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July 11, 2018

Steven Black
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U.S. Department of Energy
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Subject: **Data Submittal for Groundwater Monitoring at Sandia National Laboratories/New Mexico Tijeras Arroyo Groundwater Area of Concern Conducted by the New Mexico Environment Department DOE Oversight Bureau for FFY 2017 Q-4**

Mr. Black:

This letter transmits the subject report as final. The report shows groundwater data results from Tijeras Arroyo Groundwater Area of Concern collected by the New Mexico Environment Department DOE Oversight Bureau during the fourth quarter of FFY 2017.

The enclosed monitoring results were provided to the U.S Department of Energy in draft form on June 8, 2018 for 30-day review and comment. The final monitoring results are provided to DOE, the State of New Mexico and other 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
Environmental Scientist
Sandia Oversight Section

Enclosure: (1) Groundwater Monitoring at Sandia National Laboratories/New Mexico Tijeras Arroyo Groundwater Area of Concern Conducted by the New Mexico Environment Department DOE Oversight Bureau for FFY 2017 Q-4
(2) Table-1 Total Target Analyte List Metals plus Uranium Results
(3) Table-2 Alkalinity, Anions and Nitrate-Nitrite as Nitrogen Results
(4) Table-3 Detected Volatile Organic Compounds Results
(5) Table-4 Method Detection Limit for Volatile Organic Compounds
(6) Table-5 Gross Alpha, Gross Beta, Gamma Spectroscopy and Tritium Results

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

File: SGE42. Groundwater Monitoring. TAG. FFY 2017 Q-4

DOE Oversight Bureau, New Mexico Environment Department

Groundwater Monitoring at Sandia National Laboratories/New Mexico Tijeras Arroyo Groundwater Area of Concern

Conducted by the
New Mexico Environment Department DOE Oversight Bureau
for FFY 2017 Q-4

Prepared by Chris Armijo, Environmental Scientist
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Final Report

7/11/2018

The purpose of this communication is to transmit groundwater quality data collected by the New Mexico Environment Department DOE Oversight Bureau from Tijeras Arroyo Groundwater Area of Concern during fourth quarter of Federal Fiscal Year 2017.

Acknowledgment:

This material is based upon work supported by the Department of Energy Office of Environmental Management under Award Number *DE-EM0002420*.

Introduction

The New Mexico Environment Department (NMED) DOE Oversight Bureau (DOE-OB or Bureau) has compiled and assessed groundwater data collected during August and September 2017. The Bureau collected groundwater samples from Tijeras Arroyo Groundwater (TAG) Area of Concern (AOC) monitoring wells TA1-W-01 (plus duplicate, nitrates and VOCs only), TA1-W-02, TA1-W-04, TA1-W-05, TA1-W-06, TA1-W-08, TA2-NW1-595, TA2-W-01, TA2-W-19, TA2-W-26, TA2-W-27, TA2-W-28, TJA-2 (plus duplicate), TJA-3, TJA-4, TJA-6, TJA-7 and WYO-3. Samples were also collected from TAG monitoring well PGS-2, but the data results were rejected.

All samples were collected using standard Sandia National Laboratories/New Mexico (SNL/NM) sampling procedures and equipment. Samples were analyzed for total target analyte list (TAL) metals plus uranium, alkalinity, anions, nitrate-nitrite as nitrogen, volatile organic compounds (VOCs), gross alpha, gross beta, gamma-emitting isotopes and tritium. The Bureau submitted samples for analysis to an independent analytical laboratory under contract with the NMED.

Nitrate levels exceeded the U.S. Environmental Protection Agency (EPA) maximum contaminant level (MCL), or drinking water standard of 10 mg/L in samples collected from TAG monitoring wells TA2-W-19, TA2-W-28, TJA-2, TJA-4 and TJA-7.

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 total TAL metals plus uranium are presented in Table-1. All metal concentrations were below established MCLs.

Analytical results for alkalinity, major anions (as bromide, chloride, fluoride, and sulfate) and nitrate-nitrite as nitrogen are listed in Table-2. No results exceeded MCLs, except for nitrate-nitrite. Nitrate-nitrite concentrations exceeded the EPA MCL of 10 mg/L at monitoring wells TA2-W-19 (11 mg/L), TA2-W-28 (16 mg/L), TJA-2 (11 mg/L), TJA-2-duplicate (12 mg/L), TJA-4 (32 mg/L) and TJA-7 (24 mg/L).

VOCs detected at concentrations above the method detection limits (MDLs) are presented in Table-3. The VOCs detected include: acetone, carbon disulfide,

chloromethane, dichloroethane [1,1-], dichloroethene [1,1-], dichloroethene[cis-1,2-], tetrachloroethene (PCE), toluene, trichloro-1,2,2-trifluoroethane[1,1,2-] and trichloroethene (TCE). No VOCs were detected above their associated drinking water standards. Table-4 summarizes the laboratory MDLs for the remaining VOCs analyzed from samples collected at TAG AOC.

Analytical results for radiochemistry samples are listed in Table-5. Samples were analyzed for gross alpha, gross beta, gamma emitting isotopes and tritium. No isotopes were detected above U.S. EPA drinking water standards.

The data results from samples collected at PGS-2 were rejected based on unusual conditions observed during sampling. The turbidity readings prior to sampling well PGS-2 exceeded 500 Nephelometric Turbidity Units (NTUs). SNL/NM performed a well video inspection in October 2017 and observed grout intrusion from well screen intervals. The environmental samples collected are not representative of the groundwater as indicated by field water quality measurements and the well video inspection; therefore, data results from PGS-2 samples have been rejected and are not reported in the data tables.

Conclusion

The DOE-OB collected groundwater samples from a total of eighteen (18) TAG AOC monitoring wells during FFY 2017 Q-4. No parameters were detected above EPA drinking water standards, except for nitrate-nitrite as nitrogen at monitoring wells TA2-W-19, TA2-W-28, TJA-2, TJA-4 and TJA-7. Nitrate has been identified as a contaminate of concern at TAG and results are comparable to historical nitrate concentrations.

The DOE-OB will continue to collect split samples with SNL/NM from TAG groundwater monitoring wells and continue to independently monitor TAG wells for contaminates of concern, and make the data reports available to the public.

References

Sandia National Laboratories/New Mexico (SNL/NM) 2017. Annual Groundwater Monitoring Report, Calendar Year 2016. SAND2017-5876R.

U.S. Environmental Protection Agency (EPA). 2009. National Primary Drinking Water Regulations, EPA 816-F-09-0004. Washington, D.C.: EPA

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Table-1

Groundwater Quality Monitoring Results: Total Target Analyte List Metals plus Uranium

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA1-W-01 17-Aug-17	Aluminum	0.014	NE	0.1	0.014	U	SW-846:6020
	Antimony	0.0003	0.006	0.001	0.0003	U	SW-846:6020
	Arsenic	0.00092	0.01	0.002	0.0006	JB	SW-846:6020
	Barium	0.055	2	0.005	0.0018		SW-846:6020
	Beryllium	0.00015	0.004	0.0005	0.00015	U	SW-846:6020
	Cadmium	0.0006	0.005	0.002	0.0006	U	SW-846:6020
	Calcium	69	NE	1	0.3		SW-846:6020
	Chromium	0.003	0.10	0.01	0.003	U	SW-846:6020
	Cobalt	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Copper	0.006	NE	0.02	0.006	U	SW-846:6020
	Iron	0.03	NE	0.1	0.03	U	SW-846:6020
	Lead	0.00085	NE	0.002	0.00085	U	SW-846:6020
	Magnesium	13	NE	0.1	0.03		SW-846:6020
	Manganese	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.011	NE	0.02	0.011	U	SW-846:6020
	Potassium	2.4	NE	1	0.3		SW-846:6020
	Selenium	0.0035	0.05	0.01	0.0035	U	SW-846:6020
	Silver	0.00015	NE	0.0005	0.00015	U	SW-846:6020
	Sodium	26	NE	1	0.3		SW-846:6020
	Thallium	0.000084	0.002	0.0001	0.000084	U	SW-846:6020
	Uranium	0.0031	0.03	0.0001	0.00003		SW-846:6020
	Vanadium	0.0045	NE	0.005	0.0015	J	SW-846:6020
	Zinc	0.048	NE	0.1	0.048	U	SW-846:6020

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New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA1-W-02 21-Aug-17	Aluminum	0.03	NE	0.1	0.014	J	SW-846:6020
	Antimony	0.00034	0.006	0.001	0.0003	J	SW-846:6020
	Arsenic	0.001	0.01	0.002	0.0006	JB	SW-846:6020
	Barium	0.048	2	0.005	0.0018		SW-846:6020
	Beryllium	0.00015	0.004	0.0005	0.00015	U	SW-846:6020
	Cadmium	0.0006	0.005	0.002	0.0006	U	SW-846:6020
	Calcium	68	NE	1	0.3		SW-846:6020
	Chromium	0.003	0.10	0.01	0.003	U	SW-846:6020
	Cobalt	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Copper	0.006	NE	0.02	0.006	U	SW-846:6020
	Iron	0.043	NE	0.1	0.03	J	SW-846:6020
	Lead	0.00085	NE	0.002	0.00085	U	SW-846:6020
	Magnesium	13	NE	0.1	0.03		SW-846:6020
	Manganese	0.0026	NE	0.005	0.0015	J	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.011	NE	0.02	0.011	U	SW-846:6020
	Potassium	2.2	NE	1	0.3		SW-846:6020
	Selenium	0.0035	0.05	0.01	0.0035	U	SW-846:6020
	Silver	0.00015	NE	0.0005	0.00015	U	SW-846:6020
	Sodium	23	NE	1	0.3		SW-846:6020
	Thallium	0.000084	0.002	0.0001	0.000084	U	SW-846:6020
	Uranium	0.0029	0.03	0.0001	0.00003		SW-846:6020
	Vanadium	0.0045	NE	0.005	0.0015	J	SW-846:6020
	Zinc	0.048	NE	0.1	0.048	U	SW-846:6020

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Table-1

Groundwater Quality Monitoring Results: Total Target Analyte List Metals plus Uranium

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA1-W-04 28-Aug-17	Aluminum	0.048	NE	0.1	0.014	J	SW-846:6020
	Antimony	0.0003	0.006	0.001	0.0003	U	SW-846:6020
	Arsenic	0.0006	0.01	0.002	0.0006	U	SW-846:6020
	Barium	0.058	2	0.005	0.0018		SW-846:6020
	Beryllium	0.00015	0.004	0.0005	0.00015	U	SW-846:6020
	Cadmium	0.0006	0.005	0.002	0.0006	U	SW-846:6020
	Calcium	68	NE	1	0.3		SW-846:6020
	Chromium	0.003	0.10	0.01	0.003	U	SW-846:6020
	Cobalt	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Copper	0.006	NE	0.02	0.006	U	SW-846:6020
	Iron	0.03	NE	0.1	0.03	U	SW-846:6020
	Lead	0.00085	NE	0.002	0.00085	U	SW-846:6020
	Magnesium	12	NE	0.1	0.03		SW-846:6020
	Manganese	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.011	NE	0.02	0.011	U	SW-846:6020
	Potassium	2.2	NE	1	0.3		SW-846:6020
	Selenium	0.0035	0.05	0.01	0.0035	U	SW-846:6020
	Silver	0.00015	NE	0.0005	0.00015	U	SW-846:6020
	Sodium	25	NE	1	0.3		SW-846:6020
	Thallium	0.000084	0.002	0.0001	0.000084	U	SW-846:6020
	Uranium	0.0029	0.03	0.0001	0.00003		SW-846:6020
	Vanadium	0.0045	NE	0.005	0.0015	J	SW-846:6020
	Zinc	0.048	NE	0.1	0.048	U	SW-846:6020

