B)

Analyte	MDL (µg/L)
4-Methyl-2-pentanone (MIBK)	0.18
Acetone	2.1
Benzene	0.13
Bromodichloromethane	0.14
Bromoform	0.1
Bromomethane	0.29
Butanone[2-]	0.35
Carbon Disulfide	0.16
Carbon Tetrachloride	0.15
Chlorobenzene	0.12
Chloroethane	0.34
Chloroform	0.12
Chloromethane	0.25
Dibromochloromethane	0.13
Dichloroethane[1,1-]	0.1
Dichloroethane[1,2-]	0.22
Dichloroethene[1,1-]	0.14
Dichloroethene[cis-1,2-]	0.1

Analyte	MDL (µg/L)
Dichloroethene[trans-1,2-]	0.11
Dichloropropane[1,2-]	0.15
Dichloropropene[cis-1,3-]	0.22
Dichloropropene[trans-1,3-]	0.08
Ethylbenzene	0.1
Hexanone[2-]	0.17
Methylene Chloride	0.35
Styrene	0.15
Tetrachloroethane[1,1,2,2-]	0.09
Tetrachloroethene	0.1
Toluene	0.25
Trichloroethane[1,1,1-]	0.19
Trichloroethane[1,1,2-]	0.31
Trichloroethene	0.13
Vinyl acetate	0.21
Vinyl Chloride	0.22
Xylene (Total)	0.18

Table-4 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: Method Detection Limits for Semi-volatile Organic Compounds (EPA Method SW846:8270C)

Analyte	MDL (µg/L)
1,2,4-Trichlorobenzene	1.5
1,2-Dichlorobenzene	1.6
1,3-Dichlorobenzene	1.6
1,4-Dichlorobenzene	1.5
2,2'-oxybis[1-chloropropane]	1.4
2,4,5-Trichlorophenol	2.1-2.2
2,4,6-Trichlorophenol	2.1-2.2
2,4-Dichlorophenol	2.7-2.8
2,4-Dimethylphenol	2.3-2.4
2,4-Dinitrophenol	21-22
2,4-Dinitrotoluene	2.1-2.2
2,6-Dinitrotoluene	2.1-2.2
2-Chloronaphthalene	1.4
2-Chlorophenol	1.7
2-Methylnaphthalene	1.6
2-Methylphenol	0.98-1.0
2-Nitroaniline	2.1-2.2
2-Nitrophenol	2-2.1
3,3'-Dichlorobenzidine	1
4,6-Dinitro-2-methylphenol	2.3-2.4
4-Bromophenyl phenyl ether	1.2
4-Chloro-3-methylphenol	2.1-2.2
4-Chloroaniline	2.1-2.2
4-Chlorophenyl phenyl ether	1.2
4-Nitroaniline	1.6
4-Nitrophenol	6.4-6.5
Acenaphthene	1.2
Acenaphthylene	1.2
Anthracene	1-1.1
Benz(a)anthracene	1-1.1
Benzo(a)pyrene	0.71-0.73
Benzo(b)fluoranthene	1.3

Analyte	MDL (µg/L)
Benzo(g,h,i)perylene	1.5
Benzo(k)fluoranthene	1
Bis(2-chloroethoxy)methane	1
Bis(2-chloroethyl)ether	1.6
Bis(2-ethylhexyl)phthalate	1-1.1
Butylbenzylphthalate	1.5
Chrysene	0.64-0.66
Dibenz(a,h)anthracene	2.1-2.2
Dibenzofuran	1.2
Diethylphthalate	0.98-1.0
Dimethyl Phthalate	0.92-0.95
Di-n-butylphthalate	1.2
Di-n-octylphthalate	1.6
Fluoranthene	0.68-0.7
Fluorene	0.98-1.0
Hexachlorobenzene	1.5
Hexachlorobutadiene	1.4
Hexachlorocyclopentadiene	5.2-5.4
Hexachloroethane	1.5
Indeno(1,2,3-cd)pyrene	3.6-3.7
Isophorone	1-1.1
Methylphenol, 3-&4-	1.2
Naphthalene	1.4
Nitroaniline[3-]	1.5
Nitrobenzene	1.7
N-Nitrosodiphenylamine	0.57-0.58
N-nitrosodipropylamine	1.5
Pentachlorophenol	2.1-2.2
Phenanthrene	1-1.1
Phenol	1.2
Pyrene	1.5

