# Data Validation Package

## February 2017
## Groundwater and Surface Water Sampling at the Tuba City, Arizona, Disposal Site

**April 2017**

U.S. DEPARTMENT OF ENERGY | Legacy Management

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# Sampling Event Summary

**Site:** Tuba City, Arizona, Disposal Site

**Sampling Period:** February 14–16, 2017

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. Planned monitoring locations are shown in Attachment 1, Sampling and Analysis Work Order.

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). Water levels were measured at all sampled wells and an additional set of wells. See Attachment 2, Trip Report for additional details.

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. Time-concentration graphs of nitrate + nitrite as N, sulfate, and uranium for all monitoring wells are included in Attachment 3, Data Presentation. Data anomalies are not significant with respect to the known nature and extent of contamination and progress of remedial action at the site. An assessment of anomalous data is included in Attachment 4. 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 2017.

*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 | 0.26 |
| Molybdenum | 0.1 | 0263 | 0.15 |
| Molybdenum | 0.1 | 0287 | 0.17 |
| Nitrate + Nitrite as Nitrogen | 10 | 0262 | 180 |
| Nitrate + Nitrite as Nitrogen | 10 | 0263 | 160 |
| Nitrate + Nitrite as Nitrogen | 10 | 0264 | 11 |
| Nitrate + Nitrite as Nitrogen | 10 | 0265 | 150 |
| Nitrate + Nitrite as Nitrogen | 10 | 0267 | 300 |
| Nitrate + Nitrite as Nitrogen | 10 | 0268 | 23 |
| Nitrate + Nitrite as Nitrogen | 10 | 0268 | 21 |
| Nitrate + Nitrite as Nitrogen | 10 | 0273 | 15 |

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

| Analyte | Standard (mg/L) | Location | Concentration (mg/L) |
|---|---|---|---|
| Nitrate + Nitrite as Nitrogen | 10 | 0275 | 160 |
| Nitrate + Nitrite as Nitrogen | 10 | 0275 | 170 |
| Nitrate + Nitrite as Nitrogen | 10 | 0281 | 23 |
| Nitrate + Nitrite as Nitrogen | 10 | 0282 | 56 |
| Nitrate + Nitrite as Nitrogen | 10 | 0286 | 230 |
| Nitrate + Nitrite as Nitrogen | 10 | 0287 | 230 |
| Nitrate + Nitrite as Nitrogen | 10 | 0288 | 37 |
| Nitrate + Nitrite as Nitrogen | 10 | 0289 | 17 |
| Nitrate + Nitrite as Nitrogen | 10 | 0290 | 87 |
| Nitrate + Nitrite as Nitrogen | 10 | 0691 | 96 |
| Nitrate + Nitrite as Nitrogen | 10 | 0906 | 460 |
| Nitrate + Nitrite as Nitrogen | 10 | 0908 | 220 |
| Nitrate + Nitrite as Nitrogen | 10 | 0929 | 12 |
| Nitrate + Nitrite as Nitrogen | 10 | 0930 | 34 |
| Nitrate + Nitrite as Nitrogen | 10 | 0934 | 340 |
| Nitrate + Nitrite as Nitrogen | 10 | 0940 | 320 |
| Nitrate + Nitrite as Nitrogen | 10 | 0941 | 260 |
| Nitrate + Nitrite as Nitrogen | 10 | 1003 | 61 |
| Selenium | 0.01 | 0262 | 0.036 |
| Selenium | 0.01 | 0263 | 0.034 |
| Selenium | 0.01 | 0267 | 0.038 |
| Selenium | 0.01 | 0275 | 0.030 |
| Selenium | 0.01 | 0275 | 0.032 |
| Selenium | 0.01 | 0286 | 0.036 |
| Selenium | 0.01 | 0287 | 0.090 |
| Selenium | 0.01 | 0290 | 0.017 |
| Selenium | 0.01 | 0906 | 0.056 |
| Selenium | 0.01 | 0908 | 0.014 |
| Selenium | 0.01 | 0940 | 0.052 |
| Selenium | 0.01 | 0941 | 0.083 |
| Uranium | 0.044 | 0262 | 0.44 |
| Uranium | 0.044 | 0263 | 0.45 |
| Uranium | 0.044 | 0265 | 0.064 |
| Uranium | 0.044 | 0267 | 0.061 |
| Uranium | 0.044 | 0275 | 0.40 |
| Uranium | 0.044 | 0275 | 0.38 |
| Uranium | 0.044 | 0286 | 0.36 |
| Uranium | 0.044 | 0287 | 0.29 |
| Uranium | 0.044 | 0290 | 0.11 |
| Uranium | 0.044 | 0691 | 0.14 |

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

| Analyte | Standard (mg/L) | Location | Concentration (mg/L) |
|---|---|---|---|
| Uranium | 0.044 | 0906 | 0.36 |
| Uranium | 0.044 | 0908 | 0.071 |
| Uranium | 0.044 | 0934 | 0.17 |
| Uranium | 0.044 | 0940 | 0.68 |
| Uranium | 0.044 | 0941 | 0.27 |
| Uranium | 0.044 | 1003 | 0.044 |

mg/L = milligrams per liter

Peter Lemke
LMS Site Lead
Navarro Research and Engineering, Inc.

April 24, 2017
Date

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# Data Assessment Summary

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# Water Sampling Field Activities Verification Checklist

| | | | |
|---|---|---|---|
| **Project** | Tuba City, Arizona | **Date(s) of Water Sampling** | February 14–16, 2017 |
| **Date(s) of Verification** | March 16, 2017 | **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 February 13, 2017. |
| 2. Were the sampling locations specified in the planning documents sampled? | No | Monitoring wells 0283 and 0909 were dry. |
| 3. Were field equipment calibrations conducted as specified in the above-named documents? | Yes | Calibrations were performed February 10, 2017. |
| 4. Was an operational check of the field equipment conducted daily? | Yes | |
| Did the operational checks meet criteria? | Yes | |
| 5. Were the number and types (alkalinity, temperature, specific conductance, pH, turbidity, DO, ORP) of field measurements taken as specified? | Yes | |
| 6. Were wells categorized correctly? | Yes | |
| 7. Were the following conditions met when purging a Category I well: | | |
| Was one pump/tubing volume purged prior to sampling? | Yes | |
| Did the water level stabilize prior to sampling? | Yes | |
| 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 | Duplicate samples were collected from locations 0268, 0275, and 0276. |
| 10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with non-dedicated equipment? | NA | An equipment blank was not required because dedicated sampling equipment was used at all locations. |
| 11. Were trip blanks prepared and included with each shipment of VOC samples? | NA | No VOC samples were collected. |
| 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 | Site-wide water levels were collected at the request of the site lead. |

## Laboratory Performance Assessment

General Information

| | |
|---|---|
| Requisition No.: | 17028279 |
| Sample Event: | February 14–16, 2017 |
| Site(s): | Tuba City, Arizona, Disposal Site |
| Laboratory: | ALS Laboratory Group, Fort Collins, Colorado |
| Work Order No.: | 1702271 |
| Analysis: | Metals and Inorganics |
| Validator: | Gretchen Baer |
| Review Date: | March 16, 2017 |

This validation was performed according to the "Standard Practice for Validation of Environmental Data" found in Appendix A of the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites* (LMS/ PRO/S04351, continually updated, https://energy.gov/lm/downloads/sampling-and-analysis-plan-us-department-energy-office-legacy-management-sites). The procedure was applied at Level 3, Data Validation.

This validation includes the evaluation of data quality indicators (DQIs) associated with the data. DQIs are the quantitative and qualitative descriptors that are used to interpret the degree of acceptability or utility of data. Indicators of data quality include the analysis of laboratory control samples to assess accuracy; duplicates and replicates to assess precision; and interference check samples to assess bias (see Figure 1 through Figure 3, Data Validation Worksheets). The comparability, completeness, and sensitivity of the DQIs are also evaluated in the sections to follow.

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, Vanadium | LMM-02 | SW-846 3005A | SW-846 6020A<br>EPA 200.8 |
| Calcium, Iron, Magnesium, Manganese, Potassium, Silica, Sodium, Strontium | LMM-01 | SW-846 3005A | SW-846 6010B |
| Chloride, Sulfate | MIS-A-045 | SW-846 9056 | SW-846 9056 |
| Nitrate + Nitrite 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 |
|---|---|---|---|---|
| 1702271-1 | 0251 | Iron | U | Less than 5 times the method blank |
| 1702271-1 | 0251 | Manganese | U | Less than 5 times the method blank |
| 1702271-1 | 0251 | Uranium | J | Serial dilution result |
| 1702271-1 | 0251 | Molybdenum | U | Less than 5 times the calibration blank |
| 1702271-2 | 0252 | Iron | U | Less than 5 times the method blank |
| 1702271-2 | 0252 | Manganese | U | Less than 5 times the method blank |
| 1702271-3 | 0258 | Iron | U | Less than 5 times the method blank |
| 1702271-3 | 0258 | Manganese | U | Less than 5 times the method blank |
| 1702271-7 | 0265 | Iron | U | Less than 5 times the method blank |
| 1702271-7 | 0265 | Manganese | U | Less than 5 times the method blank |
| 1702271-10 | 0268 | Iron | U | Less than 5 times the method blank |
| 1702271-10 | 0268 | Manganese | U | Less than 5 times the method blank |
| 1702271-11 | 0272 | Manganese | U | Less than 5 times the method blank |
| 1702271-12 | 0273 | Manganese | U | Less than 5 times the method blank |
| 1702271-15 | 0276 | Uranium | J | Field duplicate RPD > 20% |
| 1702271-15 | 0276 | Iron | U | Less than 5 times the method blank |
| 1702271-15 | 0276 | Manganese | U | Less than 5 times the method blank |
| 1702271-16 | 0281 | Manganese | U | Less than 5 times the method blank |
| 1702271-17 | 0282 | Manganese | U | Less than 5 times the method blank |
| 1702271-18 | 0286 | Iron | U | Less than 5 times the method blank |
| 1702271-20 | 0288 | Iron | U | Less than 5 times the method blank |
| 1702271-21 | 0289 | Iron | U | Less than 5 times the method blank |
| 1702271-21 | 0289 | Manganese | U | Less than 5 times the calibration blank |
| 1702271-22 | 0290 | Iron | U | Less than 5 times the method blank |
| 1702271-23 | 0691 | Iron | U | Less than 5 times the method blank |
| 1702271-26 | 0929 | Manganese | U | Less than 5 times the calibration blank |
| 1702271-27 | 0930 | Iron | U | Less than 5 times the method blank |
| 1702271-27 | 0930 | Manganese | U | Less than 5 times the calibration blank |
| 1702271-28 | 0932 | Iron | U | Less than 5 times the method blank |
| 1702271-29 | 0934 | Iron | U | Less than 5 times the method blank |
| 1702271-33 | 1004 | Iron | U | Less than 5 times the method blank |
| 1702271-35 | 1007 | Iron | U | Less than 5 times the method blank |
| 1702271-38 | 0276 Duplicate | Uranium | J | Field duplicate RPD > 20% |
| 1702271-41 | NMW-1A | Iron | U | Less than 5 times the method blank |
| 1702271-41 | NMW-1A | Manganese | U | Less than 5 times the method blank |
| 1702271-42 | NMW-2A | Iron | U | Less than 5 times the method blank |
| 1702271-42 | NMW-2A | Manganese | U | Less than 5 times the method blank |
| 1702271-43 | NMW-3A | Iron | U | Less than 5 times the method blank |
| 1702271-43 | NMW-3A | Manganese | U | Less than 5 times the method blank |
| 1702271-44 | NMW-4A | Iron | U | Less than 5 times the method blank |
| 1702271-44 | NMW-4A | Manganese | U | Less than 5 times the method blank |

*Table 3. Data Qualifiers (continued)*

| Sample Number | Location | Analyte | Flag | Reason |
|---|---|---|---|---|
| 1702271-45 | NMW-6S | Iron | U | Less than 5 times the method blank |
| 1702271-45 | NMW-6S | Manganese | U | Less than 5 times the method blank |
| 1702271-46 | NMW-7D | Manganese | U | Less than 5 times the method blank |
| 1702271-47 | NMW-8S | Iron | U | Less than 5 times the method blank |
| 1702271-47 | NMW-8S | Manganese | U | Less than 5 times the method blank |
| 1702271-48 | NMW-9D | Iron | U | Less than 5 times the method blank |

Sample Shipping/Receiving

ALS Laboratory Group in Fort Collins, Colorado, received 48 samples on February 17, 2017, 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 Chain of Custody forms were complete with no errors or omissions, with one exception. The sample time was entered incorrectly on the Chain of Custody for location 0934. The error was corrected upon entry into the environmental database.

Preservation and Holding Times

The sample shipments were received intact with the temperatures inside the iced coolers at 2.3 and 0.3 °C, which complies with requirements. All samples were received in the correct container types and had been preserved correctly for the requested analyses. All samples were analyzed within the applicable holding times.

Detection and Quantitation Limits

A method detection limit (MDL) is defined in 40 CFR 136 as the minimum concentration of an analyte that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDLs reported by the laboratory were compared to the required MDLs to assess the sensitivity of the analyses and found to be in compliance with contractual requirements.

The practical quantitation limit (PQL) for an analyte, defined as 5 times the MDL, is the lowest concentration that can be quantitatively measured, and is used when evaluating laboratory method performance in the sections below.

Laboratory Instrument Calibration

Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data for the analytes of interest. Initial Calibration Verification (ICV) demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing Calibration Verification (CCV) demonstrates that the initial calibration is still valid by checking the performance of the instrument on a continuing basis. Initial and continuing calibration standards

must be prepared from independent sources to ensure the validity of the calibration. All laboratory instrument calibrations and calibration verifications were performed correctly in accordance with the cited methods.

*Method EPA 160.1*
There is no initial or continuing calibration requirement associated with the determination of total dissolved solids.

*Method EPA 350.1*
The initial calibrations for ammonia as N were performed February 23, 2017, 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 with one exception. The samples associated with this check were reanalyzed with acceptable verification checks and no qualification is necessary.

*Method EPA 353.2*
The initial calibrations for nitrate + nitrite as N were performed February 24, 2017, 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 23 and 28, 2017, using three 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 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 25, 2017, 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 10, 2017, 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. Two calibration blank results for ammonia as N were above the PQL. The samples associated with these blanks had ammonia as N 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 are analyzed to verify the instrumental interelement and background correction factors and assess any bias due to interelement interferences. Interference check samples were analyzed at the required frequency with all results meeting the acceptance criteria.

Matrix Spike Analysis

Matrix spikes are aliquots of environmental samples to which a known concentration of an analyte has been added before analysis. Matrix spike and matrix spike duplicate (MS/MSD) samples are used to measure method performance in the sample matrix. The MS/MSD data are not evaluated when the concentration of the unspiked sample is greater than 4 times the spike. 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%. 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. (The total dissolved solids results for one of the replicate samples exceeded the laboratory's RPD acceptance criteria, but were within the ±10% requirement.)

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. The evaluated serial dilution data were acceptable with the following exception. The uranium serial dilution result for sample 0251 did not meet the acceptance criteria. The associated sample uranium result is qualified with a "J" flag as an estimated value.

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 March 8, 2017, included the strontium results that were missing in the original EDD. 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 EDD contains an incorrect sample time for location 0934 because the incorrect time was provided to the laboratory on the Chain of Custody. The sample time was corrected in the environmental database and no further action is required. 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 a relative percent difference calculation. Typically, a charge balance difference less than or equal to 10% is considered acceptable.

*Table 4. Comparison of Major Anions and Cations*

| Location | Cations (meq/L) | Anions (meq/L) | Charge Balance (%) |
|---|---|---|---|
| 0251 | 2.18 | 1.82 | 9.20 |
| 0252 | 2.03 | 1.82 | 5.56 |
| 0258 | 2.95 | 2.61 | 6.11 |
| 0262 | 71.88 | 68.22 | 2.61 |
| 0263 | 69.95 | 65.19 | 3.52 |
| 0264 | 5.94 | 4.91 | 9.55 |
| 0265 | 48.49 | 46.12 | 2.50 |
| 0266 | 2.45 | 2.42 | 0.72 |
| 0267 | 109.40 | 101.88 | 3.56 |

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

| Location | Cations (meq/L) | Anions (meq/L) | Charge Balance (%) |
|---|---|---|---|
| 0268 | 9.11 | 8.58 | 2.96 |
| 0272 | 3.03 | 2.83 | 3.53 |
| 0273 | 5.44 | 5.25 | 1.74 |
| 0274 | 2.88 | 2.61 | 4.88 |
| 0275 | 69.86 | 64.61 | 3.90 |
| 0276 | 2.97 | 2.96 | 0.22 |
| 0281 | 7.20 | 6.71 | 3.53 |
| 0282 | 14.49 | 14.17 | 1.12 |
| 0286 | 85.11 | 81.87 | 1.94 |
| 0287 | 74.08 | 67.86 | 4.38 |
| 0288 | 11.40 | 10.89 | 2.26 |
| 0289 | 5.26 | 5.69 | 3.95 |
| 0290 | 34.22 | 32.81 | 2.11 |
| 0691 | 32.82 | 30.72 | 3.30 |
| 0906 | 100.41 | 91.22 | 4.80 |
| 0908 | 81.63 | 74.82 | 4.35 |
| 0929 | 3.82 | 3.44 | 5.30 |
| 0930 | 11.19 | 10.53 | 3.06 |
| 0932 | 4.16 | 3.81 | 4.30 |
| 0934 | 107.20 | 98.05 | 4.46 |
| 0940 | 155.90 | 145.98 | 3.29 |
| 0941 | 78.59 | 73.70 | 3.21 |
| 1003 | 22.44 | 20.11 | 5.49 |
| 1004 | 5.00 | 4.40 | 6.31 |
| 1006 | 2.48 | 2.15 | 7.23 |
| 1007 | 2.51 | 2.01 | 11.19 |
| 1569 | 2375.41 | 2689.07 | 6.19 |
| 1570 | 2340.39 | 2731.74 | 7.72 |
| NMW-1A | 2.80 | 2.45 | 6.62 |
| NMW-2A | 2.71 | 2.77 | 1.08 |
| NMW-3A | 2.74 | 2.23 | 10.38 |
| NMW-4A | 2.71 | 2.10 | 12.69 |
| NMW-6S | 2.91 | 2.52 | 7.29 |
| NMW-7D | 2.20 | 2.10 | 2.32 |
| NMW-8S | 2.71 | 2.37 | 6.74 |
| NMW-9D | 2.95 | 2.79 | 2.82 |
| 0251 | 2.18 | 1.82 | 9.20 |
| 0252 | 2.03 | 1.82 | 5.56 |
| 0258 | 2.95 | 2.61 | 6.11 |
| 0262 | 71.88 | 68.22 | 2.61 |
| 0263 | 69.95 | 65.19 | 3.52 |
| 0264 | 5.94 | 4.91 | 9.55 |

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

| Location | Cations (meq/L) | Anions (meq/L) | Charge Balance (%) |
|---|---|---|---|
| 0265 | 48.49 | 46.12 | 2.50 |
| 0266 | 2.45 | 2.42 | 0.72 |
| 0267 | 109.40 | 101.88 | 3.56 |
| 0268 | 9.11 | 8.58 | 2.96 |
| 0272 | 3.03 | 2.83 | 3.53 |
| 0273 | 5.44 | 5.25 | 1.74 |
| 0274 | 2.88 | 2.61 | 4.88 |
| 0275 | 69.86 | 64.61 | 3.90 |
| 0276 | 2.97 | 2.96 | 0.22 |
| 0281 | 7.20 | 6.71 | 3.53 |

meq/L = milliequivalents per liter

The charge balances calculated for locations 1007, NMW-3A, and NMW-4A were slightly above 10%. There were no analytical errors identified during the review of the laboratory data from these locations.

