Data Validation Package

February 2012
Water Sampling at the
Tuba City, Arizona, Disposal Site

June 2012

U.S. DEPARTMENT OF ENERGY | Legacy Management

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Sampling Event Summary

Site: Tuba City, Arizona, Disposal Site

Sampling Period: August 15 – 17, 2011

The groundwater compliance strategy for the Tuba City Disposal Site is defined in the 1999 *Phase I Ground Water Compliance Action Plan for the Tuba City, Arizona, UMTRA Site.* Samples are collected and analyzed on a semiannual basis to evaluate the performance of the Phase I remediation system.

Sampling and analysis were conducted as specified in *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites* (LMS/PLN/S04351, continually updated).

U.S. Environmental Protection Agency (EPA) groundwater standards were exceeded in samples collected from monitoring wells as listed in Table 1.

The data from this sampling event are generally consistent with previously obtained values and are acceptable for general use as qualified. Data anomalies are not significant with respect to the known nature and extent of contamination and progress of remedial action at the site. The data from this sampling event will be incorporated into the annual performance evaluation report that will present a comprehensive hydrologic summary and evaluation of groundwater remedial action performance at the Tuba City site through March 2012.

Table 1. Tuba City Wells with Analyte Concentrations that Exceed EPA Standards

Analyte	Standard (mg/L)	Location	Concentration (mg/L)
Molybdenum	0.1	0262	0.839
Molybdenum	0.1	0287	0.134
Molybdenum	0.1	1132	1.96
Nitrate + Nitrite as Nitrogen	10	0262	197
Nitrate + Nitrite as Nitrogen	10	0263	259
Nitrate + Nitrite as Nitrogen	10	0264	10.3
Nitrate + Nitrite as Nitrogen	10	0265	164
Nitrate + Nitrite as Nitrogen	10	0267	311
Nitrate + Nitrite as Nitrogen	10	0268	47.4
Nitrate + Nitrite as Nitrogen	10	0273	44.4
Nitrate + Nitrite as Nitrogen	10	0275	251
Nitrate + Nitrite as Nitrogen	10	0281	34
Nitrate + Nitrite as Nitrogen	10	0282	44.2
Nitrate + Nitrite as Nitrogen	10	0286	267
Nitrate + Nitrite as Nitrogen	10	0287	301
Nitrate + Nitrite as Nitrogen	10	0288	48.4
Nitrate + Nitrite as Nitrogen	10	0289	27.5

Table 1 (continued). Tuba City Wells with Analyte Concentrations that Exceed EPA Standards

Analyte	Standard (mg/L)	Location	Concentration (mg/L)
Nitrate + Nitrite as Nitrogen	10	0290	57.4
Nitrate + Nitrite as Nitrogen	10	0691	64.3
Nitrate + Nitrite as Nitrogen	10	0906	515
Nitrate + Nitrite as Nitrogen	10	0908	194
Nitrate + Nitrite as Nitrogen	10	0929	13
Nitrate + Nitrite as Nitrogen	10	0930	17.5
Nitrate + Nitrite as Nitrogen	10	0930	18
Nitrate + Nitrite as Nitrogen	10	0934	357
Nitrate + Nitrite as Nitrogen	10	0935	268
Nitrate + Nitrite as Nitrogen	10	0938	335
Nitrate + Nitrite as Nitrogen	10	0940	446
Nitrate + Nitrite as Nitrogen	10	0941	258
Nitrate + Nitrite as Nitrogen	10	0942	147
Nitrate + Nitrite as Nitrogen	10	1132	178
Selenium	0.01	0262	0.0963
Selenium	0.01	0263	0.0489
Selenium	0.01	0267	0.0554
Selenium	0.01	0273	0.0192
Selenium	0.01	0275	0.0375
Selenium	0.01	0286	0.0388
Selenium	0.01	0287	0.0955
Selenium	0.01	0906	0.0488
Selenium	0.01	0908	0.0252
Selenium	0.01	0935	0.0172
Selenium	0.01	0938	0.0767
Selenium	0.01	0940	0.0871
Selenium	0.01	0941	0.126
Selenium	0.01	0942	0.0616
Selenium	0.01	1132	0.126
Uranium	0.044	0262	0.774
Uranium	0.044	0263	0.141
Uranium	0.044	0265	0.0627
Uranium	0.044	0267	0.069
Uranium	0.044	0268	0.0845
Uranium	0.044	0273	0.0502
Uranium	0.044	0275	0.469
Uranium	0.044	0286	0.33
Uranium	0.044	0287	0.238
Uranium	0.044	0691	0.071
Uranium	0.044	0906	0.43
Uranium	0.044	0908	0.0948
Uranium	0.044	0934	0.176
Uranium	0.044	0935	0.161
Uranium	0.044	0938	0.396

Table 1 (continued). Tuba City Wells with Analyte Concentrations that Exceed EPA Standards

Analyte	Standard (mg/L)	Location	Concentration (mg/L)
Uranium	0.044	0938	0.396
Uranium	0.044	0940	0.422
Uranium	0.044	0941	0.234
Uranium	0.044	0942	0.413
Uranium	0.044	1132	1.51

mg/L = milligrams per liter

T R Bartlett

Tim Bartlett
Site Hydrologist, S.M. Stoller Corporation

6/28/12

Date

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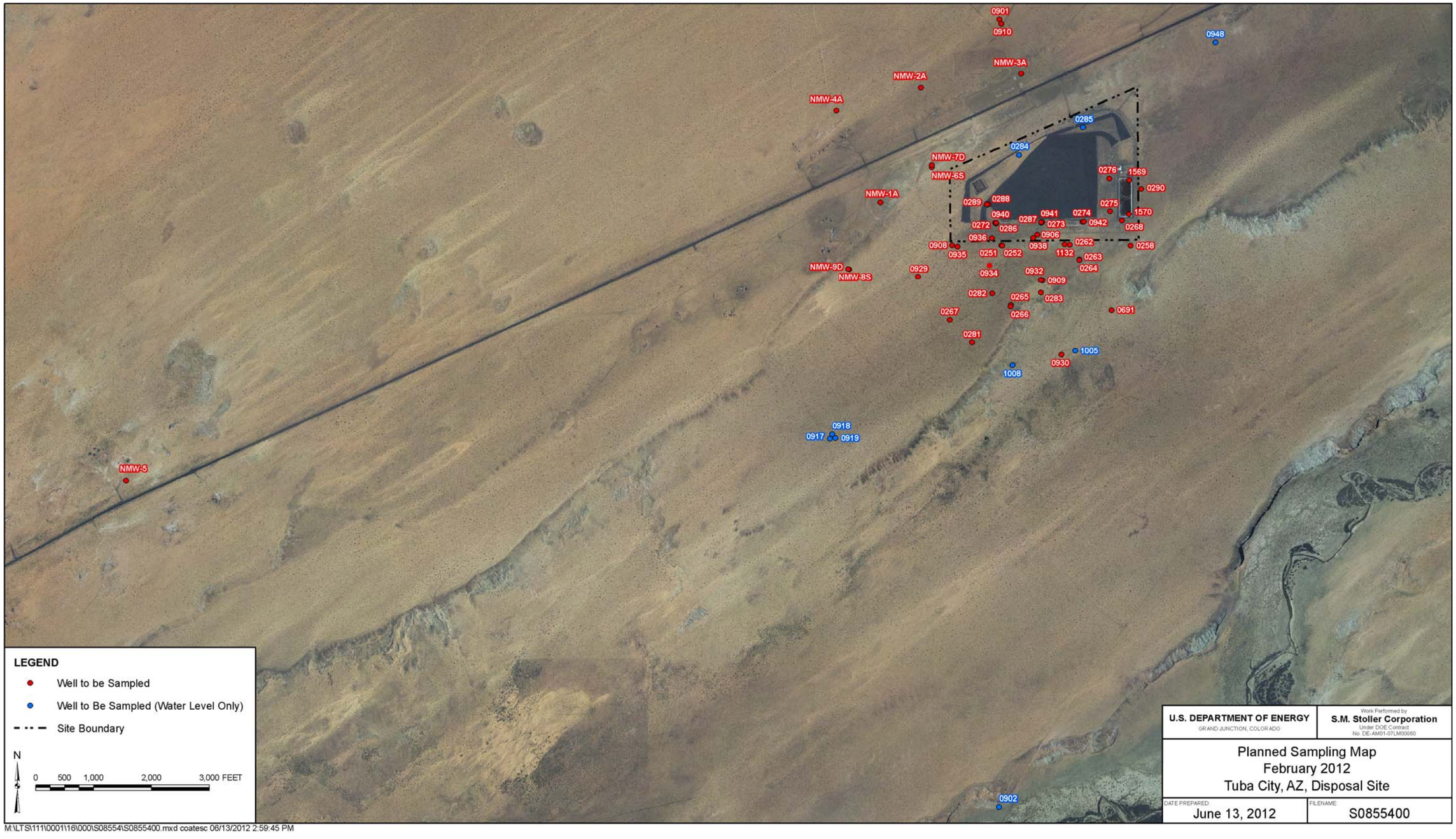

Tuba City, Arizona, Disposal Site, Sample Location Map

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Data Assessment Summary

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Water Sampling Field Activities Verification Checklist

Project	Tuba City, Arizona	**Date(s) of Water Sampling**	February 14-15, 2012
Date(s) of Verification	May 23, 2012	**Name of Verifier**	Gretchen Baer

	Response (Yes, No, NA)	Comments
1. Is the SAP the primary document directing field procedures?	Yes	
List other documents, SOPs, instructions.		Work Order Letter dated February 3, 2012.
2. Were the sampling locations specified in the planning documents sampled?	No	Monitoring wells 0283 and 0909 did not have enough water to sample. The pump at extraction well 0936 was not functioning.
3. Was a pre-trip calibration conducted as specified in the above-named documents?	Yes	Pre-trip calibrations were performed on February 10, 2012. [pH pre-trip calibration: at 182.7, a span was slightly above range (165-180), which is acceptable.]
4. Was an operational check of the field equipment conducted daily?	No	Daily checks for one team's equipment was not documented; the post-trip check, however, was within limits, indicating that the instruments were operating within acceptable limits during sampling. No data qualification is necessary.
Did the operational checks meet criteria?	Yes	
5. Were the number and types (alkalinity, temperature, specific conductance, pH, turbidity, DO, ORP) of field measurements taken as specified?	Yes	
6. Was the category of the well documented?	Yes	
7. Were the following conditions met when purging a Category I well:		
Was one pump/tubing volume purged prior to sampling?	Yes	
Did the water level stabilize prior to sampling?	Yes	At well 0268, the 3 recorded measurements (104.48, 104.75, and 104.75) were outside stability requirements. The 2nd and 3rd measurements were identical and all other parameters met stability requirements, so no data qualification is necessary.
Did pH, specific conductance, and turbidity measurements stabilize prior to sampling?	Yes	
Was the flow rate less than 500 mL/min?	Yes	
If a portable pump was used, was there a 4-hour delay between pump installation and sampling?	NA	

Water Sampling Field Activities Verification Checklist (continued)

	Response (Yes, No, NA)	Comments
8. Were the following conditions met when purging a Category II well:		
Was the flow rate less than 500 mL/min?	Yes	
Was one pump/tubing volume removed prior to sampling?	Yes	
9. Were duplicates taken at a frequency of one per 20 samples?	Yes	Three duplicate samples were collected.
10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment?	NA	
11. Were trip blanks prepared and included with each shipment of VOC samples?	NA	
12. Were QC samples assigned a fictitious site identification number?	Yes	
Was the true identity of the samples recorded on the Quality Assurance Sample Log or in the Field Data Collection System (FDCS) report?	Yes	QC samples are also listed in the trip report.
13. Were samples collected in the containers specified?	Yes	
14. Were samples filtered and preserved as specified?	Yes	
15. Were the number and types of samples collected as specified?	Yes	
16. Were chain of custody records completed and was sample custody maintained?	Yes	
17. Are field data sheets signed and dated by both team members (hardcopies) or are dates present for the “Date Signed” fields (FDCS)?	Yes	
18. Was all other pertinent information documented on the field data sheets?	Yes	
19. Was the presence or absence of ice in the cooler documented at every sample location?	Yes	
20. Were water levels measured at the locations specified in the planning documents?	Yes	

Laboratory Performance Assessment

General Information

Requisition No. (RIN):	12024345
Sample Event:	February 14-15, 2012
Site(s):	Tuba City, Arizona
Laboratory:	GEL Laboratories, Charleston, South Carolina
Work Order Nos.:	296151, 296166, 296173, and 298317
Analysis:	Metals and Inorganics
Validator:	Gretchen Baer
Review Date:	May 23, 2012

This validation was performed according to the *Environmental Procedures Catalog*, (LMS/PRO/S04325, continually updated) "Standard Practice for Validation of Laboratory Data." The procedure was applied at Level 3, Data Validation. See attached Data Validation Worksheets for supporting documentation on the data review and validation. All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 2.

Table 2. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Ammonia as N	WCH-A-005	MCAWW 350.1	MCAWW 350.1
Arsenic, Molybdenum, Selenium, Uranium	LMM-02	SW-846 3005A	SW-846 6020A
Calcium, Iron, Magnesium, Manganese, Potassium, Silica, Sodium	LMM-01	SW-846 3005A	SW-846 6010B
Chloride, Sulfate	MIS-A-045	SW-846 9056	SW-846 9056
Nitrite + Nitrate as N	WCH-A-022	MCAWW 353.2	MCAWW 353.2
Total Dissolved Solids	WCH-A-033	MCAWW 160.1	MCAWW 160.1

Data Qualifier Summary

Analytical results were qualified as listed in Table 3. Refer to the attached validation worksheets and the sections below for an explanation of the data qualifiers applied.

Table 3. Data Qualifiers

Sample Number	Location	Analyte	Flag	Reason
296151-001	0251	Potassium	J	Serial dilution failure
296151-001	0251	Sodium	J	Serial dilution failure
296151-010	0268	Molybdenum	U	Less than 5 times the calibration blank
296151-011	0272	Molybdenum	U	Less than 5 times the calibration blank
296151-013	0274	Molybdenum	U	Less than 5 times the calibration blank
296151-014	0275	Molybdenum	U	Less than 5 times the calibration blank

Table 3 (continued). Data Qualifiers

Sample Number	Location	Analyte	Flag	Reason
296151-015	0276	Molybdenum	U	Less than 5 times the calibration blank
296166-001	0289	Molybdenum	J	Matrix spike failure
296166-009	0930	Chloride	J	Field duplicate failure
296166-009	0930	Sulfate	J	Field duplicate failure
296173-005	0930 Dup	Ammonia as N	U	Less than 5 times the method blank
296173-005	0930 Dup	Chloride	J	Field duplicate failure
296173-005	0930 Dup	Molybdenum	U	Less than 5 times the calibration blank
296173-005	0930 Dup	Nitrite + Nitrate as N	R	Laboratory error
296173-005	0930 Dup	Sulfate	J	Field duplicate failure
296173-006	NMW-1A Dup	Molybdenum	U	Less than 5 times the calibration blank
296173-008	1132 Dup	Ammonia as N	U	Less than 5 times the method blank
296173-009	NMW-1A	Ammonia as N	U	Less than 5 times the method blank
296173-009	NMW-1A	Molybdenum	U	Less than 5 times the calibration blank
296173-010	NMW-2A	Ammonia as N	U	Less than 5 times the method blank
296173-010	NMW-2A	Molybdenum	U	Less than 5 times the calibration blank
296173-011	NMW-3A	Molybdenum	U	Less than 5 times the calibration blank
296173-012	NMW-4A	Ammonia as N	U	Less than 5 times the method blank
296173-012	NMW-4A	Molybdenum	U	Less than 5 times the calibration blank
296173-013	NMW-5A Herbert Chief	Ammonia as N	U	Less than 5 times the method blank
296173-014	NMW-6S	Ammonia as N	U	Less than 5 times the method blank
296173-014	NMW-6S	Molybdenum	U	Less than 5 times the calibration blank
296173-015	NMW-7D	Ammonia as N	U	Less than 5 times the method blank
296173-015	NMW-7D	Molybdenum	U	Less than 5 times the calibration blank
296173-016	NMW-8S	Ammonia as N	U	Less than 5 times the method blank
296173-016	NMW-8S	Molybdenum	U	Less than 5 times the calibration blank
296173-017	NMW-9D	Ammonia as N	U	Less than 5 times the method blank
298317-001	0930 Dup	Nitrite + Nitrate as N	J	Missed holding time

Sample Shipping/Receiving

GEL Laboratories in Charleston, South Carolina, received 56 samples on February 17, 2012, accompanied by Chain of Custody (COC) forms. Copies of the air bills were included in the receiving documentation. The COC forms were checked to confirm that all of the samples were listed with sample collection dates and times, and that signatures and dates were present indicating sample relinquishment and receipt. The COC forms had no errors or omissions. Uranium analysis was added to the request for locations 1202, 1205, and 1206 after the samples were received by the laboratory.

Preservation and Holding Times

The sample shipment was received intact with the temperatures inside the iced coolers between 2 °C and 3 °C, which complies with requirements. All samples were received in the correct container types and had been preserved correctly for the requested analyses. All samples were analyzed within the applicable holding times, with the exception of the field duplicate sample at

location 0930 for nitrite + nitrate as N. This sample was initially analyzed within holding time but was reanalyzed out of holding time in response to Request for Information #12-3449, which was issued to correct a laboratory error. The nitrite + nitrate as N result for this sample is qualified with a "J" flag as an estimated value.

Detection and Quantitation Limits

The method detection limit (MDL) was reported for all analytes as required. The MDL, as defined in 40 CFR 136, is the minimum concentration of an analyte that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. The practical quantitation limit (PQL) for these analytes is the lowest concentration that can be reliably measured, and is defined as 5 times the MDL.

The reported MDLs for all analytes demonstrate compliance with contractual requirements. The MDLs for arsenic (1.7 micrograms per liter [µg/L]) and selenium (1.5 µg/L) were above the requested detection limits (0.1 µg/L for both analytes). These detection limits are acceptable.

Laboratory Instrument Calibration

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data for all analytes. Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run. Compliance requirements for continuing calibration checks are established to ensure that the instrument continues to be capable of producing acceptable qualitative and quantitative data. All laboratory instrument calibrations were performed correctly in accordance with the cited methods. All calibration and laboratory spike standards were prepared from independent sources.

Method MCAWW 160.1

There is no initial or continuing calibration requirement associated with the determination of total dissolved solids. The laboratory noted that some samples failed the weight check criterion of 0.0005 grams. These weights were within 4 percent, however, so no further qualification is necessary.

Method MCAWW 350.1

The initial calibrations for ammonia as N were performed on March 1, 5, and 12, 2012, using five calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency resulting in 12 verification checks. All calibration verification checks met the acceptance criteria.

Method MCAWW 353.2

The initial calibrations for nitrate + nitrite as N were performed on February 27, March 9 and 29, 2012, using five calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the

MDL. Initial and continuing calibration verification checks were made at the required frequency resulting in 15 verification checks. All calibration verification checks met the acceptance criteria.

Method SW-846 6010B

Calibrations for calcium, iron, magnesium, manganese, potassium, silica, and sodium were performed February 28-29, and March 2, 5, and 16, 2012, using three calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency resulting in 30 verification checks. All calibration checks met the acceptance criteria. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curve near the PQL and all results associated with the samples were within the acceptance range.

Method SW-846 6020A

Calibrations for arsenic, molybdenum, selenium, and uranium were performed March 10, 13, and 14, 2012, using two calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency resulting in 40 verification checks. All calibration checks met the acceptance criteria. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curve near the PQL and all results were within the acceptance range. Mass calibration and resolution verifications were performed at the beginning of each analytical run in accordance with the analytical procedure. Internal standard recoveries associated with requested analytes were stable and within acceptable ranges.

Method SW-846 9056

Calibrations for chloride and sulfate were performed on January 3, 5, and 6, 2012, using six calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency resulting in 28 verification checks. All calibration checks met the acceptance criteria.

Method and Calibration Blanks

Method blanks are analyzed to assess any contamination that may have occurred during sample preparation. Calibration blanks are analyzed to assess instrument contamination prior to and during sample analysis. All method blank and calibration blank results associated with the samples were below the PQL for all analytes. In cases where a blank concentration exceeds the MDL, the associated sample results are qualified with a “U” flag (not detected) when the sample result is greater than the MDL but less than 5 times the blank concentration.

Inductively Coupled Plasma (ICP) Interference Check Sample (ICS) Analysis

ICP interference check samples ICSA and ICSAB were analyzed at the required frequency to verify the instrumental interelement and background correction factors. All check sample results met the acceptance criteria.

Matrix Spike Analysis

Matrix spike and matrix spike duplicate (MS/MSD) samples are used to measure method performance in the sample matrix. The MS/MSD data are not evaluated when the concentration of the unspiked sample is greater than 4 times the spike concentration. The spike recoveries met the recovery and precision criteria for all analytes evaluated with the following exception. A MS recovery for molybdenum was above the acceptance range. Associated results above the MDL are qualified with a "J" flag (estimated). Some spike recoveries exceeded the laboratory's acceptance criteria for wet chemistry analytes, but all spike recoveries were within the ±25 percent requirement for the associated methods.

Laboratory Replicate Analysis

Laboratory replicate analyses are used to determine laboratory precision for each sample matrix. The relative percent difference for replicate results that are greater than 5 times PQL should be less than 20 percent. For results that are less than 5 times the PQL, the range should be no greater than the PQL. The replicate results met these criteria, demonstrating acceptable laboratory precision.

Laboratory Control Sample

Laboratory control samples were analyzed at the correct frequency to provide information on the accuracy of the analytical method and the overall laboratory performance, including sample preparation. The results were acceptable for all analytes.

Metals Serial Dilution

Serial dilutions were prepared and analyzed for metals analyses to monitor chemical or physical interferences in the sample matrix. Serial dilution data are evaluated when the concentration of the undiluted sample is greater than 50 times the MDL. All evaluated serial dilution data were acceptable with the following exceptions. Percent differences for a potassium and a sodium dilution were above the acceptance range of 10 percent. The associated results are qualified with a "J" flag (estimated).

Completeness

Results were reported in the correct units for all analytes requested using contract-required laboratory qualifiers.

Chromatography Peak Integration

The integration of analyte peaks was reviewed for all ion chromatography data. There were no manual integrations performed and all peak integrations were satisfactory.

Electronic Data Deliverable (EDD) File

A revised EDD file arrived on April 11, 2102, in response to Request for Information #12-3449. The revision included the reanalysis of a nitrate + nitrite as N sample. The Sample Management System EDD validation module was used to verify that the EDD file was complete and in compliance with requirements. The module compares the contents of the file to the requested analyses to ensure all and only the requested data are delivered. The contents of the EDD were manually examined to verify that the sample results accurately reflect the data contained in the sample data package.

Anion/Cation Balance

The anion/cation balance is used to determine if major ion concentrations have been quantified correctly. The total anions should balance with (be equal to) the total cations when expressed in milliequivalents per liter (meq/L). Table 4 shows the total anion and cation results from this event and the charge balance, which is a relative percent difference calculation. Typically, a charge balance difference of 10 percent is considered acceptable.

Table 4. Comparison of Major Anions and Cations

Location	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
0251	2.2	2.3	1.3
0252	1.9	1.8	2.2
0258	2.8	2.9	1.5
0262	55.5	61.6	5.2
0263	89.9	92.1	1.2
0264	5.0	5.2	2.4
0265	47.1	45.0	2.3
0266	2.3	2.2	1.7
0267	104.2	102.2	1.0
0268	14.8	15.5	2.4
0272	2.5	2.5	0.1
0273	12.0	11.5	1.8
0274	2.9	2.7	3.0
0275	84.7	78.3	3.9
0276	2.8	3.0	2.6
0281	7.9	8.1	0.8
0282	9.1	9.1	0.1
0286	98.0	96.7	0.7
0287	69.4	74.4	3.5
0288	13.1	13.8	2.7
0289	9.2	9.0	0.7
0290	17.4	14.9	7.9

Table 4. Comparison of Major Anions and Cations

Location	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
0691	20.9	19.9	2.6
0901	3.6	3.5	1.2
0906	94.6	95.2	0.3
0908	82.2	80.5	1.1
0910	2.8	2.3	8.6
0929	3.8	3.2	8.8
0930	5.7	5.4	3.3
0932	3.6	3.3	4.5
0934	101.6	101.5	0.1
0935	82.3	81.4	0.6
0938	91.1	94.3	1.7
0940	187.0	188.7	0.4
0941	64.1	64.3	0.1
0942	85.1	87.1	1.2
1132	59.5	59.0	0.5
1202	21.5	36.8	NA
1205	0.3	0.7	NA
1206	2.0	574.2	NA
1569	4373	4122	3.0
1570	4125	4134	0.1
1576	3742	3663	1.1
1577	2760	3856	16.6
NMW-1A	2.7	2.5	2.5
NMW-2A	2.7	2.8	0.8
NMW-3A	2.7	2.7	0.6
NMW-4A	2.7	2.7	0.4
NMW-5	3.7	3.6	1.3
NMW-6S	2.9	3.1	3.4
NMW-7D	2.2	2.6	8.1
NMW-8S	2.8	2.4	6.7
NMW-9D	3.6	3.6	0.1

At locations 1202, 1205, and 1206, the alkalinity, magnesium, potassium, and sodium results were not requested or determined. The charge balance is therefore not applicable. The charge balance value for most locations was less than 10 percent but one location had a charge balance of 16.6 percent. This location (1577) is an evaporation pond sample, which is a difficult matrix. There were no analytical errors identified during the review of the laboratory data.

SAMPLE MANAGEMENT SYSTEM

RIN: 12024345 **Lab Code:** GEN

Non-Compliance Report: Detection Limits

Project: Tuba City

Validation Date: 5/8/2012

Ticket	Location	Lab Sample ID	Method Code	Lab Method	Analyte Name	Result	Qualifier	Reported Detection Limit	Required Detection Limit	Units
KDW 548	0251	296151001	LMM-02	EPA 3005/6020	Selenium	1.50	U	1.5	0.1	ug/L
KDW 548	0251	296151001	LMM-02	EPA 3005/6020	Arsenic	2.62	B	1.7	0.1	ug/L
KDW 549	0252	296151002	LMM-02	EPA 3005/6020	Arsenic	3.63	B	1.7	0.1	ug/L
KDW 549	0252	296151002	LMM-02	EPA 3005/6020	Selenium	1.50	U	1.5	0.1	ug/L
KDW 550	0258	296151003	LMM-02	EPA 3005/6020	Selenium	1.50	U	1.5	0.1	ug/L
KDW 550	0258	296151003	LMM-02	EPA 3005/6020	Arsenic	3.46	B	1.7	0.1	ug/L
KDW 551	0262	296151004	LMM-02	EPA 3005/6020	Arsenic	1.74	B	1.7	0.1	ug/L
KDW 551	0262	296151004	LMM-02	EPA 3005/6020	Selenium	96.3		1.5	0.1	ug/L
KDW 552	0263	296151005	LMM-02	EPA 3005/6020	Arsenic	1.70	U	1.7	0.1	ug/L
KDW 552	0263	296151005	LMM-02	EPA 3005/6020	Selenium	48.9		1.5	0.1	ug/L
KDW 553	0264	296151006	LMM-02	EPA 3005/6020	Selenium	2.08	B	1.5	0.1	ug/L
KDW 553	0264	296151006	LMM-02	EPA 3005/6020	Arsenic	2.88	B	1.7	0.1	ug/L
KDW 554	0265	296151007	LMM-02	EPA 3005/6020	Selenium	5.79		1.5	0.1	ug/L
KDW 554	0265	296151007	LMM-02	EPA 3005/6020	Arsenic	1.70	U	1.7	0.1	ug/L
KDW 555	0266	296151008	LMM-02	EPA 3005/6020	Arsenic	2.54	B	1.7	0.1	ug/L
KDW 555	0266	296151008	LMM-02	EPA 3005/6020	Selenium	1.50	U	1.5	0.1	ug/L
KDW 556	0267	296151009	LMM-02	EPA 3005/6020	Selenium	55.4		1.5	0.1	ug/L
KDW 556	0267	296151009	LMM-02	EPA 3005/6020	Arsenic	2.82	B	1.7	0.1	ug/L
KDW 557	0268	296151010	LMM-02	EPA 3005/6020	Selenium	2.46	B	1.5	0.1	ug/L
KDW 557	0268	296151010	LMM-02	EPA 3005/6020	Arsenic	1.70	U	1.7	0.1	ug/L
KDW 558	0272	296151011	LMM-02	EPA 3005/6020	Selenium	1.50	U	1.5	0.1	ug/L
KDW 558	0272	296151011	LMM-02	EPA 3005/6020	Arsenic	1.86	B	1.7	0.1	ug/L
KDW 559	0273	296151012	LMM-02	EPA 3005/6020	Selenium	19.2		1.5	0.1	ug/L

SAMPLE MANAGEMENT SYSTEM

RIN: 12024345 Lab Code: GEN

Non-Compliance Report: Detection Limits

Project: Tuba City

Validation Date: 5/8/2012

Ticket	Location	Lab Sample ID	Method Code	Lab Method	Analyte Name	Result	Qualifier	Reported Detection Limit	Required Detection Limit	Units
KDW 559	0273	296151012	LMM-02	EPA 3005/6020	Arsenic	2.6	B	1.7	0.1	ug/L
KDW 560	0274	296151013	LMM-02	EPA 3005/6020	Selenium	2.31	B	1.5	0.1	ug/L
KDW 560	0274	296151013	LMM-02	EPA 3005/6020	Arsenic	2.31	B	1.7	0.1	ug/L
KDW 561	0275	296151014	LMM-02	EPA 3005/6020	Arsenic	3.40	U	1.7	0.1	ug/L
KDW 561	0275	296151014	LMM-02	EPA 3005/6020	Selenium	37.5		1.5	0.1	ug/L
KDW 562	0276	296151015	LMM-02	EPA 3005/6020	Selenium	2.36	B	1.5	0.1	ug/L
KDW 562	0276	296151015	LMM-02	EPA 3005/6020	Arsenic	4.56	B	1.7	0.1	ug/L
KDW 563	0281	296151016	LMM-02	EPA 3005/6020	Arsenic	1.70	U	1.7	0.1	ug/L
KDW 563	0281	296151016	LMM-02	EPA 3005/6020	Selenium	1.67	B	1.5	0.1	ug/L
KDW 564	0282	296151017	LMM-02	EPA 3005/6020	Selenium	1.50	U	1.5	0.1	ug/L
KDW 564	0282	296151017	LMM-02	EPA 3005/6020	Arsenic	1.70	U	1.7	0.1	ug/L
KDW 565	0286	296151018	LMM-02	EPA 3005/6020	Selenium	38.8		1.5	0.1	ug/L
KDW 565	0286	296151018	LMM-02	EPA 3005/6020	Arsenic	1.70	U	1.7	0.1	ug/L
KDW 566	0287	296151019	LMM-02	EPA 3005/6020	Selenium	95.5		1.5	0.1	ug/L
KDW 566	0287	296151019	LMM-02	EPA 3005/6020	Arsenic	1.70	U	1.7	0.1	ug/L
KDW 567	0288	296151020	LMM-02	EPA 3005/6020	Selenium	1.83	B	1.5	0.1	ug/L
KDW 567	0288	296151020	LMM-02	EPA 3005/6020	Arsenic	1.70	U	1.7	0.1	ug/L
KDW 568	0289	296166001	LMM-02	EPA 3005/6020	Selenium	1.82	B	1.5	0.1	ug/L
KDW 568	0289	296166001	LMM-02	EPA 3005/6020	Arsenic	1.70	U	1.7	0.1	ug/L
KDW 569	0290	296166002	LMM-02	EPA 3005/6020	Selenium	7.95		1.5	0.1	ug/L
KDW 569	0290	296166002	LMM-02	EPA 3005/6020	Arsenic	2.14	B	1.7	0.1	ug/L
KDW 570	0691	296166003	LMM-02	EPA 3005/6020	Selenium	3.41	B	1.5	0.1	ug/L
KDW 570	0691	296166003	LMM-02	EPA 3005/6020	Arsenic	1.70	U	1.7	0.1	ug/L

SAMPLE MANAGEMENT SYSTEM

RIN: 12024345 Lab Code: GEN

Non-Compliance Report: Detection Limits

Project: Tuba City

Validation Date: 5/8/2012

Ticket	Location	Lab Sample ID	Method Code	Lab Method	Analyte Name	Result	Qualifier	Reported Detection Limit	Required Detection Limit	Units
KDW 587	0901	296166004	LMM-02	EPA 3005/6020	Selenium	3.04	B	1.5	0.1	ug/L
KDW 587	0901	296166004	LMM-02	EPA 3005/6020	Arsenic	3.74	B	1.7	0.1	ug/L
KDW 584	0906	296166005	LMM-02	EPA 3005/6020	Selenium	48.8		1.5	0.1	ug/L
KDW 584	0906	296166005	LMM-02	EPA 3005/6020	Arsenic	1.70	U	1.7	0.1	ug/L
KDW 571	0908	296166006	LMM-02	EPA 3005/6020	Selenium	25.2		1.5	0.1	ug/L
KDW 571	0908	296166006	LMM-02	EPA 3005/6020	Arsenic	4.4	B	1.7	0.1	ug/L
KDW 589	0910	296166007	LMM-02	EPA 3005/6020	Selenium	1.72	B	1.5	0.1	ug/L
KDW 589	0910	296166007	LMM-02	EPA 3005/6020	Arsenic	5.32		1.7	0.1	ug/L
KDW 572	0929	296166008	LMM-02	EPA 3005/6020	Selenium	2.39	B	1.5	0.1	ug/L
KDW 572	0929	296166008	LMM-02	EPA 3005/6020	Arsenic	2.54	B	1.7	0.1	ug/L
KDW 573	0930	296166009	LMM-02	EPA 3005/6020	Selenium	2.49	B	1.5	0.1	ug/L
KDW 573	0930	296166009	LMM-02	EPA 3005/6020	Arsenic	1.70	U	1.7	0.1	ug/L
KDW 574	0932	296166010	LMM-02	EPA 3005/6020	Selenium	1.79	B	1.5	0.1	ug/L
KDW 574	0932	296166010	LMM-02	EPA 3005/6020	Arsenic	2.77	B	1.7	0.1	ug/L
KDW 575	0934	296166011	LMM-02	EPA 3005/6020	Selenium	7.5		1.5	0.1	ug/L
KDW 575	0934	296166011	LMM-02	EPA 3005/6020	Arsenic	4.21	B	1.7	0.1	ug/L
KDW 576	0935	296166012	LMM-02	EPA 3005/6020	Arsenic	1.70	U	1.7	0.1	ug/L
KDW 576	0935	296166012	LMM-02	EPA 3005/6020	Selenium	17.2		1.5	0.1	ug/L
KDW 577	0938	296166013	LMM-02	EPA 3005/6020	Arsenic	4.15	B	1.7	0.1	ug/L
KDW 577	0938	296166013	LMM-02	EPA 3005/6020	Selenium	76.7		1.5	0.1	ug/L
KDW 586	0940	296166014	LMM-02	EPA 3005/6020	Selenium	87.1		1.5	0.1	ug/L
KDW 586	0940	296166014	LMM-02	EPA 3005/6020	Arsenic	3.41	B	1.7	0.1	ug/L
KDW 578	0941	296166015	LMM-02	EPA 3005/6020	Selenium	126		1.5	0.1	ug/L

