

United States Army White Sands Missile Range

Ground-Water Monitoring at the Open Burn / Open Detonation
Unit, Hazardous Test Area, RCRA Monitoring Well Sampling

Analytical Results of
Samples Collected June 16, 2009.

Prepared for

Commander
U.S. Army White Sands Missile Range
August 2009

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June 16, 2009

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EXECUTIVE SUMMARY

The U.S. Geological Survey (USGS), Water Resources Division, entered into an agreement with the U.S. Army in January 1996 to perform quarterly ground-water sampling and analysis at the Open Burn/Open Detonation (OB/OD) Unit of the Hazardous Test Area (HTA) at White Sands Missile Range (WSMR), New Mexico (fig. 1). The OB/OD Unit consisted primarily of two pits, excavated in 1953, and was used by WSMR personnel for explosives detonation. The site was closed by WSMR December 31, 2000. The primary objective of this agreement is to monitor ground-water quality at the OB/OD Unit for hazardous materials as required by the Resource Conservation and Recovery Act (RCRA).

The original quarterly monitoring network included wells HTA3 (production well supplying water to HTA Headquarters), HTA10A, HTA11, and HTA12 (figs. 2 and 3). The network has subsequently expanded, and in April, 2003, included 48 wells (HTA3, 4, 10A, 11-51, 16D, EMRE1, EMRE2, and HTAWINDMILL). Forty-eight wells were sampled again in July 2003, October 2003, April 2004, and October 2004. In January 2004 and July 2004, approximately one-half of the wells (generally the newer wells HTA31-51) were sampled to confirm previous water-quality data.

The sample network was modified in 2005 to include wells near the margins of the ground water contamination plumes, and approximately one-half of the 48 wells were sampled in February 2005 and May 2005. The purpose for sampling wells near the margins of the plumes was to detect changes in the spatial distribution of contaminant concentrations near the margins. Wells within the plumes, with the largest contaminant concentrations, and wells outside the plumes and not near the margins generally were not sampled.

This report presents water-quality data for samples collected June 16, 2009. Wells HTA3, HTA10A, HTA11, and HTA12 were sampled this round. Explosives (method SW8330); nitrate plus nitrite (method MCAWW 353.2); and perchlorate (method SW6860) were analyzed in ground-water samples from all the wells sampled. TestAmerica Laboratories (TAL) in Arvada, Colorado, conducted all laboratory analyses. The hard copy of this report has been modified to exclude laboratory information, including analytical results and quality assurance / control results. This information is now included only in the CD digital report.

The potentiometric-surface altitude at HTA is shown in figure 4, and a more detailed view of the potentiometric surface in the area of the OB/OD Unit is shown in figure 5. The potentiometric surface slopes east-southeast at a gradient of approximately 6 percent, generally following the topography. However, ground-water flow may be tortuous on a local scale because the aquifer is composed of fractured Precambrian granite, and local flow paths are controlled by the geometry of interconnected, hydraulically-conductive fractures.

Figures 6 through 11 show the spatial distributions of RDX, nitrate plus nitrite, and perchlorate concentrations for the June 2009 sampling round. The initial views (figs. 6, 8, and 10) show the concentration distributions over the larger HTA area, and the secondary views (figs. 7, 9, and 11) show the concentration distributions over the smaller area of the OB/OD Unit. Figures 12 through 20 show the temporal distributions of RDX (figs. 12 and 13), nitrate plus nitrite (figs. 14 through 17), and perchlorate (figs. 18 through 20) concentrations for most wells.

Significant analytical results from the June 2009 sampling round are listed below:

Ground water from wells HTA3, HTA10A, HTA11, and HTA12 had RDX concentrations, at <0.20 micrograms per liter ($\mu\text{g/L}$), 110 $\mu\text{g/L}$, 110 $\mu\text{g/L}$, and <0.20 $\mu\text{g/L}$, respectively (table 1).

Ground water from wells HTA3, HTA10A, HTA11, and HTA12 had concentrations of nitrate plus nitrite at 3.0 milligrams per liter (mg/L), 9.4 mg/L , 8.9 mg/L , and 2.8 mg/L , respectively (table 1).

Ground water from wells HTA3, HTA10A, HTA11, and HTA12 had concentrations of perchlorate, at 0.0020 milligrams per liter (mg/L), 5.9 mg/L , 6.7 mg/L , and 0.018 mg/L , respectively (table 1).

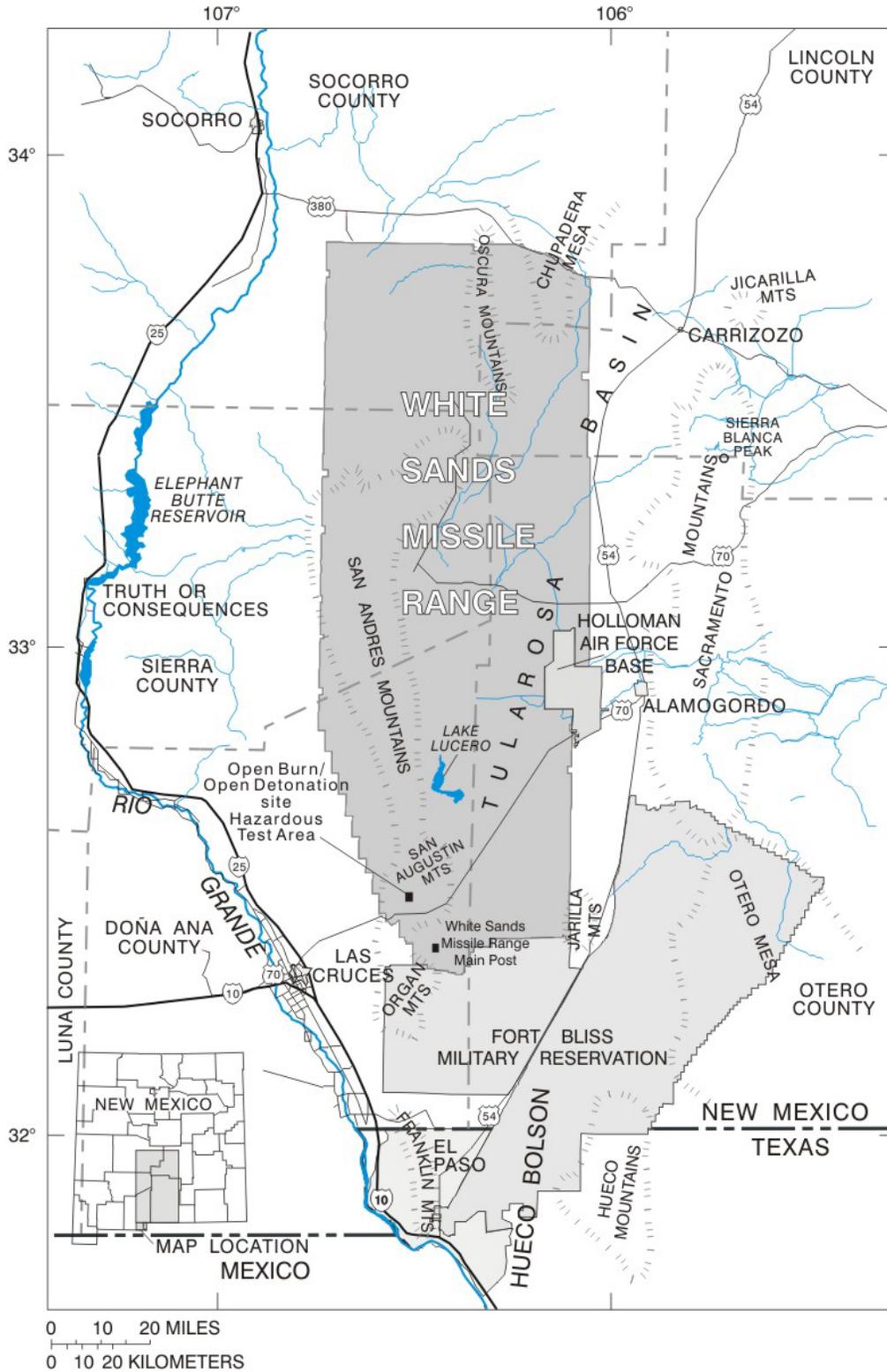
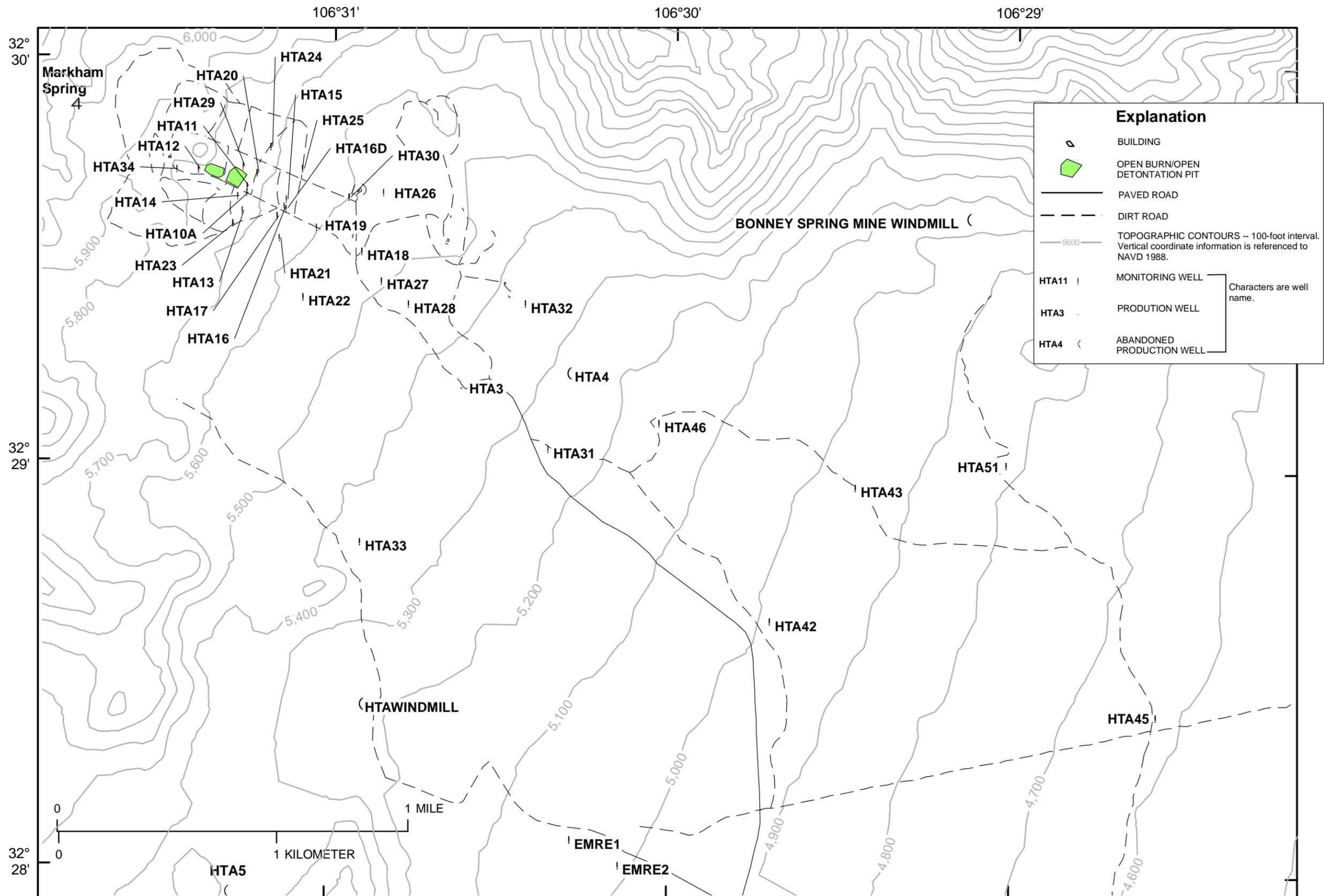
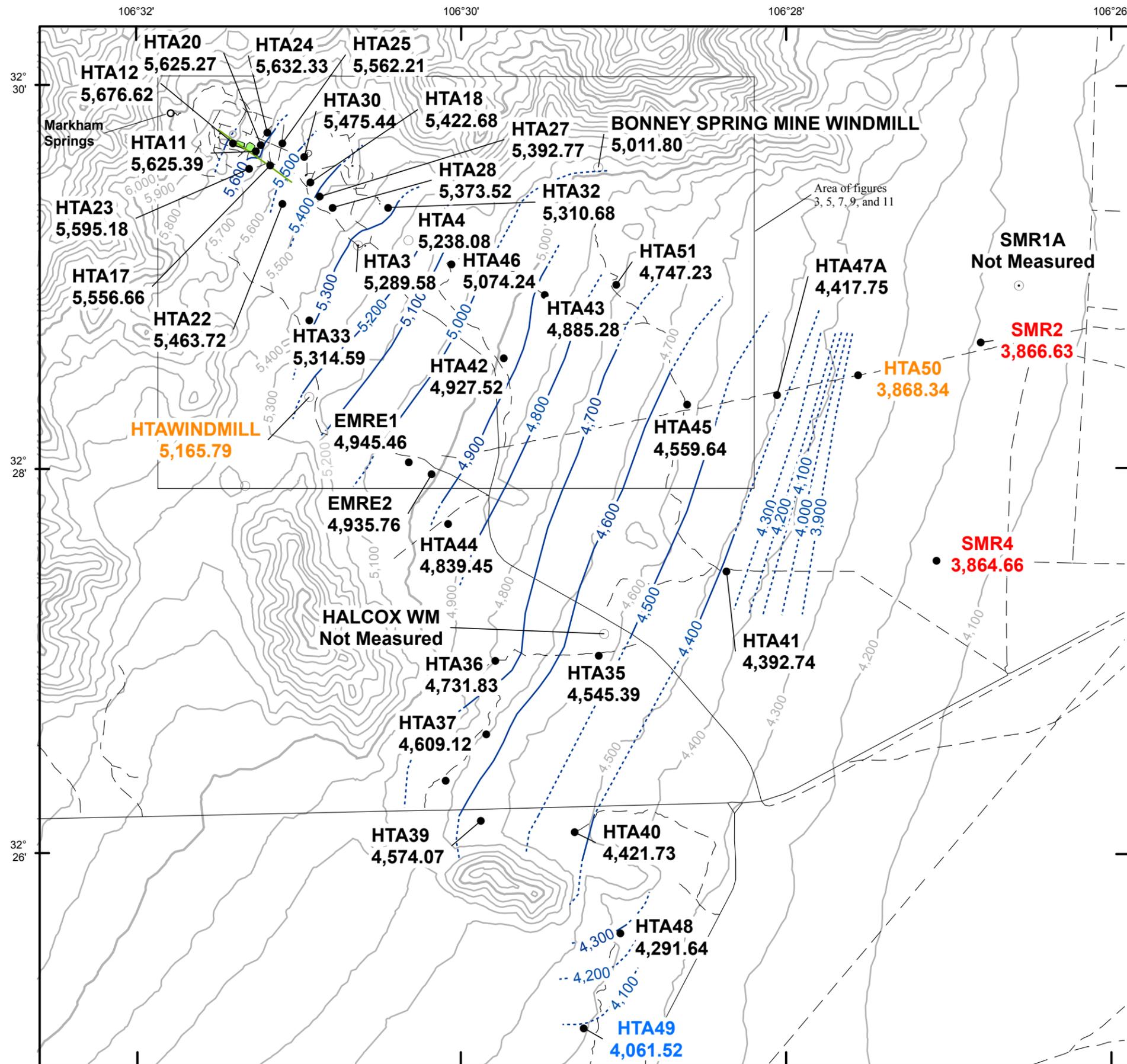
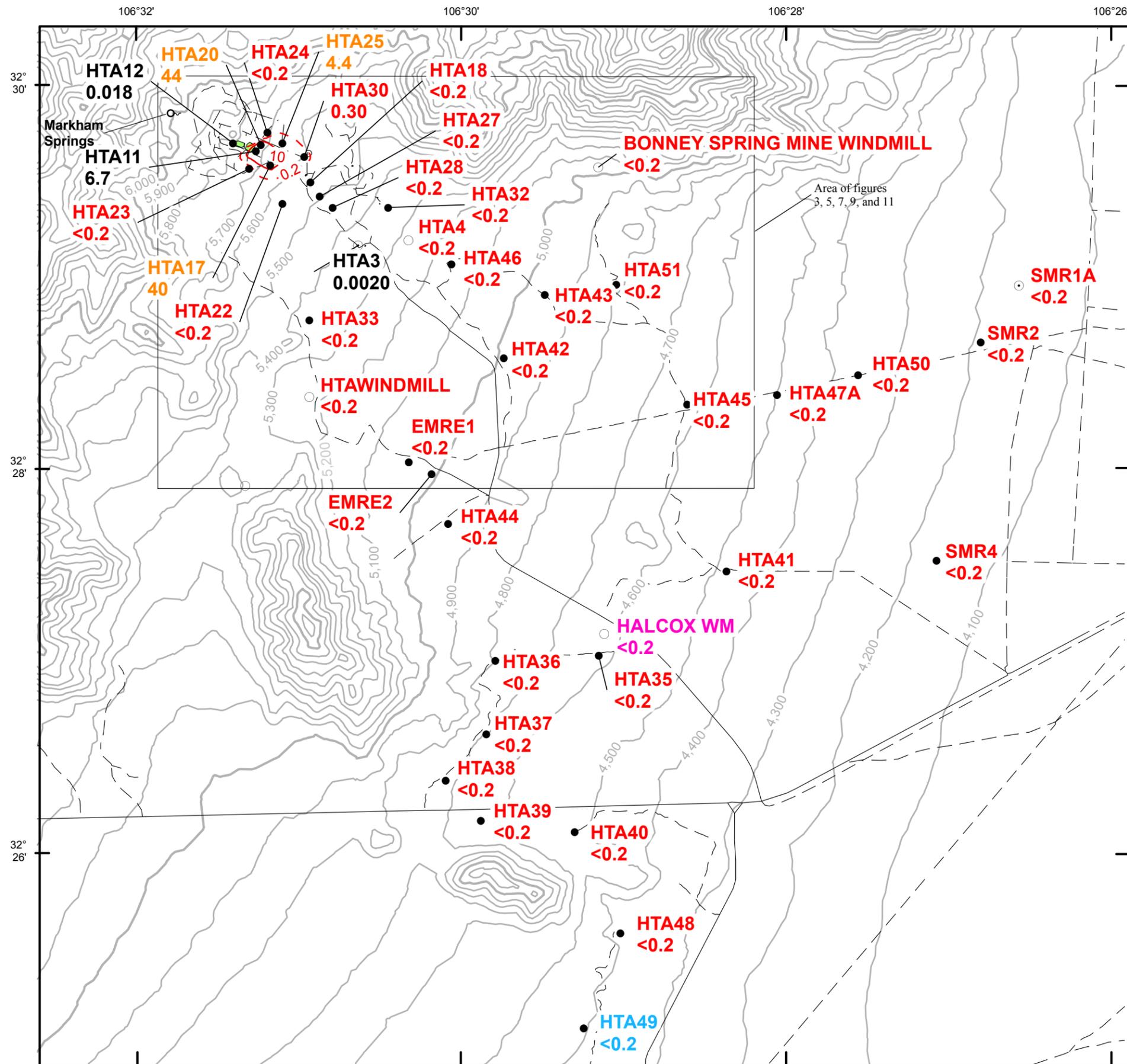


Figure 1. Location of the Open Burn/Open Detonation Unit, Hazardous Test Area and surrounding area, south-central New Mexico.