## SAMPLE MANAGEMENT SYSTEM

## General Data Validation Report

**RIN:** 17028279 **Lab Code:** PAR **Validator:** Gretchen Baer **Validation Date:** 3/15/2017

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

**# of Samples:** 48 **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 | All analyses were completed within the applicable holding times. |
| ☑ Detection Limits | The reported detection limits are equal to or below contract requirements. |
| ☐ Field/Trip Blanks | |
| ☑ Field Duplicates | There were 3 duplicates evaluated. |

*Figure 1. General Data Validation Worksheet*

## SAMPLE MANAGEMENT SYSTEM

## Metals Data Validation Worksheet

**RIN:** 17028279 **Lab Code:** PAR **Date Due:** 3/17/2017

**Matrix:** Water **Site Code:** TUB01 **Date Completed:** 3/1/2017

| 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 | 02/23/2017 | | | OK | OK | OK | 96.0 | 86.0 | 87.0 | 0.0 | 103.0 | 0.0 | 114.0 |
| Calcium | ICP/ES | 02/23/2017 | | | OK | OK | OK | 99.0 | 100.0 | 98.0 | 2.0 | 99.0 | 0.0 | 107.0 |
| Calcium | ICP/ES | 02/28/2017 | 0.1050 | 0.9999 | OK | OK | | | | | | | | |
| Calcium | ICP/ES | 02/23/2017 | 0.1600 | 0.9991 | OK | OK | OK | 102.0 | 98.0 | 99.0 | 1.0 | 100.0 | 1.0 | 109.0 |
| Iron | ICP/ES | 02/28/2017 | -0.0090 | 1.0000 | OK | OK | | | | | | | | |
| Iron | ICP/ES | 02/23/2017 | -0.0130 | 1.0000 | OK | OK | OK | 98.0 | 82.0 | 86.0 | 4.0 | 98.0 | | 92.0 |
| Iron | ICP/ES | 02/23/2017 | | | OK | OK | OK | 106.0 | 101.0 | 101.0 | 0.0 | 98.0 | | 95.0 |
| Iron | ICP/ES | 02/23/2017 | | | OK | OK | OK | 102.0 | 99.0 | 98.0 | 1.0 | 102.0 | | 86.0 |
| Magnesium | ICP/ES | 02/28/2017 | -0.0370 | 0.9999 | OK | OK | | | | | | | | |
| Magnesium | ICP/ES | 02/23/2017 | -0.0060 | 0.9997 | OK | OK | OK | 97.0 | 99.0 | 98.0 | 1.0 | 99.0 | 1.0 | 99.0 |
| Magnesium | ICP/ES | 02/23/2017 | | | OK | OK | OK | 95.0 | 87.0 | 85.0 | 1.0 | 103.0 | 1.0 | 106.0 |
| Magnesium | ICP/ES | 02/23/2017 | | | OK | OK | OK | 101.0 | 100.0 | 100.0 | 0.0 | 99.0 | 2.0 | 104.0 |
| Manganese | ICP/ES | 02/23/2017 | 0.0000 | 0.9999 | OK | OK | OK | 102.0 | 104.0 | 103.0 | 1.0 | 109.0 | | 103.0 |
| Manganese | ICP/ES | 02/28/2017 | 0.0000 | 1.0000 | OK | OK | | | | | | | | |
| Manganese | ICP/ES | 02/23/2017 | | | OK | OK | OK | 97.0 | 87.0 | 85.0 | 2.0 | 105.0 | | 98.0 |
| Manganese | ICP/ES | 02/23/2017 | | | OK | OK | OK | 107.0 | 104.0 | 103.0 | 1.0 | 104.0 | | 99.0 |
| Potassium | ICP/ES | 02/23/2017 | 0.0290 | 1.0000 | OK | OK | OK | 95.0 | 98.0 | 99.0 | 1.0 | | | 97.0 |

*Figure 2. Metals Data Validation Worksheet*

## SAMPLE MANAGEMENT SYSTEM

## Metals Data Validation Worksheet

**RIN:** 17028279 **Lab Code:** PAR **Date Due:** 3/17/2017

**Matrix:** Water **Site Code:** TUB01 **Date Completed:** 3/1/2017

| 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 | | | | | | | | |
| Potassium | ICP/ES | 02/23/2017 | | | OK | OK | OK | 99.0 | 98.0 | 99.0 | 1.0 | | | 102.0 |
| Potassium | ICP/ES | 02/28/2017 | 0.0340 | 0.9999 | OK | OK | | | | | | | | |
| Potassium | ICP/ES | 02/23/2017 | | | OK | OK | OK | 95.0 | 84.0 | 82.0 | 2.0 | | | 98.0 |
| Silicon | ICP/ES | 02/28/2017 | -0.0610 | 0.9991 | OK | OK | | | | | | | | |
| Silicon | ICP/ES | 02/23/2017 | | | OK | OK | OK | 99.0 | 108.0 | 106.0 | 0.0 | 103.0 | 4.0 | 107.0 |
| Silicon | ICP/ES | 02/23/2017 | | | OK | OK | OK | 112.0 | | | 2.0 | 99.0 | 1.0 | 91.0 |
| Silicon | ICP/ES | 02/23/2017 | -0.0480 | 0.9994 | OK | OK | OK | 91.0 | 113.0 | 100.0 | 2.0 | 117.0 | 0.0 | 120.0 |
| Sodium | ICP/ES | 02/28/2017 | -0.0270 | 1.0000 | OK | OK | | | | | | | | |
| Sodium | ICP/ES | 02/23/2017 | -0.0080 | 1.0000 | OK | OK | OK | 98.0 | 95.0 | 97.0 | 1.0 | | 2.0 | 101.0 |
| Sodium | ICP/ES | 02/23/2017 | | | OK | OK | OK | 95.0 | 98.0 | 99.0 | 1.0 | | 5.0 | 104.0 |
| Sodium | ICP/ES | 02/23/2017 | | | OK | OK | OK | 96.0 | 83.0 | 81.0 | 2.0 | | 2.0 | 98.0 |
| Strontium | ICP/ES | 02/23/2017 | | | OK | OK | OK | 91.0 | 87.0 | 85.0 | 1.0 | 105.0 | 2.0 | 102.0 |
| Strontium | ICP/ES | 02/23/2017 | | | OK | OK | OK | 103.0 | 103.0 | 105.0 | 1.0 | 101.0 | 1.0 | 99.0 |
| Strontium | ICP/ES | 02/23/2017 | 0.0000 | 1.0000 | OK | OK | OK | 95.0 | 94.0 | 92.0 | 1.0 | 110.0 | 0.0 | 108.0 |
| Strontium | ICP/ES | 02/28/2017 | 0.0000 | 1.0000 | OK | OK | | | | | | | | |
| Arsenic | ICP/MS | 02/25/2017 | -0.0200 | 1.0000 | OK | OK | OK | 104.0 | 103.0 | 104.0 | 1.0 | | | 89.0 |
| Arsenic | ICP/MS | 02/25/2017 | | | OK | OK | OK | 104.0 | 103.0 | 104.0 | 2.0 | | | 88.0 |

*Figure 2. Metals Data Validation Worksheet (continued)*

## SAMPLE MANAGEMENT SYSTEM

## Metals Data Validation Worksheet

**RIN:** 17028279 **Lab Code:** PAR **Date Due:** 3/17/2017

**Matrix:** Water **Site Code:** TUB01 **Date Completed:** 3/1/2017

| 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 | | | | | | | | |
| Arsenic | ICP/MS | 02/25/2017 | | | OK | OK | OK | 105.0 | 101.0 | 102.0 | 1.0 | 97.0 | | 87.0 |
| Molybdenum | ICP/MS | 02/25/2017 | -0.0130 | 1.0000 | OK | OK | OK | 100.0 | 98.0 | 99.0 | 1.0 | | | 79.0 |
| Molybdenum | ICP/MS | 02/25/2017 | | | OK | OK | OK | 100.0 | 99.0 | 100.0 | 1.0 | | | 83.0 |
| Molybdenum | ICP/MS | 02/25/2017 | | | OK | OK | OK | 100.0 | 96.0 | 97.0 | 1.0 | 104.0 | | 94.0 |
| Selenium | ICP/MS | 02/25/2017 | -0.0400 | 1.0000 | OK | OK | OK | 98.0 | 100.0 | 106.0 | 5.0 | | | 98.0 |
| Selenium | ICP/MS | 02/25/2017 | | | OK | OK | OK | 104.0 | 100.0 | 102.0 | 2.0 | | | 97.0 |
| Selenium | ICP/MS | 02/25/2017 | | | OK | OK | OK | 103.0 | 103.0 | 102.0 | 1.0 | 99.0 | | 95.0 |
| Uranium | ICP/MS | 02/25/2017 | -0.0010 | 1.0000 | OK | OK | OK | 98.0 | 96.0 | 99.0 | 3.0 | | 0.0 | 100.0 |
| Uranium | ICP/MS | 02/25/2017 | | | OK | OK | OK | 96.0 | 98.0 | 100.0 | 1.0 | | 0.0 | 100.0 |
| Uranium | ICP/MS | 02/25/2017 | | | OK | OK | OK | 98.0 | 96.0 | 94.0 | 1.0 | 97.0 | 13.0 | 80.0 |
| Vanadium | ICP/MS | 02/25/2017 | -0.0470 | 1.0000 | OK | OK | OK | 101.0 | 100.0 | 99.0 | 0.0 | | | 93.0 |
| Vanadium | ICP/MS | 02/25/2017 | | | OK | OK | OK | 98.0 | 98.0 | 99.0 | 1.0 | | | 93.0 |
| Vanadium | ICP/MS | 02/25/2017 | | | OK | OK | OK | 99.0 | 96.0 | 96.0 | 0.0 | 98.0 | | 91.0 |

*Figure 2. Metals Data Validation Worksheet (continued)*

## SAMPLE MANAGEMENT SYSTEM

### Wet Chemistry Data Validation Worksheet

**RIN:** 17028279 **Lab Code:** PAR **Date Due:** 3/17/2017

**Matrix:** Water **Site Code:** TUB01 **Date Completed:** 3/1/2017

| 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 | 02/23/2017 | -0.084 | 0.9993 | OK | OK | OK | 106.00 | 86.0 | 87.0 | 1.00 | |
| AMMONIA AS N | 02/23/2017 | -0.100 | 0.9991 | OK | OK | OK | 98.00 | 84.0 | 77.0 | 9.00 | |
| AMMONIA AS N | 02/23/2017 | | | OK | OK | OK | 103.00 | 75.0 | 76.0 | 1.00 | |
| CHLORIDE | 02/10/2017 | 0.019 | 0.9996 | | | | | | | | |
| CHLORIDE | 02/22/2017 | | | OK | OK | OK | 100.00 | | | | |
| CHLORIDE | 02/22/2017 | | | OK | OK | OK | 101.00 | 107.0 | 106.0 | 1.00 | |
| CHLORIDE | 02/23/2017 | | | | | | | 91.0 | 88.0 | 1.00 | |
| CHLORIDE | 02/24/2017 | | | OK | OK | OK | 101.00 | 102.0 | 99.0 | 1.00 | |
| Nitrate+Nitrite as N | 02/24/2017 | -0.003 | 0.9979 | OK | OK | OK | 102.00 | 98.0 | 94.0 | 3.00 | |
| Nitrate+Nitrite as N | 02/24/2017 | | | OK | OK | OK | 103.00 | 98.0 | 92.0 | 4.00 | |
| Nitrate+Nitrite as N | 02/24/2017 | | | OK | OK | OK | 103.00 | 107.0 | 93.0 | 9.00 | |
| Sulfate | 02/10/2017 | 0.187 | 0.9996 | | | | | | | | |
| SULFATE | 02/22/2017 | | | OK | OK | OK | 99.00 | 106.0 | 105.0 | 1.00 | |
| SULFATE | 02/22/2017 | | | OK | OK | OK | 99.00 | | | | |
| SULFATE | 02/23/2017 | | | | | | | 104.0 | 102.0 | 1.00 | |

*Figure 3. Wet Chemistry Data Validation Worksheet*

## SAMPLE MANAGEMENT SYSTEM

### Wet Chemistry Data Validation Worksheet

**RIN:** 17028279 **Lab Code:** PAR **Date Due:** 3/17/2017

**Matrix:** Water **Site Code:** TUB01 **Date Completed:** 3/1/2017

| Analyte | Date Analyzed | CALIBRATION | | | | Method Blank | LCS %R | MS %R | MSD %R | DUP RPD | Serial Dil. %R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Int. | R^2 | CCV | CCB | | | | | | |
| SULFATE | 02/24/2017 | | | OK | OK | OK | 100.00 | 107.0 | 104.0 | 2.00 | |
| TOTAL DISSOLVED SOLIDS | 02/22/2017 | | | | | OK | 107.00 | | | 6.00 | |
| TOTAL DISSOLVED SOLIDS | 02/22/2017 | | | | | OK | 100.00 | | | 4.00 | |
| TOTAL DISSOLVED SOLIDS | 02/22/2017 | | | | | | | | | 2.00 | |
| TOTAL DISSOLVED SOLIDS | 02/22/2017 | | | | | | | | | 3.00 | |
| TOTAL DISSOLVED SOLIDS | 02/23/2017 | | | | | OK | 110.00 | | | 3.00 | |

*Figure 3. Wet Chemistry Data Validation Worksheet (continued)*

## Sampling Quality Control Assessment

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

Sampling Protocol

Sample results for all monitoring wells were qualified with an "F" flag, indicating the wells were purged and sampled using the low-flow method. At all monitoring well locations, purging and sampling met the Category I criteria, with the following exceptions: wells 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 were purged and sampled using Category II criteria. The sample results for these wells were qualified with a "Q" flag, indicating the data are qualitative because of the sampling technique.

Equipment Blank Assessment

An equipment blank was not required because dedicated sampling equipment was used at all locations.

Field Duplicate Assessment

Field duplicate samples are collected and analyzed as an indication of overall precision of the measurement process, (see Figure 4 below). 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 0268, 0275, and 0276. The relative percent difference (RPD) for duplicate results that are greater than 5 times the PQL should be less than 20%. The RPD is not used to evaluate results that are less than 5 times the PQL. For these results, the range should be no greater than the PQL. The duplicate results met the criteria, with the exception of the uranium RPD at location 0276, at 50%. 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 associated sample and duplicate results for this location are qualified with a "J" flag as estimated values.

## SAMPLE MANAGEMENT SYSTEM

## Validation Report: Field Duplicates

**RIN:** 17028279 **Lab Code:** PAR **Project:** Tuba City **Validation Date:** 3/15/2017

**Duplicate:** 2122 **Sample:** 0276

| 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 | 0.0028 | | | 10 | 0.0029 | | | 10 | 3.51 | | MG/L |
| Calcium | 35 | | | 1 | 35 | | | 1 | 0 | | MG/L |
| CHLORIDE | 11 | | | 1 | 11 | | | 1 | 0 | | MG/L |
| Iron | 0.027 | J | | 1 | 0.0067 | U | | 1 | | | MG/L |
| Magnesium | 6.8 | | | 1 | 6.9 | | | 1 | 1.46 | | MG/L |
| Manganese | 0.00064 | J | | 1 | 0.00044 | J | | 1 | | | MG/L |
| Molybdenum | 0.00038 | J | | 10 | 0.0007 | J | | 10 | | | MG/L |
| Nitrate+Nitrite as N | 3 | | | 10 | 3.6 | | | 10 | 18.18 | | MG/L |
| Potassium | 1.5 | | | 1 | 1.5 | | | 1 | 0 | | MG/L |
| Selenium | 0.0018 | | | 10 | 0.0025 | | | 10 | | | MG/L |
| Silica | 12 | | | 1 | 12 | | | 1 | 0 | | MG/L |
| Silicon | 5.5 | | | 1 | 5.6 | | | 1 | 1.80 | | MG/L |
| Sodium | 14 | | | 1 | 14 | | | 1 | 0 | | MG/L |
| Strontium | 0.42 | | | 1 | 0.42 | | | 1 | 0 | | MG/L |
| SULFATE | 16 | | | 1 | 17 | | | 1 | 6.06 | | MG/L |
| TOTAL DISSOLVED SOLIDS | 170 | | | 1 | 190 | | | 1 | 11.11 | | MG/L |
| Uranium | 0.0015 | | | 10 | 0.0025 | | | 10 | 50.00 | | MG/L |
| Vanadium | 0.014 | | | 10 | 0.014 | | | 10 | 0 | | MG/L |

**Duplicate:** 2723 **Sample:** 0275

| Analyte | Sample Result | Flag | Error | Dilution | Duplicate Result | Flag | Error | Dilution | RPD | RER | Units |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AMMONIA AS N | 29 | | | 100 | 28 | | | 100 | | | MG/L |
| Arsenic | 0.00069 | J | | 10 | 0.00067 | J | | 10 | 2.94 | | MG/L |
| Calcium | 600 | | | 5 | 600 | | | 5 | 0 | | MG/L |
| CHLORIDE | 140 | | | 40 | 150 | | | 40 | 6.90 | | MG/L |
| Iron | 0.033 | U | | 5 | 0.033 | U | | 5 | | | MG/L |
| Magnesium | 290 | | | 5 | 280 | | | 5 | 3.51 | | MG/L |
| Manganese | 9.3 | | | 5 | 9.2 | | | 5 | 1.08 | | MG/L |
| Molybdenum | 0.00078 | J | | 10 | 0.00084 | J | | 10 | | | MG/L |
| Nitrate+Nitrite as N | 160 | | | 500 | 170 | | | 500 | 6.06 | | MG/L |
| Potassium | 15 | | | 5 | 15 | | | 5 | 0 | | MG/L |
| Selenium | 0.032 | | | 10 | 0.03 | | | 10 | 6.45 | | MG/L |
| Silica | 17 | | | 5 | 18 | | | 5 | 5.71 | | MG/L |
| Silicon | 8.1 | | | 5 | 8.5 | | | 5 | 4.82 | | MG/L |
| Sodium | 310 | | | 5 | 300 | | | 5 | 3.28 | | MG/L |
| Strontium | 5.8 | | | 5 | 6 | | | 5 | 3.39 | | MG/L |

