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Groundwater Monitoring at Sandia National Laboratories/New Mexico Tijeras Arroyo Groundwater Conducted by NMED DOE OB for FFY 2011 Q-1

The New Mexico Environment Department (NMED) DOE Oversight Bureau (Bureau) has compiled and assessed groundwater data collected during November 2010. The Bureau collected groundwater samples from Tijeras Arroyo Groundwater (TAG) monitoring wells TA2-SW1-320, TA2-W-19, TA2-W-26, TJA-2, TJA-4, TJA-7, and WYO-4. Split samples were collected using standard Sandia National Laboratories/New Mexico (SNL/NM or Sandia) sampling procedures and equipment. Bureau samples were submitted to Hall Analytical in Albuquerque, NM where they were analyzed for nitrates and volatile organic compounds (VOCs). Nitrate concentrations were detected above the EPA MCL of 10 mg/L at monitoring wells TA2-SW1-320, TJA-2, TJA-4, and TJA-7. Trichloroethylene (TCE) was also detected above the EPA MCL of 5 µg/L at monitoring well WYO-4.

Data Assessment

Data results are compared to applicable Maximum Contaminant Levels (MCLs) from the U.S. Environmental Protection Agency (EPA) National Primary Drinking Water Regulations (40 CFR 141).

Results

Analytical results for nitrate-nitrite as Nitrogen are presented in Table-1. Nitrate concentrations were detected above the EPA MCL of 10 mg/L at monitoring wells TA2-SW1-320 (23 mg/L), TJA-2 (11 mg/L), TJA-4 (30 mg/L), and TJA-7 (24 mg/L).

Analytical results for volatile organic compounds (VOCs) detected above the method detection limits (MDLs) are presented in Table-2. Trichloroethylene (TCE) was detected above the EPA MCL of 5 µg/L at monitoring well WYO-4 (7.9 µg/L). All other compounds detected above their MDLs were below EPA MCLs.

Response

Questions or comments should be addressed to Chris Armijo by phone at (505)845-5824, by e-mail at chris.armijo1@state.nm.us, or to the address in the letterhead.

Enclosure: (1) Table-1 Nitrate-Nitrite as N Results
(2) Table-2 Detected Volatile Organic Compounds Results

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Table-1 NMED DOE OB FFY 2011 Q-1 Tijeras Arroyo Groundwater Quality Results: Nitrate-Nitrite as N

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA2-SW1-320 9-Nov-10	Nitrate-Nitrite as N	23	10	1	0.3095		EPA:300
TA2-W-19 11-Nov-10	Nitrate-Nitrite as N	9.9	10	1	0.3095		EPA:300
TA2-W-26 10-Nov-10	Nitrate-Nitrite as N	4.9	10	1	0.3095		EPA:300
TJA-2 15-Nov-10	Nitrate-Nitrite as N	11	10	1	0.3095		EPA:300
TJA-2 15-Nov-10 Dup	Nitrate-Nitrite as N	11	10	1	0.3095		EPA:300
TJA-4 12-Nov-10	Nitrate-Nitrite as N	30	10	1	0.3095		EPA:300
TJA-7 16-Nov-10	Nitrate-Nitrite as N	24	10	1	0.3095		EPA:300
WYO-4 18-Nov-10	Nitrate-Nitrite as N	2.9	10	1	0.3095		EPA:300

Table-2 NMED DOE OB FFY 2011 Q-1 Tijeras Arroyo Groundwater Quality Results: Detected Volatile Organic Compounds

Monitoring Well/ Sample Date	Analyte	Result (µg/L)	EPA MCL (µg/L)	PQL (µg/L)	MDL (µg/L)	Laboratory Qualifier	Analytical Method
TA2-SW1-320 9-Nov-10	Bromochloromethane	0.186	NE	5	0.1	J	SW-846:8260B
	Butanone[2-]	0.412	NE	10	0.386	J	SW-846:8260B
	1,2,4-Trichlorobenzene	0.436	70	5	0.225	J	SW-846:8260B
TA2-W-19 11-Nov-10	1,2,4-Trichlorobenzene	0.228	70	5	0.225	J	SW-846:8260B
	Dichloroethane[1,1-]	0.308	NE	5	0.115	J	SW-846:8260B
	Dichloroethene[cis-1,2-]	0.346	70	5	0.164	J	SW-846:8260B
	Trichloroethylene	2.702	5	5	0.164	J	SW-846:8260B
TA2-W-26 10-Nov-10	Tetrachloroethylene	0.314	5	5	0.269	J	SW-846:8260B
	Trichloroethylene	0.62	5	5	0.164	J	SW-846:8260B
TJA-2 15-Nov-10	Dichloroethane[1,1-]	0.418	NE	5	0.115	J	SW-846:8260B
	Dichloroethene[cis-1,2-]	0.36	70	5	0.164	J	SW-846:8260B
	Trichloroethylene	2.982	5	5	0.164	J	SW-846:8260B
TJA-2 15-Nov-10 Dup	Dichloroethane[1,1-]	0.378	NE	5	0.115	J	SW-846:8260B
	Dichloroethene[cis-1,2-]	0.448	70	5	0.164	J	SW-846:8260B
	Trichloroethylene	2.958	5	5	0.164	J	SW-846:8260B
TJA-7 16-Nov-10	Trichloroethylene	0.26	5	5	0.164	J	SW-846:8260B
WYO-4 18-Nov-10	Dichloroethane[1,1-]	0.902	NE	5	0.115	J	SW-846:8260B
	1,2,4-Trichlorobenzene	0.256	70	5	0.225	J	SW-846:8260B
	Dichloroethene[cis-1,2-]	1.7	70	5	0.164	J	SW-846:8260B
	Trichloroethylene	7.974	5	5	0.164		SW-846:8260B

J = Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL).

NE = Not Established