Table-6 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: Diesel Range Organics and Gasoline Range Organics

Monitoring Well/ Sample Date	Analyte	Result (µg/L)	Quantitation Limit (µg/L)	MDL (µg/L)	Laboratory Qualifier	Analytical Method
CYN-MW4 2-Apr-12	TPH (as Gasoline)	15	50	15	U	DHS-CALUFT/GCMS VPH
	TPH Diesel Range Organics	18	56	18	D,U	SW-846:8015M_EXTRACTABLE
CYN-MW6 16-Apr-12	TPH (as Gasoline)	15	50	15	U	DHS-CALUFT/GCMS VPH
	TPH Diesel Range Organics	17	54	17	D,J	SW-846:8015M_EXTRACTABLE
CYN-MW7 5-Apr-12	TPH (as Gasoline)	15	50	15	U	DHS-CALUFT/GCMS VPH
	TPH Diesel Range Organics	17	52	17	D,U	SW-846:8015M_EXTRACTABLE
CYN-MW8 6-Apr-12	TPH (as Gasoline)	15	50	15	U	DHS-CALUFT/GCMS VPH
	TPH Diesel Range Organics	17	54	17	D,U	SW-846:8015M_EXTRACTABLE
CYN-MW9 12-Apr-12	TPH (as Gasoline)	15	50	15	U	DHS-CALUFT/GCMS VPH
	TPH Diesel Range Organics	60	53	17	D	SW-846:8015M_EXTRACTABLE
CYN-MW10 9-Apr-12	TPH (as Gasoline)	15	50	15	U	DHS-CALUFT/GCMS VPH
	TPH Diesel Range Organics	17	54	17	D,U	SW-846:8015M_EXTRACTABLE
CYN-MW10 9-Apr-12 DUP	TPH (as Gasoline)	15	50	15	U	DHS-CALUFT/GCMS VPH
	TPH Diesel Range Organics	18	56	18	D,U	SW-846:8015M_EXTRACTABLE
CYN-MW11 10-Apr-12	TPH (as Gasoline)	15	50	15	U	DHS-CALUFT/GCMS VPH
	TPH Diesel Range Organics	17	52	17	D,U	SW-846:8015M_EXTRACTABLE
CYN-MW12 11-Apr-12	TPH (as Gasoline)	15	50	15	U	DHS-CALUFT/GCMS VPH
	TPH Diesel Range Organics	16	52	16	D,U	SW-846:8015M_EXTRACTABLE

D = Dilution

J = Estimated result. Result is less than RL.

U = Analyte not detected at or above the reporting limit or MDL

Table-6 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: Gamma Spectroscopy, Gross Alpha, Gross Beta, Isotopic Uranium and Tritium

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
CYN-MW4 2-Apr-12	Actinium-228	1.53 ± 16	28.9	U	EPA:901.1M
	Beryllium-7	22 ± 34	60.1	U	EPA:901.1M
	Bismuth-212	2.12 ± 60	104	U	EPA:901.1M
	Bismuth-214	48.1 ± 39	75.6	U	EPA:901.1M
	Cesium-134	2.5 ± 4.9	8.69	U	EPA:901.1M
	Cesium-137	-1.79 ± 4.4	7.27	U	EPA:901.1M
	Cobalt-60	-3.83 ± 4.7	7.61	U	EPA:901.1M
	Gross Alpha	43 ± 11	4.28		EPA:900.0
	Gross Beta	12 ± 3.3	4.31		EPA:900.0
	Iodine-131	-5.99 ± 8	12.9	U	EPA:901.1M
	Lead-212	4.62 ± 11	8.79	U	EPA:901.1M
	Lead-212	-11.2 ± 15	15.4	U	EPA:901.1M
	Potassium-40	160 ± 62	122	U	EPA:901.1M
	Protactinium-234m	-384 ± 570	940	U	EPA:901.1M
	Sodium-22	1.24 ± 4.8	8.6	U	EPA:901.1M
	Tallium-208	3.94 ± 4.3	7.66	U	EPA:901.1M
	Thorium-234	-384 ± 570	940	U	EPA:901.1M
	Tritium	13.1 ± 170	364	U	EPA:906.0
	Uranium-234	35.2 ± 5.8	0.00488		HASL-300:ISOU
	Uranium-235	0.28 ± 0.056	0.00488		HASL-300:ISOU
Uranium-238	4.33 ± 0.72	0.00801		HASL-300:ISOU	

