NEW MEXICO
ENVIRONMENT DEPARTMENT

DOE Oversight Bureau

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RON CURRY
Secretary
JON GOLDSTEIN
Deputy Secretary

April 9, 2009

Karen Agogino
POC/SSO
P.O Box 5400 MS 0184
Albuquerque, New Mexico 87185-5400

Subject: **Groundwater Monitoring at Sandia National Laboratories/New Mexico Tijeras Arroyo Groundwater (TAG), Conducted by NMED/DOE OB for FFY 2009 Q-2, April 9, 2009**

Dear Ms. Agogino:

This letter transmits the subject final report.

The monitoring results are provided to DOE and their release as final to other State of New Mexico and federal agencies, the Pueblos, 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 Chris Armijo at (505)845-5824 or contact me at (505)845-5933.

Sincerely,

Barry S. Birch, CHMM
Program Manager
Sandia Oversight Section

BSB:ca

Enclosure: Data submittal entitled: "Groundwater Monitoring at Sandia National Laboratories/New Mexico Tijeras Arroyo Groundwater (TAG), Conducted by NMED/DOE OB for FFY 2009 Q-2, April 9, 2009" with the following enclosures:
(1) Table-1 Detected Volatile Organic Compound Results
(2) Table-2 Nitrate plus Nitrite Results
(3) Figure-1 TA2-W-19 TCE Concentration
(4) Figure-2 WYO-4 TCE Concentration

(5) Figure-3 TA2-W-19 NPN Concentration
(6) Figure-4 TJA-2 NPN Concentration
(7) Figure-5 TJA-4 NPN Concentration
(8) Figure-6 TA2-SW1-320 NPN Concentration

cc: Gayle Dye, PhD, DOE/NNSA
John Gould, DOE/SSO
Franz Lauffer, SNL/GWPP
Michael Skelly, SNL Groundwater
Thomas Skibitski, Bureau Chief, DOE OB
Barry Birch, Program Manager, DOE OB/SOS
Chris Armijo, Environmental Scientist, DOE OB/SOS

File: SGE42.Groundwater Monitoring.TAG.FFY 2009 Q-2

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Groundwater Monitoring at Sandia National Laboratories/New Mexico Tijeras Arroyo Groundwater (TAG), Conducted by NMED/DOE OB for FFY 2009 Q-2
April 9, 2009

The New Mexico Environment Department (NMED) DOE Oversight Bureau (Bureau) has compiled and assessed groundwater data collected in January 2009. The Bureau collected split ground water samples using Sandia sampling protocols, procedures and equipment to determine contaminant levels and to compare Bureau results with those of Sandia. Samples were collected from Tijeras Arroyo Groundwater (TAG) monitoring wells: TA2-SW1-320, TA2-W-19, TJA-2, TJA-4, and WYO-4. Bureau samples were submitted to an independent analytical laboratory for volatile organic compounds and nitrate plus nitrite analyses. Elevated concentrations of trichloroethylene and nitrates were noted in several wells.

Data Assessment

Data results are compared to applicable Maximum Allowable Concentrations (MACs) from the New Mexico Water Quality Control Commission (WQCC) (20.6.2.3103A NMAC Human Health Standards) and Maximum Contaminant Levels (MCLs) from the EPA National Primary Drinking Water Regulations (40 CFR 141).

Results

Analytical results for detected volatile organic compounds (VOCs) are listed in Table-1. Trichloroethylene (TCE) was detected above the EPA MCL of 5 µg/L at TA2-W-19 (5.4 µg/L) and WYO-4 (8.6 µg/L).

Analytical results for nitrate plus nitrite (NPN) are listed in Table-2. The NPN concentrations were detected above the EPA MCL of 10 mg/L at TA2-SW1-320 (13 mg/L), TA2-W-19 (13 mg/L), TJA-2 (13 mg/L), and TJA-4 (35 mg/L).

Conclusions

Data results from Sandia for FFY 2009 2nd quarter have not yet been received, so there is no direct comparison of analytical results.

Trichloroethylene concentrations exceeded the MCL of 5 µg/L at TA2-W-19 and WYO-4. Since

2003, TCE concentrations have been steady to slightly increasing over time at both monitoring wells.

