



NEW MEXICO
ENVIRONMENT DEPARTMENT



DOE Oversight Bureau

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RYAN FLYNN
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Deputy Secretary

July 26, 2016

Karen Agogino, P.E.
U.S. Department of Energy
Sandia Site Office
P.O Box 5400 MS 0184
Albuquerque, New Mexico 87185-5400

Subject: Data Submittal for Groundwater Monitoring at Sandia National Laboratories/New Mexico Solid Waste Management Units 8/58 Conducted by NMED DOE OB for FFY 2012 Q-1

Ms. Agogino:

This letter transmits the subject report as final. The report shows groundwater data results from Solid Waste Management Units (SWMUs) 8/58 monitoring wells collected by the New Mexico Environment Department DOE Oversight Bureau during the first quarter of FFY 2012.

The enclosed monitoring results were provided to the U.S Department of Energy in draft form on July 13, 2012 for 30-day review and comment. The final monitoring results are provided to DOE, the State of New Mexico and federal agencies, the NMED website and interested members of the public. If you have any questions, or if you would like copies of the complete data set, please contact me by phone at (505) 383-2070, by email at chris.armijo1@state.nm.us, or by mail to the address in the above letterhead.

Sincerely,

Chris Armijo
Geoscientist, Sandia Oversight Section
DOE Oversight Bureau

- Enclosure:
- (1) Groundwater Monitoring at Sandia National Laboratories/New Mexico Solid Waste Management Units 8/58 Conducted by the NMED DOE OB for FFY 2012 Q-1
 - (2) Table-1 Total TAL Metals plus Uranium
 - (3) Table-2 Anions, Cations, Nitrate, Nitrite, Perchlorate and Total Cyanide Results
 - (4) Table-3 High Explosives Results
 - (5) Table-4 Method Detection Limits for Volatile and Semi-Volatile Organic Compounds
 - (6) Table-5 Gross Alpha, Gross Beta, Gamma Spectroscopy, and Isotopic Uranium Results

Distribution: David Rast, DOE/SSO
Karen Oden, DOE/SSO
Tim Jackson, SNL/NM Groundwater
Michael Skelly, SNL/NM Groundwater
Susan Lucas Kamat, Bureau Chief, DOE OB

File: SGE42.Groundwater Monitoring. SWMU 8/58. FFY 2012 Q-1



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Groundwater Monitoring at Sandia National Laboratories/New Mexico Solid Waste Management Units 8/58 Conducted by the NMED DOE OB for FFY 2012 Q-1

The New Mexico Environment Department (NMED) DOE Oversight Bureau (Bureau) has compiled and assessed groundwater data collected during October and November 2011. The Bureau collected groundwater samples from Coyote Canyon Blast Area (CCBA) monitoring wells CCBA-MW1 and CCBA-MW2, located within Solid Waste Management Units (SWMUs) 8/58 at Sandia National Laboratories/New Mexico (SNL/NM). Monitoring wells CCBA-MW1 and CCBA-MW2 were installed at SWMUs 8/58 in August 2011. This is the first quarterly sampling event for the two monitoring wells.

Split samples were collected using standard SNL/NM sampling procedures and equipment. The groundwater samples from each well were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), high explosive (HE) compounds, nitrate, nitrite, major anions, major cations, Target Analyte List (TAL) metals plus uranium, perchlorate, total cyanide, gross alpha and beta activity, radionuclides by gamma spectroscopy, and isotopic uranium. No constituents were detected above established U.S. Environmental Protection Agency (EPA) drinking water standards, except for fluoride. Fluoride exceeds the established Maximum Contaminate Level (MCL) of 4.0 milligrams per liter (mg/L) in the CCBA-MW1 sample at a concentration of 5.0 mg/L.

Data Assessment

All groundwater samples were collected and analyzed in accordance with U.S. EPA protocols. Data results are compared to applicable MCLs from the EPA National Primary Drinking Water Regulations (40 CFR 141).

Currently there is no U.S. EPA National Primary Drinking Water MCL or State of New Mexico drinking water standard for perchlorate. However, 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. The COOC screening level for perchlorate is 4 micrograms per liter ($\mu\text{g/L}$).

Results

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

Analytical results for major anions (as bromide, chloride, fluoride, and sulfate), cations (as calcium, lithium, magnesium, potassium, silicon, sodium, and strontium), cyanide, nitrate, nitrite and perchlorate are presented in Table-2. Fluoride was detected above the EPA MCL of 4 mg/L. The elevated fluoride concentration was detected in a sample from monitoring well CCBA-MW1 (5 mg/L). All other analytes were below established MCLs and all samples analyzed for perchlorate were non-detects.