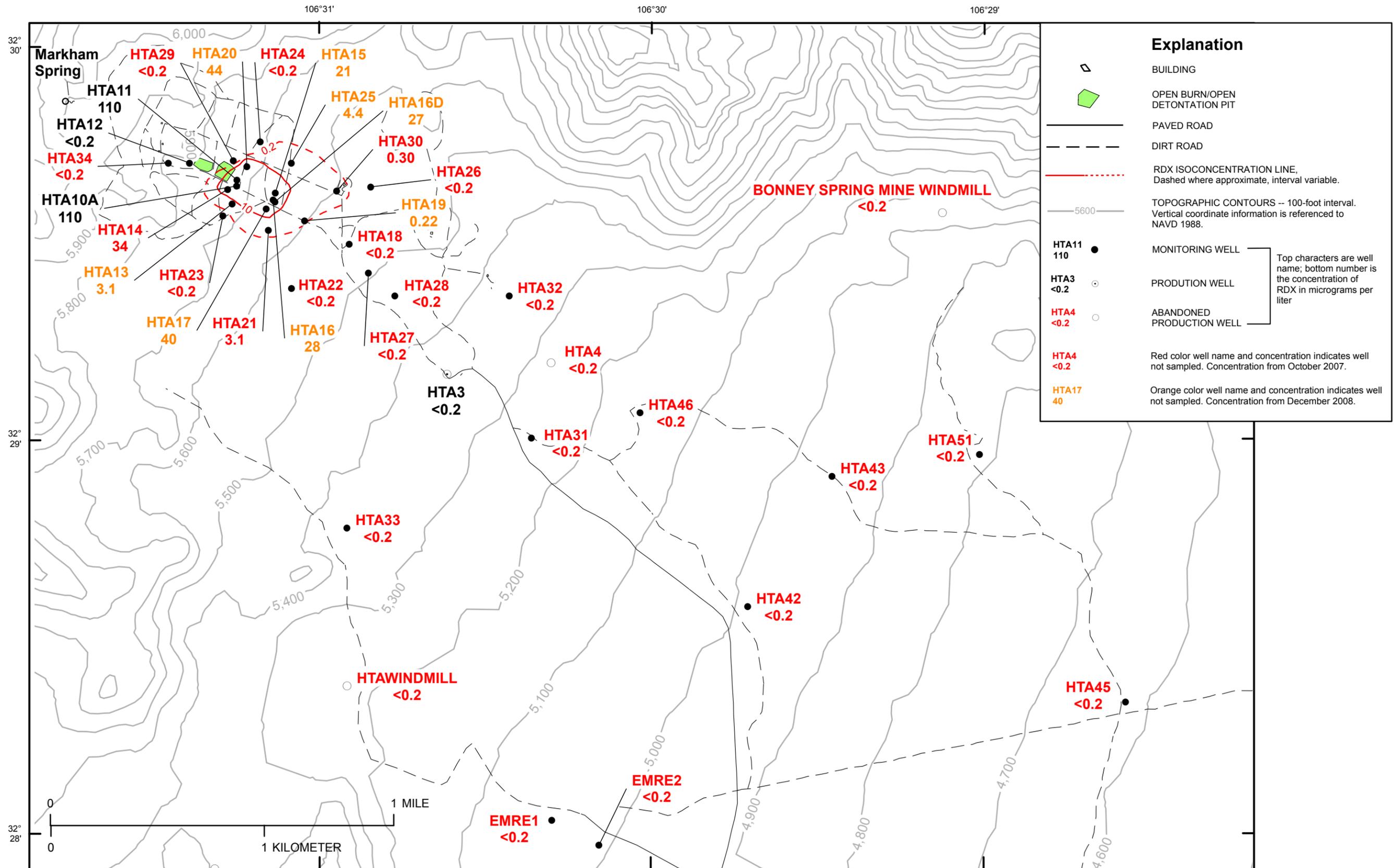


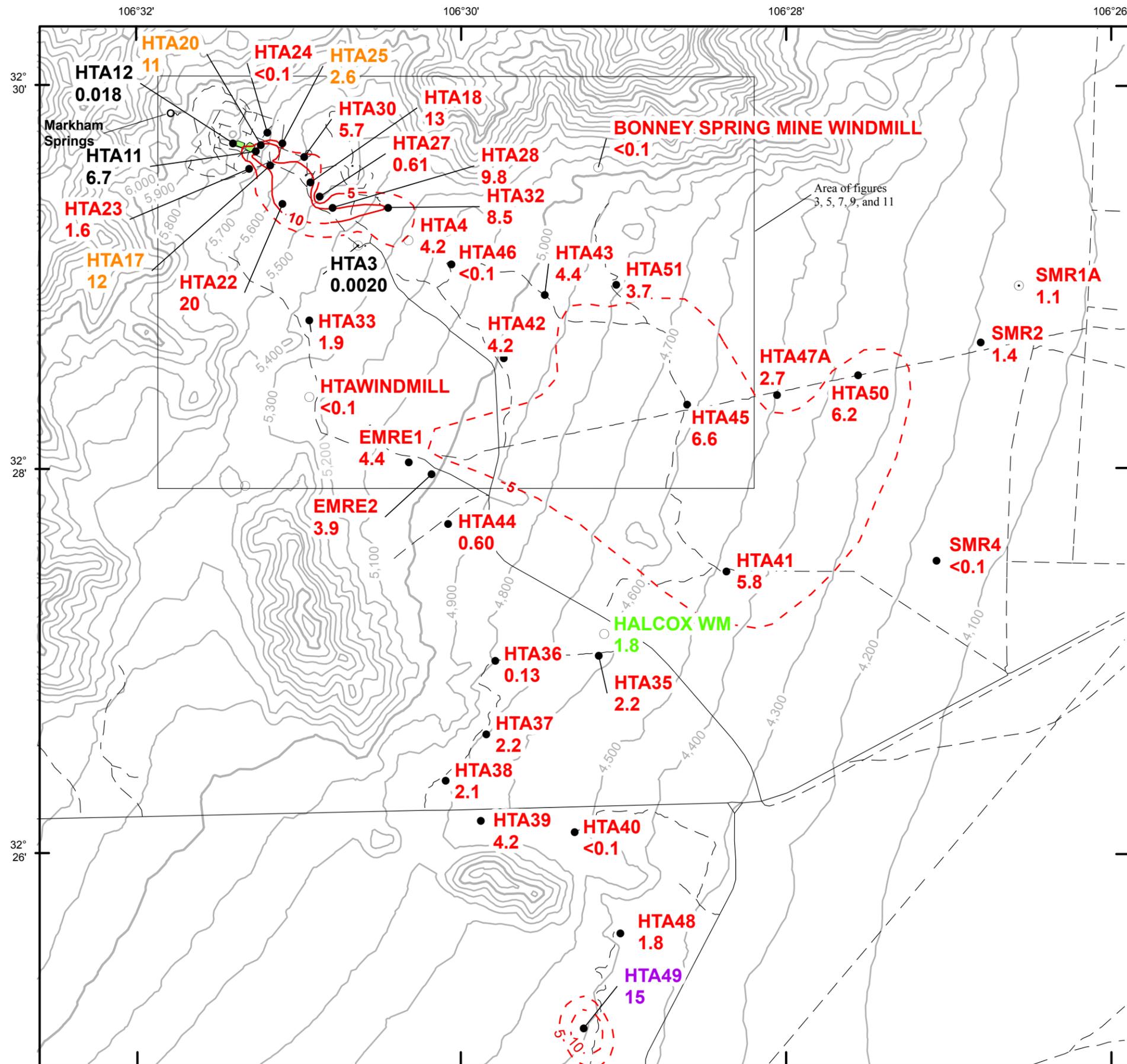


Explanation

- BUILDING
- OPEN BURN/OPEN DETONATION PIT
- PAVED ROAD
- DIRT ROAD
- RDX ISOCONCENTRATION LINE, Dashed where approximate, interval variable.
- TOPOGRAPHIC CONTOURS -- 100-foot interval. Vertical coordinate information is referenced to NAVD 1988.
- MONITORING WELL
- PRODUCTION WELL
- ABANDONED PRODUCTION WELL
- HALCOX WM** <0.2
Pink color well name and concentration indicates well not sampled. Concentration from January 2004.
- HTA49** <0.2
Blue color well name and concentration indicates well not sampled. Concentration from April 2004.
- HTA4** <0.2
Red color well name and concentration indicates well not sampled. Concentration from October 2007.
- HTA17** 40
Orange color well name and concentration indicates well not sampled. Concentration from December 2008.



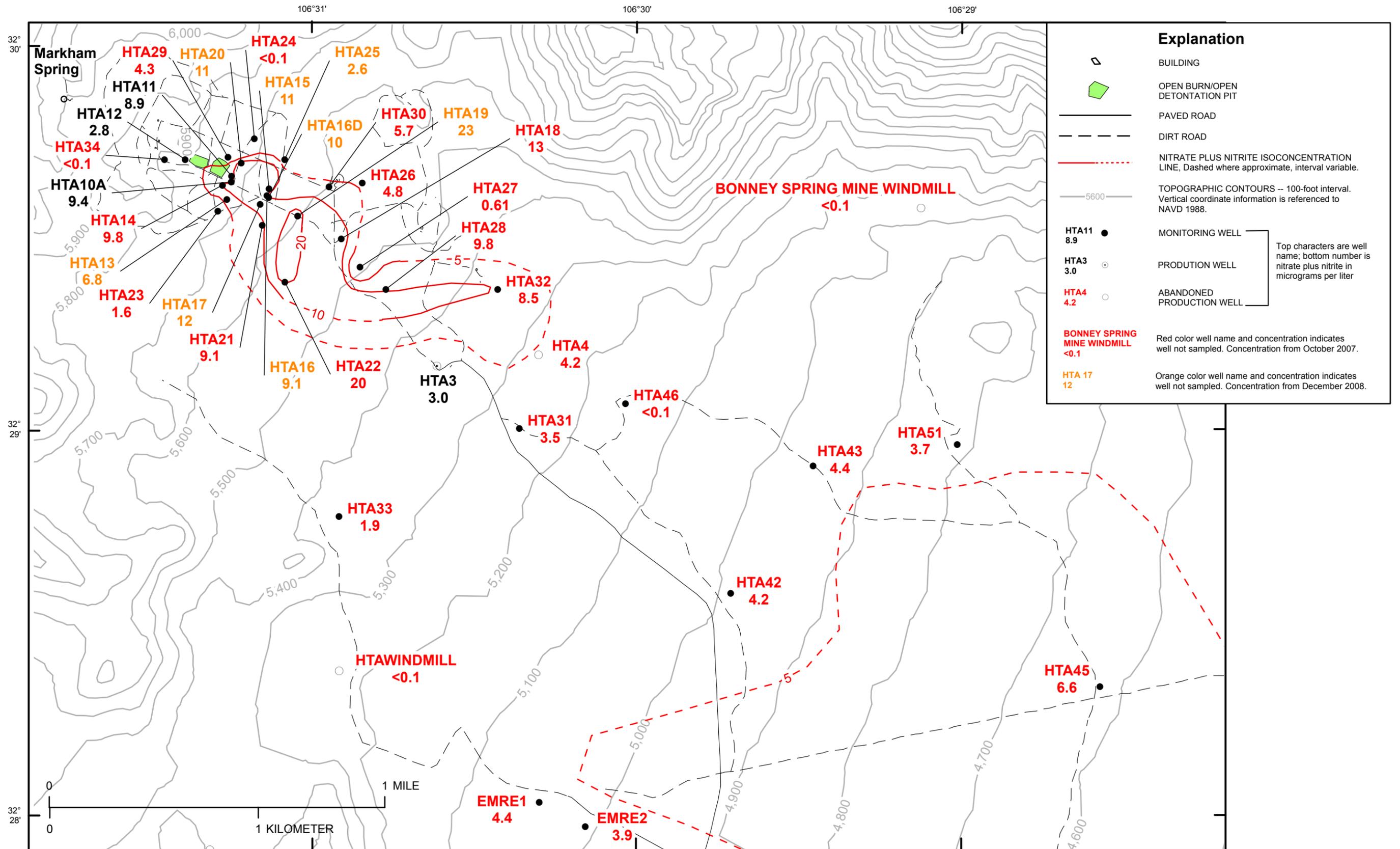


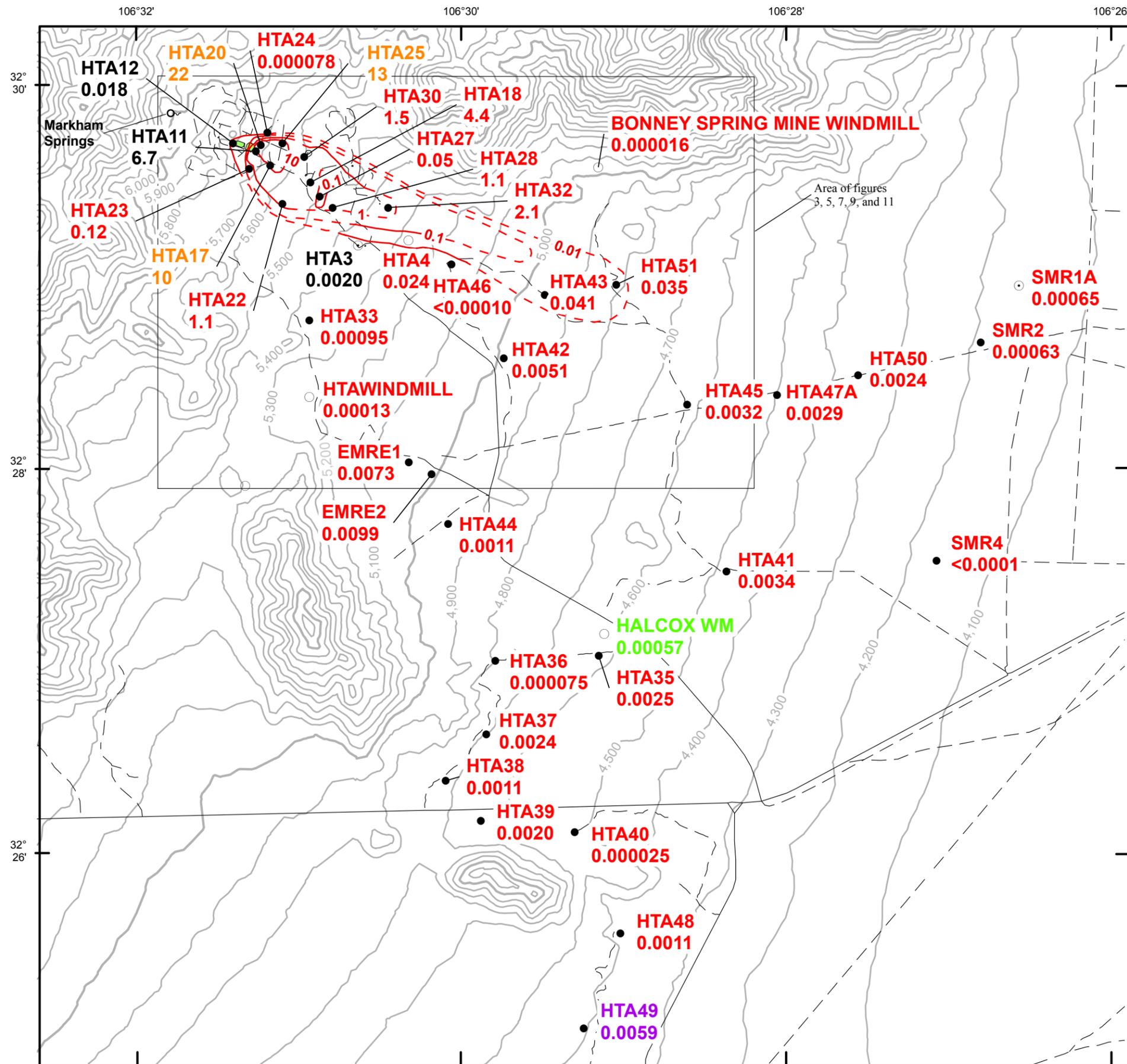


Explanation

- BUILDING
 - OPEN BURN/OPEN DETONATION PIT
 - PAVED ROAD
 - DIRT ROAD
 - NITRATE PLUS NITRITE ISOCONCENTRATION LINE, Dashed where approximate, interval variable.
 - TOPOGRAPHIC CONTOURS -- 100-foot interval. Vertical coordinate information is referenced to NAVD 1988.
 - HTA11 8.9 ● MONITORING WELL
 - HTA3 3.0 ○ PRODUCTION WELL
 - HTA4 4.2 ○ ABANDONED PRODUCTION WELL
 - HALCOX WM 1.8 Green color well name and concentration indicates well not sampled. Concentration from April 2003.
 - HTA49 15 Purple color well name and concentration indicates well not sampled. Concentration from October 2005.
 - HTA4 4.2 Red color well name and concentration indicates well not sampled. Concentration from October 2007.
 - HTA17 12 Orange color well name and concentration indicates well not sampled. Concentration from December 2008.
- Top characters are well name; bottom number is concentration of nitrate plus nitrite in milligrams per liter.



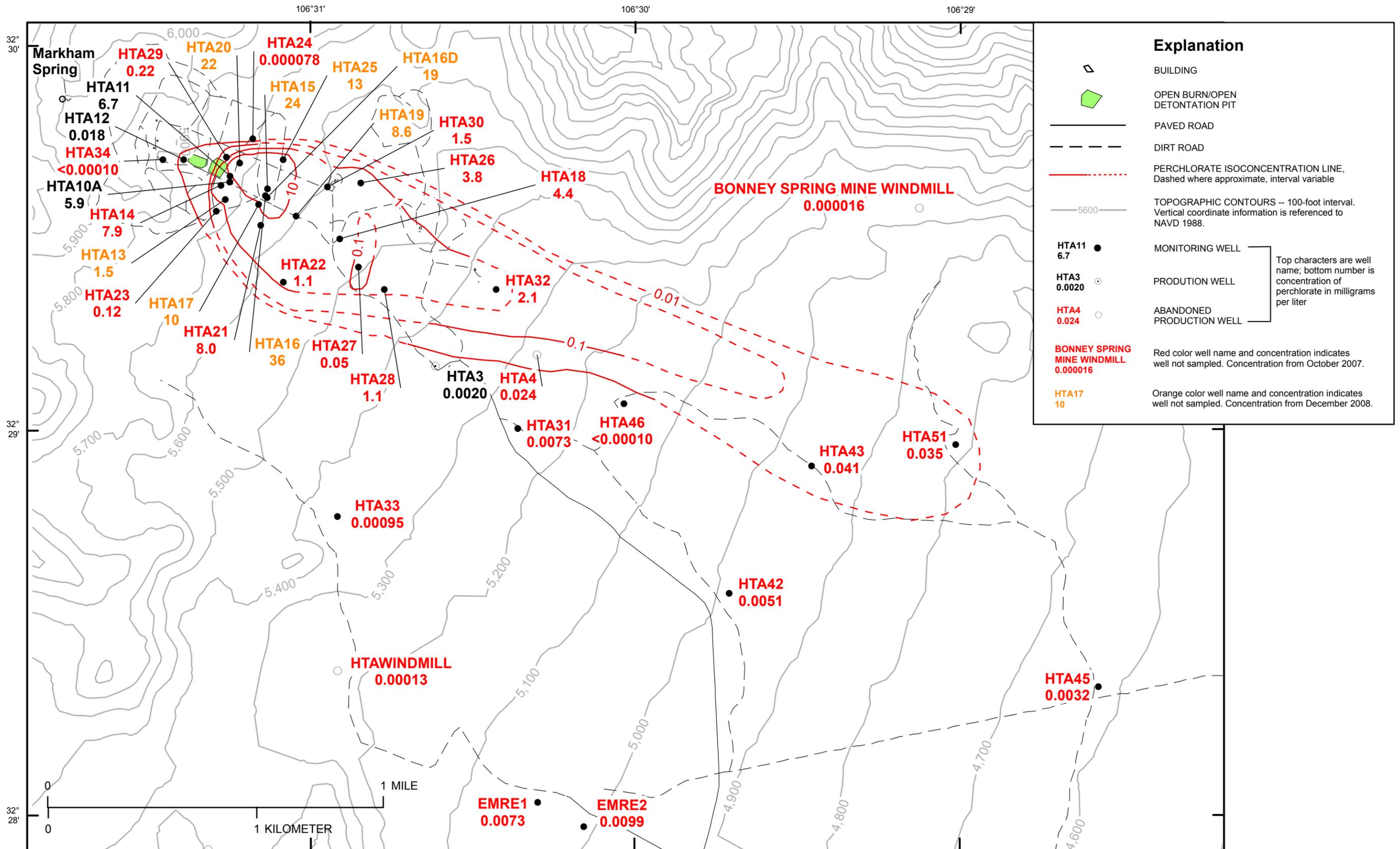




Explanation

- BUILDING
- OPEN BURN/OPEN DETONATION PIT
- PAVED ROAD
- DIRT ROAD
- PERCHLORATE ISOCONCENTRATION LINE, Dashed where approximate, interval variable
- TOPOGRAPHIC CONTOURS -- 100-foot interval. Vertical coordinate information is referenced to NAVD 1988.
- MONITORING WELL
- PRODUCTION WELL
- ABANDONED PRODUCTION WELL
- HALCOX WM 0.00057
Green color well name and concentration indicates well not sampled. Concentration from April 2003.
- HTA49 0.0059
Purple color well name and concentration indicates well not sampled. Concentration from October 2005.
- HTA4 0.024
Red color well name and concentration indicates well not sampled. Concentration from October 2007.
- HTA17 10
Orange color well name and concentration indicates well not sampled. Concentration from December 2008.





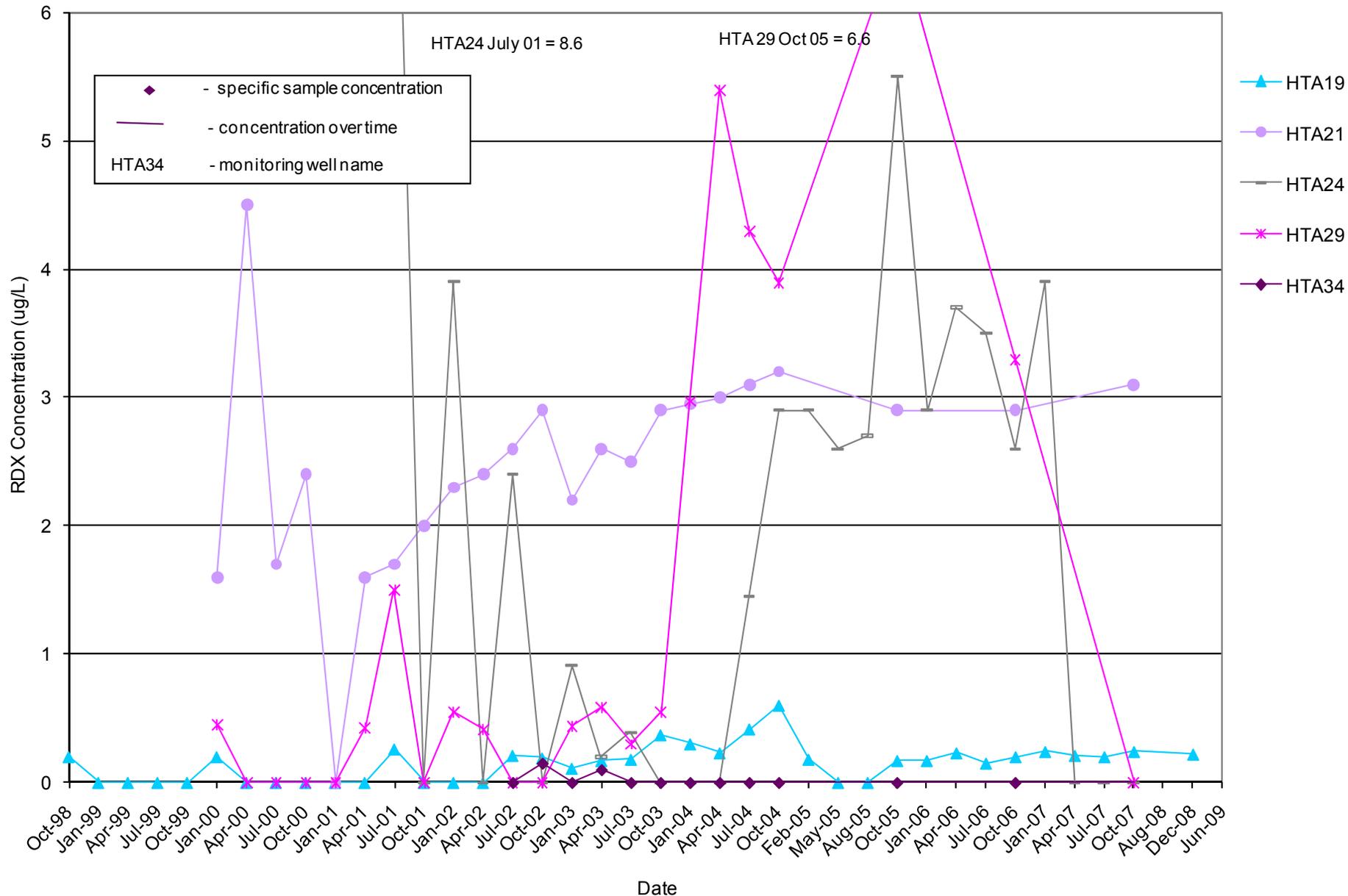


Figure 12. Time-series plot of RDX concentrations generally smaller than 4 $\mu\text{g/L}$, October 1998 to June 2009 in ground water downgradient from the Open Burn/Open Detonation Unit, U.S. Army White Sands Missile Range, New Mexico.