J = No U|< qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.

U = Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

Table-6 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: Gamma Spectroscopy, Gross Alpha, Gross Beta, Isotopic Uranium and Tritium

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
CYN-MW6 16-Apr-12	Actinium-228	-6.43 ± 16	15.9	U	EPA:901.1M
	Beryllium-7	-6.64 ± 17	27.9	U	EPA:901.1M
	Bismuth-212	23.2 ± 28	49.2	U	EPA:901.1M
	Bismuth-214	81 ± 27	25.5	J	EPA:901.1M
	Cesium-134	0.866 ± 2.2	3.87	U	EPA:901.1M
	Cesium-137	-0.768 ± 2.1	3.46	U	EPA:901.1M
	Cobalt-60	-0.86 ± 2.2	3.67	U	EPA:901.1M
	Gross Alpha	8.98 ± 4	4.21		EPA:900.0
	Gross Beta	5.41 ± 1.6	2.09		EPA:900.0
	Iodine-131	1.03 ± 7.3	13.3	U	EPA:901.1M
	Lead-212	2.62 ± 6.8	5.04	U	EPA:901.1M
	Lead-212	49.6 ± 10	6.6	J	EPA:901.1M
	Potassium-40	-172 ± 65	89.5	U	EPA:901.1M
	Protactinium-234m	182 ± 240	433	U	EPA:901.1M
	Sodium-22	0.522 ± 2.1	3.69	U	EPA:901.1M
	Tallium-208	0.846 ± 5.3	4.14	U	EPA:901.1M
	Thorium-234	182 ± 240	433	U	EPA:901.1M
	Tritium	101 ± 160	329	U	EPA:906.0
	Uranium-234	9.43 ± 1.3	0.00511		HASL-300:ISOU
	Uranium-235	0.110 ± 0.025	0.00511		HASL-300:ISOU
Uranium-238	2.47 ± 0.35	0.00705		HASL-300:ISOU	

J = No U|< qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.

U = Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

Table-6 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: Gamma Spectroscopy, Gross Alpha, Gross Beta, Isotopic Uranium and Tritium

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
CYN-MW7 5-Apr-12	Actinium-228	-14.2 ± 40	42.7	U	EPA:901.1M
	Beryllium-7	-1.35 ± 38	64.7	U	EPA:901.1M
	Bismuth-212	79.9 ± 68	123	U	EPA:901.1M
	Bismuth-214	35.1 ± 90	59.9	U	EPA:901.1M
	Cesium-134	0.675 ± 5.4	9.41	U	EPA:901.1M
	Cesium-137	0.619 ± 5.4	9.23	U	EPA:901.1M
	Cobalt-60	-0.596 ± 5.2	9.03	U	EPA:901.1M
	Gross Alpha	17.6 ± 5.5	3.41		EPA:900.0
	Gross Beta	4.51 ± 2.5	4.17		EPA:900.0
	Iodine-131	5.58 ± 7.3	12.6	U	EPA:901.1M
	Lead-212	-17.1 ± 10	10.5	U	EPA:901.1M
	Lead-212	116 ± 26	14.8	J	EPA:901.1M
	Potassium-40	-436 ± 200	269	U	EPA:901.1M
	Protactinium-234m	218 ± 630	1120	U	EPA:901.1M
	Sodium-22	-5.19 ± 5.7	9.30	U	EPA:901.1M
	Tallium-208	-3.35 ± 8	9.58	U	EPA:901.1M
	Thorium-234	218 ± 630	1120	U	EPA:901.1M
	Tritium	-58.7 ± 170	369	U	EPA:906.0
	Uranium-234	18.2 ± 3	0.00685		HASL-300:ISOU
	Uranium-235	0.108 ± 0.026	0.00496		HASL-300:ISOU
Uranium-238	2.25 ± 0.38	0.00496		HASL-300:ISOU	