SAMPLE MANAGEMENT SYSTEM

RIN: 12024345 Lab Code: GEN

Non-Compliance Report: Detection Limits

Project: Tuba City

Validation Date: 5/8/2012

Ticket	Location	Lab Sample ID	Method Code	Lab Method	Analyte Name	Result	Qualifier	Reported Detection Limit	Required Detection Limit	Units
KDW 578	0941	296166015	LMM-02	EPA 3005/6020	Arsenic	1.70	U	1.7	0.1	ug/L
KDW 579	0942	296166016	LMM-02	EPA 3005/6020	Selenium	61.6		1.5	0.1	ug/L
KDW 579	0942	296166016	LMM-02	EPA 3005/6020	Arsenic	4.29	B	1.7	0.1	ug/L
KDW 591	1132	296166017	LMM-02	EPA 3005/6020	Selenium	126		1.5	0.1	ug/L
KDW 591	1132	296166017	LMM-02	EPA 3005/6020	Arsenic	7.87		1.7	0.1	ug/L
KDW 598	1202	296166018	LMM-02	EPA 3005/6020	Selenium	24.3		1.5	0.1	ug/L
KDW 599	1205	296166019	LMM-02	EPA 3005/6020	Selenium	1.50	U	1.5	0.1	ug/L
KDW 600	1206	296166020	LMM-02	EPA 3005/6020	Selenium	336		1.5	0.1	ug/L
KDW 580	1569	296173001	LMM-02	EPA 3005/6020	Selenium	1220		1.5	0.1	ug/L
KDW 580	1569	296173001	LMM-02	EPA 3005/6020	Arsenic	1330		1.7	0.1	ug/L
KDW 581	1570	296173002	LMM-02	EPA 3005/6020	Selenium	1160		1.5	0.1	ug/L
KDW 581	1570	296173002	LMM-02	EPA 3005/6020	Arsenic	1300		1.7	0.1	ug/L
KDW 596	1576	296173003	LMM-02	EPA 3005/6020	Selenium	983		1.5	0.1	ug/L
KDW 596	1576	296173003	LMM-02	EPA 3005/6020	Arsenic	1150		1.7	0.1	ug/L
KDW 597	1577	296173004	LMM-02	EPA 3005/6020	Selenium	989		1.5	0.1	ug/L
KDW 597	1577	296173004	LMM-02	EPA 3005/6020	Arsenic	1110		1.7	0.1	ug/L
KDW 547	2122	296173005	LMM-02	EPA 3005/6020	Selenium	1.50	U	1.5	0.1	ug/L
KDW 547	2122	296173005	LMM-02	EPA 3005/6020	Arsenic	1.70	U	1.7	0.1	ug/L
KDW 582	2723	296173006	LMM-02	EPA 3005/6020	Selenium	1.50	U	1.5	0.1	ug/L
KDW 582	2723	296173006	LMM-02	EPA 3005/6020	Arsenic	3.27	B	1.7	0.1	ug/L
KDW 583	2724	296173008	LMM-02	EPA 3005/6020	Arsenic	4.76	B	1.7	0.1	ug/L

SAMPLE MANAGEMENT SYSTEM

RIN: 12024345 **Lab Code:** GEN

Non-Compliance Report: Detection Limits

Project: Tuba City

Validation Date: 5/8/2012

Ticket	Location	Lab Sample ID	Method Code	Lab Method	Analyte Name	Result	Qualifier	Reported Detection Limit	Required Detection Limit	Units
KDW 583	2724	296173008	LMM-02	EPA 3005/6020	Selenium	112		1.5	0.1	ug/L
KDW 542	NMW-1A	296173009	LMM-02	EPA 3005/6020	Selenium	1.50	U	1.5	0.1	ug/L
KDW 542	NMW-1A	296173009	LMM-02	EPA 3005/6020	Arsenic	3.05	B	1.7	0.1	ug/L
KDW 592	NMW-2A	296173010	LMM-02	EPA 3005/6020	Selenium	1.50	U	1.5	0.1	ug/L
KDW 592	NMW-2A	296173010	LMM-02	EPA 3005/6020	Arsenic	4.93	B	1.7	0.1	ug/L
KDW 593	NMW-3A	296173011	LMM-02	EPA 3005/6020	Selenium	1.50	U	1.5	0.1	ug/L
KDW 593	NMW-3A	296173011	LMM-02	EPA 3005/6020	Arsenic	2.52	B	1.7	0.1	ug/L
KDW 594	NMW-4A	296173012	LMM-02	EPA 3005/6020	Arsenic	2.58	B	1.7	0.1	ug/L
KDW 594	NMW-4A	296173012	LMM-02	EPA 3005/6020	Selenium	1.50	U	1.5	0.1	ug/L
KDW 595	NMW-5A Herbert Chief	296173013	LMM-02	EPA 3005/6020	Selenium	2.77	B	1.5	0.1	ug/L
KDW 595	NMW-5A Herbert Chief	296173013	LMM-02	EPA 3005/6020	Arsenic	6.2		1.7	0.1	ug/L
KDW 543	NMW-6S	296173014	LMM-02	EPA 3005/6020	Selenium	1.50	U	1.5	0.1	ug/L
KDW 543	NMW-6S	296173014	LMM-02	EPA 3005/6020	Arsenic	4.08	B	1.7	0.1	ug/L
KDW 544	NMW-7D	296173015	LMM-02	EPA 3005/6020	Selenium	1.50	U	1.5	0.1	ug/L
KDW 544	NMW-7D	296173015	LMM-02	EPA 3005/6020	Arsenic	4.79	B	1.7	0.1	ug/L
KDW 545	NMW-8S	296173016	LMM-02	EPA 3005/6020	Arsenic	4.94	B	1.7	0.1	ug/L
KDW 545	NMW-8S	296173016	LMM-02	EPA 3005/6020	Selenium	1.75	B	1.5	0.1	ug/L
KDW 546	NMW-9D	296173017	LMM-02	EPA 3005/6020	Selenium	1.74	B	1.5	0.1	ug/L
KDW 546	NMW-9D	296173017	LMM-02	EPA 3005/6020	Arsenic	4.64	B	1.7	0.1	ug/L

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 12024345 **Lab Code:** GEN **Date Due:** 3/16/2012

Matrix: Water **Site Code:** TUB **Date Completed:** 3/19/2012

Analyte	Method Type	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
			Int.	R^2	ICV	CCV	ICB	CCB								
Calcium	ICP/ES	02/29/2012	0.0000	1.0000	OK	OK	OK	OK	OK	102.0	104.0		1.0	101.0	2.3	101.0
Calcium	ICP/ES	02/28/2012	0.0000	1.0000	OK	OK	OK	OK	OK	99.8			2.0	98.0	1.3	104.0
Calcium	ICP/ES	03/02/2012	0.0000	1.0000					OK	107.0				99.0	2.6	106.0
Calcium	ICP/ES	03/05/2012	0.0000	1.0000									4.0	98.0		102.0
Iron	ICP/ES	02/29/2012	0.0000	1.0000	OK	OK	OK	OK	OK	98.6	96.3			94.0		93.0
Iron	ICP/ES	03/05/2012	0.0000	1.0000									3.0		2.5	
Iron	ICP/ES	03/02/2012	0.0000	1.0000					OK	105.0						
Iron	ICP/ES	02/28/2012	0.0000	1.0000	OK	OK	OK	OK	OK	97.3	98.2			94.0		
Magnesium	ICP/ES	02/28/2012	0.0000	1.0000	OK	OK	OK	OK	OK	97.9	114.0		2.0	93.0	4.2	111.0
Magnesium	ICP/ES	02/29/2012	0.0000	1.0000	OK	OK	OK	OK	OK	101.0	97.6		1.0	96.0	3.2	109.0
Magnesium	ICP/ES	03/02/2012	0.0000	1.0000					OK	105.0			1.0	99.0	1.2	105.0
Manganese	ICP/ES	02/29/2012	0.0000	1.0000	OK	OK	OK	OK	OK	98.7	94.8			101.0	2.1	99.0
Manganese	ICP/ES	03/02/2012	0.0000	1.0000					OK	101.0			0.0	99.0		101.0
Manganese	ICP/ES	02/28/2012	0.0000	1.0000	OK	OK	OK	OK	OK	95.4	95.4		2.0	99.0	1.0	100.0
Potassium	ICP/ES	03/02/2012	0.0000	1.0000					OK	101.0			6.0	108.0	10.4	108.0
Potassium	ICP/ES	02/29/2012	0.0000	1.0000	OK	OK	OK	OK	OK	98.2	94.3		2.0	108.0	7.0	78.0
Potassium	ICP/ES	02/28/2012	0.0000	1.0000	OK	OK	OK	OK	OK	95.6	93.4		1.0	108.0	8.0	

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 12024345 **Lab Code:** GEN **Date Due:** 3/16/2012

Matrix: Water **Site Code:** TUB **Date Completed:** 3/19/2012

Analyte	Method Type	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
			Int.	R^2	ICV	CCV	ICB	CCB								
Silica	ICP/ES	03/05/2012	0.0000	1.0000							85.6		6.0	105.0	2.7	92.0
Silica	ICP/ES	02/29/2012	0.0000	1.0000	OK	OK	OK	OK	OK	96.0	96.6		0.0		1.2	
Silica	ICP/ES	02/28/2012	0.0000	1.0000	OK	OK	OK	OK	OK	92.9	101.0		2.0	105.0		
Silica	ICP/ES	03/02/2012	0.0000	1.0000					OK	98.9					5.0	
Sodium	ICP/ES	02/29/2012	0.0000	1.0000	OK	OK	OK	OK	OK	103.0	93.9		1.0	108.0	19.8	98.0
Sodium	ICP/ES	03/16/2012	0.0000	1.0000					OK	98.7			2.0	115.0	0.4	
Sodium	ICP/ES	03/02/2012	0.0000	1.0000					OK	103.0			1.0		1.0	
Arsenic	ICP/MS	03/14/2012	0.0000	1.0000	OK	OK	OK	OK	OK	111.0				105.0		122.0
Arsenic	ICP/MS	03/13/2012	0.0000	1.0000	OK	OK	OK	OK	OK	111.0	106.0			107.0		116.0
Arsenic	ICP/MS	03/14/2012							OK	115.0	121.0		4.0	98.0	3.4	126.0
Molybdenum	ICP/MS	03/14/2012	0.0000	1.0000	OK	OK	OK	OK	OK	101.0			2.0	94.0		81.0
Molybdenum	ICP/MS	03/13/2012	0.0000	1.0000	OK	OK	OK	OK	OK	118.0	131.0		4.0	89.0		97.0
Molybdenum	ICP/MS	03/10/2012	0.0000	1.0000	OK	OK	OK	OK	OK	113.0	108.0			98.0	1.3	92.0
Selenium	ICP/MS	03/14/2012							OK	113.0				89.0	2.1	109.0
Selenium	ICP/MS	03/14/2012	0.0000	1.0000	OK	OK	OK	OK	OK	119.0	123.0		8.0	100.0		114.0
Selenium	ICP/MS	03/13/2012	0.0000	1.0000	OK	OK	OK	OK	OK	113.0	112.0			84.0		120.0
Uranium	ICP/MS	03/14/2012	0.0000	1.0000	OK	OK	OK	OK	OK	111.0			6.0		3.5	

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 12024345 **Lab Code:** GEN **Date Due:** 3/16/2012

Matrix: Water **Site Code:** TUB **Date Completed:** 3/19/2012

Analyte	Method Type	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
			Int.	R^2	ICV	CCV	ICB	CCB								
Uranium	ICP/MS	03/13/2012	0.0000	1.0000	OK	OK	OK	OK	OK	116.0	122.0		2.0		7.7	
Uranium	ICP/MS	03/10/2012	0.0000	1.0000	OK	OK	OK	OK	OK	114.0	109.0		1.0	104.0	1.0	122.0

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 12024345 **Lab Code:** GEN **Date Due:** 3/16/2012

Matrix: Water **Site Code:** TUB **Date Completed:** 3/19/2012

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
Chloride	01/03/2012	0.120	0.9967	OK		OK							
Chloride	01/05/2012	0.120	0.9965	OK		OK							
Chloride	01/06/2012	0.201	0.9983	OK		OK							
Chloride	02/24/2012				OK		OK	OK	95.6				
Chloride	02/24/2012				OK		OK	OK	96.5	96.1		1	
Chloride	02/25/2012									97		2	
Chloride	02/27/2012				OK		OK	OK	94.6	101		0	
Chloride	02/28/2012				OK		OK	OK	97.1				
Chloride	02/29/2012									98.6		0	
Chloride	02/29/2012									111		0	
Chloride	02/29/2012									110		0	
NH3 as N	03/01/2012	-0.040	0.9983	OK	OK	OK	OK	OK	102	97.4	86.3	12	
NH3 as N	03/01/2012							OK	93.8	105	106	1	
NH3 as N	03/01/2012									103	101	2	
NH3 as N	03/05/2012	-0.002	0.9999	OK	OK	OK	OK			98.4	97.1	1	

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 12024345 **Lab Code:** GEN **Date Due:** 3/16/2012

Matrix: Water **Site Code:** TUB **Date Completed:** 3/19/2012

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
NH3 as N	03/12/2012	-0.025	0.9998	OK	OK	OK	OK	OK	107	86.7	94.9	9	
NH3 as N	03/12/2012									96.3	108	11	
NO2+NO3 as N	02/27/2012	-0.006	0.9999	OK	OK	OK	OK	OK	100	101		2	
NO2+NO3 as N	02/27/2012									103		0	
NO2+NO3 as N	03/09/2012	0.005	0.9997	OK	OK	OK	OK	OK	97.2	98.6		1	
NO2+NO3 as N	03/09/2012			OK	OK	OK	OK	OK	104	99.1		2	
NO2+NO3 as N	03/09/2012									106		2	
NO2+NO3 as N	03/09/2012									105		0	
NO2+NO3 as N	03/29/2012	0.005	1.0000	OK	OK	OK	OK	OK	102	97		3	
Sulfate	01/03/2012	0.405	0.9977	OK		OK							
Sulfate	01/05/2012	0.409	0.9975	OK		OK							
Sulfate	01/06/2012	0.301	0.9990	OK		OK							
Sulfate	02/24/2012				OK		OK	OK	101	105		0	
Sulfate	02/24/2012				OK		OK	OK	99.3				
Sulfate	02/25/2012									110		0	

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 12024345 **Lab Code:** GEN **Date Due:** 3/16/2012

Matrix: Water **Site Code:** TUB **Date Completed:** 3/19/2012

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
Sulfate	02/27/2012				OK		OK	OK	98.1	101		1	
Sulfate	02/28/2012				OK		OK	OK	98.5				
Sulfate	02/29/2012									112		0	
Sulfate	02/29/2012									107		1	
Sulfate	02/29/2012									114		0	
Total Dissolved Solids	02/20/2012							OK	102			1	
Total Dissolved Solids	02/20/2012											3	
Total Dissolved Solids	02/21/2012							OK	95.2			0	
Total Dissolved Solids	02/21/2012											1	
Total Dissolved Solids	02/22/2012							OK	99			1	
Total Dissolved Solids	02/22/2012							OK	99			0	
Total Dissolved Solids	02/22/2012											4	

General Information

RIN:	12024346
Sample Event:	February 14-15, 2012
Site(s):	Tuba City, Arizona
Laboratory:	GEL Laboratories, Charleston, South Carolina
Work Order No.:	296453
Analysis:	Tritium
Validator:	Gretchen Baer
Review Date:	May 25, 2012

This validation was performed according to the *Environmental Procedures Catalog*, (LMS/PRO/S04325, continually updated) "Standard Practice for Validation of Laboratory Data." The procedure was applied at Level 3, Data Validation. See attached Data Validation Worksheets for supporting documentation on the data review and validation. All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 5.

Table 5. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Tritium, Enrichment Method	LMR-17	HASL-300	HASL-300

Data Qualifier Summary

Analytical results were qualified as listed in Table 6. Refer to the sections below for an explanation of the data qualifiers applied.

Table 6. Data Qualifier Summary

Sample Number	Location	Analyte(s)	Flag	Reason
296453-001	0901	Tritium	J	Less than the Determination Limit
296453-002	0906	Tritium	J	Less than the Determination Limit
296453-004	0934	Tritium	J	Less than the Determination Limit
296453-007	1132	Tritium	J	Less than the Determination Limit

Sample Shipping/Receiving

GEL Laboratories in Charleston, South Carolina, received seven water samples on February 23, 2012, accompanied by a COC form. The air waybill number was listed on the Sample Receipt and Review Form. The COC form was checked to confirm that all of the samples were listed with sample collection dates and times, and that signatures and dates were present indicating sample relinquishment and receipt. The COC form was complete with no

errors or omissions, with the exception that the turn-around-time was listed as 28 days rather than 90 days.

Preservation and Holding Times

The sample shipment was received intact at ambient temperature, which complies with requirements. All samples were received in the correct container types and had been preserved correctly for the requested analyses. All samples were analyzed within the applicable holding times.

Detection and Quantitation Limits

Radiochemical analytes (those measured by radiometric counting) are evaluated using the minimum detectable concentration (MDC), Decision Level Concentration (DLC), and Determination Limit (DL). The MDC is a measure of radiochemical method performance and was calculated and reported as specified in *Quality Systems for Analytical Services*. The DLC is the minimum concentration of an analyte that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, and is estimated as 3 times the one-sigma total propagated uncertainty. Results that are greater than the MDC, but less than the DLC are qualified with a "U" flag (not detected). The DL for radiochemical results is the lowest concentration that can be reliably measured, and is defined as 3 times the MDC. Results not previously "U" qualified that are less than the DL are qualified with a "J" flag as estimated values.

The reported MDCs for radiochemical analytes demonstrate compliance with contractual requirements.

Laboratory Instrument Calibration

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data for all analytes. Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing a linear curve. Compliance requirements for continuing calibration checks are established to ensure that the instrument continues to be capable of producing acceptable qualitative and quantitative data. All laboratory instrument calibrations were performed correctly in accordance with the cited methods. Calibration and laboratory spike standards were prepared from independent sources.

Instrument quench calibration curves were generated in June 2011. Daily instrument checks performed on April 10 and 11, 2012, met the acceptance criteria. The chemical recoveries were acceptable for all samples.

Method Blank

Method blanks are analyzed to assess any contamination that may have occurred during sample preparation. The radiochemistry method blank results were less than the DCL.

Laboratory Replicate Analysis

Laboratory replicate analyses are used to determine laboratory precision for each sample matrix. The relative error ratio for radiochemical replicate results (calculated using the one-sigma total propagated uncertainty) was less than three, indicating acceptable precision.

Laboratory Control Sample

Laboratory control samples were analyzed at the correct frequency to provide information on the accuracy of the analytical method and the overall laboratory performance, including sample preparation. All control sample results were acceptable.

Completeness

Results were reported in the correct units for all analytes requested using contract-required laboratory qualifiers. The analytical report included all required supporting documentation.

EDD File

The EDD file arrived on May 24, 2012. The Sample Management System EDD validation module was used to verify that the EDD file was complete and in compliance with requirements. The module compares the contents of the file to the requested analyses to ensure all and only the requested data are delivered. The contents of the EDD files were manually examined to verify that the sample results accurately reflect the data contained in the sample data package.

SAMPLE MANAGEMENT SYSTEM
General Data Validation Report

RIN: 12024346 Lab Code: GEN Validator: Gretchen Baer Validation Date: 5/24/2012

Project: Tuba City Analysis Type: ☐ Metals ☐ General Chem ☑ Rad ☐ Organics

# of Samples: 7 Matrix: Water Requested Analysis Completed: Yes

Chain of Custody

Present: OK Signed: OK Dated: OK

Sample

Integrity: OK Preservation: OK Temperature: OK

Select Quality Parameters

- ☑ Holding Times
- ☑ Detection Limits
- ☐ Field/Trip Blanks
- ☐ Field Duplicates

All analyses were completed within the applicable holding times.

The reported detection limits are equal to or below contract requirements.

SAMPLE MANAGEMENT SYSTEM
Radiochemistry Data Validation Worksheet

RIN: 12024346 **Lab Code:** GEN **Date Due:** 5/22/2012

Matrix: Water **Site Code:** TUB **Date Completed:** 5/23/2012

Sample	Analyte	Date Analyzed	Result	Flag	Tracer %R	LCS %R	MS %R	Duplicate
0901	Tritium	04/10/2012			62.0			
0906	Tritium	04/10/2012			62.0			
0910	Tritium	04/10/2012			62.0			
0934	Tritium	04/11/2012			62.0			
0938	Tritium	04/11/2012			62.0			
0942	Tritium	04/11/2012			62.0			
1132	Tritium	04/11/2012			62.0			
Blank_Spike	Tritium	04/11/2012			62.0	117.00		
Blank	Tritium	04/12/2012	2.4700	U	62.0			

General Information

RIN:	12024349
Sample Event:	February 14-15, 2012
Site(s):	Tuba City, Arizona
Laboratory:	Reston Stable Isotope Laboratory, Reston, Virginia
Analysis:	Stable Isotopes
Validator:	Gretchen Baer
Review Date:	May 24, 2012

This validation was performed according to the *Environmental Procedures Catalog*, (LMS/PRO/S04325, continually updated) "Standard Practice for Validation of Laboratory Data." The procedure was applied at Level 1, Data Deliverables Examination. All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 7.

Table 7. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
S-34/S-32 Isotope Ratios	LMW-09	NA	Mass Spectrometry

Data Qualifier Summary

None of the analytical results required qualification.

Sample Shipping/Receiving

The Reston Stable Isotope Laboratory in Reston, Virginia, received 46 water samples on February 22, 2012, submitted for the determination of stable sulfur isotope ratios. The analytical report was checked to confirm that all of the samples scheduled were received and analyzed.

Preservation and Holding Times

The sample shipment was received intact with all samples in the correct container types preserved correctly for the requested analyses. All samples were analyzed within the applicable holding times.

Laboratory Analysis

For sulfur isotope ratio measurements, dissolved sulfate is converted to $BaSO_4$, which is analyzed by conversion to sulfur dioxide with an elemental analyzer and subsequent analysis with a continuous flow isotope ratio mass spectrometer. Samples are analyzed simultaneously with $BaSO_4$ isotopic reference materials. No correction for oxygen isotopic composition is made to reported data.

Sulfur isotope ratios are reported in parts per thousand (per mill) relative to the standard VCDT [Vienna Canyon Diablo Troilite (Coplen and Krouse, in press)] defined by assigning a value of -0.3 per mill exactly to the silver sulfide reference material IAEA-S-1.

The 2-sigma uncertainty of sulfur isotopic results is 0.4 per mill, unless otherwise indicated.

Completeness

The EDD was the only deliverable received for this RIN.

EDD File

The EDD files arrived on May 15, 2012.

Sampling Quality Control Assessment

The following information summarizes and assesses quality control for this sampling event.

Sampling Protocol

Sample results for all monitoring wells met the Category I or II low-flow sampling criteria and were qualified with an "F" flag in the database, indicating the wells were purged and sampled using the low-flow sampling method. All monitoring wells are equipped with either dedicated downhole and pumphead tubing or a bladder pump.

Extraction wells (0935, 0938, 0942, and 1132) are spigot samples and are designated as Category IV.

These 23 wells were classified as Category II: 0251, 0258, 0262, 0263, 0264, 0266, 0273, 0274, 0281, 0282, 0286, 0287, 0288, 0289, 0290, 0906, 0908, 0929, 0934, 0940, 0941, NMW-7D, and NMW-9D. The sample results for these wells were qualified with a "Q" flag, indicating the data are qualitative because of the sampling technique.

Field Duplicate Analysis

Field duplicate samples are collected and analyzed as an indication of overall precision of the measurement process. The precision observed includes both field and laboratory precision and has more variability than laboratory duplicates, which measure only laboratory performance. The relative percent difference for duplicate results that are greater than 5 times the PQL should be less than 20 percent. For results that are less than 5 times the PQL, the range should be no greater than the PQL. Duplicate samples were collected from locations 0930, 1132, and NMW-1A. The duplicate results met the criteria, with the exception of chloride (33 percent) and sulfate (37 percent) at location 0930. There were no analytical errors identified during the review of the data. The associated results are qualified with a "J" flag as estimated values.

The laboratory's initial analysis (on February 27, 2012) of nitrite + nitrate as N for the duplicate from location 0930 produced preliminary results that were lower than the level expected. The laboratory reanalyzed an aliquot from the remaining sample material on March 29, 2012. The nitrite + nitrate as N result from the re-analysis was consistent with the expected concentration. It is suspected that the laboratory incorrectly applied a dilution factor during the initial analysis; the initial result is qualified with an "R" flag as rejected. The result from the re-analysis reported by the laboratory is acceptable as qualified.

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

RIN: 12024345 **Lab Code:** GEN **Project:** Tuba City **Validation Date:** 5/8/2012

Duplicate: 2122 **Sample:** 0930

Analyte	Sample Result	Flag	Error	Dilution	Duplicate Result	Flag	Error	Dilution	RPD	RER	Units
Arsenic	1.70	U		1.00	1.70	U		1.00			ug/L
Calcium	75100			1.00	80400			1.00	6.82		ug/L
Chloride	17.2			10.00	24.1			10.00	33.41		mg/L
Iron	30.0	U		1.00	30.0	U		1.00			ug/L
Magnesium	16200			1.00	17000			1.00	4.82		ug/L
Manganese	2.00	U		1.00	4.97	B		1.00			ug/L
Molybdenum	0.31	BN		1.00	0.591	B		1.00			ug/L
NH3 as N	0.016	U		1.00	0.0255	J		1.00			mg/L
NO2+NO3 as N	17.5			50.00	18.0	H		100.00	2.82		mg/L
Potassium	2570	B		1.00	2540	B		1.00	1.17		ug/L
Selenium	2.49	B		1.00	1.50	U		1.00			ug/L
Silica	12400			1.00	14200			1.00	13.53		ug/L
Sodium	13400			1.00	15700			1.00	15.81		ug/L
Sulfate	62.9			10.00	91.2			10.00	36.73		mg/L
Total Dissolved Solids	334			1.00	346			1.00	3.53		mg/L
Uranium	4.75			1.00	4.41			1.00	7.42		ug/L

Duplicate: 2723 **Sample:** NMW-1A

Analyte	Sample Result	Flag	Error	Dilution	Duplicate Result	Flag	Error	Dilution	RPD	RER	Units
Arsenic	3.05	B		1.00	3.27	B		1.00			ug/L
Calcium	34000			1.00	35800			1.00	5.16		ug/L
Chloride	8.92			1.00	8.95			1.00	0.34		mg/L
Iron	30.0	U		1.00	30.0	U		1.00			ug/L
Magnesium	5980			1.00	6370			1.00	6.32		ug/L
Manganese	2.00	U		1.00	2.00	U		1.00			ug/L
Molybdenum	0.643	B		1.00	0.495	B		1.00			ug/L
NH3 as N	0.0378	J		1.00	0.016	U		1.00			mg/L
NO2+NO3 as N	3.18			5.00	3.24			5.00	1.87		mg/L
Potassium	1410	B		1.00	1490	B		1.00	5.52		ug/L
Selenium	1.50	U		1.00	1.50	U		1.00			ug/L
Silica	11000			1.00	11600			1.00	5.31		ug/L
Sodium	10200			1.00	10900			1.00	6.64		ug/L
Sulfate	12.6			1.00	12.6			1.00	0		mg/L
Total Dissolved Solids	153			1.00	164			1.00	6.94		mg/L
Uranium	1.45			1.00	1.45			1.00	0		ug/L

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

RIN: 12024345 **Lab Code:** GEN **Project:** Tuba City **Validation Date:** 5/8/2012

Duplicate: 2724 **Sample:** 1132

Analyte	Sample Result	Flag	Error	Dilution	Duplicate Result	Flag	Error	Dilution	RPD	RER	Units
Arsenic	7.87			1.00	4.76	B		1.00			ug/L
Calcium	736000			5.00	707000			10.00	4.02		ug/L
Chloride	104			10.00	102			10.00	1.94		mg/L
Iron	30.0	U		1.00	30.0	U		1.00			ug/L
Magnesium	150000			1.00	157000			10.00	4.56		ug/L
Manganese	2.00	U		1.00	2.00	U		1.00			ug/L
Molybdenum	1960	N		10.00	1930			20.00	1.54		ug/L
NH3 as N	0.332			1.00	0.0356	J		1.00			mg/L
NO2+NO3 as N	178			500.00	180			500.00	1.12		mg/L
Potassium	8850			5.00	6190			10.00	35.37		ug/L
Selenium	126			1.00	112			5.00	11.76		ug/L
Silica	16700			1.00	17600			1.00	5.25		ug/L
Sodium	234000			1.00	240000			10.00	2.53		ug/L
Sulfate	1760			100.00	1750			100.00	0.57		mg/L
Total Dissolved Solids	3770			1.00	4080			1.00	7.90		mg/L
Uranium	1510			10.00	1690			20.00	11.25		ug/L

Certification

All laboratory analytical quality control criteria were met except as qualified in this report. The data qualifiers listed on the SEEPro database reports are defined on the last page of each report. All data in this package are considered validated and available for use.

Laboratory Coordinator: Steve Donivan — Date: 6-27-2012

Data Validation Lead: Gretchen Baer — Date: 6/27/12

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Attachment 1
Assessment of Anomalous Data

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Potential Outliers Report

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Potential Outliers Report

Potential outliers are measurements that are extremely large or small relative to the rest of the data and, therefore, are suspected of misrepresenting the population from which they were collected. Potential outliers may result from transcription errors, data-coding errors, or measurement system problems. However, outliers may also represent true extreme values of a distribution and indicate more variability in the population than was expected.

Statistical outlier tests give probabilistic evidence that an extreme value does not "fit" with the distribution of the remainder of the data and is therefore a statistical outlier. These tests should only be used to identify data points that require further investigation. The tests alone cannot determine whether a statistical outlier should be discarded or corrected within a data set.

There are three steps involved in identifying extreme values or outliers:

1. Identify extreme values that may be potential outliers by generating the Outliers Report using the Sample Management System from data in the SEEPro database. The application compares the new data set with historical data and lists the new data that fall outside the historical data range. A determination is also made if the data are normally distributed using the Shapiro-Wilk Test.
2. Apply the appropriate statistical test. Dixon's Extreme Value test is used to test for statistical outliers when the sample size is less than or equal to 25. This test considers both extreme values that are much smaller than the rest of the data (case 1) and extreme values that are much larger than the rest of the data (case 2). This test is valid only if the data without the suspected outlier are normally distributed. Rosner's Test is a parametric test that is used to detect outliers for sample sizes of 25 or more. This test also assumes that the data without the suspected outliers are normally distributed.
3. Scientifically review statistical outliers and decide on their disposition.

Nineteen laboratory results were identified as potentially anomalous. These 19 results were identified as potentially anomalous because of the low variability of the historical data or because of downward or upward trending in the data. Potential anomalies in the field parameters were also examined for patterns of repeated high or low bias, which suggest a systematic error due to instrument malfunction. No such patterns were found and all data from this event are acceptable as qualified.

Three anomalies were identified in a previous report (*August 2011 Water Sampling at the Tuba City, Arizona, Disposal Site*). The anomalies were high manganese values at a surface water location and two extraction wells. These locations were not sampled during this February 2012 event.

