DOE Oversight Bureau, New Mexico Environment Department

Groundwater Monitoring at Tijeras Arroyo Sandia National Laboratories/New Mexico

Conducted by the New Mexico Environment Department DOE Oversight Bureau for FFY 2012 Q-4

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Final Report

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The purpose of this communication is to transmit groundwater data collected by NMED DOE Oversight Bureau from Tijeras Arroyo groundwater monitoring wells during fourth quarter FFY 2012.

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Introduction

The New Mexico Environment Department (NMED) DOE Oversight Bureau (Bureau) has compiled and assessed groundwater data collected during August and September 2012. The Bureau collected groundwater samples from Tijeras Arroyo Groundwater (TAG) monitoring wells TA1-W-02, TA1-W-05, TA2-SW1-320, TA2-W-01, TA2-W-19, TA2-W-26, TA2-W-27, TJA-2, TJA-4, and WYO-4. Split samples were collected using standard Sandia National Laboratories/New Mexico sampling procedures and equipment. The samples were submitted for analysis to an independent analytical laboratory for analysis of target analyte list (TAL) metals plus uranium, anions, nitrate-nitrite, volatile organic compounds (VOCs), gross alpha and beta, gamma-emitting isotopes, and tritium. Several samples analyzed for nitrate-nitrite were detected above the U.S. Environmental Protection Agency (EPA) maximum contaminant level (MCL) of 10 mg/L. Trichloroethylene (TCE) was also detected above the EPA MCL of 5 µg/L at monitoring well WYO-4.

Data Assessment

All groundwater samples were collected and analyzed in accordance with U.S. EPA protocols. Data results are compared to applicable MCLs established by the U.S. EPA National Primary Drinking Water Regulations (40 CFR 141), National Primary Drinking Water Standards, EPA, July 2002.

Results

Analytical results for TAL metals are presented in Table 1. No metal parameters were detected above established regulatory standards.

Analytical results for inorganic compounds are listed in Table 2. Samples were analyzed for anions (bromide, chloride, fluoride and sulfate) and nitrate-nitrite as N. Nitrate concentrations were detected at or above the EPA MCL of 10 mg/L at monitoring wells TA2-SW1-320 (20 mg/L), TJA-2 (10 mg/L) and TJA-4 (27 mg/L).

Volatile organic compounds (VOCs) detected above the method detection limit are presented in Table 3. All samples were detected below established MCLs, except trichloroethylene (TCE). Monitoring well WYO-4 had a measured TCE concentration of 7.2 µg/L. The laboratory method detection limits for the remaining VOCs analyzed from TAG monitoring wells are presented in Table 4.

Analytical results for radionuclides are listed in Table 5. Samples were analyzed for gross alpha, gross beta and gamma emitting isotopes. No isotopes were detected above EPA MCLs.

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Table-1 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Total TAL Metals + U

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA1-W-02 15-Aug-12	Aluminum	0.056	NE	0.05	0.025		SW-846:6020
	Antimony	0.0002	0.006	0.002	0.0002	U	SW-846:6020
	Arsenic	0.001	0.01	0.002	0.001	U	SW-846:6020
	Barium	0.048	2	0.001	0.0005		SW-846:6020
	Beryllium	0.0001	0.004	0.001	0.0001	U	SW-846:6020
	Cadmium	0.0005	0.005	0.001	0.0005	U	SW-846:6020
	Calcium	57	NE	0.05	0.03		SW-846:6020
	Chromium	0.0022	0.1	0.002	0.001		SW-846:6020
	Cobalt	0.0006	NE	0.001	0.0006	U	SW-846:6020
	Copper	0.001	1.3	0.002	0.001	U	SW-846:6020
	Iron	0.13	NE	0.25	0.13	U	SW-846:6020
	Lead	0.0006	0.015	0.001	0.0006	U	SW-846:6020
	Magnesium	11	NE	0.05	0.025		SW-846:6020
	Manganese	0.0059	NE	0.001	0.0004	^	SW-846:6020
	Mercury	0.0001	0.002	0.0002	0.0001	U	SW-846:7470A
	Nickel	0.0001	NE	0.002	0.0001	U	SW-846:6020
	Potassium	2	NE	0.05	0.025		SW-846:6020
	Selenium	0.0022	0.05	0.002	0.001		SW-846:6020
	Silver	0.0003	NE	0.001	0.0003	U	SW-846:6020
	Sodium	21	NE	0.05	0.025		SW-846:6020
	Thallium	0.0005	0.002	0.001	0.0005	U	SW-846:6020
	Uranium	0.0032	0.03	0.001	0.0002		SW-846:6020
	Vanadium	0.003	NE	0.01	0.003	U	SW-846:6020
	Zinc	0.0061	NE	0.005	0.004		SW-846:6020

^ = ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.

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Table-1 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Total TAL Metals + U

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA1-W-05 21-Aug-12	Aluminum	0.025	NE	0.05	0.025	U	SW-846:6020
	Antimony	0.0002	0.006	0.002	0.0002	U	SW-846:6020
	Arsenic	0.001	0.01	0.002	0.001	U	SW-846:6020
	Barium	0.034	2	0.001	0.0005		SW-846:6020
	Beryllium	0.0001	0.004	0.001	0.0001	U	SW-846:6020
	Cadmium	0.0005	0.005	0.001	0.0005	U	SW-846:6020
	Calcium	70	NE	0.05	0.03		SW-846:6020
	Chromium	0.0015	0.1	0.002	0.001	J	SW-846:6020
	Cobalt	0.0006	NE	0.001	0.0006	U	SW-846:6020
	Copper	0.001	1.3	0.002	0.001	U	SW-846:6020
	Iron	0.13	NE	0.25	0.13	U	SW-846:6020
	Lead	0.0006	0.015	0.001	0.0006	U	SW-846:6020
	Magnesium	11	NE	0.05	0.025		SW-846:6020
	Manganese	0.00044	NE	0.001	0.0004	J,^	SW-846:6020
	Mercury	0.0001	0.002	0.0002	0.0001	U	SW-846:7470A
	Nickel	0.0001	NE	0.002	0.0001	U	SW-846:6020
	Potassium	2.2	NE	0.05	0.025		SW-846:6020
	Selenium	0.001	0.05	0.002	0.001	U	SW-846:6020
	Silver	0.0003	NE	0.001	0.0003	U	SW-846:6020
	Sodium	30	NE	0.05	0.025		SW-846:6020
	Thallium	0.0005	0.002	0.001	0.0005	U	SW-846:6020
	Uranium	0.0035	0.03	0.001	0.0002		SW-846:6020
	Vanadium	0.003	NE	0.01	0.003	U	SW-846:6020
	Zinc	0.004	NE	0.005	0.004	U	SW-846:6020

^ = ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.