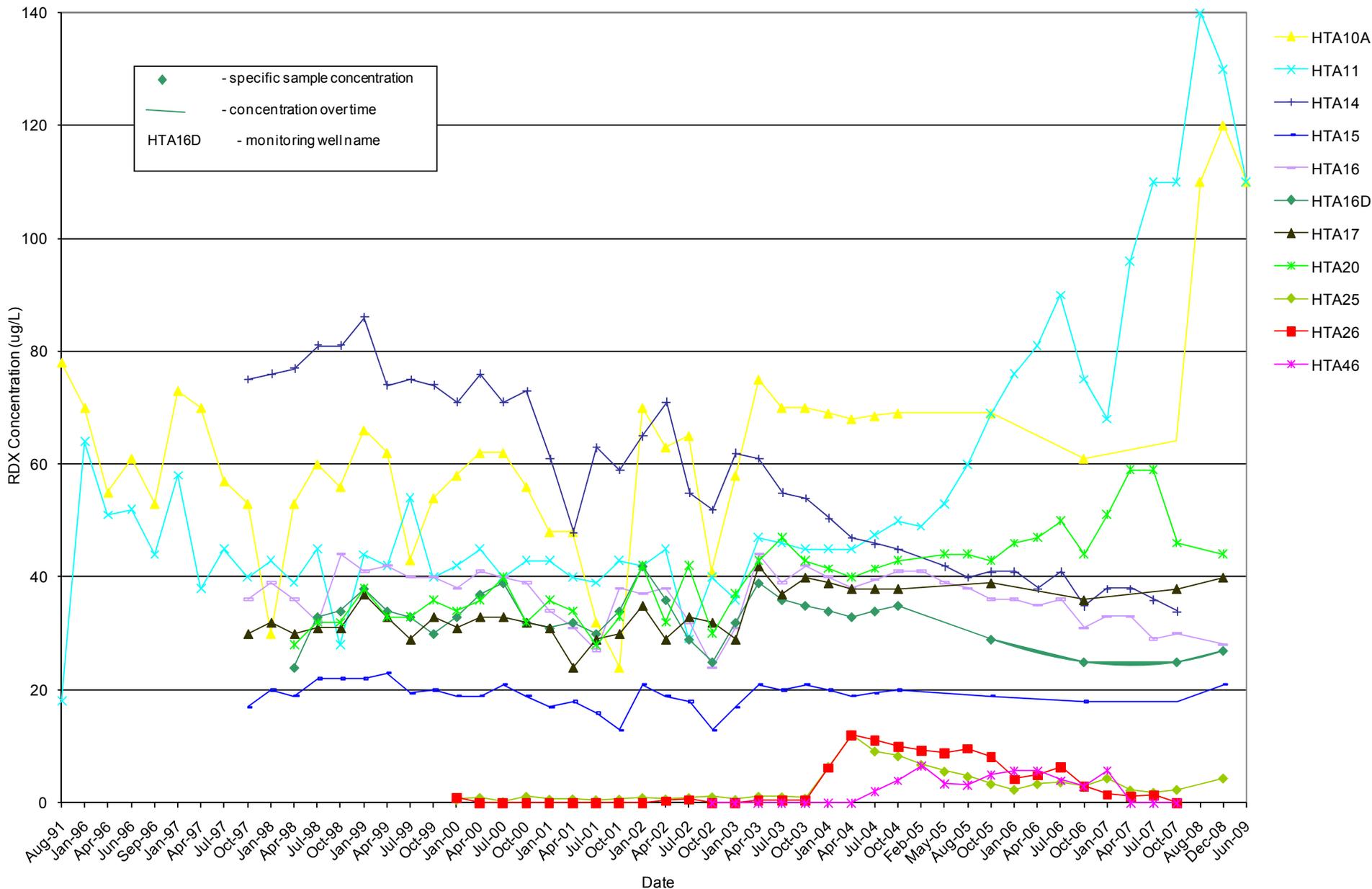


Figure 13. Time-Series plot of RDX concentrations generally larger than 10 $\mu\text{g/L}$, August 1991 to June 2009 in ground water downgradient from the Open Burn/Open Detonation Unit, U.S. Army White Sands Missile Range, New Mexico.

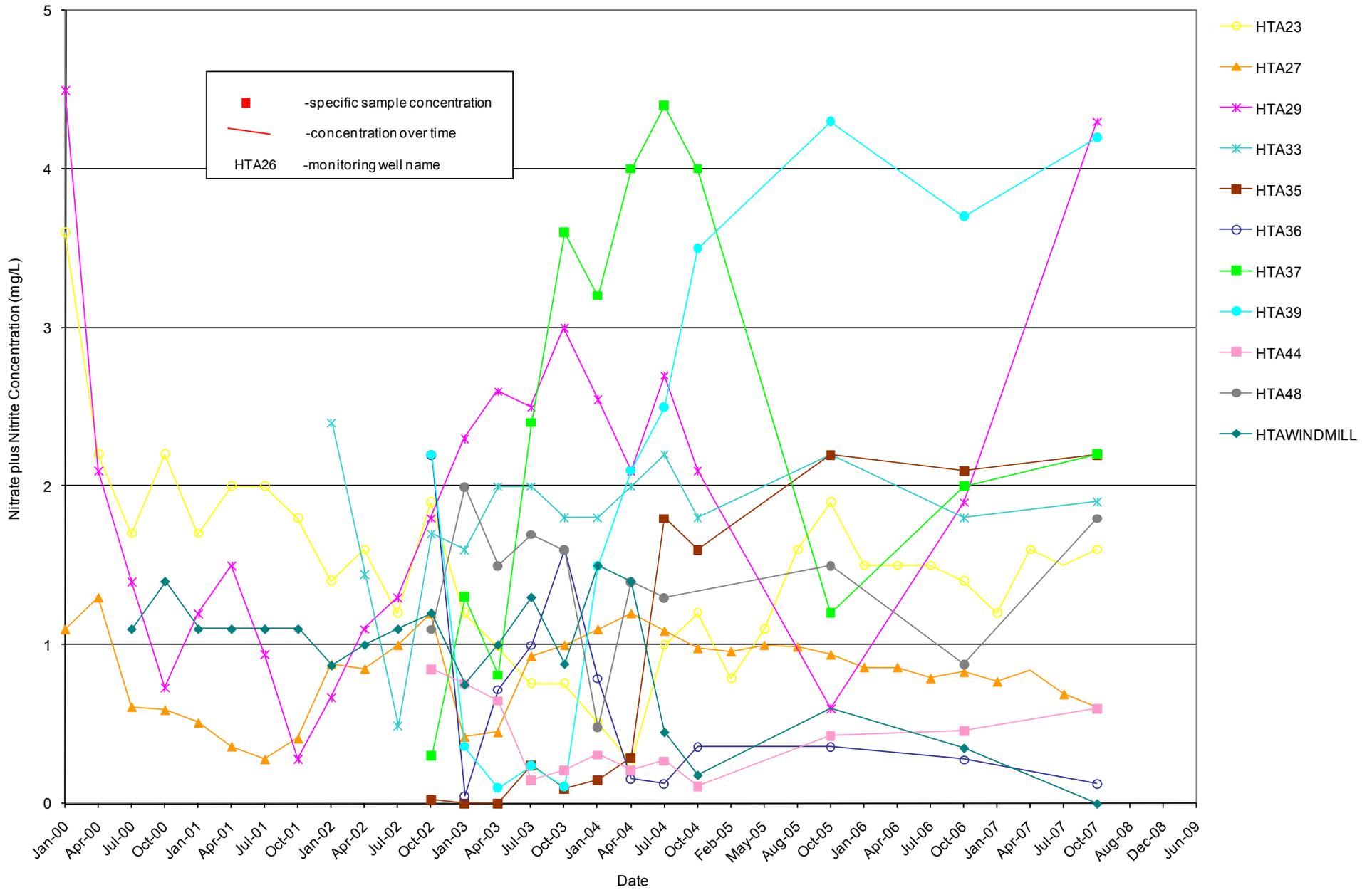


Figure 14. Time-series plot of nitrate plus nitrite concentrations generally smaller than 2 mg/L, January 2000 to June 2009 in ground water downgradient from the Open Burn/Open Detonation Unit, U.S. Army White Sands Missile Range, New Mexico.

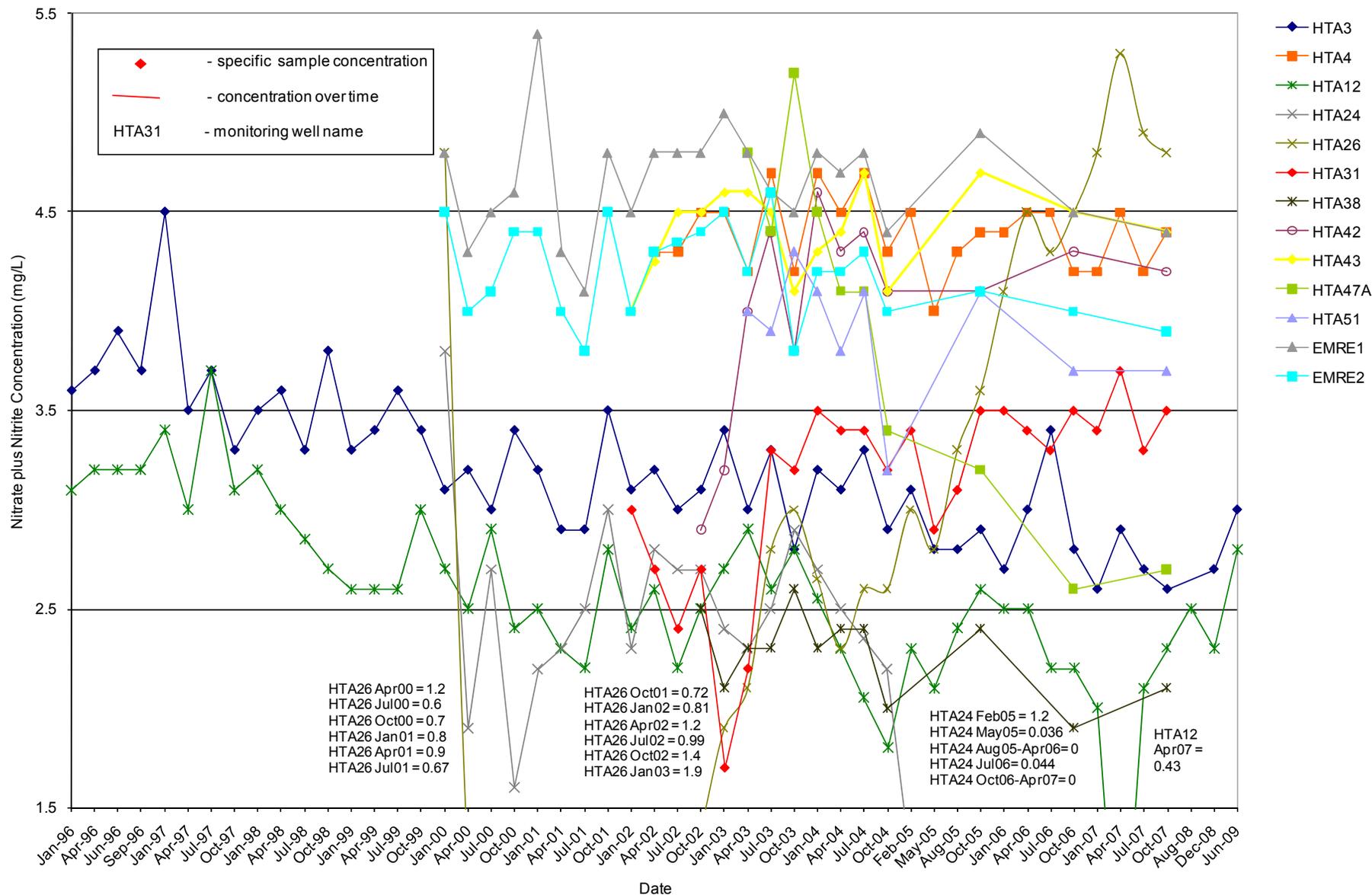


Figure 15. Time-series plot of nitrate plus nitrite concentrations generally ranging from 2 mg/L to 5 mg/L, January 1996 to June 2009 in ground water downgradient from the Open Burn/Open Detonation Unit, U.S. Army White Sands Missile Range, New Mexico.

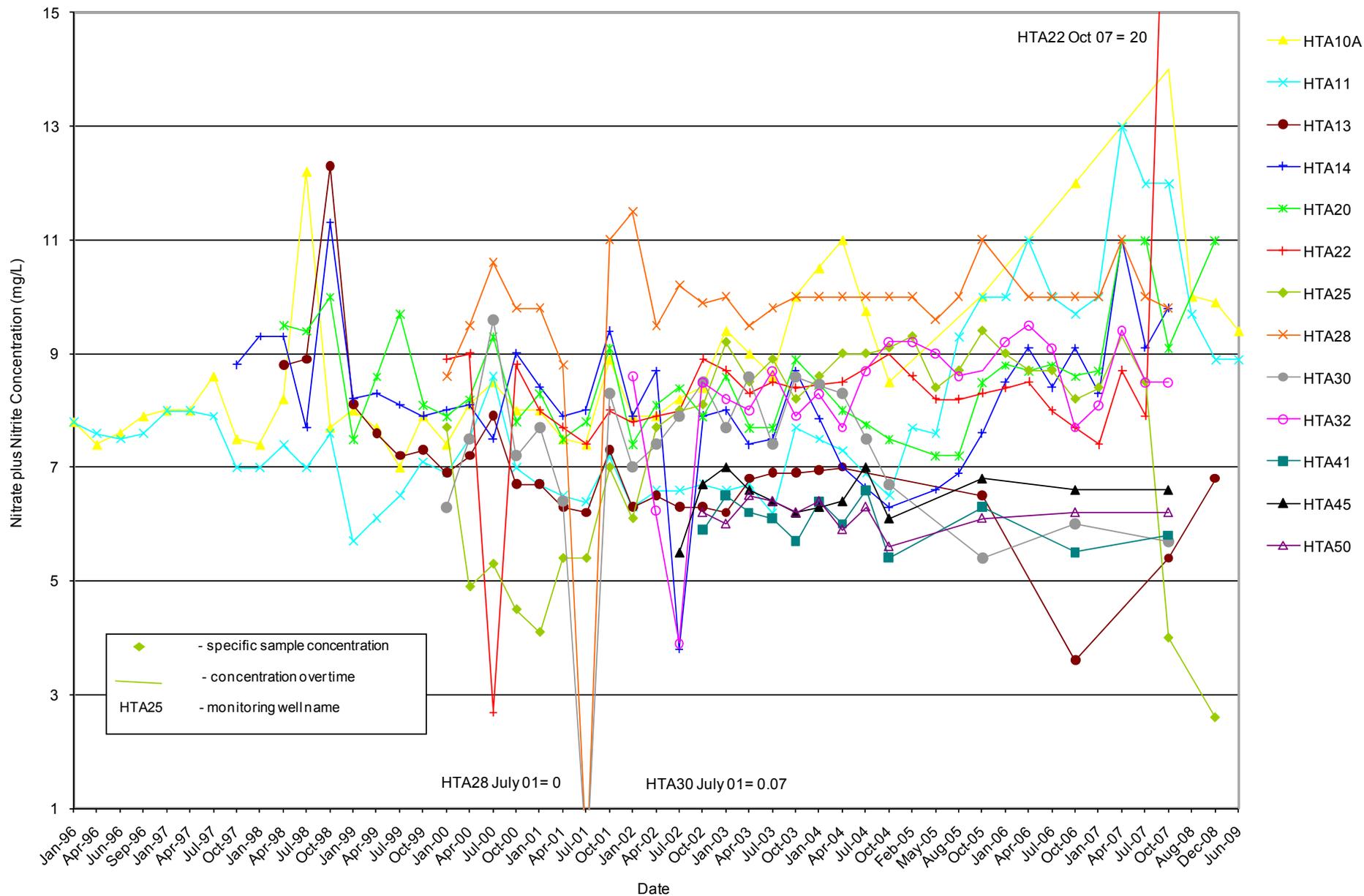


Figure 16. Time-series plot of nitrate plus nitrite concentrations generally ranging from 5 mg/L to 10 mg/L, January 1996 to June 2009 in ground water downgradient from the Open Burn/Open Detonation Unit, U.S. Army White Sands Missile Range, New Mexico.

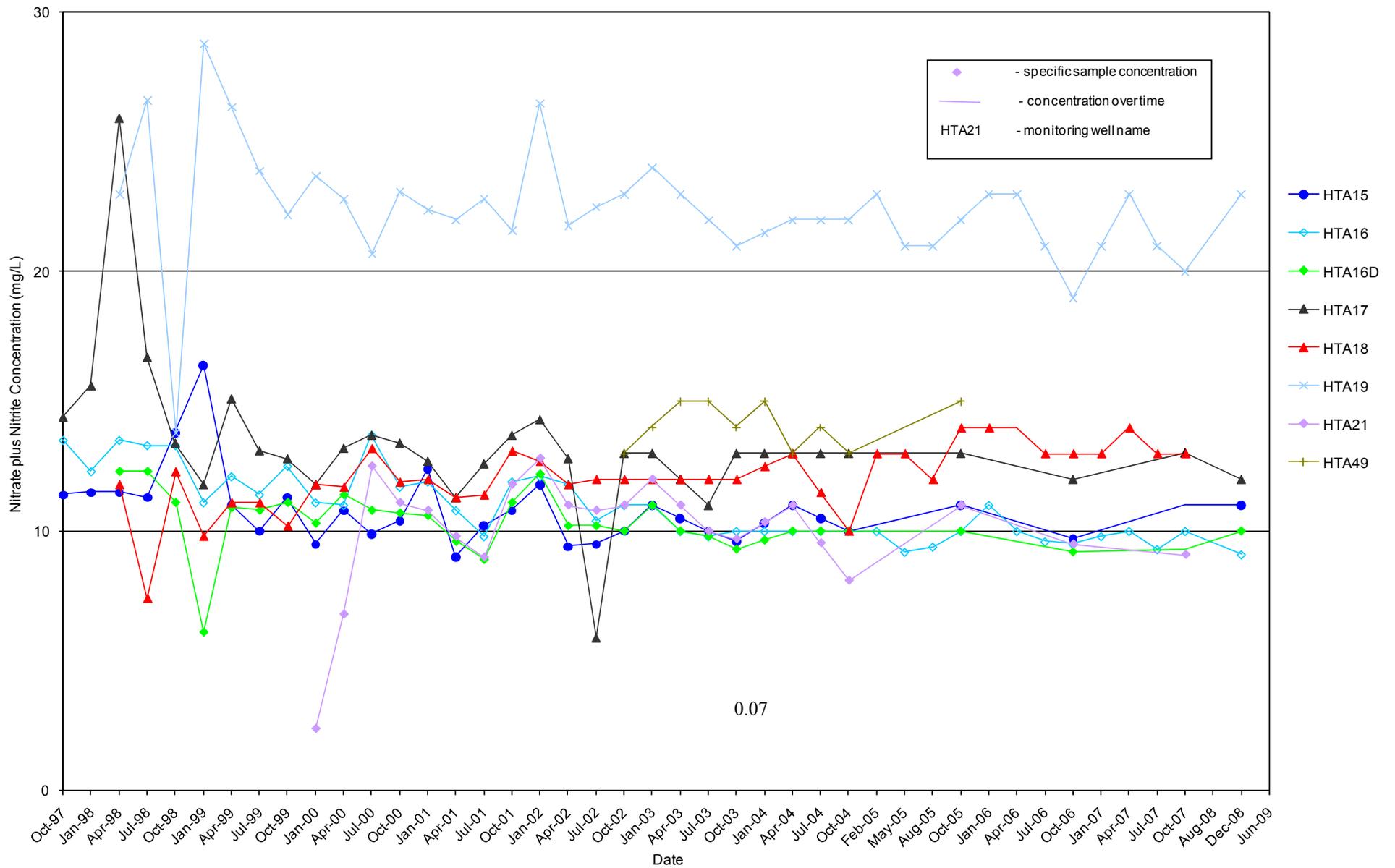


Figure 17. Time-series plot of nitrate plus nitrite concentrations generally larger than 10 mg/L, October 1997 to June 2009 in ground water downgradient from the Open Burn/Open Detonation Unit U.S. Army White Sands Missile Range, New Mexico.