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: GEL Laboratories

RIN: 12024345

Report Date: 5/25/2012

					Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
						Qualifiers			Qualifiers			Qualifiers				
Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
TUB01	0251	N001	02/14/2012	Arsenic	0.00262	B	QF	0.0023		FQ	0.0015		F	21	1	Yes
TUB01	0251	N001	02/14/2012	Chloride	5.85		QF	17.5			6.05		FQ	24	0	No
TUB01	0252	N001	02/14/2012	Arsenic	0.00363	B	F	0.0025		F	0.0012		F	21	1	Yes
TUB01	0252	N001	02/14/2012	Chloride	4.3		F	5.68			4.46		FQ	24	0	No
TUB01	0258	N001	02/14/2012	Arsenic	0.00346	B	QF	0.0025		F	0.0017	U	F	14	1	No
TUB01	0258	N001	02/14/2012	Chloride	11.5		QF	14		F	12		F	15	0	No
TUB01	0263	N001	02/14/2012	Ammonia Total as N	0.016	U	QF	0.1	U	F	0.019	J	FQ	15	14	No
TUB01	0263	N001	02/14/2012	Magnesium	508		QF	490		FQ	220		F	17	0	No
TUB01	0263	N001	02/14/2012	Silica	19.6		QF	19.1		FQ	13		F	17	0	No
TUB01	0263	N001	02/14/2012	Sodium	319	E	QF	308			140			17	0	No
TUB01	0264	N001	02/14/2012	Arsenic	0.00288	B	QF	0.0022	B	FQ	0.0016		FQ	16	1	No
TUB01	0264	N001	02/14/2012	Selenium	0.00208	B	QF	0.0019		FQ	0.001			17	0	No
TUB01	0264	N001	02/14/2012	Uranium	0.00423		QF	0.0037		FQ	0.0027		FQ	17	0	No
TUB01	0266	N001	02/15/2012	Arsenic	0.00254	B	QF	0.0019	B	QF	0.0013		FQ	16	1	Yes
TUB01	0266	N001	02/15/2012	Chloride	6.92		QF	8.5		F	7.16		FQ	17	0	No
TUB01	0266	N001	02/15/2012	Total Dissolved Solids	129		QF	160		FQ	130		F	16	0	No
TUB01	0266	N001	02/15/2012	Uranium	0.00223		QF	0.0022		FQ	0.0012		F	17	0	No
TUB01	0267	N001	02/15/2012	Magnesium	690		F	932		F	711		F	21	0	No
TUB01	0267	N001	02/15/2012	Sulfate	2990		F	3900			3100		FJ	26	0	No
TUB01	0267	N001	02/15/2012	Total Dissolved Solids	6920		F	8500		F	7200		F	20	0	No
TUB01	0268	0001	02/14/2012	Calcium	204		F	130		F	32.7		F	23	0	No
TUB01	0268	0001	02/14/2012	Chloride	23.6		F	19		F	10		F	23	0	No
TUB01	0268	0001	02/14/2012	Magnesium	36		F	22		F	6.7		F	23	0	No
TUB01	0268	0001	02/14/2012	Nitrate + Nitrite as Nitrogen	47.4		F	26		F	8.9		F	17	0	Yes
TUB01	0268	0001	02/14/2012	Selenium	0.00246	B	F	0.002		F	0.0012		F	26	0	Yes
TUB01	0268	0001	02/14/2012	Silica	14.8		F	11.9		F	8.5		F	26	0	Yes
TUB01	0268	0001	02/14/2012	Sodium	35.7	E	F	20.6			10.2		F	23	0	Yes
TUB01	0268	0001	02/14/2012	Sulfate	363		F	170		F	15			26	0	No
TUB01	0268	0001	02/14/2012	Total Dissolved Solids	914		F	560		F	140			23	0	No
TUB01	0268	0001	02/14/2012	Uranium	0.0845		F	0.028		F	0.0014		F	26	0	No
TUB01	0272	N001	02/15/2012	Chloride	7.44		F	13		F	7.69		F	18	0	No
TUB01	0274	N001	02/14/2012	Chloride	9.63		QF	12		FQ	10		FQ	14	0	No
TUB01	0274	N001	02/14/2012	Selenium	0.00231	B	QF	0.0017		FQ	0.0009		FQ	14	1	Yes
TUB01	0274	N001	02/14/2012	Uranium	0.00202		QF	0.0017		FQ	0.001		FQ	14	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: GEL Laboratories

RIN: 12024345

Report Date: 5/25/2012

					Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
						Qualifiers			Qualifiers			Qualifiers				
Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
TUB01	0275	N001	02/14/2012	Arsenic	0.0034	U	F	0.0017	U	F	0.0006		F	14	1	Yes
TUB01	0275	N001	02/14/2012	Chloride	164		F	160		F	96		F	14	0	No
TUB01	0275	N001	02/14/2012	Manganese	10.2		F	10.1		F	2.2		F	14	0	No
TUB01	0275	N001	02/14/2012	Selenium	0.0375		F	0.034		F	0.017		F	14	0	No
TUB01	0275	N001	02/14/2012	Silica	19.3		F	19.1		F	6.5		F	14	0	No
TUB01	0275	N001	02/14/2012	Sodium	350	E	F	299		F	89		F	14	0	No
TUB01	0276	N001	02/14/2012	Arsenic	0.00456	B	F	0.00399	B	F	0.0017	U	F	16	1	No
TUB01	0276	N001	02/14/2012	Chloride	10.5		F	13		F	11		F	16	0	No
TUB01	0276	N001	02/14/2012	Iron	0.0809	B	F	0.03	U	F	0.0016	U	JF	16	15	No
TUB01	0276	N001	02/14/2012	Selenium	0.00236	B	F	0.00202	B	F	0.00099		F	16	1	No
TUB01	0276	N001	02/14/2012	Uranium	0.00191		F	0.00179		F	0.0013		F	16	0	No
TUB01	0281	N001	02/15/2012	Iron	1.95		QF	0.637		FQ	0.017	B	UFQ	15	6	No
TUB01	0281	N001	02/15/2012	Sodium	16.8	E	QF	30		FQ	17		FQ	15	0	No
TUB01	0281	N001	02/15/2012	Uranium	0.00875		QF	0.0086			0.0055		FQ	15	0	No
TUB01	0282	N001	02/15/2012	Silica	13.8		QF	17		FQ	14		F	14	0	No
TUB01	0286	N001	02/15/2012	Chloride	114		QF	90		FQ	13		FQ	9	0	No
TUB01	0286	N001	02/15/2012	Magnesium	627		QF	450		FQ	10		FQ	8	0	No
TUB01	0286	N001	02/15/2012	Manganese	4.57		QF	2.86		FQ	0.0036	B	FQ	8	0	No
TUB01	0286	N001	02/15/2012	Molybdenum	0.00124	B	QF	0.00076		FQ	0.00025	B	UFQ	8	3	Yes
TUB01	0286	N001	02/15/2012	Nitrate + Nitrite as Nitrogen	267		QF	190		FQ	9.2		FQ	8	0	No
TUB01	0286	N001	02/15/2012	Selenium	0.0388		QF	0.028		FQ	0.0018		FQ	8	0	No
TUB01	0286	N001	02/15/2012	Sulfate	2850		QF	2400		FQ	34		FQ	9	0	No
TUB01	0286	N001	02/15/2012	Total Dissolved Solids	6310		QF	5800		FQJ	250		FQ	8	0	No
TUB01	0287	N001	02/14/2012	Ammonia Total as N	0.659		QF	0.57		FQ	0.1	U	FQ	8	2	No
TUB01	0287	N001	02/14/2012	Molybdenum	0.134		QF	0.122		FQ	0.023		FQ	8	0	No
TUB01	0287	N001	02/14/2012	Nitrate + Nitrite as Nitrogen	301		QF	280		FQ	210		FQ	8	0	No
TUB01	0287	N001	02/14/2012	Sodium	339	E	QF	290		FQ	170		FQ	8	0	No
TUB01	0288	N001	02/15/2012	Calcium	170		QF	330		FQ	190		FQ	8	0	No
TUB01	0288	N001	02/15/2012	Chloride	19.9		QF	44			21		FQ	9	0	No
TUB01	0288	N001	02/15/2012	Magnesium	33.3		QF	63		FQ	36		FQ	8	0	No
TUB01	0288	N001	02/15/2012	Nitrate + Nitrite as Nitrogen	48.4		QF	110		FQJ	50		FQ	8	0	No
TUB01	0288	N001	02/15/2012	Selenium	0.00183	B	QF	0.0033		FQ	0.00242	B	FQ	8	0	No
TUB01	0288	N001	02/15/2012	Silica	14.9		QF	18		FQ	15		FQ	8	0	No
TUB01	0288	N001	02/15/2012	Total Dissolved Solids	850		QF	1600		FQ	1000		FQJ	8	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: GEL Laboratories

RIN: 12024345

Report Date: 5/25/2012

					Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
						Qualifiers			Qualifiers			Qualifiers				
Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
TUB01	0289	N001	02/15/2012	Ammonia Total as N	0.016	U	QF	0.19		FQ	0.049	J	FQ	8	6	No
TUB01	0289	N001	02/15/2012	Chloride	14.3		QF	41			18.4		FQ	9	0	No
TUB01	0289	N001	02/15/2012	Selenium	0.00182	B	QF	0.0036		FQ	0.0022		FQ	8	0	No
TUB01	0289	N001	02/15/2012	Silica	13.8		QF	15.9		FQ	14		FQ	8	0	No
TUB01	0289	N001	02/15/2012	Sulfate	109		QF	656			125		FQ	9	0	No
TUB01	0290	N001	02/15/2012	Arsenic	0.00214	B	QF	0.002		FQ	0.0014		FQ	8	1	No
TUB01	0290	N001	02/15/2012	Calcium	240		QF	160		FQ	35		FQ	8	0	No
TUB01	0290	N001	02/15/2012	Magnesium	39.3		QF	26		FQ	5.8		FQ	8	0	No
TUB01	0290	N001	02/15/2012	Nitrate + Nitrite as Nitrogen	57.4		QF	39		FQ	3.6		FQ	8	0	No
TUB01	0290	N001	02/15/2012	Potassium	3.77	B	QF	3.1		FQ	1.1		FQJ	8	0	No
TUB01	0290	N001	02/15/2012	Selenium	0.00795		QF	0.0042		FQ	0.0014	E	FQ	8	0	Yes
TUB01	0290	N001	02/15/2012	Silica	16.3		QF	15		FQ	11		FQ	8	0	No
TUB01	0290	N001	02/15/2012	Sodium	47.7		QF	29		FQ	13		FQ	8	0	No
TUB01	0290	N001	02/15/2012	Sulfate	284		QF	200		FQ	19		FQ	9	0	No
TUB01	0290	N001	02/15/2012	Total Dissolved Solids	1100		QF	860		FQ	180		FQ	8	0	No
TUB01	0290	N001	02/15/2012	Uranium	0.041		QF	0.0089		FQ	0.0014		FQ	9	0	No
TUB01	0691	N001	02/14/2012	Uranium	0.071		F	0.0657		F	0.005			30	0	No
TUB01	0906	N001	02/15/2012	Ammonia Total as N	0.016	U	QF	0.1	U	FQ	0.032	J	FQ	10	9	No
TUB01	0906	N001	02/15/2012	Manganese	0.00823	B	QF	0.7	I		0.04			50	0	No
TUB01	0906	N001	02/15/2012	Nitrate + Nitrite as Nitrogen	515		QF	400		QF	220			13	0	No
TUB01	0910	N001	02/15/2012	Ammonia Total as N	0.154		F	0.13		F	0.1	U	F	8	7	No
TUB01	0929	N001	02/15/2012	Ammonia Total as N	0.0177	J	QF	0.1	U	F	0.023	J	FQ	15	14	No
TUB01	0929	N001	02/15/2012	Chloride	11.8		QF	17		F	12.1		L	23	0	No
TUB01	0930	N001	02/14/2012	Calcium	75.1		F	73		F	49		F	24	0	No
TUB01	0930	N002	02/14/2012	Calcium	80.4		F	73		F	49		F	24	0	No
TUB01	0930	N002	02/14/2012	Magnesium	17		F	15		F	10		F	24	0	No
TUB01	0930	N001	02/14/2012	Magnesium	16.2		F	15		F	10		F	24	0	No
TUB01	0930	N002	02/14/2012	Manganese	0.00497	B	F	0.002	U	F	0.000095	U	F	27	19	Yes
TUB01	0930	N002	02/14/2012	Sulfate	91.2		FJ	80		F	40			28	0	No
TUB01	0930	N002	02/14/2012	Uranium	0.00441		F	0.0033		F	0.0019			28	0	Yes
TUB01	0930	N001	02/14/2012	Uranium	0.00475		F	0.0033		F	0.0019			28	0	Yes
TUB01	0932	N001	02/14/2012	Chloride	9.78		F	15.7			11.3		F	30	0	No
TUB01	0932	N001	02/14/2012	Sulfate	23.2		F	68.9			24		F	33	0	No
TUB01	0934	N001	02/15/2012	Arsenic	0.00421	B	QF	0.0017	B	FQ	0.00029	B	QJF	22	1	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: GEL Laboratories

RIN: 12024345

Report Date: 5/25/2012

					Current			Historical Maximum			Historical Minimum			Number of		Statistical
						Qualifiers			Qualifiers			Qualifiers		Data Points		Outlier
Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	*Lab*	*Data*	Result	*Lab*	*Data*	Result	*Lab*	*Data*	N	N Below Detect	
TUB01	0934	N001	02/15/2012	Nitrate + Nitrite as Nitrogen	357		QF	520		FQJ	360		FQ	18	0	No
TUB01	0935	N001	02/14/2012	Calcium	733			730			505			29	0	No
TUB01	0935	N001	02/14/2012	Magnesium	306			593			310			29	0	No
TUB01	0938	N001	02/15/2012	Arsenic	0.00415	B		0.00341	B	F	0.00087			13	0	No
TUB01	0938	N001	02/15/2012	Selenium	0.0767			0.0719		F	0.028			20	0	No
TUB01	0941	0001	02/14/2012	Manganese	0.201		QF	0.171		F	0.0003	U	QFJ	31	5	Yes
TUB01	0941	0001	02/14/2012	Potassium	9.02		QF	8.3		FQ	2.69			30	0	No
TUB01	0941	0001	02/14/2012	Selenium	0.126		QF	0.117		FQ	0.0182		L	35	0	No
TUB01	0942	N001	02/14/2012	Arsenic	0.00429	B		0.0032			0.0013		F	20	0	No
TUB01	0942	N001	02/14/2012	Magnesium	357			755		F	390			32	0	No
TUB01	0942	N001	02/14/2012	Manganese	8.32			4.5			2.9			33	0	Yes
TUB01	0942	N001	02/14/2012	Sodium	458			615		F	460		F	32	0	No
TUB01	0942	N001	02/14/2012	Total Dissolved Solids	5560			8490		F	5840		F	32	0	No
TUB01	1132	N001	02/14/2012	Arsenic	0.00787			0.0024			0.0011		F	8	0	Yes
TUB01	1132	N002	02/14/2012	Arsenic	0.00476	B		0.0024			0.0011		F	8	0	Yes
TUB01	1132	N002	02/14/2012	Silica	17.6			16		F	14			8	0	No
TUB01	1132	N001	02/14/2012	Silica	16.7			16		F	14			8	0	No
TUB01	1569	0001	02/14/2012	Iron	22.1			13			0.0008	U		23	11	No
TUB01	1570	0001	02/14/2012	Iron	22			14			0.0008	U		28	17	Yes

STATISTICAL TESTS:
The distribution of the data is tested for normality or lognormality using the Shapiro-Wilk Test
Outliers are identified using Dixon's Test when there are 25 or fewer data points.
Outliers are identified using Rosner's Test when there are 26 or more data points.
See Data Quality Assessment: Statistical Methods for Practitioners, EPA QC/G-9S, February 2006.

Data Validation Outliers Report - Field Parameters Only

Comparison: All Historical Data

Laboratory: Field Measurements

RIN: 12024345

Report Date: 5/25/2012

					Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
						Qualifiers			Qualifiers			Qualifiers				
Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
TUB01	0267	N001	02/15/2012	Alkalinity, Total (as $CaCO_3$)	734		F	1142			740			27	0	No
TUB01	0268	N001	02/14/2012	pH	6.94		F	8.05			7.16			24	0	Yes
TUB01	0268	N001	02/14/2012	Specific Conductance	1350		F	768		F	213			24	0	No
TUB01	0268	N001	02/14/2012	Turbidity	155		F	38.3			0.17		F	24	0	Yes
TUB01	0272	N001	02/15/2012	Temperature	12.5		F	21.6		F	14.13		F	14	0	No
TUB01	0275	N001	02/14/2012	Alkalinity, Total (as $CaCO_3$)	495		F	670		F	499		F	14	0	No
TUB01	0275	N001	02/14/2012	Specific Conductance	5945		F	5880		F	4880		F	14	0	No
TUB01	0276	N001	02/14/2012	Oxidation Reduction Potential	370		F	256		F	78.3		F	13	0	Yes
TUB01	0282	N001	02/15/2012	Temperature	12.63		QF	24.4		F	13.8		FQ	14	0	No
TUB01	0286	N001	02/15/2012	Alkalinity, Total (as $CaCO_3$)	754		QF	683		FQ	102		F	8	0	No
TUB01	0286	N001	02/15/2012	Specific Conductance	7990		QF	5610		FQ	511		FQ	10	0	No
TUB01	0286	N001	02/15/2012	Temperature	14.6		QF	20.4		FQ	14.77		FQ	9	0	No
TUB01	0287	N001	02/14/2012	pH	6.39		QF	6.74		FQ	6.41		FQ	9	0	No
TUB01	0287	N001	02/14/2012	Specific Conductance	5830		QF	5530		FQ	3447			10	0	No
TUB01	0290	N001	02/15/2012	Alkalinity, Total (as $CaCO_3$)	196		QF	133		FQ	71			9	0	Yes
TUB01	0290	N001	02/15/2012	Specific Conductance	1680		QF	1112		FQ	273		FQ	10	0	Yes
TUB01	0910	N001	02/15/2012	Alkalinity, Total (as $CaCO_3$)	78		F	147		FJ	87			23	0	No
TUB01	0930	N001	02/14/2012	Specific Conductance	577		F	575		F	293		F	26	0	No
TUB01	0941	N001	02/14/2012	Specific Conductance	5100		QF	5093		FQ	1130			30	0	No
TUB01	0941	N001	02/14/2012	Turbidity	13.5		QF	11.7		L	0.26		F	31	2	Yes
TUB01	1569	N001	02/14/2012	Specific Conductance	208700			200000			6044			20	0	No

STATISTICAL TESTS:
The distribution of the data is tested for normality or lognormality using the Shapiro-Wilk Test
Outliers are identified using Dixon's Test when there are 25 or fewer data points.
Outliers are identified using Rosner's Test when there are 26 or more data points.
See Data Quality Assessment: Statistical Methods for Practitioners, EPA QC/G-9S, February 2006.

Attachment 2
Data Presentation

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Groundwater Quality Data

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Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0251 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Data		Lab QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	200	-	300	81		QF	#		
Ammonia Total as N	mg/L	02/14/2012	N001	200	-	300	0.0259	J	QF	#	0.016	
Arsenic	mg/L	02/14/2012	N001	200	-	300	0.00262	B	QF	#	0.0017	
Calcium	mg/L	02/14/2012	N001	200	-	300	27.6		QF	#	0.05	
Chloride	mg/L	02/14/2012	N001	200	-	300	5.85		QF	#	0.066	
Iron	mg/L	02/14/2012	N001	200	-	300	0.03	U	QF	#	0.03	
Magnesium	mg/L	02/14/2012	N001	200	-	300	5.9		QF	#	0.11	
Manganese	mg/L	02/14/2012	N001	200	-	300	0.002	U	QF	#	0.002	
Molybdenum	mg/L	02/14/2012	N001	200	-	300	0.000437	B	QF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	200	-	300	3.42		QF	#	0.05	
Oxidation Reduction Potential	mV	02/14/2012	N001	200	-	300	132.6		QF	#		
pH	s.u.	02/14/2012	N001	200	-	300	8.06		QF	#		
Potassium	mg/L	02/14/2012	N001	200	-	300	2.67	BE	QFJ	#	0.05	
Selenium	mg/L	02/14/2012	N001	200	-	300	0.0015	U	QF	#	0.0015	
Silica	mg/L	02/14/2012	N001	200	-	300	9.88		QF	#	0.053	
Sodium	mg/L	02/14/2012	N001	200	-	300	6.52	E	QFJ	#	0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	200	-	300	235		QF	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	200	-	300	3.38		FQ	#		
Sulfate	mg/L	02/14/2012	N001	200	-	300	11.8		QF	#	0.1	
Temperature	C	02/14/2012	N001	200	-	300	15.41		QF	#		
Total Dissolved Solids	mg/L	02/14/2012	N001	200	-	300	124		QF	#	3.4	
Turbidity	NTU	02/14/2012	N001	200	-	300	0.81		QF	#		
Uranium	mg/L	02/14/2012	N001	200	-	300	0.00194		QF	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0252 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers	Data QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	400	-	500	70		F	#		
Ammonia Total as N	mg/L	02/14/2012	N001	400	-	500	0.016	U	F	#	0.016	
Arsenic	mg/L	02/14/2012	N001	400	-	500	0.00363	B	F	#	0.0017	
Calcium	mg/L	02/14/2012	N001	400	-	500	21		F	#	0.05	
Chloride	mg/L	02/14/2012	N001	400	-	500	4.3		F	#	0.066	
Iron	mg/L	02/14/2012	N001	400	-	500	0.0337	B	F	#	0.03	
Magnesium	mg/L	02/14/2012	N001	400	-	500	4.1	B	F	#	0.11	
Manganese	mg/L	02/14/2012	N001	400	-	500	0.002	U	F	#	0.002	
Molybdenum	mg/L	02/14/2012	N001	400	-	500	0.00031	B	F	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	400	-	500	2.35		F	#	0.05	
Oxidation Reduction Potential	mV	02/14/2012	N001	400	-	500	136.2		F	#		
pH	s.u.	02/14/2012	N001	400	-	500	8.14		F	#		
Potassium	mg/L	02/14/2012	N001	400	-	500	2.56	BE	F	#	0.05	
Selenium	mg/L	02/14/2012	N001	400	-	500	0.0015	U	F	#	0.0015	
Silica	mg/L	02/14/2012	N001	400	-	500	9.55		F	#	0.053	
Sodium	mg/L	02/14/2012	N001	400	-	500	10.4	E	F	#	0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	400	-	500	205		F	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	400	-	500	5.84		F	#		
Sulfate	mg/L	02/14/2012	N001	400	-	500	6.38		F	#	0.1	
Temperature	C	02/14/2012	N001	400	-	500	15.19		F	#		
Total Dissolved Solids	mg/L	02/14/2012	N001	400	-	500	107		F	#	3.4	
Turbidity	NTU	02/14/2012	N001	400	-	500	1.05		F	#		
Uranium	mg/L	02/14/2012	N001	400	-	500	0.00224		F	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0258 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Data	QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	159	-	199	99		QF	#		
Ammonia Total as N	mg/L	02/14/2012	N001	159	-	199	0.016	U	QF	#	0.016	
Arsenic	mg/L	02/14/2012	N001	159	-	199	0.00346	B	QF	#	0.0017	
Calcium	mg/L	02/14/2012	N001	159	-	199	33.2		QF	#	0.05	
Chloride	mg/L	02/14/2012	N001	159	-	199	11.5		QF	#	0.066	
Dissolved Oxygen	mg/L	02/14/2012	N001	159	-	199	8.12		QF	#		
Iron	mg/L	02/14/2012	N001	159	-	199	0.03	U	QF	#	0.03	
Magnesium	mg/L	02/14/2012	N001	159	-	199	7.07		QF	#	0.11	
Manganese	mg/L	02/14/2012	N001	159	-	199	0.002	U	QF	#	0.002	
Molybdenum	mg/L	02/14/2012	N001	159	-	199	0.000639	B	QF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	159	-	199	3.25		QF	#	0.05	
Oxidation Reduction Potential	mV	02/14/2012	N001	159	-	199	122.7		QF	#		
pH	s.u.	02/14/2012	N001	159	-	199	7.89		QF	#		
Potassium	mg/L	02/14/2012	N001	159	-	199	1.91	BE	QF	#	0.05	
Selenium	mg/L	02/14/2012	N001	159	-	199	0.0015	U	QF	#	0.0015	
Silica	mg/L	02/14/2012	N001	159	-	199	11.5		QF	#	0.053	
Sodium	mg/L	02/14/2012	N001	159	-	199	11.9	E	QF	#	0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	159	-	199	297		QF	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	159	-	199	5.33		FQ	#		
Sulfate	mg/L	02/14/2012	N001	159	-	199	17.1		QF	#	0.1	
Temperature	C	02/14/2012	N001	159	-	199	14.35		QF	#		
Total Dissolved Solids	mg/L	02/14/2012	N001	159	-	199	177		QF	#	3.4	
Turbidity	NTU	02/14/2012	N001	159	-	199	3.83		QF	#		
Uranium	mg/L	02/14/2012	N001	159	-	199	0.00153		QF	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0262 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers	Data	QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	60	-	100	302		QF	#			
Ammonia Total as N	mg/L	02/14/2012	N001	60	-	100	0.148		QF	#		0.016	
Arsenic	mg/L	02/14/2012	N001	60	-	100	0.00174	B	QF	#		0.0017	
Calcium	mg/L	02/14/2012	N001	60	-	100	658		QF	#		0.25	
Chloride	mg/L	02/14/2012	N001	60	-	100	106		QF	#		0.66	
Iron	mg/L	02/14/2012	N001	60	-	100	0.063	B	QF	#		0.03	
Magnesium	mg/L	02/14/2012	N001	60	-	100	158		QF	#		0.11	
Manganese	mg/L	02/14/2012	N001	60	-	100	0.0112		QF	#		0.002	
Molybdenum	mg/L	02/14/2012	N001	60	-	100	0.839		QF	#		0.00165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	60	-	100	197		QF	#		5	
Oxidation Reduction Potential	mV	02/14/2012	N001	60	-	100	168.5		QF	#			
pH	s.u.	02/14/2012	N001	60	-	100	6.71		QF	#			
Potassium	mg/L	02/14/2012	N001	60	-	100	7.7	E	QF	#		0.25	
Selenium	mg/L	02/14/2012	N001	60	-	100	0.0963		QF	#		0.0015	
Silica	mg/L	02/14/2012	N001	60	-	100	16.3		QF	#		0.053	
Sodium	mg/L	02/14/2012	N001	60	-	100	217	E	QF	#		0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	60	-	100	4546		QF	#			
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	60	-	100	3.2		FQ	#			
Sulfate	mg/L	02/14/2012	N001	60	-	100	1850		QF	#		10	
Temperature	C	02/14/2012	N001	60	-	100	14.56		QF	#			
Total Dissolved Solids	mg/L	02/14/2012	N001	60	-	100	4260		QF	#		3.4	
Turbidity	NTU	02/14/2012	N001	60	-	100	8.2		QF	#			
Uranium	mg/L	02/14/2012	N001	60	-	100	0.774		QF	#		0.00067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0263 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers		Lab	Detection Limit	Uncertainty
								Data	QA			
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	60	-	100	559		QF	#		
Ammonia Total as N	mg/L	02/14/2012	N001	60	-	100	0.016	U	QF	#	0.016	
Arsenic	mg/L	02/14/2012	N001	60	-	100	0.0017	U	QF	#	0.0017	
Calcium	mg/L	02/14/2012	N001	60	-	100	681		QF	#	0.25	
Chloride	mg/L	02/14/2012	N001	60	-	100	117		QF	#	0.66	
Iron	mg/L	02/14/2012	N001	60	-	100	0.0399	B	QF	#	0.03	
Magnesium	mg/L	02/14/2012	N001	60	-	100	508		QF	#	0.55	
Manganese	mg/L	02/14/2012	N001	60	-	100	0.01	U	QF	#	0.01	
Molybdenum	mg/L	02/14/2012	N001	60	-	100	0.0476		QF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	60	-	100	259		QF	#	5	
Oxidation Reduction Potential	mV	02/14/2012	N001	60	-	100	173.9		QF	#		
pH	s.u.	02/14/2012	N001	60	-	100	6.55		QF	#		
Potassium	mg/L	02/14/2012	N001	60	-	100	8.95	E	QF	#	0.25	
Selenium	mg/L	02/14/2012	N001	60	-	100	0.0489		QF	#	0.0015	
Silica	mg/L	02/14/2012	N001	60	-	100	19.6		QF	#	0.053	
Sodium	mg/L	02/14/2012	N001	60	-	100	319	E	QF	#	0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	60	-	100	6150		QF	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	60	-	100	1.68		FQ	#		
Sulfate	mg/L	02/14/2012	N001	60	-	100	2840		QF	#	10	
Temperature	C	02/14/2012	N001	60	-	100	15.56		QF	#		
Total Dissolved Solids	mg/L	02/14/2012	N001	60	-	100	6170		QF	#	3.4	
Turbidity	NTU	02/14/2012	N001	60	-	100	1.64		QF	#		
Uranium	mg/L	02/14/2012	N001	60	-	100	0.141		QF	#	0.000335	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0264 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers	Data QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	160	-	200	127		QF	#		
Ammonia Total as N	mg/L	02/14/2012	N001	160	-	200	0.016	U	QF	#	0.016	
Arsenic	mg/L	02/14/2012	N001	160	-	200	0.00288	B	QF	#	0.0017	
Calcium	mg/L	02/14/2012	N001	160	-	200	63.2		QF	#	0.05	
Chloride	mg/L	02/14/2012	N001	160	-	200	14		QF	#	0.66	
Iron	mg/L	02/14/2012	N001	160	-	200	0.03	U	QF	#	0.03	
Magnesium	mg/L	02/14/2012	N001	160	-	200	12.7		QF	#	0.11	
Manganese	mg/L	02/14/2012	N001	160	-	200	0.002	U	QF	#	0.002	
Molybdenum	mg/L	02/14/2012	N001	160	-	200	0.000526	B	QF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	160	-	200	10.3		QF	#	0.1	
Oxidation Reduction Potential	mV	02/14/2012	N001	160	-	200	131.6		QF	#		
pH	s.u.	02/14/2012	N001	160	-	200	7.67		QF	#		
Potassium	mg/L	02/14/2012	N001	160	-	200	2.54	BE	QF	#	0.05	
Selenium	mg/L	02/14/2012	N001	160	-	200	0.00208	B	QF	#	0.0015	
Silica	mg/L	02/14/2012	N001	160	-	200	12.5		QF	#	0.053	
Sodium	mg/L	02/14/2012	N001	160	-	200	16	E	QF	#	0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	160	-	200	511		QF	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	160	-	200	-3.07		FQ	#		
Sulfate	mg/L	02/14/2012	N001	160	-	200	73.5		QF	#	1	
Temperature	C	02/14/2012	N001	160	-	200	15.08		QF	#		
Total Dissolved Solids	mg/L	02/14/2012	N001	160	-	200	320		QF	#	3.4	
Turbidity	NTU	02/14/2012	N001	160	-	200	1.26		QF	#		
Uranium	mg/L	02/14/2012	N001	160	-	200	0.00423		QF	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0265 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers	Data	QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	60	-	100	318		F	#			
Ammonia Total as N	mg/L	02/15/2012	N001	60	-	100	0.016	U	F	#		0.016	
Arsenic	mg/L	02/15/2012	N001	60	-	100	0.0017	U	F	#		0.0017	
Calcium	mg/L	02/15/2012	N001	60	-	100	558		F	#		0.25	
Chloride	mg/L	02/15/2012	N001	60	-	100	127		F	#		0.66	
Iron	mg/L	02/15/2012	N001	60	-	100	0.03	U	F	#		0.03	
Magnesium	mg/L	02/15/2012	N001	60	-	100	172		F	#		0.11	
Manganese	mg/L	02/15/2012	N001	60	-	100	0.002	U	F	#		0.002	
Molybdenum	mg/L	02/15/2012	N001	60	-	100	0.000206	B	F	#		0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	60	-	100	164		F	#		5	
Oxidation Reduction Potential	mV	02/15/2012	N001	60	-	100	182.1		F	#			
pH	s.u.	02/15/2012	N001	60	-	100	6.68		F	#			
Potassium	mg/L	02/15/2012	N001	60	-	100	7.6	E	F	#		0.25	
Selenium	mg/L	02/15/2012	N001	60	-	100	0.00579		F	#		0.0015	
Silica	mg/L	02/15/2012	N001	60	-	100	17.3		F	#		0.053	
Sodium	mg/L	02/15/2012	N001	60	-	100	112	E	F	#		0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	60	-	100	3582		F	#			
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	60	-	100	-3.28		F	#			
Sulfate	mg/L	02/15/2012	N001	60	-	100	1120		F	#		10	
Temperature	C	02/15/2012	N001	60	-	100	14.98		F	#			
Total Dissolved Solids	mg/L	02/15/2012	N001	60	-	100	2970		F	#		3.4	
Turbidity	NTU	02/15/2012	N001	60	-	100	2.58		F	#			
Uranium	mg/L	02/15/2012	N001	60	-	100	0.0627		F	#		0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0266 WELL