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Table-1 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Total TAL Metals + U

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 11-Sep-12	Aluminum	0.025	NE	0.05	0.025	U	SW-846:6020
	Antimony	0.0002	0.006	0.002	0.0002	U	SW-846:6020
	Arsenic	0.001	0.01	0.002	0.001	U	SW-846:6020
	Barium	0.048	2	0.001	0.0005		SW-846:6020
	Beryllium	0.0001	0.004	0.001	0.0001	U	SW-846:6020
	Cadmium	0.0005	0.005	0.001	0.0005	U	SW-846:6020
	Calcium	73	NE	0.05	0.03		SW-846:6020
	Chromium	0.0016	0.1	0.002	0.001	J	SW-846:6020
	Cobalt	0.0006	NE	0.001	0.0006	U	SW-846:6020
	Copper	0.001	1.3	0.002	0.001	U	SW-846:6020
	Iron	0.025	NE	0.05	0.025	U	SW-846:6020
	Lead	0.0006	0.015	0.001	0.0006	U	SW-846:6020
	Magnesium	11	NE	0.05	0.025		SW-846:6020
	Manganese	0.0004	NE	0.001	0.0004	U,^	SW-846:6020
	Mercury	0.0001	0.002	0.0002	0.0001	U	SW-846:7470A
	Nickel	0.0001	NE	0.002	0.0001	U	SW-846:6020
	Potassium	1.7	NE	0.05	0.025		SW-846:6020
	Selenium	0.0037	0.05	0.002	0.001		SW-846:6020
	Silver	0.0003	NE	0.001	0.0003	U	SW-846:6020
	Sodium	21	NE	0.05	0.025		SW-846:6020
	Thallium	0.0005	0.002	0.001	0.0005	U	SW-846:6020
	Uranium	0.0012	0.03	0.001	0.0002		SW-846:6020
	Vanadium	0.0037	NE	0.01	0.003	J	SW-846:6020
	Zinc	0.004	NE	0.005	0.004	U	SW-846:6020

^ = ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.

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Table-1 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Total TAL Metals + U

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA2-W-01 4-Sep-12	Aluminum	0.025	NE	0.05	0.025	U	SW-846:6020
	Antimony	0.0002	0.006	0.002	0.0002	U	SW-846:6020
	Arsenic	0.001	0.01	0.002	0.001	U	SW-846:6020
	Barium	0.092	2	0.001	0.0005		SW-846:6020
	Beryllium	0.0001	0.004	0.001	0.0001	U	SW-846:6020
	Cadmium	0.0005	0.005	0.001	0.0005	U	SW-846:6020
	Calcium	79	NE	0.05	0.03		SW-846:6020
	Chromium	0.0016	0.1	0.002	0.001	J	SW-846:6020
	Cobalt	0.0006	NE	0.001	0.0006	U	SW-846:6020
	Copper	0.001	1.3	0.002	0.001	U	SW-846:6020
	Iron	0.025	NE	0.05	0.025	U	SW-846:6020
	Lead	0.0006	0.015	0.001	0.0006	U	SW-846:6020
	Magnesium	11	NE	0.05	0.025		SW-846:6020
	Manganese	0.0004	NE	0.001	0.0004	U,^	SW-846:6020
	Mercury	0.0001	0.002	0.0002	0.0001	U	SW-846:7470A
	Nickel	0.0001	NE	0.002	0.0001	U	SW-846:6020
	Potassium	1.8	NE	0.05	0.025		SW-846:6020
	Selenium	0.0052	0.05	0.002	0.001		SW-846:6020
	Silver	0.0003	NE	0.001	0.0003	U	SW-846:6020
	Sodium	20	NE	0.05	0.025		SW-846:6020
	Thallium	0.0005	0.002	0.001	0.0005	U	SW-846:6020
	Uranium	0.00099	0.03	0.001	0.0002	J	SW-846:6020
	Vanadium	0.003	NE	0.01	0.003	U	SW-846:6020
	Zinc	0.004	NE	0.005	0.004	U	SW-846:6020

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Table-1 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Total TAL Metals + U

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA2-W-19 12-Sep-12	Aluminum	0.71	NE	0.05	0.025		SW-846:6020
	Antimony	0.0002	0.006	0.002	0.0002	U	SW-846:6020
	Arsenic	0.001	0.01	0.002	0.001	U	SW-846:6020
	Barium	0.21	2	0.001	0.0005		SW-846:6020
	Beryllium	0.0001	0.004	0.001	0.0001	U	SW-846:6020
	Cadmium	0.0005	0.005	0.001	0.0005	U	SW-846:6020
	Calcium	62	NE	0.05	0.03		SW-846:6020
	Chromium	0.0022	0.1	0.002	0.001		SW-846:6020
	Cobalt	0.0006	NE	0.001	0.0006	U	SW-846:6020
	Copper	0.001	1.3	0.002	0.001	U	SW-846:6020
	Iron	0.56	NE	0.05	0.025		SW-846:6020
	Lead	0.0006	0.015	0.001	0.0006	U	SW-846:6020
	Magnesium	11	NE	0.05	0.025		SW-846:6020
	Manganese	0.019	NE	0.001	0.0004	^	SW-846:6020
	Mercury	0.0001	0.002	0.0002	0.0001	U	SW-846:7470A
	Nickel	0.0001	NE	0.002	0.0001	U	SW-846:6020
	Potassium	1.9	NE	0.05	0.025		SW-846:6020
	Selenium	0.0025	0.05	0.002	0.001		SW-846:6020
	Silver	0.0003	NE	0.001	0.0003	U	SW-846:6020
	Sodium	18	NE	0.05	0.025		SW-846:6020
	Thallium	0.0005	0.002	0.001	0.0005	U	SW-846:6020
	Uranium	0.0014	0.03	0.001	0.0002		SW-846:6020
	Vanadium	0.0047	NE	0.01	0.003	J	SW-846:6020
	Zinc	0.02	NE	0.025	0.02	U,^	SW-846:6020