Analytical results for HE compounds are listed in Table-3. No HE compounds were detected above the method detection limits (MDLs) in any groundwater samples.

No VOCs or SVOCs were detected above laboratory MDLs in any groundwater samples collected from SWMUs 8/58. Table-4 lists the MDLs for associated VOCs and SVOCs.

The results for gamma-emitting radionuclides, gross alpha and beta activity, and isotopic uranium are presented in Table-5. All radionuclide activity results are below MCLs, where established.

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 TAL Metals plus Uranium
 (2) Table-2 Anions, Cations, Nitrate, Nitrite, Perchlorate and Total Cyanide Results
 (3) Table-3 High Explosives Results
 (4) Table-4 Method Detection Limits for Volatile and Semi-Volatile Organic Compounds
 (5) Table-5 Gross Alpha, Gross Beta, Gamma Spectroscopy, and Isotopic Uranium Results

Distribution: Karen Agogino, POC, DOE/SSO
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File: SGE42.Groundwater Monitoring. SWMU 8/58. FFY 2012 Q-1

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Table-1 NMED DOE OB FFY 2012 Q-1 Solid Waste Management Units 8/58 Groundwater Quality Results: Total TAL 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
CCBA-MW1 31-Oct-11	Aluminum	0.045	NE	0.03	0.013		SW-846:6020
	Antimony	0.0017	0.006	0.005	0.0017	U	SW-846:6020
	Arsenic	0.0019	0.01	0.01	0.00095	B	SW-846:6020
	Barium	0.014	2	0.002	0.0002		SW-846:6020
	Beryllium	0.00069	0.004	0.0005	0.00035		SW-846:6020
	Cadmium	0.0001	0.005	0.0005	0.0001	U	SW-846:6020
	Calcium	44.5	NE	0.1	0.068		SW-846:6020
	Chromium	0.0033	0.1	0.01	0.0033	U	SW-846:6020
	Cobalt	0.00022	NE	0.002	0.00022	U	SW-846:6020
	Copper	0.00094	1.3	0.001	0.00045	B,J	SW-846:6020
	Iron	0.02	NE	0.05	0.02	U	SW-846:6020
	Lead	0.00027	0.015	0.003	0.00017	B	SW-846:6020
	Magnesium	9.5	NE	0.05	0.0052		SW-846:6020
	Manganese	0.023	NE	0.002	0.00024		SW-846:6020
	Mercury	0.00025	0.002	0.0002	0.00006	J	SW-846:7470A
	Nickel	0.00064	NE	0.005	0.0004	B	SW-846:6020
	Potassium	4.8	NE	0.1	0.042		SW-846:6020
	Selenium	0.0016	0.05	0.005	0.0016	U	SW-846:6020
	Silver	0.00004	NE	0.002	0.00004	U	SW-846:6020
	Sodium	63.2	NE	0.05	0.015		SW-846:6020
	Thallium	0.00086	0.002	0.002	0.00055	B	SW-846:6020
Uranium	0.00023	0.03	1	0.00023	U	SW-846:6020	
Vanadium	0.0024	NE	0.01	0.0024	U	SW-846:6020	
Zinc	0.0083	NE	0.01	0.0083	U	SW-846:6020	