Parameter	Units	Sample Date ID	Depth Range (Ft BLS)			Result	Qualifiers		Lab	Detection Limit	Uncertainty
							Data	QA			
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	160	- 200	78		QF	#		
Ammonia Total as N	mg/L	02/15/2012	N001	160	- 200	0.016	U	QF	#	0.016	
Arsenic	mg/L	02/15/2012	N001	160	- 200	0.00254	B	QF	#	0.0017	
Calcium	mg/L	02/15/2012	N001	160	- 200	27.1		QF	#	0.05	
Chloride	mg/L	02/15/2012	N001	160	- 200	6.92		QF	#	0.066	
Iron	mg/L	02/15/2012	N001	160	- 200	0.03	U	QF	#	0.03	
Magnesium	mg/L	02/15/2012	N001	160	- 200	6.97		QF	#	0.11	
Manganese	mg/L	02/15/2012	N001	160	- 200	0.002	U	QF	#	0.002	
Molybdenum	mg/L	02/15/2012	N001	160	- 200	0.00044	B	QF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	160	- 200	3.21		QF	#	0.1	
Oxidation Reduction Potential	mV	02/15/2012	N001	160	- 200	140.4		QF	#		
pH	s.u.	02/15/2012	N001	160	- 200	8.04		QF	#		
Potassium	mg/L	02/15/2012	N001	160	- 200	2.64	BE	QF	#	0.05	
Selenium	mg/L	02/15/2012	N001	160	- 200	0.0015	U	QF	#	0.0015	
Silica	mg/L	02/15/2012	N001	160	- 200	11		QF	#	0.053	
Sodium	mg/L	02/15/2012	N001	160	- 200	6.5	E	QF	#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	160	- 200	237		QF	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	160	- 200	5.13		FQ	#		
Sulfate	mg/L	02/15/2012	N001	160	- 200	10.4		QF	#	0.1	
Temperature	C	02/15/2012	N001	160	- 200	14.72		QF	#		
Total Dissolved Solids	mg/L	02/15/2012	N001	160	- 200	129		QF	#	3.4	
Turbidity	NTU	02/15/2012	N001	160	- 200	0.91		QF	#		
Uranium	mg/L	02/15/2012	N001	160	- 200	0.00223		QF	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0267 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers	Data	QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	60	-	100	734		F	#			
Ammonia Total as N	mg/L	02/15/2012	N001	60	-	100	0.016	U	F	#		0.016	
Arsenic	mg/L	02/15/2012	N001	60	-	100	0.00282	B	F	#		0.0017	
Calcium	mg/L	02/15/2012	N001	60	-	100	614		F	#		0.25	
Chloride	mg/L	02/15/2012	N001	60	-	100	110		F	#		0.66	
Iron	mg/L	02/15/2012	N001	60	-	100	0.0383	B	F	#		0.03	
Magnesium	mg/L	02/15/2012	N001	60	-	100	690		F	#		0.55	
Manganese	mg/L	02/15/2012	N001	60	-	100	0.0258		F	#		0.01	
Molybdenum	mg/L	02/15/2012	N001	60	-	100	0.000267	B	F	#		0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	60	-	100	311		F	#		5	
Oxidation Reduction Potential	mV	02/15/2012	N001	60	-	100	192.3		F	#			
pH	s.u.	02/15/2012	N001	60	-	100	6.41		F	#			
Potassium	mg/L	02/15/2012	N001	60	-	100	10.2	E	F	#		0.25	
Selenium	mg/L	02/15/2012	N001	60	-	100	0.0554		F	#		0.0015	
Silica	mg/L	02/15/2012	N001	60	-	100	24.6		F	#		0.053	
Sodium	mg/L	02/15/2012	N001	60	-	100	381	E	F	#		0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	60	-	100	7060		F	#			
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	60	-	100	0.78		F	#			
Sulfate	mg/L	02/15/2012	N001	60	-	100	2990		F	#		20	
Temperature	C	02/15/2012	N001	60	-	100	15.19		F	#			
Total Dissolved Solids	mg/L	02/15/2012	N001	60	-	100	6920		F	#		3.4	
Turbidity	NTU	02/15/2012	N001	60	-	100	2.89		F	#			
Uranium	mg/L	02/15/2012	N001	60	-	100	0.069		F	#		0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0268 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers		Lab QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	0001	200	-	300	195		F	#		
Ammonia Total as N	mg/L	02/14/2012	0001	200	-	300	0.016	U	F	#	0.016	
Arsenic	mg/L	02/14/2012	0001	200	-	300	0.0017	U	F	#	0.0017	
Calcium	mg/L	02/14/2012	0001	200	-	300	204		F	#	0.05	
Chloride	mg/L	02/14/2012	0001	200	-	300	23.6		F	#	0.66	
Iron	mg/L	02/14/2012	0001	200	-	300	0.03	U	F	#	0.03	
Magnesium	mg/L	02/14/2012	0001	200	-	300	36		F	#	0.11	
Manganese	mg/L	02/14/2012	0001	200	-	300	0.002	U	F	#	0.002	
Molybdenum	mg/L	02/14/2012	0001	200	-	300	0.000484	B	UF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	0001	200	-	300	47.4		F	#	0.5	
Oxidation Reduction Potential	mV	02/14/2012	N001	200	-	300	190		F	#		
pH	s.u.	02/14/2012	N001	200	-	300	6.94		F	#		
Potassium	mg/L	02/14/2012	0001	200	-	300	3.68	BE	F	#	0.05	
Selenium	mg/L	02/14/2012	0001	200	-	300	0.00246	B	F	#	0.0015	
Silica	mg/L	02/14/2012	0001	200	-	300	14.8		F	#	0.053	
Sodium	mg/L	02/14/2012	0001	200	-	300	35.7	E	F	#	0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	200	-	300	1350		F	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	200	-	300	-3.22		F	#		
Sulfate	mg/L	02/14/2012	0001	200	-	300	363		F	#	1	
Temperature	C	02/14/2012	N001	200	-	300	16		F	#		
Total Dissolved Solids	mg/L	02/14/2012	0001	200	-	300	914		F	#	3.4	
Turbidity	NTU	02/14/2012	N001	200	-	300	155		F	#		
Uranium	mg/L	02/14/2012	0001	200	-	300	0.0845		F	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0272 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Data	Qualifiers QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	159.1	-	179.1	87		F	#		
Ammonia Total as N	mg/L	02/15/2012	N001	159.1	-	179.1	0.0378	J	F	#	0.016	
Arsenic	mg/L	02/15/2012	N001	159.1	-	179.1	0.00186	B	F	#	0.0017	
Calcium	mg/L	02/15/2012	N001	159.1	-	179.1	31.8		F	#	0.05	
Chloride	mg/L	02/15/2012	N001	159.1	-	179.1	7.44		F	#	0.066	
Iron	mg/L	02/15/2012	N001	159.1	-	179.1	0.03	U	F	#	0.03	
Magnesium	mg/L	02/15/2012	N001	159.1	-	179.1	6.81		F	#	0.11	
Manganese	mg/L	02/15/2012	N001	159.1	-	179.1	0.002	U	F	#	0.002	
Molybdenum	mg/L	02/15/2012	N001	159.1	-	179.1	0.000361	B	UF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	159.1	-	179.1	3.97		F	#	0.05	
Oxidation Reduction Potential	mV	02/15/2012	N001	159.1	-	179.1	140		F	#		
pH	s.u.	02/15/2012	N001	159.1	-	179.1	7.69		F	#		
Potassium	mg/L	02/15/2012	N001	159.1	-	179.1	1.87	BE	F	#	0.05	
Selenium	mg/L	02/15/2012	N001	159.1	-	179.1	0.0015	U	F	#	0.0015	
Silica	mg/L	02/15/2012	N001	159.1	-	179.1	10.4		F	#	0.053	
Sodium	mg/L	02/15/2012	N001	159.1	-	179.1	6.94	E	F	#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	159.1	-	179.1	265		F	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	159.1	-	179.1	4.1		F	#		
Sulfate	mg/L	02/15/2012	N001	159.1	-	179.1	12.6		F	#	0.1	
Temperature	C	02/15/2012	N001	159.1	-	179.1	12.5		F	#		
Total Dissolved Solids	mg/L	02/15/2012	N001	159.1	-	179.1	153		F	#	3.4	
Turbidity	NTU	02/15/2012	N001	159.1	-	179.1	3.1		F	#		
Uranium	mg/L	02/15/2012	N001	159.1	-	179.1	0.00182		F	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0273 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers		Lab	Detection Limit	Uncertainty
								Data	QA			
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	153	-	173	147		QF	#		
Ammonia Total as N	mg/L	02/14/2012	N001	153	-	173	0.016	U	QF	#	0.016	
Arsenic	mg/L	02/14/2012	N001	153	-	173	0.0026	B	QF	#	0.0017	
Calcium	mg/L	02/14/2012	N001	153	-	173	161		QF	#	0.05	
Chloride	mg/L	02/14/2012	N001	153	-	173	40.3		QF	#	0.66	
Iron	mg/L	02/14/2012	N001	153	-	173	0.03	U	QF	#	0.03	
Magnesium	mg/L	02/14/2012	N001	153	-	173	29.7		QF	#	0.11	
Manganese	mg/L	02/14/2012	N001	153	-	173	0.002	U	QF	#	0.002	
Molybdenum	mg/L	02/14/2012	N001	153	-	173	0.025		QF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	153	-	173	44.4		QF	#	1	
Oxidation Reduction Potential	mV	02/14/2012	N001	153	-	173	180		QF	#		
pH	s.u.	02/14/2012	N001	153	-	173	7.3		QF	#		
Potassium	mg/L	02/14/2012	N001	153	-	173	3.06	BE	QF	#	0.05	
Selenium	mg/L	02/14/2012	N001	153	-	173	0.0192		QF	#	0.0015	
Silica	mg/L	02/14/2012	N001	153	-	173	13.5		QF	#	0.053	
Sodium	mg/L	02/14/2012	N001	153	-	173	32.3	E	QF	#	0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	153	-	173	1150		QF	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	153	-	173	-4.83		FQ	#		
Sulfate	mg/L	02/14/2012	N001	153	-	173	206		QF	#	1	
Temperature	C	02/14/2012	N001	153	-	173	15.4		QF	#		
Total Dissolved Solids	mg/L	02/14/2012	N001	153	-	173	797		QF	#	3.4	
Turbidity	NTU	02/14/2012	N001	153	-	173	3.05		QF	#		
Uranium	mg/L	02/14/2012	N001	153	-	173	0.0502		QF	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0274 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers	Data	QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	149	-	169	93		QF	#			
Ammonia Total as N	mg/L	02/14/2012	N001	149	-	169	0.016	U	QF	#		0.016	
Arsenic	mg/L	02/14/2012	N001	149	-	169	0.00231	B	QF	#		0.0017	
Calcium	mg/L	02/14/2012	N001	149	-	169	34.7		QF	#		0.05	
Chloride	mg/L	02/14/2012	N001	149	-	169	9.63		QF	#		0.066	
Iron	mg/L	02/14/2012	N001	149	-	169	0.03	U	QF	#		0.03	
Magnesium	mg/L	02/14/2012	N001	149	-	169	6.91		QF	#		0.11	
Manganese	mg/L	02/14/2012	N001	149	-	169	0.002	U	QF	#		0.002	
Molybdenum	mg/L	02/14/2012	N001	149	-	169	0.000507	B	UQF	#		0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	149	-	169	3.34		QF	#		0.05	
Oxidation Reduction Potential	mV	02/14/2012	N001	149	-	169	160		QF	#			
pH	s.u.	02/14/2012	N001	149	-	169	7.92		QF	#			
Potassium	mg/L	02/14/2012	N001	149	-	169	1.57	BE	QF	#		0.05	
Selenium	mg/L	02/14/2012	N001	149	-	169	0.00231	B	QF	#		0.0015	
Silica	mg/L	02/14/2012	N001	149	-	169	11.1		QF	#		0.053	
Sodium	mg/L	02/14/2012	N001	149	-	169	11.7	E	QF	#		0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	149	-	169	280		QF	#			
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	149	-	169	5.37		FQ	#			
Sulfate	mg/L	02/14/2012	N001	149	-	169	15		QF	#		0.1	
Temperature	C	02/14/2012	N001	149	-	169	15.1		QF	#			
Total Dissolved Solids	mg/L	02/14/2012	N001	149	-	169	171		QF	#		3.4	
Turbidity	NTU	02/14/2012	N001	149	-	169	1.99		QF	#			
Uranium	mg/L	02/14/2012	N001	149	-	169	0.00202		QF	#		0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0275 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers	Data QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	158.2	-	178.2	495		F	#		
Ammonia Total as N	mg/L	02/14/2012	N001	158.2	-	178.2	24.4		F	#	0.8	
Arsenic	mg/L	02/14/2012	N001	158.2	-	178.2	0.0034	U	F	#	0.0034	
Calcium	mg/L	02/14/2012	N001	158.2	-	178.2	791		F	#	0.25	
Chloride	mg/L	02/14/2012	N001	158.2	-	178.2	164		F	#	0.66	
Iron	mg/L	02/14/2012	N001	158.2	-	178.2	0.03	U	F	#	0.03	
Magnesium	mg/L	02/14/2012	N001	158.2	-	178.2	337		F	#	0.11	
Manganese	mg/L	02/14/2012	N001	158.2	-	178.2	10.2		F	#	0.002	
Molybdenum	mg/L	02/14/2012	N001	158.2	-	178.2	0.000398	B	UF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	158.2	-	178.2	251		F	#	5	
Oxidation Reduction Potential	mV	02/14/2012	N001	158.2	-	178.2	255		F	#		
pH	s.u.	02/14/2012	N001	158.2	-	178.2	6.37		F	#		
Potassium	mg/L	02/14/2012	N001	158.2	-	178.2	20.1	E	F	#	0.25	
Selenium	mg/L	02/14/2012	N001	158.2	-	178.2	0.0375		F	#	0.0015	
Silica	mg/L	02/14/2012	N001	158.2	-	178.2	19.3		F	#	0.053	
Sodium	mg/L	02/14/2012	N001	158.2	-	178.2	350	E	F	#	0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	158.2	-	178.2	5945		F	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	158.2	-	178.2	-2.15		F	#		
Sulfate	mg/L	02/14/2012	N001	158.2	-	178.2	2200		F	#	10	
Temperature	C	02/14/2012	N001	158.2	-	178.2	14.8		F	#		
Total Dissolved Solids	mg/L	02/14/2012	N001	158.2	-	178.2	5140		F	#	3.4	
Turbidity	NTU	02/14/2012	N001	158.2	-	178.2	3.65		F	#		
Uranium	mg/L	02/14/2012	N001	158.2	-	178.2	0.469		F	#	0.000335	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0276 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers		Lab QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	154.5	-	174.5	105		F	#		
Ammonia Total as N	mg/L	02/14/2012	N001	154.5	-	174.5	0.0226	J	F	#	0.016	
Arsenic	mg/L	02/14/2012	N001	154.5	-	174.5	0.00456	B	F	#	0.0017	
Calcium	mg/L	02/14/2012	N001	154.5	-	174.5	33.1		F	#	0.05	
Chloride	mg/L	02/14/2012	N001	154.5	-	174.5	10.5		F	#	0.066	
Iron	mg/L	02/14/2012	N001	154.5	-	174.5	0.0809	B	F	#	0.03	
Magnesium	mg/L	02/14/2012	N001	154.5	-	174.5	6.66		F	#	0.11	
Manganese	mg/L	02/14/2012	N001	154.5	-	174.5	0.00458	B	F	#	0.002	
Molybdenum	mg/L	02/14/2012	N001	154.5	-	174.5	0.000556	B	UF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	154.5	-	174.5	3.22		F	#	0.05	
Oxidation Reduction Potential	mV	02/14/2012	N001	154.5	-	174.5	370		F	#		
pH	s.u.	02/14/2012	N001	154.5	-	174.5	7.79		F	#		
Potassium	mg/L	02/14/2012	N001	154.5	-	174.5	1.66	BE	F	#	0.05	
Selenium	mg/L	02/14/2012	N001	154.5	-	174.5	0.00236	B	F	#	0.0015	
Silica	mg/L	02/14/2012	N001	154.5	-	174.5	11		F	#	0.053	
Sodium	mg/L	02/14/2012	N001	154.5	-	174.5	13.4	E	F	#	0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	154.5	-	174.5	292		F	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	154.5	-	174.5	5.68		F	#		
Sulfate	mg/L	02/14/2012	N001	154.5	-	174.5	16.8		F	#	0.1	
Temperature	C	02/14/2012	N001	154.5	-	174.5	15.4		F	#		
Total Dissolved Solids	mg/L	02/14/2012	N001	154.5	-	174.5	176		F	#	3.4	
Turbidity	NTU	02/14/2012	N001	154.5	-	174.5	2.91		F	#		
Uranium	mg/L	02/14/2012	N001	154.5	-	174.5	0.00191		F	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0281 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers		Lab	Detection Limit	Uncertainty
								Data	QA			
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	70.5	-	80.5	112		QF	#		
Ammonia Total as N	mg/L	02/15/2012	N001	70.5	-	80.5	0.016	U	QF	#	0.016	
Arsenic	mg/L	02/15/2012	N001	70.5	-	80.5	0.0017	U	QF	#	0.0017	
Calcium	mg/L	02/15/2012	N001	70.5	-	80.5	110		QF	#	0.05	
Chloride	mg/L	02/15/2012	N001	70.5	-	80.5	22.7		QF	#	0.66	
Iron	mg/L	02/15/2012	N001	70.5	-	80.5	1.95		QF	#	0.03	
Magnesium	mg/L	02/15/2012	N001	70.5	-	80.5	20.1		QF	#	0.11	
Manganese	mg/L	02/15/2012	N001	70.5	-	80.5	0.0212		QF	#	0.002	
Molybdenum	mg/L	02/15/2012	N001	70.5	-	80.5	0.00152	B	QF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	70.5	-	80.5	34		QF	#	1	
Oxidation Reduction Potential	mV	02/15/2012	N001	70.5	-	80.5	150.7		QF	#		
pH	s.u.	02/15/2012	N001	70.5	-	80.5	7.45		QF	#		
Potassium	mg/L	02/15/2012	N001	70.5	-	80.5	2.19	BE	QF	#	0.05	
Selenium	mg/L	02/15/2012	N001	70.5	-	80.5	0.00167	B	QF	#	0.0015	
Silica	mg/L	02/15/2012	N001	70.5	-	80.5	13.9		QF	#	0.053	
Sodium	mg/L	02/15/2012	N001	70.5	-	80.5	16.8	E	QF	#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	70.5	-	80.5	811		QF	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	70.5	-	80.5	2.39		FQ	#		
Sulfate	mg/L	02/15/2012	N001	70.5	-	80.5	132		QF	#	1	
Temperature	C	02/15/2012	N001	70.5	-	80.5	14.91		QF	#		
Total Dissolved Solids	mg/L	02/15/2012	N001	70.5	-	80.5	521		QF	#	3.4	
Turbidity	NTU	02/15/2012	N001	70.5	-	80.5	7.7		QF	#		
Uranium	mg/L	02/15/2012	N001	70.5	-	80.5	0.00875		QF	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0282 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Data	QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	74.1	-	84.1	121		QF	#		
Ammonia Total as N	mg/L	02/15/2012	N001	74.1	-	84.1	0.0173	J	QF	#	0.016	
Arsenic	mg/L	02/15/2012	N001	74.1	-	84.1	0.0017	U	QF	#	0.0017	
Calcium	mg/L	02/15/2012	N001	74.1	-	84.1	125		QF	#	0.05	
Chloride	mg/L	02/15/2012	N001	74.1	-	84.1	40.7		QF	#	0.66	
Iron	mg/L	02/15/2012	N001	74.1	-	84.1	0.03	U	QF	#	0.03	
Magnesium	mg/L	02/15/2012	N001	74.1	-	84.1	24.7		QF	#	0.11	
Manganese	mg/L	02/15/2012	N001	74.1	-	84.1	0.002	U	QF	#	0.002	
Molybdenum	mg/L	02/15/2012	N001	74.1	-	84.1	0.000529	B	QF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	74.1	-	84.1	44.2		QF	#	0.5	
Oxidation Reduction Potential	mV	02/15/2012	N001	74.1	-	84.1	157.6		QF	#		
pH	s.u.	02/15/2012	N001	74.1	-	84.1	7.53		QF	#		
Potassium	mg/L	02/15/2012	N001	74.1	-	84.1	2.8	BE	QF	#	0.05	
Selenium	mg/L	02/15/2012	N001	74.1	-	84.1	0.0015	U	QF	#	0.0015	
Silica	mg/L	02/15/2012	N001	74.1	-	84.1	13.8		QF	#	0.053	
Sodium	mg/L	02/15/2012	N001	74.1	-	84.1	17	E	QF	#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	74.1	-	84.1	937		QF	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	74.1	-	84.1	-2.93		FQ	#		
Sulfate	mg/L	02/15/2012	N001	74.1	-	84.1	112		QF	#	1	
Temperature	C	02/15/2012	N001	74.1	-	84.1	12.63		QF	#		
Total Dissolved Solids	mg/L	02/15/2012	N001	74.1	-	84.1	617		QF	#	3.4	
Turbidity	NTU	02/15/2012	N001	74.1	-	84.1	3.16		QF	#		
Uranium	mg/L	02/15/2012	N001	74.1	-	84.1	0.00695		QF	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0286 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers	Data	QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	93.2	-	103.2	754		QF	#			
Ammonia Total as N	mg/L	02/15/2012	N001	93.2	-	103.2	10.4		QF	#		0.16	
Arsenic	mg/L	02/15/2012	N001	93.2	-	103.2	0.0017	U	QF	#		0.0017	
Calcium	mg/L	02/15/2012	N001	93.2	-	103.2	675		QF	#		0.25	
Chloride	mg/L	02/15/2012	N001	93.2	-	103.2	114		QF	#		0.66	
Iron	mg/L	02/15/2012	N001	93.2	-	103.2	0.03	U	QF	#		0.03	
Magnesium	mg/L	02/15/2012	N001	93.2	-	103.2	627		QF	#		0.55	
Manganese	mg/L	02/15/2012	N001	93.2	-	103.2	4.57		QF	#		0.01	
Molybdenum	mg/L	02/15/2012	N001	93.2	-	103.2	0.00124	B	QF	#		0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	93.2	-	103.2	267		QF	#		5	
Oxidation Reduction Potential	mV	02/15/2012	N001	93.2	-	103.2	200		QF	#			
pH	s.u.	02/15/2012	N001	93.2	-	103.2	6.5		QF	#			
Potassium	mg/L	02/15/2012	N001	93.2	-	103.2	13.9	E	QF	#		0.25	
Selenium	mg/L	02/15/2012	N001	93.2	-	103.2	0.0388		QF	#		0.0015	
Silica	mg/L	02/15/2012	N001	93.2	-	103.2	17.3		QF	#		0.053	
Sodium	mg/L	02/15/2012	N001	93.2	-	103.2	267	E	QF	#		0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	93.2	-	103.2	7990		QF	#			
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	93.2	-	103.2	-1.62		FQ	#			
Sulfate	mg/L	02/15/2012	N001	93.2	-	103.2	2850		QF	#		20	
Temperature	C	02/15/2012	N001	93.2	-	103.2	14.6		QF	#			
Total Dissolved Solids	mg/L	02/15/2012	N001	93.2	-	103.2	6310		QF	#		3.4	
Turbidity	NTU	02/15/2012	N001	93.2	-	103.2	4.26		QF	#			
Uranium	mg/L	02/15/2012	N001	93.2	-	103.2	0.33		QF	#		0.000335	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0287 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers	Data	QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	100.7	-	110.7	598		QF	#			
Ammonia Total as N	mg/L	02/14/2012	N001	100.7	-	110.7	0.659		QF	#		0.016	
Arsenic	mg/L	02/14/2012	N001	100.7	-	110.7	0.0017	U	QF	#		0.0017	
Calcium	mg/L	02/14/2012	N001	100.7	-	110.7	847		QF	#		0.25	
Chloride	mg/L	02/14/2012	N001	100.7	-	110.7	219		QF	#		1.32	
Iron	mg/L	02/14/2012	N001	100.7	-	110.7	0.0317	B	QF	#		0.03	
Magnesium	mg/L	02/14/2012	N001	100.7	-	110.7	147		QF	#		0.11	
Manganese	mg/L	02/14/2012	N001	100.7	-	110.7	0.00886	B	QF	#		0.002	
Molybdenum	mg/L	02/14/2012	N001	100.7	-	110.7	0.134		QF	#		0.000825	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	100.7	-	110.7	301		QF	#		5	
Oxidation Reduction Potential	mV	02/14/2012	N001	100.7	-	110.7	225		QF	#			
pH	s.u.	02/14/2012	N001	100.7	-	110.7	6.39		QF	#			
Potassium	mg/L	02/14/2012	N001	100.7	-	110.7	9.01	E	QF	#		0.25	
Selenium	mg/L	02/14/2012	N001	100.7	-	110.7	0.0955		QF	#		0.003	
Silica	mg/L	02/14/2012	N001	100.7	-	110.7	18.1		QF	#		0.053	
Sodium	mg/L	02/14/2012	N001	100.7	-	110.7	339	E	QF	#		0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	100.7	-	110.7	5830		QF	#			
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	100.7	-	110.7	-4.61		FQ	#			
Sulfate	mg/L	02/14/2012	N001	100.7	-	110.7	1670		QF	#		10	
Temperature	C	02/14/2012	N001	100.7	-	110.7	15.9		QF	#			
Total Dissolved Solids	mg/L	02/14/2012	N001	100.7	-	110.7	4850		QF	#		3.4	
Turbidity	NTU	02/14/2012	N001	100.7	-	110.7	8.67		QF	#			
Uranium	mg/L	02/14/2012	N001	100.7	-	110.7	0.238		QF	#		0.000335	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0288 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers	Data QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	104	-	114	244		QF	#		
Ammonia Total as N	mg/L	02/15/2012	N001	104	-	114	0.016	U	QF	#	0.016	
Arsenic	mg/L	02/15/2012	N001	104	-	114	0.0017	U	QF	#	0.0017	
Calcium	mg/L	02/15/2012	N001	104	-	114	170		QF	#	0.05	
Chloride	mg/L	02/15/2012	N001	104	-	114	19.9		QF	#	0.66	
Iron	mg/L	02/15/2012	N001	104	-	114	0.03	U	QF	#	0.03	
Magnesium	mg/L	02/15/2012	N001	104	-	114	33.3		QF	#	0.11	
Manganese	mg/L	02/15/2012	N001	104	-	114	0.002	U	QF	#	0.002	
Molybdenum	mg/L	02/15/2012	N001	104	-	114	0.000232	B	QF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	104	-	114	48.4		QF	#	1	
Oxidation Reduction Potential	mV	02/15/2012	N001	104	-	114	170		QF	#		
pH	s.u.	02/15/2012	N001	104	-	114	6.92		QF	#		
Potassium	mg/L	02/15/2012	N001	104	-	114	3.62	BE	QF	#	0.05	
Selenium	mg/L	02/15/2012	N001	104	-	114	0.00183	B	QF	#	0.0015	
Silica	mg/L	02/15/2012	N001	104	-	114	14.9		QF	#	0.053	
Sodium	mg/L	02/15/2012	N001	104	-	114	40	E	QF	#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	104	-	114	1390		QF	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	104	-	114	-3.94		FQ	#		
Sulfate	mg/L	02/15/2012	N001	104	-	114	234		QF	#	1	
Temperature	C	02/15/2012	N001	104	-	114	14.2		QF	#		
Total Dissolved Solids	mg/L	02/15/2012	N001	104	-	114	850		QF	#	3.4	
Turbidity	NTU	02/15/2012	N001	104	-	114	3.88		QF	#		
Uranium	mg/L	02/15/2012	N001	104	-	114	0.0128		QF	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0289 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers		Lab	Detection Limit	Uncertainty
								Data	QA			
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	148.3	-	158.3	220		QF	#		
Ammonia Total as N	mg/L	02/15/2012	N001	148.3	-	158.3	0.016	U	QF	#	0.016	
Arsenic	mg/L	02/15/2012	N001	148.3	-	158.3	0.0017	U	QF	#	0.0017	
Calcium	mg/L	02/15/2012	N001	148.3	-	158.3	120		QF	#	0.05	
Chloride	mg/L	02/15/2012	N001	148.3	-	158.3	14.3		QF	#	0.66	
Iron	mg/L	02/15/2012	N001	148.3	-	158.3	0.03	U	QF	#	0.03	
Magnesium	mg/L	02/15/2012	N001	148.3	-	158.3	22.4		QF	#	0.11	
Manganese	mg/L	02/15/2012	N001	148.3	-	158.3	0.0175		QF	#	0.002	
Molybdenum	mg/L	02/15/2012	N001	148.3	-	158.3	0.000938	BN	UQF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	148.3	-	158.3	27.5		QF	#	0.5	
Oxidation Reduction Potential	mV	02/15/2012	N001	148.3	-	158.3	165		QF	#		
pH	s.u.	02/15/2012	N001	148.3	-	158.3	7.09		QF	#		
Potassium	mg/L	02/15/2012	N001	148.3	-	158.3	2.86	B	QF	#	0.05	
Selenium	mg/L	02/15/2012	N001	148.3	-	158.3	0.00182	B	QF	#	0.0015	
Silica	mg/L	02/15/2012	N001	148.3	-	158.3	13.8		QF	#	0.053	
Sodium	mg/L	02/15/2012	N001	148.3	-	158.3	29.1		QF	#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	148.3	-	158.3	1200		QF	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	148.3	-	158.3	-4.04		FQ	#		
Sulfate	mg/L	02/15/2012	N001	148.3	-	158.3	109		QF	#	1	
Temperature	C	02/15/2012	N001	148.3	-	158.3	14.5		QF	#		
Total Dissolved Solids	mg/L	02/15/2012	N001	148.3	-	158.3	620		QF	#	3.4	
Turbidity	NTU	02/15/2012	N001	148.3	-	158.3	3.67		QF	#		
Uranium	mg/L	02/15/2012	N001	148.3	-	158.3	0.0155		QF	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0290 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers		Lab	Detection Limit	Uncertainty
								Data	QA			
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	102.7	-	112.7	196		QF	#		
Ammonia Total as N	mg/L	02/15/2012	N001	102.7	-	112.7	0.016	U	QF	#	0.016	
Arsenic	mg/L	02/15/2012	N001	102.7	-	112.7	0.00214	B	QF	#	0.0017	
Calcium	mg/L	02/15/2012	N001	102.7	-	112.7	240		QF	#	0.05	
Chloride	mg/L	02/15/2012	N001	102.7	-	112.7	32.6		QF	#	0.66	
Iron	mg/L	02/15/2012	N001	102.7	-	112.7	0.051	B	QF	#	0.03	
Magnesium	mg/L	02/15/2012	N001	102.7	-	112.7	39.3		QF	#	0.11	
Manganese	mg/L	02/15/2012	N001	102.7	-	112.7	0.002	U	QF	#	0.002	
Molybdenum	mg/L	02/15/2012	N001	102.7	-	112.7	0.000549	BN	QF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	102.7	-	112.7	57.4		QF	#	1	
Oxidation Reduction Potential	mV	02/15/2012	N001	102.7	-	112.7	200		QF	#		
pH	s.u.	02/15/2012	N001	102.7	-	112.7	7.09		QF	#		
Potassium	mg/L	02/15/2012	N001	102.7	-	112.7	3.77	B	QF	#	0.05	
Selenium	mg/L	02/15/2012	N001	102.7	-	112.7	0.00795		QF	#	0.0015	
Silica	mg/L	02/15/2012	N001	102.7	-	112.7	16.3		QF	#	0.053	
Sodium	mg/L	02/15/2012	N001	102.7	-	112.7	47.7		QF	#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	102.7	-	112.7	1680		QF	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	102.7	-	112.7	-2.29		FQ	#		
Sulfate	mg/L	02/15/2012	N001	102.7	-	112.7	284		QF	#	1	
Temperature	C	02/15/2012	N001	102.7	-	112.7	15.1		QF	#		
Total Dissolved Solids	mg/L	02/15/2012	N001	102.7	-	112.7	1100		QF	#	3.4	
Turbidity	NTU	02/15/2012	N001	102.7	-	112.7	7.98		QF	#		
Uranium	mg/L	02/15/2012	N001	102.7	-	112.7	0.041		QF	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0691 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Data	Qualifiers QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	55	-	95	190		F	#		
Ammonia Total as N	mg/L	02/14/2012	N001	55	-	95	0.0174	J	F	#	0.016	
Arsenic	mg/L	02/14/2012	N001	55	-	95	0.0017	U	F	#	0.0017	
Calcium	mg/L	02/14/2012	N001	55	-	95	299		F	#	0.05	
Chloride	mg/L	02/14/2012	N001	55	-	95	38.2		F	#	0.66	
Dissolved Oxygen	mg/L	02/14/2012	N001	55	-	95	8.63		F	#		
Iron	mg/L	02/14/2012	N001	55	-	95	0.03	U	F	#	0.03	
Magnesium	mg/L	02/14/2012	N001	55	-	95	49.2		F	#	0.11	
Manganese	mg/L	02/14/2012	N001	55	-	95	0.00526	B	F	#	0.002	
Molybdenum	mg/L	02/14/2012	N001	55	-	95	0.000285	BN	F	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	55	-	95	64.3		F	#	1	
Oxidation Reduction Potential	mV	02/14/2012	N001	55	-	95	149.7		F	#		
pH	s.u.	02/14/2012	N001	55	-	95	7.06		F	#		
Potassium	mg/L	02/14/2012	N001	55	-	95	3.96	B	F	#	0.05	
Selenium	mg/L	02/14/2012	N001	55	-	95	0.00341	B	F	#	0.0015	
Silica	mg/L	02/14/2012	N001	55	-	95	14.8		F	#	0.053	
Sodium	mg/L	02/14/2012	N001	55	-	95	42.6		F	#	0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	55	-	95	1832		F	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	55	-	95	1.99		F	#		
Sulfate	mg/L	02/14/2012	N001	55	-	95	499		F	#	5	
Temperature	C	02/14/2012	N001	55	-	95	15.04		F	#		
Total Dissolved Solids	mg/L	02/14/2012	N001	55	-	95	1400		F	#	3.4	
Turbidity	NTU	02/14/2012	N001	55	-	95	1.14		F	#		
Uranium	mg/L	02/14/2012	N001	55	-	95	0.071		F	#	0.000067	

General Water Quality Data by Location (USEE105) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 6/26/2012

Location: 0901 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	58	-	78	117		F	#		
Ammonia Total as N	mg/L	02/15/2012	N001	58	-	78	0.016	U	F	#	0.016	
Arsenic	mg/L	02/15/2012	N001	58	-	78	0.00374	B	F	#	0.0017	
Calcium	mg/L	02/15/2012	N001	58	-	78	42.4		F	#	0.05	
Chloride	mg/L	02/15/2012	N001	58	-	78	14.4		F	#	0.66	
Iron	mg/L	02/15/2012	N001	58	-	78	0.15		F	#	0.03	
Magnesium	mg/L	02/15/2012	N001	58	-	78	7.51		F	#	0.11	
Manganese	mg/L	02/15/2012	N001	58	-	78	0.00945	B	F	#	0.002	
Molybdenum	mg/L	02/15/2012	N001	58	-	78	0.000857	BN	F	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	58	-	78	3.2		F	#	0.05	
Oxidation Reduction Potential	mV	02/15/2012	N001	58	-	78	260		F	#		
pH	s.u.	02/15/2012	N001	58	-	78	7.82		F	#		
Potassium	mg/L	02/15/2012	N001	58	-	78	1.64	B	F	#	0.05	
Selenium	mg/L	02/15/2012	N001	58	-	78	0.00304	B	F	#	0.0015	
Silica	mg/L	02/15/2012	N001	58	-	78	12.2		F	#	0.053	
Sodium	mg/L	02/15/2012	N001	58	-	78	18.9		F	#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	58	-	78	370		F	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	58	-	78	5.37		F	#		
Sulfate	mg/L	02/15/2012	N001	58	-	78	26.1		F	#	1	
Temperature	C	02/15/2012	N001	58	-	78	14.5		F	#		
Total Dissolved Solids	mg/L	02/15/2012	N001	58	-	78	233		F	#	3.4	
Tritium	pCi/L	02/15/2012	0001	58	-	78	3.28		JF	#	2.57	1.77
Turbidity	NTU	02/15/2012	N001	58	-	78	7.43		F	#		
Uranium	mg/L	02/15/2012	N001	58	-	78	0.00353		F	#	0.000067	

General Water Quality Data by Location (USEE105) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 6/26/2012

Location: 0906 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	44	-	64	588		QF	#		
Ammonia Total as N	mg/L	02/15/2012	N001	44	-	64	0.016	U	QF	#	0.016	
Arsenic	mg/L	02/15/2012	N001	44	-	64	0.0017	U	QF	#	0.0017	
Calcium	mg/L	02/15/2012	N001	44	-	64	829		QF	#	0.25	
Chloride	mg/L	02/15/2012	N001	44	-	64	132		QF	#	0.66	
Iron	mg/L	02/15/2012	N001	44	-	64	0.03	U	QF	#	0.03	
Magnesium	mg/L	02/15/2012	N001	44	-	64	412		QF	#	0.11	
Manganese	mg/L	02/15/2012	N001	44	-	64	0.00823	B	QF	#	0.002	
Molybdenum	mg/L	02/15/2012	N001	44	-	64	0.00913	N	QF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	44	-	64	515		QF	#	5	
Oxidation Reduction Potential	mV	02/15/2012	N001	44	-	64	200		QF	#		
pH	s.u.	02/15/2012	N001	44	-	64	6.67		QF	#		
Potassium	mg/L	02/15/2012	N001	44	-	64	10.3		QF	#	0.25	
Selenium	mg/L	02/15/2012	N001	44	-	64	0.0488		QF	#	0.0015	
Silica	mg/L	02/15/2012	N001	44	-	64	13.9		QF	#	0.053	
Sodium	mg/L	02/15/2012	N001	44	-	64	439		QF	#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	44	-	64	7400		QF	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	44	-	64	-4.04		FQ	#		
Sulfate	mg/L	02/15/2012	N001	44	-	64	2060		QF	#	10	
Temperature	C	02/15/2012	N001	44	-	64	13.3		QF	#		
Total Dissolved Solids	mg/L	02/15/2012	N001	44	-	64	6520		QF	#	3.4	
Tritium	pCi/L	02/15/2012	0001	44	-	64	5.06		JFQ	#	2.36	1.91
Turbidity	NTU	02/15/2012	N001	44	-	64	6.95		QF	#		
Uranium	mg/L	02/15/2012	N001	44	-	64	0.43		QF	#	0.000335	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0908 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers	Data	QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	52	-	67	534		QF	#			
Ammonia Total as N	mg/L	02/15/2012	N001	52	-	67	71		QF	#		0.8	
Arsenic	mg/L	02/15/2012	N001	52	-	67	0.0044	B	QF	#		0.0017	
Calcium	mg/L	02/15/2012	N001	52	-	67	563		QF	#		0.25	
Chloride	mg/L	02/15/2012	N001	52	-	67	48.9		QF	#		0.66	
Iron	mg/L	02/15/2012	N001	52	-	67	0.107		QF	#		0.03	
Magnesium	mg/L	02/15/2012	N001	52	-	67	436		QF	#		0.11	
Manganese	mg/L	02/15/2012	N001	52	-	67	0.136		QF	#		0.002	
Molybdenum	mg/L	02/15/2012	N001	52	-	67	0.000522	BN	QF	#		0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	52	-	67	194		QF	#		5	
Oxidation Reduction Potential	mV	02/15/2012	N001	52	-	67	244.8		QF	#			
pH	s.u.	02/15/2012	N001	52	-	67	6.49		QF	#			
Potassium	mg/L	02/15/2012	N001	52	-	67	24.3		QF	#		0.25	
Selenium	mg/L	02/15/2012	N001	52	-	67	0.0252		QF	#		0.0015	
Silica	mg/L	02/15/2012	N001	52	-	67	20.1		QF	#		0.053	
Sodium	mg/L	02/15/2012	N001	52	-	67	289		QF	#		0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	52	-	67	5827		QF	#			
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	52	-	67	-.94		FQ	#			
Sulfate	mg/L	02/15/2012	N001	52	-	67	2620		QF	#		10	
Temperature	C	02/15/2012	N001	52	-	67	13.81		QF	#			
Total Dissolved Solids	mg/L	02/15/2012	N001	52	-	67	5370		QF	#		3.4	
Turbidity	NTU	02/15/2012	N001	52	-	67	9.01		QF	#			
Uranium	mg/L	02/15/2012	N001	52	-	67	0.0948		QF	#		0.000067	

General Water Quality Data by Location (USEE105) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 6/26/2012

Location: 0910 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	97	-	197	78		F	#		
Ammonia Total as N	mg/L	02/15/2012	N001	97	-	197	0.154		F	#	0.016	
Arsenic	mg/L	02/15/2012	N001	97	-	197	0.00532		F	#	0.0017	
Calcium	mg/L	02/15/2012	N001	97	-	197	33.1		F	#	0.05	
Chloride	mg/L	02/15/2012	N001	97	-	197	8.87		F	#	0.66	
Iron	mg/L	02/15/2012	N001	97	-	197	0.03	U	F	#	0.03	
Magnesium	mg/L	02/15/2012	N001	97	-	197	5.83		F	#	0.11	
Manganese	mg/L	02/15/2012	N001	97	-	197	0.002	U	F	#	0.002	
Molybdenum	mg/L	02/15/2012	N001	97	-	197	0.000765	BN	F	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	97	-	197	3.13		F	#	0.05	
Oxidation Reduction Potential	mV	02/15/2012	N001	97	-	197	170		F	#		
pH	s.u.	02/15/2012	N001	97	-	197	7.96		F	#		
Potassium	mg/L	02/15/2012	N001	97	-	197	1.63	B	F	#	0.05	
Selenium	mg/L	02/15/2012	N001	97	-	197	0.00172	B	F	#	0.0015	
Silica	mg/L	02/15/2012	N001	97	-	197	10.5		F	#	0.053	
Sodium	mg/L	02/15/2012	N001	97	-	197	13.5		F	#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	97	-	197	275		F	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	97	-	197	5.84		F	#		
Sulfate	mg/L	02/15/2012	N001	97	-	197	14.3		F	#	1	
Temperature	C	02/15/2012	N001	97	-	197	14.5		F	#		
Total Dissolved Solids	mg/L	02/15/2012	N001	97	-	197	146		F	#	3.4	
Tritium	pCi/L	02/15/2012	0001	97	-	197	2.11	U	F	#	2.11	1.27
Turbidity	NTU	02/15/2012	N001	97	-	197	0.84		F	#		
Uranium	mg/L	02/15/2012	N001	97	-	197	0.00155		F	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0929 WELL No Log Information.

