Data Validation Package

February 2015
Groundwater and Surface Water Sampling at the Tuba City, Arizona Disposal Site

June 2015

U.S. DEPARTMENT OF ENERGY | Legacy Management

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Sampling Event Summary

Site: Tuba City, Arizona, Disposal Site

Sampling Period: February 16-18, 2015

The groundwater compliance strategy for the Tuba City, Arizona, 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 analyses were conducted as specified in *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites* (LMS/PRO/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 2015.

Table 1. Tuba City Monitoring Wells with Analyte Concentrations that Exceed the EPA Standard

Analyte	Standard (mg/L)	Location	Concentration (mg/L)
Molybdenum	0.1	0262	0.34
Molybdenum	0.1	0287	0.14
Molybdenum	0.1	0936	0.89
Nitrate + Nitrite as Nitrogen	10	0262	190
Nitrate + Nitrite as Nitrogen	10	0263	160
Nitrate + Nitrite as Nitrogen	10	0264	11
Nitrate + Nitrite as Nitrogen	10	0265	160
Nitrate + Nitrite as Nitrogen	10	0267	290
Nitrate + Nitrite as Nitrogen	10	0268	32
Nitrate + Nitrite as Nitrogen	10	0273	25
Nitrate + Nitrite as Nitrogen	10	0275	220
Nitrate + Nitrite as Nitrogen	10	0281	19
Nitrate + Nitrite as Nitrogen	10	0282	50
Nitrate + Nitrite as Nitrogen	10	0286	150
Nitrate + Nitrite as Nitrogen	10	0287	260
Nitrate + Nitrite as Nitrogen	10	0288	35
Nitrate + Nitrite as Nitrogen	10	0289	20

Table 1 (continued). Tuba City Monitoring Wells with Analyte Concentrations that Exceed the EPA Standard

Analyte	Standard (mg/L)	Location	Concentration (mg/L)
Nitrate + Nitrite as Nitrogen	10	0290	66
Nitrate + Nitrite as Nitrogen	10	0691	83
Nitrate + Nitrite as Nitrogen	10	0906	560
Nitrate + Nitrite as Nitrogen	10	0908	220
Nitrate + Nitrite as Nitrogen	10	0929	12
Nitrate + Nitrite as Nitrogen	10	0930	39
Nitrate + Nitrite as Nitrogen	10	0934	300
Nitrate + Nitrite as Nitrogen	10	0934	310
Nitrate + Nitrite as Nitrogen	10	0935	140
Nitrate + Nitrite as Nitrogen	10	0936	260
Nitrate + Nitrite as Nitrogen	10	0938	320
Nitrate + Nitrite as Nitrogen	10	0940	350
Nitrate + Nitrite as Nitrogen	10	0941	290
Nitrate + Nitrite as Nitrogen	10	0942	150
Selenium	0.01	0262	0.041
Selenium	0.01	0263	0.028
Selenium	0.01	0267	0.048
Selenium	0.01	0273	0.011
Selenium	0.01	0275	0.032
Selenium	0.01	0286	0.019
Selenium	0.01	0287	0.11
Selenium	0.01	0290	0.01
Selenium	0.01	0906	0.046
Selenium	0.01	0908	0.018
Selenium	0.01	0934	0.011
Selenium	0.01	0936	0.056
Selenium	0.01	0938	0.072
Selenium	0.01	0940	0.055
Selenium	0.01	0941	0.095
Selenium	0.01	0942	0.055
Uranium	0.044	0262	0.52
Uranium	0.044	0263	0.4
Uranium	0.044	0265	0.071
Uranium	0.044	0267	0.072
Uranium	0.044	0268	0.072
Uranium	0.044	0275	0.42
Uranium	0.044	0286	0.43
Uranium	0.044	0287	0.29
Uranium	0.044	0290	0.052
Uranium	0.044	0691	0.12
Uranium	0.044	0906	0.4
Uranium	0.044	0908	0.078

Table 1 (continued). Tuba City Monitoring Wells with Analyte Concentrations that Exceed the EPA Standard

Analyte	Standard (mg/L)	Location	Concentration (mg/L)
Uranium	0.044	0934	0.16
Uranium	0.044	0934	0.15
Uranium	0.044	0935	0.1
Uranium	0.044	0936	0.98
Uranium	0.044	0938	0.32
Uranium	0.044	0940	0.66
Uranium	0.044	0941	0.31
Uranium	0.044	0942	0.59

mg/L = milligrams per liter

Tim Bartlett — 6/11/15

Tim Bartlett
Site Hydrologist
Stoller Newport News Nuclear, Inc.,
a wholly owned subsidiary of
Huntington Ingalls Industries, Inc.

Date

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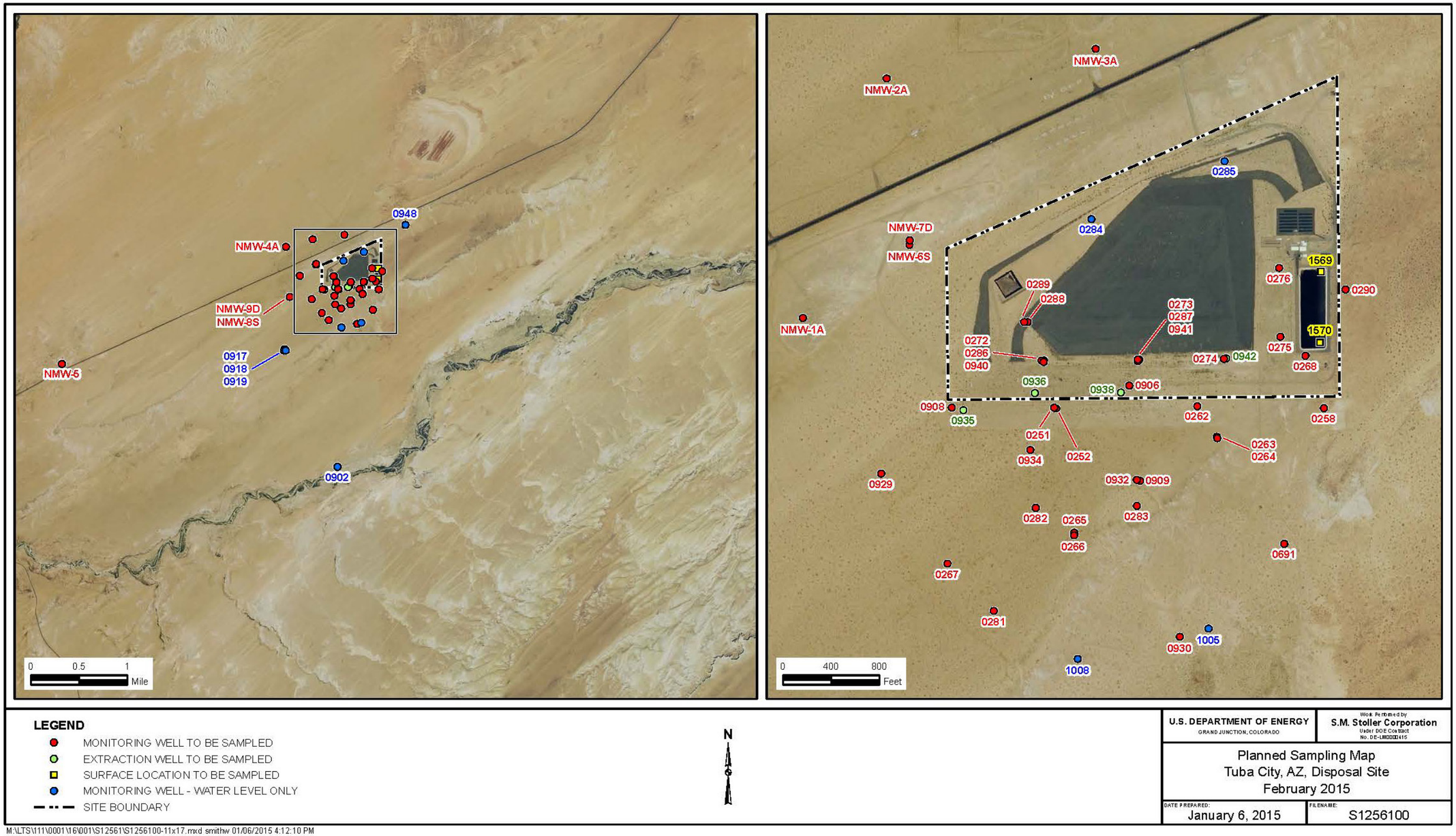

Planned Sampling Map Tuba City, AZ, Disposal Site February 2015

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Data Assessment Summary

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Water Sampling Field Activities Verification Checklist

Project	Tuba City, Arizona, Disposal Site	**Date(s) of Water Sampling**	February 16–18, 2015
Date(s) of Verification	May 11, 2015	**Name of Verifier**	Gretchen Baer

	Response (Yes, No, NA)	Comments
1. Is the SAP the primary document directing field procedures?	Yes	
List any Program Directives or other documents, SOPs, instructions.		Work Order letter dated January 8, 2015. Program Directive No. TUB-2015-01.
2. Were the sampling locations specified in the planning documents sampled?	No	Monitoring well locations 0283 and 0909 were not sampled because they were dry. Treatment system locations 1202, 1205, and 1206 were not sampled because the treatment system was not in operation during the sampling event.
3. Were calibrations conducted as specified in the above-named documents?	No	pH pre-trip calibration: a span was out of range; 2 mV readings were out of range. Some values were not recorded. The daily operational checks were acceptable, which indicates that the instrument performance was acceptable during the event.
4. Was an operational check of the field equipment conducted daily?	Yes	
Did the operational checks meet criteria?	Yes	One of the ORP probes was out of range. The probe was recalibrated and read accurately the remainder of the trip. No samples had been collected prior to the recalibration, thus no further action is required.
5. Were the number and types (alkalinity, temperature, specific conductance, pH, turbidity, DO, ORP) of field measurements taken as specified?	Yes	
6. Were wells categorized correctly?	No	A well that was sampled using high-flow criteria was categorized as CAT II.
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	
Did pH, specific conductance, and turbidity measurements meet criteria prior to sampling?	Yes	
Was the flow rate less than 500 mL/min?	Yes	

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 non-dedicated equipment?	NA	
11. Were trip blanks prepared and included with each shipment of VOC samples?	NA	
12. Were the true identities of the QC samples documented?	Yes	
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. Was all pertinent information documented on the field data sheets?	Yes	
18. Was the presence or absence of ice in the cooler documented at every sample location?	Yes	
19. Were water levels measured at the locations specified in the planning documents?	Yes	Water levels were collected from all wells on site, with the following exception. Per the direction of the site lead, water levels were not collected from extraction wells that were not sampled.

Laboratory Performance Assessment

General Information

Requisition No.:	15026775
Sample Event:	February 16–18, 2015
Site(s):	Tuba City, Arizona
Laboratory:	ALS Laboratory Group, Fort Collins, Colorado
Work Order No.:	1502384
Analysis:	Metals and Inorganics
Validator:	Gretchen Baer
Review Date:	April 26, 2015

This validation was performed according to the *Environmental Procedures Catalog* (LMS/POL/S04325, continually updated), "Standard Practice for Validation of Environmental 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	EPA 350.1	EPA 350.1
Arsenic, Molybdenum, Selenium, Uranium	LMM-02	SW-846 3005A	SW-846 6020A EPA 200.8
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	EPA 353.2	EPA 353.2
Total Dissolved Solids	WCH-A-033	EPA 160.1	EPA 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
1502384-3	0258	Iron	U	Less than 5 times the calibration blank
1502384-3	0258	Manganese	U	Less than 5 times the calibration blank
1502384-4	0262	Iron	U	Less than 5 times the calibration blank
1502384-6	0264	Manganese	U	Less than 5 times the calibration blank
1502384-7	0265	Manganese	U	Less than 5 times the calibration blank
1502384-10	0268	Manganese	U	Less than 5 times the calibration blank

Table 3 (continued). Data Qualifiers

Sample Number	Location	Analyte	Flag	Reason
1502384-11	0272	Manganese	U	Less than 5 times the calibration blank
1502384-12	0273	Manganese	U	Less than 5 times the calibration blank
1502384-15	0276	Manganese	U	Less than 5 times the calibration blank
1502384-16	0281	Iron	U	Less than 5 times the calibration blank
1502384-17	0282	Iron	U	Less than 5 times the calibration blank
1502384-18	0286	Iron	U	Less than 5 times the calibration blank
1502384-19	0287	Iron	U	Less than 5 times the calibration blank
1502384-23	0691	Iron	U	Less than 5 times the calibration blank
1502384-24	0906	Iron	U	Less than 5 times the calibration blank
1502384-25	0908	Iron	U	Less than 5 times the calibration blank
1502384-26	0929	Iron	U	Less than 5 times the calibration blank
1502384-27	0930	Iron	U	Less than 5 times the calibration blank
1502384-28	0932	Iron	U	Less than 5 times the calibration blank
1502384-28	0932	Uranium	J	Field duplicate RPD > 20%
1502384-39	0932 Duplicate	Uranium	J	Field duplicate RPD > 20%
1502384-29	0934	Iron	U	Less than 5 times the calibration blank
1502384-30	0935	Iron	U	Less than 5 times the calibration blank
1502384-31	0936	Iron	U	Less than 5 times the calibration blank
1502384-32	0938	Iron	U	Less than 5 times the calibration blank
1502384-33	0940	Iron	U	Less than 5 times the calibration blank
1502384-34	0941	Iron	U	Less than 5 times the calibration blank
1502384-35	0942	Iron	U	Less than 5 times the calibration blank
1502384-36	1569	Total dissolved solids	J	Exceeded holding time
1502384-37	1570	Total dissolved solids	J	Exceeded holding time
1502384-41	NMW-1A	Manganese	U	Less than 5 times the method blank
1502384-42	NMW-2A	Manganese	U	Less than 5 times the method blank
1502384-43	NMW-3A	Manganese	U	Less than 5 times the method blank
1502384-44	NMW-4A	Manganese	U	Less than 5 times the method blank
1502384-45	NMW-5	Manganese	U	Less than 5 times the method blank
1502384-48	NMW-8S	Manganese	U	Less than 5 times the method blank

Sample Shipping/Receiving

ALS Laboratory Group in Fort Collins, Colorado, received 49 samples on February 20, 2015, accompanied by Chain of Custody forms. Copies of the air bills were included in the receiving documentation. The Chain of Custody 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 were complete with no errors or omissions.

Preservation and Holding Times

The sample shipments were received intact with the temperatures inside the iced coolers at 1.8 and 3.8 °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 two total dissolved solids (TDS) samples. The TDS results are qualified with a "J" flag as estimated values.

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.

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 EPA 160.1
There is no initial or continuing calibration requirement associated with the determination of TDS.

Method EPA 350.1
The initial calibrations for ammonia as N were performed February 25 and March 3, 2015, 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 and all calibration check results met the acceptance criteria.

Method EPA 353.2
The initial calibrations for nitrate + nitrite as N were performed February 27, 2015, using seven 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 and all calibration check results met the acceptance criteria.

Method SW-846 6010B
Calibrations for calcium, iron, magnesium, manganese, potassium, silica, and sodium were performed February 26, 2015, using three calibration standards. The correlation coefficient values were greater than 0.995. The absolute values of the intercepts were less than or only slightly above 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency with all checks meeting 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 February 26, 2015, using four calibration standards. The correlation coefficient values were greater than 0.995. 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 and all calibration check results met the acceptance criteria. Reporting limit verification checks were made 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 February 12, 2015, 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 and all calibration check results 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 PQLs with the following exception. A method blank result for selenium was slightly above the PQL. The samples associated with this blank had selenium concentrations greater than 10 times the blank and no further qualification is necessary. 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 Interference Check Sample Analysis

Interference check samples 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 samples are used to measure method performance in the sample matrix. The matrix spike and matrix spike duplicate data are not evaluated when the concentration of the unspiked sample is greater than 4 times the spike. The spike recoveries met the acceptance criteria for all analytes evaluated.

Laboratory Replicate Analysis

Laboratory replicate analyses are used to determine laboratory precision for each sample matrix. The relative percent difference (RPD) 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 the 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.

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

The revised EDD file arrived on May 7, 2015, that included corrections to a TDS result, two uranium results, and multiple iron and manganese results. 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. Table 4 shows the total anion and cation results from this event and the charge balance, which is an RPD 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	2.1	1.3	21.8
0252	1.9	1.1	26.4
0258	2.8	3.0	3.2
0262	72.0	71.1	0.6
0263	72.2	67.7	3.2
0264	6.0	5.3	6.3
0265	50.3	46.9	3.5
0266	2.3	1.9	10.0
0267	116.1	105.2	5.0
0268	12.7	21.5	25.7
0272	2.7	2.4	4.7
0273	7.5	7.4	0.6
0274	2.9	3.5	9.5
0275	74.0	71.8	1.5
0276	2.9	2.9	0.5
0281	6.1	5.0	9.7
0282	11.3	11.1	1.1
0286	70.9	68.2	2.0
0287	74.0	71.6	1.6
0288	10.5	9.5	5.1
0289	8.3	7.3	6.1
0290	21.6	19.2	5.9
0691	29.8	26.6	5.6
0906	101.5	95.1	3.3
0908	85.9	76.9	5.6
0929	3.7	3.5	2.4
0930	11.8	11.3	2.1
0932	3.7	2.4	20.8
0934	103.7	93.8	5.0
0935	71.7	66.9	3.5
0936	86.7	80.1	4.0
0938	97.6	103.1	2.8
0940	164.8	159.3	1.7
0941	87.1	72.4	9.2

Table 4 (continued). Comparison of Major Anions and Cations

Location	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
0942	94.3	90.6	2.0
1569	3882.9	4435.4	6.6
1570	3332.1	4435.2	14.2
NMW-1A	2.7	2.6	1.0
NMW-2A	2.7	2.9	2.9
NMW-3A	2.6	2.2	10.2
NMW-4A	2.7	1.5	28.3
NMW-5	3.7	3.4	5.2
NMW-6S	2.8	3.3	6.8
NMW-7D	2.1	1.8	8.8
NMW-8S	2.6	2.6	1.5
NMW-9D	2.8	3.1	4.0

meq/L = milliequivalents per liter

Seven locations had charge balances greater than 10 percent. There were no analytical errors identified during the review of the laboratory data.

SAMPLE MANAGEMENT SYSTEM
General Data Validation Report

RIN: 15026775 **Lab Code:** PAR **Validator:** Gretchen Baer **Validation Date:** 5/11/2015

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

# of Samples: 49 **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	There are 2 holding time failures.
☑ Detection Limits	The reported detection limits are equal to or below contract requirements.
☐ Field/Trip Blanks	
☑ Field Duplicates	There were 3 duplicates evaluated.

SAMPLE MANAGEMENT SYSTEM

Non-Compliance Report: Holding Times

RIN: 15026775 **Lab Code:** PAR

Project: Tuba City

Validation Date: 5/11/2015

				Holding Times			Criteria			Reported Dates		
Ticket	Location	Lab Sample ID	Method Code	Collection to Preparation	Preparation to Analysis	Collection to Analysis	Collection to Preparation	Preparation to Analysis	Collection to Analysis	Collection Date	Preparation Date	Analysis Date
NDR 118	1569	1502384-36	WCH-A-033			8			7	02/17/2015	02/25/2015	02/26/2015
NDR 119	1570	1502384-37	WCH-A-033			8			7	02/17/2015	02/25/2015	02/26/2015

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 15026775 **Lab Code:** PAR **Date Due:** 3/20/2015

Matrix: Water **Site Code:** TUB01 **Date Completed:** 3/6/2015

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	CCV	CCB								
Calcium	ICP/ES	02/26/2015	99.9990	0.9998	OK	OK	OK	106.0	109.0	110.1	0.0	102.0	2.0	100.0
Calcium	ICP/ES	02/26/2015					OK	104.0	106.0	104.6	1.0	102.0	1.0	70.0
Calcium	ICP/ES	02/26/2015					OK	101.0	102.0	108.0	1.0	108.0	2.0	73.0
Iron	ICP/ES	02/26/2015	18.0000	0.9999	OK	OK	OK	109.0	93.0	89.4	3.0	103.0		113.0
Iron	ICP/ES	02/26/2015					OK	107.0	115.0	110.0	4.0	100.0		117.0
Iron	ICP/ES	02/26/2015					OK	108.0	105.0	107.0	2.0	101.0		109.0
Magnesium	ICP/ES	02/26/2015	33.0000	0.9998	OK	OK	OK	102.0	101.0	101.7	1.0	108.0	2.0	120.0
Magnesium	ICP/ES	02/26/2015					OK	99.0	102.0	102.0	0.0	108.0	1.0	126.0
Magnesium	ICP/ES	02/26/2015					OK	102.0	101.0	98.9	2.0	112.0	0.0	111.0
Manganese	ICP/ES	02/26/2015	0.9300	0.9998	OK	OK	OK	118.0	103.0	101.0	2.0	109.0	8.0	109.0
Manganese	ICP/ES	02/26/2015					OK	107.0	103.0	103.2	0.0	102.0		110.0
Manganese	ICP/ES	02/26/2015					OK	109.0	110.0	109.0	1.0	102.0		105.0
Potassium	ICP/ES	02/26/2015	60.0000	0.9996	OK	OK	OK	100.0	101.0	101.2	1.0			92.0
Potassium	ICP/ES	02/26/2015					OK	100.0	100.0	100.3	1.0		4.0	98.0
Potassium	ICP/ES	02/26/2015					OK	102.0	100.0	98.7	1.0			103.0
Silicon	ICP/ES	02/26/2015	35.0000	0.9988	OK	OK	OK	107.0	108.0	111.4	0.0	105.0	0.0	102.0
Silicon	ICP/ES	02/26/2015					OK	110.0			7.0	96.0	4.0	84.0

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 15026775 **Lab Code:** PAR **Date Due:** 3/20/2015

Matrix: Water **Site Code:** TUB01 **Date Completed:** 3/6/2015

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	CCV	CCB								
Silicon	ICP/ES	02/26/2015					OK	109.0			1.0	96.0	1.0	103.0
Sodium	ICP/ES	02/26/2015	-5.0000	0.9999	OK	OK	OK	101.0			0.0		0.0	102.0
Sodium	ICP/ES	02/26/2015					OK	102.0	99.0	96.8	2.0		3.0	112.0
Sodium	ICP/ES	02/26/2015					OK	99.0	97.0	97.3	0.0		1.0	109.0
Arsenic	ICP/MS	02/26/2015	-0.0030	1.0000	OK	OK	OK	100.0	99.0	101.0	2.0	103.0	6.0	96.0
Arsenic	ICP/MS	02/26/2015					OK	102.0	104.0	101.0	3.0		9.0	103.0
Arsenic	ICP/MS	02/26/2015					OK	97.0	103.0	102.0	2.0		4.0	
Molybdenum	ICP/MS	02/26/2015	-0.0030	1.0000	OK	OK	OK	103.0	105.0	105.0	0.0	102.0		88.0
Molybdenum	ICP/MS	02/26/2015					OK	101.0	108.0	107.0	1.0			
Molybdenum	ICP/MS	02/26/2015					OK	105.0	106.0	104.0	2.0			
Selenium	ICP/MS	02/26/2015	-0.0670	1.0000	OK	OK	OK	109.0	103.0	104.0	1.0	105.0		70.0
Selenium	ICP/MS	02/26/2015					OK	98.0	106.0	105.0	1.0			
Selenium	ICP/MS	02/26/2015					OK	106.0	105.0	102.0	3.0			
Uranium	ICP/MS	02/26/2015					OK	108.0	112.0	110.0	2.0	108.0	1.0	130.0
Uranium	ICP/MS	02/26/2015					OK	106.0	111.0	111.0	0.0		2.0	
Uranium	ICP/MS	02/26/2015	-0.0010	1.0000	OK	OK	OK	105.0	115.0	119.0	1.0		2.0	
Uranium	ICP/MS	02/27/2015	-0.0010	1.0000	OK	OK						104.0		120.0

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 15026775 **Lab Code:** PAR **Date Due:** 3/20/2015

Matrix: Water **Site Code:** TUB01 **Date Completed:** 3/6/2015

Analyte	Date Analyzed	CALIBRATION				Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	CCV	CCB						
AMMONIA AS N	02/25/2015	-0.070	1.0000	OK	OK	OK	106	106	109	3	
AMMONIA AS N	02/26/2015			OK	OK	OK	106	93	93	1	
AMMONIA AS N	02/27/2015			OK	OK	OK	106	102	103	0	
AMMONIA AS N	03/03/2015	-0.070	0.9997	OK	OK	OK	109	109	115	6	
CHLORIDE	02/12/2015	0.060	0.9999								
CHLORIDE	02/25/2015			OK	OK	OK	96	100	100	0	
CHLORIDE	02/25/2015			OK	OK	OK	97	102	102	0	
CHLORIDE	02/26/2015			OK	OK	OK	93	94	94	0	
Nitrate+Nitrite as N	02/27/2015	0.000	1.0000	OK	OK	OK	94	98	96	1	
Nitrate+Nitrite as N	02/27/2015					OK	102	98	93		
Nitrate+Nitrite as N	02/27/2015					OK	99	82	87	2	
Sulfate	02/12/2015	0.448	0.9999								
SULFATE	02/25/2015			OK	OK	OK	94	98	98	0	
SULFATE	02/25/2015			OK	OK	OK	92	100	101	0	
SULFATE	02/26/2015			OK	OK	OK	91	101	100	0	

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 15026775 **Lab Code:** PAR **Date Due:** 3/20/2015

Matrix: Water **Site Code:** TUB01 **Date Completed:** 3/6/2015

Analyte	Date Analyzed	CALIBRATION				Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	CCV	CCB						
TOTAL DISSOLVED SOLIDS	02/24/2015					OK	102			4	
TOTAL DISSOLVED SOLIDS	02/24/2015									3	
TOTAL DISSOLVED SOLIDS	02/26/2015					OK	104			1	
TOTAL DISSOLVED SOLIDS	02/27/2015					OK	100			7	
TOTAL DISSOLVED SOLIDS	02/27/2015					OK	95			0	
TOTAL DISSOLVED SOLIDS	02/27/2015									3	
TOTAL DISSOLVED SOLIDS	02/27/2015									7.00	

Sampling Quality Control Assessment

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

Sampling Protocol

Sample results for monitoring wells were qualified with an "F" flag in the database, indicating the wells were purged and sampled using the low-flow sampling method and Category I criteria, with the following exceptions:

- Extraction wells 0935, 0936, 0938, and 0942 were not sampled using low-flow criteria. These wells were sampled using high-volume and high-flow submersible pumps.
- These 27 wells were purged and sampled using the low-flow sampling method and Category II criteria: 0251, 0258, 0262, 0263, 0264, 0265, 0266, 0267, 0272, 0273, 0274, 0281, 0282, 0286, 0287, 0288, 0289, 0290, 0906, 0908, 0929, 0934, 0940, 0941, NMW-6S, 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 Assessment

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. Duplicate samples were collected from locations 0932, 0934, and NMW-3A. The RPD for duplicate results that are greater than 5 times the PQL should be less than 20 percent. The RPD is not used to evaluate results that are less than 5 times the PQL. For these results (RPD is "NA" on the Field Duplicates report), the range should be no greater than the PQL. The duplicate results met the criteria with the exception of the uranium RPD at location 0932, which was above the criteria at 29 percent. There were no analytical errors identified during the review of the data and the field notes did not describe any unusual conditions during sampling at this location. The uranium results for this location are qualified with a "J" flag as estimated values.

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

RIN: 15026775 **Lab Code:** PAR **Project:** Tuba City **Validation Date:** 5/11/2015

Duplicate: 2122 **Sample:** 0934

Analyte	Sample Result	Flag	Error	Dilution	Duplicate Result	Flag	Error	Dilution	RPD	RER	Units
AMMONIA AS N	0.1	U		1	0.1	U		1			MG/L
Arsenic	0.53			5	0.87			1	NA		UG/L
Calcium	740000			5	740000			5	0		UG/L
CHLORIDE	210			100	210			100	0		MG/L
Iron	51	J		5	55	J		5			UG/L
Magnesium	740000			5	750000			5	1.34		UG/L
Manganese	7.5	J		5	4.9	J		5			UG/L
Molybdenum	0.32	J		5	0.3			1			UG/L
Nitrate+Nitrite as N	300			250	310			250	3.28		MG/L
Potassium	8000			5	8300			5	3.68		UG/L
Selenium	11			5	9.7			1	12.56		UG/L
Silica	18000			5	18000			5	0		UG/L
Silicon	8400			5	8200			5	2.41		UG/L
Sodium	130000			5	130000			5	0		UG/L
SULFATE	2600			100	2600			100	0		MG/L
TOTAL DISSOLVED SOLIDS	6500			1	6400	*		1	1.55		MG/L
Uranium	160			5	150			5	6.45		UG/L

Duplicate: 2723 **Sample:** 0932

Analyte	Sample Result	Flag	Error	Dilution	Duplicate Result	Flag	Error	Dilution	RPD	RER	Units
AMMONIA AS N	0.1	U		1	0.28			1			MG/L
Arsenic	1.4			1	1.6			1	13.33		UG/L
Calcium	47000			1	49000			1	4.17		UG/L
CHLORIDE	13			1	13			1	0		MG/L
Iron	21	J		1	23	J		1			UG/L
Magnesium	9200			1	9600			1	4.26		UG/L
Manganese	1.6	J		1	1.4	J		1	13.33		UG/L
Molybdenum	0.4			1	0.33			1	19.18		UG/L
Nitrate+Nitrite as N	7.1			10	7.7			5	8.11		MG/L
Potassium	1900			1	1800			1	5.41		UG/L
Selenium	1.6			1	1.8			1	11.76		UG/L
Silica	11000			1	11000			1	0		UG/L
Silicon	5200			1	5100			1	1.94		UG/L
Sodium	13000			1	12000			1	8.00		UG/L
SULFATE	33			1	39			1	16.67		MG/L
TOTAL DISSOLVED SOLIDS	210			1	250			1	17.39		MG/L

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

RIN: 15026775 **Lab Code:** PAR **Project:** Tuba City **Validation Date:** 5/11/2015

Duplicate: 2723 **Sample:** 0932

Analyte	Sample Result	Flag	Error	Dilution	Duplicate Result	Flag	Error	Dilution	RPD	RER	Units
Uranium	2.1			1	2.8			1	28.57		UG/L

Duplicate: 2724 **Sample:** NMW-3A

Analyte	Sample Result	Flag	Error	Dilution	Duplicate Result	Flag	Error	Dilution	RPD	RER	Units
AMMONIA AS N	0.1	U		1	0.1	U		1			MG/L
Arsenic	2.1			1	2	J		50			UG/L
Calcium	34000			1	33000			1	2.99		UG/L
CHLORIDE	8.9			1	8.8			1	1.13		MG/L
Iron	18	J		1	10	J		1			UG/L
Magnesium	6100			1	6100			1	0		UG/L
Manganese	1.1	J		1	1	J		1			UG/L
Molybdenum	0.37			1	1.6	U		50			UG/L
Nitrate+Nitrite as N	2.7			5	3			5	10.53		MG/L
Potassium	1300			1	1300			1	0		UG/L
Selenium	1.1			1	8.2			50	NA		UG/L
Silica	10000			1	10000			1	0		UG/L
Silicon	4800			1	4800			1	0		UG/L
Sodium	9300			1	9300			1	0		UG/L
SULFATE	11			1	11			1	0		MG/L
TOTAL DISSOLVED SOLIDS	170			1	150			1	12.50		MG/L
Uranium	1.3			1	1.2			50	8.00		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: Stephen Donivan — Date: 6-11-2015

Data Validation Lead: Gretchen Baer — Date: 6/10/15

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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 can result from transcription errors, data-coding errors, or measurement system problems. However, outliers can also represent true extreme values of a distribution and can 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.** Do this by generating the Outliers Report using the Sample Management System from data in the environmental database. The application compares the new data set (in standard environmental database units) with historical data and lists the new data that fall outside the historical data range. A determination is also made as to whether the data are normally distributed using the Shapiro-Wilk Test.
2. **Apply the appropriate statistical test.** Dixon's Test for extreme values 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.** The review should include an evaluation of any notable trends in the data that may indicate the outliers represent true extreme values.

Data were identified as potentially anomalous for six results. (See the Data Validation Outliers Report, below.) Further review of these data did not indicate any laboratory errors. 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 the data from this event are acceptable as qualified. There were no anomalies identified in the previous report (December 2014) that required further review.