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

Table-1 NMED DOE OB FFY 2012 Q-1 Solid Waste Management Units 8/58 Groundwater Quality Results: Total TAL 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
CCBA-MW2 1-Nov-11	Aluminum	0.013	NE	0.03	0.013	U	SW-846:6020
	Antimony	0.0017	0.006	0.005	0.0017	U	SW-846:6020
	Arsenic	0.0017	0.01	0.01	0.00095	B	SW-846:6020
	Barium	0.052	2	0.002	0.0002		SW-846:6020
	Beryllium	0.00035	0.004	0.0005	0.00035	U	SW-846:6020
	Cadmium	0.0001	0.005	0.0005	0.0001	U	SW-846:6020
	Calcium	77.9	NE	0.1	0.068		SW-846:6020
	Chromium	0.0033	0.1	0.01	0.0033	U	SW-846:6020
	Cobalt	0.00022	NE	0.002	0.00022	U	SW-846:6020
	Copper	0.0014	1.3	0.001	0.00045	J	SW-846:6020
	Iron	0.02	NE	0.05	0.02	U	SW-846:6020
	Lead	0.00031	0.015	0.003	0.00017	B	SW-846:6020
	Magnesium	15.1	NE	0.05	0.0052		SW-846:6020
	Manganese	0.0081	NE	0.002	0.00024		SW-846:6020
	Mercury	0.00021	0.002	0.0002	0.00006	J	SW-846:7470A
	Nickel	0.0004	NE	0.005	0.0004	U	SW-846:6020
	Potassium	1.6	NE	0.1	0.042		SW-846:6020
	Selenium	0.0044	0.05	0.005	0.0016	B	SW-846:6020
	Silver	0.00004	NE	0.002	0.00004	U	SW-846:6020
	Sodium	48.7	NE	0.05	0.015		SW-846:6020
	Thallium	0.001	0.002	0.002	0.00055	B	SW-846:6020
Uranium	0.0059	0.03	0.001	0.00023		SW-846:6020	
Vanadium	0.0084	NE	0.01	0.0024	B	SW-846:6020	
Zinc	0.041	NE	0.01	0.0083		SW-846:6020	

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

Table-2 NMED DOE OB FFY 2012 Q-1 Solid Waste Management Units 8/58 Groundwater Quality Results: Anions, Cations, Nitrate, Nitrite, Perchlorate and Total Cyanide

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
CCBA-MW1 31-Oct-11	Bromide	0.24	NE	0.25	0.025	B	EPA:300.0
	Chloride	27	NE	4	0.4		EPA:300.0
	Fluoride	5	4	2	0.2		EPA:300.0
	Nitrate	1.3	10	0.4	0.08		EPA:300.0
	Nitrite	0.003	1	0.02	0.003	U	EPA:300.0
	Sulfate	50.4	NE	10	1		EPA:300.0
	Perchlorate	0.001	NE	0.004	0.001	U	EPA:314.0
	Calcium	48.8	NE	5	0.53		SW-846:6010B
	Lithium	0.13	NE	0.05	0.0096	J	SW-846:6010B
	Magnesium	10.3	NE	1	0.13		SW-846:6010B
	Potassium	4.4	NE	5	1.6	B	SW-846:6010B
	Silicon	15.1	NE	2	0.2		SW-846:6010B
	Sodium	68.9	NE	1	0.32		SW-846:6010B
	Strontium	0.27	NE	0.025	0.0027	J	SW-846:6010B
Total Cyanide	0.0058	0.2	0.01	0.0015	B,J	SW846-9012B	
CCBA-MW2 1-Nov-11	Bromide	0.63	NE	0.25	0.025		EPA:300.0
	Chloride	38.2	NE	4	0.4		EPA:300.0
	Fluoride	1.5	4	0.1	0.01		EPA:300.0
	Nitrate	3.1	10	0.4	0.08		EPA:300.0
	Nitrite	0.003	1	0.02	0.003	U	EPA:300.0
	Sulfate	96.1	NE	10	1		EPA:300.0
	Perchlorate	0.001	NE	0.004	0.001	U	EPA:314.0
	Calcium	87.4	NE	5	0.53		SW-846:6010B
	Lithium	0.05	NE	0.05	0.0096	J	SW-846:6010B
	Magnesium	17	NE	1	0.13		SW-846:6010B
	Potassium	1.6	NE	5	1.6	U	SW-846:6010B
	Silicon	14.4	NE	2	0.2		SW-846:6010B
	Sodium	54.7	NE	1	0.32		SW-846:6010B
	Strontium	0.44	NE	0.025	0.0027	J	SW-846:6010B
Total Cyanide	0.0064	0.2	0.01	0.0015	B,J	SW846-9012B	