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Data	Qualifiers QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	48.2	-	88.2	76		QF	#		
Ammonia Total as N	mg/L	02/15/2012	N001	48.2	-	88.2	0.0177	J	QF	#	0.016	
Arsenic	mg/L	02/15/2012	N001	48.2	-	88.2	0.00254	B	QF	#	0.0017	
Calcium	mg/L	02/15/2012	N001	48.2	-	88.2	50.5		QF	#	0.05	
Chloride	mg/L	02/15/2012	N001	48.2	-	88.2	11.8		QF	#	0.66	
Iron	mg/L	02/15/2012	N001	48.2	-	88.2	0.03	U	QF	#	0.03	
Magnesium	mg/L	02/15/2012	N001	48.2	-	88.2	8.64		QF	#	0.11	
Manganese	mg/L	02/15/2012	N001	48.2	-	88.2	0.002	U	QF	#	0.002	
Molybdenum	mg/L	02/15/2012	N001	48.2	-	88.2	0.000551	BN	QF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	48.2	-	88.2	13		QF	#	0.1	
Oxidation Reduction Potential	mV	02/15/2012	N001	48.2	-	88.2	138.5		QF	#		
pH	s.u.	02/15/2012	N001	48.2	-	88.2	7.72		QF	#		
Potassium	mg/L	02/15/2012	N001	48.2	-	88.2	2.05	B	QF	#	0.05	
Selenium	mg/L	02/15/2012	N001	48.2	-	88.2	0.00239	B	QF	#	0.0015	
Silica	mg/L	02/15/2012	N001	48.2	-	88.2	11.5		QF	#	0.053	
Sodium	mg/L	02/15/2012	N001	48.2	-	88.2	12.1		QF	#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	48.2	-	88.2	384		QF	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	48.2	-	88.2	0.88		FQ	#		
Sulfate	mg/L	02/15/2012	N001	48.2	-	88.2	19.9		QF	#	1	
Temperature	C	02/15/2012	N001	48.2	-	88.2	15.3		QF	#		
Total Dissolved Solids	mg/L	02/15/2012	N001	48.2	-	88.2	210		QF	#	3.4	
Turbidity	NTU	02/15/2012	N001	48.2	-	88.2	1.53		QF	#		
Uranium	mg/L	02/15/2012	N001	48.2	-	88.2	0.00197		QF	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0930 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers	Data	QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	20	-	50	116		F	#			
Ammonia Total as N	mg/L	02/14/2012	N001	20	-	50	0.016	U	F	#		0.016	
Ammonia Total as N	mg/L	02/14/2012	N002	20	-	50	0.0255	J	UF	#		0.016	
Arsenic	mg/L	02/14/2012	N001	20	-	50	0.0017	U	F	#		0.0017	
Arsenic	mg/L	02/14/2012	N002	20	-	50	0.0017	U	F	#		0.0017	
Calcium	mg/L	02/14/2012	N001	20	-	50	75.1		F	#		0.05	
Calcium	mg/L	02/14/2012	N002	20	-	50	80.4		F	#		0.05	
Chloride	mg/L	02/14/2012	N001	20	-	50	17.2		FJ	#		0.66	
Chloride	mg/L	02/14/2012	N002	20	-	50	24.1		FJ	#		0.66	
Dissolved Oxygen	mg/L	02/14/2012	N001	20	-	50	8.63		F	#			
Iron	mg/L	02/14/2012	N001	20	-	50	0.03	U	F	#		0.03	
Iron	mg/L	02/14/2012	N002	20	-	50	0.03	U	F	#		0.03	
Magnesium	mg/L	02/14/2012	N001	20	-	50	16.2		F	#		0.11	
Magnesium	mg/L	02/14/2012	N002	20	-	50	17		F	#		0.11	
Manganese	mg/L	02/14/2012	N001	20	-	50	0.002	U	F	#		0.002	
Manganese	mg/L	02/14/2012	N002	20	-	50	0.00497	B	F	#		0.002	
Molybdenum	mg/L	02/14/2012	N001	20	-	50	0.00031	BN	F	#		0.000165	
Molybdenum	mg/L	02/14/2012	N002	20	-	50	0.000591	B	UF	#		0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	20	-	50	17.5		F	#		0.5	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N002	20	-	50	18	H	FJ	#		1	
Oxidation Reduction Potential	mV	02/14/2012	N001	20	-	50	157.5		F	#			
pH	s.u.	02/14/2012	N001	20	-	50	7.6		F	#			
Potassium	mg/L	02/14/2012	N001	20	-	50	2.57	B	F	#		0.05	
Potassium	mg/L	02/14/2012	N002	20	-	50	2.54	B	F	#		0.05	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0930 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Data		Lab QA	Detection Limit	Uncertainty
Selenium	mg/L	02/14/2012	N001	20	-	50	0.00249	B	F	#	0.0015	
Selenium	mg/L	02/14/2012	N002	20	-	50	0.0015	U	F	#	0.0015	
Silica	mg/L	02/14/2012	N001	20	-	50	12.4		F	#	0.053	
Silica	mg/L	02/14/2012	N002	20	-	50	14.2		F	#	0.053	
Sodium	mg/L	02/14/2012	N001	20	-	50	13.4		F	#	0.1	
Sodium	mg/L	02/14/2012	N002	20	-	50	15.7		F	#	0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	20	-	50	577		F	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N003	20	-	50	-.25		F	#		
Sulfate	mg/L	02/14/2012	N001	20	-	50	62.9		FJ	#	1	
Sulfate	mg/L	02/14/2012	N002	20	-	50	91.2		FJ	#	1	
Temperature	C	02/14/2012	N001	20	-	50	15.72		F	#		
Total Dissolved Solids	mg/L	02/14/2012	N001	20	-	50	334		F	#	3.4	
Total Dissolved Solids	mg/L	02/14/2012	N002	20	-	50	346		F	#	3.4	
Turbidity	NTU	02/14/2012	N001	20	-	50	0.45		F	#		
Uranium	mg/L	02/14/2012	N001	20	-	50	0.00475		F	#	0.000067	
Uranium	mg/L	02/14/2012	N002	20	-	50	0.00441		F	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0932 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers	Data QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	112.5	-	132.5	102		F	#		
Ammonia Total as N	mg/L	02/14/2012	N001	112.5	-	132.5	0.016	U	F	#	0.016	
Arsenic	mg/L	02/14/2012	N001	112.5	-	132.5	0.00277	B	F	#	0.0017	
Calcium	mg/L	02/14/2012	N001	112.5	-	132.5	43.5		F	#	0.05	
Chloride	mg/L	02/14/2012	N001	112.5	-	132.5	9.78		F	#	0.66	
Iron	mg/L	02/14/2012	N001	112.5	-	132.5	0.03	U	F	#	0.03	
Magnesium	mg/L	02/14/2012	N001	112.5	-	132.5	8.92		F	#	0.11	
Manganese	mg/L	02/14/2012	N001	112.5	-	132.5	0.002	U	F	#	0.002	
Molybdenum	mg/L	02/14/2012	N001	112.5	-	132.5	0.000592	BN	F	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	112.5	-	132.5	6.47		F	#	0.1	
Oxidation Reduction Potential	mV	02/14/2012	N001	112.5	-	132.5	131		F	#		
pH	s.u.	02/14/2012	N001	112.5	-	132.5	7.81		F	#		
Potassium	mg/L	02/14/2012	N001	112.5	-	132.5	2.18	B	F	#	0.05	
Selenium	mg/L	02/14/2012	N001	112.5	-	132.5	0.00179	B	F	#	0.0015	
Silica	mg/L	02/14/2012	N001	112.5	-	132.5	11.2		F	#	0.053	
Sodium	mg/L	02/14/2012	N001	112.5	-	132.5	14		F	#	0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	112.5	-	132.5	353		F	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	112.5	-	132.5	3.56		F	#		
Sulfate	mg/L	02/14/2012	N001	112.5	-	132.5	23.2		F	#	1	
Temperature	C	02/14/2012	N001	112.5	-	132.5	15.17		F	#		
Total Dissolved Solids	mg/L	02/14/2012	N001	112.5	-	132.5	223		F	#	3.4	
Turbidity	NTU	02/14/2012	N001	112.5	-	132.5	0.69		F	#		
Uranium	mg/L	02/14/2012	N001	112.5	-	132.5	0.00215		F	#	0.000067	

General Water Quality Data by Location (USEE105) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 6/26/2012

Location: 0934 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	45	-	90	599		QF	#		
Ammonia Total as N	mg/L	02/15/2012	N001	45	-	90	0.0208	J	QF	#	0.016	
Arsenic	mg/L	02/15/2012	N001	45	-	90	0.00421	B	QF	#	0.0017	
Calcium	mg/L	02/15/2012	N001	45	-	90	682		QF	#	0.25	
Chloride	mg/L	02/15/2012	N001	45	-	90	202		QF	#	6.6	
Iron	mg/L	02/15/2012	N001	45	-	90	0.03	U	QF	#	0.03	
Magnesium	mg/L	02/15/2012	N001	45	-	90	741		QF	#	0.55	
Manganese	mg/L	02/15/2012	N001	45	-	90	0.01	U	QF	#	0.01	
Molybdenum	mg/L	02/15/2012	N001	45	-	90	0.00292	BN	QF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	45	-	90	357		QF	#	5	
Oxidation Reduction Potential	mV	02/15/2012	N001	45	-	90	202		QF	#		
pH	s.u.	02/15/2012	N001	45	-	90	6.6		QF	#		
Potassium	mg/L	02/15/2012	N001	45	-	90	11.3		QF	#	0.25	
Selenium	mg/L	02/15/2012	N001	45	-	90	0.0075		QF	#	0.0015	
Silica	mg/L	02/15/2012	N001	45	-	90	18.7		QF	#	0.053	
Sodium	mg/L	02/15/2012	N001	45	-	90	145		QF	#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	45	-	90	6963		QF	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	45	-	90	-2.58		FQ	#		
Sulfate	mg/L	02/15/2012	N001	45	-	90	2800		QF	#	10	
Temperature	C	02/15/2012	N001	45	-	90	14.5		QF	#		
Total Dissolved Solids	mg/L	02/15/2012	N001	45	-	90	6630		QF	#	3.4	
Tritium	pCi/L	02/15/2012	0001	45	-	90	4.17		JFQ	#	2.32	1.76
Turbidity	NTU	02/15/2012	N001	45	-	90	2.27		QF	#		
Uranium	mg/L	02/15/2012	N001	45	-	90	0.176		QF	#	0.000335	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0935 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Data	Qualifiers QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	50	-	90	550			#		
Ammonia Total as N	mg/L	02/14/2012	N001	50	-	90	66			#	0.8	
Arsenic	mg/L	02/14/2012	N001	50	-	90	0.0017	U		#	0.0017	
Calcium	mg/L	02/14/2012	N001	50	-	90	733			#	0.25	
Chloride	mg/L	02/14/2012	N001	50	-	90	83.6			#	0.66	
Iron	mg/L	02/14/2012	N001	50	-	90	0.03	U		#	0.03	
Magnesium	mg/L	02/14/2012	N001	50	-	90	306			#	0.11	
Manganese	mg/L	02/14/2012	N001	50	-	90	0.573			#	0.002	
Molybdenum	mg/L	02/14/2012	N001	50	-	90	0.000165	UN		#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	50	-	90	268			#	5	
Oxidation Reduction Potential	mV	02/14/2012	N001	50	-	90	250			#		
pH	s.u.	02/14/2012	N001	50	-	90	6.49			#		
Potassium	mg/L	02/14/2012	N001	50	-	90	19.9			#	0.25	
Selenium	mg/L	02/14/2012	N001	50	-	90	0.0172			#	0.0015	
Silica	mg/L	02/14/2012	N001	50	-	90	22.5			#	0.053	
Sodium	mg/L	02/14/2012	N001	50	-	90	353			#	0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	50	-	90	6140			#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	50	-	90	-2.21			#		
Sulfate	mg/L	02/14/2012	N001	50	-	90	2350			#	10	
Temperature	C	02/14/2012	N001	50	-	90	14.9			#		
Total Dissolved Solids	mg/L	02/14/2012	N001	50	-	90	5160			#	3.4	
Turbidity	NTU	02/14/2012	N001	50	-	90	1.05			#		
Uranium	mg/L	02/14/2012	N001	50	-	90	0.161			#	0.000335	

General Water Quality Data by Location (USEE105) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 6/26/2012

Location: 0938 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	40	-	95	760			#		
Ammonia Total as N	mg/L	02/15/2012	N001	40	-	95	0.991			#	0.016	
Arsenic	mg/L	02/15/2012	N001	40	-	95	0.00415	B		#	0.0017	
Calcium	mg/L	02/15/2012	N001	40	-	95	888			#	0.25	
Chloride	mg/L	02/15/2012	N001	40	-	95	170			#	0.66	
Iron	mg/L	02/15/2012	N001	40	-	95	0.03	U		#	0.03	
Magnesium	mg/L	02/15/2012	N001	40	-	95	378			#	0.11	
Manganese	mg/L	02/15/2012	N001	40	-	95	0.568			#	0.002	
Molybdenum	mg/L	02/15/2012	N001	40	-	95	0.0112	N		#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	40	-	95	335			#	5	
Oxidation Reduction Potential	mV	02/15/2012	N001	40	-	95	230			#		
pH	s.u.	02/15/2012	N001	40	-	95	6.62			#		
Potassium	mg/L	02/15/2012	N001	40	-	95	13.9			#	0.25	
Selenium	mg/L	02/15/2012	N001	40	-	95	0.0767			#	0.0015	
Silica	mg/L	02/15/2012	N001	40	-	95	16.6			#	0.053	
Sodium	mg/L	02/15/2012	N001	40	-	95	351			#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	40	-	95	6650			#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	40	-	95	-3.41			#		
Sulfate	mg/L	02/15/2012	N001	40	-	95	2420			#	10	
Temperature	C	02/15/2012	N001	40	-	95	15.1			#		
Total Dissolved Solids	mg/L	02/15/2012	N001	40	-	95	5940			#	3.4	
Tritium	pCi/L	02/15/2012	0001	40	-	95	6.44			#	2.14	2.03
Turbidity	NTU	02/15/2012	N001	40	-	95	1.58			#		
Uranium	mg/L	02/15/2012	N001	40	-	95	0.396			#	0.000335	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0940 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Data	QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	45	-	60	843		QF	#		
Ammonia Total as N	mg/L	02/15/2012	N001	45	-	60	35.5		QF	#	0.8	
Arsenic	mg/L	02/15/2012	N001	45	-	60	0.00341	B	QF	#	0.0017	
Calcium	mg/L	02/15/2012	N001	45	-	60	477		QF	#	0.05	
Chloride	mg/L	02/15/2012	N001	45	-	60	171		QF	#	0.66	
Iron	mg/L	02/15/2012	N001	45	-	60	0.03	U	QF	#	0.03	
Magnesium	mg/L	02/15/2012	N001	45	-	60	1730		QF	#	0.55	
Manganese	mg/L	02/15/2012	N001	45	-	60	25.2		QF	#	0.01	
Molybdenum	mg/L	02/15/2012	N001	45	-	60	0.00163	BN	QF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	45	-	60	446		QF	#	5	
Oxidation Reduction Potential	mV	02/15/2012	N001	45	-	60	210		QF	#		
pH	s.u.	02/15/2012	N001	45	-	60	6.56		QF	#		
Potassium	mg/L	02/15/2012	N001	45	-	60	30		QF	#	0.25	
Selenium	mg/L	02/15/2012	N001	45	-	60	0.0871		QF	#	0.0015	
Silica	mg/L	02/15/2012	N001	45	-	60	16.8		QF	#	0.053	
Sodium	mg/L	02/15/2012	N001	45	-	60	406		QF	#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	45	-	60	12080		QF	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	45	-	60	-1.43		FQ	#		
Sulfate	mg/L	02/15/2012	N001	45	-	60	6490		QF	#	50	
Temperature	C	02/15/2012	N001	45	-	60	15.6		QF	#		
Total Dissolved Solids	mg/L	02/15/2012	N001	45	-	60	12100		QF	#	3.4	
Turbidity	NTU	02/15/2012	N001	45	-	60	2.98		QF	#		
Uranium	mg/L	02/15/2012	N001	45	-	60	0.422		QF	#	0.000335	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 0941 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Data	QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	0001	45	-	65	580		QF	#		
Ammonia Total as N	mg/L	02/14/2012	0001	45	-	65	0.0534	J	QF	#	0.016	
Arsenic	mg/L	02/14/2012	0001	45	-	65	0.0017	U	QF	#	0.0017	
Calcium	mg/L	02/14/2012	0001	45	-	65	881		QF	#	0.25	
Chloride	mg/L	02/14/2012	0001	45	-	65	188		QF	#	0.66	
Iron	mg/L	02/14/2012	0001	45	-	65	0.03	U	QF	#	0.03	
Magnesium	mg/L	02/14/2012	0001	45	-	65	140		QF	#	0.11	
Manganese	mg/L	02/14/2012	0001	45	-	65	0.201		QF	#	0.002	
Molybdenum	mg/L	02/14/2012	0001	45	-	65	0.0358	N	QF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	0001	45	-	65	258		QF	#	5	
Oxidation Reduction Potential	mV	02/14/2012	N001	45	-	65	210		QF	#		
pH	s.u.	02/14/2012	N001	45	-	65	6.59		QF	#		
Potassium	mg/L	02/14/2012	0001	45	-	65	9.02		QF	#	0.25	
Selenium	mg/L	02/14/2012	0001	45	-	65	0.126		QF	#	0.0015	
Silica	mg/L	02/14/2012	0001	45	-	65	17.6		QF	#	0.053	
Sodium	mg/L	02/14/2012	0001	45	-	65	193		QF	#	0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	45	-	65	5100		QF	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	45	-	65	-5.56		FQ	#		
Sulfate	mg/L	02/14/2012	0001	45	-	65	1390		QF	#	10	
Temperature	C	02/14/2012	N001	45	-	65	15.7		QF	#		
Total Dissolved Solids	mg/L	02/14/2012	0001	45	-	65	4180		QF	#	3.4	
Turbidity	NTU	02/14/2012	N001	45	-	65	13.5		QF	#		
Uranium	mg/L	02/14/2012	0001	45	-	65	0.234		QF	#	0.000335	

General Water Quality Data by Location (USEE105) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 6/26/2012

Location: 0942 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	54	-	74	488			#		
Ammonia Total as N	mg/L	02/14/2012	N001	54	-	74	92.5			#	0.8	
Arsenic	mg/L	02/14/2012	N001	54	-	74	0.00429	B		#	0.0017	
Calcium	mg/L	02/14/2012	N001	54	-	74	574			#	0.25	
Chloride	mg/L	02/14/2012	N001	54	-	74	163			#	0.66	
Iron	mg/L	02/14/2012	N001	54	-	74	0.03	U		#	0.03	
Magnesium	mg/L	02/14/2012	N001	54	-	74	357			#	0.11	
Manganese	mg/L	02/14/2012	N001	54	-	74	8.32			#	0.002	
Molybdenum	mg/L	02/14/2012	N001	54	-	74	0.00931	N		#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	54	-	74	147			#	5	
Oxidation Reduction Potential	mV	02/14/2012	N001	54	-	74	260			#		
pH	s.u.	02/14/2012	N001	54	-	74	6.53			#		
Potassium	mg/L	02/14/2012	N001	54	-	74	23.2			#	0.25	
Selenium	mg/L	02/14/2012	N001	54	-	74	0.0616			#	0.0015	
Silica	mg/L	02/14/2012	N001	54	-	74	18.3			#	0.053	
Sodium	mg/L	02/14/2012	N001	54	-	74	458			#	0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	54	-	74	6570			#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	54	-	74	4.01			#		
Sulfate	mg/L	02/14/2012	N001	54	-	74	2990			#	20	
Temperature	C	02/14/2012	N001	54	-	74	14.4			#		
Total Dissolved Solids	mg/L	02/14/2012	N001	54	-	74	5560			#	3.4	
Tritium	pCi/L	02/14/2012	0001	54	-	74	7.3			#	2.09	2.16
Turbidity	NTU	02/14/2012	N001	54	-	74	0.52			#		
Uranium	mg/L	02/14/2012	N001	54	-	74	0.413			#	0.000335	

General Water Quality Data by Location (USEE105) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 6/26/2012

Location: 1132 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	49.7	-	99.7	333			#		
Ammonia Total as N	mg/L	02/14/2012	N001	49.7	-	99.7	0.332			#	0.016	
Ammonia Total as N	mg/L	02/14/2012	N002	49.7	-	99.7	0.0356	J	U	#	0.016	
Arsenic	mg/L	02/14/2012	N001	49.7	-	99.7	0.00787			#	0.0017	
Arsenic	mg/L	02/14/2012	N002	49.7	-	99.7	0.00476	B		#	0.0017	
Calcium	mg/L	02/14/2012	N001	49.7	-	99.7	736			#	0.25	
Calcium	mg/L	02/14/2012	N002	49.7	-	99.7	707			#	0.5	
Chloride	mg/L	02/14/2012	N001	49.7	-	99.7	104			#	0.66	
Chloride	mg/L	02/14/2012	N002	49.7	-	99.7	102			#	0.66	
Iron	mg/L	02/14/2012	N001	49.7	-	99.7	0.03	U		#	0.03	
Iron	mg/L	02/14/2012	N002	49.7	-	99.7	0.03	U		#	0.03	
Magnesium	mg/L	02/14/2012	N001	49.7	-	99.7	150			#	0.11	
Magnesium	mg/L	02/14/2012	N002	49.7	-	99.7	157			#	1.1	
Manganese	mg/L	02/14/2012	N001	49.7	-	99.7	0.002	U		#	0.002	
Manganese	mg/L	02/14/2012	N002	49.7	-	99.7	0.002	U		#	0.002	
Molybdenum	mg/L	02/14/2012	N001	49.7	-	99.7	1.96	N		#	0.00165	
Molybdenum	mg/L	02/14/2012	N002	49.7	-	99.7	1.93			#	0.0033	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	49.7	-	99.7	178			#	5	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N002	49.7	-	99.7	180			#	5	
Oxidation Reduction Potential	mV	02/14/2012	N001	49.7	-	99.7	225			#		
pH	s.u.	02/14/2012	N001	49.7	-	99.7	6.77			#		
Potassium	mg/L	02/14/2012	N001	49.7	-	99.7	8.85			#	0.25	
Potassium	mg/L	02/14/2012	N002	49.7	-	99.7	6.19			#	0.5	
Selenium	mg/L	02/14/2012	N001	49.7	-	99.7	0.126			#	0.0015	
Selenium	mg/L	02/14/2012	N002	49.7	-	99.7	0.112			#	0.0075	
Silica	mg/L	02/14/2012	N001	49.7	-	99.7	16.7			#	0.053	

General Water Quality Data by Location (USEE105) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 6/26/2012

Location: 1132 WELL

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Silica	mg/L	02/14/2012	N002	49.7	-	99.7	17.6			#	0.053	
Sodium	mg/L	02/14/2012	N001	49.7	-	99.7	234			#	0.1	
Sodium	mg/L	02/14/2012	N002	49.7	-	99.7	240			#	1	
Specific Conductance	umhos/cm	02/14/2012	N001	49.7	-	99.7	4570			#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N003	49.7	-	99.7	2.27			#		
Sulfate	mg/L	02/14/2012	N001	49.7	-	99.7	1760			#	10	
Sulfate	mg/L	02/14/2012	N002	49.7	-	99.7	1750			#	10	
Temperature	C	02/14/2012	N001	49.7	-	99.7	16.1			#		
Total Dissolved Solids	mg/L	02/14/2012	N001	49.7	-	99.7	3770			#	3.4	
Total Dissolved Solids	mg/L	02/14/2012	N002	49.7	-	99.7	4080			#	3.4	
Tritium	pCi/L	02/14/2012	0001	49.7	-	99.7	7.04		J	#	2.82	2.44
Turbidity	NTU	02/14/2012	N001	49.7	-	99.7	0.95			#		
Uranium	mg/L	02/14/2012	N001	49.7	-	99.7	1.51			#	0.00067	
Uranium	mg/L	02/14/2012	N002	49.7	-	99.7	1.69			#	0.00134	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: NMW-1A WELL NAVAJO MONITORING WELL NMW-1A

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers	Data	Lab QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	167.5	-	187.5	90		F	#		
Ammonia Total as N	mg/L	02/14/2012	N001	167.5	-	187.5	0.0378	J	UF	#	0.016	
Ammonia Total as N	mg/L	02/14/2012	N002	167.5	-	187.5	0.016	U	F	#	0.016	
Arsenic	mg/L	02/14/2012	N001	167.5	-	187.5	0.00305	B	F	#	0.0017	
Arsenic	mg/L	02/14/2012	N002	167.5	-	187.5	0.00327	B	F	#	0.0017	
Calcium	mg/L	02/14/2012	N001	167.5	-	187.5	34		F	#	0.05	
Calcium	mg/L	02/14/2012	N002	167.5	-	187.5	35.8		F	#	0.05	
Chloride	mg/L	02/14/2012	N001	167.5	-	187.5	8.92		F	#	0.066	
Chloride	mg/L	02/14/2012	N002	167.5	-	187.5	8.95		F	#	0.066	
Iron	mg/L	02/14/2012	N001	167.5	-	187.5	0.03	U	F	#	0.03	
Iron	mg/L	02/14/2012	N002	167.5	-	187.5	0.03	U	F	#	0.03	
Magnesium	mg/L	02/14/2012	N001	167.5	-	187.5	5.98		F	#	0.11	
Magnesium	mg/L	02/14/2012	N002	167.5	-	187.5	6.37		F	#	0.11	
Manganese	mg/L	02/14/2012	N001	167.5	-	187.5	0.002	U	F	#	0.002	
Manganese	mg/L	02/14/2012	N002	167.5	-	187.5	0.002	U	F	#	0.002	
Molybdenum	mg/L	02/14/2012	N001	167.5	-	187.5	0.000643	B	UF	#	0.000165	
Molybdenum	mg/L	02/14/2012	N002	167.5	-	187.5	0.000495	B	UF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	167.5	-	187.5	3.18		F	#	0.05	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N002	167.5	-	187.5	3.24		F	#	0.05	
Oxidation Reduction Potential	mV	02/14/2012	N001	167.5	-	187.5	119.8		F	#		
pH	s.u.	02/14/2012	N001	167.5	-	187.5	7.84		F	#		
Potassium	mg/L	02/14/2012	N001	167.5	-	187.5	1.41	B	F	#	0.05	
Potassium	mg/L	02/14/2012	N002	167.5	-	187.5	1.49	B	F	#	0.05	
Selenium	mg/L	02/14/2012	N001	167.5	-	187.5	0.0015	U	F	#	0.0015	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: NMW-1A WELL NAVAJO MONITORING WELL NMW-1A

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers		Lab QA	Detection Limit	Uncertainty
Selenium	mg/L	02/14/2012	N002	167.5	-	187.5	0.0015	U	F	#	0.0015	
Silica	mg/L	02/14/2012	N001	167.5	-	187.5	11		F	#	0.053	
Silica	mg/L	02/14/2012	N002	167.5	-	187.5	11.6		F	#	0.053	
Sodium	mg/L	02/14/2012	N001	167.5	-	187.5	10.2		F	#	0.1	
Sodium	mg/L	02/14/2012	N002	167.5	-	187.5	10.9		F	#	0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	167.5	-	187.5	260		F	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N003	167.5	-	187.5	5.63		F	#		
Sulfate	mg/L	02/14/2012	N001	167.5	-	187.5	12.6		F	#	0.1	
Sulfate	mg/L	02/14/2012	N002	167.5	-	187.5	12.6		F	#	0.1	
Temperature	C	02/14/2012	N001	167.5	-	187.5	15.12		F	#		
Total Dissolved Solids	mg/L	02/14/2012	N001	167.5	-	187.5	153		F	#	3.4	
Total Dissolved Solids	mg/L	02/14/2012	N002	167.5	-	187.5	164		F	#	3.4	
Turbidity	NTU	02/14/2012	N001	167.5	-	187.5	1.72		F	#		
Uranium	mg/L	02/14/2012	N001	167.5	-	187.5	0.00145		F	#	0.000067	
Uranium	mg/L	02/14/2012	N002	167.5	-	187.5	0.00145		F	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: NMW-2A WELL NAVAJO MONITORING WELL NMW-2A

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Data	Qualifiers QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	140.46	-	160.46	102		F	#		
Ammonia Total as N	mg/L	02/15/2012	N001	140.46	-	160.46	0.0264	J	UF	#	0.016	
Arsenic	mg/L	02/15/2012	N001	140.46	-	160.46	0.00493	B	F	#	0.0017	
Calcium	mg/L	02/15/2012	N001	140.46	-	160.46	33.8		F	#	0.05	
Chloride	mg/L	02/15/2012	N001	140.46	-	160.46	8.66		F	#	0.066	
Iron	mg/L	02/15/2012	N001	140.46	-	160.46	0.03	U	F	#	0.03	
Magnesium	mg/L	02/15/2012	N001	140.46	-	160.46	5.81		F	#	0.11	
Manganese	mg/L	02/15/2012	N001	140.46	-	160.46	0.002	U	F	#	0.002	
Molybdenum	mg/L	02/15/2012	N001	140.46	-	160.46	0.000611	B	UF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	140.46	-	160.46	3.09		F	#	0.05	
Oxidation Reduction Potential	mV	02/15/2012	N001	140.46	-	160.46	98.5		F	#		
pH	s.u.	02/15/2012	N001	140.46	-	160.46	7.77		F	#		
Potassium	mg/L	02/15/2012	N001	140.46	-	160.46	1.39	B	F	#	0.05	
Selenium	mg/L	02/15/2012	N001	140.46	-	160.46	0.0015	U	F	#	0.0015	
Silica	mg/L	02/15/2012	N001	140.46	-	160.46	11.5		F	#	0.053	
Sodium	mg/L	02/15/2012	N001	140.46	-	160.46	12.3		F	#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	140.46	-	160.46	262		F	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	140.46	-	160.46	6.6		F	#		
Sulfate	mg/L	02/15/2012	N001	140.46	-	160.46	13.4		F	#	0.1	
Temperature	C	02/15/2012	N001	140.46	-	160.46	14.54		F	#		
Total Dissolved Solids	mg/L	02/15/2012	N001	140.46	-	160.46	157		F	#	3.4	
Turbidity	NTU	02/15/2012	N001	140.46	-	160.46	1.3		F	#		
Uranium	mg/L	02/15/2012	N001	140.46	-	160.46	0.00142		F	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: NMW-3A WELL NAVAJO MONITORING WELL NMW-3A

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers		Lab	Detection Limit	Uncertainty
								Data	QA			
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	190.62	-	210.62	102		F	#		
Ammonia Total as N	mg/L	02/15/2012	N001	190.62	-	210.62	0.016	U	F	#	0.016	
Arsenic	mg/L	02/15/2012	N001	190.62	-	210.62	0.00252	B	F	#	0.0017	
Calcium	mg/L	02/15/2012	N001	190.62	-	210.62	34.6		F	#	0.05	
Chloride	mg/L	02/15/2012	N001	190.62	-	210.62	7.9		F	#	0.066	
Iron	mg/L	02/15/2012	N001	190.62	-	210.62	0.03	U	F	#	0.03	
Magnesium	mg/L	02/15/2012	N001	190.62	-	210.62	6.18		F	#	0.11	
Manganese	mg/L	02/15/2012	N001	190.62	-	210.62	0.002	U	F	#	0.002	
Molybdenum	mg/L	02/15/2012	N001	190.62	-	210.62	0.00047	B	UF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	190.62	-	210.62	3.08		F	#	0.05	
Oxidation Reduction Potential	mV	02/15/2012	N001	190.62	-	210.62	89.9		F	#		
pH	s.u.	02/15/2012	N001	190.62	-	210.62	7.92		F	#		
Potassium	mg/L	02/15/2012	N001	190.62	-	210.62	1.33	B	F	#	0.05	
Selenium	mg/L	02/15/2012	N001	190.62	-	210.62	0.0015	U	F	#	0.0015	
Silica	mg/L	02/15/2012	N001	190.62	-	210.62	11.7		F	#	0.053	
Sodium	mg/L	02/15/2012	N001	190.62	-	210.62	9.66		F	#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	190.62	-	210.62	255		F	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	190.62	-	210.62	5.69		F	#		
Sulfate	mg/L	02/15/2012	N001	190.62	-	210.62	11.4		F	#	0.1	
Temperature	C	02/15/2012	N001	190.62	-	210.62	14.59		F	#		
Total Dissolved Solids	mg/L	02/15/2012	N001	190.62	-	210.62	150		F	#	3.4	
Turbidity	NTU	02/15/2012	N001	190.62	-	210.62	1.67		F	#		
Uranium	mg/L	02/15/2012	N001	190.62	-	210.62	0.0013		F	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: NMW-4A WELL NAVAJO MONITORING WELL NMW-4A

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers		Lab	Detection Limit	Uncertainty
								Data	QA			
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	170.46	-	190.46	98		F	#		
Ammonia Total as N	mg/L	02/15/2012	N001	170.46	-	190.46	0.0229	J	UF	#	0.016	
Arsenic	mg/L	02/15/2012	N001	170.46	-	190.46	0.00258	B	F	#	0.0017	
Calcium	mg/L	02/15/2012	N001	170.46	-	190.46	35.4		F	#	0.05	
Chloride	mg/L	02/15/2012	N001	170.46	-	190.46	8.71		F	#	0.066	
Iron	mg/L	02/15/2012	N001	170.46	-	190.46	0.03	U	F	#	0.03	
Magnesium	mg/L	02/15/2012	N001	170.46	-	190.46	5.96		F	#	0.11	
Manganese	mg/L	02/15/2012	N001	170.46	-	190.46	0.002	U	F	#	0.002	
Molybdenum	mg/L	02/15/2012	N001	170.46	-	190.46	0.00039	B	UF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	170.46	-	190.46	3.47		F	#	0.05	
Oxidation Reduction Potential	mV	02/15/2012	N001	170.46	-	190.46	114.5		F	#		
pH	s.u.	02/15/2012	N001	170.46	-	190.46	7.95		F	#		
Potassium	mg/L	02/15/2012	N001	170.46	-	190.46	1.69	B	F	#	0.05	
Selenium	mg/L	02/15/2012	N001	170.46	-	190.46	0.0015	U	F	#	0.0015	
Silica	mg/L	02/15/2012	N001	170.46	-	190.46	11		F	#	0.053	
Sodium	mg/L	02/15/2012	N001	170.46	-	190.46	9.96		F	#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	170.46	-	190.46	256		F	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	170.46	-	190.46	5.48		F	#		
Sulfate	mg/L	02/15/2012	N001	170.46	-	190.46	12.5		F	#	0.1	
Temperature	C	02/15/2012	N001	170.46	-	190.46	13.37		F	#		
Total Dissolved Solids	mg/L	02/15/2012	N001	170.46	-	190.46	136		F	#	3.4	
Turbidity	NTU	02/15/2012	N001	170.46	-	190.46	3.96		F	#		
Uranium	mg/L	02/15/2012	N001	170.46	-	190.46	0.00134		F	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: NMW-5 WELL NAVAJO MONITORING WELL NMW-5; NMW-5 Herbert Chief

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Data	Qualifiers QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	34.95	-	54.95	91		F	#		
Ammonia Total as N	mg/L	02/15/2012	N001	34.95	-	54.95	0.0527	J	UF	#	0.016	
Arsenic	mg/L	02/15/2012	N001	34.95	-	54.95	0.0062		F	#	0.0017	
Calcium	mg/L	02/15/2012	N001	34.95	-	54.95	39.8		F	#	0.05	
Chloride	mg/L	02/15/2012	N001	34.95	-	54.95	18.2		F	#	0.66	
Iron	mg/L	02/15/2012	N001	34.95	-	54.95	0.03	U	F	#	0.03	
Magnesium	mg/L	02/15/2012	N001	34.95	-	54.95	9.03		F	#	0.11	
Manganese	mg/L	02/15/2012	N001	34.95	-	54.95	0.002	U	F	#	0.002	
Molybdenum	mg/L	02/15/2012	N001	34.95	-	54.95	0.00113	B	F	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	34.95	-	54.95	2.58		F	#	0.05	
Oxidation Reduction Potential	mV	02/15/2012	N001	34.95	-	54.95	57.9		F	#		
pH	s.u.	02/15/2012	N001	34.95	-	54.95	7.63		F	#		
Potassium	mg/L	02/15/2012	N001	34.95	-	54.95	1.7	B	F	#	0.05	
Selenium	mg/L	02/15/2012	N001	34.95	-	54.95	0.00277	B	F	#	0.0015	
Silica	mg/L	02/15/2012	N001	34.95	-	54.95	10.5		F	#	0.053	
Sodium	mg/L	02/15/2012	N001	34.95	-	54.95	21.4		F	#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	34.95	-	54.95	365		F	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	34.95	-	54.95	5.08		F	#		
Sulfate	mg/L	02/15/2012	N001	34.95	-	54.95	52.6		F	#	1	
Temperature	C	02/15/2012	N001	34.95	-	54.95	14.07		F	#		
Total Dissolved Solids	mg/L	02/15/2012	N001	34.95	-	54.95	200		F	#	3.4	
Turbidity	NTU	02/15/2012	N001	34.95	-	54.95	0.52		F	#		
Uranium	mg/L	02/15/2012	N001	34.95	-	54.95	0.00507		F	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: NMW-6S WELL NAVAJO MONITORING WELL NMW-6S