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New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA1-W-05 22-Aug-17	Aluminum	0.066	NE	0.1	0.014	J	SW-846:6020
	Antimony	0.00081	0.006	0.001	0.0003	J	SW-846:6020
	Arsenic	0.0006	0.01	0.002	0.0006	U	SW-846:6020
	Barium	0.036	2	0.005	0.0018		SW-846:6020
	Beryllium	0.00015	0.004	0.0005	0.00015	U	SW-846:6020
	Cadmium	0.0006	0.005	0.002	0.0006	U	SW-846:6020
	Calcium	81	NE	1	0.3		SW-846:6020
	Chromium	0.003	0.10	0.01	0.003	U	SW-846:6020
	Cobalt	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Copper	0.006	NE	0.02	0.006	U	SW-846:6020
	Iron	0.032	NE	0.1	0.03	J	SW-846:6020
	Lead	0.00085	NE	0.002	0.00085	U	SW-846:6020
	Magnesium	11	NE	0.1	0.03		SW-846:6020
	Manganese	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.011	NE	0.02	0.011	U	SW-846:6020
	Potassium	1.8	NE	1	0.3		SW-846:6020
	Selenium	0.0035	0.05	0.01	0.0035	U	SW-846:6020
	Silver	0.00015	NE	0.0005	0.00015	U	SW-846:6020
	Sodium	28	NE	1	0.3		SW-846:6020
	Thallium	0.000084	0.002	0.0001	0.000084	U	SW-846:6020
	Uranium	0.0031	0.03	0.0001	0.00003		SW-846:6020
	Vanadium	0.0034	NE	0.005	0.0015	J	SW-846:6020
	Zinc	0.048	NE	0.1	0.048	U	SW-846:6020

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New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA1-W-06 6-Sep-17	Aluminum	0.014	NE	0.1	0.014	U	SW-846:6020
	Antimony	0.0003	0.006	0.001	0.0003	U	SW-846:6020
	Arsenic	0.0006	0.01	0.002	0.0006	U	SW-846:6020
	Barium	0.025	2	0.005	0.0018		SW-846:6020
	Beryllium	0.00015	0.004	0.0005	0.00015	U	SW-846:6020
	Cadmium	0.0006	0.005	0.002	0.0006	U	SW-846:6020
	Calcium	120	NE	1	0.3		SW-846:6020
	Chromium	0.003	0.10	0.01	0.003	U	SW-846:6020
	Cobalt	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Copper	0.006	NE	0.02	0.006	U	SW-846:6020
	Iron	0.03	NE	0.1	0.03	U	SW-846:6020
	Lead	0.00085	NE	0.002	0.00085	U	SW-846:6020
	Magnesium	16	NE	0.1	0.03		SW-846:6020
	Manganese	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.011	NE	0.02	0.011	U	SW-846:6020
	Potassium	2	NE	1	0.3		SW-846:6020
	Selenium	0.0077	0.05	0.01	0.0035	J	SW-846:6020
	Silver	0.00015	NE	0.0005	0.00015	U	SW-846:6020
	Sodium	30	NE	1	0.3		SW-846:6020
	Thallium	0.000084	0.002	0.0001	0.000084	U	SW-846:6020
	Uranium	0.0011	0.03	0.0001	0.00003		SW-846:6020
	Vanadium	0.0038	NE	0.005	0.0015	J	SW-846:6020
	Zinc	0.048	NE	0.1	0.048	U	SW-846:6020

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New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA1-W-08 30-Aug-17	Aluminum	0.047	NE	0.1	0.014	J	SW-846:6020
	Antimony	0.0003	0.006	0.001	0.0003	U	SW-846:6020
	Arsenic	0.0006	0.01	0.002	0.0006	U	SW-846:6020
	Barium	0.019	2	0.005	0.0018		SW-846:6020
	Beryllium	0.00015	0.004	0.0005	0.00015	U	SW-846:6020
	Cadmium	0.0006	0.005	0.002	0.0006	U	SW-846:6020
	Calcium	320	NE	1	0.3		SW-846:6020
	Chromium	0.003	0.10	0.01	0.003	U	SW-846:6020
	Cobalt	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Copper	0.006	NE	0.02	0.006	U	SW-846:6020
	Iron	0.03	NE	0.1	0.03	U	SW-846:6020
	Lead	0.00085	NE	0.002	0.00085	U	SW-846:6020
	Magnesium	41	NE	0.1	0.03		SW-846:6020
	Manganese	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.011	NE	0.02	0.011	U	SW-846:6020
	Potassium	3.2	NE	1	0.3		SW-846:6020
	Selenium	0.029	0.05	0.01	0.0035		SW-846:6020
	Silver	0.00015	NE	0.0005	0.00015	U	SW-846:6020
	Sodium	85	NE	1	0.3		SW-846:6020
	Thallium	0.000084	0.002	0.0001	0.000084	U	SW-846:6020
	Uranium	0.0016	0.03	0.0001	0.00003		SW-846:6020
	Vanadium	0.0026	NE	0.005	0.0015	J	SW-846:6020
	Zinc	0.048	NE	0.1	0.048	U	SW-846:6020

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New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA2-NW1-595 5-Sep-17	Aluminum	0.014	NE	0.1	0.014	U	SW-846:6020
	Antimony	0.0003	0.006	0.001	0.0003	U	SW-846:6020
	Arsenic	0.0006	0.01	0.002	0.0006	U	SW-846:6020
	Barium	0.041	2	0.005	0.0018		SW-846:6020
	Beryllium	0.00015	0.004	0.0005	0.00015	U	SW-846:6020
	Cadmium	0.0006	0.005	0.002	0.0006	U	SW-846:6020
	Calcium	98	NE	1	0.3		SW-846:6020
	Chromium	0.003	0.10	0.01	0.003	U	SW-846:6020
	Cobalt	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Copper	0.006	NE	0.02	0.006	U	SW-846:6020
	Iron	0.03	NE	0.1	0.03	U	SW-846:6020
	Lead	0.00085	NE	0.002	0.00085	U	SW-846:6020
	Magnesium	15	NE	0.1	0.03		SW-846:6020
	Manganese	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.011	NE	0.02	0.011	U	SW-846:6020
	Potassium	2.1	NE	1	0.3		SW-846:6020
	Selenium	0.0062	0.05	0.01	0.0035	J	SW-846:6020
	Silver	0.00015	NE	0.0005	0.00015	U	SW-846:6020
	Sodium	28	NE	1	0.3		SW-846:6020
	Thallium	0.000084	0.002	0.0001	0.000084	U	SW-846:6020
	Uranium	0.0022	0.03	0.0001	0.00003		SW-846:6020
	Vanadium	0.0035	NE	0.005	0.0015	J	SW-846:6020
	Zinc	0.048	NE	0.1	0.048	U	SW-846:6020

B = Compound was found in the blank and sample.

J = the reported value was obtained from a reading that was less than the Laboratory Detection Limit but greater than or equal to the Method Detection Limit (MDL).

NE = Not Established

U = the analyte was analyzed for but not detected

Table-1

Groundwater Quality Monitoring Results: Total Target Analyte List Metals plus Uranium

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA2-W-01 7-Sep-17	Aluminum	0.014	NE	0.1	0.014	U	SW-846:6020
	Antimony	0.0003	0.006	0.001	0.0003	U	SW-846:6020
	Arsenic	0.00065	0.01	0.002	0.0006	J	SW-846:6020
	Barium	0.068	2	0.005	0.0018		SW-846:6020
	Beryllium	0.00015	0.004	0.0005	0.00015	U	SW-846:6020
	Cadmium	0.0006	0.005	0.002	0.0006	U	SW-846:6020
	Calcium	85	NE	1	0.3		SW-846:6020
	Chromium	0.003	0.10	0.01	0.003	U	SW-846:6020
	Cobalt	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Copper	0.006	NE	0.02	0.006	U	SW-846:6020
	Iron	0.03	NE	0.1	0.03	U	SW-846:6020
	Lead	0.00085	NE	0.002	0.00085	U	SW-846:6020
	Magnesium	13	NE	0.1	0.03		SW-846:6020
	Manganese	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.011	NE	0.02	0.011	U	SW-846:6020
	Potassium	1.6	NE	1	0.3		SW-846:6020
	Selenium	0.0069	0.05	0.01	0.0035	J	SW-846:6020
	Silver	0.00015	NE	0.0005	0.00015	U	SW-846:6020
	Sodium	21	NE	1	0.3		SW-846:6020
	Thallium	0.000084	0.002	0.0001	0.000084	U	SW-846:6020
	Uranium	0.0011	0.03	0.0001	0.00003		SW-846:6020
	Vanadium	0.0044	NE	0.005	0.0015	J	SW-846:6020
	Zinc	0.048	NE	0.1	0.048	U	SW-846:6020

B = Compound was found in the blank and sample.

J = the reported value was obtained from a reading that was less than the Laboratory Detection Limit but greater than or equal to the Method Detection Limit (MDL).

NE = Not Established

U = the analyte was analyzed for but not detected

Table-1

Groundwater Quality Monitoring Results: Total Target Analyte List Metals plus Uranium

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA2-W-19 19-Sep-17	Aluminum	0.079	NE	0.1	0.0087	J	SW-846:6020
	Antimony	0.000049	0.006	0.001	0.000049	U	SW-846:6020
	Arsenic	0.0016	0.01	0.002	0.0016	U	SW-846:6020
	Barium	0.051	2	0.005	0.0016		SW-846:6020
	Beryllium	0.000081	0.004	0.0005	0.000081	U	SW-846:6020
	Cadmium	0.000062	0.005	0.002	0.000062	U	SW-846:6020
	Calcium	79	NE	1	0.077		SW-846:6020
	Chromium	0.00082	0.10	0.01	0.00082	U	SW-846:6020
	Cobalt	0.00016	NE	0.005	0.00016	U	SW-846:6020
	Copper	0.0016	NE	0.02	0.0016	U	SW-846:6020
	Iron	0.0055	NE	0.1	0.0047	J	SW-846:6020
	Lead	0.000096	NE	0.002	0.000096	U	SW-846:6020
	Magnesium	12	NE	0.1	0.012		SW-846:6020
	Manganese	0.00032	NE	0.005	0.00032	U	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.00081	NE	0.02	0.00081	U	SW-846:6020
	Potassium	1.8	NE	1	0.11		SW-846:6020
	Selenium	0.0042	0.05	0.01	0.00018	J	SW-846:6020
	Silver	0.000023	NE	0.0005	0.000023	U	SW-846:6020
	Sodium	23	NE	1	0.18		SW-846:6020
	Thallium	0.000015	0.002	0.0001	0.000015	U	SW-846:6020
	Uranium	0.0013	0.03	0.0001	0.000022		SW-846:6020
	Vanadium	0.0052	NE	0.005	0.00023		SW-846:6020
	Zinc	0.0035	NE	0.1	0.0035	J	SW-846:6020

B = Compound was found in the blank and sample.