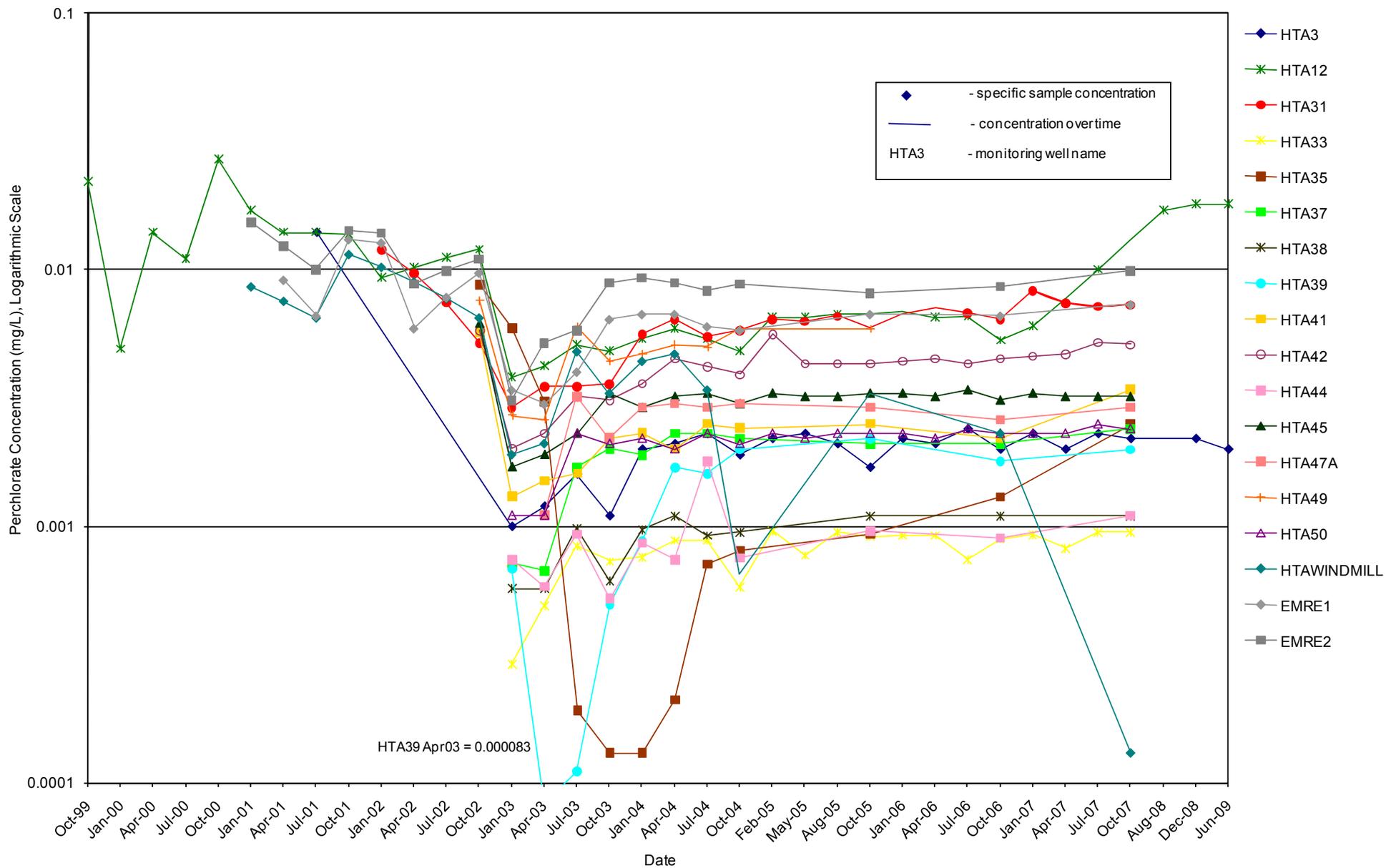


Figure 18. Semi-logarithmic time-series plot of perchlorate concentrations generally smaller than 0.01 mg/L, October 1999 to June 2009 in ground water downgradient from the Open Burn/Open Detonation Unit U.S. Army White Sands Missile Range, New Mexico.

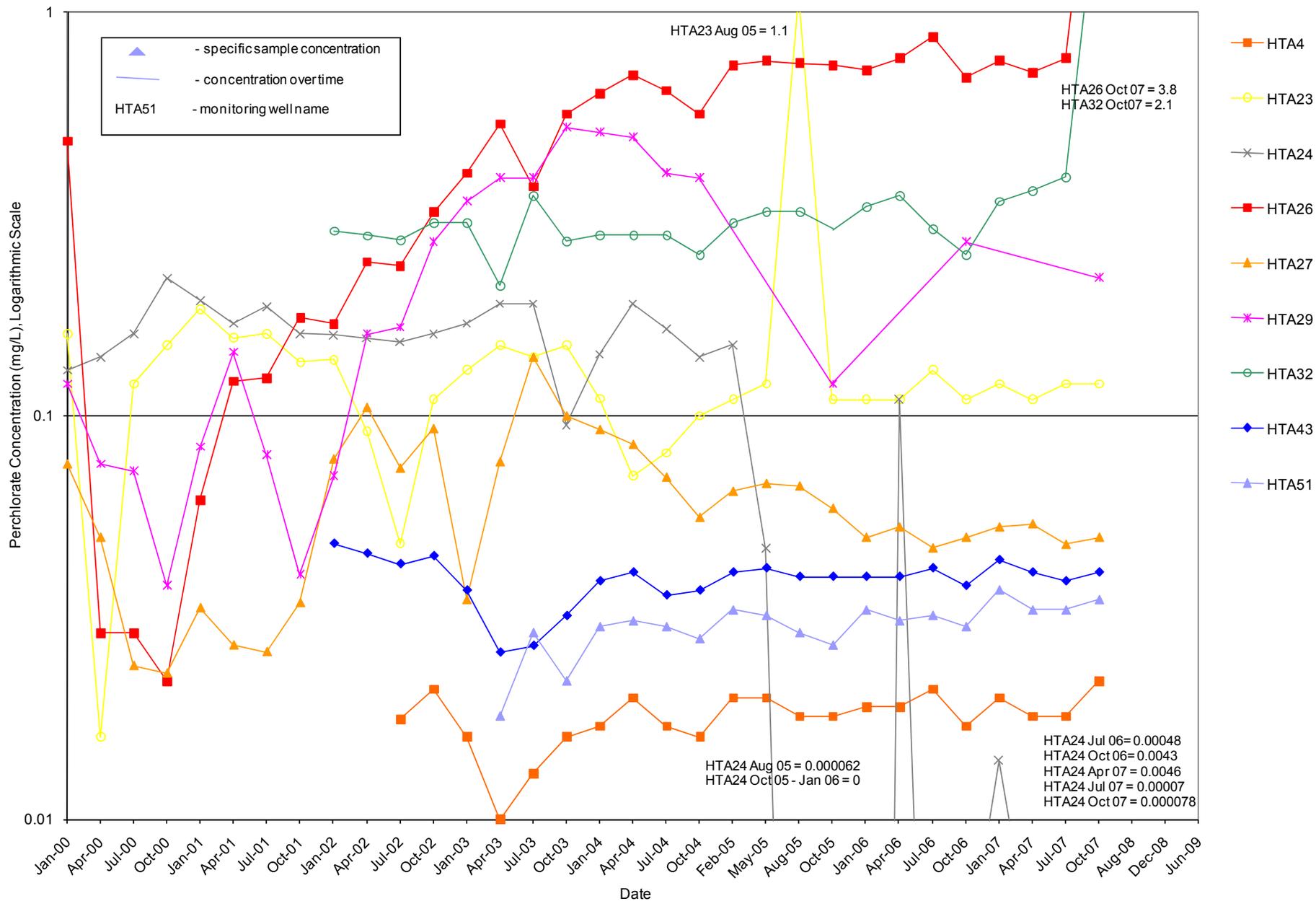


Figure 19. Semi-logarithmic time-series plot of perchlorate concentrations generally ranging from 0.01 mg/L to 1 mg/L, January 2000 to June 2009 in ground water downgradient from the Open Burn/Open Detonation Unit U.S. Army White Sands Missile Range, New Mexico.

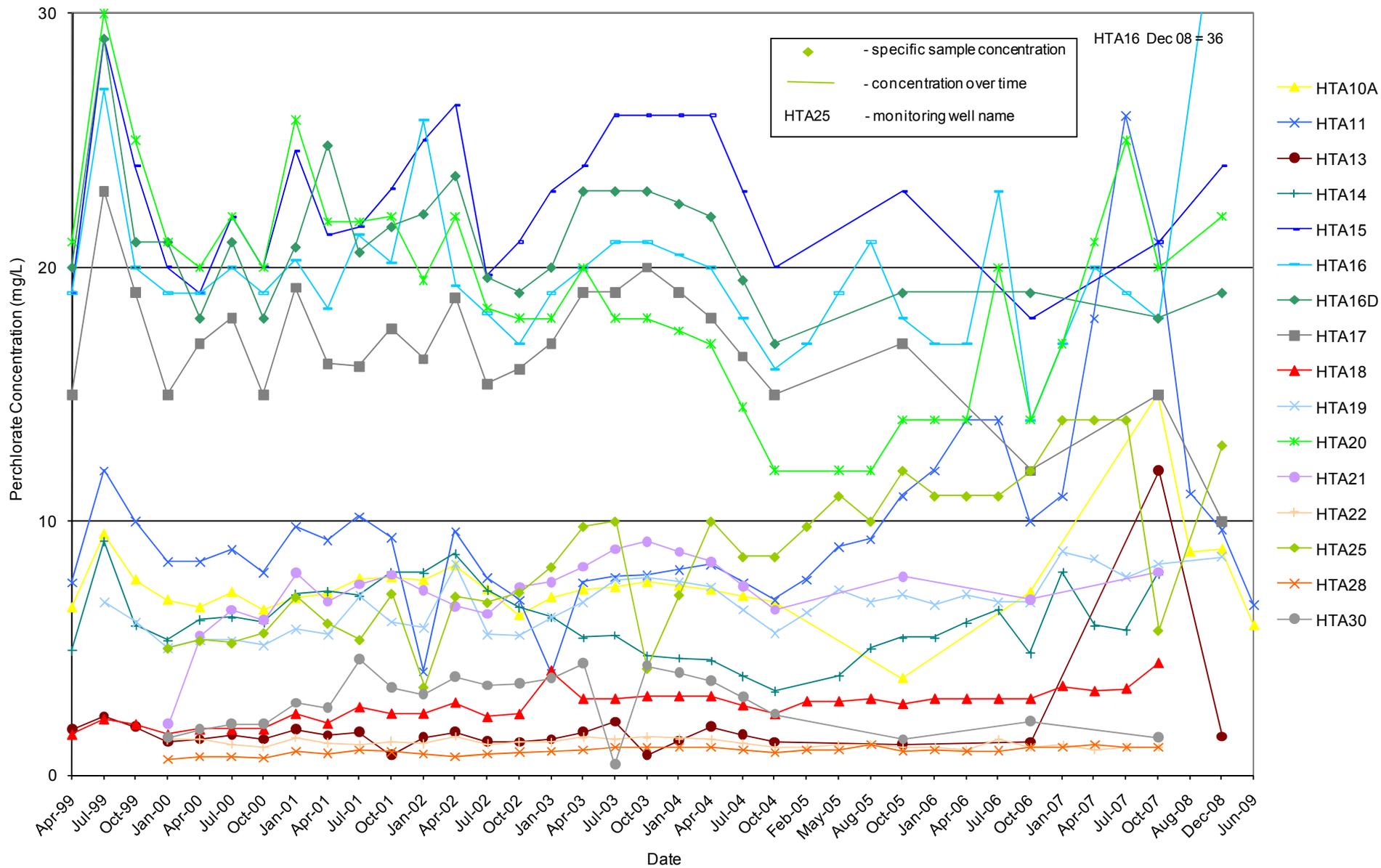


Figure 20. Time-series plot of perchlorate concentrations generally larger than 1 mg/L, April 1999 to June 2009 in ground water downgradient from the Open Burn/Open Detonation Unit U.S. Army White Sands Missile Range, New Mexico.

Table 1. Concentrations of analytes detected in ground water from monitoring wells for samples collected June 16, 2009, at the Open Burn/Open Detonation Unit, Hazardous Test Area, White Sands Missile Range, New Mexico.

[RL, reporting limit; µg/L, micrograms per liter; ND, not detected; B, estimated concentration, analyte detected at concentration less than the reporting limit; COL, more than 40% difference between the primary and confirmation detector results, the lower of the two results is reported; mg/L, milligrams per liter; J, Method blank contamination, the associated method blank contains the target analyte at a reportable level]

Sample ID: Sample date & time: Analytes and Method	HTA3		HTA10A		HTA11		HTA12	
	6/16/2009 Result	1500 RL	6/16/2009 Result	1345 RL	6/16/2009 Result	1305 RL	6/16/2009 Result	1210 RL
Explosives by HPLC, SW8330 (µg/L)								
RDX	ND	0.20	110	2.0	110	2.0	ND	0.20
HMX	ND	0.40	1.2 B, COL	4.0	1.3 B	4.0	ND	0.40
Nitrate & Nitrite, MCAWW353.2 (mg/L)	3.0 J	0.10	9.4 J	0.10	8.9 J	0.10	2.8 J	0.10
Perchlorate, SW6860 (mg/L)	0.0020	0.00050	5.9	5.0	6.7	5.0	0.018	0.0050

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NM2750211235</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-11</u>
WELL LOCATION (LONGITUDE)	<u>106° 31' 13"</u>
WELL LOCATION (LATITUDE)	<u>32° 29' 40"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>3 / 10 / 91</u>
DRILLING METHOD	<u>Air rotary</u>
INNER CASING DIAMETER	<u>4 inches</u>
BOREHOLE DIAMETER	<u>9.87" (0-20 ft); 6.75" (20-119 ft); 6" (119-205.5 ft)</u>
CASING MATERIAL	<u>PVC (Schedule 40)</u>
METHOD OF DEVELOPMENT	<u>Blown or surged with compressed air</u>
ELEV BOTTOM OF BOREHOLE	<u>5,485.74 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>5,606.24 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>5,611.24 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>5,631.24 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>5,692.17 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NM2750211235</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-12</u>
WELL LOCATION (LONGITUDE)	<u>106° 31' 22"</u>
WELL LOCATION (LATITUDE)	<u>32° 29' 43"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>3 / 13 / 91</u>
DRILLING METHOD	<u>Air rotary</u>
INNER CASING DIAMETER	<u>4 inches</u>
BOREHOLE DIAMETER	<u>9.87" (0-20 ft); 7.87" (20-100 ft); 6.75" (100-165ft)</u>
CASING MATERIAL	<u>PVC (Schedule 40)</u>
METHOD OF DEVELOPMENT	<u>Blown or surged with compressed air</u>
ELEV BOTTOM OF BOREHOLE	<u>5,589.78 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>5,599.78 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>5,604.78 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>5,624.78 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>5,756.71 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NM2750211235</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-13</u>
WELL LOCATION (LONGITUDE)	<u>106° 31' 16"</u>
WELL LOCATION (LATITUDE)	<u>32° 29' 38"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>3 / 10 / 98</u>
DRILLING METHOD	<u>Air rotary and air hammer</u>
INNER CASING DIAMETER	<u>4 inches</u>
BOREHOLE DIAMETER	<u>11.00" (0-3 ft); 9.8 " (3-60 ft); 6.12" (60-125 ft)</u>
CASING MATERIAL	<u>PVC (Schedule 40)</u>
METHOD OF DEVELOPMENT	<u>Blown or pumped with compressed air</u>
ELEV BOTTOM OF BOREHOLE	<u>5,564.92 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>5,570.12 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>5,575.47 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>5,595.53 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>5,692.23 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>	
EPA I.D. NUMBER	<u>NM2750211235</u>	
COUNTY	<u>Dona Ana</u>	
WELL NUMBER	<u>HTA-14</u>	
WELL LOCATION (LONGITUDE)	<u>106° 31' 15"</u>	
WELL LOCATION (LATITUDE)	<u>32° 29' 39"</u>	
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>	
AQUIFER CONFINED	<u>UNCONFINED</u>	<u>X</u>
WELL INSTALLATION DATE	<u>7 / 26 / 95</u>	
DRILLING METHOD	<u>Air rotary</u>	
INNER CASING DIAMETER	<u>4 inches</u>	
BOREHOLE DIAMETER	<u>7.875 inches</u>	
CASING MATERIAL	<u>PVC (Schedule 40)</u>	
METHOD OF DEVELOPMENT	<u>Unknown</u>	
ELEV BOTTOM OF BOREHOLE	<u>5,584.75 feet above MSL</u>	
ELEV BOTTOM OF WELL CASING	<u>5,585.75 feet above MSL</u>	
ELEV BOTTOM OF SCREENED INT	<u>5,585.75 feet above MSL</u>	
ELEV OF TOP OF SCREENED INT	<u>5,605.75 feet above MSL</u>	
SURVEYED ELEV OF CASING TOP	<u>5,698.04 feet above MSL</u>	

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NM2750211235</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-15</u>
WELL LOCATION (LONGITUDE)	<u>106° 31' 06"</u>
WELL LOCATION (LATITUDE)	<u>32° 29' 38"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>7 / 26 / 96</u>
DRILLING METHOD	<u>Unknown</u>
INNER CASING DIAMETER	<u>4 inches</u>
BOREHOLE DIAMETER	<u>8 inches (0 -106 ft); 6 inches (106 -120 ft)</u>
CASING MATERIAL	<u>PVC (Schedule 40)</u>
METHOD OF DEVELOPMENT	<u>Unknown</u>
ELEV BOTTOM OF BOREHOLE	<u>5,522.92 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>5,540.92 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>5,545.92 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>5,565.92 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>5,645.09 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NM2750211235</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-16D</u>
WELL LOCATION (LONGITUDE)	<u>106° 31' 09"</u>
WELL LOCATION (LATITUDE)	<u>32° 29' 37"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>3 / 04 / 98</u>
DRILLING METHOD	<u>Air rotary and air hammer</u>
INNER CASING DIAMETER	<u>2.5 inches</u>
BOREHOLE DIAMETER	<u>9.87 " (0-40 ft); 6.12 " (40-305 ft)</u>
CASING MATERIAL	<u>PVC (Schedule 40)</u>
METHOD OF DEVELOPMENT	<u>Blown or pumped with compressed air</u>
ELEV BOTTOM OF BOREHOLE	<u>5,332.96 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>5,478.74 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>5,484.01 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>5,503.90 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>5,640.13 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NM2750211235</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-18</u>
WELL LOCATION (LONGITUDE)	<u>106° 30' 56"</u>
WELL LOCATION (LATITUDE)	<u>32° 29' 32"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>2 / 28 / 98</u>
DRILLING METHOD	<u>Air rotary and air hammer</u>
INNER CASING DIAMETER	<u>4 inches</u>
BOREHOLE DIAMETER	<u>9.87 " (0-40 ft); 6.12 " (40-305 ft)</u>
CASING MATERIAL	<u>PVC (Schedule 40)</u>
METHOD OF DEVELOPMENT	<u>Pumped with compressed air</u>
ELEV BOTTOM OF BOREHOLE	<u>5,231.59 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>5,406.93 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>5,412.28 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>5,432.34 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>5,538.95 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NM2750211235</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-19</u>
WELL LOCATION (LONGITUDE)	<u>106° 31' 03"</u>
WELL LOCATION (LATITUDE)	<u>32° 29' 35"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>3 / 6 / 98</u>
DRILLING METHOD	<u>Air rotary and air hammer</u>
INNER CASING DIAMETER	<u>4 inches</u>
BOREHOLE DIAMETER	<u>11.00" (0-3ft); 9.87" (3-40ft); 6.12" (40-305 ft)</u>
CASING MATERIAL	<u>PVC (Schedule 40)</u>
METHOD OF DEVELOPMENT	<u>Pumped with compressed air</u>
ELEV BOTTOM OF BOREHOLE	<u>5,289.83 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>5,448.22 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>5,453.57 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>5,473.63 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>5,597.22 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NM2750211235</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-20</u>
WELL LOCATION (LONGITUDE)	<u>106° 31' 14"</u>
WELL LOCATION (LATITUDE)	<u>32° 29' 43"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>3 / 11 / 98</u>
DRILLING METHOD	<u>Air rotary and air hammer</u>
INNER CASING DIAMETER	<u>4 inches</u>
BOREHOLE DIAMETER	<u>11.00" (0-3ft); 9.87" (3-40ft); 6.12" (40-115ft)</u>
CASING MATERIAL	<u>PVC (Schedule 40)</u>
METHOD OF DEVELOPMENT	<u>Pumped with compressed air</u>
ELEV BOTTOM OF BOREHOLE	<u>5,584.34 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>5,599.58 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>5,604.93 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>5,624.99 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>5,701.56 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NM2750211235</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-21</u>
WELL LOCATION (LONGITUDE)	<u>106° 31' 09"</u>
WELL LOCATION (LATITUDE)	<u>32° 29' 33"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>11 / 30 / 99</u>
DRILLING METHOD	<u>Air rotary (0-41 ft) and air hammer (41-115 ft)</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>11 in (0-41 ft); 6 in (41-115 ft)</u>
CASING MATERIAL	<u>PVC (Schedule 40), 0.01 inch slotted PVC screen</u>
METHOD OF DEVELOPMENT	<u>Borehole developed with compressed air prior to installing well casing</u>
ELEV BOTTOM OF BOREHOLE	<u>5,504 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>5,509.67 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>5,514.52 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>5,534.22 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>5,621.79 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NM2750211235</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-23</u>
WELL LOCATION (LONGITUDE)	<u>106° 31' 18"</u>
WELL LOCATION (LATITUDE)	<u>32° 29' 35"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>12/01/99</u>
DRILLING METHOD	<u>Air rotary (0-35 ft) and air hammer (35-135 ft)</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>11 in (0-35 ft); 6 in (35-135 ft)</u>
CASING MATERIAL	<u>PVC (schedule 40), 0.01 inch slotted screen</u>
METHOD OF DEVELOPMENT	<u>Borehole developed with compressed air prior to installing well casing</u>
ELEV BOTTOM OF BOREHOLE	<u>5,545 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>5,544.87 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>5,549.72 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>5,569.42 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>5,682.05 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NM2750211235</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-27</u>
WELL LOCATION (LONGITUDE)	<u>106° 30' 51"</u>
WELL LOCATION (LATITUDE)	<u>32° 29' 27"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>12/03/99</u>
DRILLING METHOD	<u>Air rotary (0-25 ft) and air hammer (25-182 ft)</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>11 in (0-25 ft); 6 in (25-182 ft)</u>
CASING MATERIAL	<u>PVC (schedule 40), 0.01 inch slotted screen</u>
METHOD OF DEVELOPMENT	<u>Borehole developed with compressed air prior to installing well casing</u>
ELEV BOTTOM OF BOREHOLE	<u>5,313 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>5,315.14 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>5,315.14 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>5,334.84 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>5,496.5 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>	
EPA I.D. NUMBER	<u>NM2750211235</u>	
COUNTY	<u>Dona Ana</u>	
WELL NUMBER	<u>HTA-28</u>	
WELL LOCATION (LONGITUDE)	<u>106° 30' 46"</u>	
WELL LOCATION (LATITUDE)	<u>32° 29' 23"</u>	
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>	
AQUIFER CONFINED	<u>UNCONFINED</u>	<u>X</u>
WELL INSTALLATION DATE	<u>12/04/99</u>	
DRILLING METHOD	<u>Air rotary (0-19.5 ft), air hammer (19.5-300 ft)</u>	
INNER CASING DIAMETER	<u>3 inches</u>	
BOREHOLE DIAMETER	<u>11 in (0-19.5 ft); 6 in (19.5-300 ft)</u>	
CASING MATERIAL	<u>PVC (schedule 40), 0.01 inch slotted screen</u>	
METHOD OF DEVELOPMENT	<u>Pumped</u>	
ELEV BOTTOM OF BOREHOLE	<u>5,151 feet above MSL, Borehole backfilled with bentonite chip up to 5,302 feet MSL</u>	
ELEV BOTTOM OF WELL CASING	<u>5,306.26 feet above MSL</u>	
ELEV BOTTOM OF SCREENED INT	<u>5,311.11 feet above MSL</u>	
ELEV OF TOP OF SCREENED INT	<u>5,330.81 feet above MSL</u>	
SURVEYED ELEV OF CASING TOP	<u>5,453.96 feet above MSL</u>	