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Data Validation Outliers Report - No Field Parameters
Comparison: All historical Data Beginning 1/1/2005
Laboratory: ALS Laboratory Group
RIN: 15026775
Report Date: 5/11/2015

					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	02/17/2015	Calcium	26.0		FQ	32.0		FQ	27.0		FQ	21	0	No
TUB01	0251	N001	02/17/2015	Nitrate + Nitrite as Nitrogen	2.90		FQ	5.10	N	FQ	3.00		FQ	21	0	No
TUB01	0251	N001	02/17/2015	Sulfate	9.20		FQ	17.0		FQ	11.0		FQ	21	0	No
TUB01	0262	N001	02/16/2015	Magnesium	250		FQ	240		FQ	71.0		FQ	21	0	No
TUB01	0262	N001	02/16/2015	Molybdenum	0.340		FQ	1.70		FQ	0.410		FQ	21	0	No
TUB01	0262	N001	02/16/2015	Selenium	0.0410		FQ	0.110		FQ	0.0450		FQ	21	0	No
TUB01	0262	N001	02/16/2015	Uranium	0.520		FQ	1.40		FQ	0.560		F	21	0	No
TUB01	0263	N001	02/16/2015	Uranium	0.400		FQ	0.370		FQ	0.0960		QF	21	0	NA
TUB01	0264	N001	02/16/2015	Calcium	79.0		FQ	74.0		FQ	54.0		FQ	21	0	No
TUB01	0264	N001	02/16/2015	Magnesium	15.0		FQ	14.0		FQ	11.0		FQ	21	0	No
TUB01	0268	N001	02/16/2015	Selenium	0.00320		F	0.00310		F	0.00130		F	23	0	No
TUB01	0272	N001	02/17/2015	Selenium	0.00160		FQ	0.00150	U	F	0.00071		F	24	3	No
TUB01	0274	N001	02/16/2015	Ammonia Total as N	0.220		FQ	0.110		FQ	0.0160	U	FQ	20	19	NA
TUB01	0274	N001	02/16/2015	Arsenic	0.00260		FQ	0.00250		FQ	0.00140		FQ	20	1	NA
TUB01	0274	N001	02/16/2015	Iron	0.310		FQ	0.0491	B	FQ	0.00140	U	FQ	20	17	No
TUB01	0274	N001	02/16/2015	Manganese	0.0570		FQ	0.0170		FQ	0.0001	U	JFQ	20	12	No
TUB01	0275	N001	02/16/2015	Iron	0.1000	J	F	0.0680	B	UFJ	0.00140	U	FJ	20	17	No
TUB01	0281	0001	02/17/2015	Chloride	17.0		FQ	30.0		FQ	18.0		FQ	21	0	No
TUB01	0281	0001	02/17/2015	Silicon	6.10		FQ	7.20		FQ	6.20		FQ	19	0	No
TUB01	0281	0001	02/17/2015	Total Dissolved Solids	380		FQ	690		FQ	410		FQ	20	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: All historical Data Beginning 1/1/2005
Laboratory: ALS Laboratory Group
RIN: 15026775
Report Date: 5/11/2015

					Current	*Qualifiers*		**Historical Maximum**	*Qualifiers*		**Historical Minimum**	*Qualifiers*		**Number of Data Points**		**Statistical Outlier**
Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	*Lab*	*Data*	Result	*Lab*	*Data*	Result	*Lab*	*Data*	N	N Below Detect	
TUB01	0281	0001	02/17/2015	Uranium	0.00520		FQ	0.00875		QF	0.00530		FQ	21	0	No
TUB01	0286	N001	02/17/2015	Ammonia Total as N	25.0		FQ	19.8		FQ	0.1000	U	F	14	3	No
TUB01	0287	N001	02/17/2015	Magnesium	160		FQ	152		FQ	110		FQ	14	0	No
TUB01	0287	N001	02/17/2015	Manganese	0.0160		FQ	0.0120		FQ	0.00740	B	FQ	14	2	Yes
TUB01	0288	N001	02/17/2015	Chloride	18.0		FQ	37.0		FQ	19.9		QF	14	0	No
TUB01	0288	N001	02/17/2015	Magnesium	26.0		FQ	63.0		FQ	27.0		FQ	14	0	No
TUB01	0288	N001	02/17/2015	Manganese	0.00052	J	FQ	0.0190		FQ	0.00073	B	UFQ	14	5	No
TUB01	0288	N001	02/17/2015	Nitrate + Nitrite as Nitrogen	35.0		FQ	110		FQJ	40.0		FQ	14	0	No
TUB01	0288	N001	02/17/2015	Silica	13.0		FQ	18.0		FQ	14.0		FQ	14	0	No
TUB01	0288	N001	02/17/2015	Silicon	6.20		FQ	8.40		FQ	6.50		FQ	12	0	No
TUB01	0288	N001	02/17/2015	Sodium	30.0		FQ	74.0		FQ	35.0		FQ	14	0	No
TUB01	0288	N001	02/17/2015	Sulfate	150		FQ	540		FQ	190		FQ	14	0	No
TUB01	0288	N001	02/17/2015	Total Dissolved Solids	650		FQ	1600		FQ	820		JFQ	14	0	No
TUB01	0288	N001	02/17/2015	Uranium	0.00730		FQ	0.0220		FQ	0.00850		FQ	14	0	No
TUB01	0289	N001	02/17/2015	Iron	0.170		FQ	0.1000		F	0.00140	U	FQJ	14	10	No
TUB01	0289	N001	02/17/2015	Magnesium	20.0		FQ	43.0		FQ	22.0		FQ	14	0	No
TUB01	0289	N001	02/17/2015	Nitrate + Nitrite as Nitrogen	20.0		FQ	65.0		FQ	25.8		FQ	14	0	No
TUB01	0289	N001	02/17/2015	Selenium	0.00160		FQ	0.00360		FQ	0.00182	B	QF	14	0	No
TUB01	0289	N001	02/17/2015	Sodium	24.0		FQ	45.0		FQ	26.0	E	FQ	14	0	No
TUB01	0289	N001	02/17/2015	Sulfate	100.0		FQ	360		FQ	109		QF	14	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: All historical Data Beginning 1/1/2005
Laboratory: ALS Laboratory Group
RIN: 15026775
Report Date: 5/11/2015

					Current	Qualifiers		Historical Maximum	Qualifiers		Historical Minimum	Qualifiers		Number of Data Points		Statistical Outlier
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	02/17/2015	Total Dissolved Solids	500		FQ	1200		FQ	557		FQ	14	0	No
TUB01	0289	N001	02/17/2015	Uranium	0.00980		FQ	0.0240		FQ	0.0123		FQ	14	0	NA
TUB01	0290	N001	02/16/2015	Magnesium	49.0		FQ	47.0		FQ	5.80		FQ	14	0	No
TUB01	0691	N001	02/16/2015	Calcium	430		F	390		F	81.0		F	22	0	NA
TUB01	0691	N001	02/16/2015	Magnesium	71.0		F	63.0		F	13.0		F	22	0	NA
TUB01	0691	N001	02/16/2015	Selenium	0.00530		F	0.00500		F	0.00150		F	22	0	No
TUB01	0691	N001	02/16/2015	Silicon	7.60		F	7.50		F	5.60		F	20	0	No
TUB01	0691	N001	02/16/2015	Uranium	0.120		F	0.1000		F	0.00830		FQ	22	0	No
TUB01	0906	N001	02/16/2015	Nitrate + Nitrite as Nitrogen	560		FQ	530		FQ	343		FQ	15	0	No
TUB01	0906	N001	02/16/2015	Uranium	0.400		FQ	1.000			0.420		QF	15	0	No
TUB01	0908	N001	02/16/2015	Sulfate	2400		FQ	3100		FQJ	2500		FQ	20	0	No
TUB01	0930	N001	02/16/2015	Calcium	160		F	150		F	49.0		F	21	0	NA
TUB01	0930	N001	02/16/2015	Magnesium	35.0		F	31.0		F	10.00		F	21	0	NA
TUB01	0930	N001	02/16/2015	Molybdenum	0.00012		F	0.001		UF	0.00014		F	21	13	No
TUB01	0930	N001	02/16/2015	Nitrate + Nitrite as Nitrogen	39.0		F	37.0		F	1.50		F	21	0	No
TUB01	0930	N001	02/16/2015	Potassium	3.30		F	3.20		F	1.40		FJ	21	0	No
TUB01	0930	N001	02/16/2015	Selenium	0.00340		F	0.00320		F	0.00140		F	21	1	No
TUB01	0930	N001	02/16/2015	Sodium	20.0		F	19.0		F	8.90		F	21	0	No
TUB01	0930	N001	02/16/2015	Sulfate	230		F	210		F	41.0		F	21	0	NA
TUB01	0930	N001	02/16/2015	Total Dissolved Solids	820		F	780		JF	230		F	21	0	NA

Data Validation Outliers Report - No Field Parameters
Comparison: All historical Data Beginning 1/1/2005
Laboratory: ALS Laboratory Group
RIN: 15026775
Report Date: 5/11/2015

					Current	Qualifiers		Historical Maximum	Qualifiers		Historical Minimum	Qualifiers		Number of Data Points		Statistical Outlier
Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
TUB01	0930	N001	02/16/2015	Uranium	0.00990		F	0.00830		F	0.00230		F	21	0	NA
TUB01	0932	N002	02/17/2015	Ammonia Total as N	0.280		F	0.124		F	0.0160	U	F	22	21	NA
TUB01	0932	N002	02/17/2015	Sulfate	39.0		F	38.2		F	23.2		F	23	0	No
TUB01	0934	N002	02/17/2015	Nitrate + Nitrite as Nitrogen	310		FQ	520		FQJ	350		FQ	23	0	No
TUB01	0934	N001	02/17/2015	Nitrate + Nitrite as Nitrogen	300		FQ	520		FQJ	350		FQ	23	0	No
TUB01	0935	N001	02/17/2015	Nitrate + Nitrite as Nitrogen	140			340		J	170		F	20	0	No
TUB01	0935	N001	02/17/2015	Total Dissolved Solids	4500			5700		J	4800		J	20	0	No
TUB01	0936	0001	02/17/2015	Molybdenum	0.890			0.720			0.00056	B	U	9	3	No
TUB01	0936	0001	02/17/2015	Selenium	0.0560			0.0540		FQ	0.0170			9	0	No
TUB01	0936	0001	02/17/2015	Silica	19.0			18.0			15.0		F	9	0	No
TUB01	0936	0001	02/17/2015	Silicon	9.00			8.40			6.80		F	8	0	No
TUB01	0936	0001	02/17/2015	Uranium	0.980			0.680			0.130			9	0	No
TUB01	0938	N001	02/17/2015	Ammonia Total as N	12.0			7.00			0.1000	U	F	18	9	NA
TUB01	0941	N001	02/17/2015	Ammonia Total as N	0.190		FQ	0.1000	U	FQ	0.0270	J	FQ	18	16	NA
TUB01	0941	N001	02/17/2015	Calcium	1200		FQ	1100		FQ	580		FQ	18	0	No
TUB01	0941	N001	02/17/2015	Molybdenum	0.0450		FQ	0.0358	N	QF	0.00150	B	FQ	18	0	No
TUB01	0941	N001	02/17/2015	Uranium	0.310		FQ	0.290		FQ	0.0490		FQ	18	0	No
TUB01	0942	N001	02/17/2015	Total Dissolved Solids	5000			7300			5560			20	0	Yes
TUB01	1570	0001	02/17/2015	Arsenic	0.0330			3.60			0.0360			24	0	NA
TUB01	1570	0001	02/17/2015	Molybdenum	0.0640			4.20			0.120			24	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: All historical Data Beginning 1/1/2005
Laboratory: ALS Laboratory Group
RIN: 15026775
Report Date: 5/11/2015

					Current	*Qualifiers*		**Historical Maximum**	*Qualifiers*		**Historical Minimum**	*Qualifiers*		**Number of Data Points**		**Statistical Outlier**
Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	*Lab*	*Data*	Result	*Lab*	*Data*	Result	*Lab*	*Data*	N	N Below Detect	
TUB01	NMW-1A	N001	02/17/2015	Iron	0.0850	J	F	0.0498	B	F	0.00490	U	F	9	7	No
TUB01	NMW-1A	N001	02/17/2015	Molybdenum	0.00037		F	0.000643	B	UF	0.00039	B	F	9	2	No
TUB01	NMW-1A	N001	02/17/2015	Silica	9.90		F	11.6		F	10.00		F	8	0	No
TUB01	NMW-1A	N001	02/17/2015	Silicon	4.60		F	5.20		F	4.80		F	5	0	No
TUB01	NMW-2A	N001	02/18/2015	Calcium	34.0		F	33.8		F	32.0		F	6	0	No
TUB01	NMW-2A	N001	02/18/2015	Potassium	1.50		F	1.40		FQ	1.000		F	6	0	No
TUB01	NMW-2A	N001	02/18/2015	Silica	9.80		F	11.5		F	10.00		FQ	5	0	No
TUB01	NMW-3A	N002	02/17/2015	Molybdenum	0.00160	U	F	0.00047	B	UF	0.00031	B	F	5	1	Yes
TUB01	NMW-3A	N001	02/17/2015	Nitrate + Nitrite as Nitrogen	2.70		F	3.30		F	3.08		F	5	0	No
TUB01	NMW-3A	N002	02/17/2015	Nitrate + Nitrite as Nitrogen	3.00		F	3.30		F	3.08		F	5	0	No
TUB01	NMW-3A	N002	02/17/2015	Selenium	0.00820		F	0.00160		F	0.00110		F	5	1	Yes
TUB01	NMW-3A	N002	02/17/2015	Sulfate	11.0		F	13.0		F	11.4		F	5	0	No
TUB01	NMW-3A	N001	02/17/2015	Sulfate	11.0		F	13.0		F	11.4		F	5	0	No
TUB01	NMW-3A	N001	02/17/2015	Total Dissolved Solids	170		F	150		F	150		F	5	0	NA
TUB01	NMW-4A	N001	02/18/2015	Iron	0.0470	J	F	0.0300	U	F	0.00490	U	F	5	5	No
TUB01	NMW-4A	N001	02/18/2015	Nitrate + Nitrite as Nitrogen	3.10		F	3.70		F	3.47		F	5	0	No
TUB01	NMW-4A	N001	02/18/2015	Selenium	0.00160		F	0.00150	U	F	0.00110		F	5	1	No
TUB01	NMW-5	N001	02/17/2015	Uranium	0.00510		F	0.00507		F	0.00440		F	5	0	No
TUB01	NMW-6S	N001	02/17/2015	Iron	0.0960	J	FQ	0.0405	B	F	0.00490	U	F	7	6	Yes
TUB01	NMW-6S	N001	02/17/2015	Nitrate + Nitrite as Nitrogen	3.20		FQ	3.70		F	3.35		F	7	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: All historical Data Beginning 1/1/2005
Laboratory: ALS Laboratory Group
RIN: 15026775
Report Date: 5/11/2015

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Qualifiers		Historical Maximum	Qualifiers		Historical Minimum	Qualifiers		Number of Data Points		Statistical Outlier
					Result	*Lab*	*Data*	Result	*Lab*	*Data*	Result	*Lab*	*Data*	N	N Below Detect	
TUB01	NMW-6S	N001	02/17/2015	Silica	9.80		FQ	12.2		F	10.00		FQ	6	0	No
TUB01	NMW-7D	N001	02/17/2015	Iron	0.230		FQ	0.131		F	0.00490	U	FQ	7	4	No
TUB01	NMW-7D	N001	02/17/2015	Sulfate	8.60		FQ	26.9		F	8.80		FQ	7	0	NA
TUB01	NMW-8S	N001	02/17/2015	Iron	0.0970	J	F	0.0300	U	F	0.00490	U	F	8	7	Yes
TUB01	NMW-8S	N001	02/17/2015	Nitrate + Nitrite as Nitrogen	3.30		F	4.00		F	3.40		F	8	0	No
TUB01	NMW-8S	N001	02/17/2015	Silica	9.30		F	11.2		F	9.70		F	7	0	No
TUB01	NMW-8S	N001	02/17/2015	Silicon	4.30		F	5.00		F	4.50		F	5	0	No
TUB01	NMW-9D	N001	02/17/2015	Calcium	33.0		FQ	39.2		QF	34.0		FQ	7	0	No
TUB01	NMW-9D	N001	02/17/2015	Manganese	0.0310		FQ	0.620		F	0.0360		FQ	7	0	No
TUB01	NMW-9D	N001	02/17/2015	Silica	10.00		FQ	15.7		F	11.0		FQ	6	0	No
TUB01	NMW-9D	N001	02/17/2015	Sulfate	24.0		FQ	32.0		FQ	25.0		FQ	7	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.

NA: Data are not normally or lognormally distributed.

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: 5/11/2015

Location: 0251 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	02/17/2015	N001	200	-	300	38		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	N001	200	-	300	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/17/2015	N001	200	-	300	0.0024		FQ	#	0.000015	
Calcium	mg/L	02/17/2015	N001	200	-	300	26		FQ	#	0.024	
Chloride	mg/L	02/17/2015	N001	200	-	300	6.4		FQ	#	0.2	
Iron	mg/L	02/17/2015	N001	200	-	300	0.074	J	FQ	#	0.0067	
Magnesium	mg/L	02/17/2015	N001	200	-	300	5.6		FQ	#	0.03	
Manganese	mg/L	02/17/2015	N001	200	-	300	0.026		FQ	#	0.00024	
Molybdenum	mg/L	02/17/2015	N001	200	-	300	0.00021		FQ	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	200	-	300	2.9		FQ	#	0.05	
Oxidation Reduction Potential	mV	02/17/2015	N001	200	-	300	135.3		FQ	#		
pH	s.u.	02/17/2015	N001	200	-	300	8.16		FQ	#		
Potassium	mg/L	02/17/2015	N001	200	-	300	2.3		FQ	#	0.052	
Selenium	mg/L	02/17/2015	N001	200	-	300	0.00098		FQ	#	0.000032	
Silica	mg/L	02/17/2015	N001	200	-	300	9.8		FQ	#	0.021	
Silicon	mg/L	02/17/2015	N001	200	-	300	4.6		FQ	#	0.0097	
Sodium	mg/L	02/17/2015	N001	200	-	300	6		FQ	#	0.047	
Specific Conductance	umhos /cm	02/17/2015	N001	200	-	300	216		FQ	#		
Sulfate	mg/L	02/17/2015	N001	200	-	300	9.2		FQ	#	0.5	
Temperature	C	02/17/2015	N001	200	-	300	15.42		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	200	-	300	120		FQ	#	20	
Turbidity	NTU	02/17/2015	N001	200	-	300	2		FQ	#		
Uranium	mg/L	02/17/2015	N001	200	-	300	0.0015		FQ	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: 0252 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	02/17/2015	N001	400	-	500	34		F	#		
Ammonia Total as N	mg/L	02/17/2015	N001	400	-	500	0.1	U	F	#	0.1	
Arsenic	mg/L	02/17/2015	N001	400	-	500	0.0022		F	#	0.000015	
Calcium	mg/L	02/17/2015	N001	400	-	500	21		F	#	0.024	
Chloride	mg/L	02/17/2015	N001	400	-	500	4.8		F	#	0.2	
Iron	mg/L	02/17/2015	N001	400	-	500	0.14		F	#	0.0067	
Magnesium	mg/L	02/17/2015	N001	400	-	500	4.2		F	#	0.03	
Manganese	mg/L	02/17/2015	N001	400	-	500	0.012		F	#	0.00024	
Molybdenum	mg/L	02/17/2015	N001	400	-	500	0.00019		F	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	400	-	500	2.2		F	#	0.05	
Oxidation Reduction Potential	mV	02/17/2015	N001	400	-	500	184.5		F	#		
pH	s.u.	02/17/2015	N001	400	-	500	8.08		F	#		
Potassium	mg/L	02/17/2015	N001	400	-	500	2.3		F	#	0.052	
Selenium	mg/L	02/17/2015	N001	400	-	500	0.00077		F	#	0.000032	
Silica	mg/L	02/17/2015	N001	400	-	500	9.9		F	#	0.021	
Silicon	mg/L	02/17/2015	N001	400	-	500	4.6		F	#	0.0097	
Sodium	mg/L	02/17/2015	N001	400	-	500	9.9		F	#	0.047	
Specific Conductance	umhos /cm	02/17/2015	N001	400	-	500	192		F	#		
Sulfate	mg/L	02/17/2015	N001	400	-	500	6.2		F	#	0.5	
Temperature	C	02/17/2015	N001	400	-	500	13.85		F	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	400	-	500	110		F	#	20	
Turbidity	NTU	02/17/2015	N001	400	-	500	1.43		F	#		
Uranium	mg/L	02/17/2015	N001	400	-	500	0.002		F	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: 0258 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	02/16/2015	N001	159	-	199	106		FQ	#		
Ammonia Total as N	mg/L	02/16/2015	N001	159	-	199	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/16/2015	N001	159	-	199	0.0026		FQ	#	0.000015	
Calcium	mg/L	02/16/2015	N001	159	-	199	34		FQ	#	0.024	
Chloride	mg/L	02/16/2015	N001	159	-	199	12		FQ	#	0.2	
Iron	mg/L	02/16/2015	N001	159	-	199	0.014	J	UFQ	#	0.0067	
Magnesium	mg/L	02/16/2015	N001	159	-	199	7		FQ	#	0.03	
Manganese	mg/L	02/16/2015	N001	159	-	199	0.00027	J	UFQ	#	0.00024	
Molybdenum	mg/L	02/16/2015	N001	159	-	199	0.00047		FQ	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/16/2015	N001	159	-	199	3.1		FQ	#	0.05	
Oxidation Reduction Potential	mV	02/16/2015	N001	159	-	199	140.6		FQ	#		
pH	s.u.	02/16/2015	N001	159	-	199	8.01		FQ	#		
Potassium	mg/L	02/16/2015	N001	159	-	199	1.7		FQ	#	0.052	
Selenium	mg/L	02/16/2015	N001	159	-	199	0.0018		FQ	#	0.000032	
Silica	mg/L	02/16/2015	N001	159	-	199	11		FQ	#	0.021	
Silicon	mg/L	02/16/2015	N001	159	-	199	5.3		FQ	#	0.0097	
Sodium	mg/L	02/16/2015	N001	159	-	199	12		FQ	#	0.047	
Specific Conductance	umhos /cm	02/16/2015	N001	159	-	199	289		FQ	#		
Sulfate	mg/L	02/16/2015	N001	159	-	199	17		FQ	#	0.5	
Temperature	C	02/16/2015	N001	159	-	199	16.49		FQ	#		
Total Dissolved Solids	mg/L	02/16/2015	N001	159	-	199	170		FQ	#	20	
Turbidity	NTU	02/16/2015	N001	159	-	199	1.33		FQ	#		
Uranium	mg/L	02/16/2015	N001	159	-	199	0.0013		FQ	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: 0262 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	02/16/2015	N001	60	-	100	506		FQ	#		
Ammonia Total as N	mg/L	02/16/2015	N001	60	-	100	1.6		FQ	#	0.1	
Arsenic	mg/L	02/16/2015	N001	60	-	100	0.0024		FQ	#	0.000074	
Calcium	mg/L	02/16/2015	N001	60	-	100	780		FQ	#	0.049	
Chloride	mg/L	02/16/2015	N001	60	-	100	130		FQ	#	10	
Iron	mg/L	02/16/2015	N001	60	-	100	0.025	J	UFQ	#	0.013	
Magnesium	mg/L	02/16/2015	N001	60	-	100	250		FQ	#	0.06	
Manganese	mg/L	02/16/2015	N001	60	-	100	0.018		FQ	#	0.00049	
Molybdenum	mg/L	02/16/2015	N001	60	-	100	0.34		FQ	#	0.00016	
Nitrate + Nitrite as Nitrogen	mg/L	02/16/2015	N001	60	-	100	190		FQ	#	2	
Oxidation Reduction Potential	mV	02/16/2015	N001	60	-	100	203.2		FQ	#		
pH	s.u.	02/16/2015	N001	60	-	100	6.74		FQ	#		
Potassium	mg/L	02/16/2015	N001	60	-	100	8.1		FQ	#	0.1	
Selenium	mg/L	02/16/2015	N001	60	-	100	0.041		FQ	#	0.00016	
Silica	mg/L	02/16/2015	N001	60	-	100	20		FQ	#	0.041	
Silicon	mg/L	02/16/2015	N001	60	-	100	9.4		FQ	#	0.019	
Sodium	mg/L	02/16/2015	N001	60	-	100	280		FQ	#	0.093	
Specific Conductance	umhos /cm	02/16/2015	N001	60	-	100	5166		FQ	#		
Sulfate	mg/L	02/16/2015	N001	60	-	100	2100		FQ	#	25	
Temperature	C	02/16/2015	N001	60	-	100	15.66		FQ	#		
Total Dissolved Solids	mg/L	02/16/2015	N001	60	-	100	4700		FQ	#	80	
Turbidity	NTU	02/16/2015	N001	60	-	100	3.9		FQ	#		
Uranium	mg/L	02/16/2015	N001	60	-	100	0.52		FQ	#	0.000029	

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

REPORT DATE: 5/11/2015

Location: 0263 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	02/16/2015	N001	60	-	100	442		FQ	#		
Ammonia Total as N	mg/L	02/16/2015	N001	60	-	100	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/16/2015	N001	60	-	100	0.0026		FQ	#	0.00015	
Calcium	mg/L	02/16/2015	N001	60	-	100	540		FQ	#	0.049	
Chloride	mg/L	02/16/2015	N001	60	-	100	130		FQ	#	10	
Iron	mg/L	02/16/2015	N001	60	-	100	0.095	J	FQ	#	0.013	
Magnesium	mg/L	02/16/2015	N001	60	-	100	400		FQ	#	0.06	
Manganese	mg/L	02/16/2015	N001	60	-	100	0.007	J	FQ	#	0.00049	
Molybdenum	mg/L	02/16/2015	N001	60	-	100	0.084		FQ	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	02/16/2015	N001	60	-	100	160		FQ	#	2	
Oxidation Reduction Potential	mV	02/16/2015	N001	60	-	100	189.7		FQ	#		
pH	s.u.	02/16/2015	N001	60	-	100	6.7		FQ	#		
Potassium	mg/L	02/16/2015	N001	60	-	100	6.1		FQ	#	0.1	
Selenium	mg/L	02/16/2015	N001	60	-	100	0.028		FQ	#	0.00032	
Silica	mg/L	02/16/2015	N001	60	-	100	21		FQ	#	0.041	
Silicon	mg/L	02/16/2015	N001	60	-	100	9.8		FQ	#	0.019	
Sodium	mg/L	02/16/2015	N001	60	-	100	280		FQ	#	0.093	
Specific Conductance	umhos /cm	02/16/2015	N001	60	-	100	4997		FQ	#		
Sulfate	mg/L	02/16/2015	N001	60	-	100	2100		FQ	#	25	
Temperature	C	02/16/2015	N001	60	-	100	16.61		FQ	#		
Total Dissolved Solids	mg/L	02/16/2015	N001	60	-	100	4600		FQ	#	80	
Turbidity	NTU	02/16/2015	N001	60	-	100	5.37		FQ	#		
Uranium	mg/L	02/16/2015	N001	60	-	100	0.4		FQ	#	0.000029	

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

REPORT DATE: 5/11/2015

Location: 0264 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	02/16/2015	N001	160	-	200	104		FQ	#		
Ammonia Total as N	mg/L	02/16/2015	N001	160	-	200	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/16/2015	N001	160	-	200	0.0021		FQ	#	0.000015	
Calcium	mg/L	02/16/2015	N001	160	-	200	79		FQ	#	0.024	
Chloride	mg/L	02/16/2015	N001	160	-	200	16		FQ	#	1	
Iron	mg/L	02/16/2015	N001	160	-	200	0.013	J	FQ	#	0.0067	
Magnesium	mg/L	02/16/2015	N001	160	-	200	15		FQ	#	0.03	
Manganese	mg/L	02/16/2015	N001	160	-	200	0.00094	J	UFQ	#	0.00024	
Molybdenum	mg/L	02/16/2015	N001	160	-	200	0.00041		FQ	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/16/2015	N001	160	-	200	11		FQ	#	0.1	
Oxidation Reduction Potential	mV	02/16/2015	N001	160	-	200	173.3		FQ	#		
pH	s.u.	02/16/2015	N001	160	-	200	8.19		FQ	#		
Potassium	mg/L	02/16/2015	N001	160	-	200	2.2		FQ	#	0.052	
Selenium	mg/L	02/16/2015	N001	160	-	200	0.0025		FQ	#	0.000032	
Silica	mg/L	02/16/2015	N001	160	-	200	12		FQ	#	0.021	
Silicon	mg/L	02/16/2015	N001	160	-	200	5.8		FQ	#	0.0097	
Sodium	mg/L	02/16/2015	N001	160	-	200	17		FQ	#	0.047	
Specific Conductance	umhos /cm	02/16/2015	N001	160	-	200	562		FQ	#		
Sulfate	mg/L	02/16/2015	N001	160	-	200	94		FQ	#	2.5	
Temperature	C	02/16/2015	N001	160	-	200	16.18		FQ	#		
Total Dissolved Solids	mg/L	02/16/2015	N001	160	-	200	360		FQ	#	20	
Turbidity	NTU	02/16/2015	N001	160	-	200	3.15		FQ	#		
Uranium	mg/L	02/16/2015	N001	160	-	200	0.0046		FQ	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: 0265 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	02/17/2015	N001	60	-	100	340		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	N001	60	-	100	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/17/2015	N001	60	-	100	0.0011		FQ	#	0.000074	
Calcium	mg/L	02/17/2015	N001	60	-	100	620		FQ	#	0.049	
Chloride	mg/L	02/17/2015	N001	60	-	100	130		FQ	#	10	
Iron	mg/L	02/17/2015	N001	60	-	100	0.054	J	FQ	#	0.013	
Magnesium	mg/L	02/17/2015	N001	60	-	100	170		FQ	#	0.06	
Manganese	mg/L	02/17/2015	N001	60	-	100	0.0027	J	UFQ	#	0.00049	
Molybdenum	mg/L	02/17/2015	N001	60	-	100	0.00016	U	FQ	#	0.00016	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	60	-	100	160		FQ	#	1	
Oxidation Reduction Potential	mV	02/17/2015	N001	60	-	100	215.6		FQ	#		
pH	s.u.	02/17/2015	N001	60	-	100	6.89		FQ	#		
Potassium	mg/L	02/17/2015	N001	60	-	100	5.5		FQ	#	0.1	
Selenium	mg/L	02/17/2015	N001	60	-	100	0.0072		FQ	#	0.00016	
Silica	mg/L	02/17/2015	N001	60	-	100	16		FQ	#	0.041	
Silicon	mg/L	02/17/2015	N001	60	-	100	7.6		FQ	#	0.019	
Sodium	mg/L	02/17/2015	N001	60	-	100	120		FQ	#	0.093	
Specific Conductance	umhos /cm	02/17/2015	N001	60	-	100	3818		FQ	#		
Sulfate	mg/L	02/17/2015	N001	60	-	100	1200		FQ	#	25	
Temperature	C	02/17/2015	N001	60	-	100	15.51		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	60	-	100	3100	*	FQ	#	80	
Turbidity	NTU	02/17/2015	N001	60	-	100	1.11		FQ	#		
Uranium	mg/L	02/17/2015	N001	60	-	100	0.071		FQ	#	0.000015	