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Table-1

Groundwater Quality Monitoring Results: Total Target Analyte List Metals plus Uranium

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA2-W-26 18-Sep-17	Aluminum	0.19	NE	0.1	0.0087		SW-846:6020
	Antimony	0.000049	0.006	0.001	0.000049	U	SW-846:6020
	Arsenic	0.0016	0.01	0.002	0.0016	U	SW-846:6020
	Barium	0.063	2	0.005	0.0016		SW-846:6020
	Beryllium	0.000081	0.004	0.0005	0.000081	U	SW-846:6020
	Cadmium	0.000062	0.005	0.002	0.000062	U	SW-846:6020
	Calcium	240	NE	1	0.077		SW-846:6020
	Chromium	0.0016	0.10	0.01	0.00082	J	SW-846:6020
	Cobalt	0.00016	NE	0.005	0.00016	U	SW-846:6020
	Copper	0.0016	NE	0.02	0.0016	U	SW-846:6020
	Iron	0.098	NE	0.1	0.0047	J	SW-846:6020
	Lead	0.000096	NE	0.002	0.000096	U	SW-846:6020
	Magnesium	31	NE	0.1	0.012		SW-846:6020
	Manganese	0.0013	NE	0.005	0.00032	J	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.0012	NE	0.02	0.00081	J	SW-846:6020
	Potassium	2.6	NE	1	0.11		SW-846:6020
	Selenium	0.022	0.05	0.01	0.00018		SW-846:6020
	Silver	0.000023	NE	0.0005	0.000023	U	SW-846:6020
	Sodium	43	NE	1	0.18		SW-846:6020
	Thallium	0.000015	0.002	0.0001	0.000015	U	SW-846:6020
	Uranium	0.0014	0.03	0.0001	0.000022		SW-846:6020
	Vanadium	0.0029	NE	0.005	0.00023	J	SW-846:6020
	Zinc	0.0035	NE	0.1	0.0035	U	SW-846:6020

B = Compound was found in the blank and sample.

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Table-1

Groundwater Quality Monitoring Results: Total Target Analyte List Metals plus Uranium

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA2-W-27 13-Sep-17	Aluminum	0.053	NE	0.1	0.014	J	SW-846:6020
	Antimony	0.0003	0.006	0.001	0.0003	U	SW-846:6020
	Arsenic	0.0006	0.01	0.002	0.0006	U	SW-846:6020
	Barium	0.059	2	0.005	0.0018		SW-846:6020
	Beryllium	0.00015	0.004	0.0005	0.00015	U	SW-846:6020
	Cadmium	0.0006	0.005	0.002	0.0006	U	SW-846:6020
	Calcium	120	NE	1	0.3		SW-846:6020
	Chromium	0.003	0.10	0.01	0.003	U	SW-846:6020
	Cobalt	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Copper	0.006	NE	0.02	0.006	U	SW-846:6020
	Iron	0.03	NE	0.1	0.03	U	SW-846:6020
	Lead	0.00085	NE	0.002	0.00085	U	SW-846:6020
	Magnesium	17	NE	0.1	0.03		SW-846:6020
	Manganese	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.011	NE	0.02	0.011	U	SW-846:6020
	Potassium	2	NE	1	0.3		SW-846:6020
	Selenium	0.0083	0.05	0.01	0.0035	J	SW-846:6020
	Silver	0.00015	NE	0.0005	0.00015	U	SW-846:6020
	Sodium	28	NE	1	0.3		SW-846:6020
	Thallium	0.000084	0.002	0.0001	0.000084	U	SW-846:6020
	Uranium	0.0012	0.03	0.0001	0.00003		SW-846:6020
	Vanadium	0.0038	NE	0.005	0.0015	J	SW-846:6020
	Zinc	0.048	NE	0.1	0.048	U	SW-846:6020

B = Compound was found in the blank and sample.

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Table-1

Groundwater Quality Monitoring Results: Total Target Analyte List Metals plus Uranium

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA2-W-28 20-Sep-17	Aluminum	0.52	NE	0.1	0.0087		SW-846:6020
	Antimony	0.00007	0.006	0.001	0.000049	J	SW-846:6020
	Arsenic	0.0016	0.01	0.002	0.0016	U	SW-846:6020
	Barium	0.2	2	0.005	0.0016		SW-846:6020
	Beryllium	0.000081	0.004	0.0005	0.000081	U	SW-846:6020
	Cadmium	0.000062	0.005	0.002	0.000062	U	SW-846:6020
	Calcium	65	NE	1	0.077		SW-846:6020
	Chromium	0.00084	0.10	0.01	0.00082	J	SW-846:6020
	Cobalt	0.00016	NE	0.005	0.00016	U	SW-846:6020
	Copper	0.0016	NE	0.02	0.0016	U	SW-846:6020
	Iron	0.6	NE	0.1	0.0047		SW-846:6020
	Lead	0.000096	NE	0.002	0.000096	U	SW-846:6020
	Magnesium	12	NE	0.1	0.012		SW-846:6020
	Manganese	0.0021	NE	0.005	0.00032	J	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.0045	NE	0.02	0.00081	J	SW-846:6020
	Potassium	1.9	NE	1	0.11		SW-846:6020
	Selenium	0.0031	0.05	0.01	0.00018	J	SW-846:6020
	Silver	0.000023	NE	0.0005	0.000023	U	SW-846:6020
	Sodium	19	NE	1	0.18		SW-846:6020
	Thallium	0.000015	0.002	0.0001	0.000015	U	SW-846:6020
	Uranium	0.0014	0.03	0.0001	0.000022		SW-846:6020
	Vanadium	0.0048	NE	0.005	0.00023	J	SW-846:6020
	Zinc	0.011	NE	0.1	0.0035	J	SW-846:6020

B = Compound was found in the blank and sample.

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Table-1

Groundwater Quality Monitoring Results: Total Target Analyte List Metals plus Uranium

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TJA-2 21-Sep-17	Aluminum	0.26	NE	0.1	0.0087		SW-846:6020
	Antimony	0.00005	0.006	0.001	0.000049	J	SW-846:6020
	Arsenic	0.0016	0.01	0.002	0.0016	U	SW-846:6020
	Barium	0.048	2	0.005	0.0016		SW-846:6020
	Beryllium	0.000081	0.004	0.0005	0.000081	U	SW-846:6020
	Cadmium	0.000062	0.005	0.002	0.000062	U	SW-846:6020
	Calcium	81	NE	1	0.077		SW-846:6020
	Chromium	0.00088	0.10	0.01	0.00082	J	SW-846:6020
	Cobalt	0.00016	NE	0.005	0.00016	U	SW-846:6020
	Copper	0.0016	NE	0.02	0.0016	U	SW-846:6020
	Iron	0.01	NE	0.1	0.0047	J	SW-846:6020
	Lead	0.000096	NE	0.002	0.000096	U	SW-846:6020
	Magnesium	12	NE	0.1	0.012		SW-846:6020
	Manganese	0.00032	NE	0.005	0.00032	U	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.00081	NE	0.02	0.00081	U	SW-846:6020
	Potassium	1.7	NE	1	0.11		SW-846:6020
	Selenium	0.0051	0.05	0.01	0.00018	J	SW-846:6020
	Silver	0.000023	NE	0.0005	0.000023	U	SW-846:6020
	Sodium	23	NE	1	0.18		SW-846:6020
	Thallium	0.000015	0.002	0.0001	0.000015	U	SW-846:6020
	Uranium	0.0012	0.03	0.0001	0.000022		SW-846:6020
	Vanadium	0.005	NE	0.005	0.00023		SW-846:6020
	Zinc	0.0035	NE	0.1	0.0035	U	SW-846:6020

B = Compound was found in the blank and sample.

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Table-1

Groundwater Quality Monitoring Results: Total Target Analyte List Metals plus Uranium

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TJA-2 21-Sep-17 (Duplicate)	Aluminum	0.0087	NE	0.1	0.0087	U	SW-846:6020
	Antimony	0.00005	0.006	0.001	0.000049	J	SW-846:6020
	Arsenic	0.0016	0.01	0.002	0.0016	U	SW-846:6020
	Barium	0.044	2	0.005	0.0016		SW-846:6020
	Beryllium	0.000081	0.004	0.0005	0.000081	U	SW-846:6020
	Cadmium	0.000062	0.005	0.002	0.000062	U	SW-846:6020
	Calcium	80	NE	1	0.077		SW-846:6020
	Chromium	0.001	0.10	0.01	0.00082	J	SW-846:6020
	Cobalt	0.00016	NE	0.005	0.00016	U	SW-846:6020
	Copper	0.0016	NE	0.02	0.0016	U	SW-846:6020
	Iron	0.0047	NE	0.1	0.0047	U	SW-846:6020
	Lead	0.00014	NE	0.002	0.000096	J	SW-846:6020
	Magnesium	11	NE	0.1	0.012		SW-846:6020
	Manganese	0.00032	NE	0.005	0.00032	U	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.00081	NE	0.02	0.00081	U	SW-846:6020
	Potassium	1.7	NE	1	0.11		SW-846:6020
	Selenium	0.0046	0.05	0.01	0.00018	J	SW-846:6020
	Silver	0.000023	NE	0.0005	0.000023	U	SW-846:6020
	Sodium	21	NE	1	0.18		SW-846:6020
	Thallium	0.000015	0.002	0.0001	0.000015	U	SW-846:6020
	Uranium	0.0012	0.03	0.0001	0.000022		SW-846:6020
	Vanadium	0.0049	NE	0.005	0.00023	J	SW-846:6020
	Zinc	0.01	NE	0.1	0.0035	J	SW-846:6020

B = Compound was found in the blank and sample.

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Table-1

Groundwater Quality Monitoring Results: Total Target Analyte List Metals plus Uranium

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TJA-3 14-Sep-17	Aluminum	0.57	NE	0.1	0.014		SW-846:6020
	Antimony	0.0003	0.006	0.001	0.0003	U	SW-846:6020
	Arsenic	0.0006	0.01	0.002	0.0006	U	SW-846:6020
	Barium	0.046	2	0.005	0.0018		SW-846:6020
	Beryllium	0.00015	0.004	0.0005	0.00015	U	SW-846:6020
	Cadmium	0.0006	0.005	0.002	0.0006	U	SW-846:6020
	Calcium	73	NE	1	0.3		SW-846:6020
	Chromium	0.003	0.10	0.01	0.003	U	SW-846:6020
	Cobalt	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Copper	0.006	NE	0.02	0.006	U	SW-846:6020
	Iron	0.089	NE	0.1	0.03	J	SW-846:6020
	Lead	0.00085	NE	0.002	0.00085	U	SW-846:6020
	Magnesium	12	NE	0.1	0.03		SW-846:6020
	Manganese	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.011	NE	0.02	0.011	U	SW-846:6020
	Potassium	1.9	NE	1	0.3		SW-846:6020
	Selenium	0.0035	0.05	0.01	0.0035	U	SW-846:6020
	Silver	0.00015	NE	0.0005	0.00015	U	SW-846:6020
	Sodium	26	NE	1	0.3		SW-846:6020
	Thallium	0.000084	0.002	0.0001	0.000084	U	SW-846:6020
	Uranium	0.0026	0.03	0.0001	0.00003		SW-846:6020
	Vanadium	0.004	NE	0.005	0.0015	J	SW-846:6020
	Zinc	0.048	NE	0.1	0.048	U	SW-846:6020

B = Compound was found in the blank and sample.