Nitrate concentrations exceeded the MCL of 10 mg/L at four TAG monitoring wells during 2nd quarter FFY 2009. Since 2003, NPN concentrations at TA2-W-19, TJA-2 and TJA-4 have been stable to slightly increasing over time. Concentrations at TA2-SW1-320 have been slightly decreasing over time.

Response

Questions or comments should be addressed to Barry S. Birch by phone at (505)845-5933, by e-mail at barry.birch@state.nm.us, or to the address in the letterhead.

Enclosure: (1) Table-1 Detected Volatile Organic Compound Results
(2) Table-2 Nitrate plus Nitrite Results
(3) Figure-1 TA2-W-19 TCE Concentration
(4) Figure-2 WYO-4 TCE Concentration
(5) Figure-3 TA2-W-19 NPN Concentration
(6) Figure-4 TJA-2 NPN Concentration
(7) Figure-5 TJA-4 NPN Concentration
(8) Figure-6 TA2-SW1-320 NPN Concentration

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File: SGE42.Groundwater Monitoring.TAG.FFY 2009 Q-2

Table 1- NMED DOE OB FFY 2009 Q-2 Tijeras Arroyo Groundwater Quality Results for Volatile Organic Compounds

Monitoring Well/ Sample Date	Analyte*	Result	MDL	Quantitation Limit	EPA MCL	NMED MAC	Units	Laboratory Qualifier	Analytical Method
TA2-W-19 27-Jan-09	Dichloroethane[1,1-]	0.64	0.17	1	NE	NE	µg/L	J	SW8260_25
	Dichloroethene[cis-1,2-]	0.89	0.17	1	70	NE	µg/L	J	SW8260_25
	Toluene	0.26	0.17	1	1000	750	µg/L	J	SW8260_25
	Trichloroethylene	**5.4**	0.17	1	5	100	µg/L		SW8260_25
TJA-2 26-Jan-09	Dichloroethane[1,1-]	0.62	0.17	1	NE	NE	µg/L	J	SW8260_25
	Dichloroethene[cis-1,2-]	0.85	0.17	1	70	NE	µg/L	J	SW8260_25
	Toluene	0.32	0.17	1	1000	750	µg/L	J	SW8260_25
	Trichloroethylene	3.8	0.17	1	5	100	µg/L		SW8260_25
TJA-4 28-Jan-09	Toluene	0.17	0.17	1	1000	750	µg/L	J	SW8260_25
	Trichloroethylene	0.24	0.17	1	5	100	µg/L	J	SW8260_25
WYO-4 23-Jan-09	1,2-Dichlorobenzene	0.21	0.17	1	NE	NE	µg/L	J	SW8260_25
	Carbon Disulfide	1.5	0.17	1	NE	NE	µg/L		SW8260_25
	Chloromethane	0.35	0.17	1	NE	NE	µg/L	J	SW8260_25
	Dichloroethane[1,1-]	1	0.17	1	NE	NE	µg/L		SW8260_25
	Dichloroethene[cis-1,2-]	2.2	0.17	1	70	NE	µg/L		SW8260_25
	Dichloroethylene[1,1-]	0.19	0.17	1	7	25	µg/L	J	SW8260_25
	Tetrachloroethylene	0.23	0.17	1	5	NE	µg/L	J	SW8260_25
	Toluene	0.36	0.17	1	1000	750	µg/L	J	SW8260_25
	Trichloroethylene	**8.6**	0.17	1	5	100	µg/L		SW8260_25

NOTE: Values in bold exceed the established MCL

* = Only analytes with values above the MDL are listed

NE = not established

J = result is an estimated value

Table 2- NMED DOE OB FFY 2009 Q-2 Tijeras Arroyo Groundwater Quality Results for Nitrate plus Nitrite