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Table-6 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: Gamma Spectroscopy, Gross Alpha, Gross Beta, Isotopic Uranium and Tritium

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
CYN-MW8 6-Apr-12	Actinium-228	-17.1 ± 44	46.4	U	EPA:901.1M
	Beryllium-7	-27.1 ± 46	77.6	U	EPA:901.1M
	Bismuth-212	7.97 ± 83	143	U	EPA:901.1M
	Bismuth-214	616 ± 140	64.4		EPA:901.1M
	Cesium-134	4.42 ± 6.5	11.5	U	EPA:901.1M
	Cesium-137	1.56 ± 6.6	9.67	U	EPA:901.1M
	Cobalt-60	3.95 ± 6.2	11.1	U	EPA:901.1M
	Gross Alpha	22.1 ± 6.6	4.36		EPA:900.0
	Gross Beta	6.52 ± 3.4	5.5		EPA:900.0
	Iodine-131	-0.483 ± 8.4	14.1	U	EPA:901.1M
	Lead-212	-32.2 ± 15	14.7	U	EPA:901.1M
	Lead-212	637 ± 81	18.4		EPA:901.1M
	Potassium-40	-1320 ± 260	277	U	EPA:901.1M
	Protactinium-234m	512 ± 730	1290	U	EPA:901.1M
	Sodium-22	-2 ± 6.3	10.7	U	EPA:901.1M
	Tallium-208	-15.9 ± 10	10.7	U	EPA:901.1M
	Thorium-234	512 ± 730	1290	U	EPA:901.1M
	Tritium	-104 ± 160	365	U	EPA:906.0
	Uranium-234	23.5 ± 3.8	0.01460		HASL-300:ISOU
	Uranium-235	0.158 ± 0.034	0.00747		HASL-300:ISOU
Uranium-238	2.52 ± 0.42	0.01210		HASL-300:ISOU	

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Table-6 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: Gamma Spectroscopy, Gross Alpha, Gross Beta, Isotopic Uranium and Tritium

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
CYN-MW9 12-Apr-12	Actinium-228	6.04 ± 16	16.7	U	EPA:901.1M
	Beryllium-7	13.2 ± 17	29.6	U	EPA:901.1M
	Bismuth-212	9.90 ± 28	48.5	U	EPA:901.1M
	Bismuth-214	55.1 ± 21	25	J	EPA:901.1M
	Cesium-134	0.046 ± 2.2	3.74	U	EPA:901.1M
	Cesium-137	-0.726 ± 2	3.40	U	EPA:901.1M
	Cobalt-60	0.0544 ± 2.1	3.69	U	EPA:901.1M
	Gross Alpha	14 ± 5.1	4.91		EPA:900.0
	Gross Beta	1.07 ± 2.2	3.57	U	EPA:900.0
	Iodine-131	-3.19 ± 10	17.6	U	EPA:901.1M
	Lead-212	-4.4 ± 5.6	6.03	U	EPA:901.1M
	Lead-212	17 ± 8.8	6.23	J	EPA:901.1M
	Potassium-40	-130 ± 65	92.6	U	EPA:901.1M
	Protactinium-234m	212 ± 250	443	U	EPA:901.1M
	Sodium-22	0.773 ± 2.1	3.75	U	EPA:901.1M
	Tallium-208	-1.22 ± 3.6	3.91	U	EPA:901.1M
	Thorium-234	212 ± 250	443	U	EPA:901.1M
	Tritium	74.1 ± 160	331	U	EPA:906.0
	Uranium-234	8.45 ± 1.2	0.00777		HASL-300:ISOU
	Uranium-235	0.0922 ± 0.02	0.00563		HASL-300:ISOU
Uranium-238	2.31 ± 0.33	0.00855		HASL-300:ISOU	