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Table-1

Groundwater Quality Monitoring Results: Total Target Analyte List Metals plus Uranium

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TJA-4 27-Sep-17	Aluminum	0.0087	NE	0.1	0.0087	U	SW-846:6020
	Antimony	0.00006	0.006	0.001	0.000049	J	SW-846:6020
	Arsenic	0.0016	0.01	0.002	0.0016	U	SW-846:6020
	Barium	0.17	2	0.005	0.0016		SW-846:6020
	Beryllium	0.000081	0.004	0.0005	0.000081	U	SW-846:6020
	Cadmium	0.000062	0.005	0.002	0.000062	U	SW-846:6020
	Calcium	71	NE	1	0.077		SW-846:6020
	Chromium	0.00082	0.10	0.01	0.00082	U	SW-846:6020
	Cobalt	0.00016	NE	0.005	0.00016	U	SW-846:6020
	Copper	0.0016	NE	0.02	0.0016	U	SW-846:6020
	Iron	0.0047	NE	0.1	0.0047	U	SW-846:6020
	Lead	0.00013	NE	0.002	0.000096	J	SW-846:6020
	Magnesium	13	NE	0.1	0.012		SW-846:6020
	Manganese	0.00032	NE	0.005	0.00032	U	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.00081	NE	0.02	0.00081	U	SW-846:6020
	Potassium	3	NE	1	0.11		SW-846:6020
	Selenium	0.0028	0.05	0.01	0.00018	J	SW-846:6020
	Silver	0.000023	NE	0.0005	0.000023	U	SW-846:6020
	Sodium	24	NE	1	0.18		SW-846:6020
	Thallium	0.000015	0.002	0.0001	0.000015	U	SW-846:6020
	Uranium	0.0026	0.03	0.0001	0.000022		SW-846:6020
	Vanadium	0.0052	NE	0.005	0.00023		SW-846:6020
	Zinc	0.0094	NE	0.1	0.0035	J	SW-846:6020

B = Compound was found in the blank and sample.

J = the reported value was obtained from a reading that was less than the Laboratory Detection Limit but greater than or equal to the Method Detection Limit (MDL).

NE = Not Established

U = the analyte was analyzed for but not detected

Table-1

Groundwater Quality Monitoring Results: Total Target Analyte List Metals plus Uranium

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TJA-6 13-Sep-17	Aluminum	0.33	NE	0.1	0.014		SW-846:6020
	Antimony	0.0003	0.006	0.001	0.0003	U	SW-846:6020
	Arsenic	0.00064	0.01	0.002	0.0006	J	SW-846:6020
	Barium	0.066	2	0.005	0.0018		SW-846:6020
	Beryllium	0.00015	0.004	0.0005	0.00015	U	SW-846:6020
	Cadmium	0.0006	0.005	0.002	0.0006	U	SW-846:6020
	Calcium	65	NE	1	0.3		SW-846:6020
	Chromium	0.003	0.10	0.01	0.003	U	SW-846:6020
	Cobalt	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Copper	0.006	NE	0.02	0.006	U	SW-846:6020
	Iron	0.076	NE	0.1	0.03	J	SW-846:6020
	Lead	0.00085	NE	0.002	0.00085	U	SW-846:6020
	Magnesium	12	NE	0.1	0.03		SW-846:6020
	Manganese	0.0024	NE	0.005	0.0015	J	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.011	NE	0.02	0.011	U	SW-846:6020
	Potassium	2.1	NE	1	0.3		SW-846:6020
	Selenium	0.0035	0.05	0.01	0.0035	U	SW-846:6020
	Silver	0.00015	NE	0.0005	0.00015	U	SW-846:6020
	Sodium	23	NE	1	0.3		SW-846:6020
	Thallium	0.000084	0.002	0.0001	0.000084	U	SW-846:6020
	Uranium	0.0031	0.03	0.0001	0.00003		SW-846:6020
	Vanadium	0.0058	NE	0.005	0.0015		SW-846:6020
	Zinc	0.048	NE	0.1	0.048	U	SW-846:6020

B = Compound was found in the blank and sample.

J = the reported value was obtained from a reading that was less than the Laboratory Detection Limit but greater than or equal to the Method Detection Limit (MDL).

NE = Not Established

U = the analyte was analyzed for but not detected

Table-1

Groundwater Quality Monitoring Results: Total Target Analyte List Metals plus Uranium

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TJA-7 26-Sep-17	Aluminum	0.094	NE	0.1	0.0087	J	SW-846:6020
	Antimony	0.00007	0.006	0.001	0.000049	J	SW-846:6020
	Arsenic	0.0016	0.01	0.002	0.0016	U	SW-846:6020
	Barium	0.21	2	0.005	0.0016		SW-846:6020
	Beryllium	0.000081	0.004	0.0005	0.000081	U	SW-846:6020
	Cadmium	0.000062	0.005	0.002	0.000062	U	SW-846:6020
	Calcium	68	NE	1	0.077		SW-846:6020
	Chromium	0.0012	0.10	0.01	0.00082	J	SW-846:6020
	Cobalt	0.0011	NE	0.005	0.00016	J	SW-846:6020
	Copper	0.0016	NE	0.02	0.0016	U	SW-846:6020
	Iron	0.26	NE	0.1	0.0047		SW-846:6020
	Lead	0.00025	NE	0.002	0.000096	J	SW-846:6020
	Magnesium	12	NE	0.1	0.012		SW-846:6020
	Manganese	0.0024	NE	0.005	0.00032	J	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.00081	NE	0.02	0.00081	U	SW-846:6020
	Potassium	1.9	NE	1	0.11		SW-846:6020
	Selenium	0.0048	0.05	0.01	0.00018	J	SW-846:6020
	Silver	0.000023	NE	0.0005	0.000023	U	SW-846:6020
	Sodium	18	NE	1	0.18		SW-846:6020
	Thallium	0.000015	0.002	0.0001	0.000015	U	SW-846:6020
	Uranium	0.0016	0.03	0.0001	0.000022		SW-846:6020
	Vanadium	0.0052	NE	0.005	0.00023		SW-846:6020
	Zinc	0.0035	NE	0.1	0.0035	U	SW-846:6020

B = Compound was found in the blank and sample.

J = the reported value was obtained from a reading that was less than the Laboratory Detection Limit but greater than or equal to the Method Detection Limit (MDL).

NE = Not Established

U = the analyte was analyzed for but not detected

Table-1

Groundwater Quality Monitoring Results: Total Target Analyte List Metals plus Uranium

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
WYO-3 29-Aug-17	Aluminum	0.33	NE	0.1	0.014		SW-846:6020
	Antimony	0.001	0.006	0.001	0.0003		SW-846:6020
	Arsenic	0.00091	0.01	0.002	0.0006	J	SW-846:6020
	Barium	0.05	2	0.005	0.0018		SW-846:6020
	Beryllium	0.00015	0.004	0.0005	0.00015	U	SW-846:6020
	Cadmium	0.0006	0.005	0.002	0.0006	U	SW-846:6020
	Calcium	64	NE	1	0.3		SW-846:6020
	Chromium	0.003	0.10	0.01	0.003	U	SW-846:6020
	Cobalt	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Copper	0.006	NE	0.02	0.006	U	SW-846:6020
	Iron	0.03	NE	0.1	0.03	U	SW-846:6020
	Lead	0.00085	NE	0.002	0.00085	U	SW-846:6020
	Magnesium	13	NE	0.1	0.03		SW-846:6020
	Manganese	0.0015	NE	0.005	0.0015	U	SW-846:6020
	Mercury	0.00006	0.002	0.0001	0.00006	U	SW-846:7470A
	Nickel	0.011	NE	0.02	0.011	U	SW-846:6020
	Potassium	2.4	NE	1	0.3		SW-846:6020
	Selenium	0.0035	0.05	0.01	0.0035	U	SW-846:6020
	Silver	0.00015	NE	0.0005	0.00015	U	SW-846:6020
	Sodium	31	NE	1	0.3		SW-846:6020
	Thallium	0.000084	0.002	0.0001	0.000084	U	SW-846:6020
	Uranium	0.003	0.03	0.0001	0.00003		SW-846:6020
	Vanadium	0.0059	NE	0.005	0.0015		SW-846:6020
	Zinc	0.099	NE	0.1	0.048	J	SW-846:6020

B = Compound was found in the blank and sample.

J = the reported value was obtained from a reading that was less than the Laboratory Detection Limit but greater than or equal to the Method Detection Limit (MDL).

NE = Not Established

U = the analyte was analyzed for but not detected

Table-2

Groundwater Quality Monitoring Results: Alkalinity, Anions and Nitrate-Nitrite as Nitrogen

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA1-W-01 17-Aug-17	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	170	NE	20	20		SM2320B
	Alkalinity-HCO3	170	NE	20	20		SM2320B
	Bromide	0.06	NE	0.2	0.06	U	EPA:300.0
	Chloride	15	NE	0.2	0.06		EPA:300.0
	Fluoride	0.37	4	0.1	0.03		EPA:300.0
	Nitrate-Nitrite as Nitrogen	2.6	10	0.1	0.03		EPA:353.2
	Sulfate	78	NE	1	0.15		EPA:300.0
TA1-W-01 17-Aug-17 (Duplicate)	Nitrate-Nitrite as Nitrogen	2.6	10	0.1	0.03		EPA:353.2
TA1-W-02 21-Aug-17	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	160	NE	20	20		SM2320B
	Alkalinity-HCO3	160	NE	20	20		SM2320B
	Bromide	0.06	NE	0.2	0.06	U	EPA:300.0
	Chloride	15	NE	0.2	0.06		EPA:300.0
	Fluoride	0.33	4	0.1	0.03		EPA:300.0
	Nitrate-Nitrite as Nitrogen	1.1	10	0.01	0.003		EPA:353.2
	Sulfate	79	NE	1	0.15		EPA:300.0
TA1-W-04 28-Aug-17	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	170	NE	20	20		SM2320B
	Alkalinity-HCO3	170	NE	20	20		SM2320B
	Bromide	0.2	NE	0.2	0.06	UH	EPA:300.0
	Chloride	12	NE	2	0.6		EPA:300.0
	Fluoride	0.33	4	0.1	0.03		EPA:300.0
	Nitrate-Nitrite as Nitrogen	2	10	0.1	0.03		EPA:353.2
	Sulfate	69	NE	10	1.5		EPA:300.0

Bold = Data results exceed the established EPA MCL.

H = Analytical holding time was exceeded.

NE = Not Established

U = the analyte was analyzed for but not detected

Table-2

Groundwater Quality Monitoring Results: Alkalinity, Anions and Nitrate-Nitrite as Nitrogen

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA1-W-05 22-Aug-17	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	200	NE	20	20		SM2320B
	Alkalinity-HCO3	200	NE	20	20		SM2320B
	Bromide	0.06	NE	0.2	0.06	U	EPA:300.0
	Chloride	11	NE	0.2	0.06		EPA:300.0
	Fluoride	0.24	4	0.1	0.03		EPA:300.0
	Nitrate-Nitrite as Nitrogen	1.2	10	0.01	0.003		EPA:353.2
	Sulfate	100	NE	1	0.15		EPA:300.0
TA1-W-06 6-Sep-17	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	92	NE	20	20		SM2320B
	Alkalinity-HCO3	92	NE	20	20		SM2320B
	Bromide	1	NE	0.2	0.06		EPA:300.0
	Chloride	100	NE	2	0.6		EPA:300.0
	Fluoride	0.24	4	0.1	0.03		EPA:300.0
	Nitrate-Nitrite as Nitrogen	3.4	10	0.1	0.03		EPA:353.2
	Sulfate	210	NE	10	1.5		EPA:300.0
TA1-W-08 30-Aug-17	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	86	NE	20	20		SM2320B
	Alkalinity-HCO3	86	NE	20	20		SM2320B
	Bromide	0.6	NE	2	0.6	U	EPA:300.0
	Chloride	230	NE	5	1.5		EPA:300.0
	Fluoride	0.3	4	1	0.3	U	EPA:300.0
	Nitrate-Nitrite as Nitrogen	7.5	10	0.1	0.03		EPA:353.2
	Sulfate	750	NE	10	1.5		EPA:300.0
TA2-NW1-595 5-Sep-17	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	130	NE	20	20		SM2320B
	Alkalinity-HCO3	130	NE	20	20		SM2320B
	Bromide	0.89	NE	0.2	0.06		EPA:300.0
	Chloride	91	NE	2	0.6		EPA:300.0
	Fluoride	0.25	4	0.1	0.03		EPA:300.0
	Nitrate-Nitrite as Nitrogen	3.8	10	0.1	0.03		EPA:353.2
	Sulfate	95	NE	10	1.5		EPA:300.0

Bold = Data results exceed the established EPA MCL.