*Figure 4. Field Duplicates Validation Report*

## SAMPLE MANAGEMENT SYSTEM

## Validation Report: Field Duplicates

**RIN:** 17028279 **Lab Code:** PAR **Project:** Tuba City **Validation Date:** 3/15/2017

**Duplicate:** 2723 **Sample:** 0275

| Analyte | Sample Result | Flag | Error | Dilution | Duplicate Result | Flag | Error | Dilution | RPD | RER | Units |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SULFATE | 2000 | | | 40 | 2000 | | | 40 | 0 | | MG/L |
| TOTAL DISSOLVED SOLIDS | 4400 | | | 1 | 4400 | | | 1 | 0 | | MG/L |
| Uranium | 0.4 | | | 10 | 0.38 | | | 10 | 5.13 | | MG/L |
| Vanadium | 0.0051 | | | 10 | 0.0049 | | | 10 | 4.00 | | MG/L |

**Duplicate:** 2724 **Sample:** 0268

| 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 | 0.0011 | | | 10 | 0.001 | | | 10 | 9.52 | | MG/L |
| Calcium | 120 | | | 1 | 120 | | | 1 | 0 | | MG/L |
| CHLORIDE | 19 | | | 5 | 19 | | | 2.5 | 0 | | MG/L |
| Iron | 0.014 | J | | 1 | 0.0067 | U | | 1 | | | MG/L |
| Magnesium | 23 | | | 1 | 23 | | | 1 | 0 | | MG/L |
| Manganese | 0.0008 | J | | 1 | 0.00054 | J | | 1 | | | MG/L |
| Molybdenum | 0.00032 | U | | 10 | 0.00035 | J | | 10 | | | MG/L |
| Nitrate+Nitrite as N | 21 | | | 100 | 23 | | | 100 | 9.09 | | MG/L |
| Potassium | 3.2 | | | 1 | 3.2 | | | 1 | 0 | | MG/L |
| Selenium | 0.0027 | | | 10 | 0.0031 | | | 10 | | | MG/L |
| Silica | 12 | | | 1 | 12 | | | 1 | 0 | | MG/L |
| Silicon | 5.7 | | | 1 | 5.5 | | | 1 | 3.57 | | MG/L |
| Sodium | 25 | | | 1 | 25 | | | 1 | 0 | | MG/L |
| Strontium | 2.3 | | | 1 | 2.2 | | | 1 | 4.44 | | MG/L |
| SULFATE | 180 | | | 5 | 180 | | | 2.5 | 0 | | MG/L |
| TOTAL DISSOLVED SOLIDS | 560 | | | 1 | 580 | | | 1 | 3.51 | | MG/L |
| Uranium | 0.035 | | | 10 | 0.034 | | | 10 | 2.90 | | MG/L |
| Vanadium | 0.0048 | | | 10 | 0.0046 | | | 10 | 4.26 | | MG/L |

*Figure 4. Field Duplicates Validation Report (continued)*

## Certification

All laboratory analytical quality control criteria were met except as qualified in this report. The data qualifiers listed on the environmental 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: Steph Donivan 4-17-2017
Stephen Donivan Date

Data Validation Lead: 4/17/17
Gretchen Baer Date

# Attachment 1

# Sampling and Analysis Work Order

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February 13, 2017

Task Assignment 103
Control Number 17-0220

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-LM0000421, Navarro Research & Engineering, Inc. (Navarro)
Task Assignment 103 LTS&M-UMTRCA Title I and II Sites, D&D Sites, Other Sites, and Other
February 2017 Environmental Sampling at the Tuba City, Arizona, Disposal Site

REFERENCE: Task Assignment 103, 1-103-1-02-122, 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 disposal site. Water quality data will be collected at this site as part of the routine environmental sampling currently scheduled to begin the week of February 13, 2017.

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

**MONITORING WELLS***

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 251 Na | 265 Na | 274 Na | 286 Na | 906 Na | 934 Na | 1006 Al | NMW-4A Ss |
| 252 Na | 266 Na | 275 Na | 287 Na | 908 Na | 940 Na | 1007 Al | NMW-6S Ss |
| 258 Na | 267 Na | 276 Na | 288 Na | 909 Na | 941 Na | NMW-1A Ss | NMW-7D Ss |
| 262 Na | 268 Na | 281 Na | 289 Na | 929 Na | 1003 Al | NMW-2A Ss | NMW-8S Ss |
| 263 Na | 272 Na | 282 Na | 290 Na | 930 Na | 1004 Al | NMW-3A Ss | NMW-9D Ss |
| 264 Na | 273 Na | 283 Na | 691 Na | 932 Na | | | |

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

**SURFACE LOCATIONS**

1569 1570

All samples will be collected as directed in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites*. Water levels will be collected from additional wells on site as noted in the attachment.

This February 2017 sampling departs from what is normally required by eliminating those extraction wells that are not in operation because of suspended distillation treatment. Similarly, treatment system locations 1202, 1205, and 1206 will not be sampled. Also, sample collection at a far upgradient location (0965) on Moenkopi Wash will not be conducted because the location is redundant with upgradient location 0778.

Please contact me at (970) 248-6103 or Tim Bartlett at (970) 248-7741 if you have any questions.

Sincerely,

Peter Lemke
LMS Site Lead

PL/lcg/csa

Enclosures (3)

cc: (electronic)
Christina Pennal, DOE
Jeff Carman, Navarro
Beverly Cook, Navarro
Steve Donivan, Navarro
Lauren Goodknight, Navarro
Peter Lemke, Navarro
Sam Marutzky, Navarro
Diana Osborne, Navarro
Document Determination
EDD Delivery
Records
File: TUB 400.02

## 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 | X | | | | |
| 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 | X | | 0.2 | SW-846 6010 | LMM-01 |
| 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 | X | | 0.0003 | SW-846 6020 | IMM-02 |
| Zinc | | | | | |
| **Total No. of Analytes** | 18 | 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 | | | | |
| 261 | | | X | | | August |
| 262 | | X | | | | |
| 263 | | X | | | | |
| 264 | | X | | | | |
| 265 | | X | | | | |
| 266 | | X | | | | |
| 267 | | X | | | | |
| 268 | | X | | | | |
| 271 | | | X | | | August |
| 272 | | X | | | | |
| 273 | | X | | | | |
| 274 | | X | | | | |
| 275 | | X | | | | |
| 276 | | X | | | | |
| 277 | | | X | | | August |
| 278 | | | X | | | August |
| 279 | | | X | | | August |
| 280 | | | X | | | August |
| 281 | | X | | | | |
| 282 | | X | | | | |
| 283 | | X | | | | |
| 284 | | | | | X | Water level only |
| 285 | | | | | X | Water level only |
| 286 | | X | | | | |
| 287 | | X | | | | |
| 288 | | X | | | | |
| 289 | | X | | | | |
| 290 | | X | | | | |
| 683 | | | X | | | August |
| 684 | | | X | | | August |
| 685 | | | X | | | August |
| 686 | | | X | | | DATA LOGGER; August |
| 687 | | | X | | | DATA LOGGER; August |
| 688 | | | X | | | DATA LOGGER; August |
| 689 | | | X | | | August |
| 690 | | | X | | | August |
| 691 | | X | | | | |

## Sampling Frequencies for Locations at Tuba City, Arizona

| Location ID | Quarterly | Semiannually | Annually | Biennially | Not Sampled | Notes |
|---|---|---|---|---|---|---|
| ***Monitoring Wells*** | | | | | | |
| 692 | | | X | | | August |
| 695 | | | X | | | August |
| 901 | | | X | | | August |
| 902 | | | X | | | |
| 903 | | | X | | | August |
| 904 | | | X | | | August |
| 906 | | X | | | | DATA LOGGER |
| 908 | | X | | | | DATA LOGGER |
| 909 | | X | | | | DATA LOGGER |
| 910 | | | X | | | August |
| 911 | | | X | | | August |
| 912 | | | X | | | August |
| 913 | | | X | | | August |
| 914 | | | X | | | August |
| 915 | | | X | | | August |
| 916 | | | X | | | August |
| 917 | | | X | | | August |
| 918 | | | X | | | August |
| 919 | | | X | | | August |
| 920 | | | X | | | August |
| 921 | | | X | | | August |
| 929 | | X | | | | |
| 930 | | X | | | | |
| 932 | | X | | | | |
| 934 | | X | | | | DATA LOGGER |
| 935 | | * | | | | Converted to extraction well |
| 936 | | * | | | | DATA LOGGER |
| 938 | | * | | | | Converted to extraction well |
| 940 | | X | | | | DATA LOGGER |
| 941 | | X | | | | DATA LOGGER |
| 942 | | * | | | | DATA LOGGER |
| 943 | | | X | | | DATA LOGGER; August |
| 945 | | | X | | | August |
| 946 | | | X | | | DATA LOGGER; August |
| 947 | | | X | | | August |
| 948 | | | | | X | Water level only |
| 968 | | | | | X | Water level only |
| 1003 | | X | | | | |
| 1004 | | X | | | | |
| 1005 | | | | | X | Water level only |

## Sampling Frequencies for Locations at Tuba City, Arizona

| Location ID | Quarterly | Semiannually | Annually | Biennially | Not Sampled | Notes |
|---|---|---|---|---|---|---|
| ***Monitoring Wells*** | | | | | | |
| 1006 | | X | | | | |
| 1007 | | X | | | | |
| 1008 | | | | | X | Water level only |
| 1101 | | * | | | | |
| 1102 | | * | | | | |
| 1103 | | * | | | | |
| 1104 | | * | | | | |
| 1105 | | * | | | | |
| 1106 | | * | | | | |
| 1107 | | * | | | | |
| 1108 | | * | | | | |
| 1109 | | * | | | | |
| 1110 | | * | | | | |
| 1111 | | * | | | | |
| 1112 | | * | | | | |
| 1113 | | * | | | | |
| 1114 | | * | | | | |
| 1115 | | * | | | | |
| 1116 | | * | | | | |
| 1117 | | * | | | | |
| 1118 | | * | | | | |
| 1119 | | * | | | | |
| 1120 | | * | | | | |
| 1121 | | * | | | | |
| 1122 | | * | | | | |
| 1123 | | * | | | | |
| 1124 | | * | | | | |
| 1125 | | * | | | | |
| 1126 | | * | | | | |
| 1127 | | * | | | | |
| 1128 | | * | | | | |
| 1129 | | * | | | | |
| 1130 | | * | | | | |
| 1131 | | * | | | | |
| 1132 | | * | | | | |
| 1133 | | * | | | | |
| NMW-1A | | X | | | | |
| NMW-2A | | X | | | | |
| NMW-3A | | X | | | | |
| NMW-4A | | X | | | | |

## Sampling Frequencies for Locations at Tuba City, Arizona

| Location ID | Quarterly | Semiannually | Annually | Biennially | Not Sampled | Notes |
|---|---|---|---|---|---|---|
| ***Monitoring Wells*** | | | | | | |
| NMW-6S | | X | | | | |
| NMW-7D | | X | | | | |
| NMW-8S | | X | | | | |
| NMW-9D | | X | | | | |
| ***Surface Locations*** | | | | | | |
| 759 | | | X | | | August; Moenkopi wash-downgradient |
| 778 | | | X | | | August; Moenkopi wash-at Jimmy Spring |
| 1568 | | | X | | | Cattle trough near 1573 & 1574 |
| 1569 | | X | | | | Evap pond - North |
| 1570 | | X | | | | Evap pond - South |

Semi-annual sampling conducted in February and August; Annual sampling conducted in August.
Sample only active extraction wells. Coordinate with operators to confirm operating wells.
Treatment system monitoring done independently by operators on as-needed basis.
* Extraction well; sample if extraction system is operating.

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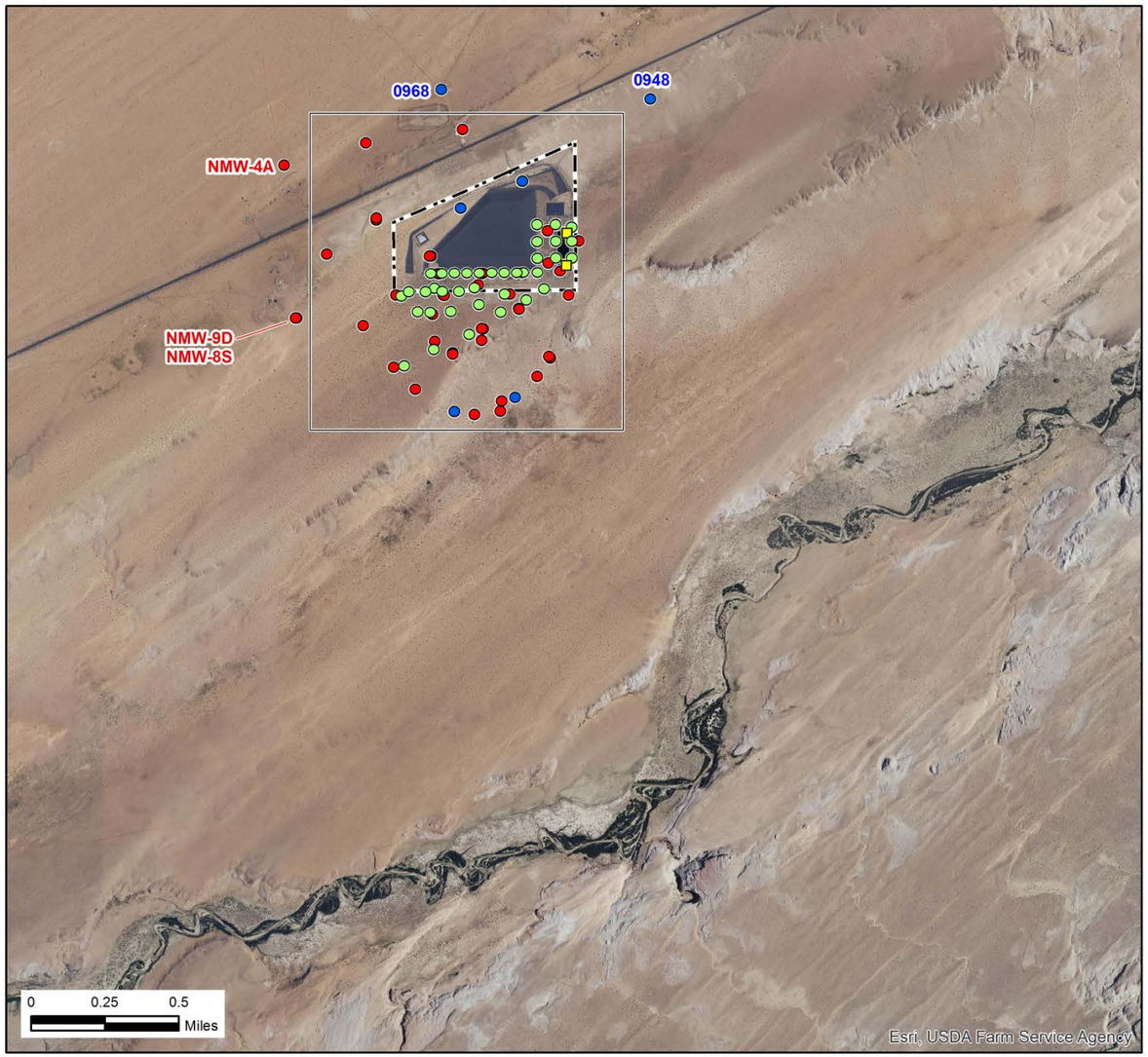


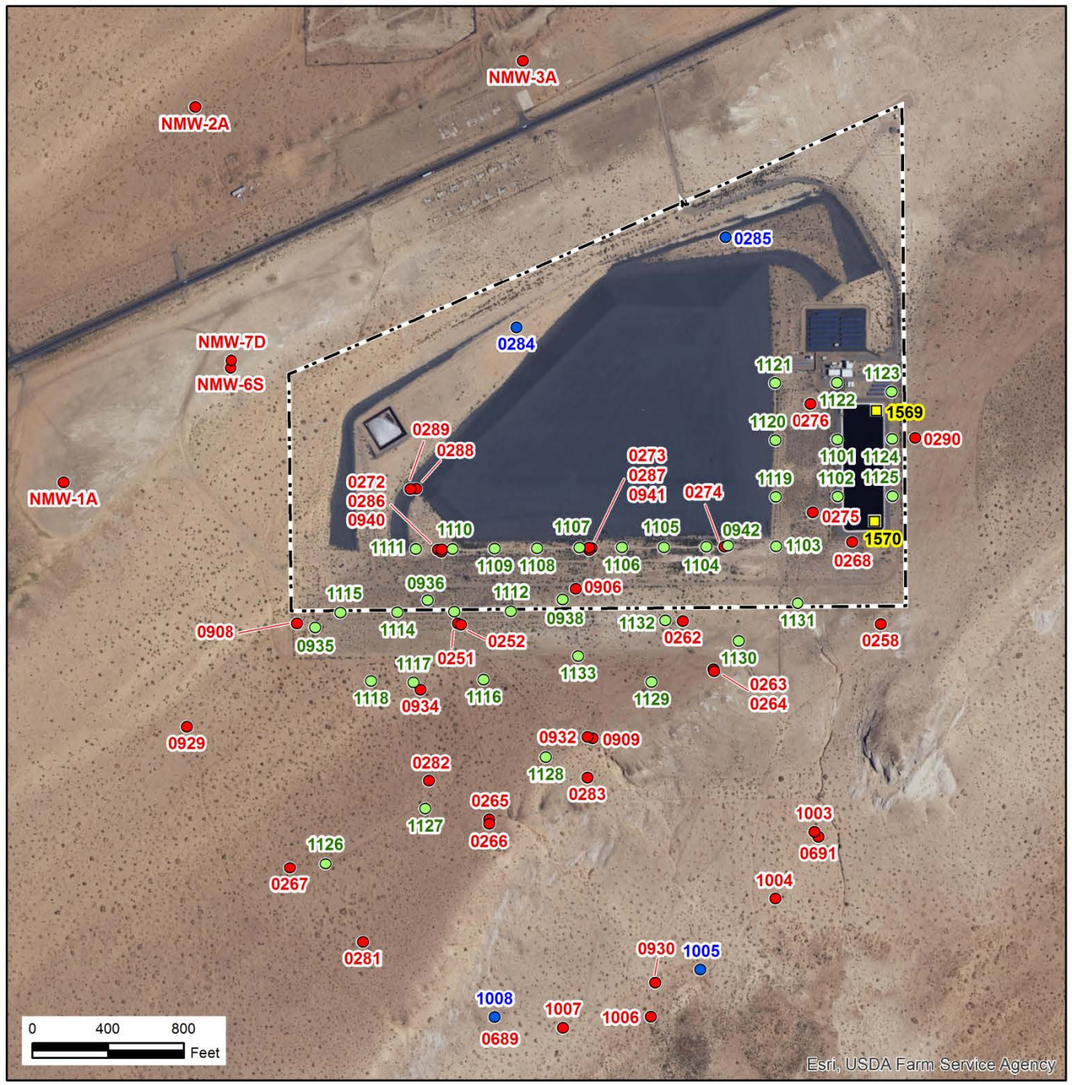


**LEGEND**

- Monitoring Well to be Sampled
- Extraction Well to be Sampled
- Monitoring Well - Water Level Only
- Surface Location to be Sampled
- Site Boundary

N

| | |
|---|---|
| U.S. DEPARTMENT OF ENERGY<br>OFFICE OF LEGACY MANAGEMENT | Work Performed by<br>**Navarro Research & Engineering, Inc.**<br>Under DOE Contract Number DE-LM0000421 |
| Planned Sample Locations<br>Tuba City, AZ, Disposal Site<br>February 2017 | |
| DATE PREPARED:<br>December 28, 2016 | FILE NAME:<br>S1549900-11x17 |

*Tuba City, Arizona, Disposal Site, Planned Sample Locations*

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# Attachment 2

# Trip Report

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NAVARRO

To: Peter Lemke, Navarro

From: Jennifer Graham, Navarro

Date: February 27, 2017

CC: Richard Bush, DOE
Tim Bartlett, Navarro
Steve Donivan, Navarro
EDD Delivery

Re: Sampling Trip Report

**Site:** Tuba City, Arizona, Disposal Site

**Dates of Event:** February 14–16, 2017

**Team Members:** David Atkinson, Jennifer Graham, Jeff Price, and Samantha Tigar, Navarro

**Number of Locations Sampled:** Samples were collected from 45 of the 47 locations identified on the sampling notification letter dated February 13, 2017.