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

REPORT DATE: 5/11/2015

Location: 0266 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	02/17/2015	N001	160	-	200	62		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	N001	160	-	200	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/17/2015	N001	160	-	200	0.0019		FQ	#	0.000015	
Calcium	mg/L	02/17/2015	N001	160	-	200	28		FQ	#	0.024	
Chloride	mg/L	02/17/2015	N001	160	-	200	7.7		FQ	#	0.2	
Iron	mg/L	02/17/2015	N001	160	-	200	0.19		FQ	#	0.0067	
Magnesium	mg/L	02/17/2015	N001	160	-	200	7.1		FQ	#	0.03	
Manganese	mg/L	02/17/2015	N001	160	-	200	0.0039	J	FQ	#	0.00024	
Molybdenum	mg/L	02/17/2015	N001	160	-	200	0.00031		FQ	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	160	-	200	3		FQ	#	0.05	
Oxidation Reduction Potential	mV	02/17/2015	N001	160	-	200	184.1		FQ	#		
pH	s.u.	02/17/2015	N001	160	-	200	8.13		FQ	#		
Potassium	mg/L	02/17/2015	N001	160	-	200	2.2		FQ	#	0.052	
Selenium	mg/L	02/17/2015	N001	160	-	200	0.0015		FQ	#	0.000032	
Silica	mg/L	02/17/2015	N001	160	-	200	11		FQ	#	0.021	
Silicon	mg/L	02/17/2015	N001	160	-	200	5.4		FQ	#	0.0097	
Sodium	mg/L	02/17/2015	N001	160	-	200	5.8		FQ	#	0.047	
Specific Conductance	umhos /cm	02/17/2015	N001	160	-	200	235		FQ	#		
Sulfate	mg/L	02/17/2015	N001	160	-	200	10		FQ	#	0.5	
Temperature	C	02/17/2015	N001	160	-	200	16.85		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	160	-	200	140		FQ	#	20	
Turbidity	NTU	02/17/2015	N001	160	-	200	9.34		FQ	#		
Uranium	mg/L	02/17/2015	N001	160	-	200	0.0017		FQ	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: 0267 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	02/17/2015	N001	60	-	100	736		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	N001	60	-	100	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/17/2015	N001	60	-	100	0.0041		FQ	#	0.00015	
Calcium	mg/L	02/17/2015	N001	60	-	100	630		FQ	#	0.12	
Chloride	mg/L	02/17/2015	N001	60	-	100	110		FQ	#	20	
Iron	mg/L	02/17/2015	N001	60	-	100	0.033	U	FQ	#	0.033	
Magnesium	mg/L	02/17/2015	N001	60	-	100	810		FQ	#	0.15	
Manganese	mg/L	02/17/2015	N001	60	-	100	0.022	J	FQ	#	0.0012	
Molybdenum	mg/L	02/17/2015	N001	60	-	100	0.00032	U	FQ	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	60	-	100	290		FQ	#	2	
Oxidation Reduction Potential	mV	02/17/2015	N001	60	-	100	221.6		FQ	#		
pH	s.u.	02/17/2015	N001	60	-	100	6.48		FQ	#		
Potassium	mg/L	02/17/2015	N001	60	-	100	8.6		FQ	#	0.26	
Selenium	mg/L	02/17/2015	N001	60	-	100	0.048		FQ	#	0.00032	
Silica	mg/L	02/17/2015	N001	60	-	100	22		FQ	#	0.1	
Silicon	mg/L	02/17/2015	N001	60	-	100	10		FQ	#	0.048	
Sodium	mg/L	02/17/2015	N001	60	-	100	410		FQ	#	0.23	
Specific Conductance	umhos /cm	02/17/2015	N001	60	-	100	7548		FQ	#		
Sulfate	mg/L	02/17/2015	N001	60	-	100	3200		FQ	#	50	
Temperature	C	02/17/2015	N001	60	-	100	15.79		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	60	-	100	7100		FQ	#	200	
Turbidity	NTU	02/17/2015	N001	60	-	100	4.08		FQ	#		
Uranium	mg/L	02/17/2015	N001	60	-	100	0.072		FQ	#	0.000029	

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

REPORT DATE: 5/11/2015

Location: 0268 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	02/16/2015	N001	200	-	300	626		F	#		
Ammonia Total as N	mg/L	02/16/2015	N001	200	-	300	0.1	U	F	#	0.1	
Arsenic	mg/L	02/16/2015	N001	200	-	300	0.0012		F	#	0.000015	
Calcium	mg/L	02/16/2015	N001	200	-	300	170		F	#	0.024	
Chloride	mg/L	02/16/2015	N001	200	-	300	22		F	#	2	
Iron	mg/L	02/16/2015	N001	200	-	300	0.0086	J	F	#	0.0067	
Magnesium	mg/L	02/16/2015	N001	200	-	300	33		F	#	0.03	
Manganese	mg/L	02/16/2015	N001	200	-	300	0.00024	U	F	#	0.00024	
Molybdenum	mg/L	02/16/2015	N001	200	-	300	0.00033		F	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/16/2015	N001	200	-	300	32		F	#	0.2	
Oxidation Reduction Potential	mV	02/16/2015	N001	200	-	300	132.5		F	#		
pH	s.u.	02/16/2015	N001	200	-	300	6.78		F	#		
Potassium	mg/L	02/16/2015	N001	200	-	300	3.4		F	#	0.052	
Selenium	mg/L	02/16/2015	N001	200	-	300	0.0032		F	#	0.000032	
Silica	mg/L	02/16/2015	N001	200	-	300	11		F	#	0.021	
Silicon	mg/L	02/16/2015	N001	200	-	300	5.3		F	#	0.0097	
Sodium	mg/L	02/16/2015	N001	200	-	300	32		F	#	0.047	
Specific Conductance	umhos /cm	02/16/2015	N001	200	-	300	1154		F	#		
Sulfate	mg/L	02/16/2015	N001	200	-	300	290		F	#	5	
Temperature	C	02/16/2015	N001	200	-	300	16.38		F	#		
Total Dissolved Solids	mg/L	02/16/2015	N001	200	-	300	860		F	#	20	
Turbidity	NTU	02/16/2015	N001	200	-	300	1.78		F	#		
Uranium	mg/L	02/16/2015	N001	200	-	300	0.072		F	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: 0272 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	02/17/2015	N001	159.1 - 179.1	81		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	N001	159.1 - 179.1	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/17/2015	N001	159.1 - 179.1	0.0019		FQ	#	0.000015	
Calcium	mg/L	02/17/2015	N001	159.1 - 179.1	35		FQ	#	0.024	
Chloride	mg/L	02/17/2015	N001	159.1 - 179.1	8.3		FQ	#	0.2	
Iron	mg/L	02/17/2015	N001	159.1 - 179.1	0.014	J	FQ	#	0.0067	
Magnesium	mg/L	02/17/2015	N001	159.1 - 179.1	7.2		FQ	#	0.03	
Manganese	mg/L	02/17/2015	N001	159.1 - 179.1	0.0004	J	UFQ	#	0.00024	
Molybdenum	mg/L	02/17/2015	N001	159.1 - 179.1	0.00026		FQ	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	159.1 - 179.1	4.2		FQ	#	0.05	
Oxidation Reduction Potential	mV	02/17/2015	N001	159.1 - 179.1	145		FQ	#		
pH	s.u.	02/17/2015	N001	159.1 - 179.1	7.87		FQ	#		
Potassium	mg/L	02/17/2015	N001	159.1 - 179.1	1.6		FQ	#	0.052	
Selenium	mg/L	02/17/2015	N001	159.1 - 179.1	0.0016		FQ	#	0.000032	
Silica	mg/L	02/17/2015	N001	159.1 - 179.1	10		FQ	#	0.021	
Silicon	mg/L	02/17/2015	N001	159.1 - 179.1	4.8		FQ	#	0.0097	
Sodium	mg/L	02/17/2015	N001	159.1 - 179.1	6.4		FQ	#	0.047	
Specific Conductance	umhos /cm	02/17/2015	N001	159.1 - 179.1	272		FQ	#		
Sulfate	mg/L	02/17/2015	N001	159.1 - 179.1	13		FQ	#	0.5	
Temperature	C	02/17/2015	N001	159.1 - 179.1	16.24		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	159.1 - 179.1	160		FQ	#	20	
Turbidity	NTU	02/17/2015	N001	159.1 - 179.1	1.51		FQ	#		
Uranium	mg/L	02/17/2015	N001	159.1 - 179.1	0.0016		FQ	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: 0273 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	02/17/2015	N001	153	-	173	128		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	N001	153	-	173	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/17/2015	N001	153	-	173	0.0012		FQ	#	0.000074	
Calcium	mg/L	02/17/2015	N001	153	-	173	100		FQ	#	0.024	
Chloride	mg/L	02/17/2015	N001	153	-	173	27		FQ	#	2	
Iron	mg/L	02/17/2015	N001	153	-	173	0.079	J	FQ	#	0.0067	
Magnesium	mg/L	02/17/2015	N001	153	-	173	19		FQ	#	0.03	
Manganese	mg/L	02/17/2015	N001	153	-	173	0.002	J	UFQ	#	0.00024	
Molybdenum	mg/L	02/17/2015	N001	153	-	173	0.014		FQ	#	0.00016	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	153	-	173	25		FQ	#	0.2	
Oxidation Reduction Potential	mV	02/17/2015	N001	153	-	173	193.9		FQ	#		
pH	s.u.	02/17/2015	N001	153	-	173	7.48		FQ	#		
Potassium	mg/L	02/17/2015	N001	153	-	173	2.2		FQ	#	0.052	
Selenium	mg/L	02/17/2015	N001	153	-	173	0.011		FQ	#	0.00016	
Silica	mg/L	02/17/2015	N001	153	-	173	12		FQ	#	0.021	
Silicon	mg/L	02/17/2015	N001	153	-	173	5.6		FQ	#	0.0097	
Sodium	mg/L	02/17/2015	N001	153	-	173	20		FQ	#	0.047	
Specific Conductance	umhos /cm	02/17/2015	N001	153	-	173	719		FQ	#		
Sulfate	mg/L	02/17/2015	N001	153	-	173	110		FQ	#	5	
Temperature	C	02/17/2015	N001	153	-	173	14.16		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	153	-	173	480		FQ	#	20	
Turbidity	NTU	02/17/2015	N001	153	-	173	4.48		FQ	#		
Uranium	mg/L	02/17/2015	N001	153	-	173	0.021		FQ	#	0.000015	

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

REPORT DATE: 5/11/2015

Location: 0274 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	02/16/2015	N001	149	-	169	132		FQ	#		
Ammonia Total as N	mg/L	02/16/2015	N001	149	-	169	0.22		FQ	#	0.1	
Arsenic	mg/L	02/16/2015	N001	149	-	169	0.0026		FQ	#	0.000015	
Calcium	mg/L	02/16/2015	N001	149	-	169	36		FQ	#	0.024	
Chloride	mg/L	02/16/2015	N001	149	-	169	11		FQ	#	0.2	
Iron	mg/L	02/16/2015	N001	149	-	169	0.31		FQ	#	0.0067	
Magnesium	mg/L	02/16/2015	N001	149	-	169	6.9		FQ	#	0.03	
Manganese	mg/L	02/16/2015	N001	149	-	169	0.057		FQ	#	0.00024	
Molybdenum	mg/L	02/16/2015	N001	149	-	169	0.00055		FQ	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/16/2015	N001	149	-	169	3.3		FQ	#	0.05	
Oxidation Reduction Potential	mV	02/16/2015	N001	149	-	169	109.4		FQ	#		
pH	s.u.	02/16/2015	N001	149	-	169	7.45		FQ	#		
Potassium	mg/L	02/16/2015	N001	149	-	169	1.4		FQ	#	0.052	
Selenium	mg/L	02/16/2015	N001	149	-	169	0.0016		FQ	#	0.000032	
Silica	mg/L	02/16/2015	N001	149	-	169	12		FQ	#	0.021	
Silicon	mg/L	02/16/2015	N001	149	-	169	5.5		FQ	#	0.0097	
Sodium	mg/L	02/16/2015	N001	149	-	169	11		FQ	#	0.047	
Specific Conductance	umhos /cm	02/16/2015	N001	149	-	169	280		FQ	#		
Sulfate	mg/L	02/16/2015	N001	149	-	169	15		FQ	#	0.5	
Temperature	C	02/16/2015	N001	149	-	169	15.86		FQ	#		
Total Dissolved Solids	mg/L	02/16/2015	N001	149	-	169	170		FQ	#	20	
Turbidity	NTU	02/16/2015	N001	149	-	169	7.37		FQ	#		
Uranium	mg/L	02/16/2015	N001	149	-	169	0.0019		FQ	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: 0275 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	02/16/2015	N001	158.2	-	178.2	408		F	#		
Ammonia Total as N	mg/L	02/16/2015	N001	158.2	-	178.2	29		F	#	1	
Arsenic	mg/L	02/16/2015	N001	158.2	-	178.2	0.0011		F	#	0.00015	
Calcium	mg/L	02/16/2015	N001	158.2	-	178.2	660		F	#	0.049	
Chloride	mg/L	02/16/2015	N001	158.2	-	178.2	150		F	#	10	
Iron	mg/L	02/16/2015	N001	158.2	-	178.2	0.1	J	F	#	0.013	
Magnesium	mg/L	02/16/2015	N001	158.2	-	178.2	310		F	#	0.06	
Manganese	mg/L	02/16/2015	N001	158.2	-	178.2	9.7		F	#	0.00049	
Molybdenum	mg/L	02/16/2015	N001	158.2	-	178.2	0.00032	U	F	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	02/16/2015	N001	158.2	-	178.2	220		F	#	2	
Oxidation Reduction Potential	mV	02/16/2015	N001	158.2	-	178.2	178.3		F	#		
pH	s.u.	02/16/2015	N001	158.2	-	178.2	6.3		F	#		
Potassium	mg/L	02/16/2015	N001	158.2	-	178.2	16		F	#	0.1	
Selenium	mg/L	02/16/2015	N001	158.2	-	178.2	0.032		F	#	0.00032	
Silica	mg/L	02/16/2015	N001	158.2	-	178.2	17		F	#	0.041	
Silicon	mg/L	02/16/2015	N001	158.2	-	178.2	8.2		F	#	0.019	
Sodium	mg/L	02/16/2015	N001	158.2	-	178.2	300		F	#	0.093	
Specific Conductance	umhos /cm	02/16/2015	N001	158.2	-	178.2	5431		F	#		
Sulfate	mg/L	02/16/2015	N001	158.2	-	178.2	2100		F	#	25	
Temperature	C	02/16/2015	N001	158.2	-	178.2	16.58		F	#		
Total Dissolved Solids	mg/L	02/16/2015	N001	158.2	-	178.2	4900		F	#	80	
Turbidity	NTU	02/16/2015	N001	158.2	-	178.2	5.58		F	#		
Uranium	mg/L	02/16/2015	N001	158.2	-	178.2	0.42		F	#	0.000029	

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

REPORT DATE: 5/11/2015

Location: 0276 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	02/16/2015	N001	154.5 - 174.5	96		F	#		
Ammonia Total as N	mg/L	02/16/2015	N001	154.5 - 174.5	0.1	U	F	#	0.1	
Arsenic	mg/L	02/16/2015	N001	154.5 - 174.5	0.0028		F	#	0.000015	
Calcium	mg/L	02/16/2015	N001	154.5 - 174.5	35		F	#	0.024	
Chloride	mg/L	02/16/2015	N001	154.5 - 174.5	12		F	#	0.2	
Iron	mg/L	02/16/2015	N001	154.5 - 174.5	0.052	J	F	#	0.0067	
Magnesium	mg/L	02/16/2015	N001	154.5 - 174.5	6.8		F	#	0.03	
Manganese	mg/L	02/16/2015	N001	154.5 - 174.5	0.0023	J	UF	#	0.00024	
Molybdenum	mg/L	02/16/2015	N001	154.5 - 174.5	0.00049		F	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/16/2015	N001	154.5 - 174.5	3.2		F	#	0.05	
Oxidation Reduction Potential	mV	02/16/2015	N001	154.5 - 174.5	196		F	#		
pH	s.u.	02/16/2015	N001	154.5 - 174.5	7.48		F	#		
Potassium	mg/L	02/16/2015	N001	154.5 - 174.5	1.4		F	#	0.052	
Selenium	mg/L	02/16/2015	N001	154.5 - 174.5	0.0017		F	#	0.000032	
Silica	mg/L	02/16/2015	N001	154.5 - 174.5	11		F	#	0.021	
Silicon	mg/L	02/16/2015	N001	154.5 - 174.5	5		F	#	0.0097	
Sodium	mg/L	02/16/2015	N001	154.5 - 174.5	13		F	#	0.047	
Specific Conductance	umhos /cm	02/16/2015	N001	154.5 - 174.5	294		F	#		
Sulfate	mg/L	02/16/2015	N001	154.5 - 174.5	19		F	#	0.5	
Temperature	C	02/16/2015	N001	154.5 - 174.5	7.67		F	#		
Total Dissolved Solids	mg/L	02/16/2015	N001	154.5 - 174.5	170		F	#	20	
Turbidity	NTU	02/16/2015	N001	154.5 - 174.5	2.15		F	#		
Uranium	mg/L	02/16/2015	N001	154.5 - 174.5	0.0017		F	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: 0281 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	02/17/2015	N001	70.5	-	80.5	76		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	0001	70.5	-	80.5	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/17/2015	0001	70.5	-	80.5	0.00064		FQ	#	0.000015	
Calcium	mg/L	02/17/2015	0001	70.5	-	80.5	85		FQ	#	0.024	
Chloride	mg/L	02/17/2015	0001	70.5	-	80.5	17		FQ	#	1	
Iron	mg/L	02/17/2015	0001	70.5	-	80.5	0.024	J	UFQ	#	0.0067	
Magnesium	mg/L	02/17/2015	0001	70.5	-	80.5	15		FQ	#	0.03	
Manganese	mg/L	02/17/2015	0001	70.5	-	80.5	0.0032	J	FQ	#	0.00024	
Molybdenum	mg/L	02/17/2015	0001	70.5	-	80.5	0.00045		FQ	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	0001	70.5	-	80.5	19		FQ	#	0.2	
Oxidation Reduction Potential	mV	02/17/2015	N001	70.5	-	80.5	200.4		FQ	#		
pH	s.u.	02/17/2015	N001	70.5	-	80.5	7.6		FQ	#		
Potassium	mg/L	02/17/2015	0001	70.5	-	80.5	1.7		FQ	#	0.052	
Selenium	mg/L	02/17/2015	0001	70.5	-	80.5	0.002		FQ	#	0.000032	
Silica	mg/L	02/17/2015	0001	70.5	-	80.5	13		FQ	#	0.021	
Silicon	mg/L	02/17/2015	0001	70.5	-	80.5	6.1		FQ	#	0.0097	
Sodium	mg/L	02/17/2015	0001	70.5	-	80.5	12		FQ	#	0.047	
Specific Conductance	umhos /cm	02/17/2015	N001	70.5	-	80.5	634		FQ	#		
Sulfate	mg/L	02/17/2015	0001	70.5	-	80.5	78		FQ	#	2.5	
Temperature	C	02/17/2015	N001	70.5	-	80.5	15.34		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	0001	70.5	-	80.5	380		FQ	#	20	
Turbidity	NTU	02/17/2015	N001	70.5	-	80.5	15		FQ	#		
Uranium	mg/L	02/17/2015	0001	70.5	-	80.5	0.0052		FQ	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: 0282 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	02/17/2015	N001	74.1	-	84.1	148		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	N001	74.1	-	84.1	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/17/2015	N001	74.1	-	84.1	0.00026		FQ	#	0.000015	
Calcium	mg/L	02/17/2015	N001	74.1	-	84.1	160		FQ	#	0.024	
Chloride	mg/L	02/17/2015	N001	74.1	-	84.1	50		FQ	#	2	
Iron	mg/L	02/17/2015	N001	74.1	-	84.1	0.033	J	UFQ	#	0.0067	
Magnesium	mg/L	02/17/2015	N001	74.1	-	84.1	30		FQ	#	0.03	
Manganese	mg/L	02/17/2015	N001	74.1	-	84.1	0.0033	J	FQ	#	0.00024	
Molybdenum	mg/L	02/17/2015	N001	74.1	-	84.1	0.00032		FQ	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	74.1	-	84.1	50		FQ	#	0.5	
Oxidation Reduction Potential	mV	02/17/2015	N001	74.1	-	84.1	205.6		FQ	#		
pH	s.u.	02/17/2015	N001	74.1	-	84.1	7.51		FQ	#		
Potassium	mg/L	02/17/2015	N001	74.1	-	84.1	2.6		FQ	#	0.052	
Selenium	mg/L	02/17/2015	N001	74.1	-	84.1	0.0016		FQ	#	0.000032	
Silica	mg/L	02/17/2015	N001	74.1	-	84.1	13		FQ	#	0.021	
Silicon	mg/L	02/17/2015	N001	74.1	-	84.1	6.2		FQ	#	0.0097	
Sodium	mg/L	02/17/2015	N001	74.1	-	84.1	18		FQ	#	0.047	
Specific Conductance	umhos /cm	02/17/2015	N001	74.1	-	84.1	1291		FQ	#		
Sulfate	mg/L	02/17/2015	N001	74.1	-	84.1	150		FQ	#	5	
Temperature	C	02/17/2015	N001	74.1	-	84.1	16.63		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	74.1	-	84.1	770		FQ	#	20	
Turbidity	NTU	02/17/2015	N001	74.1	-	84.1	1.6		FQ	#		
Uranium	mg/L	02/17/2015	N001	74.1	-	84.1	0.0086		FQ	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: 0286 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	02/17/2015	N001	93.2	-	103.2	554		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	N001	93.2	-	103.2	25		FQ	#	2.5	
Arsenic	mg/L	02/17/2015	N001	93.2	-	103.2	0.001		FQ	#	0.00015	
Calcium	mg/L	02/17/2015	N001	93.2	-	103.2	690		FQ	#	0.049	
Chloride	mg/L	02/17/2015	N001	93.2	-	103.2	95		FQ	#	10	
Iron	mg/L	02/17/2015	N001	93.2	-	103.2	0.056	J	UFQ	#	0.013	
Magnesium	mg/L	02/17/2015	N001	93.2	-	103.2	280		FQ	#	0.06	
Manganese	mg/L	02/17/2015	N001	93.2	-	103.2	2.7		FQ	#	0.00049	
Molybdenum	mg/L	02/17/2015	N001	93.2	-	103.2	0.00032	U	FQ	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	93.2	-	103.2	150		FQ	#	1	
Oxidation Reduction Potential	mV	02/17/2015	N001	93.2	-	103.2	186.9		FQ	#		
pH	s.u.	02/17/2015	N001	93.2	-	103.2	6.6		FQ	#		
Potassium	mg/L	02/17/2015	N001	93.2	-	103.2	14		FQ	#	0.1	
Selenium	mg/L	02/17/2015	N001	93.2	-	103.2	0.019		FQ	#	0.00032	
Silica	mg/L	02/17/2015	N001	93.2	-	103.2	17		FQ	#	0.041	
Silicon	mg/L	02/17/2015	N001	93.2	-	103.2	7.9		FQ	#	0.019	
Sodium	mg/L	02/17/2015	N001	93.2	-	103.2	260		FQ	#	0.093	
Specific Conductance	umhos /cm	02/17/2015	N001	93.2	-	103.2	5250		FQ	#		
Sulfate	mg/L	02/17/2015	N001	93.2	-	103.2	2100		FQ	#	25	
Temperature	C	02/17/2015	N001	93.2	-	103.2	15.38		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	93.2	-	103.2	3600		FQ	#	80	
Turbidity	NTU	02/17/2015	N001	93.2	-	103.2	8.22		FQ	#		
Uranium	mg/L	02/17/2015	N001	93.2	-	103.2	0.43		FQ	#	0.000029	

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

REPORT DATE: 5/11/2015

Location: 0287 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	02/17/2015	N001	100.7 - 110.7	571		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	N001	100.7 - 110.7	0.8		FQ	#	0.1	
Arsenic	mg/L	02/17/2015	N001	100.7 - 110.7	0.0022		FQ	#	0.00015	
Calcium	mg/L	02/17/2015	N001	100.7 - 110.7	900		FQ	#	0.049	
Chloride	mg/L	02/17/2015	N001	100.7 - 110.7	220		FQ	#	10	
Iron	mg/L	02/17/2015	N001	100.7 - 110.7	0.041	J	UFQ	#	0.013	
Magnesium	mg/L	02/17/2015	N001	100.7 - 110.7	160		FQ	#	0.06	
Manganese	mg/L	02/17/2015	N001	100.7 - 110.7	0.016		FQ	#	0.00049	
Molybdenum	mg/L	02/17/2015	N001	100.7 - 110.7	0.14		FQ	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	100.7 - 110.7	260		FQ	#	2.5	
Oxidation Reduction Potential	mV	02/17/2015	N001	100.7 - 110.7	202.8		FQ	#		
pH	s.u.	02/17/2015	N001	100.7 - 110.7	6.57		FQ	#		
Potassium	mg/L	02/17/2015	N001	100.7 - 110.7	7.1		FQ	#	0.1	
Selenium	mg/L	02/17/2015	N001	100.7 - 110.7	0.11		FQ	#	0.00032	
Silica	mg/L	02/17/2015	N001	100.7 - 110.7	19		FQ	#	0.041	
Silicon	mg/L	02/17/2015	N001	100.7 - 110.7	8.8		FQ	#	0.019	
Sodium	mg/L	02/17/2015	N001	100.7 - 110.7	360		FQ	#	0.093	
Specific Conductance	umhos /cm	02/17/2015	N001	100.7 - 110.7	5570		FQ	#		
Sulfate	mg/L	02/17/2015	N001	100.7 - 110.7	1700		FQ	#	25	
Temperature	C	02/17/2015	N001	100.7 - 110.7	14.22		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	100.7 - 110.7	4800		FQ	#	80	
Turbidity	NTU	02/17/2015	N001	100.7 - 110.7	5.61		FQ	#		
Uranium	mg/L	02/17/2015	N001	100.7 - 110.7	0.29		FQ	#	0.000029	

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

REPORT DATE: 5/11/2015

Location: 0288 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	02/17/2015	N001	104	-	114	168		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	N001	104	-	114	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/17/2015	N001	104	-	114	0.00066		FQ	#	0.000015	
Calcium	mg/L	02/17/2015	N001	104	-	114	140		FQ	#	0.024	
Chloride	mg/L	02/17/2015	N001	104	-	114	18		FQ	#	2	
Iron	mg/L	02/17/2015	N001	104	-	114	0.0067	U	FQ	#	0.0067	
Magnesium	mg/L	02/17/2015	N001	104	-	114	26		FQ	#	0.03	
Manganese	mg/L	02/17/2015	N001	104	-	114	0.00052	J	FQ	#	0.00024	
Molybdenum	mg/L	02/17/2015	N001	104	-	114	0.00018		FQ	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	104	-	114	35		FQ	#	0.25	
Oxidation Reduction Potential	mV	02/17/2015	N001	104	-	114	149.5		FQ	#		
pH	s.u.	02/17/2015	N001	104	-	114	7.06		FQ	#		
Potassium	mg/L	02/17/2015	N001	104	-	114	2.9		FQ	#	0.052	
Selenium	mg/L	02/17/2015	N001	104	-	114	0.0021		FQ	#	0.000032	
Silica	mg/L	02/17/2015	N001	104	-	114	13		FQ	#	0.021	
Silicon	mg/L	02/17/2015	N001	104	-	114	6.2		FQ	#	0.0097	
Sodium	mg/L	02/17/2015	N001	104	-	114	30		FQ	#	0.047	
Specific Conductance	umhos /cm	02/17/2015	N001	104	-	114	1072		FQ	#		
Sulfate	mg/L	02/17/2015	N001	104	-	114	150		FQ	#	5	
Temperature	C	02/17/2015	N001	104	-	114	15.1		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	104	-	114	650		FQ	#	20	
Turbidity	NTU	02/17/2015	N001	104	-	114	5.59		FQ	#		
Uranium	mg/L	02/17/2015	N001	104	-	114	0.0073		FQ	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: 0289 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	02/17/2015	N001	148.3	-	158.3	166		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	N001	148.3	-	158.3	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/17/2015	N001	148.3	-	158.3	0.00079		FQ	#	0.000015	
Calcium	mg/L	02/17/2015	N001	148.3	-	158.3	110		FQ	#	0.024	
Chloride	mg/L	02/17/2015	N001	148.3	-	158.3	17		FQ	#	2	
Iron	mg/L	02/17/2015	N001	148.3	-	158.3	0.17		FQ	#	0.0067	
Magnesium	mg/L	02/17/2015	N001	148.3	-	158.3	20		FQ	#	0.03	
Manganese	mg/L	02/17/2015	N001	148.3	-	158.3	0.0073		FQ	#	0.00024	
Molybdenum	mg/L	02/17/2015	N001	148.3	-	158.3	0.00055		FQ	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	148.3	-	158.3	20		FQ	#	0.2	
Oxidation Reduction Potential	mV	02/17/2015	N001	148.3	-	158.3	151.7		FQ	#		
pH	s.u.	02/17/2015	N001	148.3	-	158.3	7.21		FQ	#		
Potassium	mg/L	02/17/2015	N001	148.3	-	158.3	2.6		FQ	#	0.052	
Selenium	mg/L	02/17/2015	N001	148.3	-	158.3	0.0016		FQ	#	0.000032	
Silica	mg/L	02/17/2015	N001	148.3	-	158.3	14		FQ	#	0.021	
Silicon	mg/L	02/17/2015	N001	148.3	-	158.3	6.3		FQ	#	0.0097	
Sodium	mg/L	02/17/2015	N001	148.3	-	158.3	24		FQ	#	0.047	
Specific Conductance	umhos /cm	02/17/2015	N001	148.3	-	158.3	886		FQ	#		
Sulfate	mg/L	02/17/2015	N001	148.3	-	158.3	100		FQ	#	5	
Temperature	C	02/17/2015	N001	148.3	-	158.3	15.44		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	148.3	-	158.3	500		FQ	#	20	
Turbidity	NTU	02/17/2015	N001	148.3	-	158.3	3.52		FQ	#		
Uranium	mg/L	02/17/2015	N001	148.3	-	158.3	0.0098		FQ	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: 0290 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	02/16/2015	N001	102.7 - 112.7	138		FQ	#		
Ammonia Total as N	mg/L	02/16/2015	N001	102.7 - 112.7	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/16/2015	N001	102.7 - 112.7	0.0013		FQ	#	0.000015	
Calcium	mg/L	02/16/2015	N001	102.7 - 112.7	300		FQ	#	0.024	
Chloride	mg/L	02/16/2015	N001	102.7 - 112.7	54		FQ	#	4	
Iron	mg/L	02/16/2015	N001	102.7 - 112.7	0.062	J	FQ	#	0.0067	
Magnesium	mg/L	02/16/2015	N001	102.7 - 112.7	49		FQ	#	0.03	
Manganese	mg/L	02/16/2015	N001	102.7 - 112.7	0.0035	J	FQ	#	0.00024	
Molybdenum	mg/L	02/16/2015	N001	102.7 - 112.7	0.00019		FQ	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/16/2015	N001	102.7 - 112.7	66		FQ	#	0.5	
Oxidation Reduction Potential	mV	02/16/2015	N001	102.7 - 112.7	150.9		FQ	#		
pH	s.u.	02/16/2015	N001	102.7 - 112.7	7.01		FQ	#		
Potassium	mg/L	02/16/2015	N001	102.7 - 112.7	4.1		FQ	#	0.052	
Selenium	mg/L	02/16/2015	N001	102.7 - 112.7	0.01		FQ	#	0.000032	
Silica	mg/L	02/16/2015	N001	102.7 - 112.7	16		FQ	#	0.021	
Silicon	mg/L	02/16/2015	N001	102.7 - 112.7	7.4		FQ	#	0.0097	
Sodium	mg/L	02/16/2015	N001	102.7 - 112.7	57		FQ	#	0.047	
Specific Conductance	umhos /cm	02/16/2015	N001	102.7 - 112.7	1945		FQ	#		
Sulfate	mg/L	02/16/2015	N001	102.7 - 112.7	490		FQ	#	10	
Temperature	C	02/16/2015	N001	102.7 - 112.7	16.04		FQ	#		
Total Dissolved Solids	mg/L	02/16/2015	N001	102.7 - 112.7	1500		FQ	#	40	
Turbidity	NTU	02/16/2015	N001	102.7 - 112.7	7.04		FQ	#		
Uranium	mg/L	02/16/2015	N001	102.7 - 112.7	0.052		FQ	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: 0691 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	02/16/2015	N001	55	-	95	265		F	#		
Ammonia Total as N	mg/L	02/16/2015	N001	55	-	95	0.1	U	F	#	0.1	
Arsenic	mg/L	02/16/2015	N001	55	-	95	0.0009		F	#	0.000074	
Calcium	mg/L	02/16/2015	N001	55	-	95	430		F	#	0.024	
Chloride	mg/L	02/16/2015	N001	55	-	95	58		F	#	4	
Iron	mg/L	02/16/2015	N001	55	-	95	0.034	J	UF	#	0.0067	
Magnesium	mg/L	02/16/2015	N001	55	-	95	71		F	#	0.03	
Manganese	mg/L	02/16/2015	N001	55	-	95	0.016		F	#	0.00024	
Molybdenum	mg/L	02/16/2015	N001	55	-	95	0.00016	U	F	#	0.00016	
Nitrate + Nitrite as Nitrogen	mg/L	02/16/2015	N001	55	-	95	83		F	#	1	
Oxidation Reduction Potential	mV	02/16/2015	N001	55	-	95	159.8		F	#		
pH	s.u.	02/16/2015	N001	55	-	95	6.95		F	#		
Potassium	mg/L	02/16/2015	N001	55	-	95	4.9		F	#	0.052	
Selenium	mg/L	02/16/2015	N001	55	-	95	0.0053		F	#	0.00016	
Silica	mg/L	02/16/2015	N001	55	-	95	16		F	#	0.021	
Silicon	mg/L	02/16/2015	N001	55	-	95	7.6		F	#	0.0097	
Sodium	mg/L	02/16/2015	N001	55	-	95	54		F	#	0.047	
Specific Conductance	umhos /cm	02/16/2015	N001	55	-	95	2399		F	#		
Sulfate	mg/L	02/16/2015	N001	55	-	95	660		F	#	10	
Temperature	C	02/16/2015	N001	55	-	95	15.82		F	#		
Total Dissolved Solids	mg/L	02/16/2015	N001	55	-	95	1900		F	#	40	
Turbidity	NTU	02/16/2015	N001	55	-	95	1.1		F	#		
Uranium	mg/L	02/16/2015	N001	55	-	95	0.12		F	#	0.000015	