H = Analytical holding time was exceeded.

NE = Not Established

U = the analyte was analyzed for but not detected

Table-2

Groundwater Quality Monitoring Results: Alkalinity, Anions and Nitrate-Nitrite as Nitrogen

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA2-W-01 7-Sep-17	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	98	NE	20	20		SM2320B
	Alkalinity-HCO3	98	NE	20	20		SM2320B
	Bromide	1.1	NE	0.2	0.06		EPA:300.0
	Chloride	100	NE	2	0.6		EPA:300.0
	Fluoride	0.27	4	0.1	0.03		EPA:300.0
	Nitrate-Nitrite as Nitrogen	5.2	10	0.1	0.03		EPA:353.2
	Sulfate	60	NE	1	0.15		EPA:300.0
TA2-W-19 19-Sep-17	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	110	NE	20	20		SM2320B
	Alkalinity-HCO3	110	NE	20	20		SM2320B
	Bromide	0.57	NE	0.2	0.06		EPA:300.0
	Chloride	56	NE	2	0.6		EPA:300.0
	Fluoride	0.31	4	0.1	0.03		EPA:300.0
	Nitrate-Nitrite as Nitrogen	**11**	10	0.1	0.03		EPA:353.2
	Sulfate	60	NE	1	0.15		EPA:300.0
TA2-W-26 18-Sep-17	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	83	NE	20	20		SM2320B
	Alkalinity-HCO3	83	NE	20	20		SM2320B
	Bromide	2.2	NE	0.2	0.06		EPA:300.0
	Chloride	210	NE	4	1.2		EPA:300.0
	Fluoride	0.2	4	0.1	0.03		EPA:300.0
	Nitrate-Nitrite as Nitrogen	6.2	10	0.1	0.03		EPA:353.2
	Sulfate	440	NE	10	1.5		EPA:300.0
TA2-W-27 13-Sep-17	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	100	NE	20	20		SM2320B
	Alkalinity-HCO3	100	NE	20	20		SM2320B
	Bromide	1.2	NE	0.2	0.06		EPA:300.0
	Chloride	110	NE	2	0.6		EPA:300.0
	Fluoride	0.25	4	0.1	0.03		EPA:300.0
	Nitrate-Nitrite as Nitrogen	4.5	10	0.1	0.03		EPA:353.2
	Sulfate	140	NE	10	1.5		EPA:300.0

Bold = Data results exceed the established EPA MCL.

H = Analytical holding time was exceeded.

NE = Not Established

U = the analyte was analyzed for but not detected

Table-2

Groundwater Quality Monitoring Results: Alkalinity, Anions and Nitrate-Nitrite as Nitrogen

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TA2-W-28 20-Sep-17	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	120	NE	20	20		SM2320B
	Alkalinity-HCO3	120	NE	20	20		SM2320B
	Bromide	0.38	NE	0.2	0.06		EPA:300.0
	Chloride	33	NE	2	0.6		EPA:300.0
	Fluoride	0.35	4	0.1	0.03		EPA:300.0
	Nitrate-Nitrite as Nitrogen	**16**	10	0.1	0.03		EPA:353.2
	Sulfate	17	NE	1	0.15		EPA:300.0
TJA-2 21-Sep-17	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	110	NE	20	20		SM2320B
	Alkalinity-HCO3	110	NE	20	20		SM2320B
	Bromide	0.66	NE	0.2	0.06		EPA:300.0
	Chloride	67	NE	2	0.6		EPA:300.0
	Fluoride	0.28	4	0.1	0.03		EPA:300.0
	Nitrate-Nitrite as Nitrogen	**11**	10	0.1	0.03		EPA:353.2
	Sulfate	54	NE	1	0.15		EPA:300.0
TJA-2 21-Sep-17 (Duplicate)	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	100	NE	20	20		SM2320B
	Alkalinity-HCO3	100	NE	20	20		SM2320B
	Bromide	0.66	NE	0.2	0.06		EPA:300.0
	Chloride	67	NE	2	0.6		EPA:300.0
	Fluoride	0.28	4	0.1	0.03		EPA:300.0
	Nitrate-Nitrite as Nitrogen	**12**	10	1	0.3		EPA:353.2
	Sulfate	54	NE	1	0.15		EPA:300.0
TJA-3 14-Sep-17	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	170	NE	20	20		SM2320B
	Alkalinity-HCO3	170	NE	20	20		SM2320B
	Bromide	0.06	NE	0.2	0.06	U	EPA:300.0
	Chloride	13	NE	0.2	0.06		EPA:300.0
	Fluoride	0.28	4	0.1	0.03		EPA:300.0
	Nitrate-Nitrite as Nitrogen	3	10	0.1	0.03		EPA:353.2
	Sulfate	79	NE	1	0.15		EPA:300.0

Bold = Data results exceed the established EPA MCL.

H = Analytical holding time was exceeded.

NE = Not Established

U = the analyte was analyzed for but not detected

Table-2

Groundwater Quality Monitoring Results: Alkalinity, Anions and Nitrate-Nitrite as Nitrogen

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TJA-4 27-Sep-17	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	140	NE	20	20		SM2320B
	Alkalinity-HCO3	140	NE	20	20		SM2320B
	Bromide	0.23	NE	0.2	0.06		EPA:300.0
	Chloride	25	NE	1	0.3		EPA:300.0
	Fluoride	0.31	4	0.1	0.03		EPA:300.0
	Nitrate-Nitrite as Nitrogen	**32**	10	1	0.3		EPA:353.2
	Sulfate	17	NE	1	0.15		EPA:300.0
TJA-6 13-Sep-17	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	160	NE	20	20		SM2320B
	Alkalinity-HCO3	160	NE	20	20		SM2320B
	Bromide	0.06	NE	0.2	0.06	U	EPA:300.0
	Chloride	15	NE	0.2	0.06		EPA:300.0
	Fluoride	0.33	4	0.1	0.03		EPA:300.0
	Nitrate-Nitrite as Nitrogen	2.8	10	0.1	0.03		EPA:353.2
	Sulfate	64	NE	1	0.15		EPA:300.0
TJA-7 26-Sep-17	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	130	NE	20	20		SM2320B
	Alkalinity-HCO3	130	NE	20	20		SM2320B
	Bromide	0.28	NE	0.2	0.06		EPA:300.0
	Chloride	24	NE	1	0.3		EPA:300.0
	Fluoride	0.29	4	0.1	0.03		EPA:300.0
	Nitrate-Nitrite as Nitrogen	**24**	10	1	0.3		EPA:353.2
	Sulfate	23	NE	1	0.15		EPA:300.0
WYO-3 29-Aug-17	Alkalinity-CO3	20	NE	20	20	U	SM2320B
	Alkalinity-CO3+HCO3	150	NE	20	20		SM2320B
	Alkalinity-HCO3	150	NE	20	20		SM2320B
	Bromide	0.06	NE	0.2	0.06	U	EPA:300.0
	Chloride	16	NE	2	0.6		EPA:300.0
	Fluoride	0.42	4	0.1	0.03		EPA:300.0
	Nitrate-Nitrite as Nitrogen	2.2	10	0.1	0.03		EPA:353.2
	Sulfate	91	NE	10	1.5		EPA:300.0

Bold = Data results exceed the established EPA MCL.

H = Analytical holding time was exceeded.

NE = Not Established

U = the analyte was analyzed for but not detected

Table-3

Groundwater Quality Monitoring Results: Detected Volatile Organic Compounds

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (µg/L)	EPA MCL (µg/L)	Laboratory Detection Limit (µg/L)	MDL (µg/L)	Laboratory Qualifier	Analytical Method
TA1-W-04 28-Aug-17	Trichloro-1,2,2-trifluoroethane[1,1,2-]	0.67	NE	1	0.3	J	SW-846:8260B
TA1-W-06 6-Sep-17	Dichloroethene[1,1-]	1.2	7	1	0.3		SW-846:8260B
	Trichloroethene	0.5	5	1	0.31	J	SW-846:8260B
TA1-W-08 30-Aug-17	Trichloro-1,2,2-trifluoroethane[1,1,2-]	0.39	NE	1	0.3	J	SW-846:8260B
TA2-W-01 7-Sep-17	Tetrachloroethene	0.41	5	1	0.3	J	SW-846:8260B
	Trichloroethene	1.6	5	1	0.31		SW-846:8260B
TA2-W-19 19-Sep-17	Trichloroethene	2	5	1	0.31		SW-846:8260B
TA2-W-26 18-Sep-17	Acetone	15	NE	10	3		SW-846:8260B
	Chloromethane	1.3	NE	1	0.3		SW-846:8260B
	Dichloroethene[cis-1,2-]	0.43	70	1	0.33	J	SW-846:8260B
	Tetrachloroethene	0.81	5	1	0.3	J	SW-846:8260B
	Trichloroethene	1.1	5	1	0.31		SW-846:8260B
TA2-W-27 13-Sep-17	Dichloroethene[1,1-]	0.32	7	1	0.3	J	SW-846:8260B
	Tetrachloroethene	1.6	5	1	0.3		SW-846:8260B
	Trichloroethene	1.3	5	1	0.31		SW-846:8260B
TA2-W-28 20-Sep-17	Acetone	13	NE	10	3		SW-846:8260B
	Chloromethane	1.4	NE	1	0.3		SW-846:8260B
TJA-2 21-Sep-17	Acetone	14	NE	10	3		SW-846:8260B
	Chloromethane	1.4	NE	1	0.3		SW-846:8260B
	Dichloroethane[1,1-]	0.43	NE	1	0.3	J	SW-846:8260B
	Dichloroethene[cis-1,2-]	0.51	70	1	0.33	J	SW-846:8260B
	Trichloroethene	4.1	5	1	0.31		SW-846:8260B
TJA-2 21-Sep-17 (Duplicate)	Acetone	12	NE	10	3		SW-846:8260B
	Chloromethane	2.7	NE	1	0.3		SW-846:8260B
	Dichloroethane[1,1-]	0.45	NE	1	0.3	J	SW-846:8260B
	Dichloroethene[cis-1,2-]	0.51	70	1	0.33	J	SW-846:8260B
	Trichloroethene	4.5	5	1	0.31		SW-846:8260B
TJA-3 14-Sep-17	Trichloroethene	0.4	5	1	0.31	J	SW-846:8260B
TJA-4 27-Sep-17	Acetone	5.3	NE	10	3	J	SW-846:8260B
	Chloromethane	0.94	NE	1	0.3	J	SW-846:8260B

J = The reported value was obtained from the reading that was less than the Reporting Limit but greater than or equal to the Method Detection Limit (MDL).

NE = Not Established

Table-3

Groundwater Quality Monitoring Results: Detected Volatile Organic Compounds

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Result (µg/L)	EPA MCL (µg/L)	Laboratory Detection Limit (µg/L)	MDL (µg/L)	Laboratory Qualifier	Analytical Method
TJA-6 13-Sep-17	Carbon Disulfide	0.49	NE	1	0.3	J	SW-846:8260B
	Toluene	0.39	1000	1	0.31	J	SW-846:8260B
TJA-7 26-Sep-17	Acetone	6.2	NE	10	3	J	SW-846:8260B
	Chloromethane	0.84	NE	1	0.3	J	SW-846:8260B
	Trichloroethene	2.6	5	1	0.31		SW-846:8260B
WYO-3 29-Aug-17	Trichloro-1,2,2-trifluoroethane[1,1,2-]	0.52	NE	1	0.3	J	SW-846:8260B

J = The reported value was obtained from the reading that was less than the Reporting Limit but greater than or equal to the Method Detection Limit (MDL).