**Locations Not Sampled/Reason:** Monitoring wells 0283 and 0909 were dry.

**Location Specific Information:** A summary of location specific information is shown in Table 1.

*Table 1. Location Specific Information*

| Location IDs | Comments |
|---|---|
| 0264 | On arrival, the sample team found 5.15 ft of downhole tubing coiled up inside the protective casing from the recent SOARS installation. The sample team was not able to return the pump to its original location. Per T. Bartlett, a new sample depth of 169.85 ft was acceptable. The new sample depth is still within the recorded screened interval. Sample team did not remove excess tubing during the event. |
| 0908 | On arrival, the sample team observed that the downhole tubing was out of the well 0.48 ft. The sample team was not able to return pump to original sample depth. Sample was collected at 59.52 ft. Sample team did not adjust tubing length during event. |

**Quality Control Sample Cross Reference:** A summary of the quality control samples collected is shown in Table 2.

*Table 2. Quality Control Sample Summary*

| False ID | Ticket Number | True ID | Sample Type | Associated Matrix |
|---|---|---|---|---|
| 2122 | PDZ 177 | 0276 | Duplicate | Groundwater |
| 2723 | PDZ 209 | 0275 | Duplicate | Groundwater |
| 2724 | PDZ 210 | 0268 | Duplicate | Groundwater |

**Requisition Index Number (RIN) Assigned:** Samples were assigned to RIN 17028279. Field data sheets can be found in \\crow\SMS\17028279\FieldData.

**Sample Shipment:** Samples were shipped overnight via FedEx from Grand Junction, Colorado, to ALS Laboratory, Ft. Collins, Colorado, on February 17, 2016.

**Water Level Measurements:** Water levels were measured in all sampled wells and in 47 additional wells. A water level data report for these 47 wells can be found in \\crow\RAApps\SMS\FDCS\WATER LEVELS. A water level was not collected at location 0972 due to a locked fence preventing access to this well.

**Data Loggers:** Data loggers were downloaded and checked for accuracy at the following locations: TUB01-0263, 0265, 0274, 0286, 0287, 0908, 0929, 0934, and 0941. Data can be found in the SEEPro database.

**Survey Summary:** Initial survey work was conducted on February 14-16, 2017, per the Survey Statement of work dated February 13, 2017. Observed control point data was collected for Boundary Monument BM-4 and at 18 monitoring well locations for top of casing elevations (TOC) as follows: 0265, 0267, 0277, 0278, 0279, 0280, 0290, 0687, 0690, 0904, 0916, 0929, 0930, 940, 0941, 0945, 1006, and 1007. Topography ground shots and photographs were also collected at each of the listed monitoring well locations. In addition, As-Built Data was collected at the concrete bumper and strut apparatus near the evaporation pond. An Observed Control Point was collected for elevation purposes on the berm between the apparatus and vault 1101.

Each TOC point was collected either at a specified mark on the TOC or on the north side of the casing, if not otherwise marked. Each ground shot was collected on the north side of each well location using the top of the concrete well pad, as requested by T. Bartlett.

Survey field data, pictures and reports, upon completion, will be available at:
http://teams.lm.doe.gov/ESDM/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2fESDM%2fShared%20Documents%2fSurvey%20Program&FolderCTID=0x0120006D42AA0FB013054F98CEEA598A982BF3

**Well Inspection Summary:** No new issues observed.

**Sampling Method:** Samples were collected according to the *Sampling and Analysis Plan* (SAP) for the *U. S. Department of Energy Office of Legacy Management Sites* (LMS/PRO/S04351, continually updated) and Program Directive TUB-2015-01, which directs the samplers to control solids from the evaporation pond by installing a filter before the flow cell.

**Field Variance:** None. All samples were collected according to the SAP and Program Directive.

**Equipment:** All equipment functioned properly.

**Stakeholder/Regulatory/DOE:** Nothing to note.

**Institutional Controls:**

**Fences, Gates, and Locks:** No issues identified.
**Signs**: No issues identified
**Trespassing/Site Disturbances:** No issues identified