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

Table-3 NMED DOE OB FFY 2012 Q-1 Solid Waste Management Units 8/58 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
CCBA-MW1 31-Oct-11	1,3,5-trinitrobenzene	0.025	0.2	0.025	U	SW-846:8321A
	1,3-Dinitrobenzene	0.03	0.2	0.03	U	SW-846:8321A
	2,4,6-Trinitrotoluene	0.015	0.1	0.015	U	SW-846:8321A
	2,4-Diamino-6-nitrotoluene	0.036	0.05	0.036	U	SW-846:8321A
	2,4-Dinitrotoluene	0.044	0.2	0.044	U	SW-846:8321A
	2,6-Diamino-4-nitrotoluene	0.022	0.05	0.022	U	SW-846:8321A
	2,6-Dinitrotoluene	0.017	0.2	0.017	U	SW-846:8321A
	2-Amino-4,6-dinitrotoluene	0.02	0.2	0.02	U	SW-846:8321A
	2-nitrotoluene	0.035	0.5	0.035	U	SW-846:8321A
	3,5-dinitroaniline	0.025	0.05	0.025	U	SW-846:8321A
	3-Nitrotoluene	0.099	0.2	0.099	U	SW-846:8321A
	4-Amino-2,6-dinitrotoluene	0.028	0.2	0.028	U	SW-846:8321A
	4-Methylnitrobenzene	0.043	0.5	0.043	U	SW-846:8321A
	HMX	0.018	0.2	0.018	U	SW-846:8321A
	Nitrobenzene	0.041	0.25	0.041	U	SW-846:8321A
	PETN	0.072	2	0.072	U	SW846-8321A
	RDX	0.03	0.2	0.03	U	SW-846:8321A
	TATB	0.47	2	0.47	U	SW846-8321A
	Tetryl	0.055	0.75	0.055	U	SW846-8321A
	Tri-o-cresylphosphate (TOCP)	0.021	2	0.021	U	SW846-8321A
CCBA-MW2 1-Nov-11	1,3,5-trinitrobenzene	0.025	0.2	0.025	U	SW-846:8321A
	1,3-Dinitrobenzene	0.03	0.2	0.03	U	SW-846:8321A
	2,4,6-Trinitrotoluene	0.015	0.1	0.015	U	SW-846:8321A
	2,4-Diamino-6-nitrotoluene	0.036	0.05	0.036	U	SW-846:8321A
	2,4-Dinitrotoluene	0.044	0.2	0.044	U	SW-846:8321A
	2,6-Diamino-4-nitrotoluene	0.022	0.05	0.022	U	SW-846:8321A
	2,6-Dinitrotoluene	0.017	0.2	0.017	U	SW-846:8321A
	2-Amino-4,6-dinitrotoluene	0.02	0.2	0.02	U	SW-846:8321A
	2-nitrotoluene	0.035	0.5	0.035	U	SW-846:8321A
	3,5-dinitroaniline	0.025	0.05	0.025	U	SW-846:8321A
	3-Nitrotoluene	0.099	0.2	0.099	U	SW-846:8321A
	4-Amino-2,6-dinitrotoluene	0.028	0.2	0.028	U	SW-846:8321A
	4-Methylnitrobenzene	0.043	0.5	0.043	U	SW-846:8321A
	HMX	0.018	0.2	0.018	U	SW-846:8321A
	Nitrobenzene	0.041	0.25	0.041	U	SW-846:8321A
	PETN	0.072	2	0.072	U	SW846-8321A
	RDX	0.03	0.2	0.03	U	SW-846:8321A
	TATB	0.47	2	0.47	U	SW846-8321A
	Tetryl	0.055	0.75	0.055	U	SW846-8321A
	Tri-o-cresylphosphate (TOCP)	0.021	2	0.021	U	SW846-8321A

U = Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified

Table-4 NMED DOE OB FFY 2012 Q-1 Solid Waste Management Units 8/58 Groundwater Quality Results: Method Detection Limits for Volatile and Semi-volatile Organic Compounds

Analyte	MDL (µg/L)	Analytical Method
Acetone	6.7	SW-846:8260B
Benzene	0.25	SW-846:8260B
Bromodichloromethane	0.25	SW-846:8260B
Bromoform	0.37	SW-846:8260B
Bromomethane	0.4	SW-846:8260B
Butanone[2-]	0.39	SW-846:8260B
Carbon Disulfide	0.37	SW-846:8260B
Carbon Tetrachloride	0.36	SW-846:8260B
Chlorobenzene	0.38	SW-846:8260B
Chloroethane	0.38	SW-846:8260B
Chloroform	0.15	SW-846:8260B
Chloromethane	0.55	SW-846:8260B
Dibromochloromethane	0.33	SW-846:8260B
Dichloroethane[1,1-]	0.39	SW-846:8260B
Dichloroethane[1,2-]	0.37	SW-846:8260B
Dichloroethene[1,1-]	0.36	SW-846:8260B
Dichloroethene[cis-1,2-]	0.16	SW-846:8260B
Dichloroethene[trans-1,2-]	0.18	SW-846:8260B
Dichloropropane[1,2-]	0.32	SW-846:8260B
Dichloropropene[cis-1,3-]	0.34	SW-846:8260B
Dichloropropene[trans-1,3-]	0.35	SW-846:8260B
Ethylbenzene	0.3	SW-846:8260B
Hexanone[2-]	0.59	SW-846:8260B
Methyl-2-pentanone[4-]	0.33	SW-846:8260B
Methylene Chloride	1.7	SW-846:8260B
Styrene	0.35	SW-846:8260B
Tetrachloroethane[1,1,2,2-]	0.42	SW-846:8260B
Tetrachloroethene	0.28	SW-846:8260B
Toluene	1	SW-846:8260B
Trichloroethane[1,1,1-]	0.29	SW-846:8260B
Trichloroethane[1,1,2-]	0.57	SW-846:8260B
Trichloroethene	0.29	SW-846:8260B
Vinyl acetate	0.6	SW-846:8260B
Vinyl Chloride	0.43	SW-846:8260B
Xylene (Total)	0.85	SW-846:8260B