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Table-6 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: Gamma Spectroscopy, Gross Alpha, Gross Beta, Isotopic Uranium and Tritium

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
CYN-MW10 9-Apr-12	Actinium-228	0.339 ± 17	29	U	EPA:901.1M
	Beryllium-7	-4.02 ± 33	55.7	U	EPA:901.1M
	Bismuth-212	15.2 ± 63	108	U	EPA:901.1M
	Bismuth-214	222 ± 58	58.6		EPA:901.1M
	Cesium-134	-0.777 ± 4.7	8.17	U	EPA:901.1M
	Cesium-137	3.05 ± 4.5	8.03	U	EPA:901.1M
	Cobalt-60	-1.90 ± 5.3	9.06	U	EPA:901.1M
	Gross Alpha	7.11 ± 3.4	4.19		EPA:900.0
	Gross Beta	4.73 ± 2.7	4.41		EPA:900.0
	Iodine-131	-3.89 ± 5	8.12	U	EPA:901.1M
	Lead-212	10.9 ± 10	8.97	J	EPA:901.1M
	Lead-212	102 ± 23	12.9	J	EPA:901.1M
	Potassium-40	236 ± 75	81.8	J	EPA:901.1M
	Protactinium-234m	446 ± 590	1080	U	EPA:901.1M
	Sodium-22	-1.51 ± 5	8.64	U	EPA:901.1M
	Tallium-208	8.17 ± 7.6	8.10	U	EPA:901.1M
	Thorium-234	446 ± 590	1080	U	EPA:901.1M
	Tritium	187 ± 180	365	U	EPA:906.0
	Uranium-234	5.65 ± 0.95	0.00865		HASL-300:ISOU
	Uranium-235	0.117 ± 0.029	0.00569		HASL-300:ISOU
Uranium-238	2.01 ± 0.35	0.00569		HASL-300:ISOU	

J = No U|< qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.

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Table-6 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: Gamma Spectroscopy, Gross Alpha, Gross Beta, Isotopic Uranium and Tritium

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
CYN-MW10 9-Apr-12 DUP	Actinium-228	9.65 ± 17	30.2	U	EPA:901.1M
	Beryllium-7	6.11 ± 32	54.7	U	EPA:901.1M
	Bismuth-212	47.8 ± 63	111	U	EPA:901.1M
	Bismuth-214	185 ± 73	50.3	J	EPA:901.1M
	Cesium-134	0.675 ± 4.7	8.10	U	EPA:901.1M
	Cesium-137	-3.28 ± 4.3	7.08	U	EPA:901.1M
	Cobalt-60	1.58 ± 4.5	8.25	U	EPA:901.1M
	Gross Alpha	8.09 ± 3.5	3.83		EPA:900.0
	Gross Beta	0.449 ± 2.2	3.75	U	EPA:900.0
	Iodine-131	-2.7 ± 5	8.41	U	EPA:901.1M
	Lead-212	5.69 ± 9.2	10.3	U	EPA:901.1M
	Lead-212	104 ± 24	12.4	J	EPA:901.1M
	Potassium-40	-91.5 ± 110	149	U	EPA:901.1M
	Protactinium-234m	226 ± 510	916	U	EPA:901.1M
	Sodium-22	-0.392 ± 4.8	8.37	U	EPA:901.1M
	Tallium-208	-0.0236 ± 6.4	6.7	U	EPA:901.1M
	Thorium-234	226 ± 510	916	U	EPA:901.1M
	Tritium	205 ± 180	366	U	EPA:906.0
	Uranium-234	5.28 ± 0.88	0.00505		HASL-300:ISOU
	Uranium-235	0.0993 ± 0.025	0.00614		HASL-300:ISOU
Uranium-238	1.92 ± 0.33	0.00505		HASL-300:ISOU	