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

REPORT DATE: 5/11/2015

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	02/16/2015	N001	44	-	64	550		FQ	#		
Ammonia Total as N	mg/L	02/16/2015	N001	44	-	64	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/16/2015	N001	44	-	64	0.0014		FQ	#	0.00015	
Calcium	mg/L	02/16/2015	N001	44	-	64	970		FQ	#	0.12	
Chloride	mg/L	02/16/2015	N001	44	-	64	160		FQ	#	20	
Iron	mg/L	02/16/2015	N001	44	-	64	0.053	J	UFQ	#	0.033	
Magnesium	mg/L	02/16/2015	N001	44	-	64	420		FQ	#	0.15	
Manganese	mg/L	02/16/2015	N001	44	-	64	0.02	J	FQ	#	0.0012	
Molybdenum	mg/L	02/16/2015	N001	44	-	64	0.0013		FQ	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	02/16/2015	N001	44	-	64	560		FQ	#	5	
Oxidation Reduction Potential	mV	02/16/2015	N001	44	-	64	13.1		FQ	#		
pH	s.u.	02/16/2015	N001	44	-	64	6.24		FQ	#		
Potassium	mg/L	02/16/2015	N001	44	-	64	9.2		FQ	#	0.26	
Selenium	mg/L	02/16/2015	N001	44	-	64	0.046		FQ	#	0.00032	
Silica	mg/L	02/16/2015	N001	44	-	64	15		FQ	#	0.1	
Silicon	mg/L	02/16/2015	N001	44	-	64	6.9		FQ	#	0.048	
Sodium	mg/L	02/16/2015	N001	44	-	64	420		FQ	#	0.23	
Specific Conductance	umhos /cm	02/16/2015	N001	44	-	64	7380		FQ	#		
Sulfate	mg/L	02/16/2015	N001	44	-	64	1900		FQ	#	50	
Temperature	C	02/16/2015	N001	44	-	64	16.35		FQ	#		
Total Dissolved Solids	mg/L	02/16/2015	N001	44	-	64	6600		FQ	#	200	
Turbidity	NTU	02/16/2015	N001	44	-	64	4.78		FQ	#		
Uranium	mg/L	02/16/2015	N001	44	-	64	0.4		FQ	#	0.000029	

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

REPORT DATE: 5/11/2015

Location: 0908 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	02/16/2015	N001	52	-	67	462		FQ	#		
Ammonia Total as N	mg/L	02/16/2015	N001	52	-	67	73		FQ	#	2	
Arsenic	mg/L	02/16/2015	N001	52	-	67	0.00088	J	FQ	#	0.00015	
Calcium	mg/L	02/16/2015	N001	52	-	67	620		FQ	#	0.049	
Chloride	mg/L	02/16/2015	N001	52	-	67	70		FQ	#	20	
Iron	mg/L	02/16/2015	N001	52	-	67	0.033	J	UFQ	#	0.013	
Magnesium	mg/L	02/16/2015	N001	52	-	67	450		FQ	#	0.06	
Manganese	mg/L	02/16/2015	N001	52	-	67	0.17		FQ	#	0.00049	
Molybdenum	mg/L	02/16/2015	N001	52	-	67	0.00032	U	FQ	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	02/16/2015	N001	52	-	67	220		FQ	#	2	
Oxidation Reduction Potential	mV	02/16/2015	N001	52	-	67	207.2		FQ	#		
pH	s.u.	02/16/2015	N001	52	-	67	6.8		FQ	#		
Potassium	mg/L	02/16/2015	N001	52	-	67	23		FQ	#	0.1	
Selenium	mg/L	02/16/2015	N001	52	-	67	0.018		FQ	#	0.00032	
Silica	mg/L	02/16/2015	N001	52	-	67	20		FQ	#	0.041	
Silicon	mg/L	02/16/2015	N001	52	-	67	9.4		FQ	#	0.019	
Sodium	mg/L	02/16/2015	N001	52	-	67	280		FQ	#	0.093	
Specific Conductance	umhos /cm	02/16/2015	N001	52	-	67	6077		FQ	#		
Sulfate	mg/L	02/16/2015	N001	52	-	67	2400		FQ	#	50	
Temperature	C	02/16/2015	N001	52	-	67	15.4		FQ	#		
Total Dissolved Solids	mg/L	02/16/2015	N001	52	-	67	5400		FQ	#	80	
Turbidity	NTU	02/16/2015	N001	52	-	67	5.5		FQ	#		
Uranium	mg/L	02/16/2015	N001	52	-	67	0.078		FQ	#	0.000029	

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

REPORT DATE: 5/11/2015

Location: 0929 WELL No Log Information.

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	02/17/2015	N001	48.2	-	88.2	86		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	N001	48.2	-	88.2	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/17/2015	N001	48.2	-	88.2	0.0017		FQ	#	0.000015	
Calcium	mg/L	02/17/2015	N001	48.2	-	88.2	50		FQ	#	0.024	
Chloride	mg/L	02/17/2015	N001	48.2	-	88.2	16		FQ	#	0.2	
Iron	mg/L	02/17/2015	N001	48.2	-	88.2	0.053	J	UFQ	#	0.0067	
Magnesium	mg/L	02/17/2015	N001	48.2	-	88.2	8.2		FQ	#	0.03	
Manganese	mg/L	02/17/2015	N001	48.2	-	88.2	0.0014	J	FQ	#	0.00024	
Molybdenum	mg/L	02/17/2015	N001	48.2	-	88.2	0.00034		FQ	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	48.2	-	88.2	12		FQ	#	0.1	
Oxidation Reduction Potential	mV	02/17/2015	N001	48.2	-	88.2	206.6		FQ	#		
pH	s.u.	02/17/2015	N001	48.2	-	88.2	7.75		FQ	#		
Potassium	mg/L	02/17/2015	N001	48.2	-	88.2	1.9		FQ	#	0.052	
Selenium	mg/L	02/17/2015	N001	48.2	-	88.2	0.0021		FQ	#	0.000032	
Silica	mg/L	02/17/2015	N001	48.2	-	88.2	11		FQ	#	0.021	
Silicon	mg/L	02/17/2015	N001	48.2	-	88.2	5.2		FQ	#	0.0097	
Sodium	mg/L	02/17/2015	N001	48.2	-	88.2	11		FQ	#	0.047	
Specific Conductance	umhos /cm	02/17/2015	N001	48.2	-	88.2	390		FQ	#		
Sulfate	mg/L	02/17/2015	N001	48.2	-	88.2	24		FQ	#	0.5	
Temperature	C	02/17/2015	N001	48.2	-	88.2	15.32		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	48.2	-	88.2	240		FQ	#	20	
Turbidity	NTU	02/17/2015	N001	48.2	-	88.2	1.86		FQ	#		
Uranium	mg/L	02/17/2015	N001	48.2	-	88.2	0.0017		FQ	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: 0930 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	02/16/2015	N001	20	-	50	118		F	#		
Ammonia Total as N	mg/L	02/16/2015	N001	20	-	50	0.1	U	F	#	0.1	
Arsenic	mg/L	02/16/2015	N001	20	-	50	0.0013		F	#	0.000015	
Calcium	mg/L	02/16/2015	N001	20	-	50	160		F	#	0.024	
Chloride	mg/L	02/16/2015	N001	20	-	50	50		F	#	2	
Iron	mg/L	02/16/2015	N001	20	-	50	0.0084	J	UF	#	0.0067	
Magnesium	mg/L	02/16/2015	N001	20	-	50	35		F	#	0.03	
Manganese	mg/L	02/16/2015	N001	20	-	50	0.00084	J	F	#	0.00024	
Molybdenum	mg/L	02/16/2015	N001	20	-	50	0.00012		F	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/16/2015	N001	20	-	50	39		F	#	0.5	
Oxidation Reduction Potential	mV	02/16/2015	N001	20	-	50	191.9		F	#		
pH	s.u.	02/16/2015	N001	20	-	50	7.6		F	#		
Potassium	mg/L	02/16/2015	N001	20	-	50	3.3		F	#	0.052	
Selenium	mg/L	02/16/2015	N001	20	-	50	0.0034		F	#	0.000032	
Silica	mg/L	02/16/2015	N001	20	-	50	13		F	#	0.021	
Silicon	mg/L	02/16/2015	N001	20	-	50	5.9		F	#	0.0097	
Sodium	mg/L	02/16/2015	N001	20	-	50	20		F	#	0.047	
Specific Conductance	umhos /cm	02/16/2015	N001	20	-	50	1129		F	#		
Sulfate	mg/L	02/16/2015	N001	20	-	50	230		F	#	5	
Temperature	C	02/16/2015	N001	20	-	50	15.77		F	#		
Total Dissolved Solids	mg/L	02/16/2015	N001	20	-	50	820		F	#	20	
Turbidity	NTU	02/16/2015	N001	20	-	50	0.47		F	#		
Uranium	mg/L	02/16/2015	N001	20	-	50	0.0099		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/11/2015
Location: 0932 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	02/17/2015	N001	112.5 - 132.5	44		F	#		
Ammonia Total as N	mg/L	02/17/2015	N001	112.5 - 132.5	0.1	U	F	#	0.1	
Ammonia Total as N	mg/L	02/17/2015	N002	112.5 - 132.5	0.28		F	#	0.1	
Arsenic	mg/L	02/17/2015	N001	112.5 - 132.5	0.0014		F	#	0.000015	
Arsenic	mg/L	02/17/2015	N002	112.5 - 132.5	0.0016		F	#	0.000015	
Calcium	mg/L	02/17/2015	N001	112.5 - 132.5	47		F	#	0.024	
Calcium	mg/L	02/17/2015	N002	112.5 - 132.5	49		F	#	0.024	
Chloride	mg/L	02/17/2015	N001	112.5 - 132.5	13		F	#	0.2	
Chloride	mg/L	02/17/2015	N002	112.5 - 132.5	13		F	#	0.2	
Iron	mg/L	02/17/2015	N001	112.5 - 132.5	0.021	J	UF	#	0.0067	
Iron	mg/L	02/17/2015	N002	112.5 - 132.5	0.023	J	F	#	0.0067	
Magnesium	mg/L	02/17/2015	N001	112.5 - 132.5	9.2		F	#	0.03	
Magnesium	mg/L	02/17/2015	N002	112.5 - 132.5	9.6		F	#	0.03	
Manganese	mg/L	02/17/2015	N001	112.5 - 132.5	0.0016	J	F	#	0.00024	
Manganese	mg/L	02/17/2015	N002	112.5 - 132.5	0.0014	J	F	#	0.00024	
Molybdenum	mg/L	02/17/2015	N001	112.5 - 132.5	0.0004		F	#	0.000032	
Molybdenum	mg/L	02/17/2015	N002	112.5 - 132.5	0.00033		F	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	112.5 - 132.5	7.1		F	#	0.1	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N002	112.5 - 132.5	7.7		F	#	0.05	
Oxidation Reduction Potential	mV	02/17/2015	N001	112.5 - 132.5	202.4		F	#		
pH	s.u.	02/17/2015	N001	112.5 - 132.5	7.93		F	#		

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/11/2015
Location: 0932 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Potassium	mg/L	02/17/2015	N001	112.5	-	132.5	1.9		F	#	0.052	
Potassium	mg/L	02/17/2015	N002	112.5	-	132.5	1.8		F	#	0.052	
Selenium	mg/L	02/17/2015	N001	112.5	-	132.5	0.0016		F	#	0.000032	
Selenium	mg/L	02/17/2015	N002	112.5	-	132.5	0.0018		F	#	0.000032	
Silica	mg/L	02/17/2015	N001	112.5	-	132.5	11		F	#	0.021	
Silica	mg/L	02/17/2015	N002	112.5	-	132.5	11		F	#	0.021	
Silicon	mg/L	02/17/2015	N001	112.5	-	132.5	5.2		F	#	0.0097	
Silicon	mg/L	02/17/2015	N002	112.5	-	132.5	5.1		F	#	0.0097	
Sodium	mg/L	02/17/2015	N001	112.5	-	132.5	13		F	#	0.047	
Sodium	mg/L	02/17/2015	N002	112.5	-	132.5	12		F	#	0.047	
Specific Conductance	umhos /cm	02/17/2015	N001	112.5	-	132.5	367		F	#		
Sulfate	mg/L	02/17/2015	N001	112.5	-	132.5	33		F	#	0.5	
Sulfate	mg/L	02/17/2015	N002	112.5	-	132.5	39		F	#	0.5	
Temperature	C	02/17/2015	N001	112.5	-	132.5	16.59		F	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	112.5	-	132.5	210		F	#	20	
Total Dissolved Solids	mg/L	02/17/2015	N002	112.5	-	132.5	250		F	#	20	
Turbidity	NTU	02/17/2015	N001	112.5	-	132.5	1.54		F	#		
Uranium	mg/L	02/17/2015	N001	112.5	-	132.5	0.0021		JF	#	0.0000029	
Uranium	mg/L	02/17/2015	N002	112.5	-	132.5	0.0028		JF	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/11/2015
Location: 0934 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	02/17/2015	N001	45	-	90	618		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	N001	45	-	90	0.1	U	FQ	#	0.1	
Ammonia Total as N	mg/L	02/17/2015	N002	45	-	90	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/17/2015	N001	45	-	90	0.00053		FQ	#	0.000074	
Arsenic	mg/L	02/17/2015	N002	45	-	90	0.00087		FQ	#	0.000015	
Calcium	mg/L	02/17/2015	N001	45	-	90	740		FQ	#	0.12	
Calcium	mg/L	02/17/2015	N002	45	-	90	740		FQ	#	0.12	
Chloride	mg/L	02/17/2015	N001	45	-	90	210		FQ	#	20	
Chloride	mg/L	02/17/2015	N002	45	-	90	210		FQ	#	20	
Iron	mg/L	02/17/2015	N001	45	-	90	0.051	J	UFQ	#	0.033	
Iron	mg/L	02/17/2015	N002	45	-	90	0.055	J	FQ	#	0.033	
Magnesium	mg/L	02/17/2015	N001	45	-	90	740		FQ	#	0.15	
Magnesium	mg/L	02/17/2015	N002	45	-	90	750		FQ	#	0.15	
Manganese	mg/L	02/17/2015	N001	45	-	90	0.0075	J	FQ	#	0.0012	
Manganese	mg/L	02/17/2015	N002	45	-	90	0.0049	J	FQ	#	0.0012	
Molybdenum	mg/L	02/17/2015	N001	45	-	90	0.00032	J	FQ	#	0.00016	
Molybdenum	mg/L	02/17/2015	N002	45	-	90	0.0003		FQ	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	45	-	90	300		FQ	#	2.5	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N002	45	-	90	310		FQ	#	2.5	
Oxidation Reduction Potential	mV	02/17/2015	N001	45	-	90	225.1		FQ	#		
pH	s.u.	02/17/2015	N001	45	-	90	6.69		FQ	#		

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/11/2015
Location: 0934 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Potassium	mg/L	02/17/2015	N001	45	-	90	8		FQ	#	0.26	
Potassium	mg/L	02/17/2015	N002	45	-	90	8.3		FQ	#	0.26	
Selenium	mg/L	02/17/2015	N001	45	-	90	0.011		FQ	#	0.00016	
Selenium	mg/L	02/17/2015	N002	45	-	90	0.0097		FQ	#	0.000032	
Silica	mg/L	02/17/2015	N001	45	-	90	18		FQ	#	0.1	
Silica	mg/L	02/17/2015	N002	45	-	90	18		FQ	#	0.1	
Silicon	mg/L	02/17/2015	N001	45	-	90	8.4		FQ	#	0.048	
Silicon	mg/L	02/17/2015	N002	45	-	90	8.2		FQ	#	0.048	
Sodium	mg/L	02/17/2015	N001	45	-	90	130		FQ	#	0.23	
Sodium	mg/L	02/17/2015	N002	45	-	90	130		FQ	#	0.23	
Specific Conductance	umhos /cm	02/17/2015	N001	45	-	90	6811		FQ	#		
Sulfate	mg/L	02/17/2015	N001	45	-	90	2600		FQ	#	50	
Sulfate	mg/L	02/17/2015	N002	45	-	90	2600		FQ	#	50	
Temperature	C	02/17/2015	N001	45	-	90	15.77		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	45	-	90	6500		FQ	#	200	
Total Dissolved Solids	mg/L	02/17/2015	N002	45	-	90	6400	*	FQ	#	100	
Turbidity	NTU	02/17/2015	N001	45	-	90	1.19		FQ	#		
Uranium	mg/L	02/17/2015	N001	45	-	90	0.16		FQ	#	0.000015	
Uranium	mg/L	02/17/2015	N002	45	-	90	0.15		FQ	#	0.000015	

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

REPORT DATE: 5/11/2015

Location: 0935 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	02/17/2015	N001	50	-	90	448			#		
Ammonia Total as N	mg/L	02/17/2015	N001	50	-	90	42			#	2.5	
Arsenic	mg/L	02/17/2015	N001	50	-	90	0.0028			#	0.00015	
Calcium	mg/L	02/17/2015	N001	50	-	90	640			#	0.049	
Chloride	mg/L	02/17/2015	N001	50	-	90	77			#	10	
Iron	mg/L	02/17/2015	N001	50	-	90	0.08	J	U	#	0.013	
Magnesium	mg/L	02/17/2015	N001	50	-	90	310			#	0.06	
Manganese	mg/L	02/17/2015	N001	50	-	90	0.92			#	0.00049	
Molybdenum	mg/L	02/17/2015	N001	50	-	90	0.00032	U		#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	50	-	90	140			#	1	
Oxidation Reduction Potential	mV	02/17/2015	N001	50	-	90	148.4			#		
pH	s.u.	02/17/2015	N001	50	-	90	6.5			#		
Potassium	mg/L	02/17/2015	N001	50	-	90	17			#	0.1	
Selenium	mg/L	02/17/2015	N001	50	-	90	0.0078			#	0.00032	
Silica	mg/L	02/17/2015	N001	50	-	90	20			#	0.041	
Silicon	mg/L	02/17/2015	N001	50	-	90	9.3			#	0.019	
Sodium	mg/L	02/17/2015	N001	50	-	90	250			#	0.093	
Specific Conductance	umhos /cm	02/17/2015	N001	50	-	90	5094			#		
Sulfate	mg/L	02/17/2015	N001	50	-	90	2200			#	25	
Temperature	C	02/17/2015	N001	50	-	90	16.75			#		
Total Dissolved Solids	mg/L	02/17/2015	N001	50	-	90	4500			#	80	
Turbidity	NTU	02/17/2015	N001	50	-	90	4.33			#		
Uranium	mg/L	02/17/2015	N001	50	-	90	0.1			#	0.000029	

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

REPORT DATE: 5/11/2015

Location: 0936 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	02/17/2015	0001	42	-	82	632			#		
Ammonia Total as N	mg/L	02/17/2015	0001	42	-	82	0.44			#	0.1	
Arsenic	mg/L	02/17/2015	0001	42	-	82	0.0014			#	0.00015	
Calcium	mg/L	02/17/2015	0001	42	-	82	890			#	0.049	
Chloride	mg/L	02/17/2015	0001	42	-	82	110			#	20	
Iron	mg/L	02/17/2015	0001	42	-	82	0.033	J	U	#	0.013	
Magnesium	mg/L	02/17/2015	0001	42	-	82	390			#	0.06	
Manganese	mg/L	02/17/2015	0001	42	-	82	1.1			#	0.00049	
Molybdenum	mg/L	02/17/2015	0001	42	-	82	0.89			#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	0001	42	-	82	260			#	2	
Oxidation Reduction Potential	mV	02/17/2015	N001	42	-	82	200.4			#		
pH	s.u.	02/17/2015	N001	42	-	82	6.37			#		
Potassium	mg/L	02/17/2015	0001	42	-	82	8.6			#	0.1	
Selenium	mg/L	02/17/2015	0001	42	-	82	0.056			#	0.00032	
Silica	mg/L	02/17/2015	0001	42	-	82	19			#	0.041	
Silicon	mg/L	02/17/2015	0001	42	-	82	9			#	0.019	
Sodium	mg/L	02/17/2015	0001	42	-	82	230			#	0.093	
Specific Conductance	umhos /cm	02/17/2015	N001	42	-	82	5959			#		
Sulfate	mg/L	02/17/2015	0001	42	-	82	2200			#	50	
Temperature	C	02/17/2015	N001	42	-	82	16.33			#		
Total Dissolved Solids	mg/L	02/17/2015	0001	42	-	82	5800			#	80	
Turbidity	NTU	02/17/2015	N001	42	-	82	20.3			#		
Uranium	mg/L	02/17/2015	0001	42	-	82	0.98			#	0.000029	

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

REPORT DATE: 5/11/2015

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	02/17/2015	N001	40	-	95	1170			#		
Ammonia Total as N	mg/L	02/17/2015	N001	40	-	95	12			#	0.5	
Arsenic	mg/L	02/17/2015	N001	40	-	95	0.0018			#	0.00015	
Calcium	mg/L	02/17/2015	N001	40	-	95	810			#	0.12	
Chloride	mg/L	02/17/2015	N001	40	-	95	170			#	20	
Iron	mg/L	02/17/2015	N001	40	-	95	0.078	J	U	#	0.033	
Magnesium	mg/L	02/17/2015	N001	40	-	95	490			#	0.15	
Manganese	mg/L	02/17/2015	N001	40	-	95	0.79			#	0.0012	
Molybdenum	mg/L	02/17/2015	N001	40	-	95	0.0048			#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	40	-	95	320			#	2	
Oxidation Reduction Potential	mV	02/17/2015	N001	40	-	95	91.8			#		
pH	s.u.	02/17/2015	N001	40	-	95	6.48			#		
Potassium	mg/L	02/17/2015	N001	40	-	95	13			#	0.26	
Selenium	mg/L	02/17/2015	N001	40	-	95	0.072			#	0.00032	
Silica	mg/L	02/17/2015	N001	40	-	95	16			#	0.1	
Silicon	mg/L	02/17/2015	N001	40	-	95	7.3			#	0.048	
Sodium	mg/L	02/17/2015	N001	40	-	95	360			#	0.23	
Specific Conductance	umhos /cm	02/17/2015	N001	40	-	95	6830			#		
Sulfate	mg/L	02/17/2015	N001	40	-	95	2500			#	50	
Temperature	C	02/17/2015	N001	40	-	95	17.03			#		
Total Dissolved Solids	mg/L	02/17/2015	N001	40	-	95	5700			#	200	
Turbidity	NTU	02/17/2015	N001	40	-	95	1.41			#		
Uranium	mg/L	02/17/2015	N001	40	-	95	0.32			#	0.000029	

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

REPORT DATE: 5/11/2015

Location: 0940 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	02/17/2015	N001	45	-	60	687		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	N001	45	-	60	46		FQ	#	2	
Arsenic	mg/L	02/17/2015	N001	45	-	60	0.0035		FQ	#	0.00015	
Calcium	mg/L	02/17/2015	N001	45	-	60	550		FQ	#	0.12	
Chloride	mg/L	02/17/2015	N001	45	-	60	140		FQ	#	20	
Iron	mg/L	02/17/2015	N001	45	-	60	0.058	J	UFQ	#	0.033	
Magnesium	mg/L	02/17/2015	N001	45	-	60	1400		FQ	#	0.15	
Manganese	mg/L	02/17/2015	N001	45	-	60	23		FQ	#	0.0012	
Molybdenum	mg/L	02/17/2015	N001	45	-	60	0.00075	J	FQ	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	45	-	60	350		FQ	#	2.5	
Oxidation Reduction Potential	mV	02/17/2015	N001	45	-	60	198.9		FQ	#		
pH	s.u.	02/17/2015	N001	45	-	60	6.56		FQ	#		
Potassium	mg/L	02/17/2015	N001	45	-	60	26		FQ	#	0.26	
Selenium	mg/L	02/17/2015	N001	45	-	60	0.055		FQ	#	0.00032	
Silica	mg/L	02/17/2015	N001	45	-	60	16		FQ	#	0.1	
Silicon	mg/L	02/17/2015	N001	45	-	60	7.7		FQ	#	0.048	
Sodium	mg/L	02/17/2015	N001	45	-	60	420		FQ	#	0.23	
Specific Conductance	umhos /cm	02/17/2015	N001	45	-	60	9872		FQ	#		
Sulfate	mg/L	02/17/2015	N001	45	-	60	5600		FQ	#	50	
Temperature	C	02/17/2015	N001	45	-	60	16.1		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	45	-	60	11000		FQ	#	200	
Turbidity	NTU	02/17/2015	N001	45	-	60	8.61		FQ	#		
Uranium	mg/L	02/17/2015	N001	45	-	60	0.66		FQ	#	0.000029	

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

REPORT DATE: 5/11/2015

Location: 0941 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	02/17/2015	N001	45	-	65	650		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	N001	45	-	65	0.19		FQ	#	0.1	
Arsenic	mg/L	02/17/2015	N001	45	-	65	0.0017		FQ	#	0.00015	
Calcium	mg/L	02/17/2015	N001	45	-	65	1200		FQ	#	0.12	
Chloride	mg/L	02/17/2015	N001	45	-	65	190		FQ	#	20	
Iron	mg/L	02/17/2015	N001	45	-	65	0.03	J	UFQ	#	0.013	
Magnesium	mg/L	02/17/2015	N001	45	-	65	180		FQ	#	0.06	
Manganese	mg/L	02/17/2015	N001	45	-	65	0.055		FQ	#	0.00049	
Molybdenum	mg/L	02/17/2015	N001	45	-	65	0.045		FQ	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	45	-	65	290		FQ	#	2	
Oxidation Reduction Potential	mV	02/17/2015	N001	45	-	65	209		FQ	#		
pH	s.u.	02/17/2015	N001	45	-	65	6.5		FQ	#		
Potassium	mg/L	02/17/2015	N001	45	-	65	7.3		FQ	#	0.1	
Selenium	mg/L	02/17/2015	N001	45	-	65	0.095		FQ	#	0.00032	
Silica	mg/L	02/17/2015	N001	45	-	65	19		FQ	#	0.041	
Silicon	mg/L	02/17/2015	N001	45	-	65	8.9		FQ	#	0.019	
Sodium	mg/L	02/17/2015	N001	45	-	65	280		FQ	#	0.093	
Specific Conductance	umhos /cm	02/17/2015	N001	45	-	65	5990		FQ	#		
Sulfate	mg/L	02/17/2015	N001	45	-	65	1600		FQ	#	50	
Temperature	C	02/17/2015	N001	45	-	65	15.68		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	45	-	65	5100		FQ	#	80	
Turbidity	NTU	02/17/2015	N001	45	-	65	7.87		FQ	#		
Uranium	mg/L	02/17/2015	N001	45	-	65	0.31		FQ	#	0.000029	

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

REPORT DATE: 5/11/2015

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	02/17/2015	N001	54	-	74	542			#		
Ammonia Total as N	mg/L	02/17/2015	N001	54	-	74	95			#	2	
Arsenic	mg/L	02/17/2015	N001	54	-	74	0.0034			#	0.00015	
Calcium	mg/L	02/17/2015	N001	54	-	74	590			#	0.12	
Chloride	mg/L	02/17/2015	N001	54	-	74	160			#	20	
Iron	mg/L	02/17/2015	N001	54	-	74	0.12	J	U	#	0.033	
Magnesium	mg/L	02/17/2015	N001	54	-	74	440			#	0.15	
Manganese	mg/L	02/17/2015	N001	54	-	74	5.8			#	0.0012	
Molybdenum	mg/L	02/17/2015	N001	54	-	74	0.0054			#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	54	-	74	150			#	1	
Oxidation Reduction Potential	mV	02/17/2015	N001	54	-	74	92.7			#		
pH	s.u.	02/17/2015	N001	54	-	74	6.35			#		
Potassium	mg/L	02/17/2015	N001	54	-	74	22			#	0.26	
Selenium	mg/L	02/17/2015	N001	54	-	74	0.055			#	0.00032	
Silica	mg/L	02/17/2015	N001	54	-	74	17			#	0.1	
Silicon	mg/L	02/17/2015	N001	54	-	74	8			#	0.048	
Sodium	mg/L	02/17/2015	N001	54	-	74	490			#	0.23	
Specific Conductance	umhos /cm	02/17/2015	N001	54	-	74	6591			#		
Sulfate	mg/L	02/17/2015	N001	54	-	74	3100			#	50	
Temperature	C	02/17/2015	N001	54	-	74	16.84			#		
Total Dissolved Solids	mg/L	02/17/2015	N001	54	-	74	5000			#	200	
Turbidity	NTU	02/17/2015	N001	54	-	74	2.03			#		
Uranium	mg/L	02/17/2015	N001	54	-	74	0.59			#	0.000029	

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

REPORT DATE: 5/11/2015

Location: NMW-1A WELL NAVAJO MONITORING WELL NMW-1A; Owned by NNEPA

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	02/17/2015	N001	167.5	-	187.5	92		F	#		
Ammonia Total as N	mg/L	02/17/2015	N001	167.5	-	187.5	0.1	U	F	#	0.1	
Arsenic	mg/L	02/17/2015	N001	167.5	-	187.5	0.0023		F	#	0.000015	
Calcium	mg/L	02/17/2015	N001	167.5	-	187.5	34		F	#	0.024	
Chloride	mg/L	02/17/2015	N001	167.5	-	187.5	9.9		F	#	0.2	
Iron	mg/L	02/17/2015	N001	167.5	-	187.5	0.085	J	F	#	0.0067	
Magnesium	mg/L	02/17/2015	N001	167.5	-	187.5	6		F	#	0.03	
Manganese	mg/L	02/17/2015	N001	167.5	-	187.5	0.0014	J	UF	#	0.00024	
Molybdenum	mg/L	02/17/2015	N001	167.5	-	187.5	0.00037		F	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	167.5	-	187.5	3.1		F	#	0.05	
Oxidation Reduction Potential	mV	02/17/2015	N001	167.5	-	187.5	117.9		F	#		
pH	s.u.	02/17/2015	N001	167.5	-	187.5	8.01		F	#		
Potassium	mg/L	02/17/2015	N001	167.5	-	187.5	1.5		F	#	0.052	
Selenium	mg/L	02/17/2015	N001	167.5	-	187.5	0.0016		F	#	0.000032	
Silica	mg/L	02/17/2015	N001	167.5	-	187.5	9.9		F	#	0.021	
Silicon	mg/L	02/17/2015	N001	167.5	-	187.5	4.6		F	#	0.0097	
Sodium	mg/L	02/17/2015	N001	167.5	-	187.5	9.9		F	#	0.047	
Specific Conductance	umhos /cm	02/17/2015	N001	167.5	-	187.5	265		F	#		
Sulfate	mg/L	02/17/2015	N001	167.5	-	187.5	13		F	#	0.5	
Temperature	C	02/17/2015	N001	167.5	-	187.5	15.92		F	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	167.5	-	187.5	150		F	#	20	
Turbidity	NTU	02/17/2015	N001	167.5	-	187.5	1.22		F	#		
Uranium	mg/L	02/17/2015	N001	167.5	-	187.5	0.0014		F	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: NMW-2A WELL NAVAJO MONITORING WELL NMW-2A; Owned by NNEPA