Table-4 NMED DOE OB FFY 2012 Q-1 Solid Waste Management Units 8/58 Groundwater Quality Results: Method Detection Limits for Volatile and Semi-volatile Organic Compounds

Analyte	MDL (µg/L)	Analytical Method	Analyte	MDL (µg/L)	Analytical Method
2,4-Dinitrotoluene	1	SW-846:8270C	Dimethylphenol[2,4-]	1	SW-846:8270C
2,6-Dinitrotoluene	2.2	SW-846:8270C	Di-n-butylphthalate	1	SW-846:8270C
Acenaphthene	1	SW-846:8270C	Dinitro-2-methylphenol[4,6-]	1	SW-846:8270C
Acenaphthylene	1	SW-846:8270C	Dinitrophenol[2,4-]	2	SW-846:8270C
Aniline	1.3	SW-846:8270C	Di-n-octylphthalate	1	SW-846:8270C
Anthracene	1	SW-846:8270C	Fluoranthene	1	SW-846:8270C
Azobenzene	1	SW-846:8270C	Fluorene	1	SW-846:8270C
Benzidine	20	SW-846:8270C	Hexachlorobenzene	1	SW-846:8270C
Benzo(a)anthracene	1	SW-846:8270C	Hexachlorobutadiene	1	SW-846:8270C
Benzo(a)pyrene	1	SW-846:8270C	Hexachlorocyclopentadiene	1	SW-846:8270C
Benzo(b)fluoranthene	1	SW-846:8270C	Hexachloroethane	1	SW-846:8270C
Benzo(g,h,i)perylene	1	SW-846:8270C	Indeno(1,2,3-cd)pyrene	1	SW-846:8270C
Benzo(k)fluoranthene	1	SW-846:8270C	Isophorone	1	SW-846:8270C
Benzoic acid	5	SW-846:8270C	Methylnaphthalene[2-]	1	SW-846:8270C
Benzyl alcohol	1	SW-846:8270C	Methylphenol[2-]	1	SW-846:8270C
Bis(2-chloroethoxy)methane	1	SW-846:8270C	Methylphenol[4-]	2	SW-846:8270C
Bis(2-chloroethyl)ether	1	SW-846:8270C	Naphthalene	1	SW-846:8270C
Bis(2-ethylhexyl)phthalate	1	SW-846:8270C	Nitroaniline[2-]	1	SW-846:8270C
Bromophenyl-phenylether[4-]	1	SW-846:8270C	Nitroaniline[3-]	1	SW-846:8270C
Butylbenzylphthalate	1	SW-846:8270C	Nitroaniline[4-]	1	SW-846:8270C
Carbazole	1	SW-846:8270C	Nitrobenzene	1.1	SW-846:8270C
Chloro-3-methylphenol[4-]	1	SW-846:8270C	Nitrophenol[2-]	1	SW-846:8270C
Chloroaniline[4-]	2.2	SW-846:8270C	Nitrophenol[4-]	2	SW-846:8270C
Chloronaphthalene[2-]	1	SW-846:8270C	Nitrosodimethylamine[N-]	2	SW-846:8270C
Chlorophenol[2-]	1	SW-846:8270C	Nitroso-di-n-propylamine[N-]	1	SW-846:8270C
Chlorophenyl-phenyl[4-] ether	1	SW-846:8270C	Nitrosodiphenylamine[N-]	1	SW-846:8270C
Chrysene	1	SW-846:8270C	Oxybis(1-chloropropane)[2,2'-]	1	SW-846:8270C
Dibenz(a,h)anthracene	1	SW-846:8270C	Pentachlorophenol	1.3	SW-846:8270C
Dibenzofuran	1	SW-846:8270C	Phenanthrene	1	SW-846:8270C
Dichlorobenzene[1,2-]	1	SW-846:8270C	Phenol	2	SW-846:8270C
Dichlorobenzene[1,3-]	1	SW-846:8270C	Pyrene	1	SW-846:8270C
Dichlorobenzene[1,4-]	1	SW-846:8270C	Pyridine	2	SW-846:8270C
Dichlorobenzidine[3,3'-]	1.3	SW-846:8270C	Tetrachlorophenol[2,3,4,6-]	1.2	SW-846:8270C
Dichlorophenol[2,4-]	1.1	SW-846:8270C	Trichlorobenzene[1,2,4-]	1	SW-846:8270C
Diethylphthalate	1	SW-846:8270C	Trichlorophenol[2,4,5-]	1	SW-846:8270C
Dimethyl Phthalate	1	SW-846:8270C	Trichlorophenol[2,4,6-]	1	SW-846:8270C