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Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA2-W-26 13-Sep-12	Aluminum	0.025	NE	0.05	0.025	U	SW-846:6020
	Antimony	0.0002	0.006	0.002	0.0002	U	SW-846:6020
	Arsenic	0.001	0.01	0.002	0.001	U	SW-846:6020
	Barium	0.066	2	0.001	0.0005		SW-846:6020
	Beryllium	0.0001	0.004	0.001	0.0001	U	SW-846:6020
	Cadmium	0.0005	0.005	0.001	0.0005	U	SW-846:6020
	Calcium	200	NE	0.05	0.03		SW-846:6020
	Chromium	0.0023	0.1	0.002	0.001		SW-846:6020
	Cobalt	0.0006	NE	0.001	0.0006	U	SW-846:6020
	Copper	0.0013	1.3	0.002	0.001	J	SW-846:6020
	Iron	0.031	NE	0.05	0.025	J	SW-846:6020
	Lead	0.0006	0.015	0.001	0.0006	U	SW-846:6020
	Magnesium	24	NE	0.05	0.025		SW-846:6020
	Manganese	0.00062	NE	0.001	0.0004	J,^	SW-846:6020
	Mercury	0.0001	0.002	0.0002	0.0001	U	SW-846:7470A
	Nickel	0.0005	NE	0.01	0.0005	U,^	SW-846:6020
	Potassium	2.3	NE	0.05	0.025		SW-846:6020
	Selenium	0.017	0.05	0.002	0.001		SW-846:6020
	Silver	0.0003	NE	0.001	0.0003	U	SW-846:6020
	Sodium	35	NE	0.05	0.025		SW-846:6020
	Thallium	0.0005	0.002	0.001	0.0005	U	SW-846:6020
	Uranium	0.0012	0.03	0.001	0.0002		SW-846:6020
	Vanadium	0.003	NE	0.01	0.003	U	SW-846:6020
	Zinc	0.004	NE	0.005	0.004	U	SW-846:6020

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Table-1 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Total TAL Metals + U

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA2-W-27 6-Sep-12	Aluminum	0.025	NE	0.05	0.025	U	SW-846:6020
	Antimony	0.0002	0.006	0.002	0.0002	U	SW-846:6020
	Arsenic	0.001	0.01	0.002	0.001	U	SW-846:6020
	Barium	0.056	2	0.001	0.0005		SW-846:6020
	Beryllium	0.0001	0.004	0.001	0.0001	U	SW-846:6020
	Cadmium	0.0005	0.005	0.001	0.0005	U	SW-846:6020
	Calcium	110	NE	0.05	0.03		SW-846:6020
	Chromium	0.0019	0.1	0.002	0.001	J	SW-846:6020
	Cobalt	0.0006	NE	0.001	0.0006	U	SW-846:6020
	Copper	0.001	1.3	0.002	0.001	U	SW-846:6020
	Iron	0.025	NE	0.05	0.025	U	SW-846:6020
	Lead	0.0006	0.015	0.001	0.0006	U	SW-846:6020
	Magnesium	15	NE	0.05	0.025		SW-846:6020
	Manganese	0.0004	NE	0.001	0.0004	U,^	SW-846:6020
	Mercury	0.0001	0.002	0.0002	0.0001	U	SW-846:7470A
	Nickel	0.0002	NE	0.004	0.0002	U	SW-846:6020
	Potassium	2	NE	0.05	0.025		SW-846:6020
	Selenium	0.0077	0.05	0.002	0.001		SW-846:6020
	Silver	0.0003	NE	0.001	0.0003	U	SW-846:6020
	Sodium	26	NE	0.05	0.025		SW-846:6020
	Thallium	0.0005	0.002	0.001	0.0005	U	SW-846:6020
	Uranium	0.0012	0.03	0.001	0.0002		SW-846:6020
	Vanadium	0.003	NE	0.01	0.003	U	SW-846:6020
	Zinc	0.004	NE	0.005	0.004	U	SW-846:6020

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Table-1 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Total TAL Metals + U

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TJA-2 18-Sep-12	Aluminum	0.025	NE	0.05	0.025	U	SW-846:6020
	Antimony	0.0002	0.006	0.002	0.0002	U,^	SW-846:6020
	Arsenic	0.001	0.01	0.002	0.001	U	SW-846:6020
	Barium	0.044	2	0.001	0.0005	^	SW-846:6020
	Beryllium	0.0001	0.004	0.001	0.0001	U	SW-846:6020
	Cadmium	0.0005	0.005	0.001	0.0005	U,^	SW-846:6020
	Calcium	78	NE	0.05	0.03		SW-846:6020
	Chromium	0.0023	0.1	0.002	0.001		SW-846:6020
	Cobalt	0.0006	NE	0.001	0.0006	U	SW-846:6020
	Copper	0.001	1.3	0.002	0.001	U	SW-846:6020
	Iron	0.025	NE	0.05	0.025	U	SW-846:6020
	Lead	0.0006	0.015	0.001	0.0006	U	SW-846:6020
	Magnesium	11	NE	0.05	0.025		SW-846:6020
	Manganese	0.0004	NE	0.001	0.0004	U,^	SW-846:6020
	Mercury	0.0001	0.002	0.0002	0.0001	U	SW-846:7470A
	Nickel	0.0001	NE	0.002	0.0001	U	SW-846:6020
	Potassium	1.8	NE	0.05	0.025		SW-846:6020
	Selenium	0.0055	0.05	0.002	0.001		SW-846:6020
	Silver	0.0003	NE	0.001	0.0003	U,^	SW-846:6020
	Sodium	22	NE	0.05	0.025		SW-846:6020
	Thallium	0.0005	0.002	0.001	0.0005	U	SW-846:6020
	Uranium	0.0012	0.03	0.001	0.0002		SW-846:6020
	Vanadium	0.0031	NE	0.01	0.003	J	SW-846:6020
	Zinc	0.004	NE	0.005	0.004	U	SW-846:6020

^ = ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.

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Table-1 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Total TAL Metals + U

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TJA-4 19-Sep-12	Aluminum	0.025	NE	0.05	0.025	U	SW-846:6020
	Antimony	0.0002	0.006	0.002	0.0002	U,^	SW-846:6020
	Arsenic	0.001	0.01	0.002	0.001	U	SW-846:6020
	Barium	0.18	2	0.001	0.0005	^	SW-846:6020
	Beryllium	0.0001	0.004	0.001	0.0001	U	SW-846:6020
	Cadmium	0.0005	0.005	0.001	0.0005	U,^	SW-846:6020
	Calcium	68	NE	0.05	0.03		SW-846:6020
	Chromium	0.0024	0.1	0.002	0.001		SW-846:6020
	Cobalt	0.0006	NE	0.001	0.0006	U	SW-846:6020
	Copper	0.001	1.3	0.002	0.001	U	SW-846:6020
	Iron	0.025	NE	0.05	0.025	U	SW-846:6020
	Lead	0.0006	0.015	0.001	0.0006	U	SW-846:6020
	Magnesium	13	NE	0.05	0.025		SW-846:6020
	Manganese	0.0004	NE	0.001	0.0004	U,^	SW-846:6020
	Mercury	0.0001	0.002	0.0002	0.0001	U	SW-846:7470A
	Nickel	0.0001	NE	0.002	0.0001	U	SW-846:6020
	Potassium	3.2	NE	0.05	0.025		SW-846:6020
	Selenium	0.0042	0.05	0.002	0.001		SW-846:6020
	Silver	0.0003	NE	0.001	0.0003	U,^	SW-846:6020
	Sodium	25	NE	0.05	0.025		SW-846:6020
	Thallium	0.0005	0.002	0.001	0.0005	U	SW-846:6020
	Uranium	0.0024	0.03	0.001	0.0002		SW-846:6020
	Vanadium	0.003	NE	0.01	0.003	U	SW-846:6020
	Zinc	0.004	NE	0.005	0.004	U,L,^	SW-846:6020

^ = ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

L = A negative instrument reading had an absolute value greater than the reporting limit

NE = Not Established

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

Table-1 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Total TAL Metals + U

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TJA-4 19-Sep-12 Dup	Aluminum	0.025	NE	0.05	0.025	U	SW-846:6020
	Antimony	0.0002	0.006	0.002	0.0002	U,^	SW-846:6020
	Arsenic	0.001	0.01	0.002	0.001	U	SW-846:6020
	Barium	0.18	2	0.001	0.0005	^	SW-846:6020
	Beryllium	0.0001	0.004	0.001	0.0001	U	SW-846:6020
	Cadmium	0.0005	0.005	0.001	0.0005	U,^	SW-846:6020
	Calcium	70	NE	0.05	0.03		SW-846:6020
	Chromium	0.0026	0.1	0.002	0.001		SW-846:6020
	Cobalt	0.0006	NE	0.001	0.0006	U	SW-846:6020
	Copper	0.001	1.3	0.002	0.001	U	SW-846:6020
	Iron	0.025	NE	0.05	0.025	U	SW-846:6020
	Lead	0.0006	0.015	0.001	0.0006	U	SW-846:6020
	Magnesium	14	NE	0.05	0.025		SW-846:6020
	Manganese	0.0004	NE	0.001	0.0004	U,^	SW-846:6020
	Mercury	0.0001	0.002	0.0002	0.0001	U	SW-846:7470A
	Nickel	0.0001	NE	0.002	0.0001	U	SW-846:6020
	Potassium	3.2	NE	0.05	0.025		SW-846:6020
	Selenium	0.004	0.05	0.002	0.001		SW-846:6020
	Silver	0.0003	NE	0.001	0.0003	U,^	SW-846:6020
	Sodium	25	NE	0.05	0.025		SW-846:6020
	Thallium	0.0005	0.002	0.001	0.0005	U	SW-846:6020
	Uranium	0.0024	0.03	0.001	0.0002		SW-846:6020
	Vanadium	0.003	NE	0.01	0.003	U	SW-846:6020
	Zinc	0.004	NE	0.005	0.004	U,L,^	SW-846:6020

^ = ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

L = A negative instrument reading had an absolute value greater than the reporting limit

NE = Not Established

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

Table-1 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Total TAL Metals + U

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
WYO-4 17-Sep-12	Aluminum	0.025	NE	0.05	0.025	U	SW-846:6020
	Antimony	0.0002	0.006	0.002	0.0002	U,^	SW-846:6020
	Arsenic	0.001	0.01	0.002	0.001	U	SW-846:6020
	Barium	0.16	2	0.001	0.0005	^	SW-846:6020
	Beryllium	0.0001	0.004	0.001	0.0001	U	SW-846:6020
	Cadmium	0.0005	0.005	0.001	0.0005	U,^	SW-846:6020
	Calcium	81	NE	0.05	0.03		SW-846:6020
	Chromium	0.0021	0.1	0.002	0.001		SW-846:6020
	Cobalt	0.0006	NE	0.001	0.0006	U	SW-846:6020
	Copper	0.001	1.3	0.002	0.001	U	SW-846:6020
	Iron	0.025	NE	0.05	0.025	U	SW-846:6020
	Lead	0.0006	0.015	0.001	0.0006	U	SW-846:6020
	Magnesium	13	NE	0.05	0.025		SW-846:6020
	Manganese	0.0004	NE	0.001	0.0004	U,^	SW-846:6020
	Mercury	0.0001	0.002	0.0002	0.0001	U	SW-846:7470A
	Nickel	0.0001	NE	0.002	0.0001	U	SW-846:6020
	Potassium	1.8	NE	0.05	0.025		SW-846:6020
	Selenium	0.0059	0.05	0.002	0.001		SW-846:6020
	Silver	0.0003	NE	0.001	0.0003	U,^	SW-846:6020
	Sodium	19	NE	0.05	0.025		SW-846:6020
	Thallium	0.0005	0.002	0.001	0.0005	U	SW-846:6020
	Uranium	0.0011	0.03	0.001	0.0002		SW-846:6020
	Vanadium	0.0032	NE	0.01	0.003	J	SW-846:6020
	Zinc	0.004	NE	0.005	0.004	U	SW-846:6020

^ = ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

L = A negative instrument reading had an absolute value greater than the reporting limit

NE = Not Established

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

Table-2 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Anions and Nitrate-Nitrite

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA1-W-02 15-Aug-12	Bromide	0.19	NE	0.5	0.088	J	EPA:300.0
	Chloride	15	NE	1	0.037		EPA:300.0
	Fluoride	0.37	4	0.5	0.059	J	EPA:300.0
	Nitrate Nitrite as N	1	10	0.05	0.0053		EPA:353.2
	Sulfate	73	NE	5	0.25		EPA:300.0
TA1-W-05 21-Aug-12	Bromide	0.16	NE	0.5	0.088	J	EPA:300.0
	Chloride	12	NE	1	0.037		EPA:300.0
	Fluoride	0.28	4	0.5	0.059	J	EPA:300.0
	Nitrate Nitrite as N	1.2	10	0.05	0.0053		EPA:353.2
	Sulfate	97	NE	5	0.25		EPA:300.0
TA2-SW1-320 11-Sep-12	Bromide	0.52	NE	0.5	0.088		EPA:300.0
	Chloride	36	NE	5	0.19		EPA:300.0
	Fluoride	0.42	4	0.5	0.059	J	EPA:300.0
	Nitrate Nitrite as N	**20**	10	1	0.11	B	EPA:353.2
	Sulfate	15	NE	1	0.049		EPA:300.0
TA2-W-01 4-Sep-12	Bromide	1.2	NE	0.5	0.088		EPA:300.0
	Chloride	100	NE	10	0.37		EPA:300.0
	Fluoride	0.33	4	0.5	0.059	J	EPA:300.0
	Nitrate Nitrite as N	4.1	10	0.25	0.027	B	EPA:353.2
	Sulfate	59	NE	2	0.098		EPA:300.0
TA2-W-19 12-Sep-12	Bromide	0.78	NE	0.5	0.088		EPA:300.0
	Chloride	71	NE	5	0.19		EPA:300.0
	Fluoride	0.34	4	0.5	0.059	J	EPA:300.0
	Nitrate Nitrite as N	9.6	10	0.5	0.053	B	EPA:353.2
	Sulfate	56	NE	5	0.25		EPA:300.0
TA2-W-26 13-Sep-12	Bromide	2.2	NE	2.5	0.44	J	EPA:300.0
	Chloride	180	NE	25	0.93		EPA:300.0
	Fluoride	0.44	4	2.5	0.3	J	EPA:300.0
	Nitrate Nitrite as N	5	10	0.25	0.027	B	EPA:353.2
	Sulfate	360	NE	25	1.2		EPA:300.0
TA2-W-27 6-Sep-12	Bromide	1.5	NE	0.5	0.088		EPA:300.0
	Chloride	120	NE	10	0.37		EPA:300.0
	Fluoride	0.28	4	0.5	0.059	J	EPA:300.0
	Nitrate Nitrite as N	3.9	10	0.25	0.027	B	EPA:353.2
	Sulfate	150	NE	10	0.49		EPA:300.0