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Table-6 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: Gamma Spectroscopy, Gross Alpha, Gross Beta, Isotopic Uranium and Tritium

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
CYN-MW11 10-Apr-12	Actinium-228	11.5 ± 13	16.7	U	EPA:901.1M
	Beryllium-7	-21.4 ± 16	25.9	U	EPA:901.1M
	Bismuth-212	10.7 ± 27	46.8	U	EPA:901.1M
	Bismuth-214	90.5 ± 25	20.4	J	EPA:901.1M
	Cesium-134	1.48 ± 2.1	3.76	U	EPA:901.1M
	Cesium-137	-1.83 ± 2.1	3.40	U	EPA:901.1M
	Cobalt-60	0.98 ± 2.1	3.84	U	EPA:901.1M
	Gross Alpha	4.14 ± 3.4	5.17	U	EPA:900.0
	Gross Beta	4.79 ± 1.4	1.86		EPA:900.0
	Iodine-131	-3.69 ± 11	19.6	U	EPA:901.1M
	Lead-212	-7.52 ± 5	5.94	U	EPA:901.1M
	Lead-212	34.6 ± 12	5.87	J	EPA:901.1M
	Potassium-40	-114 ± 63	88	U	EPA:901.1M
	Protactinium-234m	114 ± 250	447	U	EPA:901.1M
	Sodium-22	-1.52 ± 2	3.37	U	EPA:901.1M
	Tallium-208	-1.08 ± 3.7	3.9	U	EPA:901.1M
	Thorium-234	114 ± 250	447	U	EPA:901.1M
	Tritium	135 ± 160	334	U	EPA:906.0
	Uranium-234	5.77 ± 0.80	0.00499		HASL-300:ISOU
	Uranium-235	0.0803 ± 0.02	0.00499		HASL-300:ISOU
Uranium-238	1.93 ± 0.28	0.00499		HASL-300:ISOU	

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U = Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

Table-6 NMED DOE OB FFY 2012 Q-3 Burn Site Groundwater Quality Results: Gamma Spectroscopy, Gross Alpha, Gross Beta, Isotopic Uranium and Tritium

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
CYN-MW12 11-Apr-12	Actinium-228	0.527 ± 13	16.4	U	EPA:901.1M
	Beryllium-7	3.14 ± 18	30.1	U	EPA:901.1M
	Bismuth-212	13.1 ± 28	48.6	U	EPA:901.1M
	Bismuth-214	134 ± 30	22.8	J	EPA:901.1M
	Cesium-134	0.332 ± 2.2	3.88	U	EPA:901.1M
	Cesium-137	-3.20 ± 2.2	3.36	U	EPA:901.1M
	Cobalt-60	-0.503 ± 2.2	3.71	U	EPA:901.1M
	Gross Alpha	15 ± 5.8	5.81		EPA:900.0
	Gross Beta	5.46 ± 1.3	1.61		EPA:900.0
	Iodine-131	6.16 ± 11	20.6	U	EPA:901.1M
	Lead-212	-6.14 ± 5.4	6.15	U	EPA:901.1M
	Lead-212	88.2 ± 15	6.91	J	EPA:901.1M
	Potassium-40	-128 ± 64	88.2	U	EPA:901.1M
	Protactinium-234m	111 ± 240	435	U	EPA:901.1M
	Sodium-22	-2.31 ± 2.2	3.59	U	EPA:901.1M
	Tallium-208	0.283 ± 4.1	4.03	U	EPA:901.1M
	Thorium-234	111 ± 240	435	U	EPA:901.1M
	Tritium	89.9 ± 160	332	U	EPA:906.0
	Uranium-234	12.8 ± 1.8	0.007		HASL-300:ISOU
	Uranium-235	0.103 ± 0.024	0.00507		HASL-300:ISOU
Uranium-238	2.75 ± 0.39	0.00507		HASL-300:ISOU	

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