Table-5 NMED DOE OB FFY 2012 Q-1 Solid Waste Management Units 8/58 Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, and Isotopic Uranium

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
CCBA-MW1 31-Oct-11	Actinium-228	15.1 ± 7.4	9.2		EPA:901.1
	Americium-241	2.3 ± 4.5	7.4	U	EPA:901.1
	Bismuth-212	8 ± 16	26	U	EPA:901.1
	Bismuth-214	337 ± 23	7		EPA:901.1
	Cesium-134	1 ± 1.3	11	U	EPA:901.1
	Cesium-137	-1.9 ± 2.2	3.7	U	EPA:901.1
	Cobalt-60	0.3 ± 1	2.9	U	EPA:901.1
	Gross alpha	2.8 ± 2	2.6		EPA:900
	Gross beta	4.1 ± 1.6	2.1		EPA:900
	Lead-212	2 ± 3.2	5.7	U	EPA:901.1
	Lead-214	364 ± 25	7		EPA:901.1
	Potassium-40	58 ± 37	41		EPA:901.1
	Protactinium-234M	30 ± 260	340	U	EPA:901.1
	Sodium-22	0.6 ± 2.1	3.5	U	EPA:901.1
	Thallium-208	1.9 ± 2.6	3.4	U	EPA:901.1
	Thorium-234	-15 ± 50	67	U	EPA:901.1
	Uranium-234	1.67 ± 0.27	0.02		HASL-300:ISOU
	Uranium-235	2 ± 10	21	U	EPA:901.1
	Uranium-235/236	0.029 ± 0.034	0.026		HASL-300:ISOU
Uranium-238	0.5 ± 0.13	0.05		HASL-300:ISOU	
CCBA-MW2 1-Nov-11	Actinium-228	7 ± 4.8	9.1	U	EPA:901.1
	Americium-241	1.8 ± 3.2	5.3	U	EPA:901.1
	Bismuth-212	11 ± 13	21	U	EPA:901.1
	Bismuth-214	25.4 ± 6.9	6.9		EPA:901.1
	Cesium-134	0.98 ± 0.72	2.9	U	EPA:901.1
	Cesium-137	-0.7 ± 1.8	2.9	U	EPA:901.1
	Cobalt-60	0.7 ± 1.1	2.6	U	EPA:901.1
	Gross alpha	8.6 ± 3.3	3.3		EPA:900
	Gross beta	1.4 ± 1.5	2.3	U	EPA:900
	Lead-212	1 ± 2.5	4.8	U	EPA:901.1
	Lead-214	27.3 ± 5.8	6.3		EPA:901.1
	Potassium-40	28 ± 27	38	U	EPA:901.1
	Protactinium-234M	40 ± 170	320	U	EPA:901.1
	Sodium-22	-0.5 ± 1.7	2.9	U	EPA:901.1
	Thallium-208	-0.36 ± 0.99	2.7	U	EPA:901.1
	Thorium-234	11 ± 35	55	U	EPA:901.1
	Uranium-234	7.3 ± 0.78	0.05		HASL-300:ISOU
	Uranium-235	2.9 ± 7.5	13	U	EPA:901.1
	Uranium-235/236	0.097 ± 0.065	0.054		HASL-300:ISOU
Uranium-238	1.79 ± 0.29	0.05		HASL-300:ISOU	

U = Result is less than the sample detection limit.

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