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	02/18/2015	N001	140.46 - 160.46	106		F	#		
Ammonia Total as N	mg/L	02/18/2015	N001	140.46 - 160.46	0.1	U	F	#	0.1	
Arsenic	mg/L	02/18/2015	N001	140.46 - 160.46	0.0024		F	#	0.000015	
Calcium	mg/L	02/18/2015	N001	140.46 - 160.46	34		F	#	0.024	
Chloride	mg/L	02/18/2015	N001	140.46 - 160.46	9.5		F	#	0.2	
Iron	mg/L	02/18/2015	N001	140.46 - 160.46	0.011	J	F	#	0.0067	
Magnesium	mg/L	02/18/2015	N001	140.46 - 160.46	5.8		F	#	0.03	
Manganese	mg/L	02/18/2015	N001	140.46 - 160.46	0.00079	J	UF	#	0.00024	
Molybdenum	mg/L	02/18/2015	N001	140.46 - 160.46	0.00046		F	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/18/2015	N001	140.46 - 160.46	3.1		F	#	0.05	
Oxidation Reduction Potential	mV	02/18/2015	N001	140.46 - 160.46	199.4		F	#		
pH	s.u.	02/18/2015	N001	140.46 - 160.46	7.89		F	#		
Potassium	mg/L	02/18/2015	N001	140.46 - 160.46	1.5		F	#	0.052	
Selenium	mg/L	02/18/2015	N001	140.46 - 160.46	0.0011		F	#	0.000032	
Silica	mg/L	02/18/2015	N001	140.46 - 160.46	9.8		F	#	0.021	
Silicon	mg/L	02/18/2015	N001	140.46 - 160.46	4.6		F	#	0.0097	
Sodium	mg/L	02/18/2015	N001	140.46 - 160.46	11		F	#	0.047	
Specific Conductance	umhos /cm	02/18/2015	N001	140.46 - 160.46	262		F	#		
Sulfate	mg/L	02/18/2015	N001	140.46 - 160.46	12		F	#	0.5	
Temperature	C	02/18/2015	N001	140.46 - 160.46	12.52		F	#		
Total Dissolved Solids	mg/L	02/18/2015	N001	140.46 - 160.46	160		F	#	20	
Turbidity	NTU	02/18/2015	N001	140.46 - 160.46	1.03		F	#		
Uranium	mg/L	02/18/2015	N001	140.46 - 160.46	0.0014		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/11/2015
Location: NMW-3A WELL NAVAJO MONITORING WELL NMW-3A; Owned by NNEPA

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	02/17/2015	N001	190.62 - 210.62	74		F	#		
Ammonia Total as N	mg/L	02/17/2015	N001	190.62 - 210.62	0.1	U	F	#	0.1	
Ammonia Total as N	mg/L	02/17/2015	N002	190.62 - 210.62	0.1	U	F	#	0.1	
Arsenic	mg/L	02/17/2015	N001	190.62 - 210.62	0.0021		F	#	0.000015	
Arsenic	mg/L	02/17/2015	N002	190.62 - 210.62	0.002	J	F	#	0.00074	
Calcium	mg/L	02/17/2015	N001	190.62 - 210.62	34		F	#	0.024	
Calcium	mg/L	02/17/2015	N002	190.62 - 210.62	33		F	#	0.024	
Chloride	mg/L	02/17/2015	N001	190.62 - 210.62	8.9		F	#	0.2	
Chloride	mg/L	02/17/2015	N002	190.62 - 210.62	8.8		F	#	0.2	
Iron	mg/L	02/17/2015	N001	190.62 - 210.62	0.018	J	F	#	0.0067	
Iron	mg/L	02/17/2015	N002	190.62 - 210.62	0.01	J	F	#	0.0067	
Magnesium	mg/L	02/17/2015	N001	190.62 - 210.62	6.1		F	#	0.03	
Magnesium	mg/L	02/17/2015	N002	190.62 - 210.62	6.1		F	#	0.03	
Manganese	mg/L	02/17/2015	N001	190.62 - 210.62	0.0011	J	UF	#	0.00024	
Manganese	mg/L	02/17/2015	N002	190.62 - 210.62	0.001	J	F	#	0.00024	
Molybdenum	mg/L	02/17/2015	N001	190.62 - 210.62	0.00037		F	#	0.000032	
Molybdenum	mg/L	02/17/2015	N002	190.62 - 210.62	0.0016	U	F	#	0.0016	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	190.62 - 210.62	2.7		F	#	0.05	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N002	190.62 - 210.62	3		F	#	0.05	
Oxidation Reduction Potential	mV	02/17/2015	N001	190.62 - 210.62	178.1		F	#		
pH	s.u.	02/17/2015	N001	190.62 - 210.62	8.19		F	#		

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/11/2015
Location: NMW-3A WELL NAVAJO MONITORING WELL NMW-3A; Owned by NNEPA

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Potassium	mg/L	02/17/2015	N001	190.62 - 210.62	1.3		F	#	0.052	
Potassium	mg/L	02/17/2015	N002	190.62 - 210.62	1.3		F	#	0.052	
Selenium	mg/L	02/17/2015	N001	190.62 - 210.62	0.0011		F	#	0.000032	
Selenium	mg/L	02/17/2015	N002	190.62 - 210.62	0.0082		F	#	0.0016	
Silica	mg/L	02/17/2015	N001	190.62 - 210.62	10		F	#	0.021	
Silica	mg/L	02/17/2015	N002	190.62 - 210.62	10		F	#	0.021	
Silicon	mg/L	02/17/2015	N001	190.62 - 210.62	4.8		F	#	0.0097	
Silicon	mg/L	02/17/2015	N002	190.62 - 210.62	4.8		F	#	0.0097	
Sodium	mg/L	02/17/2015	N001	190.62 - 210.62	9.3		F	#	0.047	
Sodium	mg/L	02/17/2015	N002	190.62 - 210.62	9.3		F	#	0.047	
Specific Conductance	umhos /cm	02/17/2015	N001	190.62 - 210.62	263		F	#		
Sulfate	mg/L	02/17/2015	N001	190.62 - 210.62	11		F	#	0.5	
Sulfate	mg/L	02/17/2015	N002	190.62 - 210.62	11		F	#	0.5	
Temperature	C	02/17/2015	N001	190.62 - 210.62	15.17		F	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	190.62 - 210.62	170		F	#	20	
Total Dissolved Solids	mg/L	02/17/2015	N002	190.62 - 210.62	150		F	#	20	
Turbidity	NTU	02/17/2015	N001	190.62 - 210.62	0.87		F	#		
Uranium	mg/L	02/17/2015	N001	190.62 - 210.62	0.0013		F	#	0.0000029	
Uranium	mg/L	02/17/2015	N002	190.62 - 210.62	0.0012		F	#	0.00015	

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

REPORT DATE: 5/11/2015

Location: NMW-4A WELL NAVAJO MONITORING WELL NMW-4A; Owned by NNEPA

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	02/18/2015	N001	170.46 - 190.46	36		F	#		
Ammonia Total as N	mg/L	02/18/2015	N001	170.46 - 190.46	0.1	U	F	#	0.1	
Arsenic	mg/L	02/18/2015	N001	170.46 - 190.46	0.0024		F	#	0.000015	
Calcium	mg/L	02/18/2015	N001	170.46 - 190.46	35		F	#	0.024	
Chloride	mg/L	02/18/2015	N001	170.46 - 190.46	9.8		F	#	0.2	
Iron	mg/L	02/18/2015	N001	170.46 - 190.46	0.047	J	F	#	0.0067	
Magnesium	mg/L	02/18/2015	N001	170.46 - 190.46	5.7		F	#	0.03	
Manganese	mg/L	02/18/2015	N001	170.46 - 190.46	0.00069	J	UF	#	0.00024	
Molybdenum	mg/L	02/18/2015	N001	170.46 - 190.46	0.0003		F	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/18/2015	N001	170.46 - 190.46	3.1		F	#	0.05	
Oxidation Reduction Potential	mV	02/18/2015	N001	170.46 - 190.46	173.8		F	#		
pH	s.u.	02/18/2015	N001	170.46 - 190.46	8.02		F	#		
Potassium	mg/L	02/18/2015	N001	170.46 - 190.46	1.6		F	#	0.052	
Selenium	mg/L	02/18/2015	N001	170.46 - 190.46	0.0016		F	#	0.000032	
Silica	mg/L	02/18/2015	N001	170.46 - 190.46	9.2		F	#	0.021	
Silicon	mg/L	02/18/2015	N001	170.46 - 190.46	4.3		F	#	0.0097	
Sodium	mg/L	02/18/2015	N001	170.46 - 190.46	9.2		F	#	0.047	
Specific Conductance	umhos /cm	02/18/2015	N001	170.46 - 190.46	259		F	#		
Sulfate	mg/L	02/18/2015	N001	170.46 - 190.46	13		F	#	0.5	
Temperature	C	02/18/2015	N001	170.46 - 190.46	13.6		F	#		
Total Dissolved Solids	mg/L	02/18/2015	N001	170.46 - 190.46	150		F	#	20	
Turbidity	NTU	02/18/2015	N001	170.46 - 190.46	0.68		F	#		
Uranium	mg/L	02/18/2015	N001	170.46 - 190.46	0.0013		F	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: NMW-5 WELL NAVAJO MONITORING WELL NMW-5; NMW-5 Herbert Chief; Owned by NNEPA

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	02/17/2015	N001	34.95 - 54.95	74		F	#		
Ammonia Total as N	mg/L	02/17/2015	N001	34.95 - 54.95	0.1	U	F	#	0.1	
Arsenic	mg/L	02/17/2015	N001	34.95 - 54.95	0.0035		F	#	0.000015	
Calcium	mg/L	02/17/2015	N001	34.95 - 54.95	41		F	#	0.024	
Chloride	mg/L	02/17/2015	N001	34.95 - 54.95	20		F	#	0.2	
Iron	mg/L	02/17/2015	N001	34.95 - 54.95	0.0067	U	F	#	0.0067	
Magnesium	mg/L	02/17/2015	N001	34.95 - 54.95	9.2		F	#	0.03	
Manganese	mg/L	02/17/2015	N001	34.95 - 54.95	0.00059	J	UF	#	0.00024	
Molybdenum	mg/L	02/17/2015	N001	34.95 - 54.95	0.0011		F	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	34.95 - 54.95	2.3		F	#	0.05	
pH	s.u.	02/17/2015	N001	34.95 - 54.95	7.75		F	#		
Potassium	mg/L	02/17/2015	N001	34.95 - 54.95	1.7		F	#	0.052	
Selenium	mg/L	02/17/2015	N001	34.95 - 54.95	0.0027		F	#	0.000032	
Silica	mg/L	02/17/2015	N001	34.95 - 54.95	9.1		F	#	0.021	
Silicon	mg/L	02/17/2015	N001	34.95 - 54.95	4.3		F	#	0.0097	
Sodium	mg/L	02/17/2015	N001	34.95 - 54.95	20		F	#	0.047	
Specific Conductance	umhos /cm	02/17/2015	N001	34.95 - 54.95	368		F	#		
Sulfate	mg/L	02/17/2015	N001	34.95 - 54.95	55		F	#	0.5	
Temperature	C	02/17/2015	N001	34.95 - 54.95	15.33		F	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	34.95 - 54.95	220		F	#	20	
Turbidity	NTU	02/17/2015	N001	34.95 - 54.95	0.65		F	#		
Uranium	mg/L	02/17/2015	N001	34.95 - 54.95	0.0051		F	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: NMW-6S WELL NAVAJO MONITORING WELL NMW-6S; Owned by NNEPA

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	02/17/2015	N001	167.62 - 187.62	120		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	N001	167.62 - 187.62	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/17/2015	N001	167.62 - 187.62	0.0014		FQ	#	0.000015	
Calcium	mg/L	02/17/2015	N001	167.62 - 187.62	38		FQ	#	0.024	
Chloride	mg/L	02/17/2015	N001	167.62 - 187.62	11		FQ	#	0.2	
Iron	mg/L	02/17/2015	N001	167.62 - 187.62	0.096	J	FQ	#	0.0067	
Magnesium	mg/L	02/17/2015	N001	167.62 - 187.62	6.2		FQ	#	0.03	
Manganese	mg/L	02/17/2015	N001	167.62 - 187.62	0.0062		FQ	#	0.00024	
Molybdenum	mg/L	02/17/2015	N001	167.62 - 187.62	0.00037		FQ	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	167.62 - 187.62	3.2		FQ	#	0.05	
Oxidation Reduction Potential	mV	02/17/2015	N001	167.62 - 187.62	142.4		FQ	#		
pH	s.u.	02/17/2015	N001	167.62 - 187.62	8.25		FQ	#		
Potassium	mg/L	02/17/2015	N001	167.62 - 187.62	1.5		FQ	#	0.052	
Selenium	mg/L	02/17/2015	N001	167.62 - 187.62	0.0016		FQ	#	0.000032	
Silica	mg/L	02/17/2015	N001	167.62 - 187.62	9.8		FQ	#	0.021	
Silicon	mg/L	02/17/2015	N001	167.62 - 187.62	4.6		FQ	#	0.0097	
Sodium	mg/L	02/17/2015	N001	167.62 - 187.62	8.8		FQ	#	0.047	
Specific Conductance	umhos /cm	02/17/2015	N001	167.62 - 187.62	365		FQ	#		
Sulfate	mg/L	02/17/2015	N001	167.62 - 187.62	15		FQ	#	0.5	
Temperature	C	02/17/2015	N001	167.62 - 187.62	15.82		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	167.62 - 187.62	170		FQ	#	20	
Turbidity	NTU	02/17/2015	N001	167.62 - 187.62	1.08		FQ	#		
Uranium	mg/L	02/17/2015	N001	167.62 - 187.62	0.0013		FQ	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: NMW-7D WELL NAVAJO MONITORING WELL NMW-7D; Owned by NNEPA

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	02/17/2015	N001	278.19 - 283.19	60		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	N001	278.19 - 283.19	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/17/2015	N001	278.19 - 283.19	0.0023		FQ	#	0.000015	
Calcium	mg/L	02/17/2015	N001	278.19 - 283.19	28		FQ	#	0.024	
Chloride	mg/L	02/17/2015	N001	278.19 - 283.19	6.7		FQ	#	0.2	
Iron	mg/L	02/17/2015	N001	278.19 - 283.19	0.23		FQ	#	0.0067	
Magnesium	mg/L	02/17/2015	N001	278.19 - 283.19	5.4		FQ	#	0.03	
Manganese	mg/L	02/17/2015	N001	278.19 - 283.19	0.0096		FQ	#	0.00024	
Molybdenum	mg/L	02/17/2015	N001	278.19 - 283.19	0.00035		FQ	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	278.19 - 283.19	3		FQ	#	0.05	
Oxidation Reduction Potential	mV	02/17/2015	N001	278.19 - 283.19	153.4		FQ	#		
pH	s.u.	02/17/2015	N001	278.19 - 283.19	8.06		FQ	#		
Potassium	mg/L	02/17/2015	N001	278.19 - 283.19	1.6		FQ	#	0.052	
Selenium	mg/L	02/17/2015	N001	278.19 - 283.19	0.0011		FQ	#	0.000032	
Silica	mg/L	02/17/2015	N001	278.19 - 283.19	11		FQ	#	0.021	
Silicon	mg/L	02/17/2015	N001	278.19 - 283.19	5.4		FQ	#	0.0097	
Sodium	mg/L	02/17/2015	N001	278.19 - 283.19	5.4		FQ	#	0.047	
Specific Conductance	umhos /cm	02/17/2015	N001	278.19 - 283.19	224		FQ	#		
Sulfate	mg/L	02/17/2015	N001	278.19 - 283.19	8.6		FQ	#	0.5	
Temperature	C	02/17/2015	N001	278.19 - 283.19	16.27		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	278.19 - 283.19	120		FQ	#	20	
Turbidity	NTU	02/17/2015	N001	278.19 - 283.19	1.05		FQ	#		
Uranium	mg/L	02/17/2015	N001	278.19 - 283.19	0.00094		FQ	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: NMW-8S WELL NAVAJO MONITORING WELL NMW_8S; Owned by NNEPA

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	02/17/2015	N001	149.43 - 169.43	88		F	#		
Ammonia Total as N	mg/L	02/17/2015	N001	149.43 - 169.43	0.1	U	F	#	0.1	
Arsenic	mg/L	02/17/2015	N001	149.43 - 169.43	0.0023		F	#	0.000015	
Calcium	mg/L	02/17/2015	N001	149.43 - 169.43	34		F	#	0.024	
Chloride	mg/L	02/17/2015	N001	149.43 - 169.43	10		F	#	0.2	
Iron	mg/L	02/17/2015	N001	149.43 - 169.43	0.097	J	F	#	0.0067	
Magnesium	mg/L	02/17/2015	N001	149.43 - 169.43	5.5		F	#	0.03	
Manganese	mg/L	02/17/2015	N001	149.43 - 169.43	0.00028	J	UF	#	0.00024	
Molybdenum	mg/L	02/17/2015	N001	149.43 - 169.43	0.00033		F	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	149.43 - 169.43	3.3		F	#	0.05	
Oxidation Reduction Potential	mV	02/17/2015	N001	149.43 - 169.43	111.9		F	#		
pH	s.u.	02/17/2015	N001	149.43 - 169.43	8.03		F	#		
Potassium	mg/L	02/17/2015	N001	149.43 - 169.43	1.7		F	#	0.052	
Selenium	mg/L	02/17/2015	N001	149.43 - 169.43	0.0011		F	#	0.000032	
Silica	mg/L	02/17/2015	N001	149.43 - 169.43	9.3		F	#	0.021	
Silicon	mg/L	02/17/2015	N001	149.43 - 169.43	4.3		F	#	0.0097	
Sodium	mg/L	02/17/2015	N001	149.43 - 169.43	9.8		F	#	0.047	
Specific Conductance	umhos /cm	02/17/2015	N001	149.43 - 169.43	262		F	#		
Sulfate	mg/L	02/17/2015	N001	149.43 - 169.43	13		F	#	0.5	
Temperature	C	02/17/2015	N001	149.43 - 169.43	15.41		F	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	149.43 - 169.43	150		F	#	20	
Turbidity	NTU	02/17/2015	N001	149.43 - 169.43	0.39		F	#		
Uranium	mg/L	02/17/2015	N001	149.43 - 169.43	0.0014		F	#	0.0000029	

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

REPORT DATE: 5/11/2015

Location: NMW-9D WELL NAVAJO MONITORING WELL NMW-9D; Owned by NNEPA

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	02/17/2015	N001	265.52 - 270.52	104		FQ	#		
Ammonia Total as N	mg/L	02/17/2015	N001	265.52 - 270.52	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/17/2015	N001	265.52 - 270.52	0.00098		FQ	#	0.000015	
Calcium	mg/L	02/17/2015	N001	265.52 - 270.52	33		FQ	#	0.024	
Chloride	mg/L	02/17/2015	N001	265.52 - 270.52	11		FQ	#	0.2	
Iron	mg/L	02/17/2015	N001	265.52 - 270.52	0.0067	U	FQ	#	0.0067	
Magnesium	mg/L	02/17/2015	N001	265.52 - 270.52	6.5		FQ	#	0.03	
Manganese	mg/L	02/17/2015	N001	265.52 - 270.52	0.031		FQ	#	0.00024	
Molybdenum	mg/L	02/17/2015	N001	265.52 - 270.52	0.0023		FQ	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	N001	265.52 - 270.52	2.7		FQ	#	0.05	
Oxidation Reduction Potential	mV	02/17/2015	N001	265.52 - 270.52	118.7		FQ	#		
pH	s.u.	02/17/2015	N001	265.52 - 270.52	7.33		FQ	#		
Potassium	mg/L	02/17/2015	N001	265.52 - 270.52	1.8		FQ	#	0.052	
Selenium	mg/L	02/17/2015	N001	265.52 - 270.52	0.0014		FQ	#	0.000032	
Silica	mg/L	02/17/2015	N001	265.52 - 270.52	10		FQ	#	0.021	
Silicon	mg/L	02/17/2015	N001	265.52 - 270.52	4.9		FQ	#	0.0097	
Sodium	mg/L	02/17/2015	N001	265.52 - 270.52	14		FQ	#	0.047	
Specific Conductance	umhos /cm	02/17/2015	N001	265.52 - 270.52	291		FQ	#		
Sulfate	mg/L	02/17/2015	N001	265.52 - 270.52	24		FQ	#	0.5	
Temperature	C	02/17/2015	N001	265.52 - 270.52	15.73		FQ	#		
Total Dissolved Solids	mg/L	02/17/2015	N001	265.52 - 270.52	170		FQ	#	20	
Turbidity	NTU	02/17/2015	N001	265.52 - 270.52	2.58		FQ	#		
Uranium	mg/L	02/17/2015	N001	265.52 - 270.52	0.0015		FQ	#	0.0000029	

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.

Surface Water Quality Data

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Surface Water Quality Data by Location (USEE102) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/11/2015
Location: 1569 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/17/2015	0001	9			#		
Arsenic	mg/L	02/17/2015	0001	0.031			#	0.003	
Calcium	mg/L	02/17/2015	0001	800			#	0.24	
Chloride	mg/L	02/17/2015	0001	130000			#	2000	
Iron	mg/L	02/17/2015	0001	0.067	U		#	0.067	
Magnesium	mg/L	02/17/2015	0001	9500			#	15	
Manganese	mg/L	02/17/2015	0001	77			#	0.0024	
Molybdenum	mg/L	02/17/2015	0001	0.064			#	0.0064	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	0001	5800			#	50	
Oxidation Reduction Potential	mV	02/17/2015	N001	175.3			#		
pH	s.u.	02/17/2015	N001	6.4			#		
Potassium	mg/L	02/17/2015	0001	660			#	0.52	
Selenium	mg/L	02/17/2015	0001	1			#	0.0065	
Sodium	mg/L	02/17/2015	0001	70000			#	23	
Specific Conductance	umhos/cm	02/17/2015	N001	203716			#		
Sulfate	mg/L	02/17/2015	0001	17000			#	2500	
Temperature	C	02/17/2015	N001	12.4			#		
Total Dissolved Solids	mg/L	02/17/2015	0001	250000		J	#	400	
Uranium	mg/L	02/17/2015	0001	0.34			#	0.00058	

Surface Water Quality Data by Location (USEE102) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/11/2015
Location: 1570 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	02/17/2015	0001	0			#		
Arsenic	mg/L	02/17/2015	0001	0.033			#	0.003	
Calcium	mg/L	02/17/2015	0001	830			#	0.24	
Chloride	mg/L	02/17/2015	0001	130000			#	2000	
Iron	mg/L	02/17/2015	0001	0.067	U		#	0.067	
Magnesium	mg/L	02/17/2015	0001	8600			#	30	
Manganese	mg/L	02/17/2015	0001	78			#	0.0024	
Molybdenum	mg/L	02/17/2015	0001	0.064			#	0.0064	
Nitrate + Nitrite as Nitrogen	mg/L	02/17/2015	0001	5800			#	50	
Oxidation Reduction Potential	mV	02/17/2015	N001	149.1			#		
pH	s.u.	02/17/2015	N001	6.4			#		
Potassium	mg/L	02/17/2015	0001	670			#	0.52	
Selenium	mg/L	02/17/2015	0001	0.96			#	0.0065	
Sodium	mg/L	02/17/2015	0001	59000			#	47	
Specific Conductance	umhos/cm	02/17/2015	N001	203257			#		
Sulfate	mg/L	02/17/2015	0001	17000			#	2500	
Temperature	C	02/17/2015	N001	13.77			#		
Total Dissolved Solids	mg/L	02/17/2015	0001	260000		J	#	400	
Uranium	mg/L	02/17/2015	0001	0.33			#	0.00058	

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.

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Static Water Level Data

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STATIC WATER LEVELS (USEE700) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/11/2015

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	02/17/2015	08:35:59	64.35	4996.9	
0252		5061.3	02/17/2015	09:30:30	68.67	4992.63	
0258		5055.56	02/16/2015	16:20:53	93.87	4961.69	
0261		5069.69	02/18/2015	13:06:00	127.6	4942.09	
0262		5061.99	02/16/2015	17:30:51	45.19	5016.8	
0263		5063.1	02/16/2015	16:50:40	50.11	5012.99	
0264		5062.19	02/16/2015	17:10:03	78.44	4983.75	
0265		5053.88	02/17/2015	10:25:00	81.6	4972.28	
0266		5053.32	02/17/2015	11:00:00	91.74	4961.58	
0267		5053.4	02/17/2015	11:20:49	62.4	4991	
0268		5067.24	02/16/2015	17:05:15	86.76	4980.48	
0271		5046.72	02/18/2015	11:24:00	55.13	4991.59	
0272		5064.24	02/17/2015	11:30:55	56.49	5007.75	
0273		5064.74	02/17/2015	08:25:02	56.41	5008.33	
0274		5064.42	02/16/2015	17:20:12	60	5004.42	
0275		5062.64	02/16/2015	16:35:39	64.47	4998.17	
0276		5067.55	02/16/2015	16:10:08	59.22	5008.33	
0277		4982.35	02/18/2015	12:44:00	34.42	4947.93	
0278		4956.09	02/18/2015	12:19:00	22.12	4933.97	
0279		4951.04	02/18/2015	12:15:00	25.46	4925.58	
0280		4951.52	02/18/2015	12:09:00	27.5	4924.02	
0281		5051	02/17/2015	11:40:11	70.8	4980.2	
0282		5060.04	02/17/2015	12:55:17	83.3	4976.74	
0283		5057.97	02/17/2015	09:46:00			D
0284		5098.72	02/18/2015	13:15:00			D
0285		5096.47	02/18/2015	13:17:00			D
0286		5063.99	02/18/2015	13:40:00	55.55	5008.44	
0287		5065.65	02/17/2015	09:30:00	50.17	5015.48	

STATIC WATER LEVELS (USEE700) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/11/2015

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
0288		5072.54	02/17/2015	13:00:39	55.99	5016.55	
0289		5070.82	02/17/2015	12:25:00	55.35	5015.47	
0290		5068.91	02/16/2015	15:50:12	80.01	4988.9	
0290		5068.91	02/18/2015	13:33:00	80.2	4988.71	
0683		5070.64	02/18/2015	13:29:00	94.32	4976.32	
0684		5070.05	02/18/2015	13:39:00	66.75	5003.3	
0685		5072.44	02/18/2015	13:51:00	49.23	5023.21	
0686		5107.97	02/18/2015	13:53:00			D
0687		5109.82	02/18/2015	13:20:00	58.9	5050.92	
0688		5106.98	02/18/2015	13:48:00	65.22	5041.76	
0689		4981.63	02/18/2015	12:31:00	38.69	4942.94	
0690		4950.87	02/18/2015	12:11:00	24.28	4926.59	
0691		4979.41	02/16/2015	17:45:00	40.2	4939.21	
0692		4953.31	02/18/2015	12:06:00	25.16	4928.15	
0695		4976.83	02/18/2015	11:57:00	50.29	4926.54	
0901	U	5105.46	02/17/2015	17:13:00	47.5	5057.96	
0902	N	4737.42	02/18/2015	10:43:00	30	4707.42	
0903	D	4983.33	02/18/2015	12:46:00	31.64	4951.69	
0904	N	4904.11	02/18/2015	12:50:00	23.29	4880.82	
0906	O	5062.1	02/16/2015	17:40:19	48.3	5013.8	
0908	D	5058.14	02/16/2015	17:50:39	57.39	5000.75	
0909	D	5057.17	02/17/2015	13:11:00			D
0910	U	5106.7	02/17/2015	17:12:00	50.64	5056.06	
0911	U	5106.96	02/17/2015	17:15:00	46.92	5060.04	
0912	D	5059.97	02/18/2015	11:30:00	58.6	5001.37	
0913	D	5060.16	02/18/2015	11:39:00	65.75	4994.41	
0914	D	5070.1	02/18/2015	13:20:00	110.46	4959.64	
0915	D	5070.84	02/18/2015	13:24:00	105.91	4964.93	

STATIC WATER LEVELS (USEE700) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/11/2015

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
0916	D	5070	02/18/2015	13:26:00	117.35	4952.65	
0917	D	5048.02	02/18/2015	10:46:00	69.59	4978.43	
0918	D	5049.63	02/18/2015	11:16:00			D
0919	D	5048.56	02/18/2015	11:19:00	146.05	4902.51	
0920	D	4982.97	02/18/2015	12:36:00	32.04	4950.93	
0921	D	4979.08	02/18/2015	12:47:00	37.36	4941.72	
0929	D	5060.82	02/17/2015	12:05:57	60.5	5000.32	
0930	D	4954.96	02/16/2015	16:50:31	20.91	4934.05	
0932	D	5057.32	02/17/2015	13:45:34	98.45	4958.87	
0934	D	5059.73	02/17/2015	12:25:09	75.5	4984.23	
0935	D	5061.5	02/17/2015	09:30:03	55.4	5006.1	
0936	D	5062.3	02/17/2015	09:00:56	60.5	5001.8	
0938	D	5063.64	02/17/2015	10:20:17	45.95	5017.69	
0940	D	5064.77	02/17/2015	10:30:06	55.09	5009.68	
0941	D	5065.97	02/17/2015	08:55:34	49.82	5016.15	
0942	D	5066.45	02/17/2015	12:30:49	42.78	5023.67	
0943	U	5098.05	02/18/2015	13:24:00	55.3	5042.75	
0945	U	5140.49	02/18/2015	13:18:00	93	5047.49	
0946	C	5100.5	02/18/2015	13:23:00	54.35	5046.15	
0947	U	5097.01	02/18/2015	13:45:00	67.35	5029.66	
0948	U	5117.8	02/18/2015	13:56:00	101.69	5016.11	
0968	U	5107	02/17/2015	17:18:00	51.61	5055.39	
1003		4976.58	02/18/2015	11:42:00	38.1	4938.48	
1004		4961.55	02/18/2015	12:01:00	23.25	4938.3	
1005		4947.83	02/18/2015	12:17:00	22.1	4925.73	
1006		4947.08	02/18/2015	12:23:00	15.2	4931.88	
1007		4958.56	02/18/2015	12:26:00	21.3	4937.26	
1008		4980.52	02/18/2015	12:34:00	36.95	4943.57	

STATIC WATER LEVELS (USEE700) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/11/2015

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
NMW-1A		5150.95	02/17/2015	16:40:39	114.46	5036.49	
NMW-2A		5121.69	02/18/2015	08:55:08	70.19	5051.5	
NMW-3A		5168.51	02/17/2015	17:00:18	112.4	5056.11	
NMW-4A		5137.44	02/18/2015	08:35:31	80.36	5057.08	
NMW-5		4985.85	02/17/2015	17:40:05	16.7	4969.15	
NMW-6S		5145.93	02/17/2015	15:35:59	107.49	5038.44	
NMW-7D		5147.13	02/17/2015	16:10:59	117.05	5030.08	
NMW-8S		5114.87	02/17/2015	15:20:03	88.68	5026.19	
NMW-9D		5115.92	02/17/2015	14:45:15	89.82	5026.1	