**Safety Issues:** Nothing to note.

**Access Issues:** None.

**General Information:** Nothing to note.

**Immediate Actions Taken:** None.

**Future Actions Required or Suggested:** None.

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# Attachment 3

# 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: 3/17/2017
Location: 0251 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 64 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 0.0027 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 27 | | FQ | # | 0.024 | |
| Chloride | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 6.4 | | FQ | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 6.27 | | FQ | # | | |
| Iron | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 0.0096 | J | UFQ | # | 0.0067 | |
| Magnesium | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 5.6 | | FQ | # | 0.03 | |
| Manganese | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 0.0016 | J | UFQ | # | 0.00024 | |
| Molybdenum | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 0.00088 | J | UFQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 2.7 | | FQ | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/15/2017 | N001 | 200 | - | 300 | 165.8 | | FQ | # | | |
| pH | s.u. | 02/15/2017 | N001 | 200 | - | 300 | 8.04 | | FQ | # | | |
| Potassium | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 2.5 | | FQ | # | 0.052 | |
| Selenium | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 0.0015 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 10 | | FQ | # | 0.021 | |
| Silicon | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 4.9 | | FQ | # | 0.0097 | |
| Sodium | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 6.4 | | FQ | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/15/2017 | N001 | 200 | - | 300 | 211 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0251 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 1.2 | | FQ | # | 0.00026 | |
| Sulfate | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 7.8 | | FQ | # | 0.5 | |
| Temperature | C | 02/15/2017 | N001 | 200 | - | 300 | 15.34 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 140 | | FQ | # | 20 | |
| Turbidity | NTU | 02/15/2017 | N001 | 200 | - | 300 | 1.65 | | FQ | # | | |
| Uranium | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 0.0014 | E | JFQ | # | 0.000012 | |
| Vanadium | mg/L | 02/15/2017 | N001 | 200 | - | 300 | 0.0047 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0252 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 68 | | F | # | | |
| Ammonia Total as N | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 0.1 | U | F | # | 0.1 | |
| Arsenic | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 0.0022 | | F | # | 0.00012 | |
| Calcium | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 22 | | F | # | 0.024 | |
| Chloride | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 4.8 | | F | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 6.48 | | F | # | | |
| Iron | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 0.011 | J | UF | # | 0.0067 | |
| Magnesium | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 4.5 | | F | # | 0.03 | |
| Manganese | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 0.0015 | J | UF | # | 0.00024 | |
| Molybdenum | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 0.00032 | U | F | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 2.5 | | F | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/15/2017 | N001 | 400 | - | 500 | 176.8 | | F | # | | |
| pH | s.u. | 02/15/2017 | N001 | 400 | - | 500 | 8.22 | | F | # | | |
| Potassium | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 2.4 | | F | # | 0.052 | |
| Selenium | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 0.00079 | J | F | # | 0.00066 | |
| Silica | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 9.9 | | F | # | 0.021 | |
| Silicon | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 4.6 | | F | # | 0.0097 | |
| Sodium | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 11 | | F | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/15/2017 | N001 | 400 | - | 500 | 197 | | F | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0252 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 0.78 | | F | # | 0.00026 | |
| Sulfate | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 6.9 | | F | # | 0.5 | |
| Temperature | C | 02/15/2017 | N001 | 400 | - | 500 | 15.02 | | F | # | | |
| Total Dissolved Solids | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 130 | | F | # | 20 | |
| Turbidity | NTU | 02/15/2017 | N001 | 400 | - | 500 | 1.44 | | F | # | | |
| Uranium | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 0.002 | | F | # | 0.000012 | |
| Vanadium | mg/L | 02/15/2017 | N001 | 400 | - | 500 | 0.0034 | | F | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0258 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 85 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 0.0022 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 35 | | FQ | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 12 | | FQ | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 7.22 | | FQ | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 0.028 | J | UFQ | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 7.5 | | FQ | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 0.0007 | J | UFQ | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 0.00066 | J | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 3.1 | | FQ | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 159 | - | 199 | 137 | | FQ | # | | |
| pH | s.u. | 02/14/2017 | N001 | 159 | - | 199 | 7.96 | | FQ | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 1.8 | | FQ | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 0.0022 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 12 | | FQ | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 5.7 | | FQ | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 12 | | FQ | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 159 | - | 199 | 286 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0258 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 0.64 | | FQ | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 17 | | FQ | # | 0.5 | |
| Temperature | C | 02/14/2017 | N001 | 159 | - | 199 | 16.1 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 170 | | FQ | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 159 | - | 199 | 2.81 | | FQ | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 0.0014 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 159 | - | 199 | 0.01 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0262 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 60 - 100 | 427 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 60 - 100 | 1.5 | | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 60 - 100 | 0.0026 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 60 - 100 | 750 | | FQ | # | 0.12 | |
| Chloride | mg/L | 02/14/2017 | N001 | 60 - 100 | 110 | | FQ | # | 8 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 60 - 100 | 1.13 | | FQ | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 60 - 100 | 0.033 | U | FQ | # | 0.033 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 60 - 100 | 260 | | FQ | # | 0.15 | |
| Manganese | mg/L | 02/14/2017 | N001 | 60 - 100 | 0.034 | | FQ | # | 0.0012 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 60 - 100 | 0.26 | | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 60 - 100 | 180 | | FQ | # | 5 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 60 - 100 | 199 | | FQ | # | | |
| pH | s.u. | 02/14/2017 | N001 | 60 - 100 | 6.72 | | FQ | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 60 - 100 | 8 | | FQ | # | 0.26 | |
| Selenium | mg/L | 02/14/2017 | N001 | 60 - 100 | 0.036 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 60 - 100 | 20 | | FQ | # | 0.1 | |
| Silicon | mg/L | 02/14/2017 | N001 | 60 - 100 | 9.5 | | FQ | # | 0.048 | |
| Sodium | mg/L | 02/14/2017 | N001 | 60 - 100 | 290 | | FQ | # | 0.23 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 60 - 100 | 5007 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0262 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 60 | - | 100 | 6.5 | | FQ | # | 0.0013 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 60 | - | 100 | 2100 | | FQ | # | 20 | |
| Temperature | C | 02/14/2017 | N001 | 60 | - | 100 | 15.72 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 60 | - | 100 | 4600 | * | FQ | # | 80 | |
| Turbidity | NTU | 02/14/2017 | N001 | 60 | - | 100 | 3.86 | | FQ | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 60 | - | 100 | 0.44 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 60 | - | 100 | 0.012 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0263 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 482 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 0.38 | | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 0.0023 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 540 | | FQ | # | 0.12 | |
| Chloride | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 88 | | FQ | # | 8 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 60 | - | 100 | 0.7 | | FQ | # | | |
| Iron | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 0.033 | U | FQ | # | 0.033 | |
| Magnesium | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 350 | | FQ | # | 0.15 | |
| Manganese | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 0.011 | J | FQ | # | 0.0012 | |
| Molybdenum | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 0.15 | | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 160 | | FQ | # | 5 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 60 | - | 100 | 203 | | FQ | # | | |
| pH | s.u. | 02/14/2017 | N001 | 60 | - | 100 | 6.61 | | FQ | # | | |
| Potassium | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 7.8 | | FQ | # | 0.26 | |
| Selenium | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 0.034 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 21 | | FQ | # | 0.1 | |
| Silicon | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 9.7 | | FQ | # | 0.048 | |
| Sodium | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 320 | | FQ | # | 0.23 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 60 | - | 100 | 4843 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0263 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 3.3 | | FQ | # | 0.0013 | |
| Sulfate | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 2000 | | FQ | # | 20 | |
| Temperature | C | 02/14/2017 | N001 | 60 | - | 100 | 15.84 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 4600 | | FQ | # | 80 | |
| Turbidity | NTU | 02/14/2017 | N001 | 60 | - | 100 | 34.8 | | FQ | # | | |
| Uranium | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 0.45 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | 0001 | 60 | - | 100 | 0.013 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0264 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 78 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 0.0019 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 77 | | FQ | # | 0.024 | |
| Chloride | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 17 | | FQ | # | 0.4 | |
| Dissolved Oxygen | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 6.76 | | FQ | # | | |
| Iron | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 0.063 | J | FQ | # | 0.0067 | |
| Magnesium | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 15 | | FQ | # | 0.03 | |
| Manganese | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 0.0028 | J | FQ | # | 0.00024 | |
| Molybdenum | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 0.0007 | J | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 11 | | FQ | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/15/2017 | N001 | 160 | - | 200 | 186 | | FQ | # | | |
| pH | s.u. | 02/15/2017 | N001 | 160 | - | 200 | 7.66 | | FQ | # | | |
| Potassium | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 2.3 | | FQ | # | 0.052 | |
| Selenium | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 0.0024 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 14 | | FQ | # | 0.021 | |
| Silicon | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 6.4 | | FQ | # | 0.0097 | |
| Sodium | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 18 | | FQ | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/15/2017 | N001 | 160 | - | 200 | 563 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0264 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 0.79 | | FQ | # | 0.00026 | |
| Sulfate | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 100 | | FQ | # | 1 | |
| Temperature | C | 02/15/2017 | N001 | 160 | - | 200 | 12.88 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 370 | | FQ | # | 20 | |
| Turbidity | NTU | 02/15/2017 | N001 | 160 | - | 200 | 3.69 | | FQ | # | | |
| Uranium | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 0.0045 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 0.012 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
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 | 02/15/2017 | 0001 | 60 | - | 100 | 338 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 0.00093 | J | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 590 | | FQ | # | 0.12 | |
| Chloride | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 130 | | FQ | # | 5 | |
| Dissolved Oxygen | mg/L | 02/15/2017 | N001 | 60 | - | 100 | 9.63 | | FQ | # | | |
| Iron | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 0.018 | J | UFQ | # | 0.0067 | |
| Magnesium | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 170 | | FQ | # | 0.03 | |
| Manganese | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 0.00076 | J | UFQ | # | 0.00024 | |
| Molybdenum | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 0.00032 | U | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 150 | | FQ | # | 5 | |
| Oxidation Reduction Potential | mV | 02/15/2017 | N001 | 60 | - | 100 | 169.3 | | FQ | # | | |
| pH | s.u. | 02/15/2017 | N001 | 60 | - | 100 | 6.77 | | FQ | # | | |
| Potassium | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 5.3 | | FQ | # | 0.052 | |
| Selenium | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 0.0074 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 17 | | FQ | # | 0.021 | |
| Silicon | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 8.2 | | FQ | # | 0.0097 | |
| Sodium | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 110 | | FQ | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/15/2017 | N001 | 60 | - | 100 | 3881 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0265 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 6.1 | | FQ | # | 0.0013 | |
| Sulfate | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 1200 | | FQ | # | 12 | |
| Temperature | C | 02/15/2017 | N001 | 60 | - | 100 | 14.86 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 3000 | | FQ | # | 80 | |
| Turbidity | NTU | 02/15/2017 | N001 | 60 | - | 100 | 15 | | FQ | # | | |
| Uranium | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 0.064 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 0.0077 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0266 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 89 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 0.0023 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 30 | | FQ | # | 0.024 | |
| Chloride | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 7.6 | | FQ | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 7.48 | | FQ | # | | |
| Iron | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 0.12 | | FQ | # | 0.0067 | |
| Magnesium | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 7.3 | | FQ | # | 0.03 | |
| Manganese | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 0.0032 | J | FQ | # | 0.00024 | |
| Molybdenum | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 0.00034 | J | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 3.1 | | FQ | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/15/2017 | N001 | 160 | - | 200 | 135 | | FQ | # | | |
| pH | s.u. | 02/15/2017 | N001 | 160 | - | 200 | 7.83 | | FQ | # | | |
| Potassium | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 2.2 | | FQ | # | 0.052 | |
| Selenium | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 0.0014 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 12 | | FQ | # | 0.021 | |
| Silicon | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 5.7 | | FQ | # | 0.0097 | |
| Sodium | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 6.1 | | FQ | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/15/2017 | N001 | 160 | - | 200 | 367 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0266 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 1.1 | | FQ | # | 0.00026 | |
| Sulfate | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 9.6 | | FQ | # | 0.5 | |
| Temperature | C | 02/15/2017 | N001 | 160 | - | 200 | 15.74 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 140 | | FQ | # | 20 | |
| Turbidity | NTU | 02/15/2017 | N001 | 160 | - | 200 | 5.51 | | FQ | # | | |
| Uranium | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 0.0016 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/15/2017 | N001 | 160 | - | 200 | 0.0076 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0267 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 759 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 0.0041 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 610 | | FQ | # | 0.12 | |
| Chloride | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 100 | | FQ | # | 10 | |
| Dissolved Oxygen | mg/L | 02/15/2017 | N001 | 60 | - | 100 | 4.05 | | FQ | # | | |
| Iron | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 0.033 | U | FQ | # | 0.033 | |
| Magnesium | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 740 | | FQ | # | 0.15 | |
| Manganese | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 0.013 | J | FQ | # | 0.0012 | |
| Molybdenum | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 0.00032 | U | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 300 | | FQ | # | 5 | |
| Oxidation Reduction Potential | mV | 02/15/2017 | N001 | 60 | - | 100 | 174 | | FQ | # | | |
| pH | s.u. | 02/15/2017 | N001 | 60 | - | 100 | 6.44 | | FQ | # | | |
| Potassium | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 8.5 | | FQ | # | 0.26 | |
| Selenium | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 0.038 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 24 | | FQ | # | 0.1 | |
| Silicon | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 11 | | FQ | # | 0.048 | |
| Sodium | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 410 | | FQ | # | 0.23 | |
| Specific Conductance | umhos /cm | 02/15/2017 | N001 | 60 | - | 100 | 7376 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0267 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 2 | | FQ | # | 0.0013 | |
| Sulfate | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 3000 | | FQ | # | 25 | |
| Temperature | C | 02/15/2017 | N001 | 60 | - | 100 | 14.36 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 6600 | | FQ | # | 200 | |
| Turbidity | NTU | 02/15/2017 | N001 | 60 | - | 100 | 18.8 | | FQ | # | | |
| Uranium | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 0.061 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/15/2017 | 0001 | 60 | - | 100 | 0.016 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0268 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 140 | | F | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 0.1 | U | F | # | 0.1 | |
| Ammonia Total as N | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 0.1 | U | F | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 0.0011 | | F | # | 0.00012 | |
| Arsenic | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 0.001 | | F | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 120 | | F | # | 0.024 | |
| Calcium | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 120 | | F | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 19 | | F | # | 1 | |
| Chloride | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 19 | | F | # | 0.5 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 7.72 | | F | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 0.014 | J | UF | # | 0.0067 | |
| Iron | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 0.0067 | U | F | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 23 | | F | # | 0.03 | |
| Magnesium | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 23 | | F | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 0.0008 | J | UF | # | 0.00024 | |
| Manganese | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 0.00054 | J | F | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 0.00032 | U | F | # | 0.00032 | |
| Molybdenum | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 0.00035 | J | F | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 21 | | F | # | 1 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0268 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 23 | | F | # | 1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 200 | - | 300 | 162.2 | | F | # | | |
| pH | s.u. | 02/14/2017 | N001 | 200 | - | 300 | 7.2 | | F | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 3.2 | | F | # | 0.052 | |
| Potassium | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 3.2 | | F | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 0.0027 | | F | # | 0.00066 | |
| Selenium | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 0.0031 | | F | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 12 | | F | # | 0.021 | |
| Silica | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 12 | | F | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 5.7 | | F | # | 0.0097 | |
| Silicon | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 5.5 | | F | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 25 | | F | # | 0.047 | |
| Sodium | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 25 | | F | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 200 | - | 300 | 866 | | F | # | | |
| Strontium | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 2.3 | | F | # | 0.00026 | |
| Strontium | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 2.2 | | F | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 180 | | F | # | 2.5 | |
| Sulfate | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 180 | | F | # | 1.2 | |
| Temperature | C | 02/14/2017 | N001 | 200 | - | 300 | 15.55 | | F | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0268 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 560 | | F | # | 20 | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 580 | | F | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 200 | - | 300 | 0.71 | | F | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 0.035 | | F | # | 0.000012 | |
| Uranium | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 0.034 | | F | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 200 | - | 300 | 0.0048 | | F | # | 0.00058 | |
| Vanadium | mg/L | 02/14/2017 | N002 | 200 | - | 300 | 0.0046 | | F | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0272 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 95 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 0.0015 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 39 | | FQ | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 8.6 | | FQ | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 4.84 | | FQ | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 0.0067 | U | FQ | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 8.2 | | FQ | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 0.00071 | J | UFQ | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 0.00032 | U | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 4.9 | | FQ | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 159.1 | - | 179.1 | 183.4 | | FQ | # | | |
| pH | s.u. | 02/14/2017 | N001 | 159.1 | - | 179.1 | 7.31 | | FQ | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 1.9 | | FQ | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 0.0012 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 12 | | FQ | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 5.5 | | FQ | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 7.7 | | FQ | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 159.1 | - | 179.1 | 318 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0272 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 0.97 | | FQ | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 16 | | FQ | # | 0.5 | |
| Temperature | C | 02/14/2017 | N001 | 159.1 | - | 179.1 | 16.71 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 160 | | FQ | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 159.1 | - | 179.1 | 1.49 | | FQ | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 0.0018 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 159.1 | - | 179.1 | 0.0087 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0273 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 112 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 0.0016 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 72 | | FQ | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 20 | | FQ | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 6.42 | | FQ | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 0.049 | J | FQ | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 13 | | FQ | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 0.0013 | J | UFQ | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 0.0084 | | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 15 | | FQ | # | 0.5 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 153 | - | 173 | 143.2 | | FQ | # | | |
| pH | s.u. | 02/14/2017 | N001 | 153 | - | 173 | 7.46 | | FQ | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 2 | | FQ | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 0.0067 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 13 | | FQ | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 5.9 | | FQ | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 16 | | FQ | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 153 | - | 173 | 568 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0273 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 0.85 | | FQ | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 66 | | FQ | # | 0.5 | |
| Temperature | C | 02/14/2017 | N001 | 153 | - | 173 | 16.49 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 340 | | FQ | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 153 | - | 173 | 3.65 | | FQ | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 0.01 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 153 | - | 173 | 0.009 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0274 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 91 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 0.0021 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 35 | | FQ | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 10 | | FQ | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 7.62 | | FQ | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 0.09 | J | FQ | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 6.8 | | FQ | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 0.012 | | FQ | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 0.00037 | J | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 3.1 | | FQ | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 149 | - | 169 | 146.9 | | FQ | # | | |
| pH | s.u. | 02/14/2017 | N001 | 149 | - | 169 | 7.84 | | FQ | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 1.5 | | FQ | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 0.0017 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 12 | | FQ | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 5.4 | | FQ | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 12 | | FQ | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 149 | - | 169 | 281 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0274 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 0.41 | | FQ | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 14 | | FQ | # | 0.5 | |
| Temperature | C | 02/14/2017 | N001 | 149 | - | 169 | 15.27 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 170 | | FQ | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 149 | - | 169 | 9.07 | | FQ | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 0.0017 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 149 | - | 169 | 0.012 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0275 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 380 | | F | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 29 | | F | # | 10 | |
| Ammonia Total as N | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 28 | | F | # | 10 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 0.00069 | J | F | # | 0.00012 | |
| Arsenic | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 0.00067 | J | F | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 600 | | F | # | 0.12 | |
| Calcium | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 600 | | F | # | 0.12 | |
| Chloride | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 140 | | F | # | 8 | |
| Chloride | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 150 | | F | # | 8 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 3.04 | | F | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 0.033 | U | F | # | 0.033 | |
| Iron | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 0.033 | U | F | # | 0.033 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 290 | | F | # | 0.15 | |
| Magnesium | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 280 | | F | # | 0.15 | |
| Manganese | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 9.3 | | F | # | 0.0012 | |
| Manganese | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 9.2 | | F | # | 0.0012 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 0.00078 | J | F | # | 0.00032 | |
| Molybdenum | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 0.00084 | J | F | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 160 | | F | # | 5 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0275 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 170 | | F | # | 5 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 158.2 | - | 178.2 | 194.3 | | F | # | | |
| pH | s.u. | 02/14/2017 | N001 | 158.2 | - | 178.2 | 6.47 | | F | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 15 | | F | # | 0.26 | |
| Potassium | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 15 | | F | # | 0.26 | |
| Selenium | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 0.032 | | F | # | 0.00066 | |
| Selenium | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 0.03 | | F | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 17 | | F | # | 0.1 | |
| Silica | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 18 | | F | # | 0.1 | |
| Silicon | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 8.1 | | F | # | 0.048 | |
| Silicon | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 8.5 | | F | # | 0.048 | |
| Sodium | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 310 | | F | # | 0.23 | |
| Sodium | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 300 | | F | # | 0.23 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 158.2 | - | 178.2 | 5239 | | F | # | | |
| Strontium | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 5.8 | | F | # | 0.0013 | |
| Strontium | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 6 | | F | # | 0.0013 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 2000 | | F | # | 20 | |
| Sulfate | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 2000 | | F | # | 20 | |
| Temperature | C | 02/14/2017 | N001 | 158.2 | - | 178.2 | 15.03 | | F | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0275 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 4400 | | F | # | 80 | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 4400 | | F | # | 80 | |
| Turbidity | NTU | 02/14/2017 | N001 | 158.2 | - | 178.2 | 2.12 | | F | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 0.4 | | F | # | 0.000012 | |
| Uranium | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 0.38 | | F | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 158.2 | - | 178.2 | 0.0051 | | F | # | 0.00058 | |
| Vanadium | mg/L | 02/14/2017 | N002 | 158.2 | - | 178.2 | 0.0049 | | F | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0276 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 105 | | F | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 0.1 | U | F | # | 0.1 | |
| Ammonia Total as N | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 0.1 | U | F | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 0.0028 | | F | # | 0.00012 | |
| Arsenic | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 0.0029 | | F | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 35 | | F | # | 0.024 | |
| Calcium | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 35 | | F | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 11 | | F | # | 0.2 | |
| Chloride | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 11 | | F | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 7.13 | | F | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 0.027 | J | UF | # | 0.0067 | |
| Iron | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 0.0067 | U | F | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 6.8 | | F | # | 0.03 | |
| Magnesium | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 6.9 | | F | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 0.00064 | J | UF | # | 0.00024 | |
| Manganese | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 0.00044 | J | F | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 0.00038 | J | F | # | 0.00032 | |
| Molybdenum | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 0.0007 | J | F | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 3 | | F | # | 0.1 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0276 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 3.6 | | F | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 154.5 | - | 174.5 | 188 | | F | # | | |
| pH | s.u. | 02/14/2017 | N001 | 154.5 | - | 174.5 | 7.66 | | F | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 1.5 | | F | # | 0.052 | |
| Potassium | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 1.5 | | F | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 0.0018 | | F | # | 0.00066 | |
| Selenium | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 0.0025 | | F | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 12 | | F | # | 0.021 | |
| Silica | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 12 | | F | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 5.5 | | F | # | 0.0097 | |
| Silicon | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 5.6 | | F | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 14 | | F | # | 0.047 | |
| Sodium | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 14 | | F | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 154.5 | - | 174.5 | 290 | | F | # | | |
| Strontium | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 0.42 | | F | # | 0.00026 | |
| Strontium | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 0.42 | | F | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 16 | | F | # | 0.5 | |
| Sulfate | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 17 | | F | # | 0.5 | |
| Temperature | C | 02/14/2017 | N001 | 154.5 | - | 174.5 | 14.88 | | F | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0276 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 170 | | F | # | 20 | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 190 | | F | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 154.5 | - | 174.5 | 0.85 | | F | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 0.0015 | | JF | # | 0.000012 | |
| Uranium | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 0.0025 | | JF | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 154.5 | - | 174.5 | 0.014 | | F | # | 0.00058 | |
| Vanadium | mg/L | 02/14/2017 | N002 | 154.5 | - | 174.5 | 0.014 | | F | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0281 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 121 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 0.00065 | J | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 100 | | FQ | # | 0.024 | |
| Chloride | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 20 | | FQ | # | 0.4 | |
| Dissolved Oxygen | mg/L | 02/15/2017 | N001 | 70.5 | - | 80.5 | 8.01 | | FQ | # | | |
| Iron | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 0.0067 | U | FQ | # | 0.0067 | |
| Magnesium | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 18 | | FQ | # | 0.03 | |
| Manganese | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 0.00062 | J | UFQ | # | 0.00024 | |
| Molybdenum | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 0.00048 | J | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 23 | | FQ | # | 0.5 | |
| Oxidation Reduction Potential | mV | 02/15/2017 | N001 | 70.5 | - | 80.5 | 187.3 | | FQ | # | | |
| pH | s.u. | 02/15/2017 | N001 | 70.5 | - | 80.5 | 7.61 | | FQ | # | | |
| Potassium | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 2 | | FQ | # | 0.052 | |
| Selenium | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 0.002 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 14 | | FQ | # | 0.021 | |
| Silicon | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 6.7 | | FQ | # | 0.0097 | |
| Sodium | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 15 | | FQ | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/15/2017 | N001 | 70.5 | - | 80.5 | 695 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0281 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 0.82 | | FQ | # | 0.00026 | |
| Sulfate | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 100 | | FQ | # | 1 | |
| Temperature | C | 02/15/2017 | N001 | 70.5 | - | 80.5 | 14.88 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 450 | | FQ | # | 20 | |
| Turbidity | NTU | 02/15/2017 | N001 | 70.5 | - | 80.5 | 22.2 | | FQ | # | | |
| Uranium | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 0.0062 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/15/2017 | 0001 | 70.5 | - | 80.5 | 0.0045 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0282 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 156 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 0.00012 | U | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 200 | | FQ | # | 0.024 | |
| Chloride | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 58 | | FQ | # | 1 | |
| Dissolved Oxygen | mg/L | 02/15/2017 | N001 | 74.1 | - | 84.1 | 10.34 | | FQ | # | | |
| Iron | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 0.0067 | U | FQ | # | 0.0067 | |
| Magnesium | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 40 | | FQ | # | 0.03 | |
| Manganese | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 0.00032 | J | UFQ | # | 0.00024 | |
| Molybdenum | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 0.00034 | J | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 56 | | FQ | # | 1 | |
| Oxidation Reduction Potential | mV | 02/15/2017 | N001 | 74.1 | - | 84.1 | 177.1 | | FQ | # | | |
| pH | s.u. | 02/15/2017 | N001 | 74.1 | - | 84.1 | 7.47 | | FQ | # | | |
| Potassium | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 3.1 | | FQ | # | 0.052 | |
| Selenium | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 0.0025 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 15 | | FQ | # | 0.021 | |
| Silicon | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 6.8 | | FQ | # | 0.0097 | |
| Sodium | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 25 | | FQ | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/15/2017 | N001 | 74.1 | - | 84.1 | 1433 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0282 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 2 | | FQ | # | 0.00026 | |
| Sulfate | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 260 | | FQ | # | 2.5 | |
| Temperature | C | 02/15/2017 | N001 | 74.1 | - | 84.1 | 15.37 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 920 | | FQ | # | 40 | |
| Turbidity | NTU | 02/15/2017 | N001 | 74.1 | - | 84.1 | 18.9 | | FQ | # | | |
| Uranium | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 0.014 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/15/2017 | 0001 | 74.1 | - | 84.1 | 0.0015 | J | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0286 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 619 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 5.1 | | FQ | # | 2.5 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 0.0012 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 730 | | FQ | # | 0.12 | |
| Chloride | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 110 | | FQ | # | 8 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 2.76 | | FQ | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 0.037 | J | UFQ | # | 0.033 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 460 | | FQ | # | 0.15 | |
| Manganese | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 3.6 | | FQ | # | 0.0012 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 0.00032 | U | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 230 | | FQ | # | 5 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 93.2 | - | 103.2 | 186.2 | | FQ | # | | |
| pH | s.u. | 02/14/2017 | N001 | 93.2 | - | 103.2 | 6.48 | | FQ | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 9.2 | | FQ | # | 0.26 | |
| Selenium | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 0.036 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 19 | | FQ | # | 0.1 | |
| Silicon | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 8.9 | | FQ | # | 0.048 | |
| Sodium | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 230 | | FQ | # | 0.23 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 93.2 | - | 103.2 | 5908 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0286 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 11 | | FQ | # | 0.0013 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 2400 | | FQ | # | 20 | |
| Temperature | C | 02/14/2017 | N001 | 93.2 | - | 103.2 | 16.2 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 5300 | | FQ | # | 80 | |
| Turbidity | NTU | 02/14/2017 | N001 | 93.2 | - | 103.2 | 2.92 | | FQ | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 0.36 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 93.2 | - | 103.2 | 0.0069 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0287 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 100.7 - 110.7 | 596 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 100.7 - 110.7 | 1.1 | | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 100.7 - 110.7 | 0.0021 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 100.7 - 110.7 | 880 | | FQ | # | 0.12 | |
| Chloride | mg/L | 02/14/2017 | N001 | 100.7 - 110.7 | 220 | | FQ | # | 8 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 100.7 - 110.7 | 3.38 | | FQ | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 100.7 - 110.7 | 0.033 | U | FQ | # | 0.033 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 100.7 - 110.7 | 150 | | FQ | # | 0.15 | |
| Manganese | mg/L | 02/14/2017 | N001 | 100.7 - 110.7 | 0.013 | J | FQ | # | 0.0012 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 100.7 - 110.7 | 0.17 | | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 100.7 - 110.7 | 230 | | FQ | # | 5 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 100.7 - 110.7 | 162.8 | | FQ | # | | |
| pH | s.u. | 02/14/2017 | N001 | 100.7 - 110.7 | 6.51 | | FQ | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 100.7 - 110.7 | 7 | | FQ | # | 0.26 | |
| Selenium | mg/L | 02/14/2017 | N001 | 100.7 - 110.7 | 0.09 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 100.7 - 110.7 | 20 | | FQ | # | 0.1 | |
| Silicon | mg/L | 02/14/2017 | N001 | 100.7 - 110.7 | 9.3 | | FQ | # | 0.048 | |
| Sodium | mg/L | 02/14/2017 | N001 | 100.7 - 110.7 | 400 | | FQ | # | 0.23 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 100.7 - 110.7 | 5637 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0287 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 100.7 | - | 110.7 | 7.6 | | FQ | # | 0.0013 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 100.7 | - | 110.7 | 1600 | | FQ | # | 20 | |
| Temperature | C | 02/14/2017 | N001 | 100.7 | - | 110.7 | 16.62 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 100.7 | - | 110.7 | 4700 | | FQ | # | 80 | |
| Turbidity | NTU | 02/14/2017 | N001 | 100.7 | - | 110.7 | 6.97 | | FQ | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 100.7 | - | 110.7 | 0.29 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 100.7 | - | 110.7 | 0.01 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0288 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 188 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 0.00054 | J | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 150 | | FQ | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 19 | | FQ | # | 0.5 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 7.02 | | FQ | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 0.027 | J | UFQ | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 29 | | FQ | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 0.0025 | J | FQ | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 0.00032 | U | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 37 | | FQ | # | 1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 104 | - | 114 | 155 | | FQ | # | | |
| pH | s.u. | 02/14/2017 | N001 | 104 | - | 114 | 7.1 | | FQ | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 3.2 | | FQ | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 0.0025 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 14 | | FQ | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 6.7 | | FQ | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 32 | | FQ | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 104 | - | 114 | 978 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0288 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 2 | | FQ | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 190 | | FQ | # | 1.2 | |
| Temperature | C | 02/14/2017 | N001 | 104 | - | 114 | 15.74 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 730 | | FQ | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 104 | - | 114 | 2.49 | | FQ | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 0.0083 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 104 | - | 114 | 0.0047 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0289 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 144 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 0.00088 | J | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 70 | | FQ | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 13 | | FQ | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 5.15 | | FQ | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 0.031 | J | UFQ | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 13 | | FQ | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 0.0015 | J | UFQ | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 0.00082 | J | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 17 | | FQ | # | 0.5 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 148.3 | - | 158.3 | 156.8 | | FQ | # | | |
| pH | s.u. | 02/14/2017 | N001 | 148.3 | - | 158.3 | 7.32 | | FQ | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 2.1 | | FQ | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 0.0019 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 13 | | FQ | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 6.2 | | FQ | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 14 | | FQ | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 148.3 | - | 158.3 | 589 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0289 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 1.1 | | FQ | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 59 | | FQ | # | 0.5 | |
| Temperature | C | 02/14/2017 | N001 | 148.3 | - | 158.3 | 15.65 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 350 | | FQ | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 148.3 | - | 158.3 | 5.29 | | FQ | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 0.0042 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 148.3 | - | 158.3 | 0.0037 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0290 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 258 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 0.0011 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 460 | | FQ | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 81 | | FQ | # | 2.5 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 8.23 | | FQ | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 0.039 | J | UFQ | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 76 | | FQ | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 0.0021 | J | FQ | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 0.00032 | U | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 87 | | FQ | # | 1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 102.7 | - | 112.7 | 196 | | FQ | # | | |
| pH | s.u. | 02/14/2017 | N001 | 102.7 | - | 112.7 | 6.87 | | FQ | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 5.1 | | FQ | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 0.017 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 20 | | FQ | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 9.4 | | FQ | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 110 | | FQ | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 102.7 | - | 112.7 | 2679 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0290 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 4.3 | | FQ | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 920 | | FQ | # | 6.2 | |
| Temperature | C | 02/14/2017 | N001 | 102.7 | - | 112.7 | 16.59 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 2300 | | FQ | # | 40 | |
| Turbidity | NTU | 02/14/2017 | N001 | 102.7 | - | 112.7 | 1.06 | | FQ | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 0.11 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 102.7 | - | 112.7 | 0.0041 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0691 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 275 | | F | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 0.1 | U | F | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 0.00099 | J | F | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 470 | | F | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 68 | | F | # | 2.5 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 4.67 | | F | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 0.0092 | J | UF | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 78 | | F | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 0.01 | | F | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 0.00032 | U | F | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 96 | | F | # | 1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 55 | - | 95 | 205.6 | | F | # | | |
| pH | s.u. | 02/14/2017 | N001 | 55 | - | 95 | 6.9 | | F | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 5 | | F | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 0.0067 | | F | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 19 | | F | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 8.9 | | F | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 62 | | F | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 55 | - | 95 | 2533 | | F | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0691 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 5.1 | | F | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 790 | | F | # | 6.2 | |
| Temperature | C | 02/14/2017 | N001 | 55 | - | 95 | 16.26 | | F | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 2100 | | F | # | 40 | |
| Turbidity | NTU | 02/14/2017 | N001 | 55 | - | 95 | 0.9 | | F | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 0.14 | | F | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 55 | - | 95 | 0.0092 | | F | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0906 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 535 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 0.0016 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 830 | | FQ | # | 0.12 | |
| Chloride | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 140 | | FQ | # | 8 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 7.15 | | FQ | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 0.033 | U | FQ | # | 0.033 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 500 | | FQ | # | 0.15 | |
| Manganese | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 0.0098 | J | FQ | # | 0.0012 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 0.0013 | J | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 460 | | FQ | # | 5 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 44 | - | 64 | 179.8 | | FQ | # | | |
| pH | s.u. | 02/14/2017 | N001 | 44 | - | 64 | 6.56 | | FQ | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 8.5 | | FQ | # | 0.26 | |
| Selenium | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 0.056 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 16 | | FQ | # | 0.1 | |
| Silicon | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 7.4 | | FQ | # | 0.048 | |
| Sodium | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 400 | | FQ | # | 0.23 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 44 | - | 64 | 7480 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0906 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 11 | | FQ | # | 0.0013 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 2100 | | FQ | # | 20 | |
| Temperature | C | 02/14/2017 | N001 | 44 | - | 64 | 17.21 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 6400 | | FQ | # | 200 | |
| Turbidity | NTU | 02/14/2017 | N001 | 44 | - | 64 | 8.54 | | FQ | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 0.36 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 44 | - | 64 | 0.01 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0908 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 468 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 74 | | FQ | # | 2.5 | |
| Arsenic | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 0.00064 | J | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 640 | | FQ | # | 0.12 | |
| Chloride | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 66 | | FQ | # | 8 | |
| Dissolved Oxygen | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 1.77 | | FQ | # | | |
| Iron | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 0.033 | U | FQ | # | 0.033 | |
| Magnesium | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 400 | | FQ | # | 0.15 | |
| Manganese | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 0.17 | | FQ | # | 0.0012 | |
| Molybdenum | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 0.00032 | U | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 220 | | FQ | # | 5 | |
| Oxidation Reduction Potential | mV | 02/15/2017 | N001 | 52 | - | 67 | 241.6 | | FQ | # | | |
| pH | s.u. | 02/15/2017 | N001 | 52 | - | 67 | 6.54 | | FQ | # | | |
| Potassium | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 21 | | FQ | # | 0.26 | |
| Selenium | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 0.014 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 21 | | FQ | # | 0.1 | |
| Silicon | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 9.9 | | FQ | # | 0.048 | |
| Sodium | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 250 | | FQ | # | 0.23 | |
| Specific Conductance | umhos /cm | 02/15/2017 | N001 | 52 | - | 67 | 5750 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0908 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 4.1 | | FQ | # | 0.0013 | |
| Sulfate | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 2300 | | FQ | # | 20 | |
| Temperature | C | 02/15/2017 | N001 | 52 | - | 67 | 14.21 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 4900 | | FQ | # | 80 | |
| Turbidity | NTU | 02/15/2017 | N001 | 52 | - | 67 | 4.31 | | FQ | # | | |
| Uranium | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 0.071 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/15/2017 | N001 | 52 | - | 67 | 0.0061 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0929 WELL No Log Information.