NE = Not Established

Table-4

Groundwater Quality Monitoring Results: Method Detection Limits for Volatile Organic Compounds by Method SW846:8260B

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Analyte	MDL (µg/L)
Acetone	3
Benzene	0.32
Bromobenzene	0.3
Bromochloromethane	0.32
Bromodichloromethane	0.35
Bromoform	0.34
Bromomethane	0.3
Butanone[2-]	3
Butylbenzene[n-]	0.3
Butylbenzene[sec-]	0.3
Butylbenzene[tert-]	0.3
Carbon Disulfide	0.3
Carbon Tetrachloride	0.32
Chlorobenzene	0.3
Chlorodibromomethane	0.35
Chloroethane	0.32
Chloroform	0.3
Chlorohexane[1-]	0.3
Chloromethane	0.3
Chlorotoluene[2-]	0.3
Chlorotoluene[4-]	0.3
Dibromo-3-Chloropropane[1,2-]	0.66
Dibromoethane[1,2-]	0.3
Dibromomethane	0.31
Dichlorobenzene[1,2-]	0.3
Dichlorobenzene[1,3-]	0.3
Dichlorobenzene[1,4-]	0.3
Dichlorodifluoromethane	0.32
Dichloroethane[1,1-]	0.3
Dichloroethane[1,2-]	0.3
Dichloroethene[1,1-]	0.3
Dichloroethene[cis-1,2-]	0.33
Dichloroethene[trans-1,2-]	0.33
Dichloropropane[1,2-]	0.3
Dichloropropane[1,3-]	0.3

Analyte	MDL (µg/L)
Dichloropropane[2,2-]	0.33
Dichloropropene[1,1-]	0.3
Dichloropropene[cis-1,3-]	0.33
Dichloropropene[trans-1,3-]	0.33
Ethylbenzene	0.31
Hexachlorobutadiene	0.3
Hexanone[2-]	3
Iodomethane	0.3
Isopropylbenzene	0.3
Isopropyltoluene[4-]	0.3
Methyl tert-Butyl Ether	0.31
Methyl-2-pentanone[4-]	3
Methylene Chloride	0.3
Naphthalene	0.3
Propylbenzene[1-]	0.3
Styrene	0.32
Tetrachloroethane[1,1,1,2-]	0.3
Tetrachloroethane[1,1,2,2-]	0.3
Tetrachloroethene	0.3
Toluene	0.31
Trichloro-1,2,2-trifluoroethane[1,1,2-]	0.3
Trichlorobenzene[1,2,3-]	0.3
Trichlorobenzene[1,2,4-]	0.3
Trichloroethane[1,1,1-]	0.3
Trichloroethane[1,1,2-]	0.3
Trichloroethene	0.31
Trichlorofluoromethane	0.31
Trichloropropane[1,2,3-]	0.3
Trimethylbenzene[1,2,4-]	0.3
Trimethylbenzene[1,3,5-]	0.3
Vinyl acetate	0.78
Vinyl Chloride	0.31
Xylene[1,2-]	0.31
Xylene[1,3-]+Xylene[1,4-]	0.31

Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TA1-W-01 17-Aug-17	Actinium-228	14	±	5.3	NE	17	U	EPA:901.1
	Americium-241	0.77	±	7.8	NE	26	U	EPA:901.1
	Beryllium-7	6.2	±	14	NE	47	U	EPA:901.1
	Bismuth-212	39	±	19	NE	62	U	EPA:901.1
	Bismuth-214	-3.6	±	6	NE	20	U	EPA:901.1
	Cesium-134	-1.2	±	1.5	NE	5.1	U	EPA:901.1
	Cesium-137	2	±	1.3	NE	4.3	U	EPA:901.1
	Cobalt-60	1.9	±	1.6	NE	5.4	U	EPA:901.1
	Gross alpha	2.7	±	0.37	15 pCi/L	0.79		EPA:900
	Gross beta	2.8	±	0.43	4 mrem/yr	1.1		EPA:900
	Iodine-131	-10	±	13	NE	44	U	EPA:901.1
	Lead-212	-0.32	±	4.3	NE	14	U	EPA:901.1
	Lead-214	7.5	±	2.6	NE	8.3	U	EPA:901.1
	Potassium-40	-34	±	37	NE	130	U	EPA:901.1
	Protactinium-234m	280	±	240	NE	790	U	EPA:901.1
	Sodium-22	-1.2	±	1.7	NE	5.9	U	EPA:901.1
	Thallium-208	1.6	±	2.5	NE	8.4	U	EPA:901.1
	Thorium-234	-3.6	±	39	NE	130	U	EPA:901.1
	Tritium	-170	±	110	NE	360	U	EPA:906.0

NE = Not Established

U = Result is less than the sample specific MDA or less than the associated TPU.

[a] Activity = Negative numbers indicate the sample count or result was less than the instrument background; result is below the Minimum Detectable Activity (MDA).

Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TA1-W-02 21-Aug-17	Actinium-228	19	±	5.8	NE	18		EPA:901.1
	Americium-241	-17	±	22	NE	74	U	EPA:901.1
	Beryllium-7	-1.8	±	13	NE	44	U	EPA:901.1
	Bismuth-212	42	±	21	NE	70	U	EPA:901.1
	Bismuth-214	15	±	3.1	NE	9.1		EPA:901.1
	Cesium-134	-5.6	±	1.5	NE	5.2	U	EPA:901.1
	Cesium-137	2.5	±	1.4	NE	4.4	U	EPA:901.1
	Cobalt-60	-1.8	±	1.7	NE	6.1	U	EPA:901.1
	Gross alpha	2.5	±	0.36	15 pCi/L	0.82		EPA:900
	Gross beta	4.1	±	0.5	4 mrem/yr	1.2		EPA:900
	Iodine-131	10	±	9.1	NE	30	U	EPA:901.1
	Lead-212	-0.51	±	4.1	NE	14	U	EPA:901.1
	Lead-214	10	±	2.7	NE	8.2		EPA:901.1
	Potassium-40	30	±	42	NE	140	U	EPA:901.1
	Protactinium-234m	88	±	250	NE	860	U	EPA:901.1
	Sodium-22	1.8	±	1.7	NE	5.6	U	EPA:901.1
	Thallium-208	5.4	±	1.5	NE	4.7		EPA:901.1
	Thorium-234	2	±	46	NE	150	U	EPA:901.1
	Tritium	-89	±	110	NE	360	U	EPA:906.0

NE = Not Established

U = Result is less than the sample specific MDA or less than the associated TPU.

[a] Activity = Negative numbers indicate the sample count or result was less than the instrument background; result is below the Minimum Detectable Activity (MDA).

Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TA1-W-04 28-Aug-17	Actinium-228	3.6	±	12	NE	41	U	EPA:901.1
	Americium-241	18	±	15	NE	49	U	EPA:901.1
	Beryllium-7	-5.5	±	13	NE	44	U	EPA:901.1
	Bismuth-212	2.5	±	22	NE	73	U	EPA:901.1
	Bismuth-214	7.3	±	5.2	NE	24	U	EPA:901.1
	Cesium-134	-3.1	±	1.4	NE	5	U	EPA:901.1
	Cesium-137	-3.5	±	1.6	NE	5.6	U	EPA:901.1
	Cobalt-60	-1.8	±	1.5	NE	5.5	U	EPA:901.1
	Gross alpha	2.8	±	0.4	15 pCi/L	0.84		EPA:900
	Gross beta	3.8	±	0.49	4 mrem/yr	1.2		EPA:900
	Iodine-131	1.7	±	7.4	NE	25	U	EPA:901.1
	Lead-212	1.2	±	4.6	NE	15	U	EPA:901.1
	Lead-214	4.7	±	3	NE	9.8	U	EPA:901.1
	Potassium-40	-19	±	51	NE	170	U	EPA:901.1
	Protactinium-234m	460	±	250	NE	810	U	EPA:901.1
	Sodium-22	0.094	±	1.7	NE	5.7	U	EPA:901.1
	Thallium-208	4.6	±	1.5	NE	4.8	U	EPA:901.1
	Thorium-234	12	±	50	NE	170	U	EPA:901.1
	Tritium	13	±	110	NE	360	U	EPA:906.0

NE = Not Established

U = Result is less than the sample specific MDA or less than the associated TPU.

[a] Activity = Negative numbers indicate the sample count or result was less than the instrument background; result is below the Minimum Detectable Activity (MDA).

Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TA1-W-05 22-Aug-17	Actinium-228	12	±	5.7	NE	19	U	EPA:901.1
	Americium-241	28	±	14	NE	45	U	EPA:901.1
	Beryllium-7	-16	±	13	NE	44	U	EPA:901.1
	Bismuth-212	13	±	21	NE	71	U	EPA:901.1
	Bismuth-214	10	±	5.2	NE	23	U	EPA:901.1
	Cesium-134	1.4	±	1.9	NE	6.4	U	EPA:901.1
	Cesium-137	0.68	±	1.5	NE	5.1	U	EPA:901.1
	Cobalt-60	0	±	1.5	NE	5.2	U	EPA:901.1
	Gross alpha	3.9	±	0.61	15 pCi/L	1.4		EPA:900
	Gross beta	3.3	±	0.44	4 mrem/yr	1.1		EPA:900
	Iodine-131	6.4	±	11	NE	36	U	EPA:901.1
	Lead-212	4.8	±	2.1	NE	6.9	U	EPA:901.1
	Lead-214	8.6	±	2.9	NE	9.1	U	EPA:901.1
	Potassium-40	0.055	±	50	NE	170	U	EPA:901.1
	Protactinium-234m	50	±	230	NE	790	U	EPA:901.1
	Sodium-22	1.7	±	1.6	NE	5.3	U	EPA:901.1
	Thallium-208	4.8	±	1.5	NE	4.8	U	EPA:901.1
	Thorium-234	20	±	47	NE	160	U	EPA:901.1
	Tritium	-14	±	110	NE	360	U	EPA:906.0

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[a] Activity = Negative numbers indicate the sample count or result was less than the instrument background; result is below the Minimum Detectable Activity (MDA).

Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TA1-W-06 6-Sep-17	Actinium-228	17	±	7.3	NE	23	U	EPA:901.1
	Americium-241	12	±	10	NE	33	U	EPA:901.1
	Beryllium-7	-5.5	±	16	NE	54	U	EPA:901.1
	Bismuth-212	43	±	24	NE	78	U	EPA:901.1
	Bismuth-214	0.42	±	6.7	NE	22	U	EPA:901.1
	Cesium-134	-1.8	±	1.8	NE	6	U	EPA:901.1
	Cesium-137	-1.8	±	1.8	NE	6.4	U	EPA:901.1
	Cobalt-60	-0.16	±	2.2	NE	7.5	U	EPA:901.1
	Gross alpha	1.4	±	0.38	15 pCi/L	1.1		EPA:900
	Gross beta	1.7	±	0.54	4 mrem/yr	1.7		EPA:900
	Iodine-131	14	±	14	NE	48	U	EPA:901.1
	Lead-212	-1.7	±	4.6	NE	15	U	EPA:901.1
	Lead-214	7.6	±	3.1	NE	10	U	EPA:901.1
	Potassium-40	-23	±	54	NE	180	U	EPA:901.1
	Protactinium-234m	160	±	290	NE	990	U	EPA:901.1
	Sodium-22	4.7	±	2.2	NE	7	U	EPA:901.1
	Thallium-208	4	±	1.7	NE	5.3	U	EPA:901.1
	Thorium-234	-6.1	±	44	NE	150	U	EPA:901.1
	Tritium	-71	±	94	NE	320	U	EPA:906.0

NE = Not Established

U = Result is less than the sample specific MDA or less than the associated TPU.