B = Compound was found in the blank and sample.

D = Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.

H = Sample was prepped or analyzed beyond the specified holding time

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NE = Not Established

Table-2 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Anions and Nitrate-Nitrite

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TJA-2 18-Sep-12	Bromide	0.75	NE	0.5	0.088		EPA:300.0
	Chloride	63	NE	10	0.37		EPA:300.0
	Fluoride	0.3	4	0.5	0.059	J	EPA:300.0
	Nitrate Nitrite as N	**10**	10	0.5	0.053	B,D	EPA:353.2
	Sulfate	54	NE	2	0.098		EPA:300.0
TJA-4 19-Sep-12	Bromide	0.31	NE	0.5	0.088	J	EPA:300.0
	Chloride	22	NE	2	0.074		EPA:300.0
	Fluoride	0.33	4	0.5	0.059	J	EPA:300.0
	Nitrate Nitrite as N	**27**	10	2.5	0.27	B,D	EPA:353.2
	Sulfate	17	NE	1	0.049		EPA:300.0
TJA-4 19-Sep-12 Dup	Bromide	0.31	NE	0.5	0.088	J	EPA:300.0
	Chloride	22	NE	2	0.074		EPA:300.0
	Fluoride	0.35	4	0.5	0.059	J	EPA:300.0
	Nitrate Nitrite as N	**28**	10	2.5	0.27	B,D	EPA:353.2
	Sulfate	17	NE	1	0.049		EPA:300.0
WYO-4 17-Sep-12	Bromide	1.2	NE	0.5	0.088		EPA:300.0
	Chloride	100	NE	20	0.74	H	EPA:300.0
	Fluoride	0.29	4	0.5	0.059	J	EPA:300.0
	Nitrate Nitrite as N	2.8	10	0.25	0.027	B,D	EPA:353.2
	Sulfate	52	NE	2	0.098	H	EPA:300.0

B = Compound was found in the blank and sample.

D = Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.

H = Sample was prepped or analyzed beyond the specified holding time

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NE = Not Established

Table-3 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Detected Volatile Organic Compounds

Monitoring Well/ Sample Date	Analyte	EPA MCL (µg/L)	Result (µg/L)	Quantitation Limit (µg/L)	MDL (µg/L)	Laboratory Qualifier	Analytical Method
TA1-W-02 15-Aug-12	Toluene	0.52	1000	1	0.25	J	SW-846:8260B
	Trichloroethene	0.98	5	1	0.13	J,B	SW-846:8260B
TA1-W-05 21-Aug-12	Toluene	0.34	1000	1	0.25	J	SW-846:8260B
	Trichloroethene	0.68	5	1	0.13	J,B	SW-846:8260B
TA2-SW1-320 11-Sep-12	Tetrachloroethene	0.29	5	1	0.1	J,B	SW-846:8260B
	Tetrachloroethene	0.13	5	1	0.1	J,H,B	SW-846:8260B
TA2-W-01 4-Sep-12	Chloroform	0.12	NE	1	0.12	J	SW-846:8260B
	Tetrachloroethene	0.43	5	1	0.1	J	SW-846:8260B
	Toluene	0.49	1000	1	0.25	J	SW-846:8260B
	Trichloroethene	1.4	5	1	0.13		SW-846:8260B
TA2-W-19 12-Sep-12	Chloroform	0.12	NE	1	0.12	J,H	SW-846:8260B
	Dichloroethane[1,1-]	0.41	NE	1	0.1	J	SW-846:8260B
	Dichloroethane[1,1-]	0.48	NE	1	0.1	J,H	SW-846:8260B
	Dichloroethene[cis-1,2-]	0.5	70	1	0.1	J	SW-846:8260B
	Dichloroethene[cis-1,2-]	0.56	70	1	0.1	J,H	SW-846:8260B
	Tetrachloroethene	0.38	5	1	0.1	J,B	SW-846:8260B
	Tetrachloroethene	0.23	5	1	0.1	J,H,B	SW-846:8260B
	Toluene	0.26	1000	1	0.25	J	SW-846:8260B
	Trichloroethene	2.9	5	1	0.13		SW-846:8260B
	Trichloroethene	2.7	5	1	0.13	H	SW-846:8260B
TA2-W-26 13-Sep-12	Chloroform	0.32	NE	1	0.12	J	SW-846:8260B
	Chloroform	0.41	NE	1	0.12	J	SW-846:8260B
	Dichloroethane[1,1-]	0.11	NE	1	0.1	J	SW-846:8260B
	Dichloroethane[1,1-]	0.12	NE	1	0.1	J	SW-846:8260B
	Dichloroethene[1,1-]	0.35	7	1	0.14	J	SW-846:8260B
	Dichloroethene[1,1-]	0.42	7	1	0.14	J	SW-846:8260B
	Dichloroethene[cis-1,2-]	0.39	70	1	0.1	J	SW-846:8260B
	Dichloroethene[cis-1,2-]	0.4	70	1	0.1	J	SW-846:8260B
	Tetrachloroethene	1.1	5	1	0.1	B	SW-846:8260B
	Tetrachloroethene	1.1	5	1	0.1	B	SW-846:8260B
	Trichloroethene	1.1	5	1	0.13		SW-846:8260B
	Trichloroethene	0.95	5	1	0.13	J	SW-846:8260B
TA2-W-27 6-Sep-12	Chloroform	0.26	NE	1	0.12	J	SW-846:8260B
	Dichloroethene[1,1-]	0.25	7	1	0.14	J	SW-846:8260B
	Tetrachloroethene	1.3	5	1	0.1		SW-846:8260B
	Toluene	0.29	1000	1	0.25	J	SW-846:8260B
	Trichloroethene	0.99	5	1	0.13	J	SW-846:8260B

B = Compound was found in the blank and sample.