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 85 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 0.0017 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 51 | | FQ | # | 0.024 | |
| Chloride | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 15 | | FQ | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 7.15 | | FQ | # | | |
| Iron | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 0.0067 | U | FQ | # | 0.0067 | |
| Magnesium | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 8.4 | | FQ | # | 0.03 | |
| Manganese | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 0.0004 | J | UFQ | # | 0.00024 | |
| Molybdenum | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 0.00033 | J | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 12 | | FQ | # | 0.5 | |
| Oxidation Reduction Potential | mV | 02/15/2017 | N001 | 48.2 | - | 88.2 | 182.7 | | FQ | # | | |
| pH | s.u. | 02/15/2017 | N001 | 48.2 | - | 88.2 | 7.49 | | FQ | # | | |
| Potassium | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 1.9 | | FQ | # | 0.052 | |
| Selenium | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 0.0026 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 13 | | FQ | # | 0.021 | |
| Silicon | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 6 | | FQ | # | 0.0097 | |
| Sodium | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 12 | | FQ | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/15/2017 | N001 | 48.2 | - | 88.2 | 393 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 0.4 | | FQ | # | 0.00026 | |
| Sulfate | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 22 | | FQ | # | 0.5 | |
| Temperature | C | 02/15/2017 | N001 | 48.2 | - | 88.2 | 15.67 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 230 | | FQ | # | 20 | |
| Turbidity | NTU | 02/15/2017 | N001 | 48.2 | - | 88.2 | 3.19 | | FQ | # | | |
| Uranium | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 0.0015 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/15/2017 | N001 | 48.2 | - | 88.2 | 0.0092 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0930 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 102 | | F | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 0.1 | U | F | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 0.0013 | | F | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 150 | | F | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 45 | | F | # | 0.8 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 8.19 | | F | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 0.031 | J | UF | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 32 | | F | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 0.0011 | J | UF | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 0.00032 | U | F | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 34 | | F | # | 1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 20 | - | 50 | 172.4 | | F | # | | |
| pH | s.u. | 02/14/2017 | N001 | 20 | - | 50 | 7.63 | | F | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 3.2 | | F | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 0.0036 | | F | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 15 | | F | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 6.9 | | F | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 21 | | F | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 20 | - | 50 | 1025 | | F | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0930 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 3.1 | | F | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 230 | | F | # | 2 | |
| Temperature | C | 02/14/2017 | N001 | 20 | - | 50 | 15.72 | | F | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 700 | | F | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 20 | - | 50 | 0.7 | | F | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 0.0084 | | F | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 20 | - | 50 | 0.006 | | F | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0932 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 99 | | F | # | | |
| Ammonia Total as N | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 0.1 | U | F | # | 0.1 | |
| Arsenic | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 0.0014 | | F | # | 0.00012 | |
| Calcium | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 54 | | F | # | 0.024 | |
| Chloride | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 13 | | F | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 6.17 | | F | # | | |
| Iron | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 0.022 | J | UF | # | 0.0067 | |
| Magnesium | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 10 | | F | # | 0.03 | |
| Manganese | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 0.0012 | J | F | # | 0.00024 | |
| Molybdenum | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 0.00032 | U | F | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 8.3 | | F | # | 0.5 | |
| Oxidation Reduction Potential | mV | 02/15/2017 | N001 | 112.5 | - | 132.5 | 181.9 | | F | # | | |
| pH | s.u. | 02/15/2017 | N001 | 112.5 | - | 132.5 | 7.75 | | F | # | | |
| Potassium | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 1.9 | | F | # | 0.052 | |
| Selenium | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 0.0014 | | F | # | 0.00066 | |
| Silica | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 13 | | F | # | 0.021 | |
| Silicon | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 5.9 | | F | # | 0.0097 | |
| Sodium | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 13 | | F | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/15/2017 | N001 | 112.5 | - | 132.5 | 373 | | F | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0932 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 0.82 | | F | # | 0.00026 | |
| Sulfate | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 42 | | F | # | 0.5 | |
| Temperature | C | 02/15/2017 | N001 | 112.5 | - | 132.5 | 14.88 | | F | # | | |
| Total Dissolved Solids | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 240 | | F | # | 20 | |
| Turbidity | NTU | 02/15/2017 | N001 | 112.5 | - | 132.5 | 0.35 | | F | # | | |
| Uranium | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 0.0024 | | F | # | 0.000012 | |
| Vanadium | mg/L | 02/15/2017 | N001 | 112.5 | - | 132.5 | 0.007 | | F | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0934 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/15/2017 | 0001 | 45 | - | 90 | 700 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 0.00049 | J | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 740 | | FQ | # | 0.12 | |
| Chloride | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 200 | | FQ | # | 10 | |
| Dissolved Oxygen | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 8.58 | | FQ | # | | |
| Iron | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 0.034 | J | UFQ | # | 0.033 | |
| Magnesium | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 770 | | FQ | # | 0.15 | |
| Manganese | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 0.0082 | J | FQ | # | 0.0012 | |
| Molybdenum | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 0.00032 | U | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 340 | | FQ | # | 5 | |
| Oxidation Reduction Potential | mV | 02/15/2017 | N001 | 45 | - | 90 | 212.7 | | FQ | # | | |
| pH | s.u. | 02/15/2017 | N001 | 45 | - | 90 | 6.63 | | FQ | # | | |
| Potassium | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 8.2 | | FQ | # | 0.26 | |
| Selenium | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 0.0086 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 20 | | FQ | # | 0.1 | |
| Silicon | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 9.5 | | FQ | # | 0.048 | |
| Sodium | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 150 | | FQ | # | 0.23 | |
| Specific Conductance | umhos /cm | 02/15/2017 | N001 | 45 | - | 90 | 7075 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0934 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 9.2 | | FQ | # | 0.0013 | |
| Sulfate | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 2600 | | FQ | # | 25 | |
| Temperature | C | 02/15/2017 | N001 | 45 | - | 90 | 16.14 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 6200 | | FQ | # | 200 | |
| Turbidity | NTU | 02/15/2017 | N001 | 45 | - | 90 | 15.1 | | FQ | # | | |
| Uranium | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 0.17 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/15/2017 | N001 | 45 | - | 90 | 0.0061 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0940 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 768 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 47 | | FQ | # | 2.5 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 0.002 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 550 | | FQ | # | 0.12 | |
| Chloride | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 130 | | FQ | # | 20 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 4.1 | | FQ | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 0.033 | U | FQ | # | 0.033 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 1300 | | FQ | # | 0.15 | |
| Manganese | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 23 | | FQ | # | 0.0012 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 0.00032 | U | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 320 | | FQ | # | 5 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 45 | - | 60 | 160.8 | | FQ | # | | |
| pH | s.u. | 02/14/2017 | N001 | 45 | - | 60 | 6.46 | | FQ | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 22 | | FQ | # | 0.26 | |
| Selenium | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 0.052 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 20 | | FQ | # | 0.1 | |
| Silicon | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 9.3 | | FQ | # | 0.048 | |
| Sodium | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 400 | | FQ | # | 0.23 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 45 | - | 60 | 9752 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0940 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 9.6 | | FQ | # | 0.0013 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 5000 | | FQ | # | 50 | |
| Temperature | C | 02/14/2017 | N001 | 45 | - | 60 | 16.75 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 8800 | | FQ | # | 200 | |
| Turbidity | NTU | 02/14/2017 | N001 | 45 | - | 60 | 5.32 | | FQ | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 0.68 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 45 | - | 60 | 0.0085 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0941 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 45 | - | 65 | 705 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 0.23 | | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 0.0017 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 1000 | | FQ | # | 0.12 | |
| Chloride | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 200 | | FQ | # | 8 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 45 | - | 65 | 2.88 | | FQ | # | | |
| Iron | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 0.033 | U | FQ | # | 0.033 | |
| Magnesium | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 180 | | FQ | # | 0.15 | |
| Manganese | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 0.16 | | FQ | # | 0.0012 | |
| Molybdenum | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 0.04 | | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 260 | | FQ | # | 5 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 45 | - | 65 | 170 | | FQ | # | | |
| pH | s.u. | 02/14/2017 | N001 | 45 | - | 65 | 6.46 | | FQ | # | | |
| Potassium | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 6.8 | | FQ | # | 0.26 | |
| Selenium | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 0.083 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 22 | | FQ | # | 0.1 | |
| Silicon | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 10 | | FQ | # | 0.048 | |
| Sodium | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 310 | | FQ | # | 0.23 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 45 | - | 65 | 5799 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 0941 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 9.3 | | FQ | # | 0.0013 | |
| Sulfate | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 1700 | | FQ | # | 20 | |
| Temperature | C | 02/14/2017 | N001 | 45 | - | 65 | 16.67 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 5100 | | FQ | # | 80 | |
| Turbidity | NTU | 02/14/2017 | N001 | 45 | - | 65 | 45.3 | | FQ | # | | |
| Uranium | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 0.27 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | 0001 | 45 | - | 65 | 0.011 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 1003 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 191 | | F | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 0.1 | U | F | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 0.0012 | | F | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 330 | | F | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 54 | | F | # | 2 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 7.43 | | F | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 0.0067 | U | F | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 51 | | F | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 0.00053 | J | F | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 0.00032 | U | F | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 61 | | F | # | 1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 55.5 | - | 105.5 | 197.6 | | F | # | | |
| pH | s.u. | 02/14/2017 | N001 | 55.5 | - | 105.5 | 7.26 | | F | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 3.8 | | F | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 0.004 | | F | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 17 | | F | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 8 | | F | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 37 | | F | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 55.5 | - | 105.5 | 1803 | | F | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 1003 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 3 | | F | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 500 | | F | # | 5 | |
| Temperature | C | 02/14/2017 | N001 | 55.5 | - | 105.5 | 16.16 | | F | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 1400 | | F | # | 40 | |
| Turbidity | NTU | 02/14/2017 | N001 | 55.5 | - | 105.5 | 0.38 | | F | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 0.044 | | F | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 55.5 | - | 105.5 | 0.0098 | | F | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 1004 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 102 | | F | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 0.1 | U | F | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 0.0024 | | F | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 65 | | F | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 16 | | F | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 6.39 | | F | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 0.027 | J | UF | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 12 | | F | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 0.00062 | J | F | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 0.00032 | U | F | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 8.7 | | F | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 45.5 | - | 95.5 | 177.8 | | F | # | | |
| pH | s.u. | 02/14/2017 | N001 | 45.5 | - | 95.5 | 7.56 | | F | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 1.7 | | F | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 0.0016 | | F | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 14 | | F | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 6.4 | | F | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 16 | | F | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 45.5 | - | 95.5 | 467 | | F | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 1004 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 0.83 | | F | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 62 | | F | # | 0.5 | |
| Temperature | C | 02/14/2017 | N001 | 45.5 | - | 95.5 | 15.67 | | F | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 300 | | F | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 45.5 | - | 95.5 | 0.66 | | F | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 0.0055 | | F | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 45.5 | - | 95.5 | 0.011 | | F | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 1006 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 75 | | F | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 0.1 | U | F | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 0.0014 | | F | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 28 | | F | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 8.3 | | F | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 6.35 | | F | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 0.0067 | U | F | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 7.1 | | F | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 0.00059 | J | F | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 0.00032 | U | F | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 2.9 | | F | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 45.74 | - | 95.74 | 154.1 | | F | # | | |
| pH | s.u. | 02/14/2017 | N001 | 45.74 | - | 95.74 | 8.1 | | F | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 2.6 | | F | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 0.0014 | | F | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 13 | | F | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 5.9 | | F | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 9.2 | | F | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 45.74 | - | 95.74 | 238 | | F | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 1006 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 1.3 | | F | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 10 | | F | # | 0.5 | |
| Temperature | C | 02/14/2017 | N001 | 45.74 | - | 95.74 | 14.63 | | F | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 140 | | F | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 45.74 | - | 95.74 | 0.51 | | F | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 0.0015 | | F | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 45.74 | - | 95.74 | 0.0052 | | F | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 1007 WELL