FLOW CODES: B BACKGROUND C CROSS GRADIENT D DOWNGRADIENT F OFFSITE
N UNKNOWN O ONSITE U UPGRADIENT

WATER LEVEL FLAGS: D Dry F Flowing B Below top of pump

Time-Concentration Graphs
Primary Contaminants in Monitoring Wells

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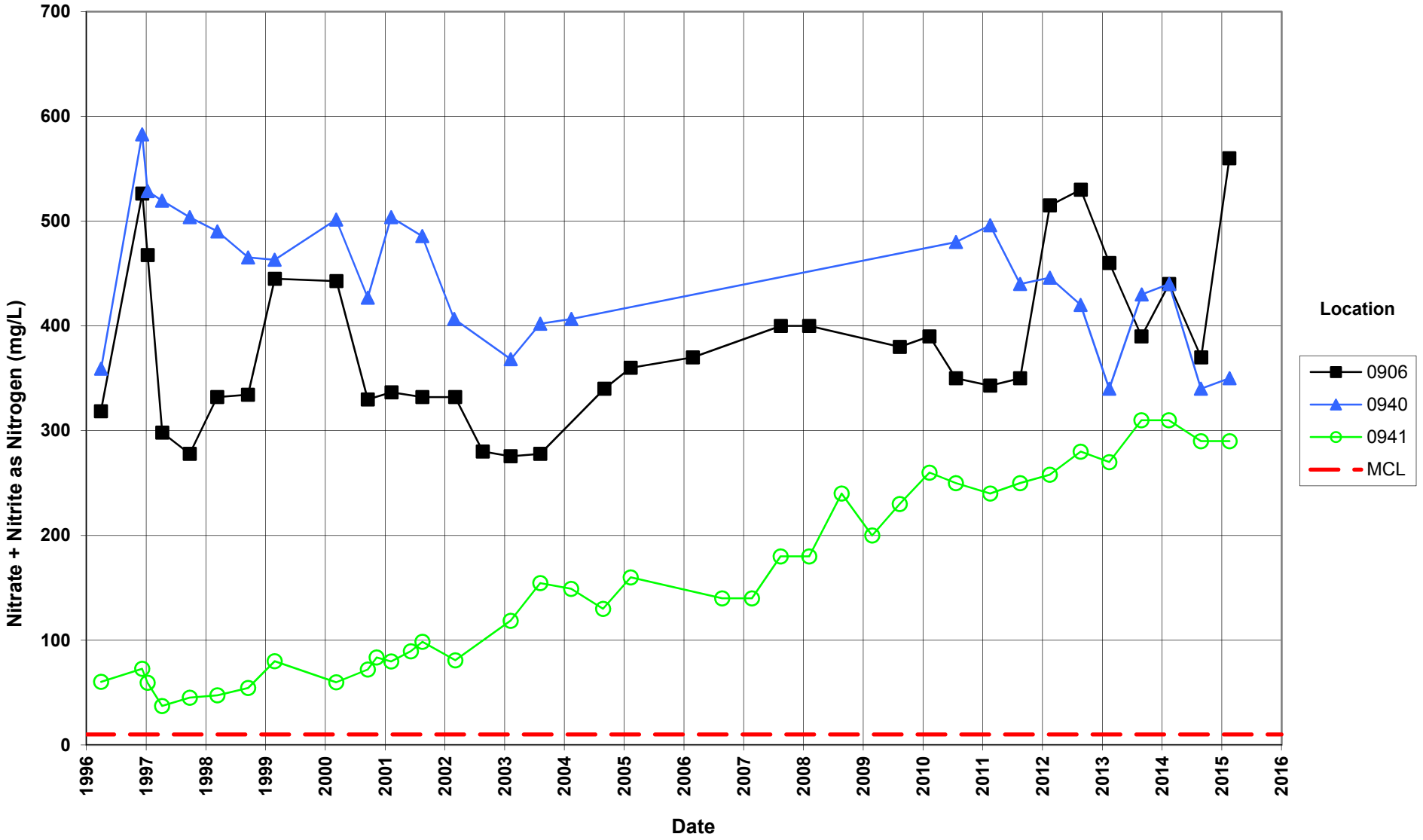
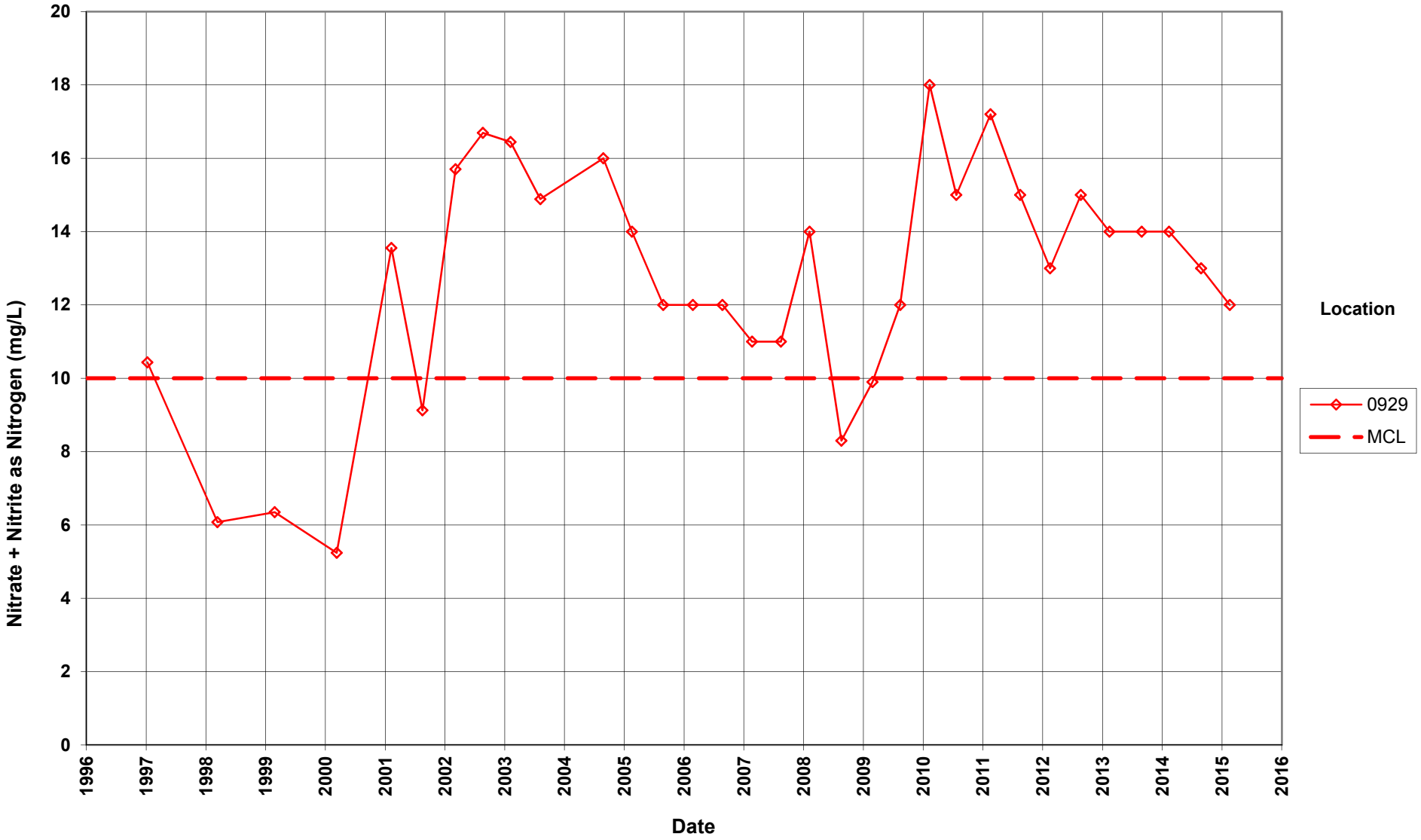
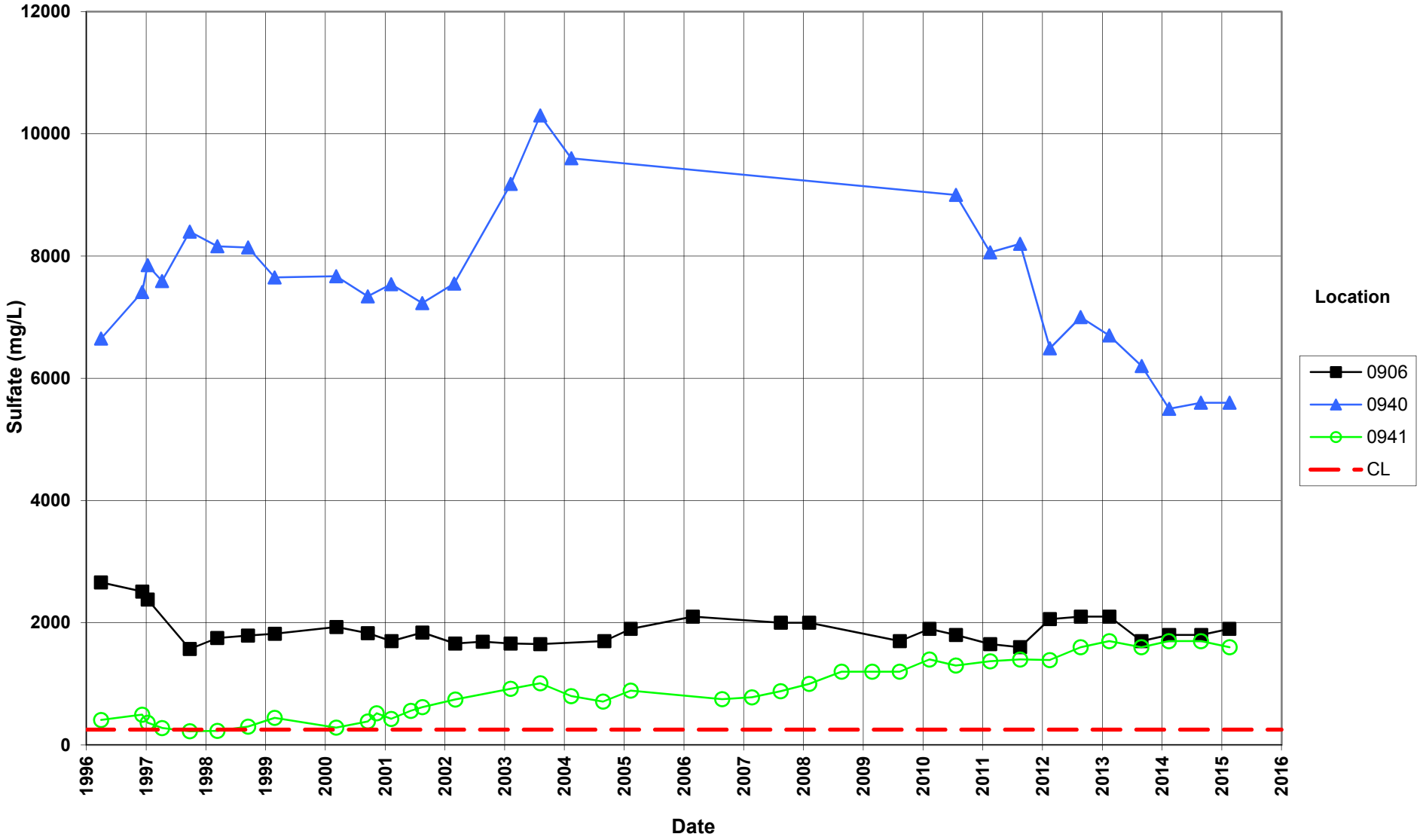
Tuba City Disposal Site
Horizon A Monitoring Wells
Nitrate + Nitrite as Nitrogen Concentration
Maximum Concentration Limit (MCL) = 10.0 mg/L



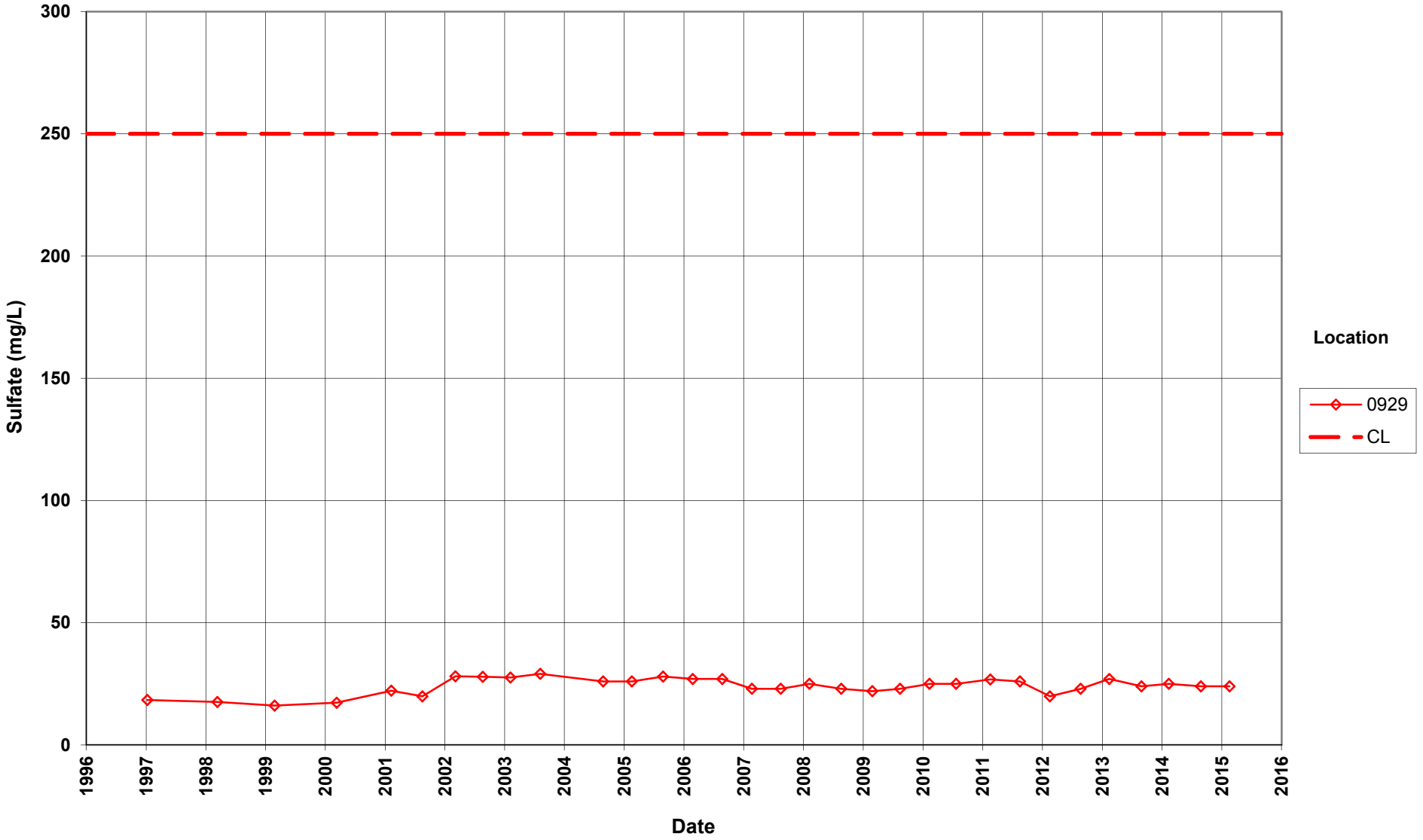
Tuba City Disposal Site
Horizon A Monitoring Wells - Sentinel Well
Nitrate + Nitrite as Nitrogen Concentration
Maximum Concentration Limit (MCL) = 10.0 mg/L



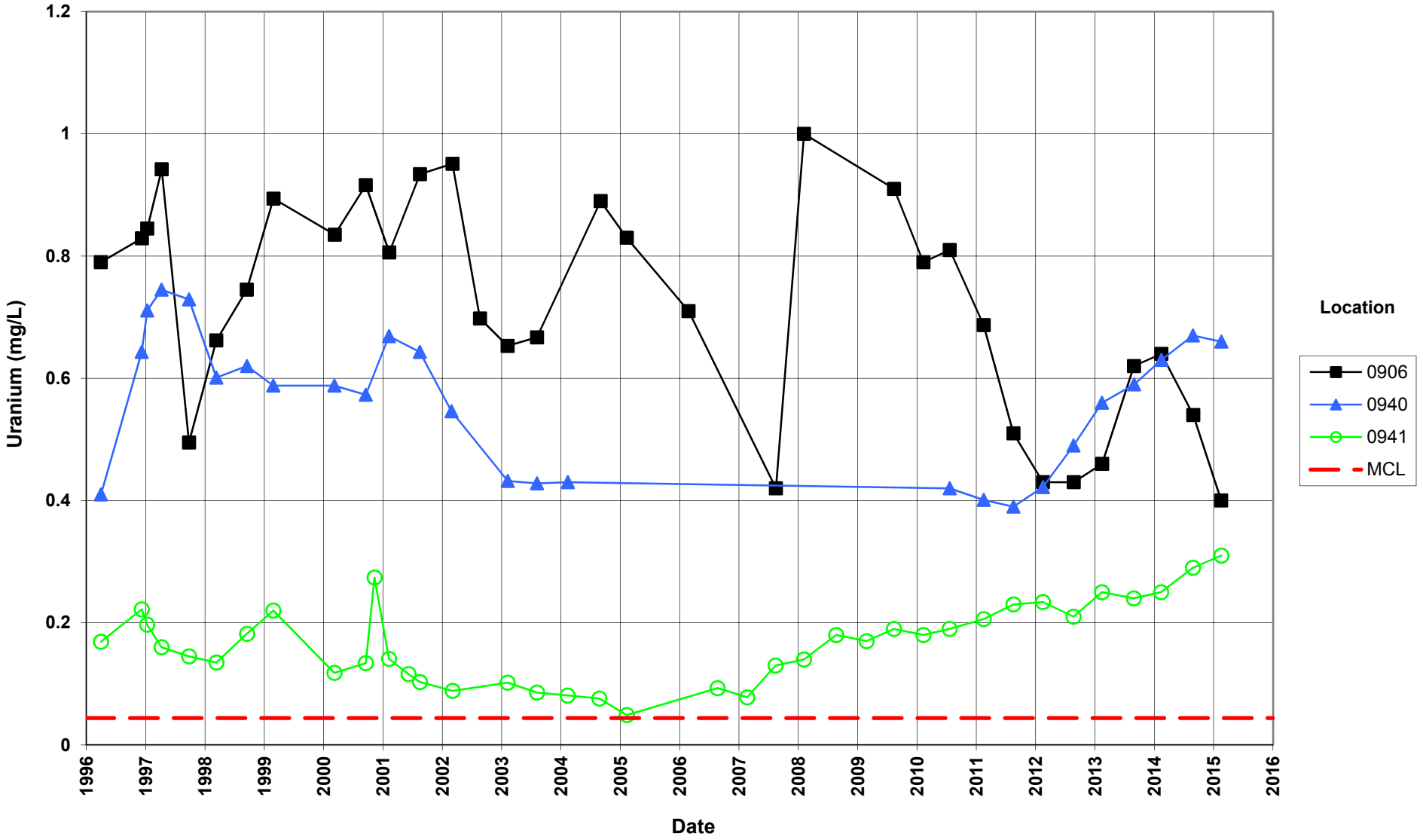
Tuba City Disposal Site
Horizon A Monitoring Wells
Sulfate Concentration
Cleanup Level (CL) = 250 mg/L



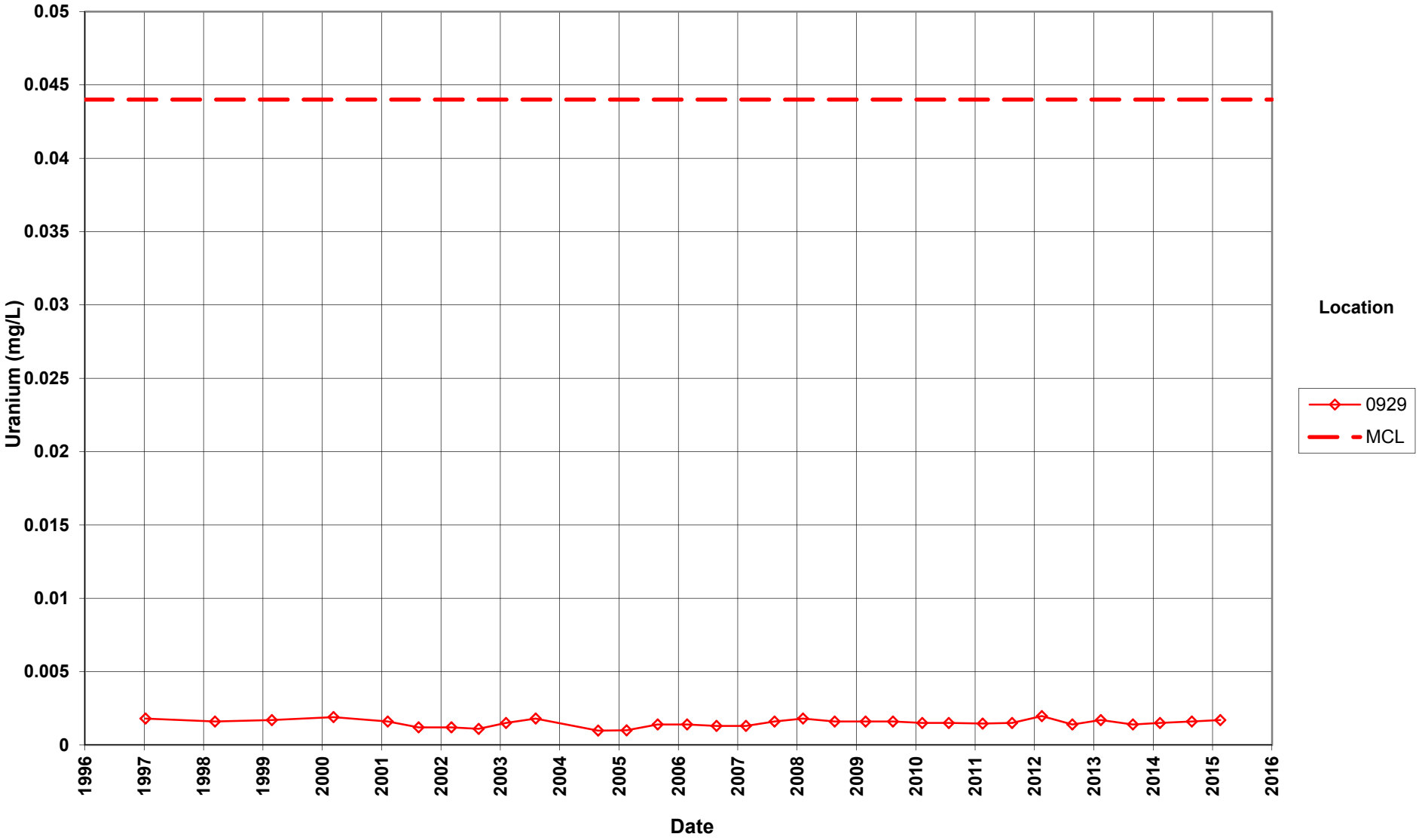
Tuba City Disposal Site
Horizon A Monitoring Wells - Sentinel Well
Sulfate Concentration
Cleanup Level (CL) = 250 mg/L



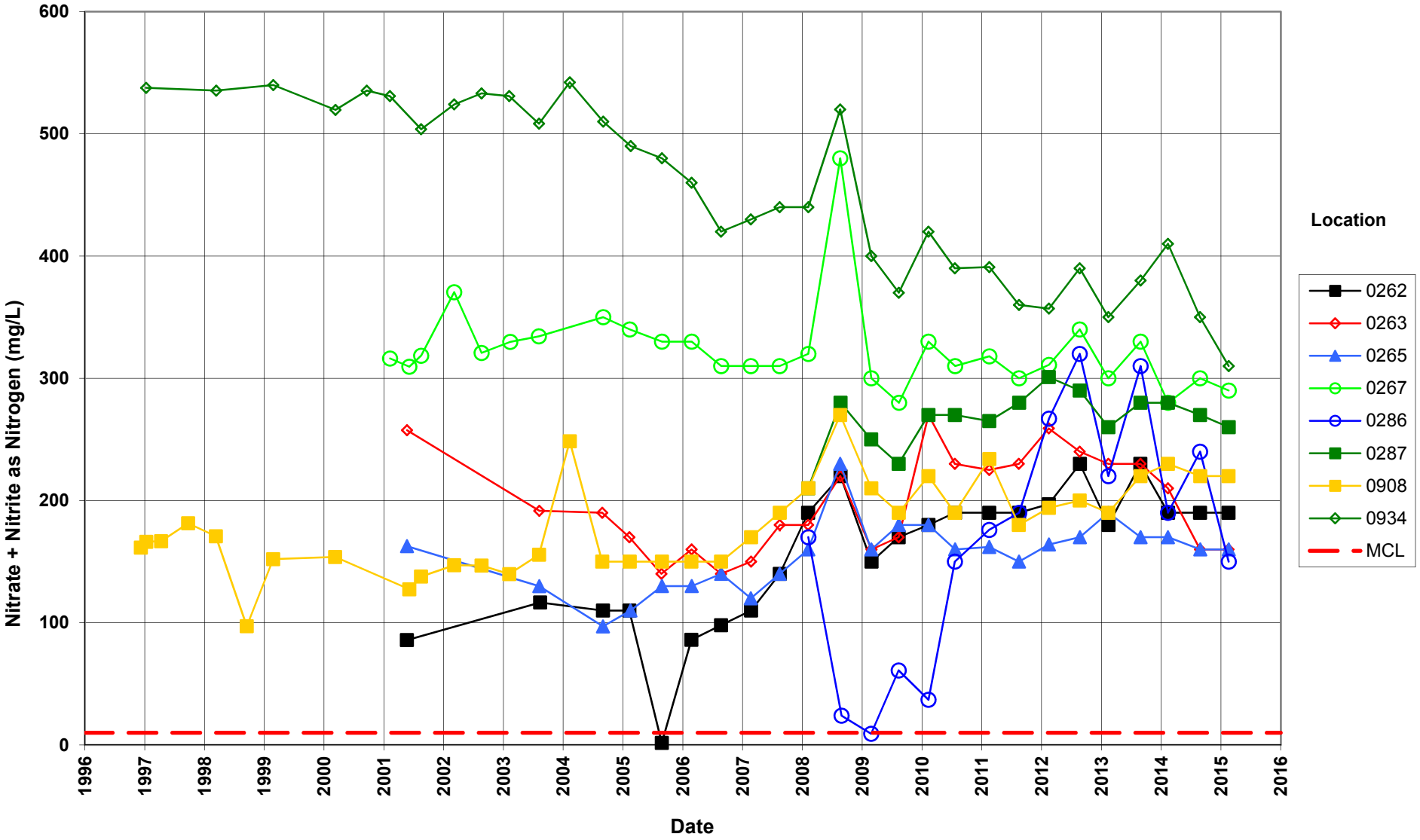
Tuba City Disposal Site
Horizon A Monitoring Wells
Uranium Concentration
Maximum Concentration Limit (MCL) = 0.044 mg/L



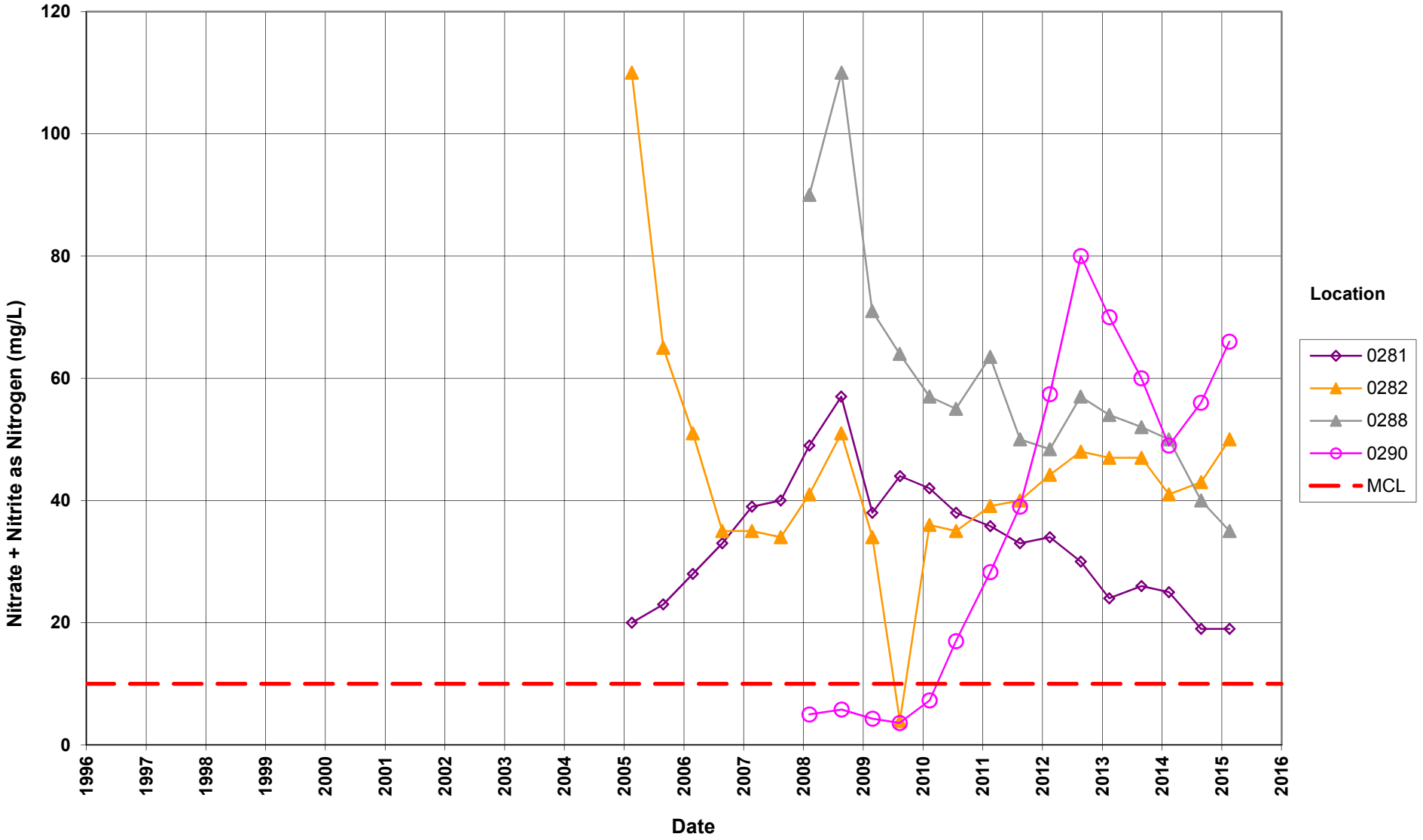
Tuba City Disposal Site
Horizon A Monitoring Wells
Uranium Concentration
Maximum Concentration Limit (MCL) = 0.044 mg/L



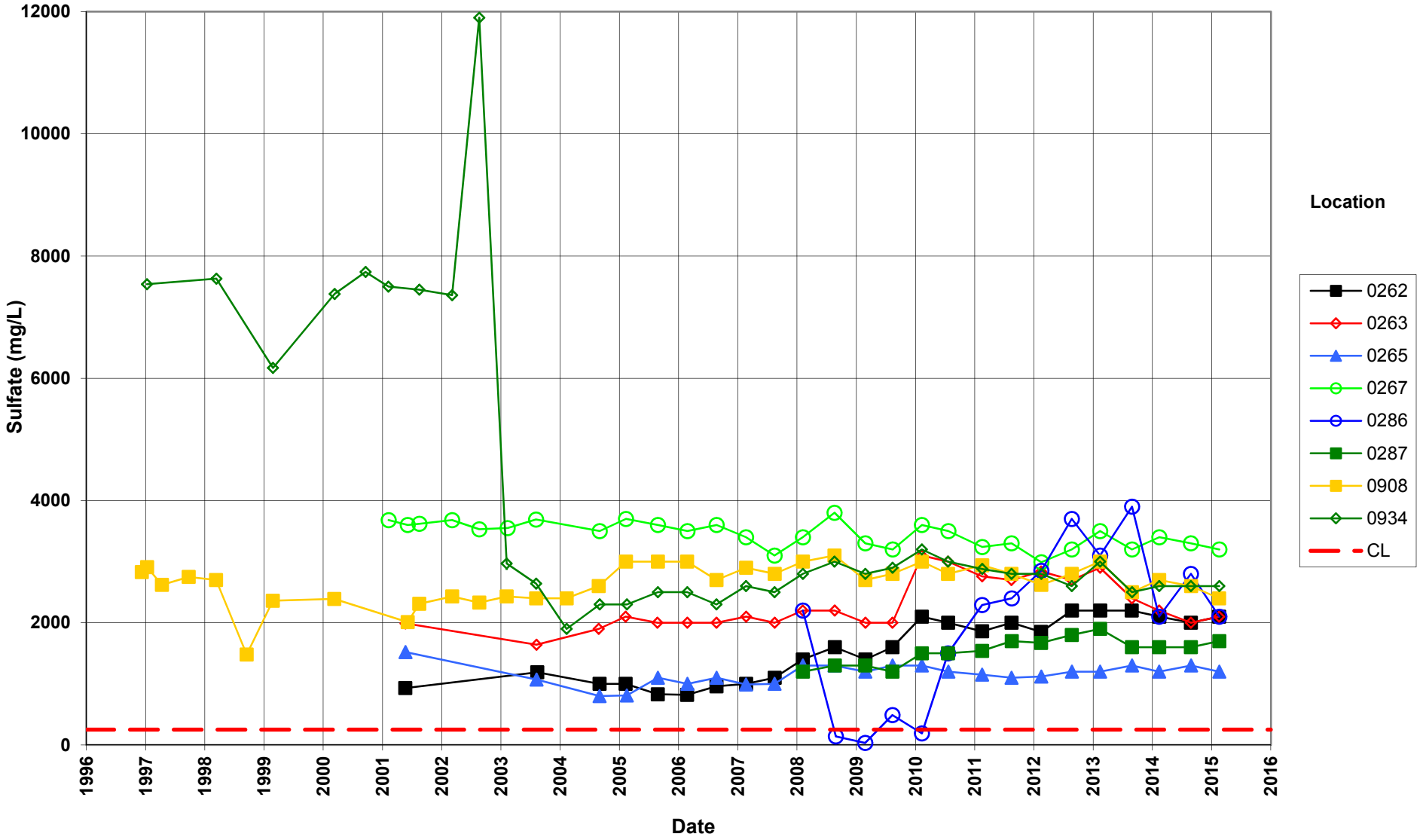
Tuba City Disposal Site
Horizon B Monitoring Wells
Nitrate + Nitrite as Nitrogen Concentration
Maximum Concentration Limit (MCL) = 10.0 mg/L