[a] Activity = Negative numbers indicate the sample count or result was less than the instrument background; result is below the Minimum Detectable Activity (MDA).

Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TA1-W-08 30-Aug-17	Actinium-228	16	±	5.5	NE	18	U	EPA:901.1
	Americium-241	-16	±	49	NE	160	U	EPA:901.1
	Beryllium-7	-1.2	±	12	NE	41	U	EPA:901.1
	Bismuth-212	53	±	19	NE	59	U	EPA:901.1
	Bismuth-214	5.9	±	5.5	NE	18	U	EPA:901.1
	Cesium-134	-0.22	±	1.5	NE	4.9	U	EPA:901.1
	Cesium-137	-0.03	±	1.3	NE	4.4	U	EPA:901.1
	Cobalt-60	-0.35	±	1.6	NE	5.4	U	EPA:901.1
	Gross alpha	1.2	±	1.3	15 pCi/L	4.3	U	EPA:900
	Gross beta	0.58	±	1.7	4 mrem/yr	5.8	U	EPA:900
	Iodine-131	0.54	±	5.2	NE	18	U	EPA:901.1
	Lead-212	-5.8	±	4.9	NE	16	U	EPA:901.1
	Lead-214	1.6	±	5.3	NE	18	U	EPA:901.1
	Potassium-40	32	±	43	NE	140	U	EPA:901.1
	Protactinium-234m	20	±	230	NE	780	U	EPA:901.1
	Sodium-22	3.1	±	1.5	NE	4.8	U	EPA:901.1
	Thallium-208	3.8	±	1.5	NE	4.7	U	EPA:901.1
	Thorium-234	-24	±	73	NE	240	U	EPA:901.1
	Tritium	34	±	100	NE	340	U	EPA:906.0

NE = Not Established

U = Result is less than the sample specific MDA or less than the associated TPU.

[a] Activity = Negative numbers indicate the sample count or result was less than the instrument background; result is below the Minimum Detectable Activity (MDA).

Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TA2-NW1-595 5-Sep-17	Actinium-228	10	±	10	NE	34	U	EPA:901.1
	Americium-241	-1.4	±	12	NE	41	U	EPA:901.1
	Beryllium-7	-8.1	±	15	NE	52	U	EPA:901.1
	Bismuth-212	-2	±	22	NE	75	U	EPA:901.1
	Bismuth-214	3.9	±	6.8	NE	22	U	EPA:901.1
	Cesium-134	-0.93	±	2.2	NE	7.4	U	EPA:901.1
	Cesium-137	1.8	±	1.5	NE	4.8	U	EPA:901.1
	Cobalt-60	-3.1	±	1.9	NE	6.6	U	EPA:901.1
	Gross alpha	1.9	±	0.43	15 pCi/L	1.2		EPA:900
	Gross beta	3.8	±	0.5	4 mrem/yr	1.2		EPA:900
	Iodine-131	11	±	14	NE	45	U	EPA:901.1
	Lead-212	2.1	±	4.1	NE	13	U	EPA:901.1
	Lead-214	-3.4	±	5.6	NE	19	U	EPA:901.1
	Potassium-40	-50	±	47	NE	160	U	EPA:901.1
	Protactinium-234m	450	±	280	NE	900	U	EPA:901.1
	Sodium-22	2.2	±	1.8	NE	5.9	U	EPA:901.1
	Thallium-208	6.8	±	1.6	NE	4.7		EPA:901.1
	Thorium-234	-16	±	45	NE	150	U	EPA:901.1
	Tritium	-41	±	95	NE	320	U	EPA:906.0

NE = Not Established

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[a] Activity = Negative numbers indicate the sample count or result was less than the instrument background; result is below the Minimum Detectable Activity (MDA).

Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TA2-W-01 7-Sep-17	Actinium-228	15	±	5.1	NE	16	U	EPA:901.1
	Americium-241	-38	±	71	NE	240	U	EPA:901.1
	Beryllium-7	9.2	±	12	NE	42	U	EPA:901.1
	Bismuth-212	31	±	18	NE	58	U	EPA:901.1
	Bismuth-214	4.1	±	6	NE	20	U	EPA:901.1
	Cesium-134	-3.1	±	2.1	NE	7.1	U	EPA:901.1
	Cesium-137	-0.84	±	1.1	NE	4	U	EPA:901.1
	Cobalt-60	2.7	±	1.4	NE	4.6	U	EPA:901.1
	Gross alpha	0.77	±	0.25	15 pCi/L	0.74		EPA:900
	Gross beta	2.4	±	0.42	4 mrem/yr	1.2		EPA:900
	Iodine-131	24	±	10	NE	32	U	EPA:901.1
	Lead-212	0.35	±	4.2	NE	14	U	EPA:901.1
	Lead-214	-2.9	±	6.1	NE	20	U	EPA:901.1
	Potassium-40	-3	±	37	NE	120	U	EPA:901.1
	Protactinium-234m	430	±	220	NE	700	U	EPA:901.1
	Sodium-22	0.57	±	1.4	NE	4.6	U	EPA:901.1
	Thallium-208	4.2	±	1.4	NE	4.4	U	EPA:901.1
	Thorium-234	9.7	±	67	NE	220	U	EPA:901.1
	Tritium	2.2	±	94	NE	320	U	EPA:906.0

NE = Not Established

U = Result is less than the sample specific MDA or less than the associated TPU.

[a] Activity = Negative numbers indicate the sample count or result was less than the instrument background; result is below the Minimum Detectable Activity (MDA).

Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TA2-W-19 19-Sep-17	Actinium-228	16	±	4.9	NE	18	U	EPA:901.1
	Americium-241	2.7	±	1.6	NE	5.2	U	EPA:901.1
	Beryllium-7	16	±	11	NE	35	U	EPA:901.1
	Bismuth-212	5.2	±	18	NE	63	U	EPA:901.1
	Bismuth-214	29	±	5.1	NE	20		EPA:901.1
	Cesium-134	-3.7	±	1.4	NE	4.9	U	EPA:901.1
	Cesium-137	-0.45	±	1.4	NE	4.9	U	EPA:901.1
	Cobalt-60	-0.93	±	1.5	NE	5.3	U	EPA:901.1
	Gross alpha	1.6	±	0.34	15 pCi/L	0.92		EPA:900
	Gross beta	2	±	0.37	4 mrem/yr	1.1		EPA:900
	Iodine-131	2.4	±	2.4	NE	7.9	U	EPA:901.1
	Lead-212	2.4	±	3.7	NE	12	U	EPA:901.1
	Lead-214	21	±	4.7	NE	18		EPA:901.1
	Potassium-40	2.5	±	38	NE	130	U	EPA:901.1
	Protactinium-234m	-1.2	±	240	NE	830	U	EPA:901.1
	Sodium-22	2.4	±	1.5	NE	4.8	U	EPA:901.1
	Thallium-208	4.8	±	1.5	NE	4.6		EPA:901.1
	Thorium-234	25	±	24	NE	79	U	EPA:901.1
	Tritium	-180	±	91	NE	310	U	EPA:906.0

NE = Not Established

U = Result is less than the sample specific MDA or less than the associated TPU.

[a] Activity = Negative numbers indicate the sample count or result was less than the instrument background; result is below the Minimum Detectable Activity (MDA).

Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TA2-W-26 18-Sep-17	Actinium-228	12	±	4.8	NE	15	U	EPA:901.1
	Americium-241	0.81	±	1.5	NE	5	U	EPA:901.1
	Beryllium-7	-7	±	8.6	NE	30	U	EPA:901.1
	Bismuth-212	17	±	18	NE	58	U	EPA:901.1
	Bismuth-214	23	±	4.2	NE	17		EPA:901.1
	Cesium-134	-1.9	±	1.1	NE	4	U	EPA:901.1
	Cesium-137	-0.42	±	1.1	NE	3.8	U	EPA:901.1
	Cobalt-60	-1	±	1.3	NE	4.7	U	EPA:901.1
	Gross alpha	3.2	±	0.79	15 pCi/L	2.2		EPA:900
	Gross beta	3	±	0.92	4 mrem/yr	2.9		EPA:900
	Iodine-131	4.7	±	2.4	NE	7.8	U	EPA:901.1
	Lead-212	0.1	±	3.4	NE	11	U	EPA:901.1
	Lead-214	19	±	3.9	NE	14		EPA:901.1
	Potassium-40	12	±	35	NE	120	U	EPA:901.1
	Protactinium-234m	-230	±	230	NE	780	U	EPA:901.1
	Sodium-22	-0.07	±	1.3	NE	4.6	U	EPA:901.1
	Thallium-208	3.3	±	2.3	NE	7.6	U	EPA:901.1
	Thorium-234	-17	±	22	NE	73	U	EPA:901.1
	Tritium	-39	±	92	NE	310	U	EPA:906.0

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Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TA2-W-27 13-Sep-17	Actinium-228	-13	±	20	NE	67	U	EPA:901.1
	Americium-241	-7.6	±	10	NE	34	U	EPA:901.1
	Beryllium-7	-19	±	17	NE	57	U	EPA:901.1
	Bismuth-212	45	±	23	NE	76	U	EPA:901.1
	Bismuth-214	1.3	±	8.4	NE	28	U	EPA:901.1
	Cesium-134	-1.6	±	2.3	NE	7.9	U	EPA:901.1
	Cesium-137	-2.7	±	1.8	NE	6.4	U	EPA:901.1
	Cobalt-60	2.5	±	2.2	NE	7.2	U	EPA:901.1
	Gross alpha	1.8	±	0.41	15 pCi/L	1.1		EPA:900
	Gross beta	2.1	±	0.48	4 mrem/yr	1.4		EPA:900
	Iodine-131	-2.3	±	22	NE	75	U	EPA:901.1
	Lead-212	0.43	±	3.8	NE	13	U	EPA:901.1
	Lead-214	10	±	3	NE	9.6		EPA:901.1
	Potassium-40	-76	±	49	NE	170	U	EPA:901.1
	Protactinium-234m	950	±	300	NE	940		EPA:901.1
	Sodium-22	0.3	±	2.1	NE	7.2	U	EPA:901.1
	Thallium-208	4.2	±	1.7	NE	5.5	U	EPA:901.1
	Thorium-234	-30	±	54	NE	180	U	EPA:901.1
	Tritium	30	±	99	NE	330	U	EPA:906.0

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Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TA2-W-28 20-Sep-17	Actinium-228	14	±	5.3	NE	17	U	EPA:901.1
	Americium-241	-69	±	36	NE	120	U	EPA:901.1
	Beryllium-7	14	±	9.9	NE	33	U	EPA:901.1
	Bismuth-212	20	±	17	NE	55	U	EPA:901.1
	Bismuth-214	20	±	5.5	NE	21	U	EPA:901.1
	Cesium-134	-1.9	±	1.4	NE	4.7	U	EPA:901.1
	Cesium-137	-1.9	±	1.3	NE	4.4	U	EPA:901.1
	Cobalt-60	1.6	±	1.4	NE	4.5	U	EPA:901.1
	Gross alpha	2.3	±	0.32	15 pCi/L	0.66		EPA:900
	Gross beta	2.6	±	0.4	4 mrem/yr	1.1		EPA:900
	Iodine-131	-1.7	±	2.2	NE	7.3	U	EPA:901.1
	Lead-212	0.059	±	4	NE	13	U	EPA:901.1
	Lead-214	21	±	6.7	NE	21	U	EPA:901.1
	Potassium-40	34	±	39	NE	130	U	EPA:901.1
	Protactinium-234m	430	±	170	NE	540	U	EPA:901.1
	Sodium-22	-0.49	±	1.4	NE	4.9	U	EPA:901.1
	Thallium-208	5.4	±	1.4	NE	4.2		EPA:901.1
	Thorium-234	53	±	58	NE	190	U	EPA:901.1
	Tritium	-58	±	91	NE	310	U	EPA:906.0