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Data	Qualifiers QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	167.62	-	187.62	110		F	#		
Ammonia Total as N	mg/L	02/14/2012	N001	167.62	-	187.62	0.0456	J	UF	#	0.016	
Arsenic	mg/L	02/14/2012	N001	167.62	-	187.62	0.00408	B	F	#	0.0017	
Calcium	mg/L	02/14/2012	N001	167.62	-	187.62	37		F	#	0.05	
Chloride	mg/L	02/14/2012	N001	167.62	-	187.62	10.3		F	#	0.066	
Iron	mg/L	02/14/2012	N001	167.62	-	187.62	0.03	U	F	#	0.03	
Magnesium	mg/L	02/14/2012	N001	167.62	-	187.62	6.44		F	#	0.11	
Manganese	mg/L	02/14/2012	N001	167.62	-	187.62	0.002	U	F	#	0.002	
Molybdenum	mg/L	02/14/2012	N001	167.62	-	187.62	0.000601	B	UF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	167.62	-	187.62	3.47		F	#	0.05	
Oxidation Reduction Potential	mV	02/14/2012	N001	167.62	-	187.62	122.2		F	#		
pH	s.u.	02/14/2012	N001	167.62	-	187.62	7.67		F	#		
Potassium	mg/L	02/14/2012	N001	167.62	-	187.62	1.58	B	F	#	0.05	
Selenium	mg/L	02/14/2012	N001	167.62	-	187.62	0.0015	U	F	#	0.0015	
Silica	mg/L	02/14/2012	N001	167.62	-	187.62	12.2		F	#	0.053	
Sodium	mg/L	02/14/2012	N001	167.62	-	187.62	9.86		F	#	0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	167.62	-	187.62	271		F	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	167.62	-	187.62	5.62		F	#		
Sulfate	mg/L	02/14/2012	N001	167.62	-	187.62	14.8		F	#	0.1	
Temperature	C	02/14/2012	N001	167.62	-	187.62	13.53		F	#		
Total Dissolved Solids	mg/L	02/14/2012	N001	167.62	-	187.62	170		F	#	3.4	
Turbidity	NTU	02/14/2012	N001	167.62	-	187.62	1.94		F	#		
Uranium	mg/L	02/14/2012	N001	167.62	-	187.62	0.0014		F	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: NMW-7D WELL NAVAJO MONITORING WELL NMW-7D

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers	Data	QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	278.19	-	283.19	98		QF	#			
Ammonia Total as N	mg/L	02/14/2012	N001	278.19	-	283.19	0.0172	J	UQF	#		0.016	
Arsenic	mg/L	02/14/2012	N001	278.19	-	283.19	0.00479	B	QF	#		0.0017	
Calcium	mg/L	02/14/2012	N001	278.19	-	283.19	28.1		QF	#		0.05	
Chloride	mg/L	02/14/2012	N001	278.19	-	283.19	6.09		QF	#		0.066	
Iron	mg/L	02/14/2012	N001	278.19	-	283.19	0.0622	B	QF	#		0.03	
Magnesium	mg/L	02/14/2012	N001	278.19	-	283.19	5.45		QF	#		0.11	
Manganese	mg/L	02/14/2012	N001	278.19	-	283.19	0.0063	B	QF	#		0.002	
Molybdenum	mg/L	02/14/2012	N001	278.19	-	283.19	0.000707	B	UQF	#		0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	278.19	-	283.19	3.16		QF	#		0.05	
Oxidation Reduction Potential	mV	02/14/2012	N001	278.19	-	283.19	112.2		QF	#			
pH	s.u.	02/14/2012	N001	278.19	-	283.19	7.6		QF	#			
Potassium	mg/L	02/14/2012	N001	278.19	-	283.19	1.98	B	QF	#		0.05	
Selenium	mg/L	02/14/2012	N001	278.19	-	283.19	0.0015	U	QF	#		0.0015	
Silica	mg/L	02/14/2012	N001	278.19	-	283.19	13.8		QF	#		0.053	
Sodium	mg/L	02/14/2012	N001	278.19	-	283.19	6.27		QF	#		0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	278.19	-	283.19	212		QF	#			
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	278.19	-	283.19	5.41		FQ	#			
Sulfate	mg/L	02/14/2012	N001	278.19	-	283.19	9.68		QF	#		0.1	
Temperature	C	02/14/2012	N001	278.19	-	283.19	12.98		QF	#			
Total Dissolved Solids	mg/L	02/14/2012	N001	278.19	-	283.19	133		QF	#		3.4	
Turbidity	NTU	02/14/2012	N001	278.19	-	283.19	2.92		QF	#			
Uranium	mg/L	02/14/2012	N001	278.19	-	283.19	0.0011		QF	#		0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: NMW-8S WELL NAVAJO MONITORING WELL NMW_8S

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Data	Qualifiers QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	149.43	-	169.43	82		F	#		
Ammonia Total as N	mg/L	02/14/2012	N001	149.43	-	169.43	0.0399	J	UF	#	0.016	
Arsenic	mg/L	02/14/2012	N001	149.43	-	169.43	0.00494	B	F	#	0.0017	
Calcium	mg/L	02/14/2012	N001	149.43	-	169.43	35		F	#	0.05	
Chloride	mg/L	02/14/2012	N001	149.43	-	169.43	9.16		F	#	0.066	
Iron	mg/L	02/14/2012	N001	149.43	-	169.43	0.03	U	F	#	0.03	
Magnesium	mg/L	02/14/2012	N001	149.43	-	169.43	5.82		F	#	0.11	
Manganese	mg/L	02/14/2012	N001	149.43	-	169.43	0.002	U	F	#	0.002	
Molybdenum	mg/L	02/14/2012	N001	149.43	-	169.43	0.000431	B	UF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	149.43	-	169.43	3.47		F	#	0.05	
Oxidation Reduction Potential	mV	02/14/2012	N001	149.43	-	169.43	116.6		F	#		
pH	s.u.	02/14/2012	N001	149.43	-	169.43	7.87		F	#		
Potassium	mg/L	02/14/2012	N001	149.43	-	169.43	1.76	B	F	#	0.05	
Selenium	mg/L	02/14/2012	N001	149.43	-	169.43	0.00175	B	F	#	0.0015	
Silica	mg/L	02/14/2012	N001	149.43	-	169.43	11.2		F	#	0.053	
Sodium	mg/L	02/14/2012	N001	149.43	-	169.43	11.3		F	#	0.1	
Specific Conductance	umhos/cm	02/14/2012	N001	149.43	-	169.43	258		F	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/14/2012	N002	149.43	-	169.43	5.49		F	#		
Sulfate	mg/L	02/14/2012	N001	149.43	-	169.43	13		F	#	0.1	
Temperature	C	02/14/2012	N001	149.43	-	169.43	14.87		F	#		
Total Dissolved Solids	mg/L	02/14/2012	N001	149.43	-	169.43	153		F	#	3.4	
Turbidity	NTU	02/14/2012	N001	149.43	-	169.43	1.89		F	#		
Uranium	mg/L	02/14/2012	N001	149.43	-	169.43	0.00156		F	#	0.000067	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: NMW-9D WELL NAVAJO MONITORING WELL NMW-9D

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Data	Qualifiers QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/15/2012	N001	265.52	-	270.52	124		QF	#		
Ammonia Total as N	mg/L	02/15/2012	N001	265.52	-	270.52	0.0323	J	UQF	#	0.016	
Arsenic	mg/L	02/15/2012	N001	265.52	-	270.52	0.00464	B	QF	#	0.0017	
Calcium	mg/L	02/15/2012	N001	265.52	-	270.52	39.2		QF	#	0.05	
Chloride	mg/L	02/15/2012	N001	265.52	-	270.52	10.5		QF	#	0.066	
Iron	mg/L	02/15/2012	N001	265.52	-	270.52	0.0546	B	QF	#	0.03	
Magnesium	mg/L	02/15/2012	N001	265.52	-	270.52	7.69		QF	#	0.11	
Manganese	mg/L	02/15/2012	N001	265.52	-	270.52	0.178		QF	#	0.002	
Molybdenum	mg/L	02/15/2012	N001	265.52	-	270.52	0.00259	B	QF	#	0.000165	
Nitrate + Nitrite as Nitrogen	mg/L	02/15/2012	N001	265.52	-	270.52	1.74		QF	#	0.05	
Oxidation Reduction Potential	mV	02/15/2012	N001	265.52	-	270.52	65.6		QF	#		
pH	s.u.	02/15/2012	N001	265.52	-	270.52	7.38		QF	#		
Potassium	mg/L	02/15/2012	N001	265.52	-	270.52	1.84	B	QF	#	0.05	
Selenium	mg/L	02/15/2012	N001	265.52	-	270.52	0.00174	B	QF	#	0.0015	
Silica	mg/L	02/15/2012	N001	265.52	-	270.52	14.2		QF	#	0.053	
Sodium	mg/L	02/15/2012	N001	265.52	-	270.52	21.4		QF	#	0.1	
Specific Conductance	umhos/cm	02/15/2012	N001	265.52	-	270.52	327		QF	#		
Stable isotope ratio S-34/S-32 in Sulfate	parts per thousand	02/15/2012	N002	265.52	-	270.52	11.14		FQ	#		
Sulfate	mg/L	02/15/2012	N001	265.52	-	270.52	31.7		QF	#	0.1	
Temperature	C	02/15/2012	N001	265.52	-	270.52	12.73		QF	#		
Total Dissolved Solids	mg/L	02/15/2012	N001	265.52	-	270.52	207		QF	#	3.4	
Turbidity	NTU	02/15/2012	N001	265.52	-	270.52	4.21		QF	#		
Uranium	mg/L	02/15/2012	N001	265.52	-	270.52	0.00147		QF	#	0.000067	

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
>	Result above upper detection limit.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
C	Pesticide result confirmed by GC-MS.
D	Analyte determined in diluted sample.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
J	Estimated
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z	Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:

F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.	J	Estimated value.
L	Less than 3 bore volumes purged prior to sampling.	Q	Qualitative result due to sampling technique.	R	Unusable result.
U	Parameter analyzed for but was not detected.	X	Location is undefined.		

QA QUALIFIER:

#	Validated according to quality assurance guidelines.

Treatment System
and
Surface Water Quality Data

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General Water Quality Data by Location (USEE105) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 1202 TREATMENT SYSTEM Soft Water Feed Tank

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Data	Qualifiers QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N002	0	-	0	342			0		
Ammonia Total as N	mg/L	02/14/2012	N001	0	-	0	13.3			#	0.8	
Ammonia Total as N	mg/L	02/14/2012	N002	0	-	0	17			0	1	
Calcium	mg/L	02/14/2012	N001	0	-	0	411			#	0.05	
Calcium	mg/L	02/14/2012	N002	0	-	0	426			0	0.01	
Chloride	mg/L	02/14/2012	N001	0	-	0	75			#	0.66	
Chlorine	mg/L	02/14/2012	N002	0	-	0	81			0	0.5	
Molybdenum	mg/L	02/14/2012	N001	0	-	0	0.0578	N		#	0.000825	
Molybdenum	mg/L	02/14/2012	N002	0	-	0	0.047			0	0.005	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	0	-	0	103			#	5	
Nitrate as Nitrogen	mg/L	02/14/2012	N002	0	-	0	127			0	0.1	
Oxidation Reduction Potential	mV	02/14/2012	N002	0	-	0	130			0		
pH	s.u.	02/14/2012	N002	0	-	0	6.47			0		
Selenium	mg/L	02/14/2012	N001	0	-	0	0.0243			#	0.0015	
Selenium	mg/L	02/14/2012	N002	0	-	0	0.0299			0	0.01	
Specific Conductance	umhos/cm	02/14/2012	N002	0	-	0	3540			0		
Sulfate	mg/L	02/14/2012	N001	0	-	0	1310			#	10	
Sulfate	mg/L	02/14/2012	N002	0	-	0	1325			0	0.5	
Temperature	C	02/14/2012	N002	0	-	0	10.5			0		
Total Dissolved Solids	mg/L	02/14/2012	0001	0	-	0	3110			0	10	
Turbidity	NTU	02/14/2012	N002	0	-	0	0.25			0		
Uranium	mg/L	02/14/2012	N001	0	-	0	0.368			#	0.000335	
Uranium	mg/L	02/14/2012	N002	0	-	0	0.3157			0	0.0002	

General Water Quality Data by Location (USEE105) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 1205 TREATMENT SYSTEM Distillate from Evaporator

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Data	Qualifiers QA	Lab	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N002	0	-	0	0			0		
Ammonia Total as N	mg/L	02/14/2012	N001	0	-	0	3.73			#	0.16	
Ammonia Total as N	mg/L	02/14/2012	N002	0	-	0	7			0	1	
Calcium	mg/L	02/14/2012	N001	0	-	0	0.114	B		#	0.05	
Calcium	mg/L	02/14/2012	N002	0	-	0	0.058			0	0.01	
Chloride	mg/L	02/14/2012	N001	0	-	0	1.48			#	0.066	
Chlorine	mg/L	02/14/2012	N002	0	-	0	1.5			0	0.5	
Molybdenum	mg/L	02/14/2012	N001	0	-	0	0.00131	BN		#	0.000165	
Molybdenum	mg/L	02/14/2012	N002	0	-	0	0.005	U		0	0.005	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	0	-	0	1.54			#	0.05	
Nitrate as Nitrogen	mg/L	02/14/2012	N002	0	-	0	3			0	0.1	
Oxidation Reduction Potential	mV	02/14/2012	N002	0	-	0	132			0		
pH	s.u.	02/14/2012	N002	0	-	0	6.03			0		
Selenium	mg/L	02/14/2012	N001	0	-	0	0.0015	U		#	0.0015	
Selenium	mg/L	02/14/2012	N002	0	-	0	0.01	U		0	0.01	
Specific Conductance	umhos/cm	02/14/2012	N002	0	-	0	128			0		
Sulfate	mg/L	02/14/2012	N001	0	-	0	25			#	0.1	
Sulfate	mg/L	02/14/2012	N002	0	-	0	23.9			0	0.5	
Temperature	C	02/14/2012	N002	0	-	0	17.4			0		
Total Dissolved Solids	mg/L	02/14/2012	0001	0	-	0	40			0	10	
Turbidity	NTU	02/14/2012	N002	0	-	0	0.8			0		
Uranium	mg/L	02/14/2012	N001	0	-	0	0.00214			#	0.000067	
Uranium	mg/L	02/14/2012	N002	0	-	0	0.0015			0	0.0002	

General Water Quality Data by Location (USEE105) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 1206 TREATMENT SYSTEM Brine from Evaporator

Parameter	Units	Sample ID	Date	Depth Range (Ft BLS)			Result	Qualifiers Data	Lab QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N002	0	-	0	15		0		
Ammonia Total as N	mg/L	02/14/2012	N001	0	-	0	4.6		#	0.16	
Ammonia Total as N	mg/L	02/14/2012	N002	0	-	0	10		0	1	
Calcium	mg/L	02/14/2012	N001	0	-	0	34.1		#	0.05	
Calcium	mg/L	02/14/2012	N002	0	-	0	37.3		0	0.01	
Chloride	mg/L	02/14/2012	N001	0	-	0	1480		#	13.2	
Chlorine	mg/L	02/14/2012	N002	0	-	0	1320		0	0.5	
Molybdenum	mg/L	02/14/2012	N001	0	-	0	0.799	N	#	0.00165	
Molybdenum	mg/L	02/14/2012	N002	0	-	0	0.684		0	0.005	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	N001	0	-	0	1450		#	25	
Nitrate as Nitrogen	mg/L	02/14/2012	N002	0	-	0	1738		0	0.1	
Oxidation Reduction Potential	mV	02/14/2012	N002	0	-	0	185		0		
pH	s.u.	02/14/2012	N002	0	-	0	6.38		0		
Selenium	mg/L	02/14/2012	N001	0	-	0	0.336		#	0.015	
Selenium	mg/L	02/14/2012	N002	0	-	0	0.289		0	0.01	
Specific Conductance	umhos/cm	02/14/2012	N002	0	-	0	41700		0		
Sulfate	mg/L	02/14/2012	N001	0	-	0	20600		#	200	
Sulfate	mg/L	02/14/2012	N002	0	-	0	22133		0	0.5	
Temperature	C	02/14/2012	N002	0	-	0	21.3		0		
Total Dissolved Solids	mg/L	02/14/2012	0001	0	-	0	43780		0	10	
Turbidity	NTU	02/14/2012	N002	0	-	0	0.67		0		
Uranium	mg/L	02/14/2012	N001	0	-	0	0.825		#	0.00067	
Uranium	mg/L	02/14/2012	N002	0	-	0	0.7377		0	0.0002	

Surface Water Quality Data by Location (USEE102) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 1569 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Data	Qualifiers QA	Lab #	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	0			#		
Arsenic	mg/L	02/14/2012	0001	1.33			#	0.034	
Calcium	mg/L	02/14/2012	0001	692			#	0.5	
Chloride	mg/L	02/14/2012	0001	116000			#	660	
Iron	mg/L	02/14/2012	0001	22.1			#	0.3	
Magnesium	mg/L	02/14/2012	0001	10400			#	55	
Manganese	mg/L	02/14/2012	0001	206			#	1	
Molybdenum	mg/L	02/14/2012	0001	1.56			#	0.0033	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	0001	6600			#	50	
Oxidation Reduction Potential	mV	02/14/2012	N001	525			#		
pH	s.u.	02/14/2012	N001	0.96			#		
Potassium	mg/L	02/14/2012	0001	487			#	25	
Selenium	mg/L	02/14/2012	0001	1.22			#	0.03	
Sodium	mg/L	02/14/2012	0001	79800			#	50	
Specific Conductance	umhos/cm	02/14/2012	N001	208700			#		
Sulfate	mg/L	02/14/2012	0001	18200			#	100	
Temperature	C	02/14/2012	N001	7.1			#		
Total Dissolved Solids	mg/L	02/14/2012	0001	253000			#	7.93	
Uranium	mg/L	02/14/2012	0001	5.17			#	0.0067	

Surface Water Quality Data by Location (USEE102) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 1570 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Data	Qualifiers Lab QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	0		#		
Arsenic	mg/L	02/14/2012	0001	1.3		#	0.034	
Calcium	mg/L	02/14/2012	0001	695		#	0.5	
Chloride	mg/L	02/14/2012	0001	116000		#	660	
Iron	mg/L	02/14/2012	0001	22		#	0.3	
Magnesium	mg/L	02/14/2012	0001	9760		#	55	
Manganese	mg/L	02/14/2012	0001	194		#	1	
Molybdenum	mg/L	02/14/2012	0001	1.55		#	0.0033	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	0001	7050		#	50	
Oxidation Reduction Potential	mV	02/14/2012	N001	470		#		
pH	s.u.	02/14/2012	N001	0.92		#		
Potassium	mg/L	02/14/2012	0001	482		#	25	
Selenium	mg/L	02/14/2012	0001	1.16		#	0.03	
Sodium	mg/L	02/14/2012	0001	75300		#	50	
Specific Conductance	umhos/cm	02/14/2012	N001	198000		#		
Sulfate	mg/L	02/14/2012	0001	17200		#	100	
Temperature	C	02/14/2012	N001	7		#		
Total Dissolved Solids	mg/L	02/14/2012	0001	245000		#	7.93	
Uranium	mg/L	02/14/2012	0001	4.95		#	0.0067	

Surface Water Quality Data by Location (USEE102) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 1576 SURFACE LOCATION Evaporation pond, near discharge pipe

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Data	Qualifiers QA	Lab Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	0		#		
Arsenic	mg/L	02/14/2012	0001	1.15		#	0.034	
Calcium	mg/L	02/14/2012	0001	1050		#	0.5	
Chloride	mg/L	02/14/2012	0001	101000		#	660	
Iron	mg/L	02/14/2012	0001	21.4		#	0.3	
Magnesium	mg/L	02/14/2012	0001	8770		#	55	
Manganese	mg/L	02/14/2012	0001	177		#	1	
Molybdenum	mg/L	02/14/2012	0001	1.36		#	0.0033	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	0001	6150		#	50	
Oxidation Reduction Potential	mV	02/14/2012	N001	560		#		
pH	s.u.	02/14/2012	N001	1.14		#		
Potassium	mg/L	02/14/2012	0001	433		#	25	
Selenium	mg/L	02/14/2012	0001	0.983		#	0.03	
Sodium	mg/L	02/14/2012	0001	68000		#	50	
Specific Conductance	umhos/cm	02/14/2012	N001	204800		#		
Sulfate	mg/L	02/14/2012	0001	18000		#	100	
Temperature	C	02/14/2012	N001	9.4		#		
Total Dissolved Solids	mg/L	02/14/2012	0001	228000		#	7.93	
Uranium	mg/L	02/14/2012	0001	4.48		#	0.0067	

Surface Water Quality Data by Location (USEE102) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location: 1577 SURFACE LOCATION Evaporation pond, approx. 30 feet east of discharge pipe

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Data	Qualifiers QA	Lab Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/14/2012	N001	0		#		
Arsenic	mg/L	02/14/2012	0001	1.11		#	0.034	
Calcium	mg/L	02/14/2012	0001	883		#	0.5	
Chloride	mg/L	02/14/2012	0001	105000		#	660	
Iron	mg/L	02/14/2012	0001	20.5		#	0.3	
Magnesium	mg/L	02/14/2012	0001	6430		#	55	
Manganese	mg/L	02/14/2012	0001	130		#	1	
Molybdenum	mg/L	02/14/2012	0001	1.37		#	0.0033	
Nitrate + Nitrite as Nitrogen	mg/L	02/14/2012	0001	6800		#	50	
Oxidation Reduction Potential	mV	02/14/2012	N001	540		#		
pH	s.u.	02/14/2012	N001	1.1		#		
Potassium	mg/L	02/14/2012	0001	312		#	25	
Selenium	mg/L	02/14/2012	0001	0.989		#	0.03	
Sodium	mg/L	02/14/2012	0001	50100		#	50	
Specific Conductance	umhos/cm	02/14/2012	N001	204100		#		
Sulfate	mg/L	02/14/2012	0001	19600		#	100	
Temperature	C	02/14/2012	N001	8.6		#		
Total Dissolved Solids	mg/L	02/14/2012	0001	97000		#	3.4	
Uranium	mg/L	02/14/2012	0001	4.52		#	0.0067	

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
>	Result above upper detection limit.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
C	Pesticide result confirmed by GC-MS.
D	Analyte determined in diluted sample.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
J	Estimated
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).

P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z	Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:

F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.	J	Estimated value.
L	Less than 3 bore volumes purged prior to sampling.	Q	Qualitative result due to sampling technique.	R	Unusable result.
U	Parameter analyzed for but was not detected.	X	Location is undefined.		

QA QUALIFIER:

#	Validated according to quality assurance guidelines.

Static Water Level Data

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STATIC WATER LEVELS (USEE700) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0251		5061.25	02/14/2012	16:15:27	93.54	4967.71	
0252		5061.3	02/14/2012	17:03:42	71.45	4989.85	
0258		5055.56	02/14/2012	12:34:38	98.75	4956.81	
0261		5069.69	02/15/2012	11:07:00	129.09	4940.6	
0262		5061.99	02/14/2012	13:48:13	51.35	5010.64	
0263		5063.1	02/14/2012	14:19:38	56.41	5006.69	
0264		5062.19	02/14/2012	14:49:06	94.69	4967.5	
0265		5053.88	02/15/2012	11:43:31	80.42	4973.46	
0266		5053.32	02/15/2012	11:00:06	103.49	4949.83	
0267		5053.4	02/15/2012	14:08:37	62.52	4990.88	
0268		5067.24	02/14/2012	13:25:11	103.14	4964.1	
0271		5046.72	02/13/2012	17:11:00	55	4991.72	
0272		5064.24	02/15/2012	09:35:39	99.45	4964.79	
0273		5064.74	02/14/2012	15:45:09	100.45	4964.29	
0274		5064.42	02/14/2012	12:05:39	93	4971.42	
0275		5062.64	02/14/2012	11:35:27	80.27	4982.37	
0276		5067.55	02/14/2012	10:55:38	91.49	4976.06	
0277		4982.35	02/15/2012	14:49:00	38.71	4943.64	
0278		4956.09	02/14/2012	11:10:00	23.68	4932.41	
0279		4951.04	02/15/2012	15:00:00	25.67	4925.37	
0280		4951.52	02/15/2012	15:02:00	27.6	4923.92	
0281		5051	02/15/2012	13:35:28	70.8	4980.2	
0282		5060.04	02/15/2012	10:08:40	83.24	4976.8	
0283		5057.97	02/15/2012	11:49:00			B
0284		5098.72	02/13/2012	17:36:00	29.39	5069.33	
0285		5096.47	02/13/2012	17:55:00			D
0286		5063.99	02/15/2012	08:40:19	75.31	4988.68	
0287		5065.65	02/14/2012	15:10:28	59.38	5006.27	
0288		5072.54	02/15/2012	10:00:12	56.29	5016.25	
0289		5070.82	02/15/2012	10:15:40	57.4	5013.42	
0290		5068.91	02/15/2012	11:40:06	87.88	4981.03	
0683		5070.64	02/15/2012	11:22:00	100.69	4969.95	
0684		5070.05	02/15/2012	11:49:00	75.41	4994.64	
0685		5072.44	02/13/2012	17:40:00	50.38	5022.06	
0686		5107.97	02/13/2012	17:27:00	67.25	5040.72	
0687		5109.82	02/15/2012	11:59:00	55.05	5054.77	
0688		5106.98	02/15/2012	11:55:00	62.54	5044.44	
0689		4981.63	02/14/2012	08:42:00	40.3	4941.33	

STATIC WATER LEVELS (USEE700) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0690		4950.87	02/15/2012	15:01:00	25.19	4925.68	
0691		4979.41	02/14/2012	11:55:10	42.32	4937.09	
0692		4953.31	02/15/2012	15:05:00	26.58	4926.73	
0695		4976.83	02/15/2012	15:00:00	50.67	4926.16	
0901	U	5105.46	02/15/2012	13:25:16	47.91	5057.55	
0903	D	4983.33	02/15/2012	14:46:00	33.3	4950.03	
0906	O	5062.1	02/15/2012	08:10:29	49.76	5012.34	
0908	D	5058.14	02/15/2012	08:43:52	59.54	4998.60	
0909	D	5057.17	02/14/2012	15:36:00			B
0910	U	5106.7	02/15/2012	12:45:25	51.08	5055.62	
0911	U	5106.96	02/15/2012	12:48:00	47.29	5059.67	
0912	D	5059.97	02/13/2012	17:26:00	63.08	4996.89	
0913	D	5060.16	02/13/2012	17:15:00	67.09	4993.07	
0914	D	5070.1	02/15/2012	11:08:00	112.75	4957.35	
0915	D	5070.84	02/15/2012	11:12:00	109.96	4960.88	
0916	D	5070	02/15/2012	11:15:00	119.78	4950.22	
0917	D	5048.02	02/13/2012	17:06:00	69.44	4978.58	
0918	D	5049.63	02/13/2012	17:09:00			D
0919	D	5048.56	02/13/2012	17:04:00	145.98	4902.58	
0920	D	4982.97	02/15/2012	14:50:00	38.81	4944.16	
0921	D	4979.08	02/15/2012	14:44:00	38.67	4940.41	
0929	D	5060.82	02/15/2012	14:39:48	61.86	4998.96	
0930	D	4954.96	02/14/2012	11:08:01	21.35	4933.61	
0932	D	5057.32	02/14/2012	15:29:30	105.53	4951.79	
0934	D	5059.73	02/15/2012	09:11:56	77.75	4981.98	
0940	D	5064.77	02/15/2012	08:50:19	60.79	5003.98	
0941	D	5065.97	02/14/2012	15:30:27	57.21	5008.76	
0943	U	5098.05	02/13/2012	17:52:00	53.05	5045.00	
0945	U	5140.49	02/15/2012	12:07:00	90.54	5049.95	
0946	C	5100.5	02/13/2012	17:39:00	53.04	5047.46	
0947	U	5097.01	02/15/2012	11:51:00	69.02	5027.99	
0968	U	5107	02/15/2012	12:50:00	52.05	5054.95	
1003		4976.58	02/14/2012	11:53:00	39.76	4936.82	
1004		4961.55	02/15/2012	15:05:00	25.38	4936.17	
1005		4947.83	02/15/2012	14:56:00	22.3	4925.53	
1006		4947.08	02/14/2012	11:20:00	17.32	4929.76	
1007		4958.56	02/15/2012	14:52:00	22.9	4935.66	
1108		5059.62	02/14/2012	08:10:00	38.49	5021.13	
1117		5054.95	02/15/2012	09:30:00	108.02	4946.93	

STATIC WATER LEVELS (USEE700) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/25/2012

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
1118		5055.11	02/14/2012	09:40:00	106.14	4948.97	
1129			02/15/2012	13:00:00	89.71		
1133			02/15/2012	12:50:00	89.79		
NMW-1A		5223.78	02/14/2012	10:35:34	114	5109.78	
NMW-2A		5121.69	02/15/2012	09:30:00	70.63	5051.06	
NMW-3A		5168.51	02/15/2012	10:05:54	112.82	5055.69	
NMW-4A		5137.44	02/15/2012	08:45:46	80.59	5056.85	
NMW-5		4985.85	02/15/2012	12:00:17	16.73	4969.12	
NMW-6S		5218.49	02/14/2012	09:40:40	107.88	5110.61	
NMW-7D		5219.67	02/14/2012	16:15:52	117.76	5101.91	
NMW-8S		5188.16	02/14/2012	11:25:58	88.85	5099.31	
NMW-9D		5188.76	02/15/2012	11:10:07	89.91	5098.85	

FLOW CODES:

B	BACKGROUND
C	CROSS GRADIENT
D	DOWN GRADIENT
F	OFF SITE
N	UNKNOWN
O	ON SITE
U	UPGRADIENT

WATER LEVEL FLAGS:

D	Dry
F	Flowing
B	Below top of pump

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Time-Concentration Graphs

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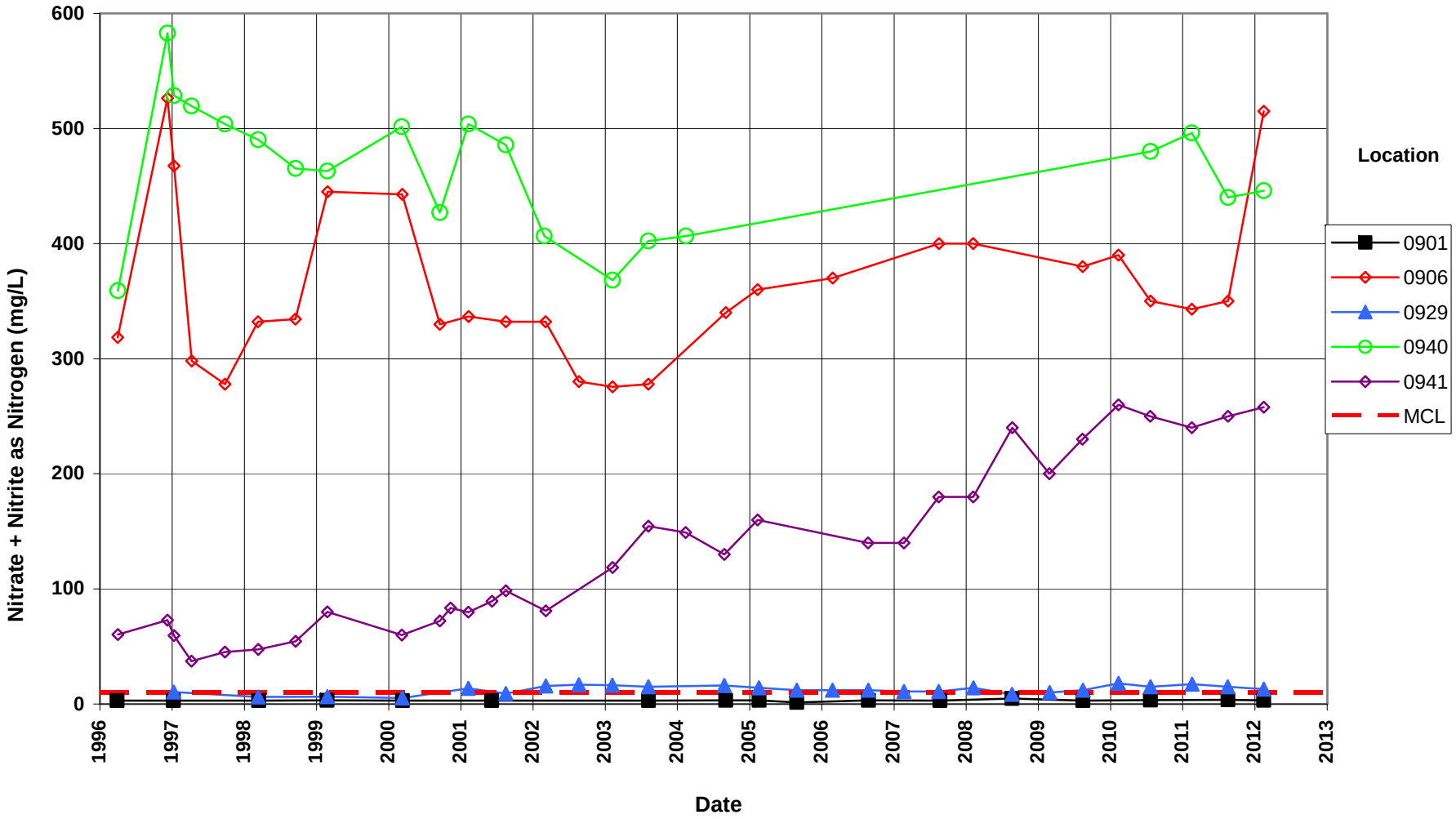
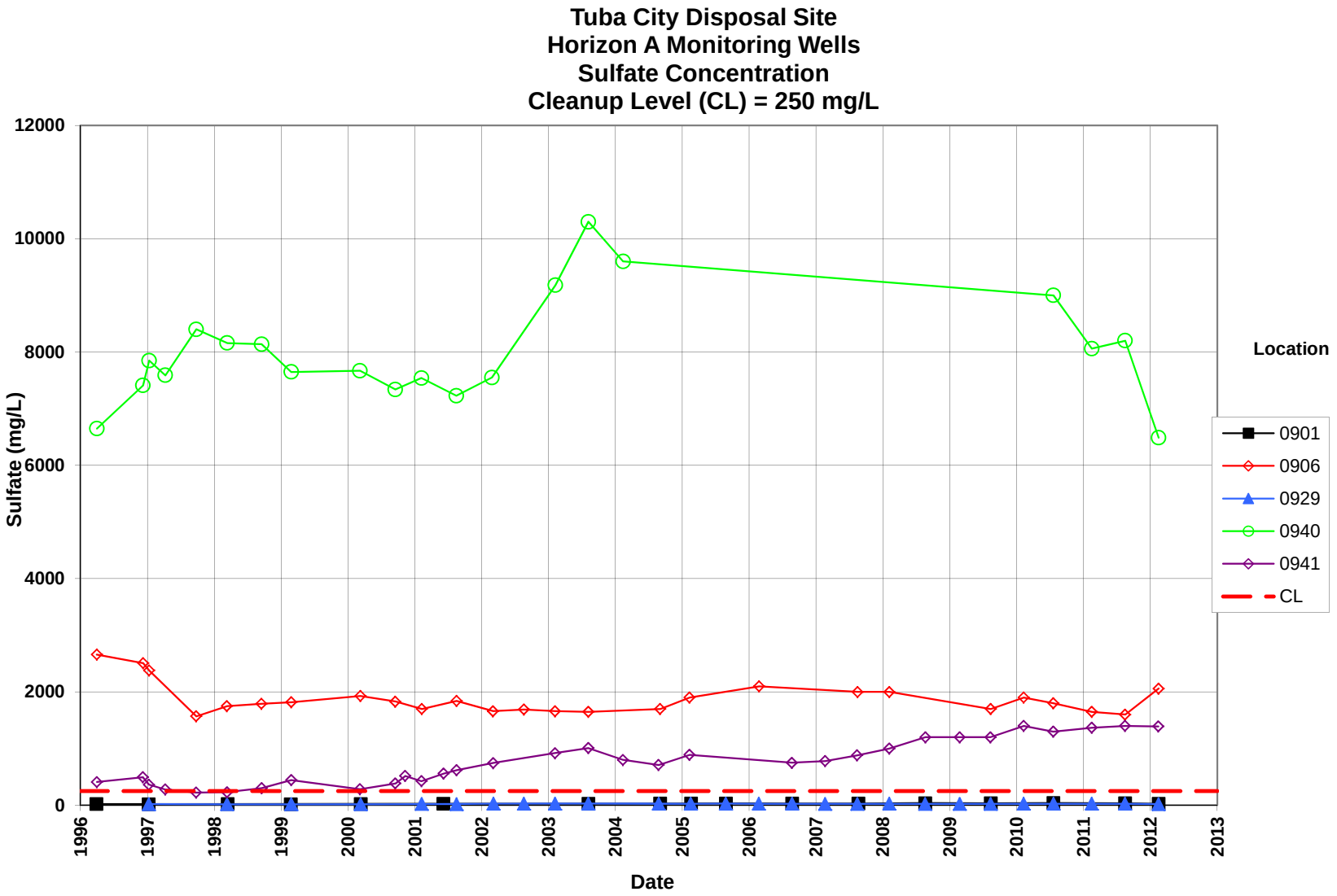
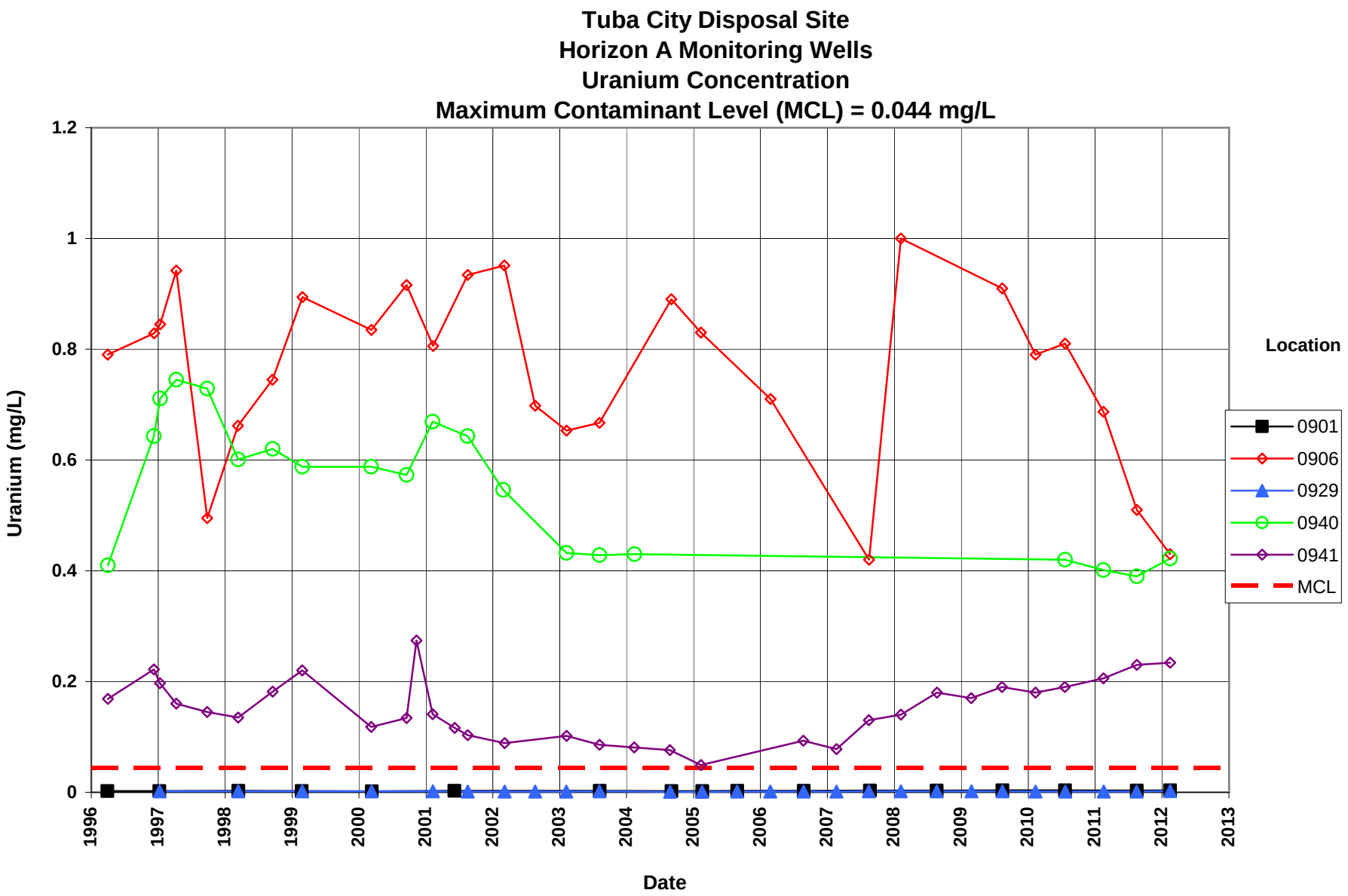
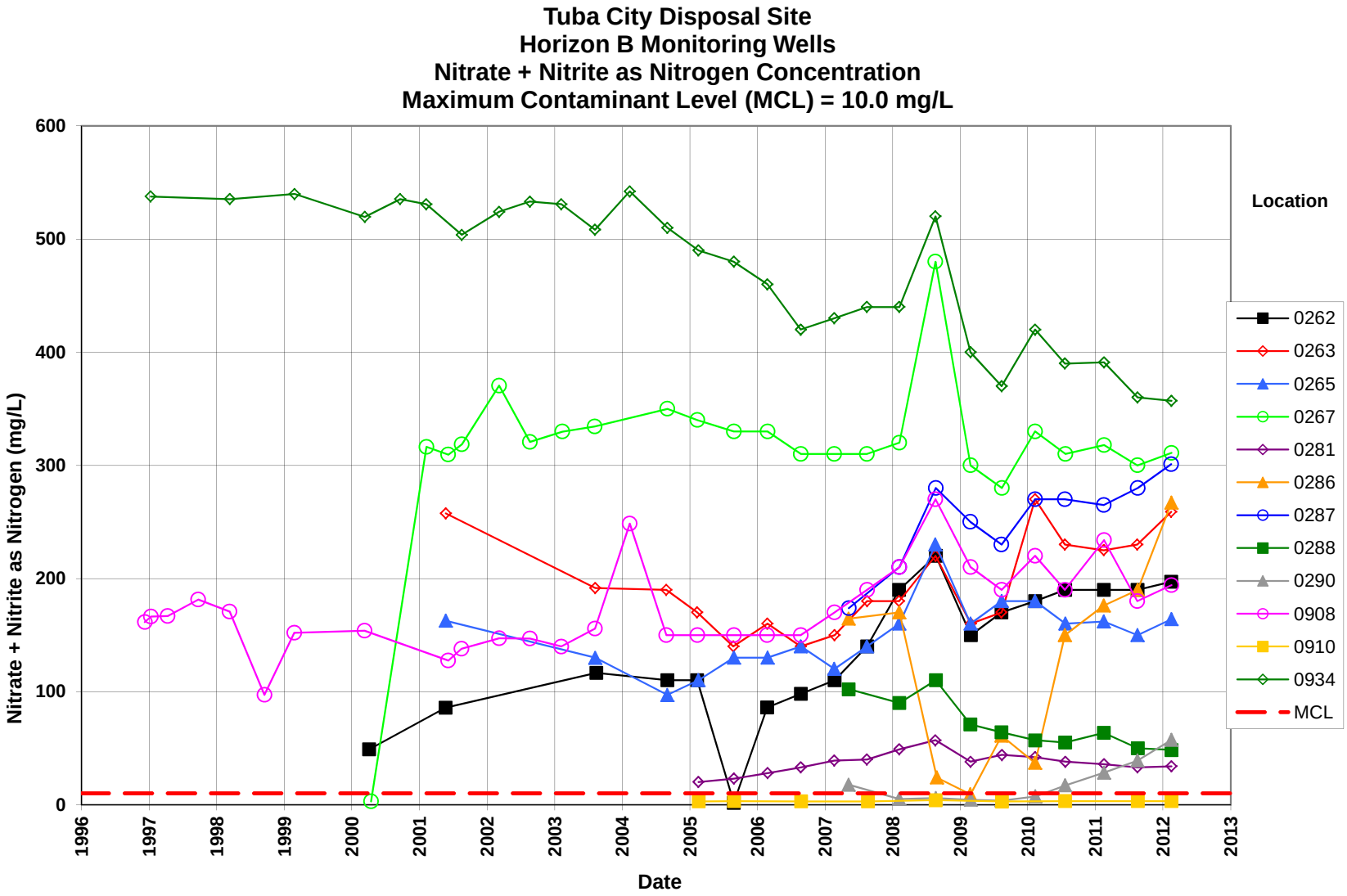
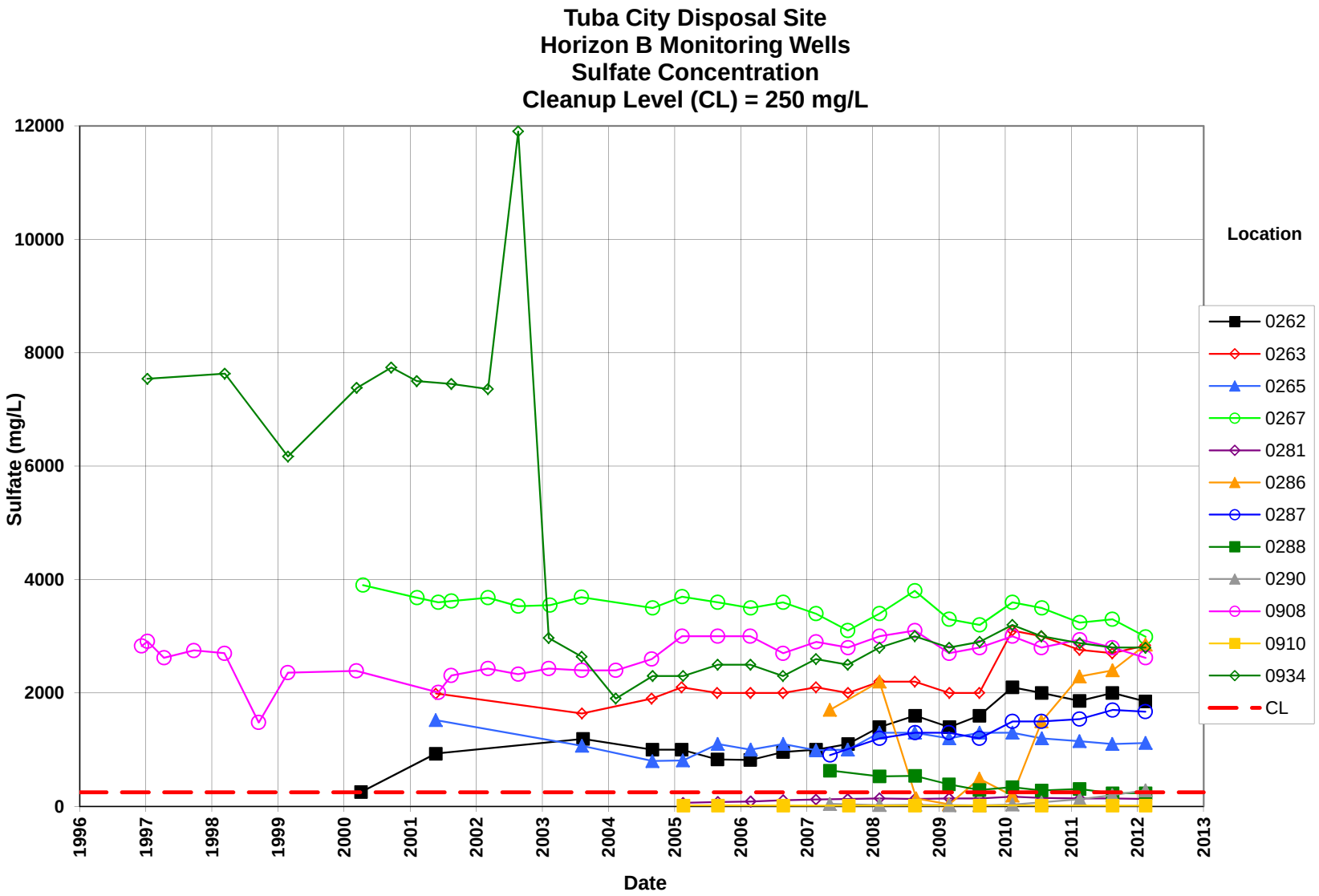
Tuba City Disposal Site
Horizon A Monitoring Wells
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level (MCL) = 10.0 mg/L

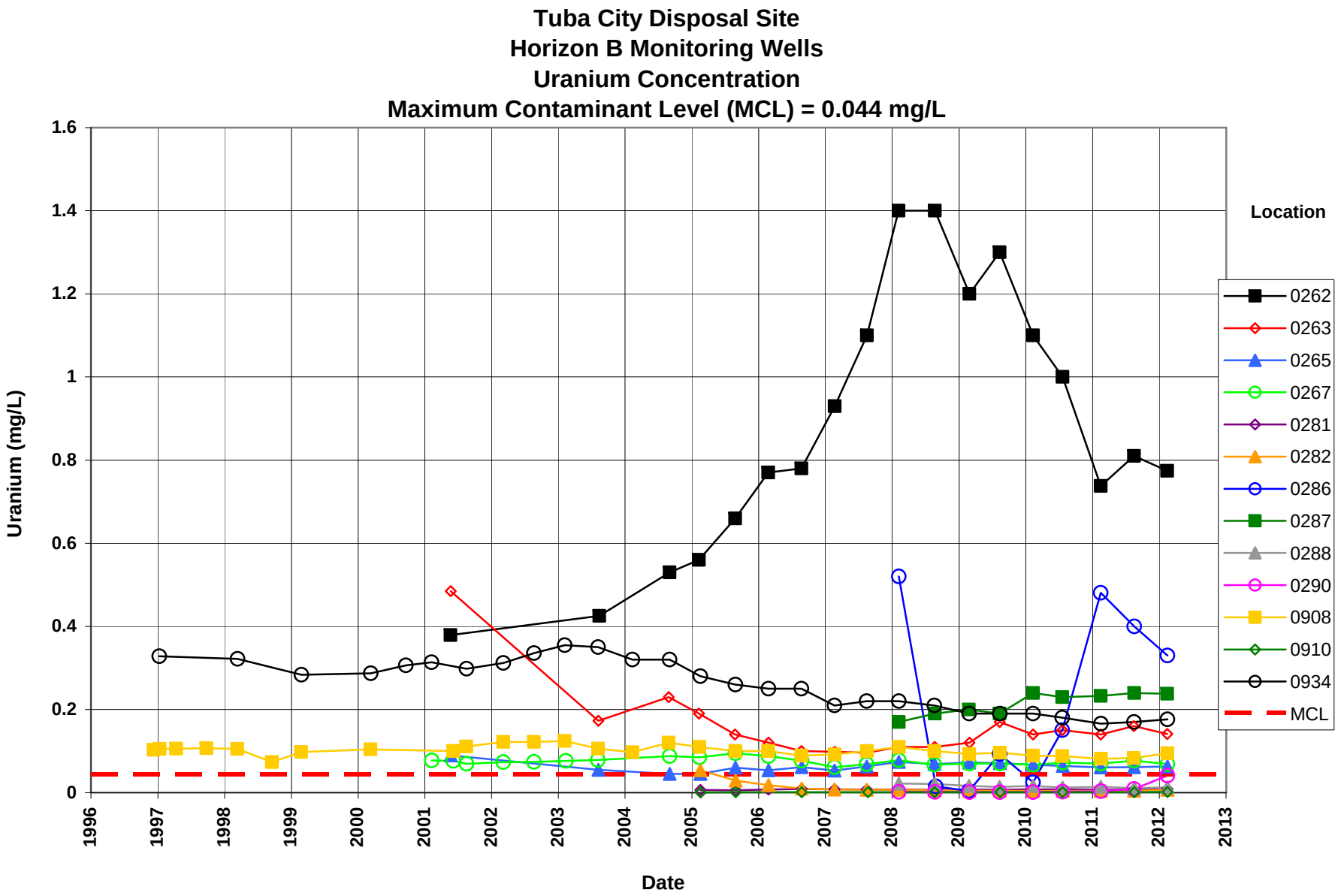


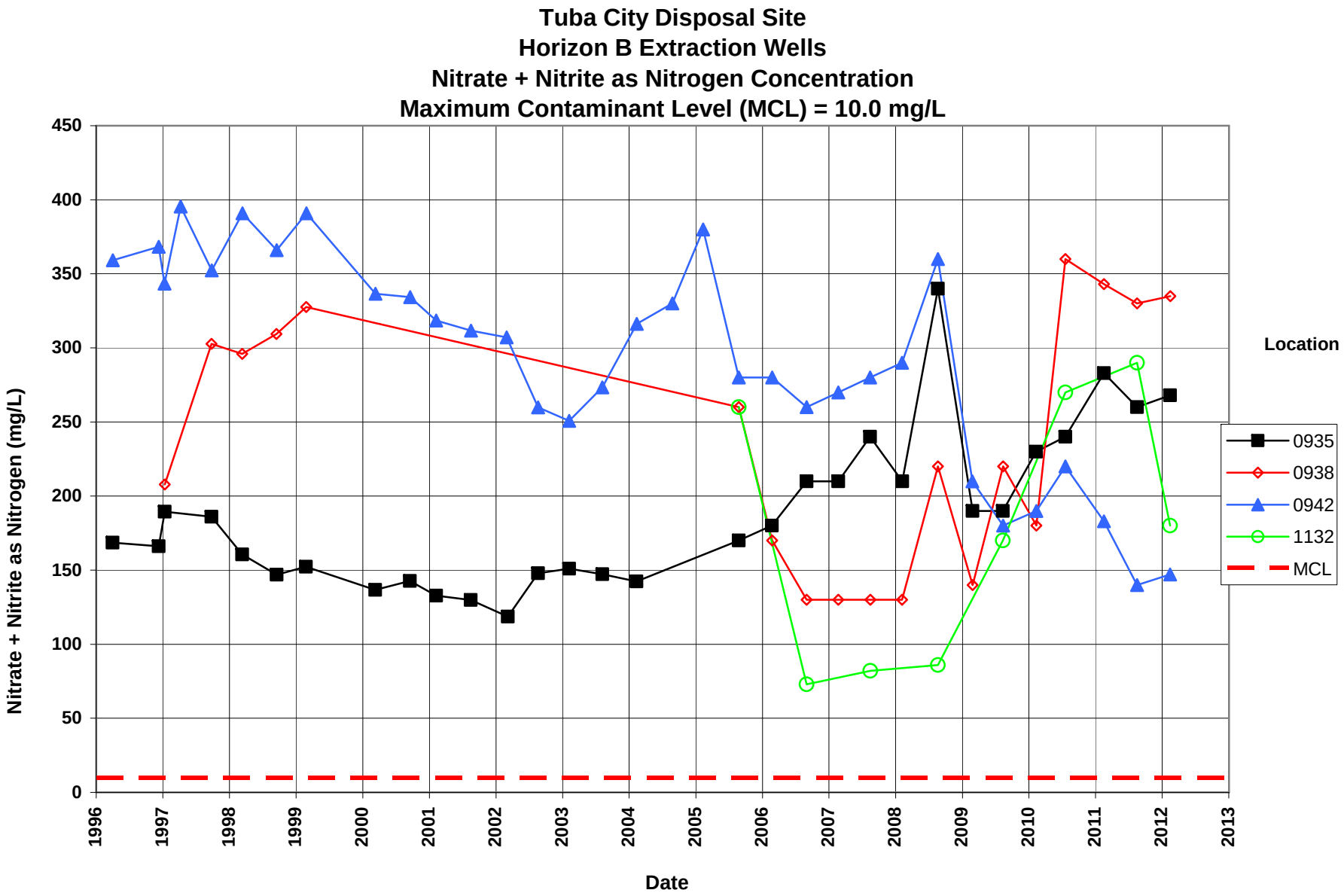

Tuba City Disposal Site
Horizon A Monitoring Wells
Sulfate Concentration
Cleanup Level (CL) = 250 mg/L
Sulfate (mg/L)
12000
10000
8000
6000
4000
2000
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
Date
Location
0901
0906
0929
0940
0941
CL

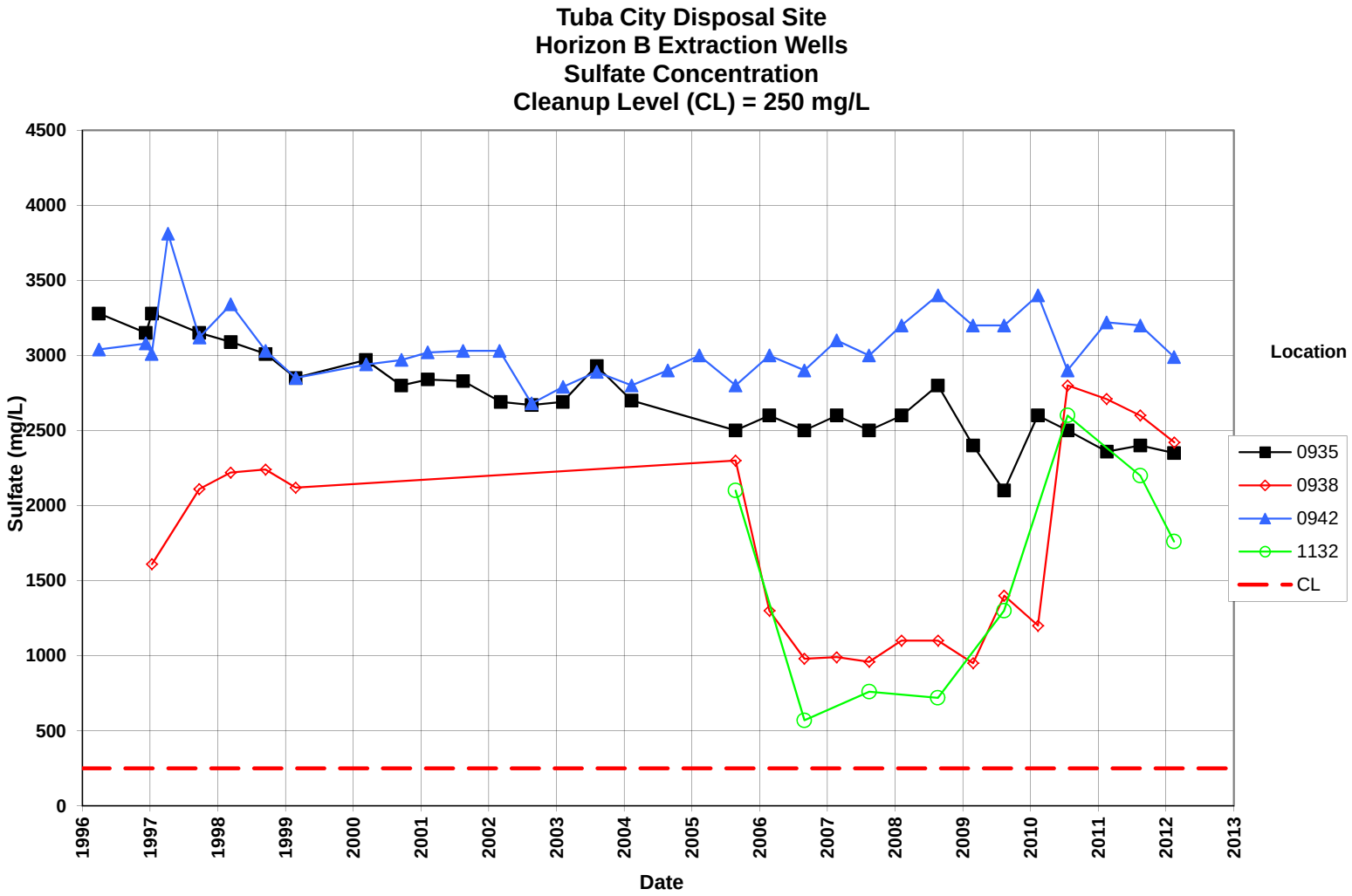

Tuba City Disposal Site
Horizon A Monitoring Wells
Uranium Concentration
Maximum Contaminant Level (MCL) = 0.044 mg/L
Uranium (mg/L)
1.2
1
0.8
0.6
0.4
0.2
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
Date
Location
0901
0906
0929
0940
0941
MCL

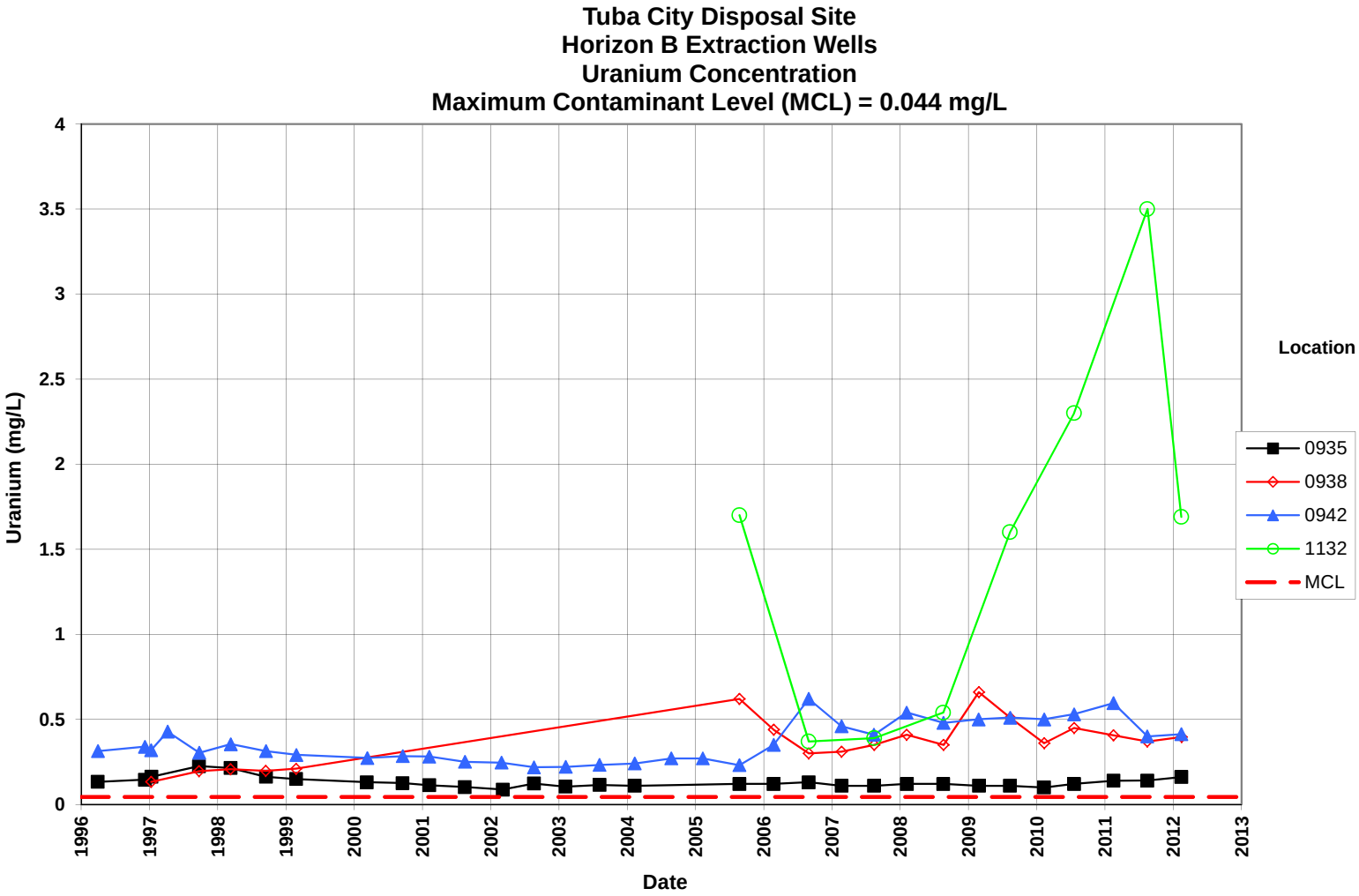

Tuba City Disposal Site
Horizon B Monitoring Wells
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level (MCL) = 10.0 mg/L
Nitrate + Nitrite as Nitrogen (mg/L)
Date
Location
0262
0263
0265
0267
0281
0286
0287
0288
0290
0908
0910
0934
MCL

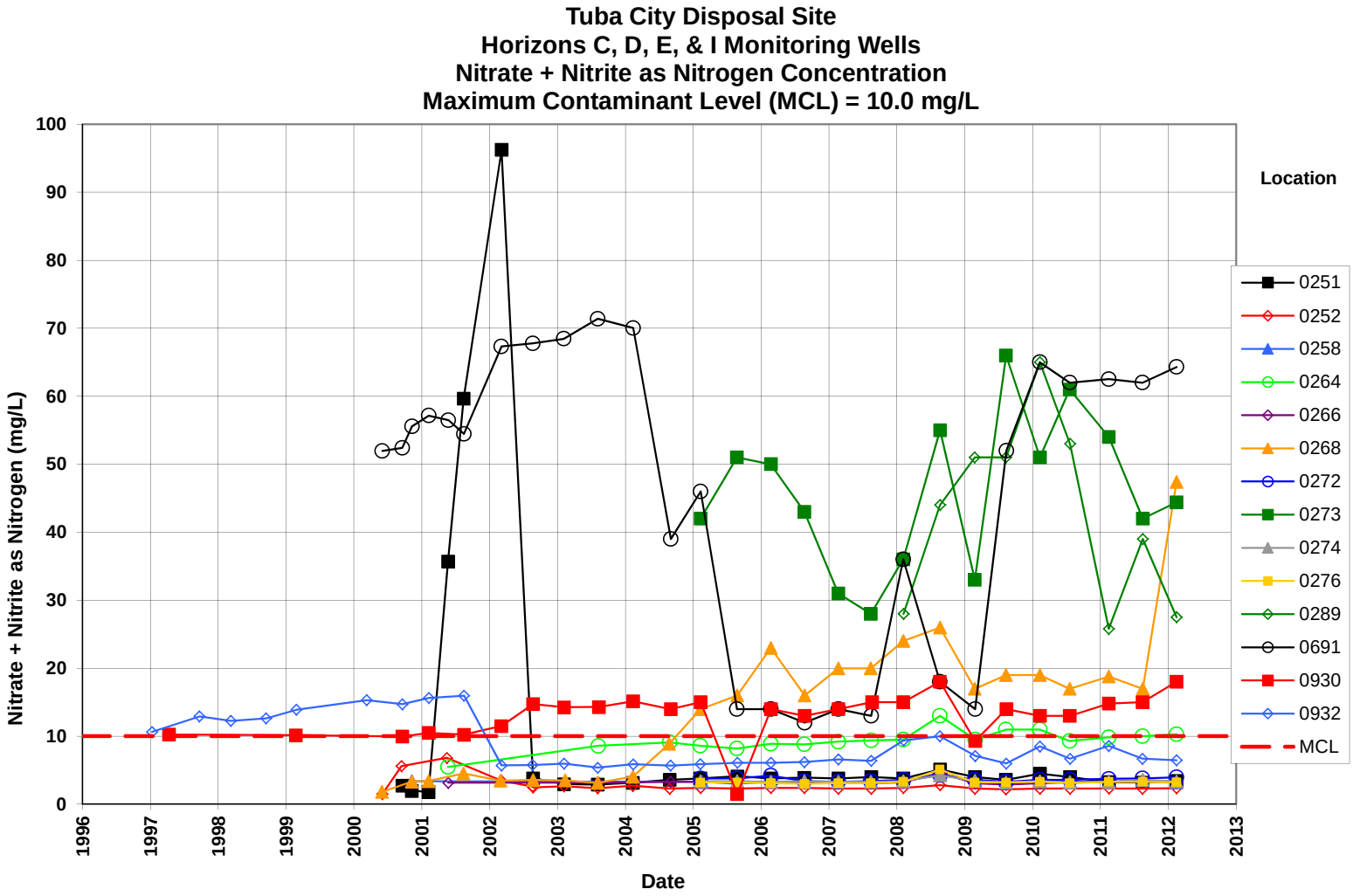

Tuba City Disposal Site
Horizon B Monitoring Wells
Sulfate Concentration
Cleanup Level (CL) = 250 mg/L
Sulfate (mg/L)
12000
10000
8000
6000
4000
2000
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
Date
Location
0262
0263
0265
0267
0281
0286
0287
0288
0290
0908
0910
0934
CL

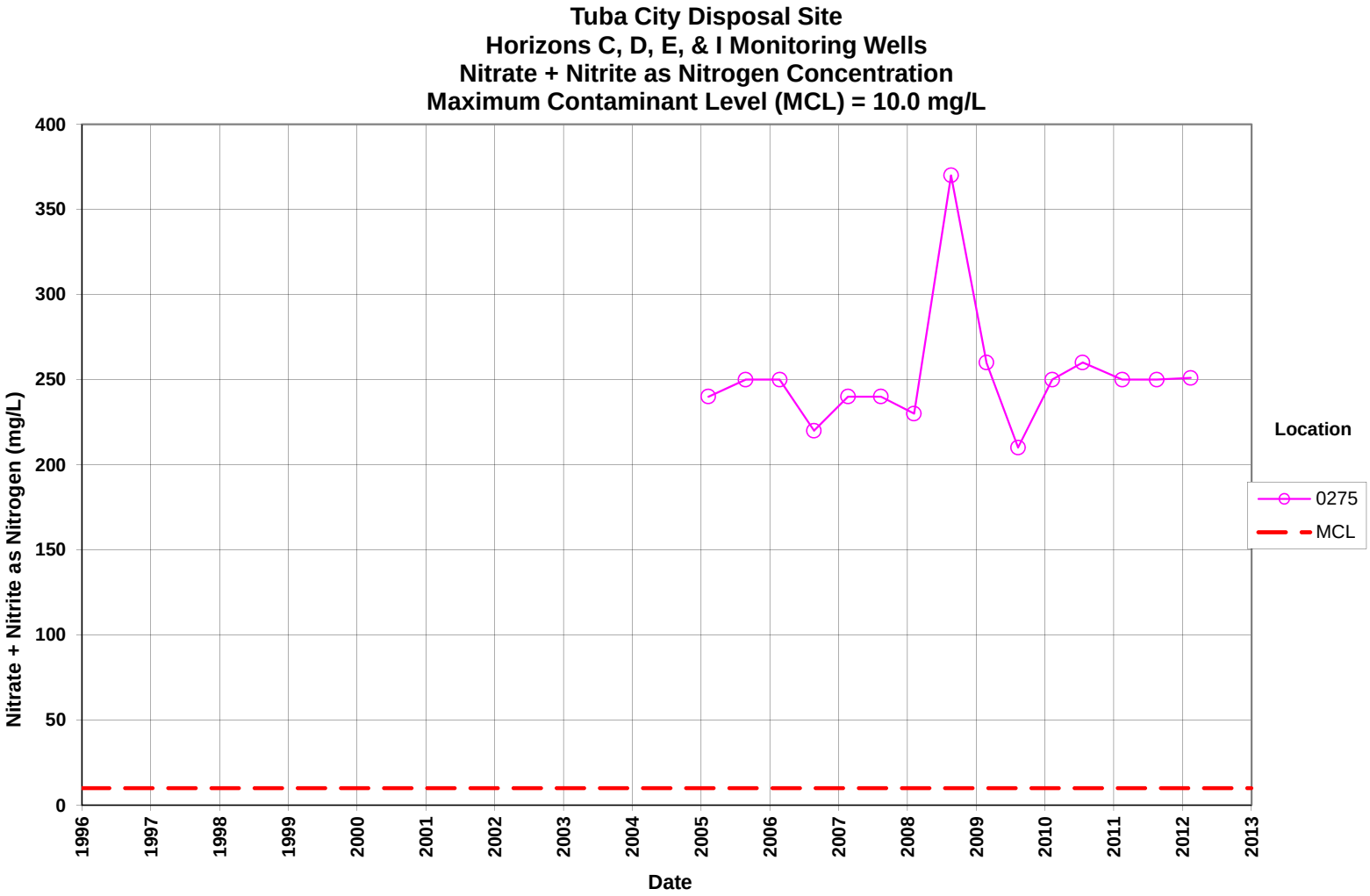

Tuba City Disposal Site
Horizon B Monitoring Wells
Uranium Concentration
Maximum Contaminant Level (MCL) = 0.044 mg/L
Uranium (mg/L)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
Date
Location
0262
0263
0265
0267
0281
0282
0286
0287
0288
0290
0908
0910
0934
MCL