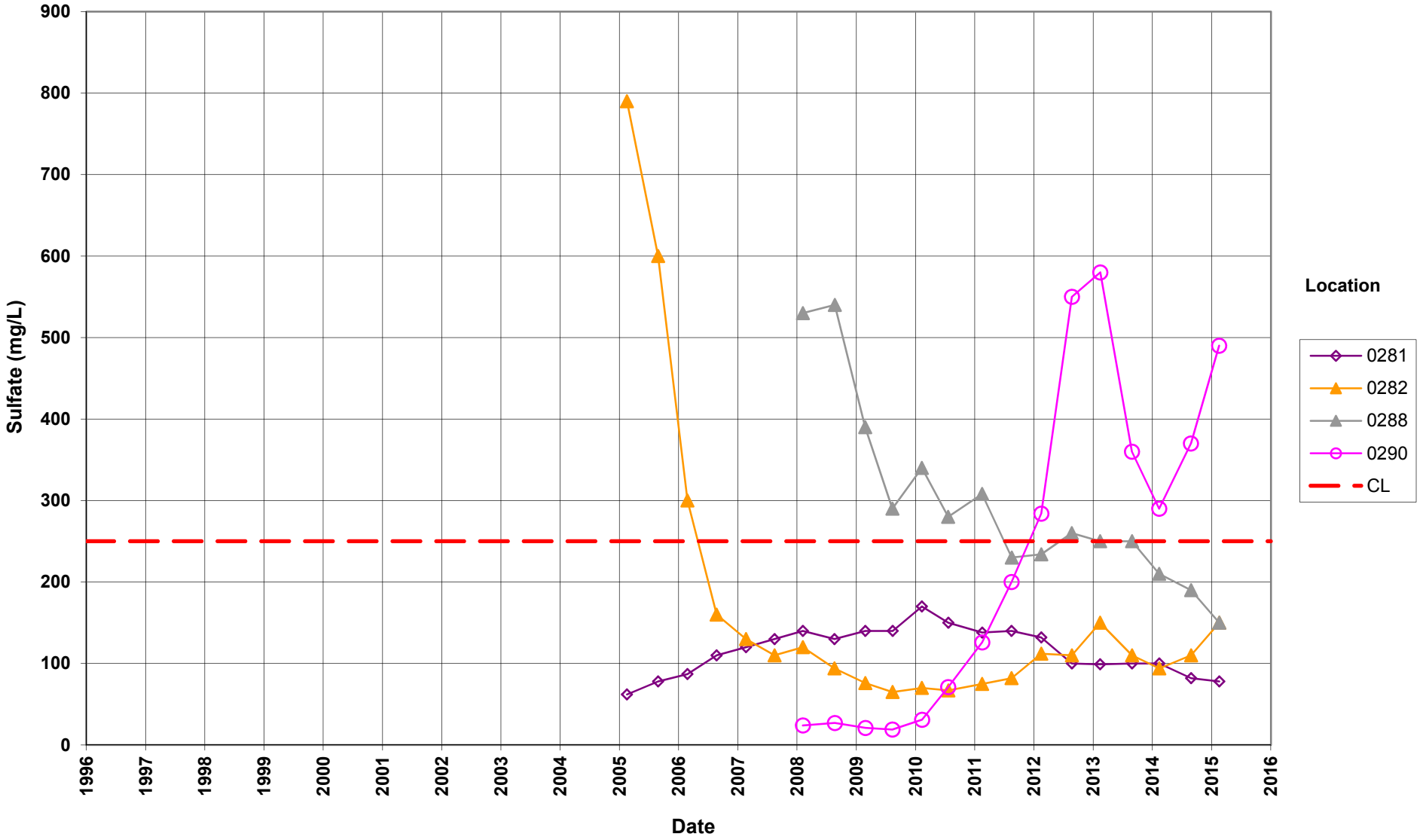
Tuba City Disposal Site
Horizon B Monitoring Wells
Nitrate + Nitrite as Nitrogen Concentration
Maximum Concentration Limit (MCL) = 10.0 mg/L



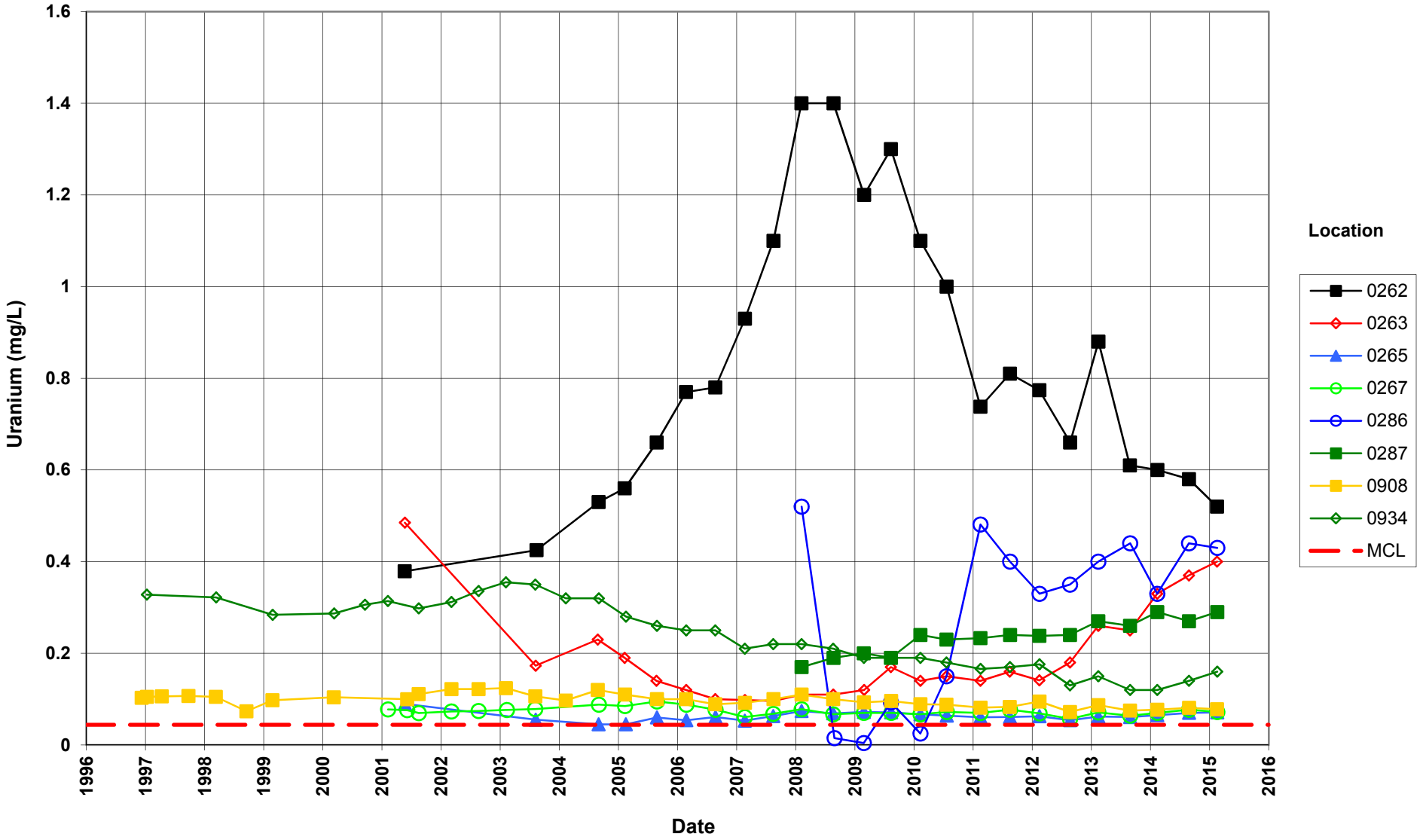
Tuba City Disposal Site
Horizon B Monitoring Wells
Sulfate Concentration
Cleanup Level (CL) = 250 mg/L



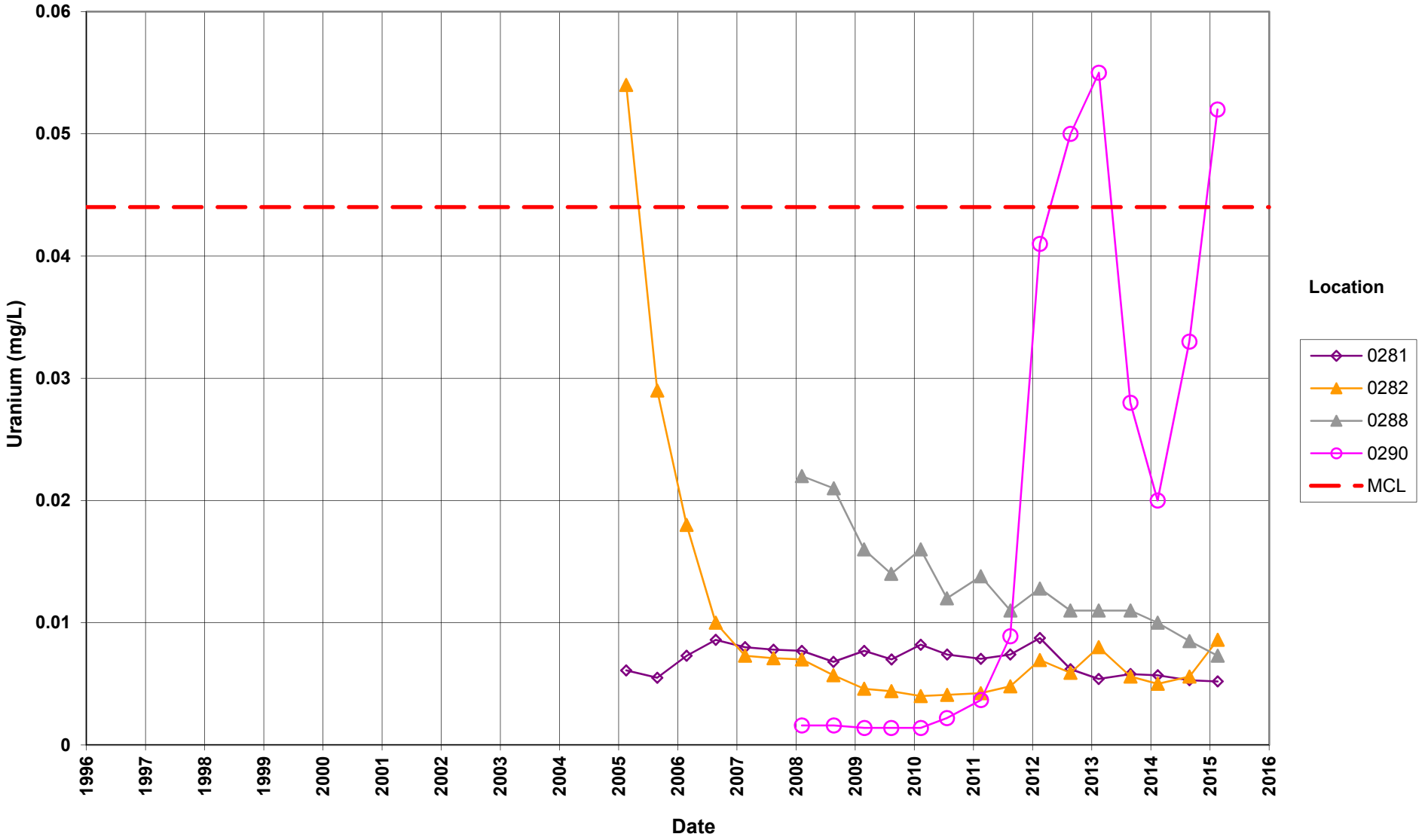
Tuba City Disposal Site
Horizon B Monitoring Wells
Sulfate Concentration
Cleanup Level (CL) = 250 mg/L



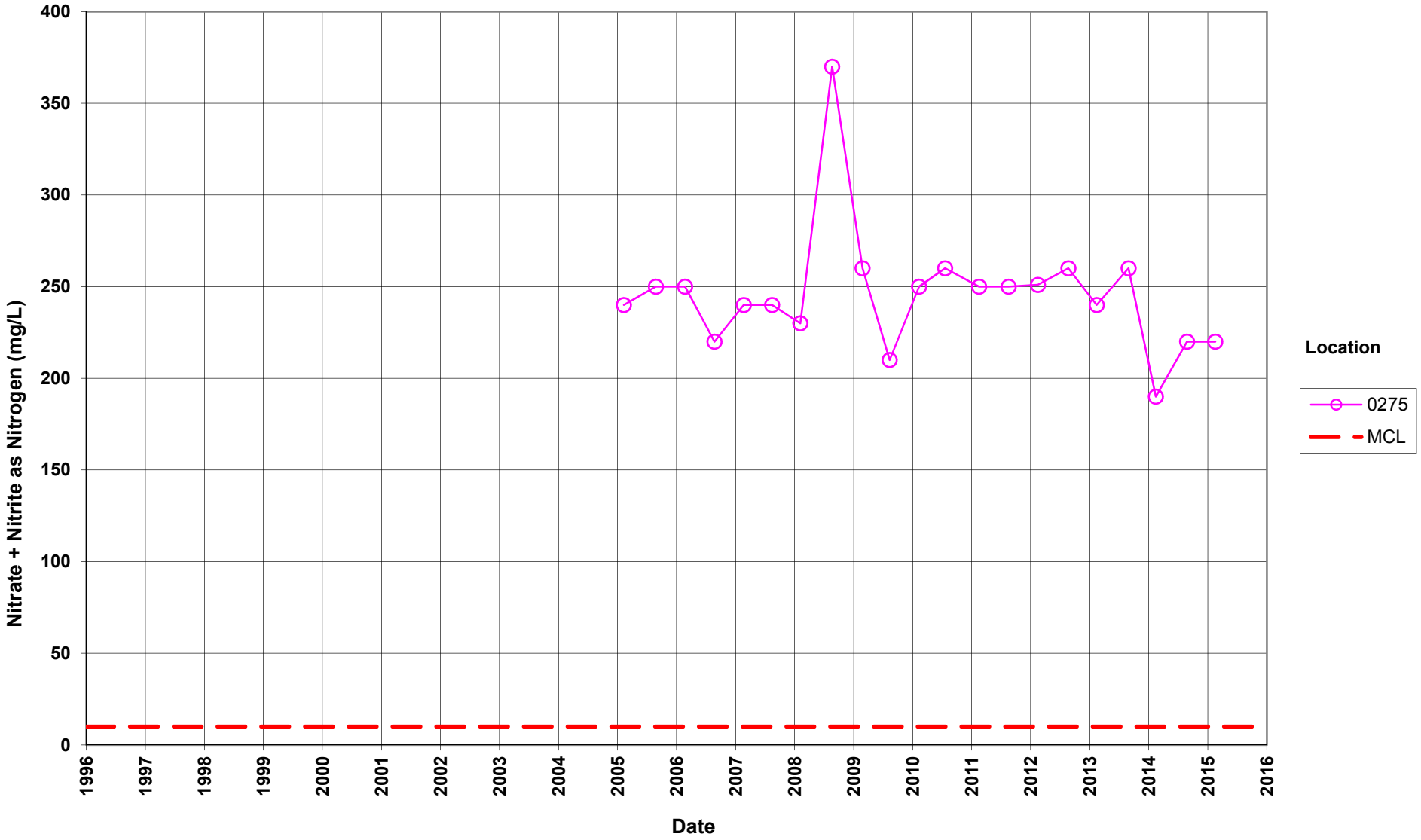
Tuba City Disposal Site
Horizon B Monitoring Wells
Uranium Concentration
Maximum Concentration Limit (MCL) = 0.044 mg/L



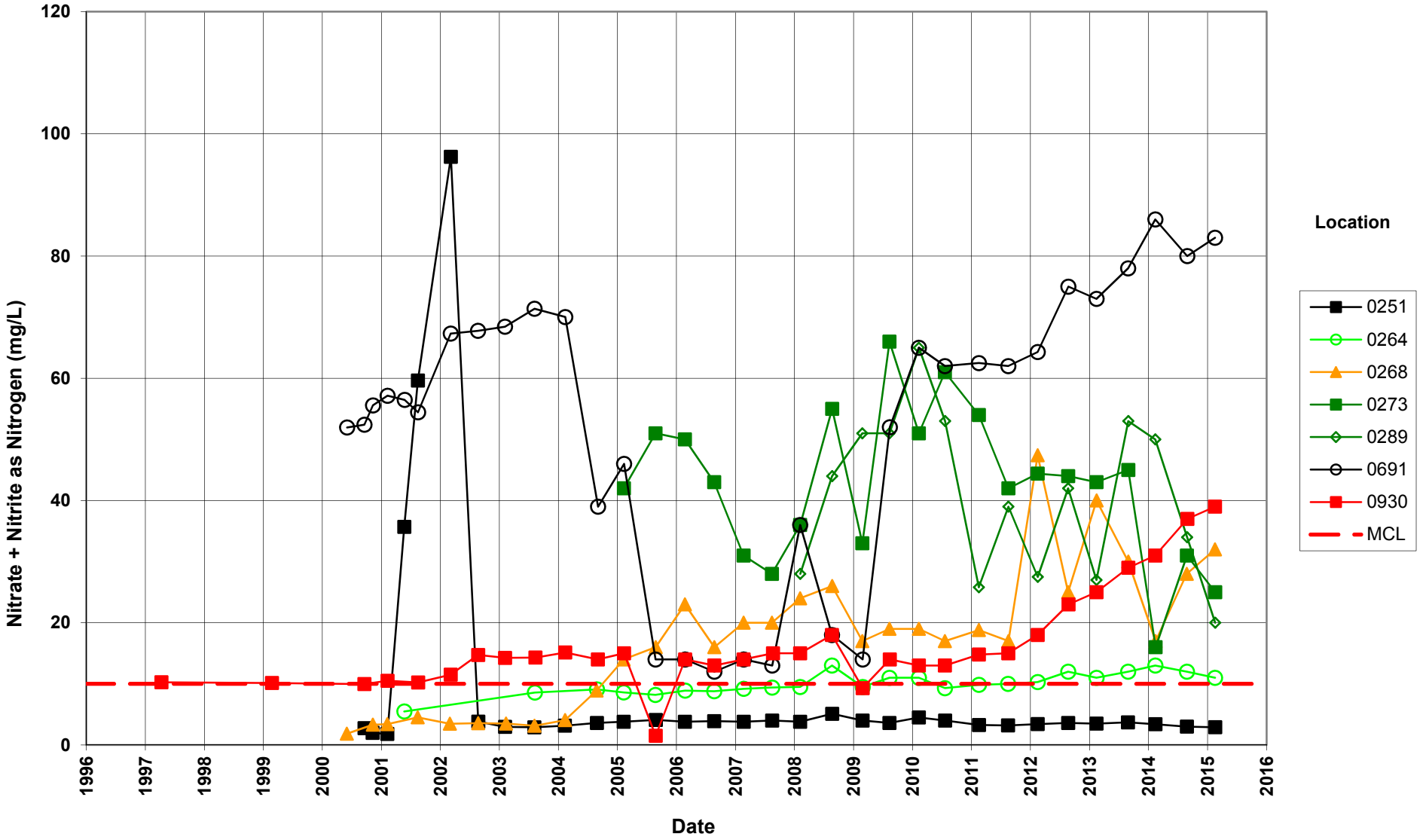
Tuba City Disposal Site
Horizon B Monitoring Wells
Uranium Concentration
Maximum Concentration Limit (MCL) = 0.044 mg/L



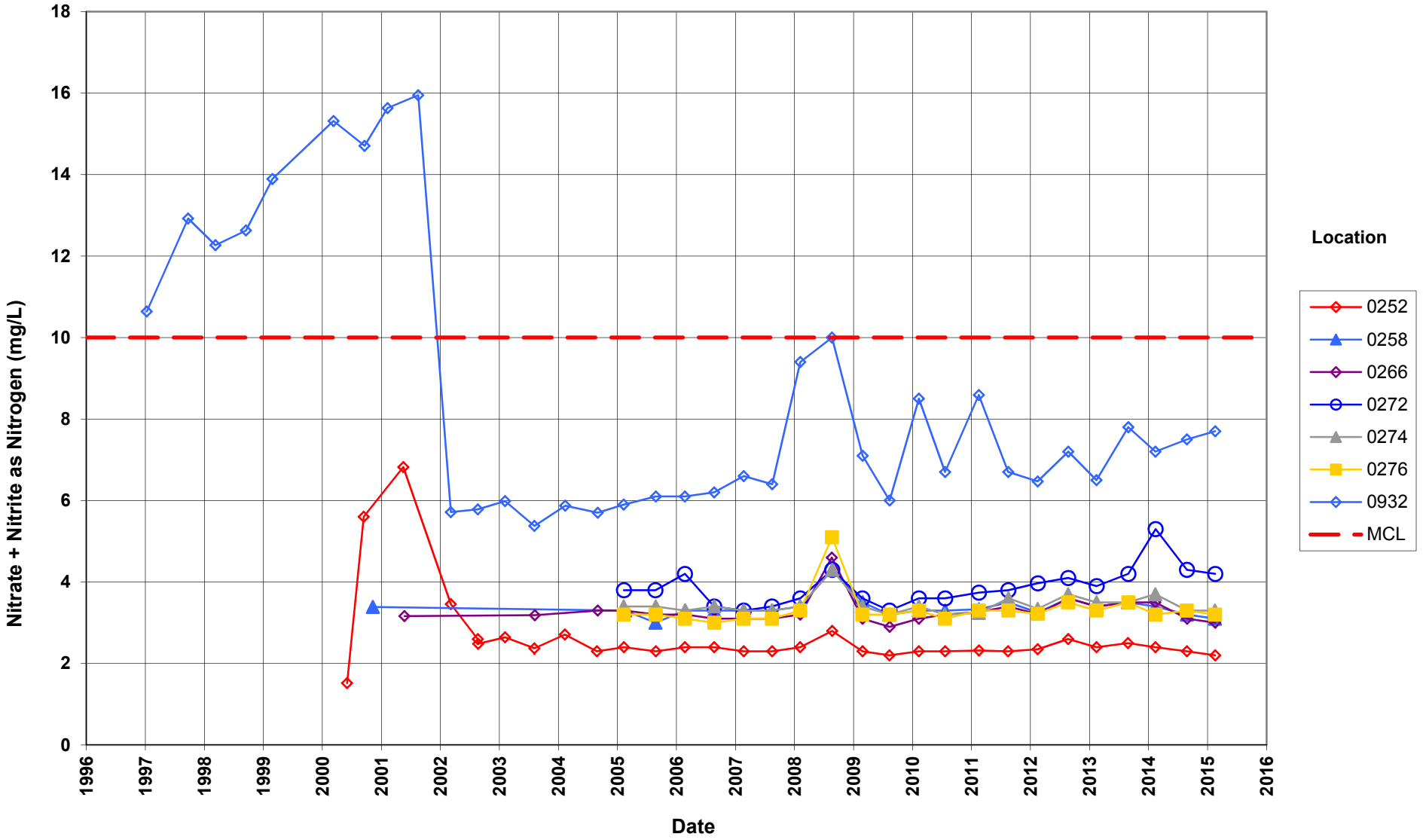
Tuba City Disposal Site
Horizons C, D, E, & I Monitoring Wells
Nitrate + Nitrite as Nitrogen Concentration
Maximum Concentration Limit (MCL) = 10.0 mg/L



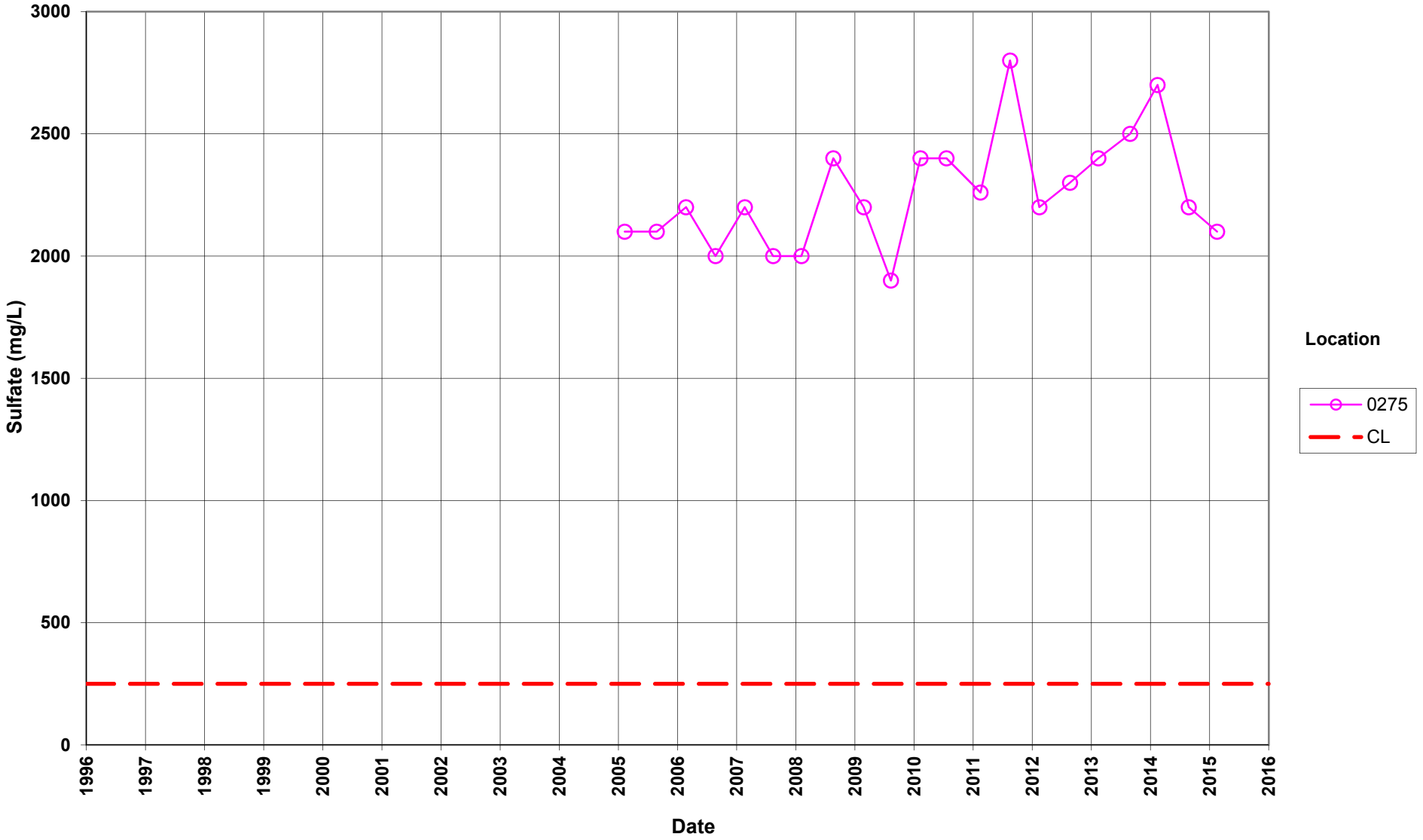
Tuba City Disposal Site
Horizons C, D, E, & I Monitoring Wells
Nitrate + Nitrite as Nitrogen Concentration
Maximum Concentration Limit (MCL) = 10.0 mg/L



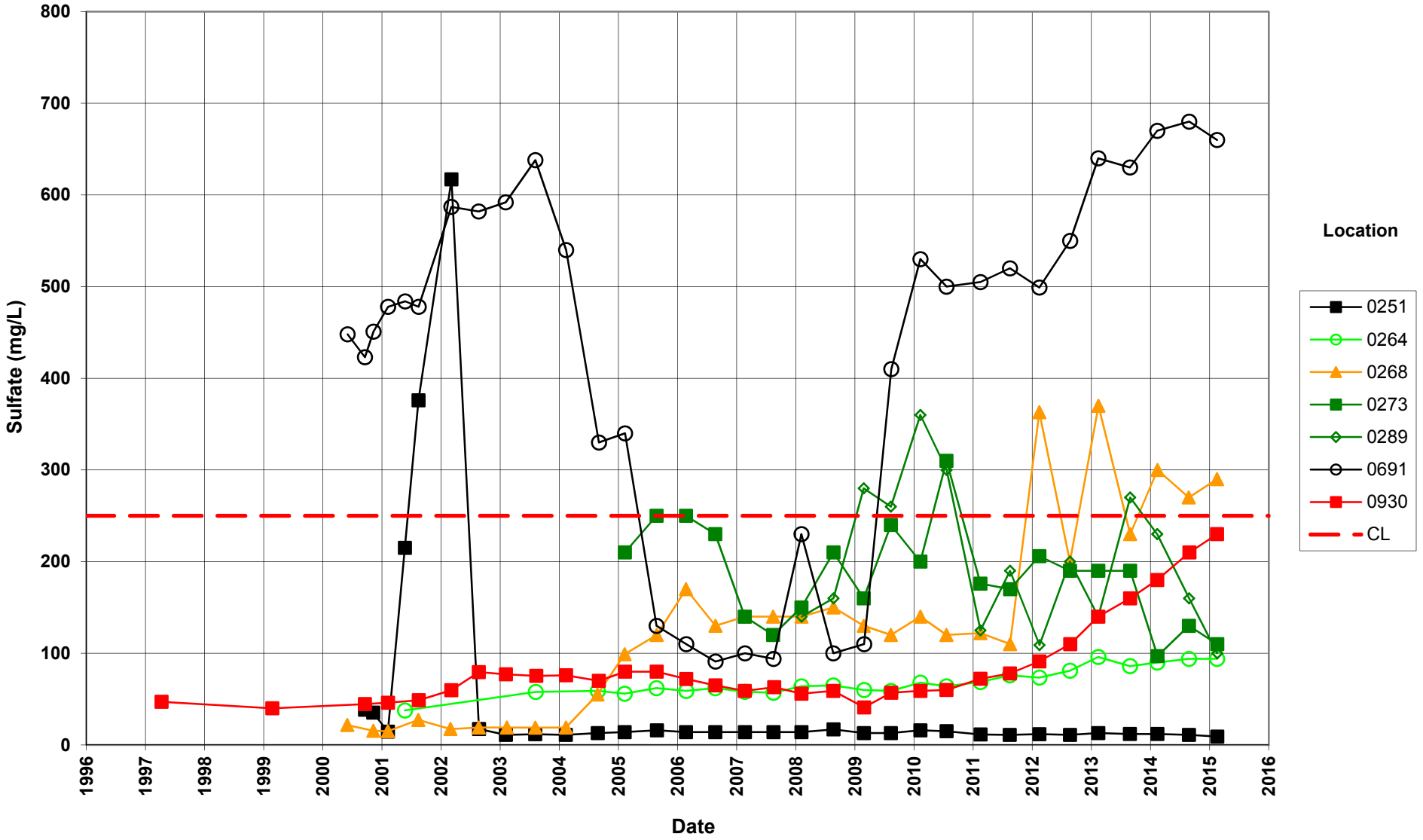
Tuba City Disposal Site
Horizons C, D, E, & I Monitoring Wells
Nitrate + Nitrite as Nitrogen Concentration
Maximum Concentration Limit (MCL) = 10.0 mg/L