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NONE</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-32</u>
WELL LOCATION (LONGITUDE)	<u>106° 30' 26.29"</u>
WELL LOCATION (LATITUDE)	<u>32° 29' 23.73"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>01/14/2002</u>
DRILLING METHOD	<u>Air rotary</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>6 inches</u>
CASING MATERIAL	<u>PVC</u>
METHOD OF DEVELOPMENT	<u>Air lifted and pumped</u>
ELEV BOTTOM OF BOREHOLE	<u>5,259.77 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>5,268.77 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>5,268.77 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>5,288.77 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>5,346.31 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NONE</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-33</u>
WELL LOCATION (LONGITUDE)	<u>106° 30' 54.85"</u>
WELL LOCATION (LATITUDE)	<u>32° 28' 48.1"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>1/14/2002</u>
DRILLING METHOD	<u>Air rotary</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>6 inches</u>
CASING MATERIAL	<u>PVC</u>
METHOD OF DEVELOPMENT	<u>Air lifted and pumped</u>
ELEV BOTTOM OF BOREHOLE	<u>5,256.81 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>5,261.81 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>5,261.81 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>5,281.81 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>5,371.55 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NONE</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-34</u>
WELL LOCATION (LONGITUDE)	<u>106° 31' 27.89"</u>
WELL LOCATION (LATITUDE)	<u>32° 29' 43.16"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>1/14/2002</u>
DRILLING METHOD	<u>Air rotary</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>6 inches</u>
CASING MATERIAL	<u>PVC</u>
METHOD OF DEVELOPMENT	<u>Air lifted and pumped</u>
ELEV BOTTOM OF BOREHOLE	<u>5,690.94 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>5,691.94 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>5,691.94 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>5,711.94 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>5,797.72 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NONE</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-35</u>
WELL LOCATION (LONGITUDE)	<u>106° 29' 6.03"</u>
WELL LOCATION (LATITUDE)	<u>32° 27' 4.28"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>1/16/2002</u>
DRILLING METHOD	<u>Air rotary</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>6 inches</u>
CASING MATERIAL	<u>PVC</u>
METHOD OF DEVELOPMENT	<u>Air lifted and pumped</u>
ELEV BOTTOM OF BOREHOLE	<u>4,454.42 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>4,459.42 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>4,459.42 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>4,479.42 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>4,621.18 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NONE</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-36</u>
WELL LOCATION (LONGITUDE)	<u>106° 29' 44.25"</u>
WELL LOCATION (LATITUDE)	<u>32° 27' 2.38"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>1/16/2002</u>
DRILLING METHOD	<u>Air rotary</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>6 inches</u>
CASING MATERIAL	<u>PVC</u>
METHOD OF DEVELOPMENT	<u>Air lifted and pumped</u>
ELEV BOTTOM OF BOREHOLE	<u>4,696.49 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>4,701.49 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>4,701.49 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>4,721.49 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>4,798.02 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NONE</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-37</u>
WELL LOCATION (LONGITUDE)	<u>106° 29' 47.22"</u>
WELL LOCATION (LATITUDE)	<u>32° 26' 39.19"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>1/16/2002</u>
DRILLING METHOD	<u>Air rotary</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>6 inches</u>
CASING MATERIAL	<u>PVC</u>
METHOD OF DEVELOPMENT	<u>Air lifted and pumped</u>
ELEV BOTTOM OF BOREHOLE	<u>4,551.93 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>4,557.93 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>4,557.93 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>4,577.93 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>4,697.84 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NONE</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-38</u>
WELL LOCATION (LONGITUDE)	<u>106° 30' 2.03"</u>
WELL LOCATION (LATITUDE)	<u>32° 26' 24.49"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>1/17/2002</u>
DRILLING METHOD	<u>Air rotary</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>6 inches</u>
CASING MATERIAL	<u>PVC</u>
METHOD OF DEVELOPMENT	<u>Air lifted and pumped</u>
ELEV BOTTOM OF BOREHOLE	<u>4,599.95 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>4,604.95 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>4,604.95 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>4,624.95 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>4,726.93 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NONE</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-39</u>
WELL LOCATION (LONGITUDE)	<u>106° 29' 48.75"</u>
WELL LOCATION (LATITUDE)	<u>32° 26' 12.15"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>1/17/2002</u>
DRILLING METHOD	<u>Air rotary</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>6 inches</u>
CASING MATERIAL	<u>PVC</u>
METHOD OF DEVELOPMENT	<u>Air lifted and pumped</u>
ELEV BOTTOM OF BOREHOLE	<u>4,495.42 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>4,500.42 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>4,500.42 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>4,520.42 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>4,652.14 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NONE</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-40</u>
WELL LOCATION (LONGITUDE)	<u>106° 29' 13.95"</u>
WELL LOCATION (LATITUDE)	<u>32° 26' 8.93"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>1/17/2002</u>
DRILLING METHOD	<u>Air rotary</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>6 inches</u>
CASING MATERIAL	<u>PVC</u>
METHOD OF DEVELOPMENT	<u>Air lifted and pumped</u>
ELEV BOTTOM OF BOREHOLE	<u>4,309.63 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>4,314.63 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>4,314.63 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>4,334.63 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>4,516.5 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NONE</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-41</u>
WELL LOCATION (LONGITUDE)	<u>106° 28' 19.14"</u>
WELL LOCATION (LATITUDE)	<u>32° 27' 31.39"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>1/16/2002</u>
DRILLING METHOD	<u>Air rotary</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>6 inches</u>
CASING MATERIAL	<u>PVC</u>
METHOD OF DEVELOPMENT	<u>Air lifted and pumped</u>
ELEV BOTTOM OF BOREHOLE	<u>4,377.11 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>4,377.11 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>4,377.11 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>4,397.11 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>4,504.63 feet above MSL</u>

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NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NONE</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-42</u>
WELL LOCATION (LONGITUDE)	<u>106° 29' 42.66"</u>
WELL LOCATION (LATITUDE)	<u>32° 28' 37.01"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>1/15/2002</u>
DRILLING METHOD	<u>Air rotary</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>6 inches</u>
CASING MATERIAL	<u>PVC</u>
METHOD OF DEVELOPMENT	<u>Air lifted and pumped</u>
ELEV BOTTOM OF BOREHOLE	<u>4,854.49 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>4,856.69 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>4,856.69 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>4,876.69 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>4,996.95 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NONE</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-44</u>
WELL LOCATION (LONGITUDE)	<u>106° 30' 2.42"</u>
WELL LOCATION (LATITUDE)	<u>32° 27' 44.93"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>1/15/2002</u>
DRILLING METHOD	<u>Air rotary</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>6 inches</u>
CASING MATERIAL	<u>PVC</u>
METHOD OF DEVELOPMENT	<u>Air lifted and pumped</u>
ELEV BOTTOM OF BOREHOLE	<u>4,794.28 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>4,799.28 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>4,799.28 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>4,819.28 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>4,940.26 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
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2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NONE</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-45</u>
WELL LOCATION (LONGITUDE)	<u>106° 28' 34.57"</u>
WELL LOCATION (LATITUDE)	<u>32° 28' 23.34"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>1/16/2002</u>
DRILLING METHOD	<u>Air rotary</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>6 inches</u>
CASING MATERIAL	<u>PVC</u>
METHOD OF DEVELOPMENT	<u>Air lifted and pumped</u>
ELEV BOTTOM OF BOREHOLE	<u>4,493.73 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>4,498.73 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>4,498.73 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>4,518.73 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>4,640.84 feet above MSL</u>

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
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2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NONE</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-46</u>
WELL LOCATION (LONGITUDE)	<u>106° 30' 2.51"</u>
WELL LOCATION (LATITUDE)	<u>32° 29' 6.27"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>1/15/2002</u>
DRILLING METHOD	<u>Air rotary</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>6 inches</u>
CASING MATERIAL	<u>PVC</u>
METHOD OF DEVELOPMENT	<u>Air lifted and pumped</u>
ELEV BOTTOM OF BOREHOLE	<u>4,834.15 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>5,014.15 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>5,014.15 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>5,034.15 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>5,161.62 feet above</u>

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SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NONE</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-47A</u>
WELL LOCATION (LONGITUDE)	<u>106° 28' 1.33"</u>
WELL LOCATION (LATITUDE)	<u>32° 28' 26.72"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>2/21/2003</u>
DRILLING METHOD	<u>Air rotary</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>6 inches</u>
CASING MATERIAL	<u>PVC</u>
METHOD OF DEVELOPMENT	<u>Air lifted and pumped</u>
ELEV BOTTOM OF BOREHOLE	<u>4,310.93 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>4,311.13 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>4,311.13 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>4,331.13 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>4,494.93 feet above MSL</u>

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NEW MEXICO ENVIRONMENT DEPARTMENT
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2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>	
EPA I.D. NUMBER	<u>NONE</u>	
COUNTY	<u>Dona Ana</u>	
WELL NUMBER	<u>HTA-48</u>	
WELL LOCATION (LONGITUDE)	<u>106° 28' 56.57"</u>	
WELL LOCATION (LATITUDE)	<u>32° 25' 37.51"</u>	
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>	
AQUIFER CONFINED	<u>UNCONFINED</u>	<u>X</u>
WELL INSTALLATION DATE	<u>1/17/2002</u>	
DRILLING METHOD	<u>Air rotary</u>	
INNER CASING DIAMETER	<u>3 inches</u>	
BOREHOLE DIAMETER	<u>6 inches</u>	
CASING MATERIAL	<u>PVC</u>	
METHOD OF DEVELOPMENT	<u>Air lifted and pumped</u>	
ELEV BOTTOM OF BOREHOLE	<u>4,242.41 feet above MSL</u>	
ELEV BOTTOM OF WELL CASING	<u>4,247.41 feet above MSL</u>	
ELEV BOTTOM OF SCREENED INT	<u>4,247.41 feet above MSL</u>	
ELEV OF TOP OF SCREENED INT	<u>4,267.41 feet above MSL</u>	
SURVEYED ELEV OF CASING TOP	<u>4,409.63 feet above MSL</u>	

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NONE</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-50</u>
WELL LOCATION (LONGITUDE)	<u>106° 27' 31.4"</u>
WELL LOCATION (LATITUDE)	<u>32° 28' 33.32"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>1/13/2002</u>
DRILLING METHOD	<u>Mud rotary</u>
INNER CASING DIAMETER	<u>4 inches</u>
BOREHOLE DIAMETER	<u>7.875 inches</u>
CASING MATERIAL	<u>PVC</u>
METHOD OF DEVELOPMENT	<u>Bailed</u>
ELEV BOTTOM OF BOREHOLE	<u>3,846.45 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>3,850.05 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>3,850.05 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>3,880.05 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>4,368.24 feet above MSL</u>

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HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>
EPA I.D. NUMBER	<u>NONE</u>
COUNTY	<u>Dona Ana</u>
WELL NUMBER	<u>HTA-51</u>
WELL LOCATION (LONGITUDE)	<u>106° 29' 1.41"</u>
WELL LOCATION (LATITUDE)	<u>32° 29' 0.61"</u>
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>
AQUIFER CONFINED	<u>UNCONFINED</u> <u>X</u>
WELL INSTALLATION DATE	<u>2/24/2003</u>
DRILLING METHOD	<u>Air rotary</u>
INNER CASING DIAMETER	<u>3 inches</u>
BOREHOLE DIAMETER	<u>6 inches</u>
CASING MATERIAL	<u>PVC</u>
METHOD OF DEVELOPMENT	<u>Air lifted and pumped</u>
ELEV BOTTOM OF BOREHOLE	<u>4,692.23 feet above MSL</u>
ELEV BOTTOM OF WELL CASING	<u>4,692.63 feet above MSL</u>
ELEV BOTTOM OF SCREENED INT	<u>4,692.63 feet above MSL</u>
ELEV OF TOP OF SCREENED INT	<u>4,712.63 feet above MSL</u>
SURVEYED ELEV OF CASING TOP	<u>4,837.23 feet above MSL</u>

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NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>		
EPA I.D. NUMBER	<u>NONE</u>		
COUNTY	<u>Dona Ana</u>		
WELL NUMBER	<u>EMRE 1</u>		
WELL LOCATION (LONGITUDE)	<u>106° 30' 17"</u>		
WELL LOCATION (LATITUDE)	<u>32° 28' 4"</u>		
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>		
AQUIFER CONFINED	<u>Unknown</u>	UNCONFINED	<u>Unknown</u>
WELL INSTALLATION DATE	<u>12/3/99</u>		
DRILLING METHOD	<u>Air rotary</u>		
INNER CASING DIAMETER	<u>3 inches</u>		
BOREHOLE DIAMETER	<u>Unknown</u>		
CASING MATERIAL	<u>PVC</u>		
METHOD OF DEVELOPMENT	<u>Unknown</u>		
ELEV BOTTOM OF BOREHOLE	<u>4,859.16 feet above MSL</u>		
ELEV BOTTOM OF WELL CASING	<u>4,863.16 feet above MSL</u>		
ELEV BOTTOM OF SCREENED INT	<u>4,868.16 feet above MSL</u>		
ELEV OF TOP OF SCREENED INT	<u>4,888.16 feet above MSL</u>		
SURVEYED ELEV OF CASING TOP	<u>5,045.43 feet above MSL</u>		

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>		
EPA I.D. NUMBER	<u>NONE</u>		
COUNTY	<u>Dona Ana</u>		
WELL NUMBER	<u>EMRE 2</u>		
WELL LOCATION (LONGITUDE)	<u>106° 30' 9"</u>		
WELL LOCATION (LATITUDE)	<u>32° 28' 0"</u>		
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>		
AQUIFER CONFINED	<u>Unknown</u>	UNCONFINED	<u>Unknown</u>
WELL INSTALLATION DATE	<u>12/03/99</u>		
DRILLING METHOD	<u>Air rotary</u>		
INNER CASING DIAMETER	<u>3 inches</u>		
BOREHOLE DIAMETER	<u>Unknown</u>		
CASING MATERIAL	<u>PVC</u>		
METHOD OF DEVELOPMENT	<u>Unknown</u>		
ELEV BOTTOM OF BOREHOLE	<u>4,890.99 feet above MSL</u>		
ELEV BOTTOM OF WELL CASING	<u>4,893.99 feet above MSL</u>		
ELEV BOTTOM OF SCREENED INT	<u>4,898.99 feet above MSL</u>		
ELEV OF TOP OF SCREENED INT	<u>4,917.99 feet above MSL</u>		
SURVEYED ELEV OF CASING TOP	<u>4,996.37 feet above MSL</u>		

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2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>		
EPA I.D. NUMBER	<u>NONE</u>		
COUNTY	<u>Dona Ana</u>		
WELL NUMBER	<u>HTA-WINDMILL</u>		
WELL LOCATION (LONGITUDE)	<u>106° 50' 52"</u>		
WELL LOCATION (LATITUDE)	<u>32° 28' 24"</u>		
AQUIFER NAME	<u>Precambrian Granite (400PCMB)</u>		
AQUIFER CONFINED	<u>Unknown</u>	UNCONFINED	<u>Unknown</u>
WELL INSTALLATION DATE	<u>Unknown</u>		
DRILLING METHOD	<u>Unknown</u>		
INNER CASING DIAMETER	<u>Unknown</u>		
BOREHOLE DIAMETER	<u>Unknown</u>		
CASING MATERIAL	<u>Unknown</u>		
METHOD OF DEVELOPMENT	<u>Unknown</u>		
ELEV BOTTOM OF BOREHOLE	<u>Unknown</u>		
ELEV BOTTOM OF WELL CASING	<u>Unknown</u>		
ELEV BOTTOM OF SCREENED INT	<u>Unknown</u>		
ELEV OF TOP OF SCREENED INT	<u>Unknown</u>		
SURVEYED ELEV OF CASING TOP	<u>Unknown</u>		

MONITORING WELL IDENTIFICATION REPORT

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SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>		
EPA I.D. NUMBER	<u>NONE</u>		
COUNTY	<u>Dona Ana</u>		
WELL NUMBER	<u>BONNEY SPRING MINE WINDMILL</u>		
WELL LOCATION (LONGITUDE)	<u>106° 29' 11"</u>		
WELL LOCATION (LATITUDE)	<u>32° 29' 38"</u>		
AQUIFER NAME	<u>Unknown</u>		
AQUIFER CONFINED	<u>Unknown</u>	UNCONFINED	<u>Unknown</u>
WELL INSTALLATION DATE	<u>Unknown</u>		
DRILLING METHOD	<u>Unknown</u>		
INNER CASING DIAMETER	<u>8 inches</u>		
BOREHOLE DIAMETER	<u>Unknown</u>		
CASING MATERIAL	<u>Steel</u>		
METHOD OF DEVELOPMENT	<u>Unknown</u>		
ELEV BOTTOM OF BOREHOLE	<u>Unknown</u>		
ELEV BOTTOM OF WELL CASING	<u>4,978 feet above MSL</u>		
ELEV BOTTOM OF SCREENED INT	<u>Unknown</u>		
ELEV OF TOP OF SCREENED INT	<u>Unknown</u>		
SURVEYED ELEV OF CASING TOP	<u>5,041 feet above MSL</u>		

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2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>		
EPA I.D. NUMBER	<u>NONE</u>		
COUNTY	<u>Dona Ana</u>		
WELL NUMBER	<u>SMR1A</u>		
WELL LOCATION (LONGITUDE)	<u>106° 26' 32"</u>		
WELL LOCATION (LATITUDE)	<u>32° 29' 02"</u>		
AQUIFER NAME	<u>Unknown</u>		
AQUIFER CONFINED	<u>Unknown</u>	UNCONFINED	<u>Unknown</u>
WELL INSTALLATION DATE	<u></u>		
DRILLING METHOD	<u>Unknown</u>		
INNER CASING DIAMETER	<u>Unknown</u>		
BOREHOLE DIAMETER	<u>Unknown</u>		
CASING MATERIAL	<u>Unknown</u>		
METHOD OF DEVELOPMENT	<u>Unknown</u>		
ELEV BOTTOM OF BOREHOLE	<u>Unknown</u>		
ELEV BOTTOM OF WELL CASING	<u>Unknown</u>		
ELEV BOTTOM OF SCREENED INT	<u>Unknown</u>		
ELEV OF TOP OF SCREENED INT	<u>Unknown</u>		
SURVEYED ELEV OF CASING TOP	<u>Unkown</u>		

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2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>		
EPA I.D. NUMBER	<u>NONE</u>		
COUNTY	<u>Dona Ana</u>		
WELL NUMBER	<u>SMR2</u>		
WELL LOCATION (LONGITUDE)	<u>106° 26' 44"</u>		
WELL LOCATION (LATITUDE)	<u>32° 28' 38"</u>		
AQUIFER NAME	<u>Unknown</u>		
AQUIFER CONFINED	<u>Unknown</u>	UNCONFINED	<u>Unknown</u>
WELL INSTALLATION DATE	<u>September 1960</u>		
DRILLING METHOD	<u>Cable tool</u>		
INNER CASING DIAMETER	<u>8 inches to 608 feet, 6 inches to 747 feet</u>		
BOREHOLE DIAMETER	<u>10 inches to 612 feet, 8 inches to 747 feet</u>		
CASING MATERIAL	<u>Steel</u>		
METHOD OF DEVELOPMENT	<u>Unknown</u>		
ELEV BOTTOM OF BOREHOLE	<u>3,440.71 feet above MSL</u>		
ELEV BOTTOM OF WELL CASING	<u>3,449.71 feet above MSL</u>		
ELEV BOTTOM OF SCREENED INT	<u>Unknown</u>		
ELEV OF TOP OF SCREENED INT	<u>Unknown</u>		
SURVEYED ELEV OF CASING TOP	<u>4,196.71 feet above MSL</u>		

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>		
EPA I.D. NUMBER	<u>NONE</u>		
COUNTY	<u>Dona Ana</u>		
WELL NUMBER	<u>SMR3</u>		
WELL LOCATION (LONGITUDE)	<u>106° 25' 11"</u>		
WELL LOCATION (LATITUDE)	<u>32° 31' 04"</u>		
AQUIFER NAME	<u>Unknown</u>		
AQUIFER CONFINED	<u>Unknown</u>	UNCONFINED	<u>Unknown</u>
WELL INSTALLATION DATE	<u>January 1967</u>		
DRILLING METHOD	<u>Hydraulic rotary</u>		
INNER CASING DIAMETER	<u>8 inches to 1,000 feet</u>		
BOREHOLE DIAMETER	<u>Unknown</u>		
CASING MATERIAL	<u>Steel</u>		
METHOD OF DEVELOPMENT	<u>Unknown</u>		
ELEV BOTTOM OF BOREHOLE	<u>3,170.73 feet above MSL</u>		
ELEV BOTTOM OF WELL CASING	<u>3,180.73 feet above MSL</u>		
ELEV BOTTOM OF SCREENED INT	<u>Unknown</u>		
ELEV OF TOP OF SCREENED INT	<u>Unknown</u>		
SURVEYED ELEV OF CASING TOP	<u>4,180.73 feet above MSL</u>		

MONITORING WELL IDENTIFICATION REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT
HAZARDOUS WASTE BUREAU
2905 RODEO PARK DRIVE, EAST, BUILDING 1
SANTA FE, NEW MEXICO 87505

FACILITY NAME	<u>Open Burn / Open Detonation Unit, Hazardous Test Area</u>		
EPA I.D. NUMBER	<u>NONE</u>		
COUNTY	<u>Dona Ana</u>		
WELL NUMBER	<u>SMR4</u>		
WELL LOCATION (LONGITUDE)	<u>106° 27' 13"</u>		
WELL LOCATION (LATITUDE)	<u>32° 27' 35"</u>		
AQUIFER NAME	<u>Unknown</u>		
AQUIFER CONFINED	<u>Unknown</u>	UNCONFINED	<u>Unknown</u>
WELL INSTALLATION DATE	<u>December 1967</u>		
DRILLING METHOD	<u>Hydraulic rotary</u>		
INNER CASING DIAMETER	<u>8 inches</u>		
BOREHOLE DIAMETER	<u>12 1/4 inches to 450 feet, 7 7/8 inches to total</u>		
CASING MATERIAL	<u>Steel</u>		
METHOD OF DEVELOPMENT	<u>Unknown</u>		
ELEV BOTTOM OF BOREHOLE	<u>3,145.83 feet above MSL</u>		
ELEV BOTTOM OF WELL CASING	<u>Unknown</u>		
ELEV BOTTOM OF SCREENED INT	<u>Unknown</u>		
ELEV OF TOP OF SCREENED INT	<u>Unknown</u>		
SURVEYED ELEV OF CASING TOP	<u>4,161.83 feet above MSL</u>		

APPENDIX I

Analytical Results from Severn Trent Services Laboratory for
Ground-Water Samples Collected June 16, 2009

ANALYTICAL REPORT

White Sands HTA
SDG: HTA-30
Lot #s: D9F190279

Gary Cottrell

U.S. Geological Survey

TestAmerica Laboratories, Inc.