H = Sample was prepped or analyzed beyond the specified holding time

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NE = Not Established

Table-3 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Detected Volatile Organic Compounds

Monitoring Well/ Sample Date	Analyte	EPA MCL (µg/L)	Result (µg/L)	Quantitation Limit (µg/L)	MDL (µg/L)	Laboratory Qualifier	Analytical Method
TJA-2 18-Sep-12	Chloroform	0.15	NE	1	0.12	J	SW-846:8260B
	Dichloroethane[1,1-]	0.53	NE	1	0.1	J	SW-846:8260B
	Dichloroethene[cis-1,2-]	0.57	70	1	0.1	J	SW-846:8260B
	Tetrachloroethene	0.24	5	1	0.1	J,B	SW-846:8260B
	Trichloroethene	3.4	5	1	0.13		SW-846:8260B
TJA-4 19-Sep-12	Tetrachloroethene	0.11	5	1	0.1	J,B	SW-846:8260B
TJA-4 19-Sep-12 Dup	Tetrachloroethene	0.12	5	1	0.1	J,B	SW-846:8260B
	Trichloroethene	0.14	5	1	0.13	J	SW-846:8260B
WYO-4 17-Sep-12	Chloroform	0.18	NE	1	0.12	J	SW-846:8260B
	Dichloroethane[1,1-]	1.1	NE	1	0.1		SW-846:8260B
	Dichloroethene[1,1-]	0.29	7	1	0.14	J	SW-846:8260B
	Dichloroethene[cis-1,2-]	2.2	70	1	0.1		SW-846:8260B
	Tetrachloroethene	0.35	5	1	0.1	J,B	SW-846:8260B
	Toluene	1.2	1000	1	0.25		SW-846:8260B
	Trichloroethene	**7.2**	5	1	0.13		SW-846:8260B

B = Compound was found in the blank and sample.

H = Sample was prepped or analyzed beyond the specified holding time

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NE = Not Established

Table-4 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Method Detection Limits for Volatile Organic Compounds

Analyte	MDL (µg/L)	Analytical Method
4-Methyl-2-pentanone (MIBK)	0.18	SW-846:8260B
Acetone	2.1	SW-846:8260B
Benzene	0.13	SW-846:8260B
Bromodichloromethane	0.14	SW-846:8260B
Bromoform	0.1	SW-846:8260B
Bromomethane	0.29	SW-846:8260B
Butanone[2-]	0.35	SW-846:8260B
Carbon Disulfide	0.16	SW-846:8260B
Carbon Tetrachloride	0.15	SW-846:8260B
Chlorobenzene	0.12	SW-846:8260B
Chloroethane	0.34	SW-846:8260B
Chloroform	0.12	SW-846:8260B
Chloromethane	0.25	SW-846:8260B
Dibromochloromethane	0.13	SW-846:8260B
Dichloroethane[1,1-]	0.1	SW-846:8260B
Dichloroethane[1,2-]	0.22	SW-846:8260B
Dichloroethene[1,1-]	0.14	SW-846:8260B
Dichloroethene[cis-1,2-]	0.1	SW-846:8260B
Dichloroethene[trans-1,2-]	0.11	SW-846:8260B
Dichloropropane[1,2-]	0.15	SW-846:8260B
Dichloropropene[cis-1,3-]	0.22	SW-846:8260B
Dichloropropene[trans-1,3-]	0.08	SW-846:8260B
Ethylbenzene	0.1	SW-846:8260B
Hexanone[2-]	0.17	SW-846:8260B
Methylene Chloride	0.35	SW-846:8260B
Styrene	0.15	SW-846:8260B
Tetrachloroethane[1,1,2,2-]	0.09	SW-846:8260B
Tetrachloroethene	0.1	SW-846:8260B
Toluene	0.25	SW-846:8260B
Trichloroethane[1,1,1-]	0.19	SW-846:8260B
Trichloroethane[1,1,2-]	0.31	SW-846:8260B
Trichloroethene	0.13	SW-846:8260B
Vinyl acetate	0.21	SW-846:8260B
Vinyl Chloride	0.22	SW-846:8260B
Xylenes, Total	0.18	SW-846:8260B

Table-5 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, and Tritium

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)			MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TA1-W-02 15-Aug-12	Actinium-228	3.37	±	8.1	13.9	U	EPA:901.1M
	Beryllium-7	6.44	±	16	29.2	U	EPA:901.1M
	Bismuth-212	23.2	±	20	39.4	U	EPA:901.1M
	Bismuth-214	1.99	±	15	30.1	U	EPA:901.1M
	Cesium-134	0.404	±	1.6	3	U	EPA:901.1M
	Cesium-137	1.01	±	1.4	2.7	U	EPA:901.1M
	Cobalt-60	-0.848	±	1.7	2.97	U	EPA:901.1M
	Gross Alpha	4.47	±	1.9	2		EPA:900.0
	Gross Beta	4.27	±	1.1	1.49		EPA:900.0
	Lead-212	-1.41	±	2.3	3.35	U	EPA:901.1M
	Lead-212	-1.73	±	3.1	5.12	U	EPA:901.1M
	Potassium-40	-34.3	±	42	87.8	U	EPA:901.1M
	Protactinium-234m	-59.5	±	180	310	U	EPA:901.1M
	Sodium-22	-0.348	±	1.6	2.98	U	EPA:901.1M
	Tallium-208	0.439	±	1.8	3.04	U	EPA:901.1M
	Thorium-234	-59.5	±	180	310	U	EPA:901.1M
	Tritium	3.48	±	180	371	U	EPA:906.0
TA1-W-05 21-Aug-12	Actinium-228	4.73	±	6.3	12.4	U	EPA:901.1M
	Beryllium-7	-12.9	±	17	28.3	U	EPA:901.1M
	Bismuth-212	-1.77	±	26	46.5	U	EPA:901.1M
	Bismuth-214	-3.35	±	17	30.7	U	EPA:901.1M
	Cesium-134	0.47	±	2.1	3.84	U	EPA:901.1M
	Cesium-137	0.778	±	1.6	3.1	U	EPA:901.1M
	Cobalt-60	-0.144	±	1.5	2.76	U	EPA:901.1M
	Gross Alpha	2.14	±	2	3.12	U	EPA:900.0
	Gross Beta	3.76	±	1.4	1.97		EPA:900.0
	Lead-212	-0.189	±	2.3	4.08	U	EPA:901.1M
	Lead-212	-0.531	±	4	6.41	U	EPA:901.1M
	Potassium-40	-38.6	±	42	87.6	U	EPA:901.1M
	Protactinium-234m	152	±	200	403	U	EPA:901.1M
	Sodium-22	1.97	±	2.1	4.28	U	EPA:901.1M
	Tallium-208	0.976	±	1.8	3.30	U	EPA:901.1M
	Thorium-234	152	±	200	403	U	EPA:901.1M
	Tritium	-38.6	±	180	370	U	EPA:906.0