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 45.79 - 95.99 | 66 | | F | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 45.79 - 95.99 | 0.1 | U | F | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 45.79 - 95.99 | 0.0018 | | F | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 45.79 - 95.99 | 30 | | F | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 45.79 - 95.99 | 8.4 | | F | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 45.79 - 95.99 | 7.07 | | F | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 45.79 - 95.99 | 0.023 | J | UF | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 45.79 - 95.99 | 7.3 | | F | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 45.79 - 95.99 | 0.001 | J | F | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 45.79 - 95.99 | 0.00032 | U | F | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 45.79 - 95.99 | 3.1 | | F | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 45.79 - 95.99 | 155.6 | | F | # | | |
| pH | s.u. | 02/14/2017 | N001 | 45.79 - 95.99 | 8.05 | | F | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 45.79 - 95.99 | 2.2 | | F | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 45.79 - 95.99 | 0.0011 | | F | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 45.79 - 95.99 | 14 | | F | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 45.79 - 95.99 | 6.4 | | F | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 45.79 - 95.99 | 7.7 | | F | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 45.79 - 95.99 | 245 | | F | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: 1007 WELL

| Parameter | Units | Sample Date | Sample ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 45.79 | - | 95.99 | 0.79 | | F | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 45.79 | - | 95.99 | 11 | | F | # | 0.5 | |
| Temperature | C | 02/14/2017 | N001 | 45.79 | - | 95.99 | 15.45 | | F | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 45.79 | - | 95.99 | 160 | | F | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 45.79 | - | 95.99 | 0.31 | | F | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 45.79 | - | 95.99 | 0.0015 | | F | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 45.79 | - | 95.99 | 0.0084 | | F | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: NMW-1A WELL NAVAJO MONITORING WELL NMW-1A; Owned by NNEPA

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 85 | | F | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 0.1 | U | F | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 0.0023 | | F | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 35 | | F | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 9.6 | | F | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 8.15 | | F | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 0.0074 | J | UF | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 6.3 | | F | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 0.00044 | J | UF | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 0.00044 | J | F | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 3.2 | | F | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 167.5 | - | 187.5 | 135.5 | | F | # | | |
| pH | s.u. | 02/14/2017 | N001 | 167.5 | - | 187.5 | 7.99 | | F | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 1.5 | | F | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 0.0016 | | F | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 12 | | F | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 5.6 | | F | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 11 | | F | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 167.5 | - | 187.5 | 269 | | F | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 0.33 | | F | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 12 | | F | # | 0.5 | |
| Temperature | C | 02/14/2017 | N001 | 167.5 | - | 187.5 | 15.62 | | F | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 170 | | F | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 167.5 | - | 187.5 | 1.06 | | F | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 0.0012 | | F | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 167.5 | - | 187.5 | 0.012 | | F | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: NMW-2A WELL NAVAJO MONITORING WELL NMW-2A; Owned by NNEPA

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 103 | | F | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 0.1 | U | F | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 0.0021 | | F | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 34 | | F | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 9.2 | | F | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 7.67 | | F | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 0.026 | J | UF | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 5.9 | | F | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 0.0014 | J | UF | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 0.0005 | J | F | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 3.1 | | F | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 140.46 | - | 160.46 | 129.3 | | F | # | | |
| pH | s.u. | 02/14/2017 | N001 | 140.46 | - | 160.46 | 7.92 | | F | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 1.4 | | F | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 0.0017 | | F | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 12 | | F | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 5.7 | | F | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 11 | | F | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 140.46 | - | 160.46 | 266 | | F | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 0.33 | | F | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 11 | | F | # | 0.5 | |
| Temperature | C | 02/14/2017 | N001 | 140.46 | - | 160.46 | 16.14 | | F | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 170 | | F | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 140.46 | - | 160.46 | 0.71 | | F | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 0.0012 | | F | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 140.46 | - | 160.46 | 0.01 | | F | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: NMW-3A WELL NAVAJO MONITORING WELL NMW-3A; Owned by NNEPA

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 190.62 - 210.62 | 77 | | F | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 190.62 - 210.62 | 0.1 | U | F | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 190.62 - 210.62 | 0.0021 | | F | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 190.62 - 210.62 | 35 | | F | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 190.62 - 210.62 | 8.7 | | F | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 190.62 - 210.62 | 7.75 | | F | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 190.62 - 210.62 | 0.016 | J | UF | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 190.62 - 210.62 | 6.4 | | F | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 190.62 - 210.62 | 0.00081 | J | UF | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 190.62 - 210.62 | 0.00032 | U | F | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 190.62 - 210.62 | 3 | | F | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 190.62 - 210.62 | 127.2 | | F | # | | |
| pH | s.u. | 02/14/2017 | N001 | 190.62 - 210.62 | 7.99 | | F | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 190.62 - 210.62 | 1.3 | | F | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 190.62 - 210.62 | 0.0013 | | F | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 190.62 - 210.62 | 12 | | F | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 190.62 - 210.62 | 5.8 | | F | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 190.62 - 210.62 | 9.7 | | F | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 190.62 - 210.62 | 266 | | F | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 190.62 | - | 210.62 | 0.39 | | F | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 190.62 | - | 210.62 | 11 | | F | # | 0.5 | |
| Temperature | C | 02/14/2017 | N001 | 190.62 | - | 210.62 | 15.4 | | F | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 190.62 | - | 210.62 | 170 | | F | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 190.62 | - | 210.62 | 0.94 | | F | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 190.62 | - | 210.62 | 0.0012 | | F | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 190.62 | - | 210.62 | 0.01 | | F | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: NMW-4A WELL NAVAJO MONITORING WELL NMW-4A; Owned by NNEPA

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 67 | | F | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 0.1 | U | F | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 0.0022 | | F | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 35 | | F | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 9.5 | | F | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 8.16 | | F | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 0.02 | J | UF | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 5.8 | | F | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 0.00047 | J | UF | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 0.00032 | U | F | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 3.4 | | F | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 170.46 | - | 190.46 | 127.8 | | F | # | | |
| pH | s.u. | 02/14/2017 | N001 | 170.46 | - | 190.46 | 7.98 | | F | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 1.7 | | F | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 0.0012 | | F | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 12 | | F | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 5.4 | | F | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 9.9 | | F | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 170.46 | - | 190.46 | 265 | | F | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 0.31 | | F | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 12 | | F | # | 0.5 | |
| Temperature | C | 02/14/2017 | N001 | 170.46 | - | 190.46 | 14.3 | | F | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 170 | | F | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 170.46 | - | 190.46 | 0.5 | | F | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 0.0012 | | F | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 170.46 | - | 190.46 | 0.011 | | F | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: NMW-6S WELL NAVAJO MONITORING WELL NMW-6S; Owned by NNEPA

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 84 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 0.0016 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 38 | | FQ | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 11 | | FQ | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 6.92 | | FQ | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 0.019 | J | UFQ | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 6.6 | | FQ | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 0.0031 | J | UFQ | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 0.00032 | U | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 3.3 | | FQ | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 167.62 | - | 187.62 | 159 | | FQ | # | | |
| pH | s.u. | 02/14/2017 | N001 | 167.62 | - | 187.62 | 7.7 | | FQ | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 1.6 | | FQ | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 0.0014 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 13 | | FQ | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 5.9 | | FQ | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 9.6 | | FQ | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 167.62 | - | 187.62 | 280 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 0.35 | | FQ | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 14 | | FQ | # | 0.5 | |
| Temperature | C | 02/14/2017 | N001 | 167.62 | - | 187.62 | 15.57 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 180 | | FQ | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 167.62 | - | 187.62 | 2.63 | | FQ | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 0.0011 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 167.62 | - | 187.62 | 0.0088 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: NMW-7D WELL NAVAJO MONITORING WELL NMW-7D; Owned by NNEPA

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | Result | Lab | Qualifiers Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 278.19 - 283.19 | 77 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 278.19 - 283.19 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 278.19 - 283.19 | 0.0027 | | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 278.19 - 283.19 | 29 | | FQ | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 278.19 - 283.19 | 6.6 | | FQ | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 278.19 - 283.19 | 5.51 | | FQ | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 278.19 - 283.19 | 0.0067 | U | FQ | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 278.19 - 283.19 | 5.5 | | FQ | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 278.19 - 283.19 | 0.0005 | J | UFQ | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 278.19 - 283.19 | 0.00032 | U | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 278.19 - 283.19 | 3 | | FQ | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 278.19 - 283.19 | 146.7 | | FQ | # | | |
| pH | s.u. | 02/14/2017 | N001 | 278.19 - 283.19 | 7.78 | | FQ | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 278.19 - 283.19 | 1.6 | | FQ | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 278.19 - 283.19 | 0.0015 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 278.19 - 283.19 | 13 | | FQ | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 278.19 - 283.19 | 6.1 | | FQ | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 278.19 - 283.19 | 5.6 | | FQ | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 278.19 - 283.19 | 212 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 278.19 | - | 283.19 | 0.5 | | FQ | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 278.19 | - | 283.19 | 7.8 | | FQ | # | 0.5 | |
| Temperature | C | 02/14/2017 | N001 | 278.19 | - | 283.19 | 15.48 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 278.19 | - | 283.19 | 150 | | FQ | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 278.19 | - | 283.19 | 9.23 | | FQ | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 278.19 | - | 283.19 | 0.00088 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 278.19 | - | 283.19 | 0.01 | | FQ | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: NMW-8S WELL NAVAJO MONITORING WELL NMW_8S; Owned by NNEPA

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 149.43 - 169.43 | 80 | | F | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 149.43 - 169.43 | 0.1 | U | F | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 149.43 - 169.43 | 0.0026 | | F | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 149.43 - 169.43 | 35 | | F | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 149.43 - 169.43 | 9.9 | | F | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 149.43 - 169.43 | 8.33 | | F | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 149.43 - 169.43 | 0.026 | J | UF | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 149.43 - 169.43 | 5.7 | | F | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 149.43 - 169.43 | 0.00076 | J | UF | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 149.43 - 169.43 | 0.00032 | U | F | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 149.43 - 169.43 | 3.3 | | F | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 149.43 - 169.43 | 146 | | F | # | | |
| pH | s.u. | 02/14/2017 | N001 | 149.43 - 169.43 | 7.99 | | F | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 149.43 - 169.43 | 1.7 | | F | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 149.43 - 169.43 | 0.0016 | | F | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 149.43 - 169.43 | 11 | | F | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 149.43 - 169.43 | 5.3 | | F | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 149.43 - 169.43 | 10 | | F | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 149.43 - 169.43 | 266 | | F | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: NMW-8S WELL NAVAJO MONITORING WELL NMW_8S; Owned by NNEPA

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | | | Result | Qualifiers Lab | Data | QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 149.43 | - | 169.43 | 0.28 | | F | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 149.43 | - | 169.43 | 12 | | F | # | 0.5 | |
| Temperature | C | 02/14/2017 | N001 | 149.43 | - | 169.43 | 15.99 | | F | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 149.43 | - | 169.43 | 170 | | F | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 149.43 | - | 169.43 | 0.41 | | F | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 149.43 | - | 169.43 | 0.0013 | | F | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 149.43 | - | 169.43 | 0.012 | | F | # | 0.00058 | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
Location: NMW-9D WELL NAVAJO MONITORING WELL NMW-9D; Owned by NNEPA

| Parameter | Units | Sample Date | ID | Depth Range (Ft BLS) | Result | Qualifiers Lab | Qualifiers Data | Qualifiers QA | Detection Limit | Uncertainty |
|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total (as $CaCO_3$) | mg/L | 02/14/2017 | N001 | 265.52 - 270.52 | 94 | | FQ | # | | |
| Ammonia Total as N | mg/L | 02/14/2017 | N001 | 265.52 - 270.52 | 0.1 | U | FQ | # | 0.1 | |
| Arsenic | mg/L | 02/14/2017 | N001 | 265.52 - 270.52 | 0.00074 | J | FQ | # | 0.00012 | |
| Calcium | mg/L | 02/14/2017 | N001 | 265.52 - 270.52 | 35 | | FQ | # | 0.024 | |
| Chloride | mg/L | 02/14/2017 | N001 | 265.52 - 270.52 | 10 | | FQ | # | 0.2 | |
| Dissolved Oxygen | mg/L | 02/14/2017 | N001 | 265.52 - 270.52 | 0.71 | | FQ | # | | |
| Iron | mg/L | 02/14/2017 | N001 | 265.52 - 270.52 | 0.0071 | J | UFQ | # | 0.0067 | |
| Magnesium | mg/L | 02/14/2017 | N001 | 265.52 - 270.52 | 7 | | FQ | # | 0.03 | |
| Manganese | mg/L | 02/14/2017 | N001 | 265.52 - 270.52 | 0.02 | | FQ | # | 0.00024 | |
| Molybdenum | mg/L | 02/14/2017 | N001 | 265.52 - 270.52 | 0.0018 | J | FQ | # | 0.00032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/14/2017 | N001 | 265.52 - 270.52 | 2.7 | | FQ | # | 0.1 | |
| Oxidation Reduction Potential | mV | 02/14/2017 | N001 | 265.52 - 270.52 | 164.1 | | FQ | # | | |
| pH | s.u. | 02/14/2017 | N001 | 265.52 - 270.52 | 7.29 | | FQ | # | | |
| Potassium | mg/L | 02/14/2017 | N001 | 265.52 - 270.52 | 1.8 | | FQ | # | 0.052 | |
| Selenium | mg/L | 02/14/2017 | N001 | 265.52 - 270.52 | 0.0015 | | FQ | # | 0.00066 | |
| Silica | mg/L | 02/14/2017 | N001 | 265.52 - 270.52 | 13 | | FQ | # | 0.021 | |
| Silicon | mg/L | 02/14/2017 | N001 | 265.52 - 270.52 | 6 | | FQ | # | 0.0097 | |
| Sodium | mg/L | 02/14/2017 | N001 | 265.52 - 270.52 | 13 | | FQ | # | 0.047 | |
| Specific Conductance | umhos /cm | 02/14/2017 | N001 | 265.52 - 270.52 | 290 | | FQ | # | | |

**Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | mg/L | 02/14/2017 | N001 | 265.52 | - | 270.52 | 0.58 | | FQ | # | 0.00026 | |
| Sulfate | mg/L | 02/14/2017 | N001 | 265.52 | - | 270.52 | 21 | | FQ | # | 0.5 | |
| Temperature | C | 02/14/2017 | N001 | 265.52 | - | 270.52 | 15.77 | | FQ | # | | |
| Total Dissolved Solids | mg/L | 02/14/2017 | N001 | 265.52 | - | 270.52 | 180 | | FQ | # | 20 | |
| Turbidity | NTU | 02/14/2017 | N001 | 265.52 | - | 270.52 | 0.55 | | FQ | # | | |
| Uranium | mg/L | 02/14/2017 | N001 | 265.52 | - | 270.52 | 0.0014 | | FQ | # | 0.000012 | |
| Vanadium | mg/L | 02/14/2017 | N001 | 265.52 | - | 270.52 | 0.0043 | | FQ | # | 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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# Surface Water Quality Data

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**Surface Water Quality Data by Location (USEE102) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
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 | 02/15/2017 | 0001 | 161 | | | # | | |
| Arsenic | mg/L | 02/15/2017 | 0001 | 0.025 | | | # | 0.0012 | |
| Calcium | mg/L | 02/15/2017 | 0001 | 1100 | | | # | 0.24 | |
| Chloride | mg/L | 02/15/2017 | 0001 | 76000 | | | # | 1000 | |
| Dissolved Oxygen | mg/L | 02/15/2017 | N001 | 3.64 | | | # | | |
| Iron | mg/L | 02/15/2017 | 0001 | 0.067 | U | | # | 0.067 | |
| Magnesium | mg/L | 02/15/2017 | 0001 | 5900 | | | # | 3 | |
| Manganese | mg/L | 02/15/2017 | 0001 | 3.5 | | | # | 0.0024 | |
| Molybdenum | mg/L | 02/15/2017 | 0001 | 0.17 | | | # | 0.0032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/15/2017 | 0001 | 3800 | | | # | 50 | |
| Oxidation Reduction Potential | mV | 02/15/2017 | N001 | 167.5 | | | # | | |
| pH | s.u. | 02/15/2017 | N001 | 7.54 | | | # | | |
| Potassium | mg/L | 02/15/2017 | 0001 | 330 | | | # | 0.52 | |
| Selenium | mg/L | 02/15/2017 | 0001 | 0.47 | | | # | 0.0066 | |
| Sodium | mg/L | 02/15/2017 | 0001 | 42000 | | | # | 4.7 | |
| Specific Conductance | umhos/cm | 02/15/2017 | N001 | 159787 | | | # | | |
| Sulfate | mg/L | 02/15/2017 | 0001 | 13000 | | | # | 100 | |
| Temperature | C | 02/15/2017 | N001 | 12.01 | | | # | | |
| Total Dissolved Solids | mg/L | 02/15/2017 | 0001 | 160000 | | | # | 40 | |
| Uranium | mg/L | 02/15/2017 | 0001 | 0.97 | | | # | 0.00012 | |

**Surface Water Quality Data by Location (USEE102) FOR SITE TUB01, Tuba City Disposal Site**
REPORT DATE: 3/17/2017
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 | 02/15/2017 | 0001 | 170 | | | # | | |
| Arsenic | mg/L | 02/15/2017 | 0001 | 0.024 | | | # | 0.0012 | |
| Calcium | mg/L | 02/15/2017 | 0001 | 1100 | | | # | 0.24 | |
| Chloride | mg/L | 02/15/2017 | 0001 | 77000 | | | # | 1000 | |
| Dissolved Oxygen | mg/L | 02/15/2017 | N001 | 3.75 | | | # | | |
| Iron | mg/L | 02/15/2017 | 0001 | 0.067 | U | | # | 0.067 | |
| Magnesium | mg/L | 02/15/2017 | 0001 | 6000 | | | # | 3 | |
| Manganese | mg/L | 02/15/2017 | 0001 | 3.4 | | | # | 0.0024 | |
| Molybdenum | mg/L | 02/15/2017 | 0001 | 0.17 | | | # | 0.0032 | |
| Nitrate + Nitrite as Nitrogen | mg/L | 02/15/2017 | 0001 | 4000 | | | # | 50 | |
| Oxidation Reduction Potential | mV | 02/15/2017 | N001 | 168.7 | | | # | | |
| pH | s.u. | 02/15/2017 | N001 | 7.5 | | | # | | |
| Potassium | mg/L | 02/15/2017 | 0001 | 340 | | | # | 0.52 | |
| Selenium | mg/L | 02/15/2017 | 0001 | 0.45 | | | # | 0.0066 | |
| Sodium | mg/L | 02/15/2017 | 0001 | 41000 | | | # | 4.7 | |
| Specific Conductance | umhos/cm | 02/15/2017 | N001 | 164014 | | | # | | |
| Sulfate | mg/L | 02/15/2017 | 0001 | 13000 | | | # | 100 | |
| Temperature | C | 02/15/2017 | N001 | 11.02 | | | # | | |
| Total Dissolved Solids | mg/L | 02/15/2017 | 0001 | 160000 | | | # | 40 | |
| Uranium | mg/L | 02/15/2017 | 0001 | 0.96 | | | # | 0.00012 | |