Lisa B. Uriell
Project Manager

July 15, 2009

Case Narrative

HTA-30

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits, with any exceptions noted.

The test results presented in this report meet all requirements of NELAC, and any exceptions are noted. This report shall not be reproduced, except in full, without written permission from the laboratory.

Sample Receiving

Nine samples were received under chain of custody on June 19, 2009 and logged under lot D9F190279. This lot is reported here under SDG HTA-30.

Samples logged under lot D9F190279 were received at temperatures of 3.8°C and 2.4°C.

No anomalies were encountered during sample receipt.

LC/MS – Perchlorate, SW846 6860

Each sample is analyzed to achieve the lowest possible reporting limits within the constraints of the method. Samples HTA-12 (D9F190279-001), HTA-3 (002), HTA-11 (003) and HTA-10A (004) had to be analyzed at dilutions due to high constituent concentrations of Perchlorate. The reporting limits have been adjusted relative to the dilutions required.

MS/MSD associated with QC batch 9194322 were performed on sample HTA-12 (D9F190279-001). All spike parameters were within QC control limits.

No other anomalies were observed.

HPLC – Explosives, SW846 8330

Each sample is analyzed to achieve the lowest possible reporting limits within the constraints of the method. Due to analytes present above the linear calibration curve, samples HTA-11 (D9F190279-003) and HTA-10A (004) had to be analyzed at dilutions. The reporting limits have been adjusted relative to the dilutions required.

Surrogate recoveries could not be calculated for samples HTA-11 (D9F190279-003) and HTA-10A (004), because the extracts were diluted beyond the ability to quantitate recoveries.

The RPD between the primary and confirmation columns exceeded 40% for HMX in sample HTA-10A (D9F190279-004). The lower of the two values has been reported, as matrix interference is evident. The result in the analytical report has been flagged with "COL".

The method required MS/MSD could not be performed for QC batch 9172021, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data.

No other anomalies were observed.

General Chemistry, Bromide, MCAWW 300.0A & Nitrate-Nitrite, MCAWW 353.2

Low levels of Nitrate-Nitrite are present in the method blank associated with QC batch 9192033. Because the concentration in the method blank is not present at a level greater than one half the reporting limit, corrective action is deemed unnecessary. The associated positive results in the analytical report have been flagged with a "J".

The Bromide MS/MSD (batch 9190043) was performed on a sample from another client and/or lot and was in control.

The Nitrate-Nitrite MS/MSD (batch 9192033) was performed on a sample from another client and/or lot and was in control.

No other anomalies were observed.

Quality Control Definitions of Terms

Term	Definition
Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD)	A volume of reagent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which is spiked with known amounts of representative target analytes and required surrogates. A LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects. An LCSD is a second Laboratory Control Sample.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A field sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MS/MSDs are carried throughout the entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.
Sample Duplicate	A second aliquot of an environmental sample, taken from the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative to the precision for other samples in the batch.
Method Detection Limit "MDL"	The method detection limit is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from replicate analyses of low level standards in a typical representative matrix.
Reporting Limit "RL"	The STL reporting limit is normally the lowest level at which measurements become quantitatively meaningful, i.e., the quantitation limit, which is approximately three times the MDL. Some projects require RLs that are less than the quantitation limit to achieve particular maximum contaminant levels (MCLs) or relevant and appropriate requirements (ARARs), but RLs cannot be less than the statistically determined MDL.

Quality Control Definitions of Qualifiers

Qualifier	Definition
*	Surrogate or Relative Percent Difference (RPD) is outside control limits.
a	Spiked analyte recovery is outside control limits.
B	Organics: Method blank contamination. The associated method blank contains the target analyte at a reportable level. Inorganics: Estimated result. Result is less than the RL
COL	More than 40% difference between the primary and confirmation detector results. The lower of the two results is reported.
DIL	The concentration is estimated or not reported due to dilution.
E	Estimated result. Result concentrations exceeds the calibration range.
G	Inorganics: Elevated reporting limit. The reporting limit is elevated due to matrix interference.
J	Organics: Estimated result. Result is less than RL Inorganics: Method blank contamination. The associated method blank contains the target analyte at a reportable level.
L	Serial dilution of a digestate in the analytical batch indicates that physical and chemical interferences are present
N	Spiked analyte recovery is outside stated control limits.
NC	The recovery and/or RPD were not calculated.
ND	The analyte was not detected at the MDL concentration and with a measurable degree of confidence can be said not to be present at or above the RL concentration.
p	Relative percent difference (RPD) is outside stated control limits.
Q	Elevated reporting limit. The reporting limit is elevated due to high analyte levels.
V	General Chemistry: Elevated reporting limit due to limited sample volume.
Wa	Post digestion spike recovery fell between 40-85% due to matrix interference.
Wb	Post digestion spike recovery fell between 115-150% due to matrix interference.
I	Percent recovery is estimated since the results exceeded the calibration range.
T1	A tentatively identified compound that did not generate a spectral match of 80% or greater. Typically called "unknown"
T2	A tentatively identified compound with a spectral match of 80% or better
T3	A tentatively identified compound that was calibrated for by the lab, but not on the client target analyte list.
IC	Diluted due to high inorganic chloride.

EXECUTIVE SUMMARY - Detection Highlights

HTA-30 : D9F190279

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HTA-12 06/16/09 12:10 001				
Perchlorate	18	5.0	ug/L	SW846 6860
Nitrate-Nitrite	2.8 J	0.10	mg/L	MCAWW 353.2
HTA-3 06/16/09 15:00 002				
Perchlorate	2.0	0.50	ug/L	SW846 6860
Nitrate-Nitrite	3.0 J	0.10	mg/L	MCAWW 353.2
HTA-11 06/16/09 13:05 003				
HMX	1.3 J	4.0	ug/L	SW846 8330
RDX	110	2.0	ug/L	SW846 8330
Perchlorate	6700	5000	ug/L	SW846 6860
Nitrate-Nitrite	8.9 J	0.10	mg/L	MCAWW 353.2
Bromide	0.22	0.20	mg/L	MCAWW 300.0A
HTA-10A 06/16/09 13:45 004				
HMX	1.2 J, COL	4.0	ug/L	SW846 8330
RDX	110	2.0	ug/L	SW846 8330
Perchlorate	5900	5000	ug/L	SW846 6860
Nitrate-Nitrite	9.4 J	0.10	mg/L	MCAWW 353.2
Bromide	0.23	0.20	mg/L	MCAWW 300.0A
HTA-16 06/17/09 10:50 005				
Bromide	0.24	0.20	mg/L	MCAWW 300.0A
HTA-16D 06/17/09 11:40 006				
Bromide	0.24	0.20	mg/L	MCAWW 300.0A
HTA-15 06/17/09 12:30 007				
Bromide	0.24	0.20	mg/L	MCAWW 300.0A
HTA-17 06/17/09 13:15 008				
Bromide	0.23	0.20	mg/L	MCAWW 300.0A

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

HTA-30 : D9F190279

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
HTA-19 06/17/09 14:00 009				
Bromide	0.26	0.20	mg/L	MCAWW 300.0A

METHODS SUMMARY

HTA-30

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Bromide	MCAWW 300.0A	MCAWW 300.0A
Nitrate-Nitrite	MCAWW 353.2	MCAWW 353.2
Nitroaromatics and Nitramines by HPLC	SW846 8330	SW846 3535
SW846 6860 Perchlorate	SW846 6860	SW846 6860

References:

- MCAWW "Methods for Chemical Analysis of Water and Wastes",
EPA-600/4-79-020, March 1983 and subsequent revisions.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

HTA-30

<u>ANALYTICAL METHOD</u>	<u>ANALYST</u>	<u>ANALYST ID</u>
MCAWW 300.0A	Ewa Kudla	001167
MCAWW 353.2	Brett Wolff	009878
SW846 6860	Tim O'Donnell	000443
SW846 8330	Carrie Lahr	008835

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes",
EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

HTA-30 : D9F190279

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LFAAM	001	HTA-12	06/16/09	12:10
LFAAR	002	HTA-3	06/16/09	15:00
LFAAW	003	HTA-11	06/16/09	13:05
LFAA4	004	HTA-10A	06/16/09	13:45
LFAA9	005	HTA-16	06/17/09	10:50
LFACD	006	HTA-16D	06/17/09	11:40
LFACH	007	HTA-15	06/17/09	12:30
LFACL	008	HTA-17	06/17/09	13:15
LFACP	009	HTA-19	06/17/09	14:00

NOTE (S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

U.S. Geological Survey (USGS)

Client Sample ID: HTA-12

HPLC

Lot-Sample #....: D9F190279-001 Work Order #....: LFAAM1AC Matrix.....: WATER
Date Sampled...: 06/16/09 12:10 Date Received...: 06/19/09
Prep Date.....: 07/13/09 Analysis Date...: 07/13/09
Prep Batch #....: 9194322 Analysis Time...: 16:09
Dilution Factor: 100
Method.....: SW846 6860

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>MDL</u>
Perchlorate	18	5.0	ug/L	0.88

U.S. Geological Survey (USGS)

Client Sample ID: HTA-3

HPLC

Lot-Sample #....: D9F190279-002 Work Order #....: LFAAR1AC Matrix.....: WATER
Date Sampled....: 06/16/09 15:00 Date Received...: 06/19/09
Prep Date.....: 07/13/09 Analysis Date...: 07/13/09
Prep Batch #....: 9194322 Analysis Time...: 19:04
Dilution Factor: 10
Method.....: SW846 6860

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>MDL</u>
Perchlorate	2.0	0.50	ug/L	0.088

U.S. Geological Survey (USGS)

Client Sample ID: HTA-11

HPLC

Lot-Sample #....: D9F190279-003 Work Order #....: LFAAW1AC Matrix.....: WATER
Date Sampled....: 06/16/09 13:05 Date Received...: 06/19/09
Prep Date.....: 07/13/09 Analysis Date...: 07/13/09
Prep Batch #....: 9194322 Analysis Time...: 19:33
Dilution Factor: 100000
Method.....: SW846 6860

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>MDL</u>
Perchlorate	6700	5000	ug/L	880

U.S. Geological Survey (USGS)

Client Sample ID: HTA-10A

HPLC

Lot-Sample #....: D9F190279-004 Work Order #....: LFAA41AC Matrix.....: WATER
Date Sampled....: 06/16/09 13:45 Date Received...: 06/19/09
Prep Date.....: 07/13/09 Analysis Date...: 07/13/09
Prep Batch #....: 9194322 Analysis Time...: 20:02
Dilution Factor: 100000
Method.....: SW846 6860

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>MDL</u>
Perchlorate	5900	5000	ug/L	880

U.S. Geological Survey (USGS)

Client Sample ID: HTA-12

HPLC

Lot-Sample #...: D9F190279-001 **Work Order #...**: LFAAM1AA **Matrix.....**: WATER
Date Sampled...: 06/16/09 12:10 **Date Received...**: 06/19/09
Prep Date.....: 06/21/09 **Analysis Date...**: 06/26/09
Prep Batch #...: 9172021 **Analysis Time...**: 00:17
Dilution Factor: 1
Method.....: SW846 8330

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
2-Amino-4,6-dinitrotoluene	ND	0.20	ug/L	0.051
4-Amino-2,6-dinitrotoluene	ND	0.20	ug/L	0.058
1,3-Dinitrobenzene	ND	0.40	ug/L	0.089
2,4-Dinitrotoluene	ND	0.40	ug/L	0.084
2,6-Dinitrotoluene	ND	0.20	ug/L	0.064
HMX	ND	0.40	ug/L	0.088
Nitrobenzene	ND	0.40	ug/L	0.091
2-Nitrotoluene	ND	0.40	ug/L	0.086
3-Nitrotoluene	ND	0.40	ug/L	0.083
4-Nitrotoluene	ND	1.0	ug/L	0.20
RDX	ND	0.20	ug/L	0.052
Tetryl	ND	0.20	ug/L	0.079
1,3,5-Trinitrobenzene	ND	1.0	ug/L	0.20
2,4,6-Trinitrotoluene	ND	0.40	ug/L	0.072
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
1,2-Dinitrobenzene	87	(75 - 118)		

U.S. Geological Survey (USGS)

Client Sample ID: HTA-3

HPLC

Lot-Sample #...: D9F190279-002 **Work Order #...**: LFAAR1AA **Matrix.....**: WATER
Date Sampled...: 06/16/09 15:00 **Date Received...**: 06/19/09
Prep Date.....: 06/21/09 **Analysis Date...**: 06/26/09
Prep Batch #...: 9172021 **Analysis Time...**: 00:41
Dilution Factor: 1
Method.....: SW846 8330

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
2-Amino-4,6-dinitrotoluene	ND	0.20	ug/L	0.051
4-Amino-2,6-dinitrotoluene	ND	0.20	ug/L	0.058
1,3-Dinitrobenzene	ND	0.40	ug/L	0.089
2,4-Dinitrotoluene	ND	0.40	ug/L	0.084
2,6-Dinitrotoluene	ND	0.20	ug/L	0.064
HMX	ND	0.40	ug/L	0.088
Nitrobenzene	ND	0.40	ug/L	0.091
2-Nitrotoluene	ND	0.40	ug/L	0.086
3-Nitrotoluene	ND	0.40	ug/L	0.083
4-Nitrotoluene	ND	1.0	ug/L	0.20
RDX	ND	0.20	ug/L	0.052
Tetryl	ND	0.20	ug/L	0.079
1,3,5-Trinitrobenzene	ND	1.0	ug/L	0.20
2,4,6-Trinitrotoluene	ND	0.40	ug/L	0.072
SURROGATE		PERCENT RECOVERY	RECOVERY LIMITS	
1,2-Dinitrobenzene	88		(75 - 118)	

U.S. Geological Survey (USGS)

Client Sample ID: HTA-11

HPLC

Lot-Sample #...: D9F190279-003 **Work Order #...**: LFAAW1AA **Matrix.....**: WATER
Date Sampled...: 06/16/09 13:05 **Date Received...**: 06/19/09
Prep Date.....: 06/21/09 **Analysis Date...**: 06/26/09
Prep Batch #...: 9172021 **Analysis Time...**: 01:05
Dilution Factor: 10
Method.....: SW846 8330

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
2-Amino-4,6-dinitrotoluene	ND	2.0	ug/L	0.51
4-Amino-2,6-dinitrotoluene	ND	2.0	ug/L	0.58
1,3-Dinitrobenzene	ND	4.0	ug/L	0.89
2,4-Dinitrotoluene	ND	4.0	ug/L	0.84
2,6-Dinitrotoluene	ND	2.0	ug/L	0.64
HMX	1.3 J	4.0	ug/L	0.88
Nitrobenzene	ND	4.0	ug/L	0.91
2-Nitrotoluene	ND	4.0	ug/L	0.86
3-Nitrotoluene	ND	4.0	ug/L	0.83
4-Nitrotoluene	ND	10	ug/L	2.0
RDX	110	2.0	ug/L	0.52
Tetryl	ND	2.0	ug/L	0.79
1,3,5-Trinitrobenzene	ND	10	ug/L	2.0
2,4,6-Trinitrotoluene	ND	4.0	ug/L	0.72
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
1,2-Dinitrobenzene	0.0 DIL	(75 - 118)		

NOTE (S) :

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
 J Estimated result. Result is less than RL.

U.S. Geological Survey (USGS)

Client Sample ID: HTA-10A

HPLC

Lot-Sample #....: D9F190279-004 Work Order #....: LFAA41AA Matrix.....: WATER
 Date Sampled...: 06/16/09 13:45 Date Received...: 06/19/09
 Prep Date.....: 06/21/09 Analysis Date...: 06/26/09
 Prep Batch #...: 9172021 Analysis Time...: 01:29
 Dilution Factor: 10
 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
2-Amino-4,6-dinitrotoluene	ND	2.0	ug/L	0.51
4-Amino-2,6-dinitrotoluene	ND	2.0	ug/L	0.58
1,3-Dinitrobenzene	ND	4.0	ug/L	0.89
2,4-Dinitrotoluene	ND	4.0	ug/L	0.84
2,6-Dinitrotoluene	ND	2.0	ug/L	0.64
HMX	1.2 J, COL	4.0	ug/L	0.88
Nitrobenzene	ND	4.0	ug/L	0.91
2-Nitrotoluene	ND	4.0	ug/L	0.86
3-Nitrotoluene	ND	4.0	ug/L	0.83
4-Nitrotoluene	ND	10	ug/L	2.0
RDX	110	2.0	ug/L	0.52
Tetryl	ND	2.0	ug/L	0.79
1,3,5-Trinitrobenzene	ND	10	ug/L	2.0
2,4,6-Trinitrotoluene	ND	4.0	ug/L	0.72
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
1,2-Dinitrobenzene	0.0 DIL	(75 - 118)		

NOTE (S) :

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

J Estimated result. Result is less than RL.

COL More than 40% RPD between primary and confirmation detector results. The lower of the two results is reported.

U.S. Geological Survey (USGS)

Client Sample ID: HTA-12

General Chemistry

Lot-Sample #...: D9F190279-001
Date Sampled...: 06/16/09 12:10

Work Order #...: LFAAM
Date Received...: 06/19/09

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Nitrate-Nitrite	2.8 J	0.10	mg/L	MCAWW 353.2	07/10/09	9192033
		Dilution Factor: 1		Analysis Time...: 12:19	MDL.....: 0.019	

NOTE(S) :

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U.S. Geological Survey (USGS)

Client Sample ID: HTA-3

General Chemistry

Lot-Sample #....: D9F190279-002 Work Order #....: LFAAR Matrix.....: WATER
Date Sampled....: 06/16/09 15:00 Date Received...: 06/19/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Nitrate-Nitrite	3.0 J	0.10	mg/L	MCAWW 353.2	07/10/09	9192033
		Dilution Factor: 1		Analysis Time...: 12:19	MDL.....: 0.019	

NOTE(S) :

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U.S. Geological Survey (USGS)

Client Sample ID: HTA-11

General Chemistry

Lot-Sample #...: D9F190279-003 Work Order #...: LFAAW Matrix.....: WATER
Date Sampled...: 06/16/09 13:05 Date Received...: 06/19/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Bromide	0.22	0.20	mg/L	MCAWW 300.0A	07/08/09	9190043
		Dilution Factor: 1		Analysis Time...: 18:41	MDL.....: 0.11	
Nitrate-Nitrite	8.9 J	0.10	mg/L	MCAWW 353.2	07/10/09	9192033
		Dilution Factor: 1		Analysis Time...: 12:19	MDL.....: 0.019	

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U.S. Geological Survey (USGS)

Client Sample ID: HTA-10A

General Chemistry

Lot-Sample #...: D9F190279-004 Work Order #...: LFAA4 Matrix.....: WATER
Date Sampled...: 06/16/09 13:45 Date Received...: 06/19/09

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Bromide	0.23	0.20	mg/L	MCAWW 300.0A	07/08/09	9190043
		Dilution Factor: 1		Analysis Time...: 18:58	MDL.....: 0.11	
Nitrate-Nitrite	9.4 J	0.10	mg/L	MCAWW 353.2	07/10/09	9192033
		Dilution Factor: 1		Analysis Time...: 12:19	MDL.....: 0.019	

NOTE(S) :

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U.S. Geological Survey (USGS)

Client Sample ID: HTA-16

General Chemistry

Lot-Sample #....: D9F190279-005 Work Order #....: LFAA9 Matrix.....: WATER
Date Sampled...: 06/17/09 10:50 Date Received...: 06/19/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Bromide	0.24	0.20	mg/L	MCAWW 300.0A	07/08/09	9190043
		Dilution Factor: 1		Analysis Time..: 19:48	MDL.....: 0.11	

U.S. Geological Survey (USGS)

Client Sample ID: HTA-16D

General Chemistry

Lot-Sample #...: D9F190279-006 Work Order #...: LFACD Matrix.....: WATER
Date Sampled...: 06/17/09 11:40 Date Received...: 06/19/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Bromide	0.24	0.20	mg/L	MCAWW 300.0A	07/08/09	9190043
		Dilution Factor: 1		Analysis Time...: 20:05	MDL.....: 0.11	

U.S. Geological Survey (USGS)