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Table-5 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, and Tritium

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)			MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TA2-SW1-320 11-Sep-12	Actinium-228	11.2	±	7.4	15.1	U	EPA:901.1M
	Beryllium-7	-2.76	±	19	34.1	U	EPA:901.1M
	Bismuth-212	-11.8	±	25	41.7	U	EPA:901.1M
	Bismuth-214	3.87	±	18	35.4	U	EPA:901.1M
	Cesium-134	-0.264	±	2.1	3.68	U	EPA:901.1M
	Cesium-137	0.168	±	1.8	3.17	U	EPA:901.1M
	Cobalt-60	0.533	±	1.9	3.66	U	EPA:901.1M
	Gross Alpha	1.78	±	1.3	1.91	U	EPA:900.0
	Gross Beta	2.61	±	1.2	1.77		EPA:900.0
	Lead-212	0.298	±	2.6	4.44	U	EPA:901.1M
	Lead-212	-1.4	±	4.3	6.69	U	EPA:901.1M
	Potassium-40	-40	±	41	81.6	U	EPA:901.1M
	Protactinium-234m	53.4	±	230	416	U	EPA:901.1M
	Sodium-22	0.696	±	1.9	3.71	U	EPA:901.1M
	Tallium-208	0.521	±	2.2	3.67	U	EPA:901.1M
	Thorium-234	53.4	±	230	416	U	EPA:901.1M
	Tritium	44.9	±	130	280	U	EPA:906.0
TA2-W-01 4-Sep-12	Actinium-228	-13.5	±	11	15.9	U	EPA:901.1M
	Beryllium-7	0.626	±	16	27.5	U	EPA:901.1M
	Bismuth-212	16.9	±	27	48.3	U	EPA:901.1M
	Bismuth-214	27.8	±	19	36.1	U	EPA:901.1M
	Cesium-134	-1.61	±	2	3.37	U	EPA:901.1M
	Cesium-137	1.94	±	1.9	3.58	U	EPA:901.1M
	Cobalt-60	-0.578	±	1.8	3.18	U	EPA:901.1M
	Gross Alpha	2.13	±	1.5	2.05		EPA:900.0
	Gross Beta	3.31	±	1.4	2		EPA:900.0
	Lead-212	0.887	±	3.5	5.56	U	EPA:901.1M
	Lead-212	-5.49	±	4.7	7.16	U	EPA:901.1M
	Potassium-40	-96.8	±	61	123	U	EPA:901.1M
	Protactinium-234m	-58.1	±	230	397	U	EPA:901.1M
	Sodium-22	0.0774	±	2.1	3.78	U	EPA:901.1M
	Tallium-208	-0.561	±	2.7	3.92	U	EPA:901.1M
	Thorium-234	-58.1	±	230	397	U	EPA:901.1M
	Tritium	13.7	±	180	368	U	EPA:906.0

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Table-5 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, and Tritium

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)			MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TA2-W-19 12-Sep-12	Actinium-228	-3.98	±	6.9	11.2	U	EPA:901.1M
	Beryllium-7	5.75	±	14	25.6	U	EPA:901.1M
	Bismuth-212	14.8	±	18	36.1	U	EPA:901.1M
	Bismuth-214	-5.63	±	17	31.7	U	EPA:901.1M
	Cesium-134	-0.874	±	1.5	2.43	U	EPA:901.1M
	Cesium-137	0.296	±	1.3	2.39	U	EPA:901.1M
	Cobalt-60	0.21	±	1.4	2.72	U	EPA:901.1M
	Gross Alpha	-0.259	±	1.4	2.61	U	EPA:900.0
	Gross Beta	2.33	±	1.1	1.68		EPA:900.0
	Lead-212	-2.38	±	2.1	3.2	U	EPA:901.1M
	Lead-212	-1.8	±	3.0	5.09	U	EPA:901.1M
	Potassium-40	-57.6	±	41	80.9	U	EPA:901.1M
	Protactinium-234m	-140	±	140	214	U	EPA:901.1M
	Sodium-22	0.536	±	1.5	3.01	U	EPA:901.1M
	Tallium-208	-1.2	±	1.6	2.45	U	EPA:901.1M
	Thorium-234	-140	±	140	214	U	EPA:901.1M
	Tritium	129	±	140	281	U	EPA:906.0
TA2-W-26 13-Sep-12	Actinium-228	-2.63	±	9.5	16.3	U	EPA:901.1M
	Beryllium-7	-6.2	±	18	31	U	EPA:901.1M
	Bismuth-212	31.8	±	27	50.9	U	EPA:901.1M
	Bismuth-214	1.83	±	21	42.5	U	EPA:901.1M
	Cesium-134	0.0334	±	2.1	3.66	U	EPA:901.1M
	Cesium-137	1.30	±	2	3.6	U	EPA:901.1M
	Cobalt-60	0.898	±	1.9	3.69	U	EPA:901.1M
	Gross Alpha	3.78	±	4.3	6.75	U	EPA:900.0
	Gross Beta	4.85	±	2.5	3.71		EPA:900.0
	Lead-212	-0.217	±	3.5	5.37	U	EPA:901.1M
	Lead-212	3.54	±	6.5	8.18	U	EPA:901.1M
	Potassium-40	-83.4	±	62	125	U	EPA:901.1M
	Protactinium-234m	-56.10	±	230	398	U	EPA:901.1M
	Sodium-22	0.0809	±	2	3.68	U	EPA:901.1M
	Tallium-208	-4.45	±	2.8	3.73	U	EPA:901.1M
	Thorium-234	-56.10	±	230	398	U	EPA:901.1M
	Tritium	350	±	150	284	J	EPA:906.0

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Table-5 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, and Tritium