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Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TJA-2 21-Sep-17	Actinium-228	14	±	6.4	NE	27	U	EPA:901.1
	Americium-241	3.3	±	1.6	NE	5.2	U	EPA:901.1
	Beryllium-7	-3.6	±	8.3	NE	28	U	EPA:901.1
	Bismuth-212	53	±	17	NE	55	U	EPA:901.1
	Bismuth-214	26	±	5.2	NE	18		EPA:901.1
	Cesium-134	-0.19	±	1.2	NE	3.9	U	EPA:901.1
	Cesium-137	-2.3	±	1.6	NE	5.6	U	EPA:901.1
	Cobalt-60	-2.5	±	1.4	NE	5	U	EPA:901.1
	Gross alpha	1.6	±	0.4	15 pCi/L	1.1		EPA:900
	Gross beta	2.7	±	0.4	4 mrem/yr	1		EPA:900
	Iodine-131	0.43	±	2	NE	6.9	U	EPA:901.1
	Lead-212	3.1	±	3.6	NE	12	U	EPA:901.1
	Lead-214	23	±	4.1	NE	15		EPA:901.1
	Potassium-40	1.9	±	35	NE	120	U	EPA:901.1
	Protactinium-234m	-9.7	±	220	NE	760	U	EPA:901.1
	Sodium-22	0.78	±	1.3	NE	4.4	U	EPA:901.1
	Thallium-208	2.7	±	2.2	NE	7.5	U	EPA:901.1
	Thorium-234	-35	±	22	NE	75	U	EPA:901.1
	Tritium	-69	±	91	NE	310	U	EPA:906.0

NE = Not Established

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Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TJA-2 21-Sep-17 (Duplicate)	Actinium-228	16	±	5.2	NE	16	U	EPA:901.1
	Americium-241	43	±	35	NE	120	U	EPA:901.1
	Beryllium-7	4.9	±	12	NE	41	U	EPA:901.1
	Bismuth-212	17	±	18	NE	58	U	EPA:901.1
	Bismuth-214	3.9	±	6.1	NE	20	U	EPA:901.1
	Cesium-134	-3.9	±	1.4	NE	5	U	EPA:901.1
	Cesium-137	-0.33	±	1.3	NE	4.6	U	EPA:901.1
	Cobalt-60	0.65	±	1.4	NE	4.7	U	EPA:901.1
	Gross alpha	1.6	±	0.34	15 pCi/L	0.92		EPA:900
	Gross beta	1.8	±	0.5	4 mrem/yr	1.6		EPA:900
	Iodine-131	6	±	8.3	NE	28	U	EPA:901.1
	Lead-212	-0.39	±	4.4	NE	15	U	EPA:901.1
	Lead-214	-8.4	±	5	NE	17	U	EPA:901.1
	Potassium-40	-22	±	36	NE	120	U	EPA:901.1
	Protactinium-234m	-59	±	210	NE	720	U	EPA:901.1
	Sodium-22	1.3	±	1.4	NE	4.5	U	EPA:901.1
	Thallium-208	1.2	±	3.8	NE	12	U	EPA:901.1
	Thorium-234	-71	±	75	NE	250	U	EPA:901.1
	Tritium	-160	±	91	NE	310	U	EPA:906.0

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Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TJA-3 14-Sep-17	Actinium-228	18	±	4.1	NE	17		EPA:901.1
	Americium-241	-3.6	±	37	NE	120	U	EPA:901.1
	Beryllium-7	4.2	±	15	NE	50	U	EPA:901.1
	Bismuth-212	11	±	18	NE	61	U	EPA:901.1
	Bismuth-214	13	±	5.9	NE	19	U	EPA:901.1
	Cesium-134	-0.64	±	1.4	NE	4.8	U	EPA:901.1
	Cesium-137	-0.66	±	1.3	NE	4.6	U	EPA:901.1
	Cobalt-60	-3.6	±	1.4	NE	5.1	U	EPA:901.1
	Gross alpha	2.2	±	0.34	15 pCi/L	0.76		EPA:900
	Gross beta	2.4	±	0.37	4 mrem/yr	0.99		EPA:900
	Iodine-131	-12	±	23	NE	77	U	EPA:901.1
	Lead-212	-0.25	±	4.1	NE	14	U	EPA:901.1
	Lead-214	4	±	6.3	NE	21	U	EPA:901.1
	Potassium-40	5.4	±	37	NE	120	U	EPA:901.1
	Protactinium-234m	380	±	230	NE	740	U	EPA:901.1
	Sodium-22	1.3	±	1.4	NE	4.8	U	EPA:901.1
	Thallium-208	-0.6	±	3	NE	10	U	EPA:901.1
	Thorium-234	13	±	61	NE	200	U	EPA:901.1
	Tritium	-17	±	98	NE	330	U	EPA:906.0

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Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TJA-4 27-Sep-17	Actinium-228	17	±	5.4	NE	17		EPA:901.1
	Americium-241	-45	±	36	NE	120	U	EPA:901.1
	Beryllium-7	12	±	12	NE	40	U	EPA:901.1
	Bismuth-212	45	±	18	NE	56	U	EPA:901.1
	Bismuth-214	8	±	5	NE	20	U	EPA:901.1
	Cesium-134	-3.4	±	1.4	NE	4.8	U	EPA:901.1
	Cesium-137	-2.1	±	1.3	NE	4.7	U	EPA:901.1
	Cobalt-60	-1.8	±	1.4	NE	4.9	U	EPA:901.1
	Gross alpha	1.7	±	0.32	15 pCi/L	0.8		EPA:900
	Gross beta	3.4	±	0.55	4 mrem/yr	1.5		EPA:900
	Iodine-131	3.6	±	6.2	NE	21	U	EPA:901.1
	Lead-212	0.98	±	4.4	NE	14	U	EPA:901.1
	Lead-214	-8.5	±	5.2	NE	17	U	EPA:901.1
	Potassium-40	-0.23	±	37	NE	120	U	EPA:901.1
	Protactinium-234m	390	±	220	NE	730	U	EPA:901.1
	Sodium-22	-1.9	±	1.4	NE	5.1	U	EPA:901.1
	Thallium-208	6.7	±	1.4	NE	4.3		EPA:901.1
	Thorium-234	-23	±	77	NE	260	U	EPA:901.1
	Tritium	-87	±	91	NE	310	U	EPA:906.0

NE = Not Established

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Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TJA-6 13-Sep-17	Actinium-228	20	±	5.2	NE	16		EPA:901.1
	Americium-241	-28	±	44	NE	150	U	EPA:901.1
	Beryllium-7	14	±	14	NE	47	U	EPA:901.1
	Bismuth-212	28	±	18	NE	59	U	EPA:901.1
	Bismuth-214	-5.1	±	7.6	NE	25	U	EPA:901.1
	Cesium-134	-3	±	1.4	NE	4.7	U	EPA:901.1
	Cesium-137	-1.3	±	1.2	NE	4.2	U	EPA:901.1
	Cobalt-60	1.2	±	1.4	NE	4.8	U	EPA:901.1
	Gross alpha	3.3	±	0.39	15 pCi/L	0.69		EPA:900
	Gross beta	3.3	±	0.42	4 mrem/yr	0.98		EPA:900
	Iodine-131	-6.3	±	18	NE	61	U	EPA:901.1
	Lead-212	-4.4	±	4.3	NE	14	U	EPA:901.1
	Lead-214	9.7	±	2.6	NE	8.1		EPA:901.1
	Potassium-40	-9.1	±	40	NE	130	U	EPA:901.1
	Protactinium-234m	120	±	210	NE	710	U	EPA:901.1
	Sodium-22	0.12	±	1.4	NE	4.7	U	EPA:901.1
	Thallium-208	4	±	1.4	NE	4.3	U	EPA:901.1
	Thorium-234	18	±	60	NE	200	U	EPA:901.1
	Tritium	48	±	98	NE	330	U	EPA:906.0

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Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TJA-7 26-Sep-17	Actinium-228	-2.5	±	13	NE	43	U	EPA:901.1
	Americium-241	23	±	9.1	NE	29	U	EPA:901.1
	Beryllium-7	6.3	±	12	NE	40	U	EPA:901.1
	Bismuth-212	21	±	20	NE	66	U	EPA:901.1
	Bismuth-214	3.7	±	7.6	NE	25	U	EPA:901.1
	Cesium-134	-0.016	±	2.2	NE	7.2	U	EPA:901.1
	Cesium-137	-1.7	±	1.3	NE	4.6	U	EPA:901.1
	Cobalt-60	-1	±	1.8	NE	6	U	EPA:901.1
	Gross alpha	1.9	±	0.29	15 pCi/L	0.69		EPA:900
	Gross beta	3.2	±	0.45	4 mrem/yr	1.2		EPA:900
	Iodine-131	1.3	±	6.5	NE	22	U	EPA:901.1
	Lead-212	3.7	±	3.5	NE	12	U	EPA:901.1
	Lead-214	0.38	±	4.7	NE	16	U	EPA:901.1
	Potassium-40	-41	±	42	NE	140	U	EPA:901.1
	Protactinium-234m	270	±	260	NE	850	U	EPA:901.1
	Sodium-22	-3.9	±	1.7	NE	6	U	EPA:901.1
	Thallium-208	4	±	1.5	NE	4.7	U	EPA:901.1
	Thorium-234	-22	±	38	NE	130	U	EPA:901.1
	Tritium	-130	±	91	NE	310	U	EPA:906.0

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Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Emitting Isotopes and Tritium

Sandia National Laboratories/New Mexico: Tijeras Arroyo Groundwater Area of Concern

New Mexico Environment Department DOE Oversight Bureau

August and September 2017

Monitoring Well/ Sample Date	Analyte	Activity [a] (pCi/L)			EPA MCL	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
WYO-3 29-Aug-17	Actinium-228	23	±	4.2	NE	18		EPA:901.1
	Americium-241	-7.2	±	23	NE	76	U	EPA:901.1
	Beryllium-7	-32	±	14	NE	47	U	EPA:901.1
	Bismuth-212	14	±	21	NE	71	U	EPA:901.1
	Bismuth-214	1.4	±	7.9	NE	26	U	EPA:901.1
	Cesium-134	-1.2	±	2	NE	7	U	EPA:901.1
	Cesium-137	-0.68	±	1.4	NE	4.9	U	EPA:901.1
	Cobalt-60	-2.1	±	1.7	NE	6.1	U	EPA:901.1
	Gross alpha	1.9	±	0.37	15 pCi/L	0.97		EPA:900
	Gross beta	2.2	±	0.4	4 mrem/yr	1.1		EPA:900
	Iodine-131	0.93	±	5.9	NE	20	U	EPA:901.1
	Lead-212	-2.6	±	4.2	NE	14	U	EPA:901.1
	Lead-214	9.5	±	2.7	NE	8.4		EPA:901.1
	Potassium-40	43	±	43	NE	140	U	EPA:901.1
	Protactinium-234m	370	±	250	NE	820	U	EPA:901.1
	Sodium-22	0.76	±	1.7	NE	5.8	U	EPA:901.1
	Thallium-208	5.4	±	1.5	NE	4.6		EPA:901.1
	Thorium-234	49	±	48	NE	160	U	EPA:901.1
	Tritium	-45	±	100	NE	350	U	EPA:906.0

NE = Not Established

U = Result is less than the sample specific MDA or less than the associated TPU.

[a] Activity = Negative numbers indicate the sample count or result was less than the instrument background; result is below the Minimum Detectable Activity (MDA).