Monitoring Well/ Sample Date	Analyte	Result	MDL	Quantitation Limit	EPA MCL	Units	Laboratory Qualifier	Analytical Method
TA2-SW1-320 13-Jan-09	Nitrate-Nitrite as N	**13**	0.055	0.2	10	mg/L		EPA:353.2
TA2-W-19 27-Jan-09	Nitrate-Nitrite as N	**13**	0.028	0.1	10	mg/L		EPA:353.2
TJA-2 26-Jan-09	Nitrate-Nitrite as N	**13**	0.028	0.1	10	mg/L		EPA:353.2
TJA-4 28-Jan-09	Nitrate-Nitrite as N	**35**	0.055	0.2	10	mg/L		EPA:353.2
TJA-4 28-Jan-09 (DUP)	Nitrate-Nitrite as N	**36**	0.055	0.2	10	mg/L		EPA:353.2
WYO-4 23-Jan-09	Nitrate-Nitrite as N	3	0.014	0.05	10	mg/L		EPA:353.2

NOTE: Values in bold exceed the established MCL.

Figure 1
TA2-W-19
TCE Concentration

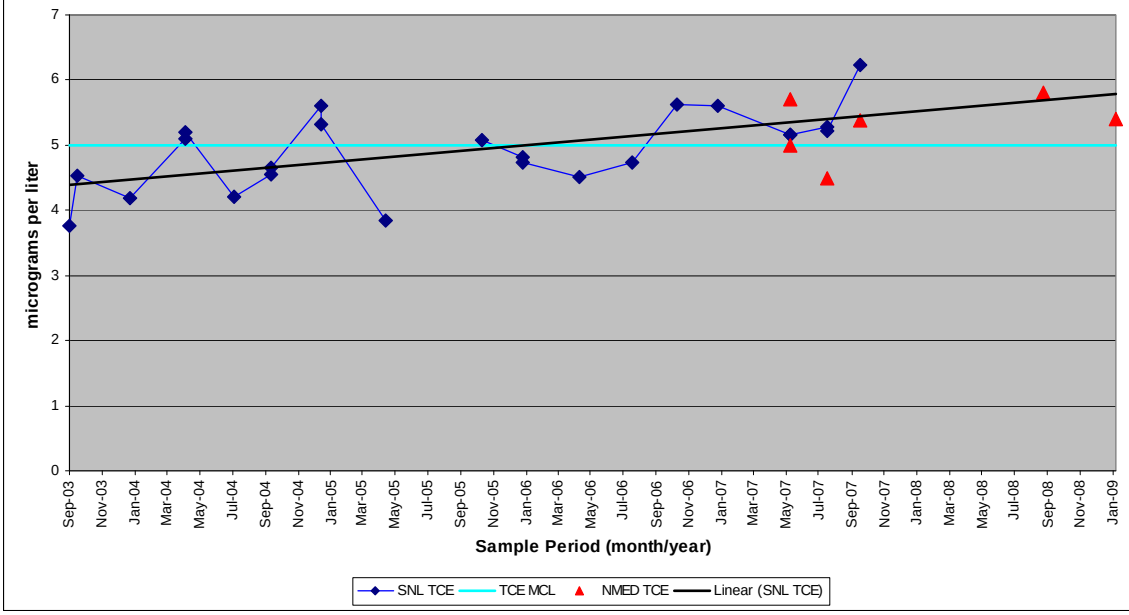