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)			MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TA2-W-27 6-Sep-12	Actinium-228	2.37	±	6	11.2	U	EPA:901.1M
	Beryllium-7	-1.24	±	14	24	U	EPA:901.1M
	Bismuth-212	6.32	±	23	41.4	U	EPA:901.1M
	Bismuth-214	13	±	14	28.4	U	EPA:901.1M
	Cesium-134	-0.716	±	1.6	2.73	U	EPA:901.1M
	Cesium-137	-0.982	±	1.6	2.68	U	EPA:901.1M
	Cobalt-60	1.13	±	1.8	3.58	U	EPA:901.1M
	Gross Alpha	0.131	±	1.9	3.51	U	EPA:900.0
	Gross Beta	2.19	±	2.5	4.05	U	EPA:900.0
	Lead-212	1.09	±	2.3	4.09	U	EPA:901.1M
	Lead-212	-3.03	±	3.4	5.33	U	EPA:901.1M
	Potassium-40	-26.2	±	34	65.7	U	EPA:901.1M
	Protactinium-234m	-127	±	210	345	U	EPA:901.1M
	Sodium-22	1.17	±	1.7	3.35	U	EPA:901.1M
	Tallium-208	1.75	±	1.5	2.91	U	EPA:901.1M
	Thorium-234	-127	±	210	345	U	EPA:901.1M
	Tritium	10.6	±	180	368	U	EPA:906.0
TJA-2 18-Sep-12	Actinium-228	3.34	±	6.5	12.4	U	EPA:901.1M
	Beryllium-7	3.36	±	17	30.3	U	EPA:901.1M
	Bismuth-212	10.1	±	23	42.9	U	EPA:901.1M
	Bismuth-214	-3.78	±	18	33.3	U	EPA:901.1M
	Cesium-134	0.316	±	1.8	3.36	U	EPA:901.1M
	Cesium-137	-1.28	±	1.8	2.92	U	EPA:901.1M
	Cobalt-60	-0.943	±	1.9	3.28	U	EPA:901.1M
	Gross Alpha	2.60	±	1.7	2.32		EPA:900.0
	Gross Beta	2.09	±	1.2	1.77		EPA:900.0
	Lead-212	-0.58	±	2.6	4.4	U	EPA:901.1M
	Lead-212	-4.41	±	4.3	6.33	U	EPA:901.1M
	Potassium-40	-56.5	±	41	79.8	U	EPA:901.1M
	Protactinium-234m	12	±	220	393	U	EPA:901.1M
	Sodium-22	-0.177	±	2.1	3.84	U	EPA:901.1M
	Tallium-208	0.029	±	2.2	3.61	U	EPA:901.1M
	Thorium-234	12	±	220	393	U	EPA:901.1M
	Tritium	326	±	140	284	J	EPA:906.0

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Table-5 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, and Tritium

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)			MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TJA-4 19-Sep-12	Actinium-228	-7.52	±	6.8	10.1	U	EPA:901.1M
	Beryllium-7	7.67	±	13	23.8	U	EPA:901.1M
	Bismuth-212	6.63	±	22	39.8	U	EPA:901.1M
	Bismuth-214	-17.4	±	15	25.7	U	EPA:901.1M
	Cesium-134	0.919	±	1.5	2.86	U	EPA:901.1M
	Cesium-137	0.809	±	1.3	2.59	U	EPA:901.1M
	Cobalt-60	0.709	±	1.2	2.54	U	EPA:901.1M
	Gross Alpha	3.26	±	1.6	1.93		EPA:900.0
	Gross Beta	3.73	±	1.4	2.07		EPA:900.0
	Lead-212	-1.64	±	2.1	3.2	U	EPA:901.1M
	Lead-212	-4.2	±	3.0	4.73	U	EPA:901.1M
	Potassium-40	0.95	±	42	22.8	U	EPA:901.1M
	Protactinium-234m	61.1	±	150	298	U	EPA:901.1M
	Sodium-22	0.00572	±	1.5	2.77	U	EPA:901.1M
	Tallium-208	1.25	±	1.6	2.79	U	EPA:901.1M
	Thorium-234	61.1	±	150	298	U	EPA:901.1M
	Tritium	289	±	140	281	J	EPA:906.0
TJA-4 19-Sep-12 Dup	Actinium-228	20.5	±	13	18.2	U	EPA:901.1M
	Beryllium-7	-6.16	±	17	29.1	U	EPA:901.1M
	Bismuth-212	27.2	±	28	51.5	U	EPA:901.1M
	Bismuth-214	4.75	±	20	22.2	U	EPA:901.1M
	Cesium-134	-1.34	±	2.2	3.7	U	EPA:901.1M
	Cesium-137	0.583	±	1.8	3.18	U	EPA:901.1M
	Cobalt-60	2.35	±	2.2	4.32	U	EPA:901.1M
	Gross Alpha	3.34	±	1.5	1.48		EPA:900.0
	Gross Beta	4.46	±	1.6	2.18		EPA:900.0
	Lead-212	-1.31	±	3.5	5.36	U	EPA:901.1M
	Lead-212	-4.47	±	4.8	7.29	U	EPA:901.1M
	Potassium-40	-69.80	±	63	127	U	EPA:901.1M
	Protactinium-234m	-94.4	±	220	373	U	EPA:901.1M
	Sodium-22	-1.96	±	2	3.2	U	EPA:901.1M
	Tallium-208	-2.46	±	2.7	3.83	U	EPA:901.1M
	Thorium-234	-94.4	±	220	373	U	EPA:901.1M
	Tritium	172	±	140	281	U	EPA:906.0

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Table-5 NMED DOE OB FFY 2012 Q-4 Tijeras Arroyo Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, and Tritium

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)			MDA (pCi/L)	Laboratory Qualifier	Analytical Method
WYO-4 17-Sep-12	Actinium-228	4.47	±	7.6	13.9	U	EPA:901.1M
	Beryllium-7	-1.79	±	14	24.3	U	EPA:901.1M
	Bismuth-212	-11.3	±	21	36.3	U	EPA:901.1M
	Bismuth-214	29	±	15	33.4	U	EPA:901.1M
	Cesium-134	1.06	±	1.5	2.91	U	EPA:901.1M
	Cesium-137	-0.38	±	1.4	2.42	U	EPA:901.1M
	Cobalt-60	0.86	±	1.3	2.82	U	EPA:901.1M
	Gross Alpha	1.7	±	2.0	3.21	U	EPA:900.0
	Gross Beta	2.81	±	1.4	2.09		EPA:900.0
	Lead-212	1.62	±	2.6	3.49	U	EPA:901.1M
	Lead-212	-1.27	±	3.6	5.40	U	EPA:901.1M
	Potassium-40	-35.8	±	41	82.9	U	EPA:901.1M
	Protactinium-234m	49.6	±	170	328	U	EPA:901.1M
	Sodium-22	1.3	±	1.6	3.28	U	EPA:901.1M
	Tallium-208	0.49	±	1.9	3.05	U	EPA:901.1M
	Thorium-234	49.6	±	170	328	U	EPA:901.1M
	Tritium	124	±	130	280	U	EPA:906.0

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