Client Sample ID: HTA-15

General Chemistry

Lot-Sample #...: D9F190279-007 Work Order #...: LFACH Matrix.....: WATER
Date Sampled...: 06/17/09 12:30 Date Received...: 06/19/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Bromide	0.24	0.20	mg/L	MCAWW 300.0A	07/08/09	9190043
		Dilution Factor: 1		Analysis Time...: 20:22	MDL.....: 0.11	

U.S. Geological Survey (USGS)

Client Sample ID: HTA-17

General Chemistry

Lot-Sample #...: D9F190279-008 Work Order #...: LFACL Matrix.....: WATER
Date Sampled...: 06/17/09 13:15 Date Received...: 06/19/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Bromide	0.23	0.20	mg/L	MCAWW 300.0A	07/08/09	9190043
		Dilution Factor: 1		Analysis Time...: 20:39	MDL.....: 0.11	

U.S. Geological Survey (USGS)

Client Sample ID: HTA-19

General Chemistry

Lot-Sample #...: D9F190279-009 Work Order #...: LFACP Matrix.....: WATER
Date Sampled...: 06/17/09 14:00 Date Received...: 06/19/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Bromide	0.26	0.20	mg/L	MCAWW 300.0A	07/08/09	9190043
		Dilution Factor: 1		Analysis Time...: 20:55	MDL.....: 0.11	

APPENDIX II

Laboratory Quality Assurance / Quality Control Results

LABORATORY DATA VALIDATION CHECKLIST

SECTION 1.0: GENERAL INFORMATION (also see Appendix A)

Data reviewer(s) name, affiliation, title, signature, and date of review:

Fredrick Gebhardt, USGS-WRD, Hydrologic Technician August 28, 2009

Data Inventory

1.1 Sample project numbers: TestAmerica No. D9F190279

1.2 Operable unit and site: Open Burn/Open Detonation (OB/OD) Unit,
Hazardous Test Area (HTA) site

1.3 Sample collection date: June 16, 2009

Sample locations (location IDs): HTA 3, HTA10A, HTA11, HTA12

1.4 Sample matrix (ground water, soil, other): ground water

1.5 Type and number of field samples (environmental and quality control) in sample project:

<u>Type</u>	<u>number</u>	<u>Type</u>	<u>number</u>
environmental	4	MS/MSD	1 pair
field duplicate	0	trip blank	0
equipment blank	0	ambient blank	0

Data validation level: note--see appendix A for description of different levels

LEVEL 1

SECTION 2.0: DATA REPORTS AND COMPLETENESS

Name of reviewer(s) and review date: Fredrick Gebhardt August 28, 2009

Laboratory Data Reports

2.1 Analytical Results Report--report date: July 16, 2009

2.2 Raw Data Report--number of volumes: Raw data not reviewed

2.3 Was completeness of lab reports acceptable? Yes No
(overview, analytical results, quality-control report)

Data Completeness

2.4 Were all samples requested on chain of custody form analyzed by lab? Yes No

	<u>Explosives</u>	<u>Metals</u>	<u>General Chem.</u>	<u>Perchlorate</u>
requested:	4	0	4	4
analyzed:	4	0	4	4

2.5 List cancelled analyses on cancelled-data worksheet: None

2.6 Were sample cooler seals intact upon receipt by lab? Yes

2.7 What were the sample cooler temperatures upon receipt by lab? 2.4 and 3.8°C at TestAmerica Laboratories

2.8 Additional comments:

The 8330 analysis of sample HTA-10 resulted in greater than 40% RPD between the primary and confirmation columns for HMX. The lower of the two values has been reported, as matrix interference is evident. The result in the analytical report has been flagged with "COL".

SECTION 3.0: DATA VALIDATION REVIEW

In the following table (Table II-1), the resulting data from the June 16, 2009 sampling round is reviewed for the following data validation parameters: holding times, surrogate spike recovery, field duplicates, equipment blanks, lab control samples, lab method blanks, matrix spike and duplicates, and results over the reporting limits with qualifiers. Data validation parameters are reviewed for compliance with individual requirements for each parameter specific to the individual analyses of explosives (method SW8330); nitrate plus nitrite (method MCAWW353.2); and perchlorate (method SW6860).

Table II-1. Data validation worksheet table for June 16, 2009, sampling round at HTA – validation parameters, analytes, and methods (USEPA, 1994a; USEPA, 1994b; USGS, 1992).

Data Validation Parameters	Explosives SW8330	Nitrate-Nitrite MCAWW353.2	Perchlorate SW6860
<i>Holding times</i>	7 days to extract, 40-days from extraction to analysis	28-day limit	28-day limit
Met	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, see notes	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, see notes	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, see notes
<i>Surrogate Spike Recovery</i>	% Recovery (R) varies for surrogates	Not Applicable	Not Applicable
Met	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No, see notes		
<i>Field Duplicates</i>	Not Applicable	Not Applicable	Not Applicable
Met			
<i>Equipment Blanks</i>	Not Applicable	Not Applicable	Not Applicable
Met			
<i>Lab Control Samples</i>	% R and RPD within 3 Standard Deviations (SD) of historical performance	%R within 3 SD of historical performance	%R within 3 SD of historical performance
Met	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, see notes	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, see notes	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, see notes
<i>Lab Method Blanks</i>	≤ RL, except for common lab contaminants, then < 5 X RL	≤ RL	≤ RL
Met	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, see notes	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, see notes	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, see notes
<i>Matrix Spike and Duplicates</i>	Met various % R and RPD requirements	%R within 3 SD of historical performance	%R within 3 SD of historical performance
Met	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, see notes	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, see notes	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, see notes
<i>Results over RL with Qualifiers</i>	None	Method blank contamination for Nitrate-Nitrite in HTA3, 10A, 11, and 12. The associated method blank contains the target analyte at a reportable level.	None

Table II-2. Data validation worksheet table for June 16, 2009, sampling round at HTA- notes.

Analyte and Method:	Notes of Data Validation Parameters:
Explosives SW8330	-The surrogates' percent recovery was not calculated for HTA10A and 11 due to dilution or the presence of interfering analytes.
Nitrate-Nitrite MCAWW353.2	-None
Perchlorate SW6860	-None

Appendix A -- Laboratory Data Validation Checklist

Instruction Notes for the Data Validation Checklist

This data validation checklist will be used when validating the chemical analytical results. Data validation is a systematic and independent verification of data quality and consists of checking, verifying, evaluating, and qualifying the chemical analytical results.

Two different levels of data validation are used with level I being not as detailed or as rigorous as level II. Level I data validation includes: (1) checking holding times limits, (2) evaluating the results of field and laboratory quality-control (QC) samples such as field replicates, matrix spikes, surrogate samples, and duplicate control samples, and (3) checking that contamination during sample processing has not occurred in QC blanks such as equipment, method, ambient, and trip blanks. Most of the information and data used to conduct a level I data validation is contained in the summary-data reports prepared by the reporting laboratory. Level II data validation includes all the level I guidelines plus using the raw-data reports prepared by the reporting laboratory to: (1) check that the laboratory instruments have been properly tuned and calibrated, and (2) verify that selected sample results do not have any omissions, problems, discrepancies, transcription errors, and reduction (dilution, conversion) errors.

Field samples (environmental and QC) are processed and analyzed by the reporting laboratory in specific groups of samples called sample projects (also called sample cases). A sample project usually consists of 20 or fewer samples that are collected from one or more sampling locations (monitoring well) in a given sampling period. Numerous laboratory QC samples also are analyzed with the field samples for each sample project.

This data validation checklist is designed to be used when validating the analytical results for a given sample project and it has a multi-level organization. The first part of the checklist contains general information (section 1.0) about the scope (who, when, how, and what) of the data validation and data reports and completeness (section 2.0) for each sample project. Sections 1.0 and 2.0 will be completed and included with all data validation checklists. The data validation checklist also contains numerous supplemental sections that are listed at the bottom of the first page of this document. These supplemental checklist sections are used for specific analytical methods and will be marked with a checkmark (✓) when they are completed for a given sample project. Specific project-required frequency and QC acceptance criteria and pertinent reference page numbers are listed with most of the checklist items. The major data-validation references are the USEPA guidance documents (USEPA 1994).

References

USEPA, 1994a, USEPA Contract laboratory program national functional guidelines for organic data review, February 1994, Publication 9240.1-05, Document number PB94-963501, 124 p.

USEPA, 1994b, USEPA contract laboratory program national functional guidelines for inorganic data review, February 1994, Publication 9240.1-05-01, Document number PB94-963502, 42 p.

USGS, 1992, Laboratory data validation checklist: Wyoming District, U.S. Geological Survey checklist prepared for the U.S. Air Force, multiple pages.

CONTRACT LABORATORY DATA-REVIEW WORKSHEET**1.0 GENERAL INFORMATION**Data reviewer: Gary Cottrell Review date: 7/16/9Office, Project, & Account #: NM, White Sands HTA, 8636-9K41Lots in SDG: 09F190279**2.0 DATA DELIVERABLES**Date of Lab analytical report: 7/15/9 Number of copies: bound _____ unbound 1No. of CD copies of raw-data report: 2 Remarks: _____Raw-data report reviewed? Yes _____ No Electronic data files on CD? Yes No _____EDD file format: QWDATA TAL QUA08 ERPIMS _____ Other _____Date rec'd data deliverables: 7/16/9 Date sent deliverables to USGS office 7/16/9Data deliverables sent to USGS Office by FedEx: or by regular mail: _____**3.0 INVOICE STATUS FOR SDG:** OK**4.0 SAMPLE INFORMATION** (Page #'s listed in this worksheet refer to lab analytical report)Sample collection date(s): 6/16-17/09 Sample matrix: waterNo. of sample types in lot: Environmental 9 Trip blank _____ Equip. blank _____

MS/MSD _____ Other: _____

Date samples received at laboratory: 6/19/94.1 Were accelerated turn-around times (TATs) requested for analyses? Yes _____ No

If yes, list TAT period and if completed: _____

4.2 Were analyses on chain-of-custody (COC) form performed by lab? YES _____ NO

If no, list missing or cancelled analyses and reason for non-performance: _____

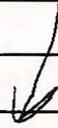
4.3 Were the samples properly preserved, labeled, no lab log-in problems, and(or) at appropriate temperature (<6 deg. C) upon receipt by the laboratory: Yes No _____

If no, list sample/lab IDs and associated problems or reference lab report case narrative: _____

4.4 Were preparation (extraction) and/or analysis holding times met? Yes No

If **no**, list analytical methods and sample/lab IDs for samples that exceeded holding-time limits:

*NOTE: 2 Samples Diluted Beyond Range for Calculations
For Surrogate Recoveries*



4.5 Did surrogate recoveries meet QC acceptance criteria? Yes No NA

If **no**, list methods, surrogates, associated sample/lab IDs, lab report page #s: _____

4.6 Were dilution factors greater than 1 for **organic** analyses? Yes No NA

If **yes**, list analytical methods and reason for raised dilution factors:

high-analyte levels matrix interferences _____ other _____

perchlorate + Explosives

4.7 Were dilution factors greater than 1 for **inorganic** analyses? Yes _____ No NA

If **yes**, list analytical methods and reason for raised dilution factors:

high-analyte levels _____ matrix interferences _____ other _____

4.8 Additional comments about sample analyses: _____

5.0 QUALITY CONTROL (QC) ANALYSES and RESULTS

5.1 Were any target analytes detected in the **Laboratory Method Blanks**? Yes No

If **yes**, list method, analytes, prep batch #, report page #s,:

NO₂ + NO₃ = 0.031, RL = 0.1

5.2 Did lab control samples (LCS/LSCD) meet percent recoveries (%R) criteria? Yes No

If **no**, list method, analytes, LCS/LCSD, prep batch #, report page #s,

5.3 Did the **MS/MSD** results meet %R or RPD acceptance criteria? Yes No NA

Note: matrix spike and matrix spike duplicate (MS/MSD) data are used to evaluate the effect of sample matrix on the analytical process and should be only used in conjunction with other available lab QC data. In some cases, MS samples not directly associated with this lot may be used by the laboratory.

If **no**, list method; analytes; MS, MSD or RPD; and lab report page #:

Insert Val for Explosives associated MS lot # yes no

No MS results reported for method(s):

5.4 Did the **lab-sample duplicate** results meet RPD acceptance criteria? Yes No NA

If **no**, list method, analytes, prep batch #, report page #s,

5.5 Additional comments about QC results:

6.0 ANALYTICAL METHODS USED in this LABORATORY SDG NUMBER

- ___ VOCs by GC/MS--method 8260B/ 524.2 [water (W) or solids (S) analysis holding-time (HT) of 14 days]
- ___ Gasoline Range Organics (GRO)+BTEX-method 8015M(GRO)/ 8021 [W and S: analysis HT 14 days]
- ___ Diesel Range Organics-method 8015M-DRO [W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]
- ___ Pesticides by GC--method 8081A [W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]
- ___ PCBs by GC--method 8082 [W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]
- ___ Pesticides by GC--method 8141A [W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]
- ___ Herbicides by GC--method 8151A [W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]
- ___ SVOCs by GC/MS--method 8270C [W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]
- ___ Dioxins and Furans--methods 8280/ 8290/ 161 [W and S: prep HT 30 days; analysis HT 45 days]
- ___ PAHs by HPLC method 8310 [W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]
- ✓ Explosives by HPLC method 8330 or 8321A [W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]
- ___ Hexane extractable materials (HEM and SGT-HEM)-method 1664/ 9071B [W/S: analysis HT 28 days]
- ___ Total organic carbon (TOC) or DOC--methods 415.1 or 9060 [W: analysis HT 28 days]
- ✓ Perchlorate--methods 314.0 or 6850 LC/MS/MS or 6860 IC/MS/MS [W: analysis HT 28 days]
- ___ Metals by ICP--method 6010B or 200.7 [W and S: analysis HT 180 days]
- ___ Metals by ICP/MS--method 6020 or 200.8 [W and S: analysis HT 180 days]
- ___ Mercury by CVAA--method 7470A (W) and 7471A (S) [W and S: analysis HT 28 days]
- ✓ Inorganic anions-method 300/ 9056 [W: analysis HT 48 hours- NO₂, NO₃, ortho-P; HT 28 days--Br, Cl, F, SO₄]
- ___ Total dissolved solids (TDS)--method 160.1 and(or) TSS--method 160.2 [W: analysis HT 7 days]
- ___ Alkalinity--method 310.1 (Total, OH, HCO₃, and CO₃) [W: analysis HT 14 days]
- ___ Nitrogen, ammonia--method 350.1 [W: analysis HT 28 days]
- ___ Nitrogen, TKN--method 351.2 [W: analysis HT 28 days]
- ___ Nitrogen, nitrate + nitrite--method 353.2 [W: analysis HT 28 days] NO₃ or NO₂ only [HT 48 hours]
- ✓ Nitrogen, nitrite--method 353.2 or 354.1 [W: analysis HT 48 hours]
- ___ Phosphorus-method 365.3 and ortho P by 365.3 [Phosphorus: W: analysis HT 28 days, ortho P 48 hours]
- ___ Phosphorus-method 365.1 and ortho P by 365.1 [Phosphorus: W: analysis HT 28 days, ortho P 48 hours]
- ___ Cyanide, total, dissolved, or amenable--methods 9012A/ 335.4 [W and S: analysis HT 14 days]
- ___ Moisture content--methods D2216 or 160.3M
- ___ BOD--method 405.1 (HT 48 hours) or COD--method 410.4
- ___ Turbidity--method 180.1 (HT 48 hours); Hardness 2340B
- ___ Physical properties: pH--method 150.1 (48 hours); specific conductance--method 120.1
- ___ Other analyses: _____

QC DATA ASSOCIATION SUMMARY

HTA-30 : D9F190279

Sample Preparation and Analysis Control Numbers

<u>SAMPLE#</u>	<u>MATRIX</u>	<u>ANALYTICAL METHOD</u>	<u>LEACH BATCH #</u>	<u>PREP BATCH #</u>	<u>MS RUN#</u>
001	WATER	SW846 8330		9172021	
	WATER	MCAWW 353.2		9192033	9192038
	WATER	SW846 6860		9194322	9194186
002	WATER	SW846 8330		9172021	
	WATER	MCAWW 353.2		9192033	9192038
	WATER	SW846 6860		9194322	9194186
003	WATER	SW846 8330		9172021	
	WATER	MCAWW 353.2		9192033	9192038
	WATER	MCAWW 300.0A		9190043	9191083
	WATER	SW846 6860		9194322	9194186
004	WATER	SW846 8330		9172021	
	WATER	MCAWW 353.2		9192033	9192038
	WATER	MCAWW 300.0A		9190043	9191083
	WATER	SW846 6860		9194322	9194186
005	WATER	MCAWW 300.0A		9190043	9191083
006	WATER	MCAWW 300.0A		9190043	9191083
007	WATER	MCAWW 300.0A		9190043	9191083
008	WATER	MCAWW 300.0A		9190043	9191083
009	WATER	MCAWW 300.0A		9190043	9191083

METHOD BLANK REPORT

HPLC

Client Lot #...: HTA-30 Work Order #...: LGEME1AA Matrix.....: WATER
MB Lot-Sample #: R9G130000-322 Prep Date.....: 07/13/09 Analysis Time...: 14:34
Analysis Date...: 07/13/09 Prep Batch #...: 9194322
Dilution Factor: 1

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>
Perchlorate	ND	0.050	ug/L	SW846 6860

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: HTA-30 Work Order #...: LGEME1AC Matrix.....: WATER
LCS Lot-Sample#: R9G130000-322
Prep Date.....: 07/13/09 Analysis Date...: 07/13/09
Prep Batch #...: 9194322 Analysis Time...: 15:09
Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>	<u>METHOD</u>
Perchlorate	104	(80 - 120)	SW846 6860

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #....: HTA-30 Work Order #....: LGEME1AC Matrix.....: WATER
LCS Lot-Sample#: R9G130000-322
Prep Date.....: 07/13/09 Analysis Date...: 07/13/09
Prep Batch #....: 9194322 Analysis Time...: 15:09
Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE</u> <u>AMOUNT</u>	<u>MEASURED</u> <u>AMOUNT</u>	<u>UNITS</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>METHOD</u>
Perchlorate	0.0500	0.0520	ug/L	104	SW846 6860

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: HTA-30 Work Order #...: LFAAM1AE-MS Matrix.....: WATER
MS Lot-Sample #: D9F190279-001 LFAAM1AF-MSD
Date Sampled...: 06/16/09 12:10 Date Received...: 06/19/09
Prep Date.....: 07/13/09 Analysis Date...: 07/13/09
Prep Batch #...: 9194322 Analysis Time...: 16:38
Dilution Factor: 100

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
Perchlorate	90	(80 - 120)			SW846 6860
	83	(80 - 120)	1.5	(0-15)	SW846 6860

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

HPLC

Client Lot #...: HTA-30 **Work Order #...**: LFAAM1AE-MS **Matrix.....**: WATER
MS Lot-Sample #: D9F190279-001 LFAAM1AF-MSD
Date Sampled...: 06/16/09 12:10 **Date Received...**: 06/19/09
Prep Date.....: 07/13/09 **Analysis Date...**: 07/13/09
Prep Batch #...: 9194322 **Analysis Time...**: 16:38
Dilution Factor: 100

PARAMETER	SAMPLE	SPIKE	MEASRD	UNITS	PERCNT		METHOD
	AMOUNT	AMT	AMOUNT		RECVRY	RPD	
Perchlorate	18	5.00	22.7	ug/L	90		SW846 6860
	18	5.00	22.4	ug/L	83	1.5	SW846 6860

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

METHOD BLANK REPORT

HPLC

Client Lot #...: HTA-30
 MB Lot-Sample #: D9F210000-021

Work Order #...: LFDG11AA

Matrix.....: WATER

Analysis Date...: 06/25/09
 Dilution Factor: 1

Prep Date.....: 06/21/09
 Prep Batch #...: 9172021

Analysis Time...: 23:05

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	METHOD
2-Amino-4,6-dinitrotoluene	ND	0.20	ug/L	SW846 8330
4-Amino-2,6-dinitrotoluene	ND	0.20	ug/L	SW846 8330
1,3-Dinitrobenzene	ND	0.40	ug/L	SW846 8330
2,4-Dinitrotoluene	ND	0.40	ug/L	SW846 8330
2,6-Dinitrotoluene	ND	0.20	ug/L	SW846 8330
HMX	ND	0.40	ug/L	SW846 8330
Nitrobenzene	ND	0.40	ug/L	SW846 8330
2-Nitrotoluene	ND	0.40	ug/L	SW846 8330
3-Nitrotoluene	ND	0.40	ug/L	SW846 8330
4-Nitrotoluene	ND	1.0	ug/L	SW846 8330
RDX	ND	0.20	ug/L	SW846 8330
Tetryl	ND	0.20	ug/L	SW846 8330
1,3,5-Trinitrobenzene	ND	1.0	ug/L	SW846 8330
2,4,6-Trinitrotoluene	ND	0.40	ug/L	SW846 8330

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
1,2-Dinitrobenzene	85	(75 - 118)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: HTA-30 Work Order #...: LFDG11AC-LCS Matrix.....: WATER
 LCS Lot-Sample#: D9F210000-021 LFDG11AD-LCSD
 Prep Date.....: 06/21/09 Analysis Date...: 06/25/09
 Prep Batch #...: 9172021 Analysis Time...: 23:29
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
2-Amino-4,6-dinitrotoluene	95	(75 - 115)			SW846 8330
	92	(75 - 115)	3.6	(0-18)	SW846 8330
4-Amino-2,6-dinitrotoluene	88	(57 - 115)			SW846 8330
	86	(57 - 115)	2.3	(0-22)	SW846 8330
1,3-Dinitrobenzene	96	(78 - 115)			SW846 8330
	95	(78 - 115)	0.99	(0-19)	SW846 8330
2,4-Dinitrotoluene	91	(75 - 115)			SW846 8330
	88	(75 - 115)	3.2	(0-21)	SW846 8330
2,6-Dinitrotoluene	107	(77 - 115)			SW846 8330
	105	(77 - 115)	2.4	(0-20)	SW846 8330
HMX	99	(78 - 115)			SW846 8330
	96	(78 - 115)	3.1	(0-26)	SW846 8330
Nitrobenzene	72	(51 - 115)			SW846 8330
	69	(51 - 115)	3.3	(0-32)	SW846 8330
2-Nitrotoluene	68	(35 - 115)			SW846 8330
	66	(35 - 115)	2.7	(0-43)	SW846 8330
3-Nitrotoluene	68	(30 - 115)			SW846 8330
	58	(30 - 115)	17	(0-74)	SW846 8330
4-Nitrotoluene	75	(40 - 115)			SW846 8330
	71	(40 - 115)	5.2	(0-44)	SW846 8330
RDX	97	(69 - 118)			SW846 8330
	92	(69 - 118)	5.3	(0-37)	SW846 8330
Tetryl	112	(69 - 127)			SW846 8330
	111	(69 - 127)	1.3	(0-24)	SW846 8330
1,3,5-Trinitrobenzene	97	(73 - 122)			SW846 8330
	91	(73 - 122)	6.4	(0-21)	SW846 8330
2,4,6-Trinitrotoluene	98	(73 - 116)			SW846 8330
	96	(73 - 116)	2.4	(0-19)	SW846 8330