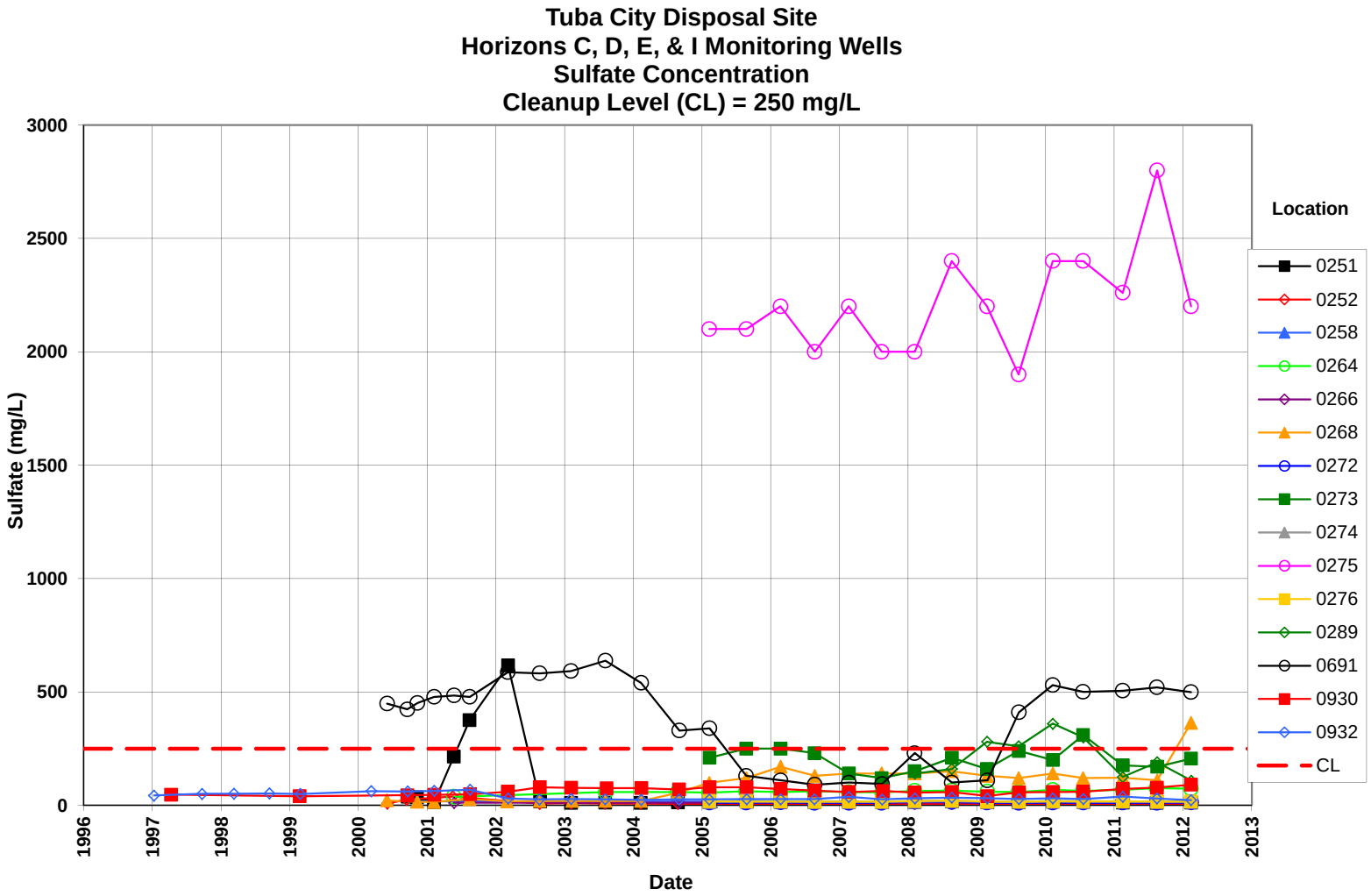

Tuba City Disposal Site
Horizon B Extraction Wells
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level (MCL) = 10.0 mg/L
Nitrate + Nitrite as Nitrogen (mg/L)
450
400
350
300
250
200
150
100
50
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
Date
Location
0935
0938
0942
1132
MCL

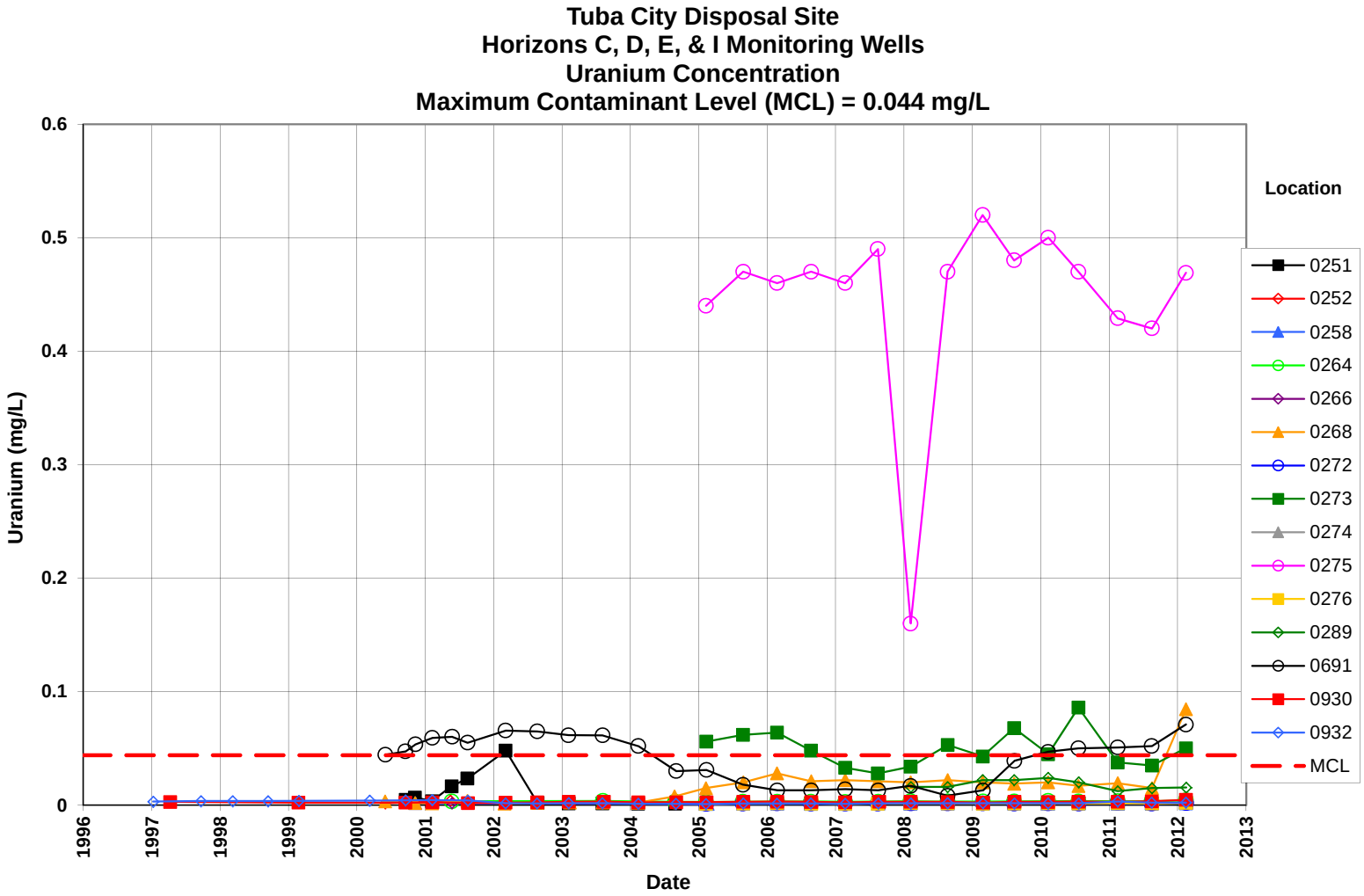

Tuba City Disposal Site
Horizon B Extraction Wells
Sulfate Concentration
Cleanup Level (CL) = 250 mg/L
Sulfate (mg/L)
4500
4000
3500
3000
2500
2000
1500
1000
500
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
Date
Location
0935
0938
0942
1132
CL

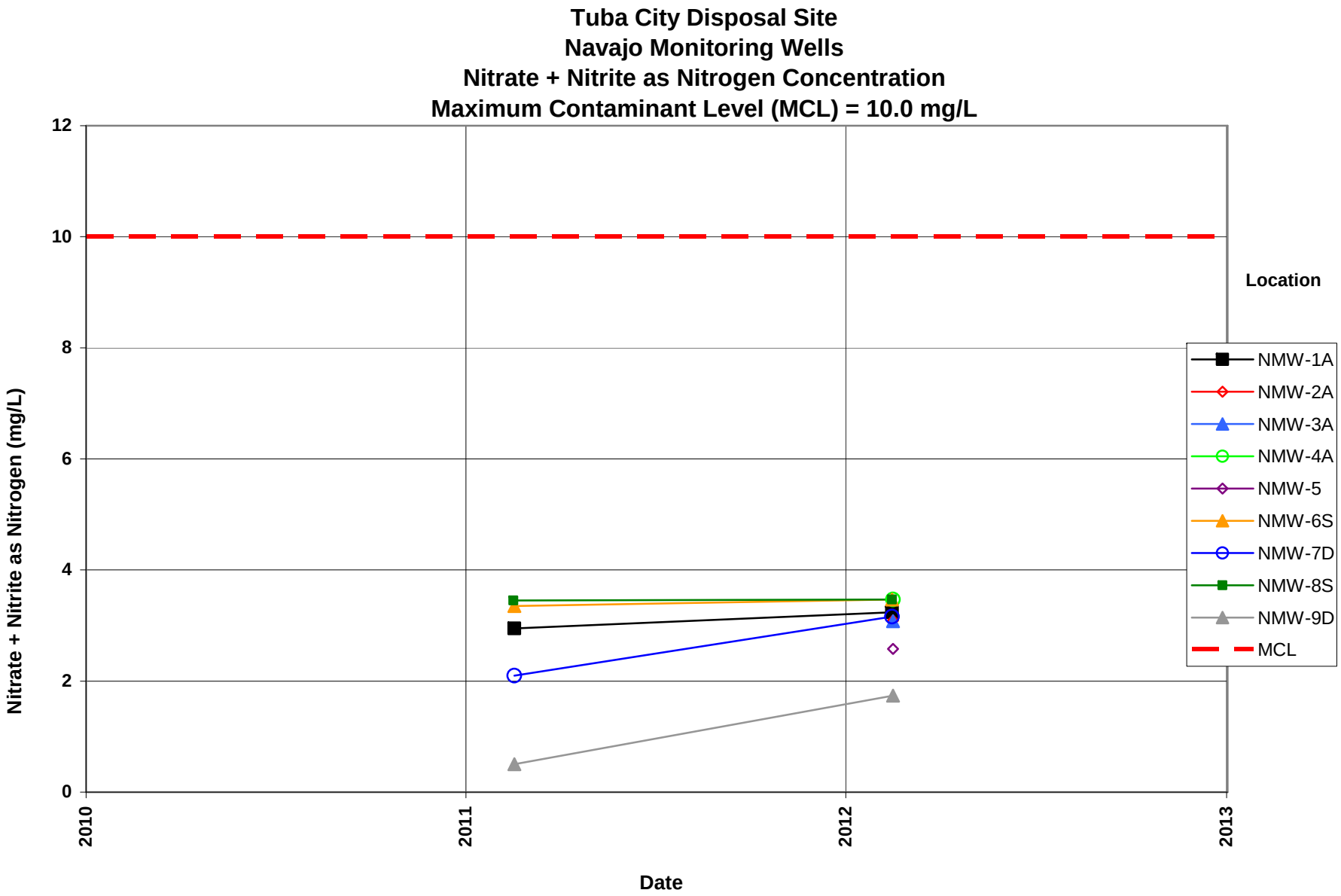

Tuba City Disposal Site
Horizon B Extraction Wells
Uranium Concentration
Maximum Contaminant Level (MCL) = 0.044 mg/L
Uranium (mg/L)
4
3.5
3
2.5
2
1.5
1
0.5
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
Date
Location
0935
0938
0942
1132
MCL

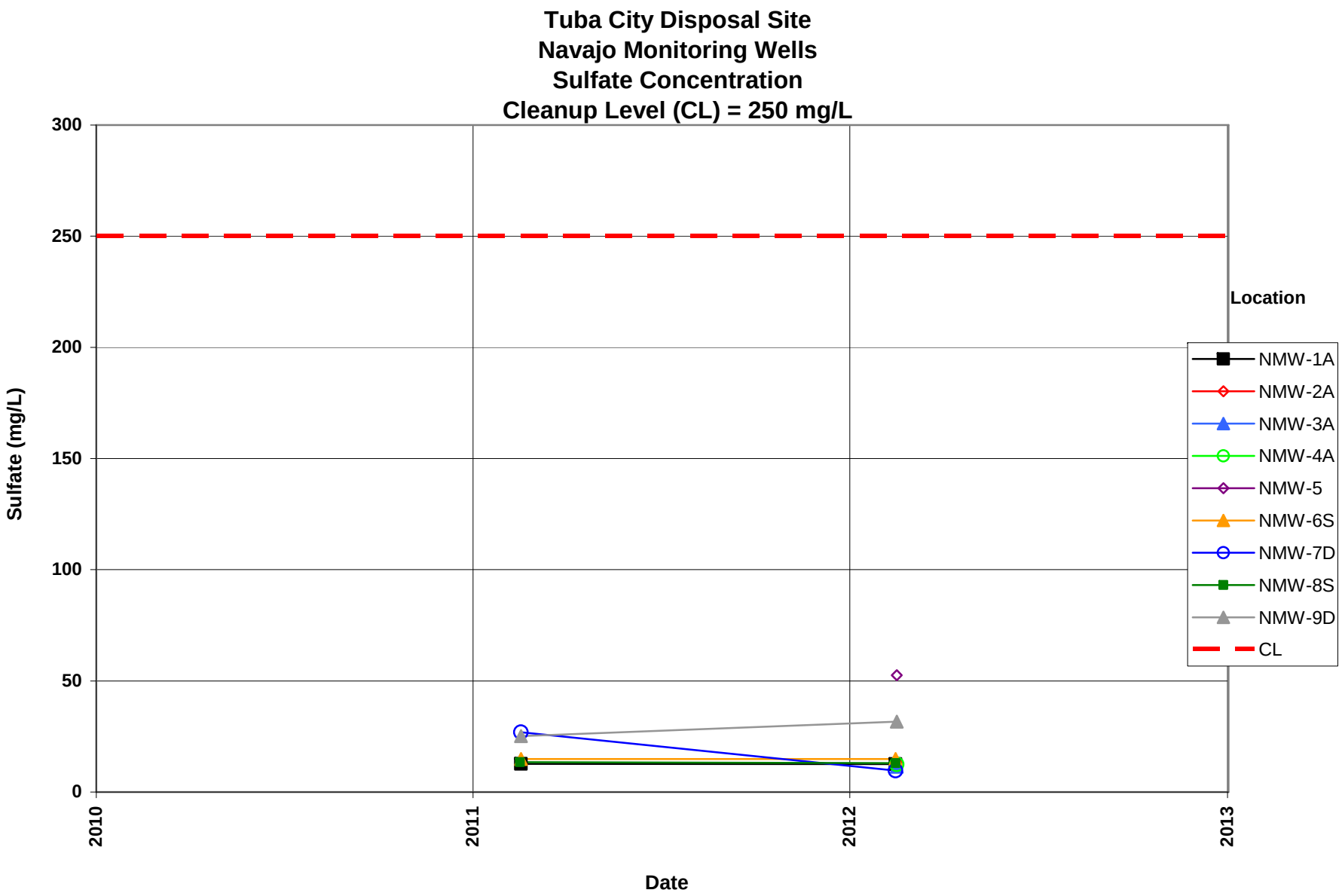

Tuba City Disposal Site
Horizons C, D, E, & I Monitoring Wells
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level (MCL) = 10.0 mg/L
Nitrate + Nitrite as Nitrogen (mg/L)
Date
Location
0251
0252
0258
0264
0266
0268
0272
0273
0274
0276
0289
0691
0930
0932
MCL

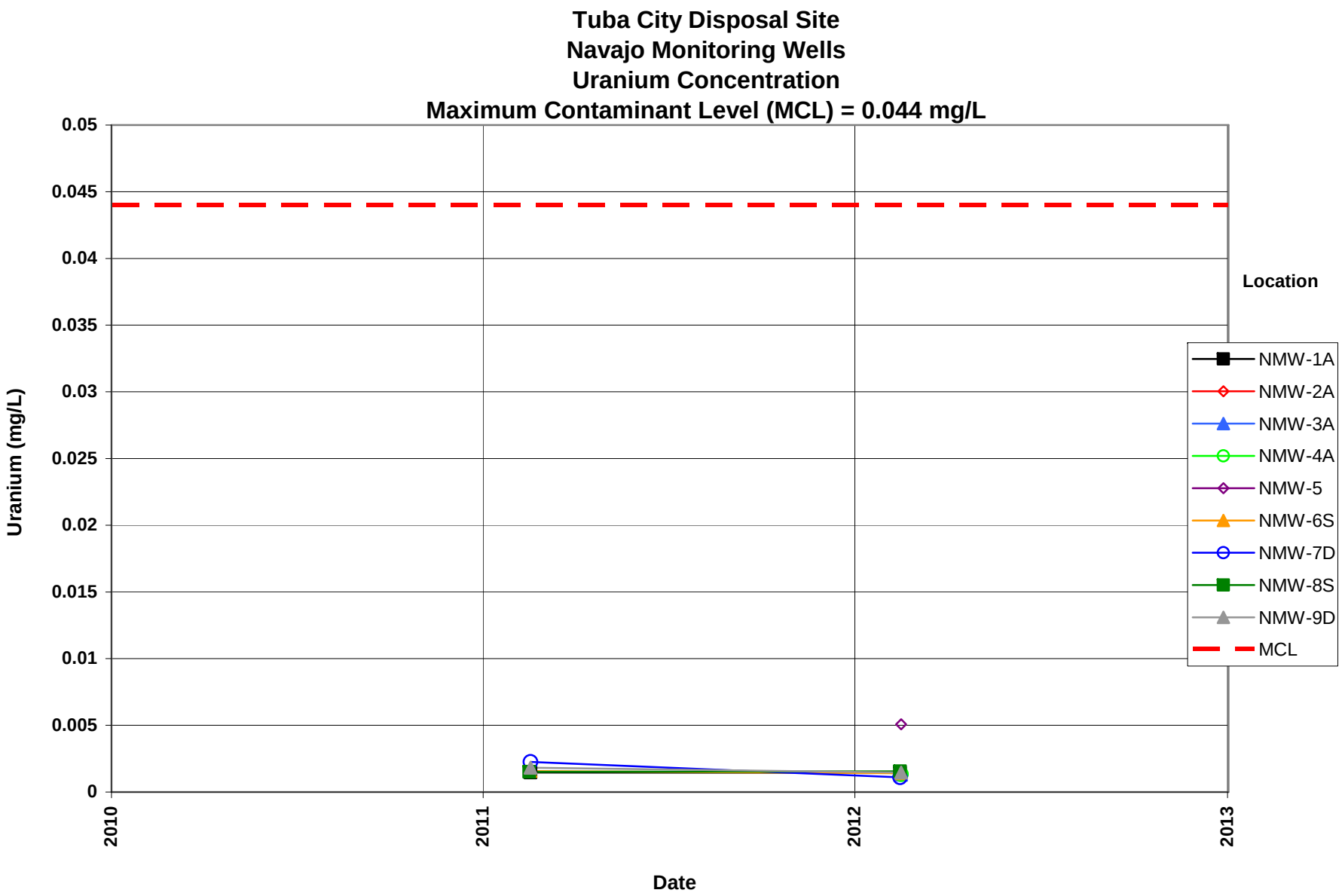

Tuba City Disposal Site
Horizons C, D, E, & I Monitoring Wells
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level (MCL) = 10.0 mg/L
Nitrate + Nitrite as Nitrogen (mg/L)
400
350
300
250
200
150
100
50
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
Date
Location
0275
MCL


Tuba City Disposal Site
Horizons C, D, E, & I Monitoring Wells
Sulfate Concentration
Cleanup Level (CL) = 250 mg/L
Sulfate (mg/L)
3000
2500
2000
1500
1000
500
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
Date
Location
0251
0252
0258
0264
0266
0268
0272
0273
0274
0275
0276
0289
0691
0930
0932
CL


Tuba City Disposal Site
Horizons C, D, E, & I Monitoring Wells
Uranium Concentration
Maximum Contaminant Level (MCL) = 0.044 mg/L
Uranium (mg/L)
0.6
0.5
0.4
0.3
0.2
0.1
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
Date
Location
0251
0252
0258
0264
0266
0268
0272
0273
0274
0275
0276
0289
0691
0930
0932
MCL


Tuba City Disposal Site
Navajo Monitoring Wells
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level (MCL) = 10.0 mg/L
Nitrate + Nitrite as Nitrogen (mg/L)
12
10
8
6
4
2
0
2010
2011
2012
2013
Date
Location
NMW-1A
NMW-2A
NMW-3A
NMW-4A
NMW-5
NMW-6S
NMW-7D
NMW-8S
NMW-9D
MCL


Tuba City Disposal Site
Navajo Monitoring Wells
Sulfate Concentration
Cleanup Level (CL) = 250 mg/L
Sulfate (mg/L)
300
250
200
150
100
50
0
2010
2011
2012
2013
Date
Location
NMW-1A
NMW-2A
NMW-3A
NMW-4A
NMW-5
NMW-6S
NMW-7D
NMW-8S
NMW-9D
CL


Tuba City Disposal Site
Navajo Monitoring Wells
Uranium Concentration
Maximum Contaminant Level (MCL) = 0.044 mg/L
Uranium (mg/L)
0.05
0.045
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
2010
2011
2012
2013
Date
Location
NMW-1A
NMW-2A
NMW-3A
NMW-4A
NMW-5
NMW-6S
NMW-7D
NMW-8S
NMW-9D
MCL

Attachment 3
Sampling and Analysis Work Order

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Task Order LM00-501
Control Number 12-0341

February 3, 2012

U.S. Department of Energy
Office of Legacy Management
ATTN: Richard Bush
Site Manager
2597 Legacy Way
Grand Junction, CO 81503

SUBJECT: Contract No. DE-AM01-07LM00060, S.M. Stoller Corporation (Stoller)
February 2012 Environmental Sampling at the Tuba City, Arizona,
Disposal Site - Revised

REFERENCE: Task Order LM00-501-02-122-402, Tuba City, Arizona, Disposal Site

Dear Mr. Bush:

The purpose of this letter is to inform you of the upcoming sampling event at Tuba City, Arizona. Enclosed are the map and tables specifying sample locations and analytes for monitoring at the Tuba City site. Water quality data will be collected from monitoring wells and surface locations at this site as part of the routine environmental sampling currently scheduled to begin the week of February 13, 2012. This letter has been revised to include additional sampling locations and analytes.

The following lists show the monitoring wells (with zone of completion) and surface locations scheduled to be sampled during this event.

Monitoring Wells*

251 Na	265 Na	274 Na	283 Na	290 Na	929 Na	936 Na
252 Na	266 Na	275 Na	286 Na	691 Na	930 Na	938 Na
258 Na	267 Na	276 Na	287 Na	906 Na	932 Na	940 Na
262 Na	268 Na	281 Na	288 Na	908 Na	934 Na	941 Na
263 Na	272 Na	282 Na	289 Na	909 Na	935 Na	942 Na
264 Na	273 Na	0901 Na	0910 Na	1132 Na	NMW-1A Na	NMW-2A Na
NMW-3A Na	NMW-4A Na	NMW-5 Herbert Chief Na		NMW-6S Na	NMW-7D Na	NMW-8S Na
NMW-9D Na						

*NOTE: Na = Navajo sandstone

Surface Locations

1569	1570	1576	1577

Treatment System Locations

1202	1205	1206

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All samples will be collected as directed in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites*. In addition, water levels will be collected from all wells on site.

Please contact me at (970) 248-6568 if you have any questions.

Sincerely,

Carl Jacobson
Site Lead

CJ/lcg/lb

Enclosures

cc: (electronic)
Karl Stoeckle, DOE
Steve Donivan, Stoller
Lauren Goodknight, Stoller
Carl Jacobson, Stoller
EDD Delivery
rc-grand.junction
File: TUB 410.02(A)

The S.M. Stoller Corporation 2597 Legacy Way Grand Junction, CO 81503 (970) 248-6000 Fax (970) 248-6040

Constituent Sampling Breakdown

Site	Tuba City					
Analyte	**Groundwater**	**Surface Water**	**Treatment System**	**Required Detection Limit (mg/L)**	**Analytical Method**	**Line Item Code**
Approx. No. Samples/yr	143	9	3			
Field Measurements						
Alkalinity	X	X				
Dissolved Oxygen						
Redox Potential	X	X				
pH	X	X				
Specific Conductance	X	X				
Turbidity	X					
Temperature	X	X				
Laboratory Measurements						
Aluminum						
Ammonia as N (NH3-N)	X		X	0.1	EPA 350.1	WCH-A-005
Arsenic	X	X		0.0001	SW-846 6020	LMM-02
Calcium	X	X	X	5	SW-846 6010	LMM-01
Chloride	X	X	X	0.5	SW-846 9056	WCH-A-039
Chromium						
Gross Alpha						
Gross Beta						
Iron	X	X		0.05	SW-846 6020	LMM-02
Lead						
Magnesium	X	X		5	SW-846 6010	LMM-01
Manganese	X	X		0.005	SW-846 6010	LMM-01
Molybdenum	X	X	X	0.003	SW-846 6020	LMM-02
Nickel						
Nickel-63						
Nitrate + Nitrite as N (NO_3+NO_2)-N	X	X	X	0.05	EPA 353.1	WCH-A-022
Potassium	X	X		1	SW-846 6010	LMM-01
Selenium	X	X	X	0.0001	SW-846 6020	LMM-02
Silica	X			0.2	SW-846 6010	LMM-01
Sodium	X	X		1	SW-846 6010	LMM-01
Strontium						
Sulfate	X	X	X	0.5	SW-846 9056	MIS-A-044
Sulfur isotope ratio	X			NA	Mass Spectrometry	LMW-09
Total Dissolved Solids	X	X		10	SM2540 C	WCH-A-033
Tritium, enrichment method*	See below			3	Enrichment, liquid scintillation	LMR-17
Uranium	X	X		0.0001	SW-846 6020	LMM-02
Vanadium						
Zinc						
Total No. of Analytes	18	14				

* Wells 0901, 0906, 0910, 0934, 0936, 0938, 0942, and 1132 only; units are in pCi/L.

Note: All private well samples are to be unfiltered. The total number of analytes does not include field parameters.

Sampling Frequencies for Locations at Tuba City, Arizona

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
Monitoring Wells						
251		X				
252		X				
258		X				
261			X			August
262		X				
263		X				
264		X				
265		X				
266		X				
267		X				
268		X				
271			X			August
272		X				
273		X				
274		X				
275		X				
276		X				
277			X			August
278			X			August
279			X			August
280			X			August
281		X				
282		X				
283		X				
284					X	Water level only
285					X	Water level only
286		X				
287		X				
288		X				
289		X				
290		X				
683			X			August
684			X			August
685			X			August
686			X			DATA LOGGER; August
687			X			DATA LOGGER; August
688			X			DATA LOGGER; August
689			X			August
690			X			August
691		X				
692			X			August
695			X			August
901		X				August
902					X	Water level only
903			X			August
904			X			August
906		X				DATA LOGGER
908		X				DATA LOGGER
909		X				DATA LOGGER
910		X				August
911			X			August
912			X			August

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
913			X			August
914			X			August
915			X			August
916			X			August
917					X	Water level only
918					X	Water level only
919					X	Water level only
920			X			August
921			X			August
929		X				
930		X				
932		X				
934		X				DATA LOGGER
935		X				Converted to extraction well 7/05
936		X				DATA LOGGER
938		X				Converted to extraction well 7/05
940		X				DATA LOGGER
941		X				DATA LOGGER
942		X				DATA LOGGER
943			X			DATA LOGGER; August
945			X			August
946			X			DATA LOGGER; August
947			X			August
948					X	Water level only
1003			X			August
1004			X			August
1005					X	Water level only
1006			X			August
1007			X			August
1008					X	Water level only
1101			X			August
1102			X			August
1103			X			August
1104			X			August
1105			X			August
1106			X			August
1107			X			August
1108			X			August
1109			X			August
1110			X			August
1111			X			August
1112			X			August
1113			X			August
1114			X			August
1115			X			August
1116			X			August
1117			X			August
1118			X			August
1119			X			August
1120			X			August
1121			X			August
1122			X			August
1123			X			August
1124			X			August
1125			X			August

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
1126			X			August
1127			X			August
1128			X			August
1129			X			August
1130			X			August
1131			X			August
1132		X				August
1133			X			August
NMW-1A		X				August
NMW-2A		X				
NMW-3A		X				
NMW-4A		X				
NMW-5 Herbert Chief		X				
NMW-6S		X				
NMW-7D		X				
NMW-8S		X				
NMW-9D		X				
Surface Locations						
759			X			August; Moenkopi wash-downgradient
778			X			August; Moenkopi wash-at Jimmy Spring
965			X			August; Moenkopi wash-far upgradient
1569		X				Evap pond - North
1570		X				Evap pond - South
1571			X			Jimmy Spr West - August
1572					X	Jimmy Spr East
1573			X			West pipe Shonto Well - August
1574					X	East pipe Shonto Well
1576		X				
1577		X				
Treatment System Locations						
1202		X				
1205		X				Treatment system distillate; verify location with system operators
1206		X				

Semi-annual sampling conducted in February and August; Annual sampling conducted in August.

Attachment 4
Trip Report

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Memorandum

DATE: February 23, 2012

TO: Carl Jacobson

FROM: Jeff Price

SUBJECT: Trip Report

Site: Tuba City, Arizona

Dates of Sampling Event: February 13-16, 2012

Team Members: Joe Trevino, Dave Atkinson, Kent Moe, Jeff Walters, Dan Sellers, and Jeff Price

Number of Locations Sampled and Analytes: Samples were collected from 53 of the 56 locations identified on the sampling notification letter as follows.

	Locations That Were Sampled	Planned Locations
Monitoring wells	42	44
Extraction wells	4	5
Evaporation Pond	4	4
Treatment System locations	3	3

All locations were sampled for metals and cations (As, Mo, Se, U, Ca, Fe, K, Mg, Mn, Na, $Si0_2$), anions (Cl and SO_4), $NO_{3+}NO_2$-N, NH_3-N, and TDS analysis. Most locations were sampled for sulfur isotopic analysis, and a limited set of locations were also sampled for enriched tritium analysis.

Locations Not Sampled/Reason: A total of three locations were not sampled for the following reasons:

- Monitoring wells 0283 and 0909 did not have enough water to sample.
- The pump at extraction well 0936 was not functioning.

Location Specific Information: Because the pumps in wells 268, NMW-7D, and NMW-9D were at their maximum depth rating, the pumps were raised to a higher level to increase sample collection efficiency. Drop tubes, which facilitate sample collection from the original pump location, were attached at the base of the pumps.

Quality Control Sample Cross Reference: The following are the false identifications assigned to the quality control samples.

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False ID	True ID	Ticket Number	Sample Type	Associated Matrix
2122	0930	KDW 547	Duplicate	Groundwater
2723	NMW-1A	KDW 582	Duplicate	Groundwater
2724	1132	KDW 583	Duplicate	Groundwater

Report Identification Number (RIN) Assigned: Four RINs were assigned to this event: 12024345, 12024346, 12024349, and 12024350. Field data sheets can be found in SMS on 'Crow' 12024345 in the FieldData folder. Field data sheets for locations 1202, 1205, and 1206 can be found in RIN 12024350.

Sample Shipment: Samples associated with RIN 12024345 were shipped overnight via FedEx to GEL Laboratories from Tuba City, Arizona, on February 16. Samples associated with RIN 12024350 were hand delivered to the ESL in Grand Junction on February 17. Samples associated with RINs 12024346 and 12024349 were shipped via FedEx on February 21, to GEL Labs and Reston Stable Isotope Lab, respectively.

Water Level Measurements: Water levels were measured in all monitoring wells.

Well Inspection Summary: All wells were in good condition.

Field Variance: Although the turbidity was less than 10 NTUs, samples collected from the evaporation pond were filtered. Filtration was deemed necessary to prevent rogue evaporite solids from entering the sample containers. All other samples were collected according to the *Sampling and Analysis Plan for the U. S. Department of Energy Office of Legacy Management Sites*.

Equipment: All equipment functioned properly. Multi-gas meters were used to verify the air quality in the extraction vaults. Monitoring wells were sampled with a dedicated bladder pump; extraction wells have dedicated submersible pumps and were sampled at taps. Surface waters were sampled using a peristaltic pump and dedicated tubing.

Dataloggers: Dataloggers were downloaded and checked for accuracy at the following locations: 0263, 0264, 0265, 0274, 0286, 0287, 0908, 0929, 0934, 0941, 0943, and 0946. Data and information from each data logger can be viewed electronically using SEEPro.

Regulatory: Nothing to note.

Institutional Controls:

Fences, Gates, and Locks: Acceptable
Signs: Acceptable
Trespassing/Site Disturbances: None observed

Site Issues: Cell phone service (Verizon) was weak but available at the site.

Disposal Cell/Drainage Structure Integrity: No issues observed
Vegetation/Noxious Weed Concerns: None observed
Maintenance Requirements: None observed

Safety Issues: None
Access Issues: None

Corrective Action Required/Taken: None

(JP/lcg)

cc: (electronic)
Richard Bush, DOE
Timothy Bartlett, Stoller
Steve Donivan, Stoller
Susan Kamp, Stoller
EDD Delivery

The S.M. Stoller Corporation 2597 Legacy Way Grand Junction, CO 81503 (970) 248-6000 Fax (970) 248-6040

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