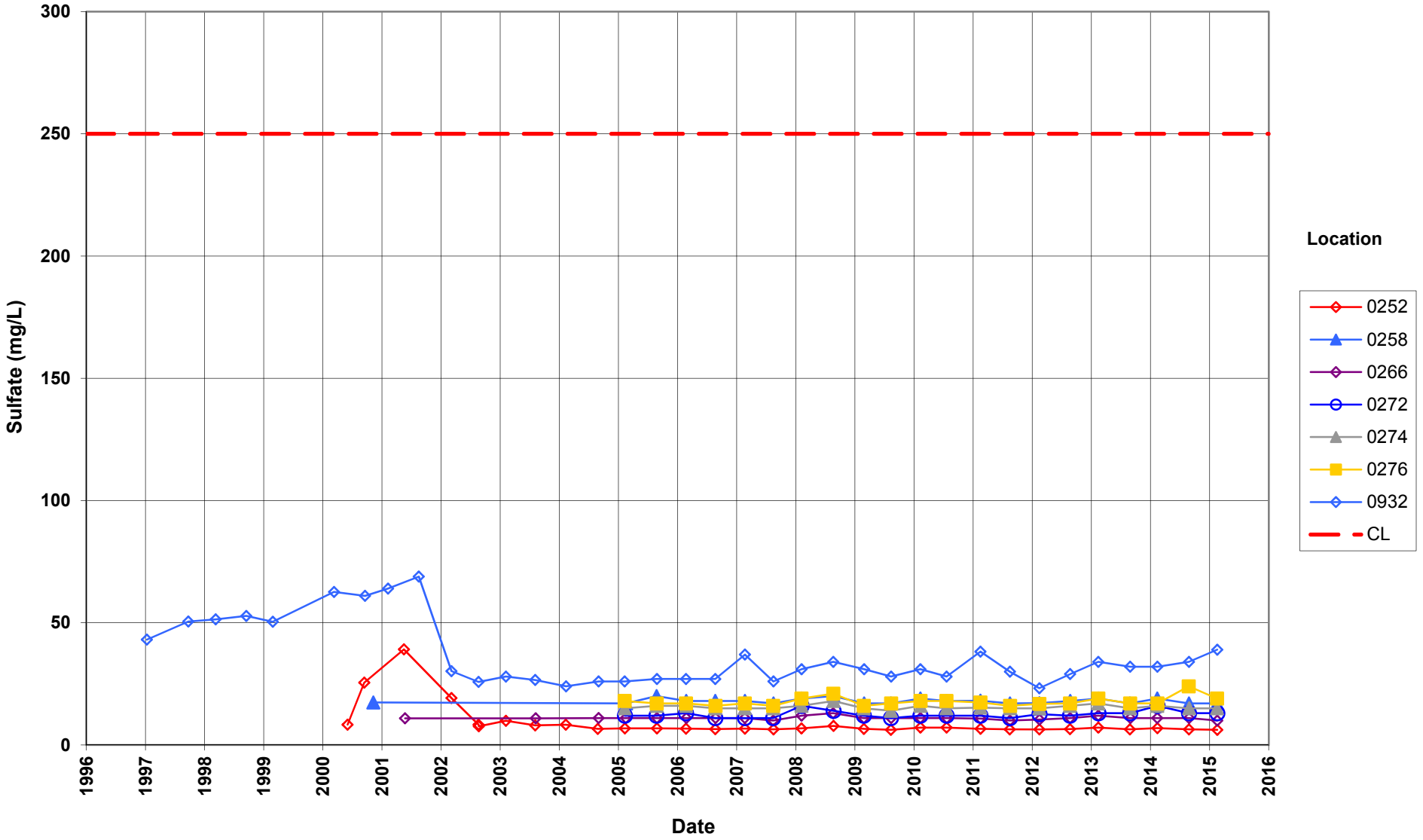
Tuba City Disposal Site
Horizons C, D, E, & I Monitoring Wells
Sulfate Concentration
Cleanup Level (CL) = 250 mg/L



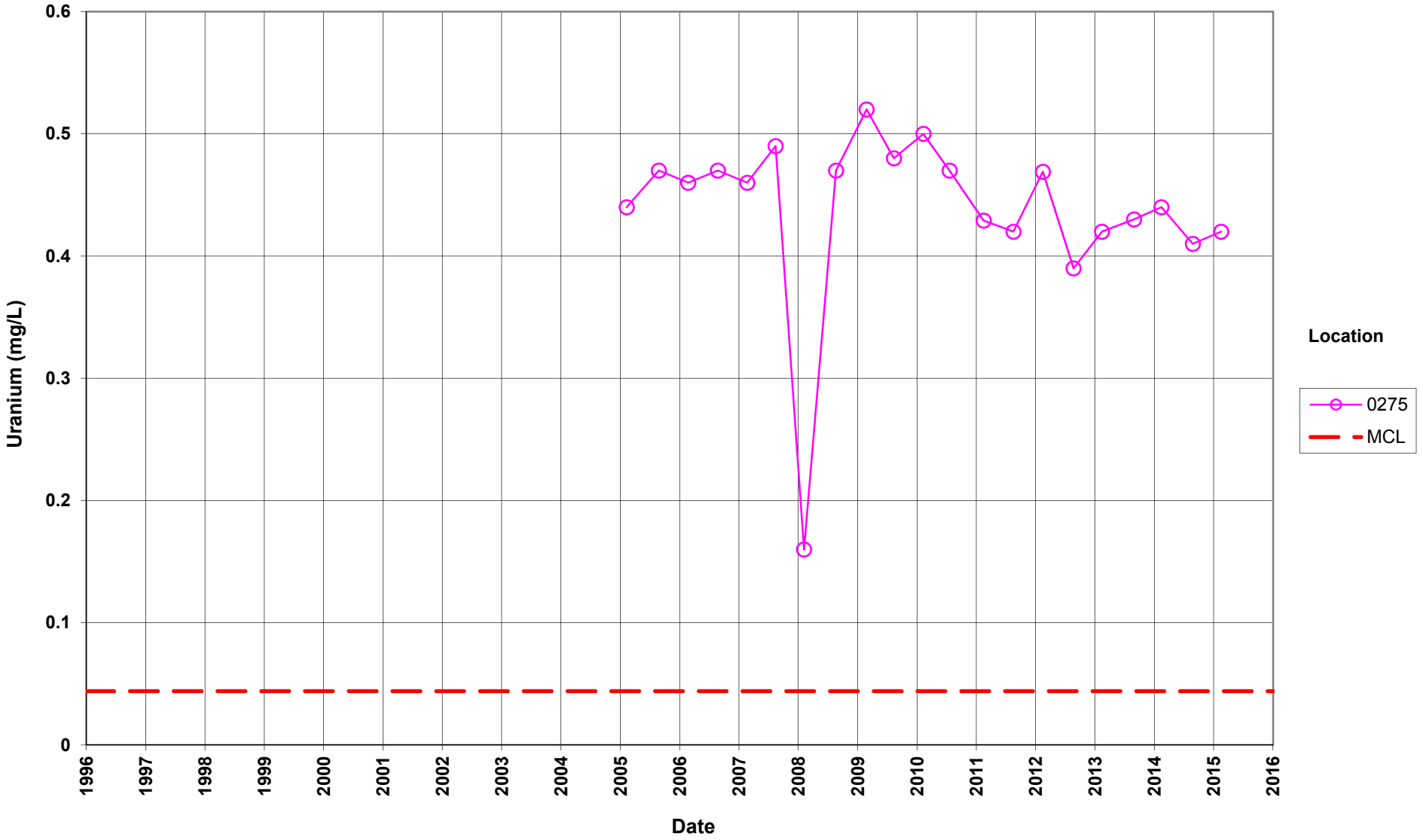
Tuba City Disposal Site
Horizons C, D, E, & I Monitoring Wells
Sulfate Concentration
Cleanup Level (CL) = 250 mg/L



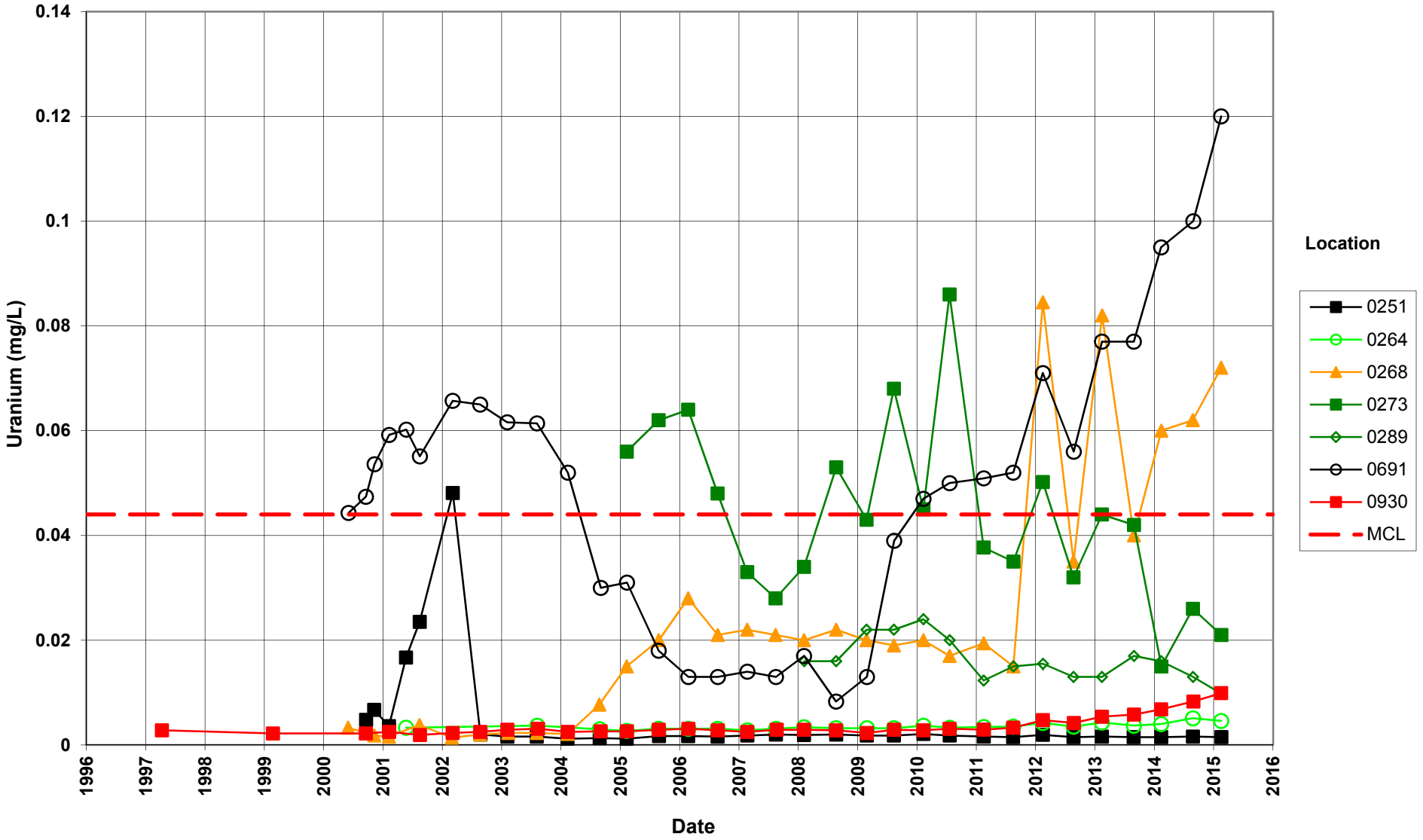
Tuba City Disposal Site
Horizons C, D, E, & I Monitoring Wells
Sulfate Concentration
Cleanup Level (CL) = 250 mg/L



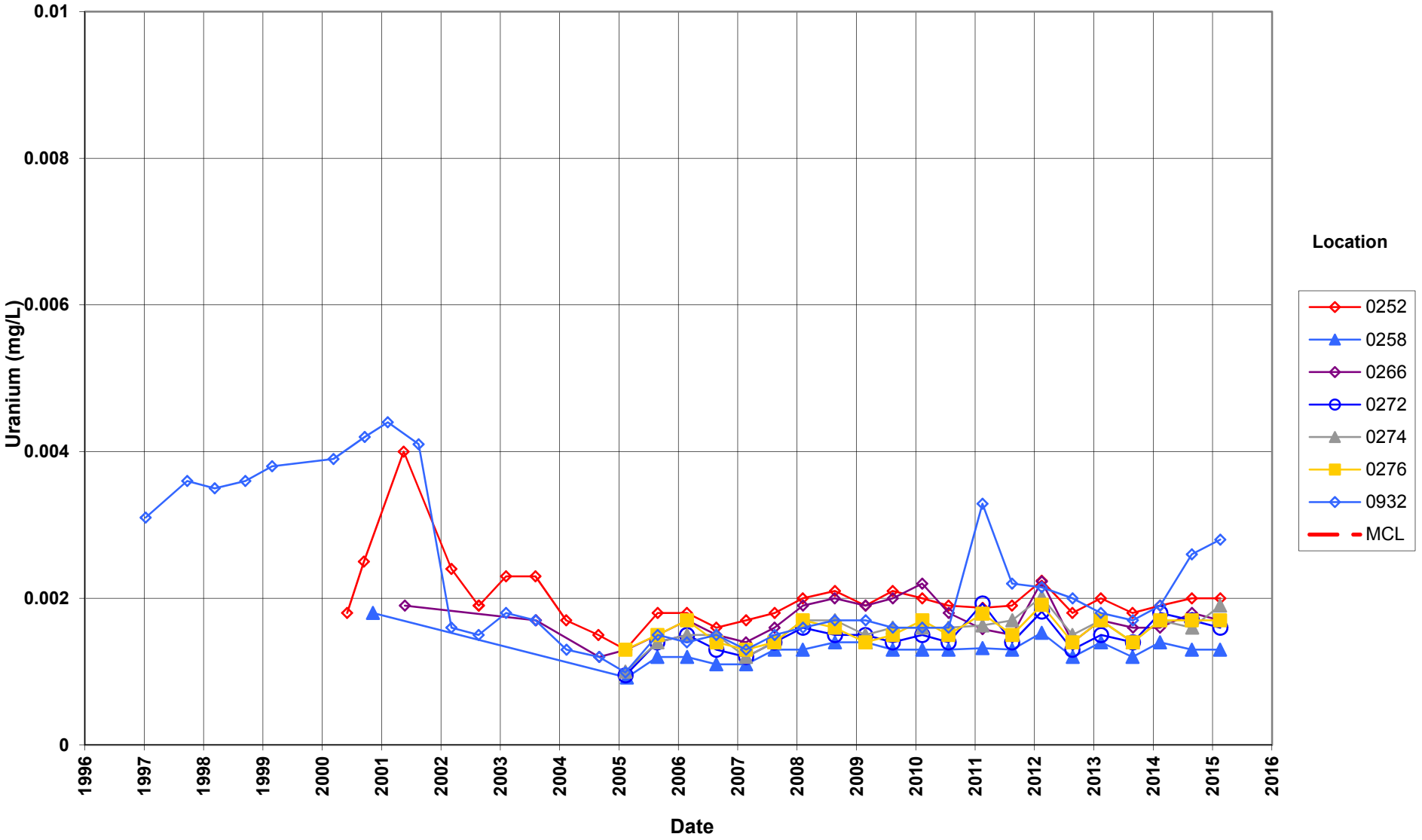
Tuba City Disposal Site
Horizons C, D, E, & I Monitoring Wells
Uranium Concentration
Maximum Concentration Limit (MCL) = 0.044 mg/L



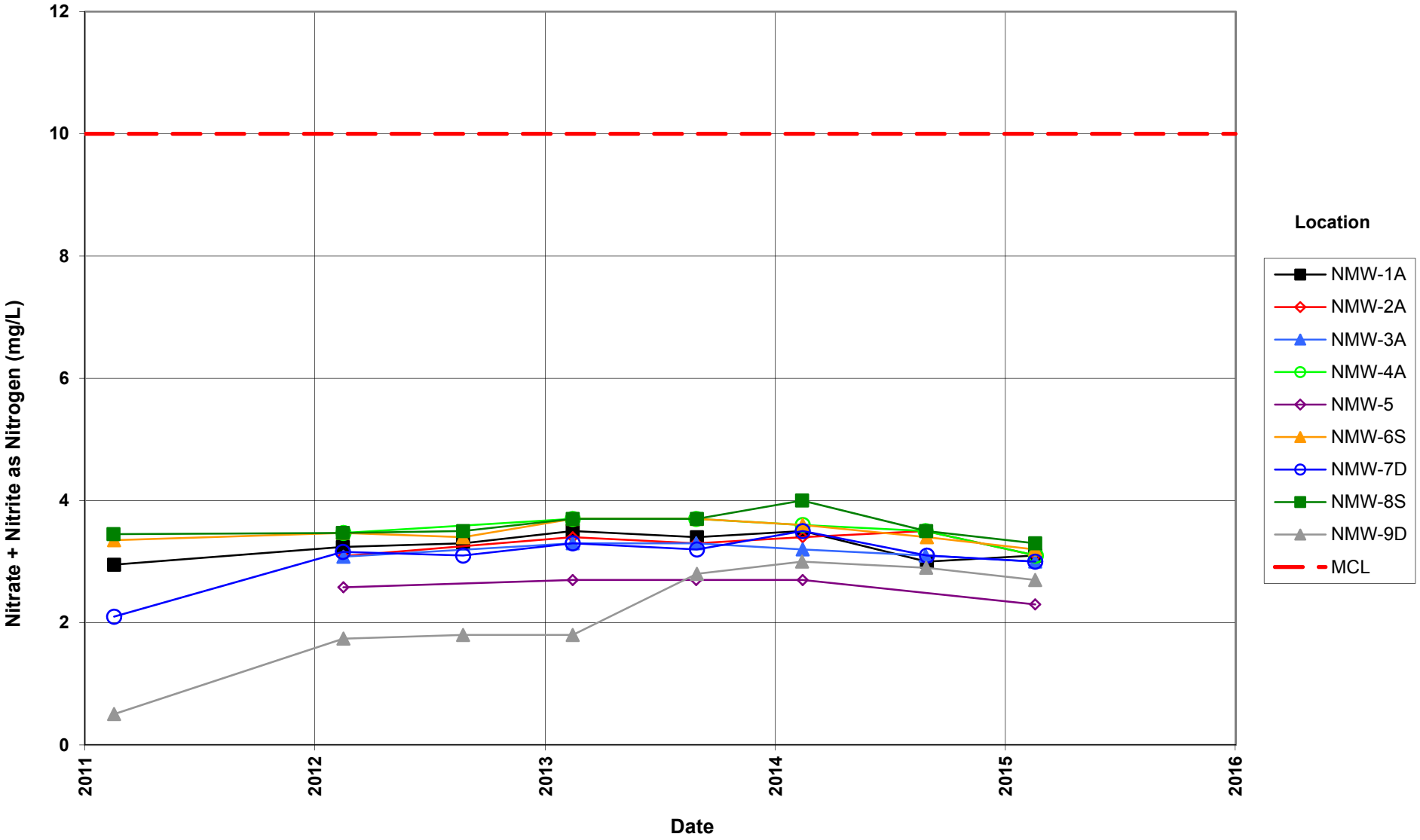
Tuba City Disposal Site
Horizons C, D, E, & I Monitoring Wells
Uranium Concentration
Maximum Concentration Limit (MCL) = 0.044 mg/L



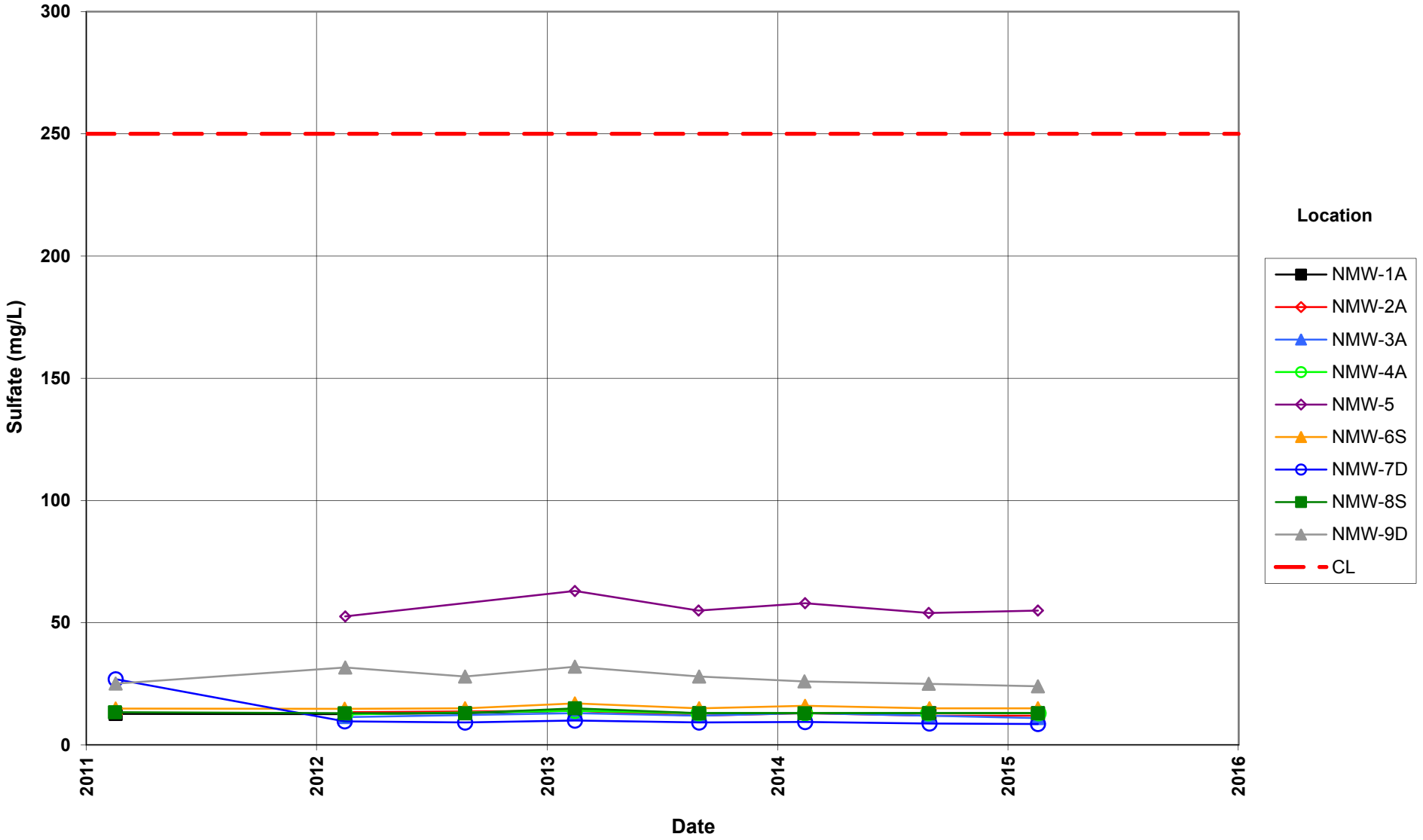
Tuba City Disposal Site
Horizons C, D, E, & I Monitoring Wells
Uranium Concentration
Maximum Concentration Limit (MCL) = 0.044 mg/L



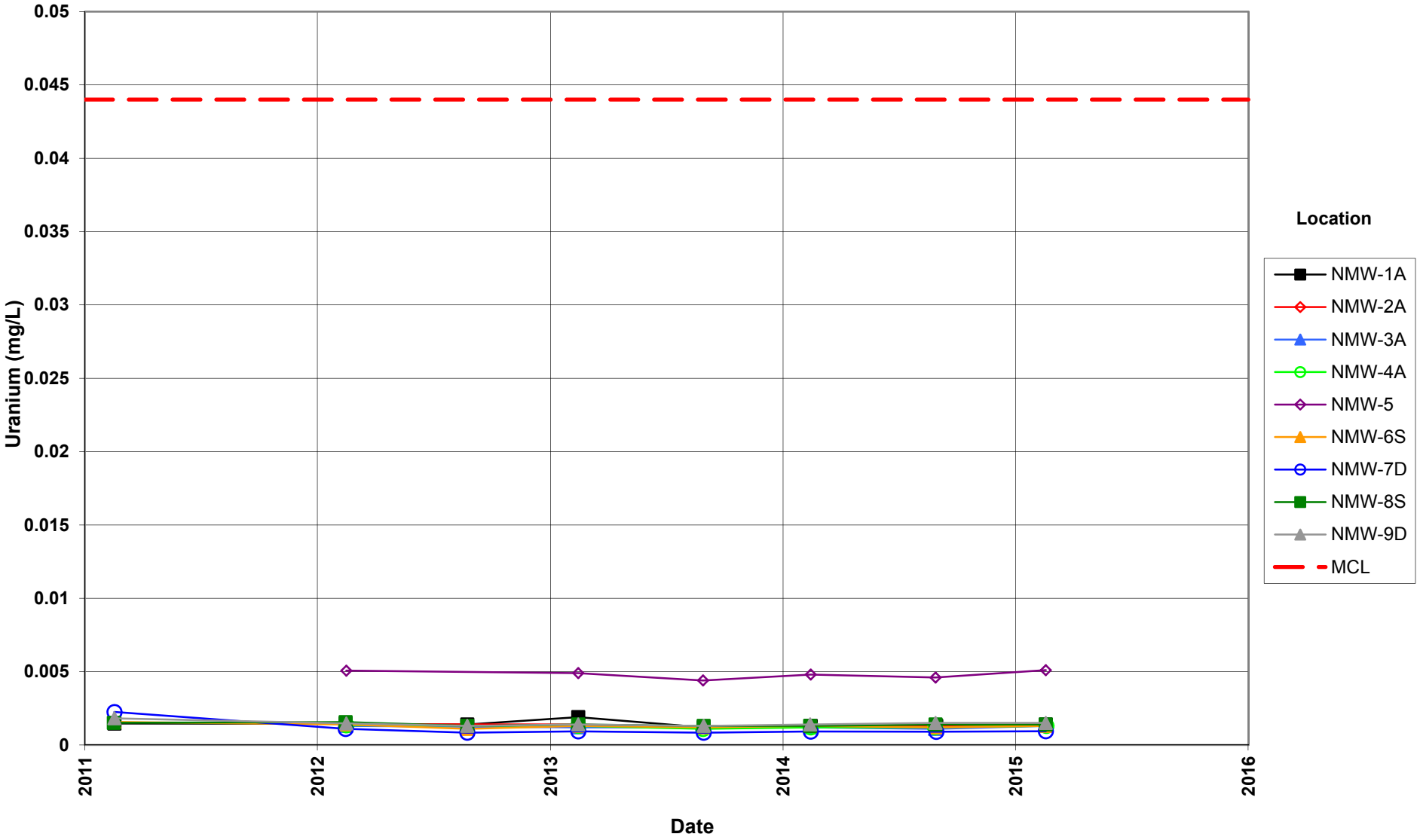
Tuba City Disposal Site
Navajo Monitoring Wells
Nitrate + Nitrite as Nitrogen Concentration
Maximum Concentration Limit (MCL) = 10.0 mg/L



Tuba City Disposal Site
Navajo Monitoring Wells
Sulfate Concentration
Cleanup Level (CL) = 250 mg/L



Tuba City Disposal Site
Navajo Monitoring Wells
Uranium Concentration
Maximum Concentration Limit (MCL) = 0.044 mg/L



Attachment 3
Sampling and Analysis Work Order

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Stoller

January 8, 2015

Task Assignment 103
Control Number 15-0248

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-LM0000415, The S.M. Stoller Corporation, a wholly owned subsidiary of Huntington Ingalls Industries (Stoller)
Task Assignment 103 LTS&M - UMTRCA TI & TII, D&D, Others, and AS&T
February 2015 Environmental Sampling at the Tuba City, Arizona, Disposal Site

REFERENCE: Task Assignment 103, 3-103-1-02-122-402, 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 16, 2015.

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

*NOTE: Al = alluvium; Na = Navajo sandstone; Ss = sandstone

Surface Locations

1569 1570

Treatment System Locations (during operation only)

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) 248-6019 if you have any questions.

Sincerely,

Scott Smith
Site Lead

SS/lcg/lb

Enclosures (3)

cc: (electronic)
Christina Pennal, DOE
Steve Donivan, Stoller
Lauren Goodknight, Stoller
Scott Smith, Stoller
EDD Delivery
rc-grand.junction
File: TUB 400.02

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Constituent Sampling Breakdown

Site	Tuba City				
Analyte	Groundwater	Surface Water	Required Detection Limit (mg/L)	Analytical Method	Line Item Code
Approx. No. Samples/yr	143	9			
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		0.1	EPA 350.1	WCH-A-005
Arsenic	X	X	0.0001	SW-846 6020	LMM-02
Calcium	X	X	5	SW-846 6010	LMM-01
Chloride	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	0.003	SW-846 6020	LMM-02
Nickel					
Nickel-63					
Nitrate + Nitrite as N (NO3+NO2)-N	X	X	0.05	EPA 353.1	WCH-A-022
Potassium	X	X	1	SW-846 6010	LMM-01
Radium-226					
Radium-228					
Selenium	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	0.5	SW-846 9056	MIS-A-044
Sulfide					
Total Dissolved Solids	X	X	10	SM2540 C	WCH-A-033
Total Organic Carbon					
Uranium	X	X	0.0001	SW-846 6020	LMM-02
Vanadium					
Zinc					
Total No. of Analytes	16	14			

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				
262		X				
263		X				
264		X				
265		X				
266		X				
267		X				
268		X				
272		X				
273		X				
274		X				
275		X				
276		X				
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				
691		X				
902					X	Water level only
906		X				DATA LOGGER
908		X				DATA LOGGER
909		X				DATA LOGGER
917					X	Water level only
918					X	Water level only
919					X	Water level only
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

Sampling Frequencies for Locations at Tuba City, Arizona

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
Monitoring Wells						
940		X				DATA LOGGER
941		X				DATA LOGGER
942		X				DATA LOGGER
948					X	Water level only
1005					X	Water level only
1008					X	Water level only
NMW-1A		X				
NMW-2A		X				
NMW-3A		X				
NMW-4A		X				
NMW-5		X				
NMW-6S		X				
NMW-7D		X				
NMW-8S		X				
NMW-9D		X				
Surface Locations						
1569		X				Evap pond - North
1570		X				Evap pond - South
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.

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Attachment 4
Trip Report

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Stoller Newport News Nuclear

Memorandum

DATE: March 3, 2015

TO: Scott Smith

FROM: Alison Kuhlman

SUBJECT: Sampling Trip Report

Site: Tuba City, Arizona

Dates of Sampling Event: February 16 – 18, 2015

Team Members: Sam Campbell, Jeff Price, Dan Sellers, David Atkinson, and Alison Kuhlman.

Number of Locations Sampled: The following table shows the number of locations sampled and the number of locations planned:

	Planned Locations	Sampled Locations
Monitoring Wells	42	40
Extraction Wells	4	4
Surface Locations	2	2
Treatment System Locations	3	0

Locations Not Sampled/Reason: Monitoring well locations 0283 and 0909 were not sampled because they were dry.

Treatment system locations 1202, 1205, and 1206 were not sampled because the treatment system was not in operation during the sampling event.

Location Specific Information:

Location IDs	Comments
0281, 0936	Filtered due to turbidity greater than 10 NTUs.
0265	Previously sampled under Category I stabilization criteria, was sampled under Category II criteria during this sampling event.
0282	Confirmed Cat II when at a flow rate less than 100 water level stability could not be established.
0935, 0936, 0938, 0942	Purged one casing volume, collected three readings, and sampled
0281	Red particles in purge water.
1569, 1570	All measurements including field parameters are filtered and samples collected per program directive TUB-2015-01

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

False ID	Ticket #	True ID	Sample Type	Sample Date/Time
2723	NDR 120	0932	Duplicate	2-17-15/1335
2122	NDR 085	0934	Duplicate	2-17-15/1230
2724	NDR 121	NMW-3A	Duplicate	2-17-15/1650

Duplicates were collected by filling all bottles labeled with the location number first, then filling all bottles labeled with the false ID second.

RIN Number Assigned: Samples were assigned to RIN 15026775. Field data sheets can be found in Crow\sms\15026775 in the Field Data folders.

Sample Shipment: Samples were shipped overnight via FedEx to ALS Laboratory Group Fort Collins, CO, from Moab, UT, on Wednesday, February 18, 2014.

Datalogger Download: Dataloggers were downloaded at 12 well locations. All data has been uploaded to the SEEPro database and can now be viewed electronically via SEEPro. Reports and graphs have been sent to Tim Bartlett.

Water Level Measurements: Water levels were measured at all sampled wells prior to sampling. Per the work order letter dated January 8, 2015, water levels were collected from all other wells on site, with the following exception. Per the direction of the site lead, water levels were not collected from extraction wells that were not sampled.

Water Level Data Location: Water level data sheets can be found in Crow\sms\FDCS\Water Levels folder under the file names TUB01_2202015 and TUB01_2202015_1.

Pumping Tests: Pumping tests were conducted on extraction wells 1129, 1131, and 1132 to determine the flow-rate that each well will sustain during pumping. The associated data has been sent to Tim Bartlett.

Well Inspection Summary: None.

Sampling Method: Samples were collected according to the *Sampling and Analysis Plan for the U. S. Department of Energy Office of Legacy Management Sites* (LMS/PLN/S04351, continually updated) and Program Directive # TUB-2015-01.

Field Variance: None.

Equipment: Monitoring wells were sampled with a dedicated bladder pump and tubing. Extraction wells were sampled by spigot. Surface waters were sampled using a peristaltic pump and dedicated tubing. All samples were collected with dedicated tubing, thus no equipment blank was required. Equipment functioned properly, with the following exception.

The ORP on YSI "F" was reading out of the acceptance range on the February 16, 2015, daily operational check. ORP was recalibrated and read accurately the remainder of the trip. No samples had been collected prior to the recalibration, thus no further action is required.

Institutional Controls:

Fences, Gates, Locks: All gates were locked and in good condition.
Signs: No issues observed.
Trespassing/Site Disturbances: None observed.

Site Issues:

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

Corrective Action Required/Taken: The pumps in wells 0942 and 1103 were replaced after the previous pumps had failed.

(AK/lcg)

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

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