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dinitrobenzene	84	(75 - 118)
	80	(75 - 118)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #....: HTA-30 Work Order #....: LFDG11AC-LCS Matrix.....: WATER
 LCS Lot-Sample#: D9F210000-021 LFDG11AD-LCSD
 Prep Date.....: 06/21/09 Analysis Date...: 06/25/09
 Prep Batch #....: 9172021 Analysis Time...: 23:29
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCENT RECOVERY</u>	<u>RPD</u>	<u>METHOD</u>
2-Amino-4,6-dinitrotoluene	2.00	1.90	ug/L	95		SW846 8330
	2.00	1.83	ug/L	92	3.6	SW846 8330
4-Amino-2,6-dinitrotoluene	2.00	1.76	ug/L	88		SW846 8330
	2.00	1.72	ug/L	86	2.3	SW846 8330
1,3-Dinitrobenzene	2.00	1.92	ug/L	96		SW846 8330
	2.00	1.90	ug/L	95	0.99	SW846 8330
2,4-Dinitrotoluene	2.00	1.82	ug/L	91		SW846 8330
	2.00	1.77	ug/L	88	3.2	SW846 8330
2,6-Dinitrotoluene	2.00	2.14	ug/L	107		SW846 8330
	2.00	2.09	ug/L	105	2.4	SW846 8330
HMX	2.00	1.98	ug/L	99		SW846 8330
	2.00	1.92	ug/L	96	3.1	SW846 8330
Nitrobenzene	2.00	1.43	ug/L	72		SW846 8330
	2.00	1.38	ug/L	69	3.3	SW846 8330
2-Nitrotoluene	2.00	1.36	ug/L	68		SW846 8330
	2.00	1.32	ug/L	66	2.7	SW846 8330
3-Nitrotoluene	2.00	1.37	ug/L	68		SW846 8330
	2.00	1.16	ug/L	58	17	SW846 8330
4-Nitrotoluene	2.00	1.50	ug/L	75		SW846 8330
	2.00	1.42	ug/L	71	5.2	SW846 8330
RDX	2.00	1.94	ug/L	97		SW846 8330
	2.00	1.84	ug/L	92	5.3	SW846 8330
Tetryl	2.00	2.25	ug/L	112		SW846 8330
	2.00	2.22	ug/L	111	1.3	SW846 8330
1,3,5-Trinitrobenzene	2.00	1.93	ug/L	97		SW846 8330
	2.00	1.81	ug/L	91	6.4	SW846 8330
2,4,6-Trinitrotoluene	2.00	1.96	ug/L	98		SW846 8330
	2.00	1.92	ug/L	96	2.4	SW846 8330

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dinitrobenzene	84	(75 - 118)
	80	(75 - 118)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

METHOD BLANK REPORT

General Chemistry

Client Lot #....: HTA-30

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>PREP</u> <u>BATCH #</u>
Bromide	ND	Work Order #: LGACQ1AA 0.20	mg/L	MB Lot-Sample #: MCAWW 300.0A	D9G090000-043 07/08/09	9190043
		Dilution Factor: 1 Analysis Time...: 14:24				
Nitrate-Nitrite	0.031 B	Work Order #: LGDDK1AA 0.10	mg/L	MB Lot-Sample #: MCAWW 353.2	D9G110000-033 07/10/09	9192033
		Dilution Factor: 1 Analysis Time...: 12:19				

NOTE (S) :

Calculations are performed before rounding to avoid round off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: HTA-30

Matrix.....: WATER

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Bromide		WO#:LGACQ1AC-LCS/LGACQ1AD-LCSD			LCS Lot-Sample#: D9G090000-043		
	98	(90 - 110)			MCAWW 300.0A	07/08/09	9190043
	98	(90 - 110)	0.04	(0-10)	MCAWW 300.0A	07/08/09	9190043
		Dilution Factor: 1			Analysis Time...: 13:51		
Nitrate-Nitrite		WO#:LGDDK1AC-LCS/LGDDK1AD-LCSD			LCS Lot-Sample#: D9G110000-033		
	104	(90 - 110)			MCAWW 353.2	07/10/09	9192033
	105	(90 - 110)	0.78	(0-10)	MCAWW 353.2	07/10/09	9192033
		Dilution Factor: 1			Analysis Time...: 12:19		

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: HTA-30

Matrix.....: WATER

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCNT RECVRY</u>	<u>RPD</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Bromide		WO#:LGACQ1AC-LCS/LGACQ1AD-LCSD LCS Lot-Sample#: D9G090000-043						
	5.00	4.89	mg/L	98		MCAWW 300.0A	07/08/09	9190043
	5.00	4.89	mg/L	98	0.04	MCAWW 300.0A	07/08/09	9190043
			Dilution Factor: 1		Analysis Time...: 13:51			
Nitrate-Nitrite		WO#:LGDDK1AC-LCS/LGDDK1AD-LCSD LCS Lot-Sample#: D9G110000-033						
	5.00	5.20	mg/L	104		MCAWW 353.2	07/10/09	9192033
	5.00	5.24	mg/L	105	0.78	MCAWW 353.2	07/10/09	9192033
			Dilution Factor: 1		Analysis Time...: 12:19			

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: HTA-30

Matrix.....: WATER

Date Sampled...: 06/29/09 18:52 Date Received...: 07/02/09

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Bromide			WO#: LFXXN1C6-MS/LFXXN1C7-MSD		MS Lot-Sample #: D9G010218-001		
	100	(80 - 120)			MCAWW 300.0A	07/08/09	9190043
	100	(80 - 120)	0.0	(0-20)	MCAWW 300.0A	07/08/09	9190043
			Dilution Factor: 1				
			Analysis Time...: 17:17				
Nitrate-Nitrite			WO#: LF1JL1CX-MS/LF1JL1C0-MSD		MS Lot-Sample #: D9G020188-001		
	99	(72 - 113)			MCAWW 353.2	07/10/09	9192033
	83	(72 - 113)	9.8	(0-17)	MCAWW 353.2	07/10/09	9192033
			Dilution Factor: 1				
			Analysis Time...: 12:19				

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: HTA-30

Matrix.....: WATER

Date Sampled...: 06/29/09 18:52 Date Received...: 07/02/09

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Bromide									
	0.13	5.00	5.14	mg/L	100		MCAWW 300.0A	07/08/09	9190043
	0.13	5.00	5.14	mg/L	100	0.0	MCAWW 300.0A	07/08/09	9190043
WO#: LFXKN1C6-MS/LFXKN1C7-MSD MS Lot-Sample #: D9G010218-001									
Dilution Factor: 1									
Analysis Time...: 17:17									
Nitrate-Nitrite									
	2.7	4.00	6.70	mg/L	99		MCAWW 353.2	07/10/09	9192033
	2.7	4.00	6.07	mg/L	83	9.8	MCAWW 353.2	07/10/09	9192033
WO#: LF1JL1CX-MS/LF1JL1C0-MSD MS Lot-Sample #: D9G020188-001									
Dilution Factor: 1									
Analysis Time...: 12:19									

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

**U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIVISION, NEW MEXICO DISTRICT
ANALYTICAL REQUEST/CHAIN OF CUSTODY**

Project Name & Number				PACKING AND SHIPPING DETAILS			
White Sands Missile Range (WSMR), Ground Water Sampling (86369KY11)				Packed and Sealed for Shipping by Fred Gebhardt		Seal Number 669557	
Hazardous Test Area (HTA)				Delivered to Shipper by Fred Gebhardt		Airbill Number 8652 2446 073D	
Team Leader Fred Gebhardt				Sampling Status <input checked="" type="checkbox"/> Done <input type="checkbox"/> Continuing			
Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks	
6/16/09	1210	HTA-12	GROUND WATER	3	MCAMW E353.2 (NO2 + NO3) MCAMW E3000A (Promide) SW/846 6860 (Perchlorate) SW/846 8330 (Explosives by HPLC)	Environmental Sample	
11	1500	HTA-3	11	3	11	11	
Additional Comments Please batch all samples collected during the week of June 15, 2009. Thanks.							
CHAIN OF CUSTODY RECORD				LABORATORY LOG-IN OF SAMPLE SHIPPING CONTAINER			
Relinquished by (signed)		Received by (signed)		Date	Time	Analytical Laboratory	
<i>Fredrick S. Gebhardt</i>		TD FEDERAL EXPRESS		6/18/09	1330	TestAmerica Labs 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0103	
		<i>Gavin Brin</i>		6.19.09	0900	Attention: Lisa Uriell	
				Seal Intact upon Receipt <input type="checkbox"/> Yes <input type="checkbox"/> No		Condition of Contents	
				Contents Temperature		Laboratory Project Number	

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 6/19/09

**U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIVISION, NEW MEXICO DISTRICT
 ANALYTICAL REQUEST/CHAIN OF CUSTODY**

Project Name & Number White Sands Missile Range (WSMR), Ground Water Sampling (86369KY11)				PACKING AND SHIPPING DETAILS			
Sampling Location Hazardous Test Area (HTA)				Packed and Sealed for Shipping by Fred Gebhardt		Seal Number 669557	
Team Leader Fred Gebhardt				Delivered to Shipper by Fred Gebhardt		Airbill Number 865224460732	
Sample Date 6/16/09				Sample Type GROUND WATER		No. of Containers 4	
Sample Time 1305				Field Sample Number HTA - 11		Analytical Methods (Parameters) MCAWW E353.2 (NO2 + NO3) MCAWW E300.0A (Bromide) SW846 6860 (Perchlorate) SW846 8330 (Explosives by HPLC)	
Sample No. 11				HTA - 10A		No. of Containers 4	
Additional Comments Please batch all samples collected during the week of June 15, 2009. Thanks.				Analytical Methods (Parameters) MCAWW E353.2 (NO2 + NO3) MCAWW E300.0A (Bromide) SW846 6860 (Perchlorate) SW846 8330 (Explosives by HPLC)			
CHAIN OF CUSTODY RECORD				LABORATORY LOG-IN OF SAMPLE SHIPPING CONTAINER			
Relinquished by (signed)		Received by (signed)		Date		Time	
Fredlin S. Gebhardt		TJ FEDERAL EXPRESS		6/18/09		1330	
Fredlin S. Gebhardt		Carina Krue		6-19-09		0900	
Analytical Laboratory TestAmerica Labs 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0103 Attention: Lisa Uriell				Seal Intact upon Receipt <input type="checkbox"/> Yes <input type="checkbox"/> No Condition of Contents Contents Temperature Laboratory Project Number			

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6/19/09

**U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIVISION, NEW MEXICO DISTRICT
ANALYTICAL REQUEST/CHAIN OF CUSTODY**

Project Name & Number				PACKING AND SHIPPING DETAILS			
White Sands Missile Range (WSMR), Ground Water Sampling (86369KY11)				Packed and Sealed for Shipping by Fred Gebhardt		Seal Number 498561	
Sampling Location Hazardous Test Area (HTA)				Delivered to Shipper by Fred Gebhardt		Airbill Number 9652 2446 0730	
Team Leader Fred Gebhardt				Sampling Status <input checked="" type="checkbox"/> Done <input type="checkbox"/> Continuing			
Sample Date	Sample Time	Field Sample Number	Sample Type	No. of Containers	Analytical Methods (Parameters)	Remarks	
6/17/09	1050	HTA-16	GROUND WATER	1	MCWW E300.0A (Bromide)	Environmental Sample	
"	1140	HTA-16D	"	1	"	"	
"	1230	HTA-15	"	1	"	"	
"	1315	HTA-17	"	1	"	"	
"	1400	HTA-19	"	1	"	"	

Additional Comments
Please batch all samples collected during the week of June 15, 2009. Thanks.

CHAIN OF CUSTODY RECORD				LABORATORY LOG-IN OF SAMPLE SHIPPING CONTAINER			
Relinquished by (signed)	Received by (signed)	Date	Time	Analytical Laboratory			
<i>Fredrick S. Rubenoff</i>	<i>TO FEDERAL EXPRESS</i>	6/18/09	1330	TestAmerica Labs 4955 Yarrow Street Arvada, CO 80002 ph: (303) 736-0103 Attention: Lisa Urfell			
	<i>Carina Kani</i>	6.19.09	0900	Seal Intact upon Receipt <input type="checkbox"/> Yes <input type="checkbox"/> No Condition of Contents Contents Temperature Laboratory Project Number			

TestAmerica Denver
Sample Receiving Checklist

Lot #: D9F190279 Date/Time Received: 6-19-09 / 0900
Company Name & Sampling Site: USGS - White Sands HTA

PM to Complete This Section: Yes No
Residual chlorine check required: Quarantined:

Quote #: 24783 - A

Special Instructions:

Time Zone:
• EDT/EST • CDT/CST • MDT/MST • PDT/PST • OTHER

Unpacking Checks:

Cooler #(s): 2

Temperatures (°C): 3.8 2.4

N/A Yes No

- Initials*
[Signature]
- 1. Cooler seals intact? (N/A if hand delivered) If no, document on CUR.
 - 2. Coolers scanned for radiation. Is the reading \leq to background levels? Yes: No:
 - 3. Chain of custody present? If no, document on CUR.
 - 4. Bottles broken and/or are leaking? If yes, document on CUR.
 - 5. Multiphasic samples obvious? If yes, document on CUR.
 - 6. Proper container & preservatives used? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR.
 - 7. pH of all samples checked and meet requirements? If no, document on CUR.
 - 8. Sufficient volume provided for all analysis requested? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR, and contact PM before proceeding.
 - 9. Did chain of custody agree with labels ID and samples received? If no, document on CUR.
 - 10. Were VOA samples without headspace? If no, document on CUR.
 - 11. Were VOA vials preserved? Preservative HCl 4 \pm 2°C Sodium Thiosulfate Ascorbic Acid
 - 12. Did samples require preservation with sodium thiosulfate?
 - 13. If yes to #11, did the samples contain residual chlorine? If yes, document on CUR.
 - 14. Sediment present in dissolved/filtered bottles? If yes, document on CUR.
 - 15. Is sufficient volume provided for client requested MS, MSD or matrix duplicates? If no, document on CUR, and contact PM before proceeding.
 - 16. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.
 - 17. Are analyses with short holding times requested?
 - 18. Was a quick Turn Around (TAT) requested?

TestAmerica Denver
Sample Receiving Checklist

Lot # 09F190279

Login Checks:

Initials

CSH

N/A Yes No

- 19. Sufficient volume provided for all analysis requested? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR, and contact PM before proceeding.
- 20. Is sufficient volume provided for client requested MS, MSD or matrix duplicates? If no, document on CUR, and contact PM before proceeding.
- 21. Did the chain of custody includes "received by" and "relinquished" by signatures, dates, and times?
- 22. Were special log in instructions read and followed?
- 23. Were AFCEE metals logged for refrigerated storage?
- 24. Were tests logged checked against the COC? Which samples were confirmed? 1
- 25. Was a Rush form completed for quick TAT?
- 26. Was a Short Hold form completed for any short holds?
- 27. Were special archiving instructions indicated in the General Comments? If so, what were they?

90 days, ~~180 days~~ MTTIS case 4/19

Labeling and Storage Checks:

Initials

CSH

- 28. Was the subcontract COC signed and sent with samples to bottle prep?
- 29. Were sample labels double-checked by a second person?
- 30. Were sample bottles and COC double checked for dissolved/filtered metals by a second person?
- 31. Did the sample ID, Date, and Time from label match what was logged?
- 32. Were stickers for special archiving instructions affixed to each box? See #27
- 33. Were AFCEE metals stored refrigerated?

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

APPENDIX III

Container and Preservation Requirements

Field Data

Sample container and preservation requirements

Parameters and Methods	Bottle Size and Type	Preservatives
Explosive compounds, SW8330	32 oz. glass	None, Chilled
Nitrate plus Nitrite, MCAWW353.2	16 oz. glass	2 mL 50% Sulfuric Acid, pH<2, Chilled
Perchlorate, SW8321A	125 mL polyethylene	None, Chilled

6/16/09

1055 ARRIVE AT WELL HTA-12. WL. 80.13

CALIBRATION OF METERS:

PH METER: ORION MODEL S/N
BUFFER: 4.01 7.00 10.00
INITIAL READING 4.01 6.99 9.99
ADJUSTED NONE
SLOPE 98.5

CONDUCTIVITY METER: ORION MODEL S/N
STANDARD 1800
INITIAL READING 1789
ADJUSTED 1799
SLOPE 471

DO METER : YSI

TIME	VOL	TEMP	PH	COND	DO
1133	INITIAL	20.8	7.15	1010	
1140	5	20.5	7.15	955	
1149	10	20.4	7.17	961	
1157	15	20.4	7.18	964	
1205	20	20.3	7.18	963	

1210 COLLECTED SAMPLE HTA-12

6-16-09

HTA

1222 ARRIVE AT WELL HTA-11. WL. 66.82

<u>TIME</u>	<u>VOL</u>	<u>TEMP</u>	<u>pH</u>	<u>COND</u>
1232	INITIAL	20.8	7.44	868
1239	5	20.3	7.40	869
1245	10	20.3	7.38	874
1252	15	20.3	7.36	877
1258	20	20.3	7.36	877

1305 COLLECTED SAMPLE HTA-11.

Recno 00900559

1315 ARRIVE AT WELL HTA-10A. WL FORGOT !!

<u>TIME</u>	<u>VOL</u>	<u>TEMP</u>	<u>pH</u>	<u>COND</u>	<u>DO</u>
1321	INITIAL	21.5	7.45	830	1.76
1327	5	20.3	7.49	870	1.51
1331	10	20.3	7.53	870	1.36
1336	15	20.3	7.54	869	1.33
1342	20	20.3	7.56	869	1.31

1345 COLLECTED SAMPLE HTA-10A

WATER LEVEL FOR HTA-10A WAS TAKEN

6/17/09 @ 1253.

Recno 00900560

August 2009

III-4

6/16/69

HTA

1415 ARRIVE AT WELL HTA-3, WL ^{(HELD) (OUT)} 80.00-12.77 = 67.23
METER 66881.92 66898.70

<u>TIME</u>	<u>TEMP</u>	<u>PH</u>	<u>COND</u>	<u>DO</u>
1438	20.9	7.27	800	1.90
1445	20.8	7.27	77 801	2.00
1448	20.8	7.26	803	2.05
1455	20.8	7.26	805	2.07

1500 COLLECTED SAMPLE HTA-3.

Recno 00900561

WATER LEVELS

<u>TIME</u> <u>WELL</u>	<u>WELL</u>	<u>WL</u>
1543	HTA-33	56.98
1547	WINDMILL - PUMP IN WELL/RUNNING.	
1555	EMRE-1	99.90
1600	EMRE-2	60.61
1606	HTA-44	100.81
1621	HTA-41	111.89
1631	HTA-35	75.79
1639	HTA-36	66.19
1645	HTA-37	89.72
1657	HTA-38	87.12
1712	HTA-48	117.99

6/17/09

HTA

- 0750 ARRIVE AT WELL HTA-16. WL. 86.51
EARLIER MET WITH WSMR/PDC @ 0800. DISCUSSED
FUNDING OPTIONS IN REGARDS TO SITES HTA + STA.
HOW MUCH ADDITIONAL FOR THIS FISCAL YEAR?
WHAT EXPECTED FOR DELIVERABLES + FUNDING FOR
NEXT YEAR?

HTA-16 WILL PURGED 20 GALS FROM WELL
AND COLLECT BROMIDE SAMPLE. SAME
PROCEDURES WILL BE PERFORMED ON
WELLS HTA-16D, 15 + 17, + 19.

1050 COLLECTED SAMPLE HTA-16.

- 1105 ARRIVE AT WELL HTA-16D. WL 83.74
1140 COLLECTED SAMPLE HTA-16D.

- 1150 ARRIVE AT WELL HTA-15. WL 83.91
COLLECTED @ 1113.
1230 COLLECTED SAMPLE HTA-15.

- 1240 ARRIVE AT WELL HTA-17. WL 87.02
COLLECTED @ 1121.
1315 COLLECTED SAMPLE HTA-17

- 1325 ARRIVE AT WELL. HTA-19, WL 130.83
1400 COLLECTED SAMPLE HTA-19.

6/17/09

HTA

CREW FOR COLLECTING WATER LEVELS AT HTA

NICK ENGDAHL			JEFF LANGMAN		FRED GEBKARDT	
• 1101	HTA-22	95.93	HTA-31	47.23°	• 1420	HTA-4 32.42
• 1110	HTA-21	68.21	HTA-32	35.63°	• 1510	HTA ** 29.20
• 1119	HTA-18	116.31	HTA-42	69.45°	• 1610	HTA-40 94.77
• 1126	HTA-27	103.77	HTA-43	74.43°	• 1648	HTA-39 78.07
• 1134	HTA-28	80.48	HTA-45	81.20°		
• 1154	HTA-25	83.86	HTA-46	87.40°	• X	BONNEY MINE SPRING
• 1201	HTA-24	62.21	HTA-47A	77.18°		
• 1211	HTA-30	94.78	HTA-51	90.00°		
• 1219	HTA-26	102.89				
• 1239	HTA-20	76.33				
• 1247	HTA-29	82.54				
• 1253	HTA-10A	65.33				
• 1301	HTA-23	86.91				
• 1313	HTA-14	92.35				
• 1320	HTA-13	100.53				
• 1331	HTA-34	50.85				