Figure 2
WYO-4
TCE Concentration

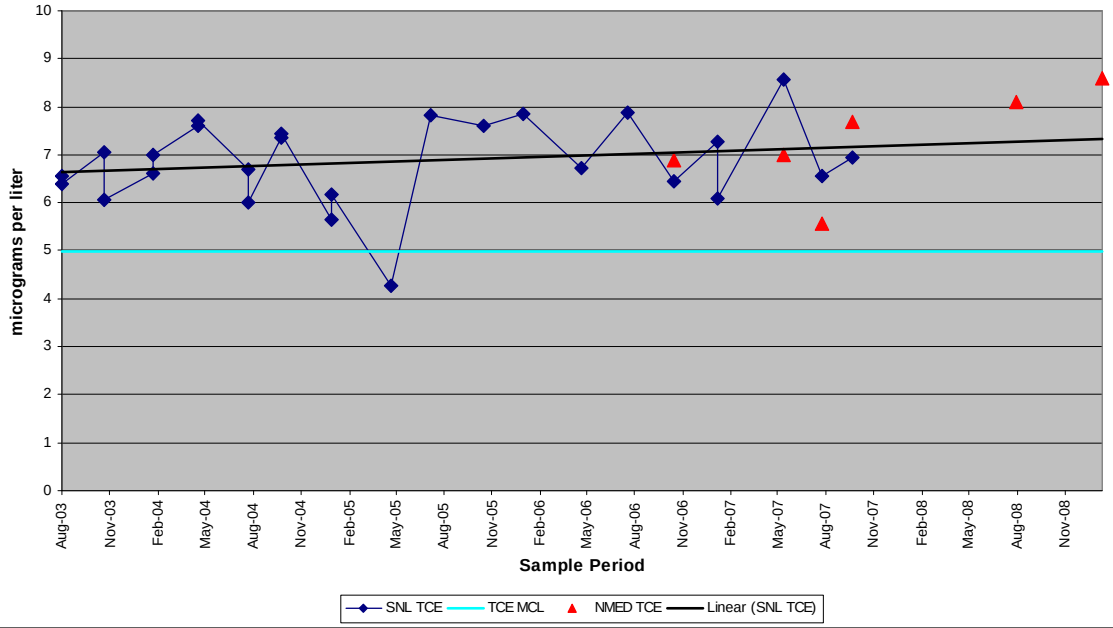

Figure 3
TA2-W-19
NPN Concentration

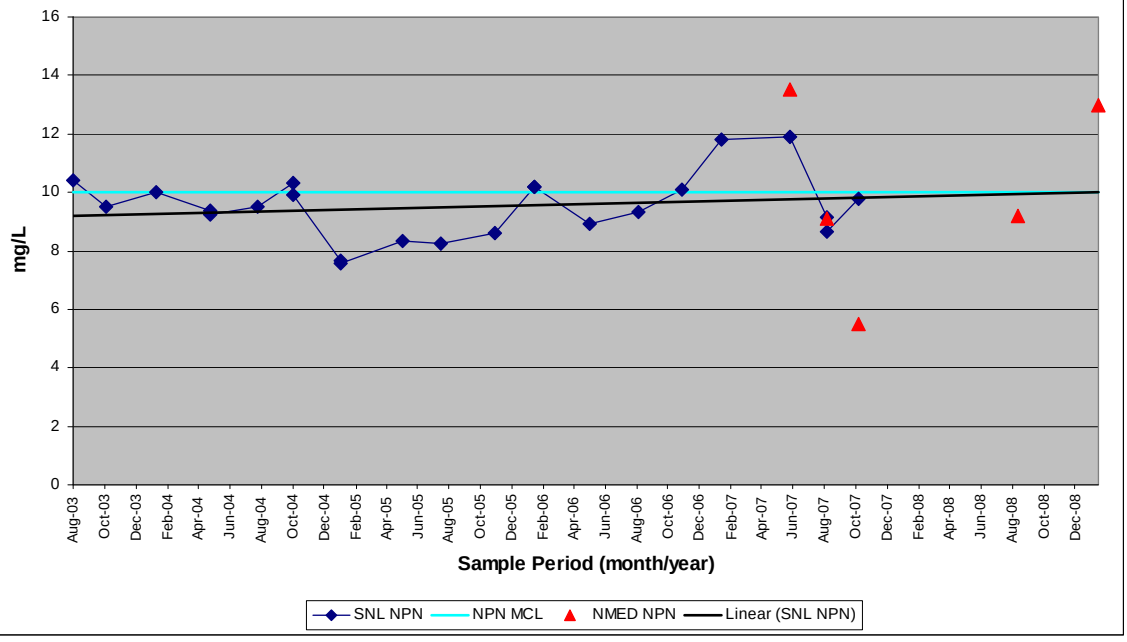

Figure 4
TJA-2
NPN Concentration

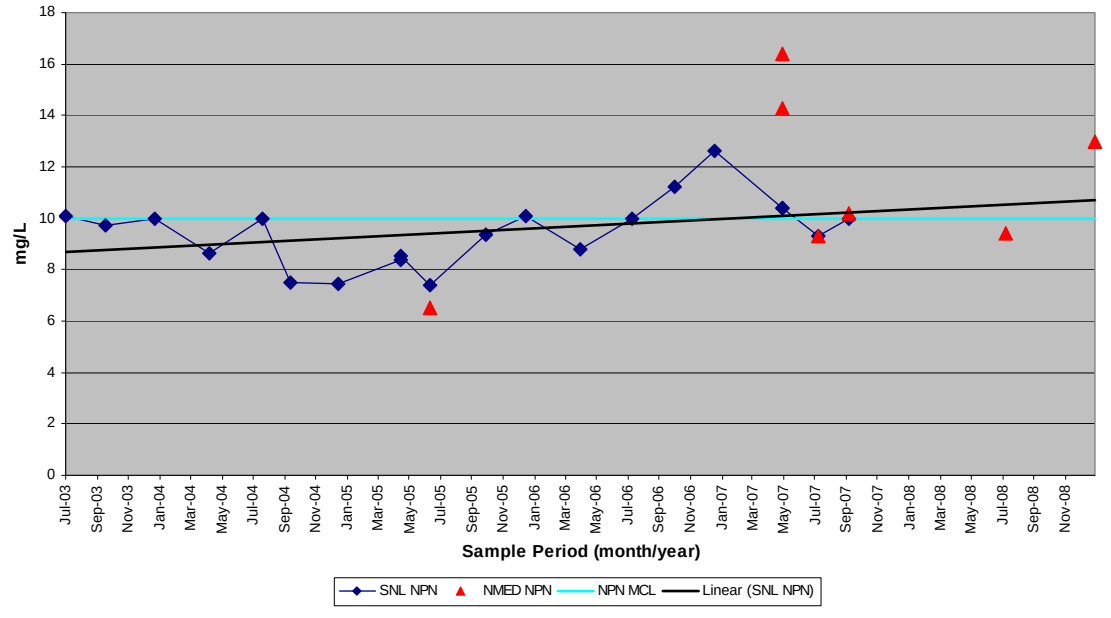

Figure 5
TJA-4
NPN Concentration

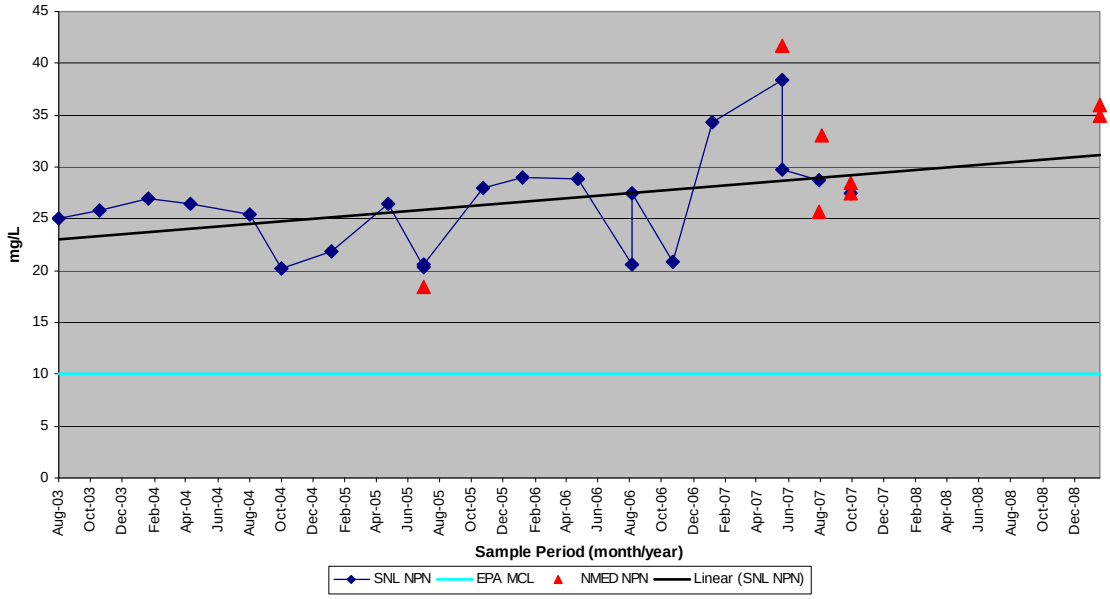

Figure 6
TA2-SW1-320
NPN Concentration