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: 3/17/2017**

| 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 |
|---|---|---|---|---|---|---|---|
| 000I | | 5064.56 | 02/16/2017 | 07:45:00 | 39.81 | 5024.75 | |
| 000J | | 5063.46 | 02/16/2017 | 07:42:00 | 38.96 | 5024.50 | |
| 000M | | 5063.7 | 02/16/2017 | 07:47:00 | 39.15 | 5024.55 | |
| 0251 | | 5061.25 | 02/15/2017 | 09:20:32 | 61.26 | 4999.99 | |
| 0252 | | 5061.3 | 02/15/2017 | 10:10:52 | 68.01 | 4993.29 | |
| 0258 | | 5055.56 | 02/14/2017 | 15:45:43 | 92.08 | 4963.48 | |
| 0261 | | 5069.69 | 02/15/2017 | 14:09:00 | 126.81 | 4942.88 | |
| 0262 | | 5061.99 | 02/14/2017 | 16:35:47 | 44.27 | 5017.72 | |
| 0263 | | 5063.1 | 02/14/2017 | 16:10:08 | 49.41 | 5013.69 | |
| 0264 | | 5062.19 | 02/15/2017 | 08:15:06 | 76.44 | 4985.75 | |
| 0265 | | 5053.88 | 02/15/2017 | 09:25:32 | 81.83 | 4972.05 | |
| 0266 | | 5053.32 | 02/15/2017 | 09:40:40 | 89.84 | 4963.48 | |
| 0267 | | 5053.4 | 02/15/2017 | 09:00:12 | 61.06 | 4992.34 | |
| 0268 | | 5067.24 | 02/14/2017 | 09:40:14 | 84.63 | 4982.61 | |
| 0271 | | 5046.72 | 02/15/2017 | 08:35:00 | 55.03 | 4991.69 | |
| 0272 | | 5064.24 | 02/14/2017 | 12:05:41 | 52.8 | 5011.44 | |
| 0273 | | 5064.74 | 02/14/2017 | 10:50:46 | 51.7 | 5013.04 | |
| 0274 | | 5064.42 | 02/14/2017 | 10:10:30 | 53.23 | 5011.19 | |
| 0275 | | 5062.64 | 02/14/2017 | 09:10:09 | 62.4 | 5000.24 | |
| 0276 | | 5067.55 | 02/14/2017 | 08:35:19 | 57.87 | 5009.68 | |
| 0277 | | 4982.35 | 02/15/2017 | 13:52:00 | 32.76 | 4949.59 | |
| 0278 | | 4956.09 | 02/15/2017 | 13:30:00 | 21.37 | 4934.72 | |
| 0279 | | 4951.04 | 02/15/2017 | 13:37:00 | 25.35 | 4925.69 | |
| 0280 | | 4951.52 | 02/15/2017 | 13:40:00 | 27.47 | 4924.05 | |
| 0281 | | 5051 | 02/15/2017 | 10:00:28 | 70.46 | 4980.54 | |
| 0282 | | 5060.04 | 02/15/2017 | 10:20:07 | 82.83 | 4977.21 | |
| 0283 | | 5057.97 | 02/15/2017 | 10:53:00 | | | D |
| 0284 | | 5098.72 | 02/16/2017 | 07:52:00 | | | D |
| 0285 | | 5096.47 | 02/16/2017 | 07:30:00 | | | D |

**STATIC WATER LEVELS (USEE700) FOR SITE TUB01, Tuba City Disposal Site**
**REPORT DATE: 3/17/2017**

| 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 |
|---|---|---|---|---|---|---|---|
| 0285 | | 5096.47 | 02/16/2017 | 07:30:00 | | | D |
| 0286 | | 5063.99 | 02/14/2017 | 12:15:13 | 50.72 | 5013.27 | |
| 0287 | | 5065.65 | 02/14/2017 | 11:20:49 | 43.65 | 5022.00 | |
| 0288 | | 5072.54 | 02/14/2017 | 12:35:08 | 54.7 | 5017.84 | |
| 0289 | | 5070.82 | 02/14/2017 | 12:50:40 | 53.75 | 5017.07 | |
| 0290 | | 5068.91 | 02/14/2017 | 15:15:41 | 77.4 | 4991.51 | |
| 0683 | | 5070.64 | 02/15/2017 | 14:22:00 | 90.44 | 4980.20 | |
| 0684 | | 5070.05 | 02/15/2017 | 14:42:00 | 65.67 | 5004.38 | |
| 0685 | | 5072.44 | 02/16/2017 | 07:28:00 | 49.56 | 5022.88 | |
| 0686 | | 5107.97 | 02/15/2017 | 17:00:00 | 73.76 | 5034.21 | |
| 0687 | | 5109.82 | 02/15/2017 | 16:56:00 | 63.73 | 5046.09 | |
| 0688 | | 5106.98 | 02/16/2017 | 07:24:00 | 68.57 | 5038.41 | |
| 0689 | | 4981.63 | 02/15/2017 | 13:26:00 | 37.85 | 4943.78 | |
| 0690 | | 4950.87 | 02/15/2017 | 13:35:00 | 23.84 | 4927.03 | |
| 0691 | | 4979.41 | 02/14/2017 | 12:15:28 | 39.45 | 4939.96 | |
| 0692 | | 4953.31 | 02/15/2017 | 13:41:00 | 24.48 | 4928.83 | |
| 0695 | | 4976.83 | 02/15/2017 | 13:43:00 | 49.88 | 4926.95 | |
| 0901 | U | 5105.46 | 02/15/2017 | 15:18:00 | 47.41 | 5058.05 | |
| 0902 | N | 4737.42 | 02/15/2017 | 12:52:00 | 29.83 | 4707.59 | |
| 0903 | D | 4983.33 | 02/15/2017 | 13:54:00 | 30.01 | 4953.32 | |
| 0904 | N | 4904.11 | 02/15/2017 | 13:12:00 | 23.4 | 4880.71 | |
| 0906 | O | 5062.1 | 02/14/2017 | 13:05:23 | 45.19 | 5016.91 | |
| 0908 | D | 5058.14 | 02/15/2017 | 10:35:49 | 55.53 | 5002.61 | |
| 0909 | D | 5057.17 | 02/15/2017 | 08:55:00 | | | D |
| 0910 | U | 5106.7 | 02/15/2017 | 15:15:00 | 50.85 | 5055.85 | |
| 0911 | U | 5106.96 | 02/15/2017 | 15:17:00 | 46.96 | 5060.00 | |
| 0912 | D | 5059.97 | 02/15/2017 | 16:26:00 | 56.51 | 5003.46 | |
| 0913 | D | 5060.16 | 02/15/2017 | 16:28:00 | 65.28 | 4994.88 | |
| 0914 | D | 5070.1 | 02/15/2017 | 14:15:00 | 109.13 | 4960.97 | |

**STATIC WATER LEVELS (USEE700) FOR SITE TUB01, Tuba City Disposal Site**
**REPORT DATE: 3/17/2017**

| 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 |
|---|---|---|---|---|---|---|---|
| 0915 | D | 5070.84 | 02/15/2017 | 14:17:00 | 104.02 | 4966.82 | |
| 0916 | D | 5070 | 02/15/2017 | 14:18:00 | 116.92 | 4953.08 | |
| 0917 | D | 5048.02 | 02/15/2017 | 08:40:00 | 69.57 | 4978.45 | |
| 0918 | D | 5049.63 | 02/15/2017 | 08:42:00 | | | D |
| 0919 | D | 5048.56 | 02/15/2017 | 08:45:00 | 146.15 | 4902.41 | |
| 0920 | D | 4982.97 | 02/15/2017 | 13:50:00 | 29.83 | 4953.14 | |
| 0921 | D | 4979.08 | 02/15/2017 | 13:47:00 | 36.85 | 4942.23 | |
| 0929 | D | 5060.82 | 02/15/2017 | 08:10:14 | 59.89 | 5000.93 | |
| 0930 | D | 4954.96 | 02/14/2017 | 10:30:01 | 20.42 | 4934.54 | |
| 0932 | D | 5057.32 | 02/15/2017 | 08:50:43 | 96.54 | 4960.78 | |
| 0934 | D | 5059.73 | 02/15/2017 | 10:35:08 | 73.33 | 4986.40 | |
| 0940 | D | 5064.77 | 02/14/2017 | 11:55:34 | 49.96 | 5014.81 | |
| 0941 | D | 5065.97 | 02/14/2017 | 11:10:02 | 46.75 | 5019.22 | |
| 0943 | U | 5098.05 | 02/16/2017 | 07:32:00 | 58.9 | 5039.15 | |
| 0945 | U | 5140.49 | 02/15/2017 | 15:05:00 | 95.58 | 5044.91 | |
| 0946 | C | 5100.5 | 02/16/2017 | 07:54:00 | 60.82 | 5039.68 | |
| 0947 | U | 5097.01 | 02/15/2017 | 14:46:00 | 67.4 | 5029.61 | |
| 0948 | U | 5117.8 | 02/15/2017 | 14:55:00 | 103.27 | 5014.53 | |
| 0968 | U | 5107 | 02/14/2017 | 13:45:00 | 51.69 | 5055.31 | |
| 0970 | U | 5109.53 | 02/15/2017 | 15:28:00 | 50.41 | 5059.12 | |
| 0971 | U | 5104 | 02/15/2017 | 15:30:00 | 27.01 | 5076.99 | |
| 1003 | | 4976.58 | 02/14/2017 | 12:40:28 | 37.26 | 4939.32 | |
| 1004 | | 4961.55 | 02/14/2017 | 12:00:41 | 23.5 | 4938.05 | |
| 1005 | | 4947.83 | 02/14/2017 | 10:54:00 | 21.97 | 4925.86 | |
| 1006 | | 4947.08 | 02/14/2017 | 10:05:20 | 15.42 | 4931.66 | |
| 1007 | | 4958.56 | 02/14/2017 | 09:25:10 | 20.57 | 4937.99 | |
| 1008 | | 4980.52 | 02/14/2017 | 08:52:00 | 36.04 | 4944.48 | |
| NMW-1A | | 5150.95 | 02/14/2017 | 15:25:24 | 114.29 | 5036.66 | |
| NMW-2A | | 5121.69 | 02/14/2017 | 14:15:51 | 69.95 | 5051.74 | |

**STATIC WATER LEVELS (USEE700) FOR SITE TUB01, Tuba City Disposal Site**
**REPORT DATE: 3/17/2017**

| 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-3A | | 5168.51 | 02/14/2017 | 13:35:17 | 112.72 | 5055.79 | |
| NMW-4A | | 5137.44 | 02/14/2017 | 14:55:11 | 80.15 | 5057.29 | |
| NMW-6S | | 5145.93 | 02/14/2017 | 16:05:05 | 107.23 | 5038.70 | |
| NMW-7D | | 5147.13 | 02/14/2017 | 15:50:01 | 116.57 | 5030.56 | |
| NMW-8S | | 5114.87 | 02/14/2017 | 16:55:17 | 88.56 | 5026.31 | |
| NMW-9D | | 5115.92 | 02/14/2017 | 16:35:06 | 89.58 | 5026.34 | |

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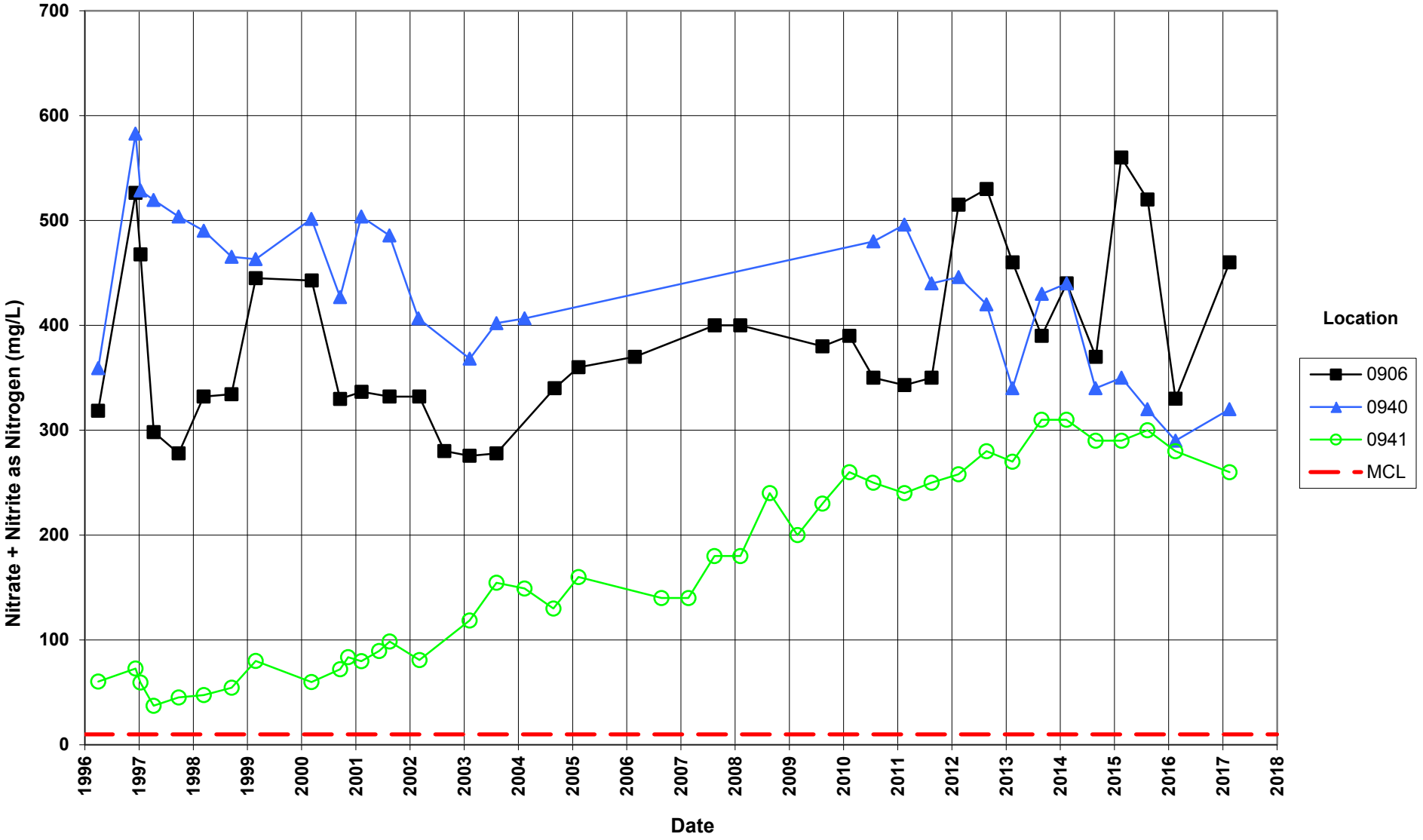
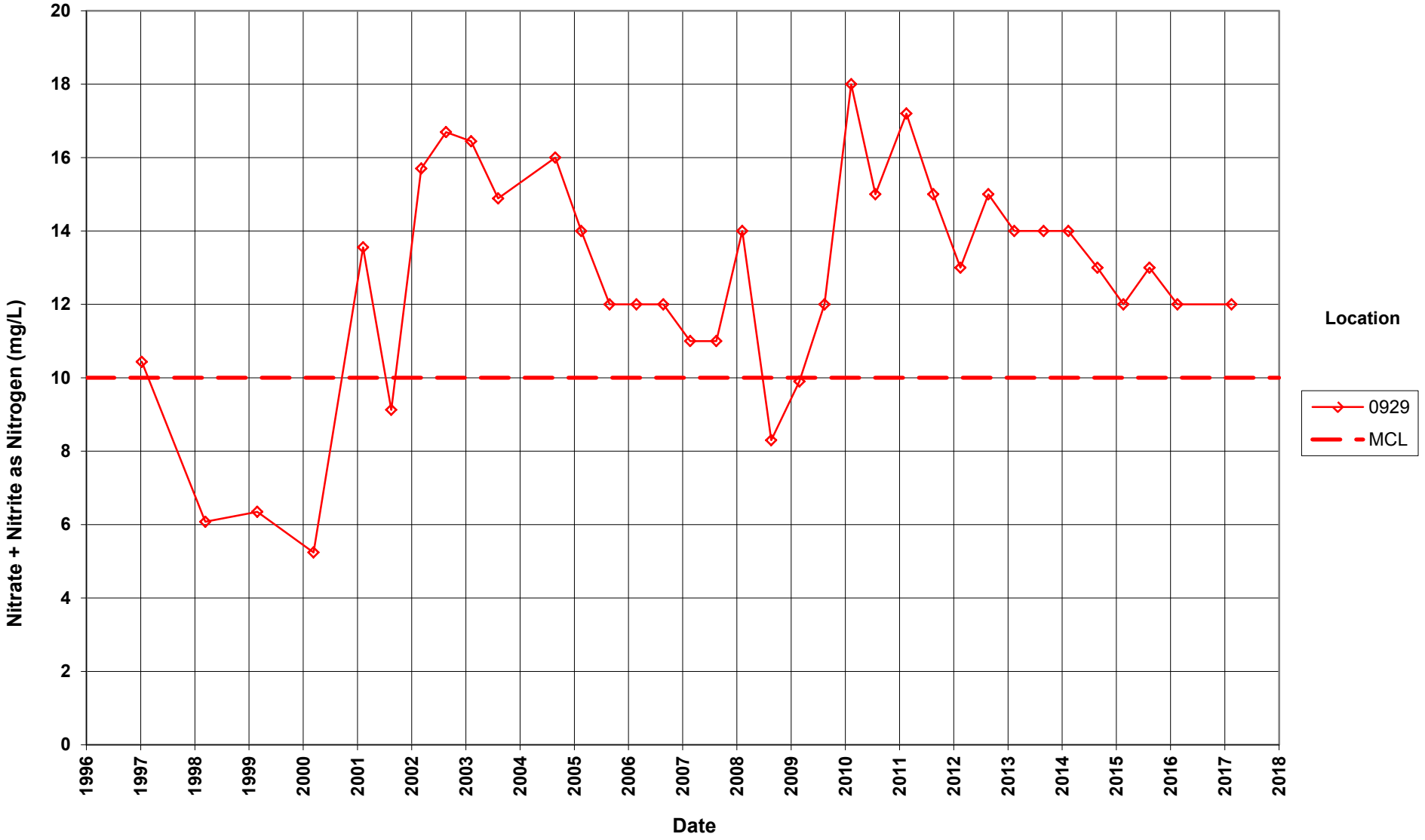
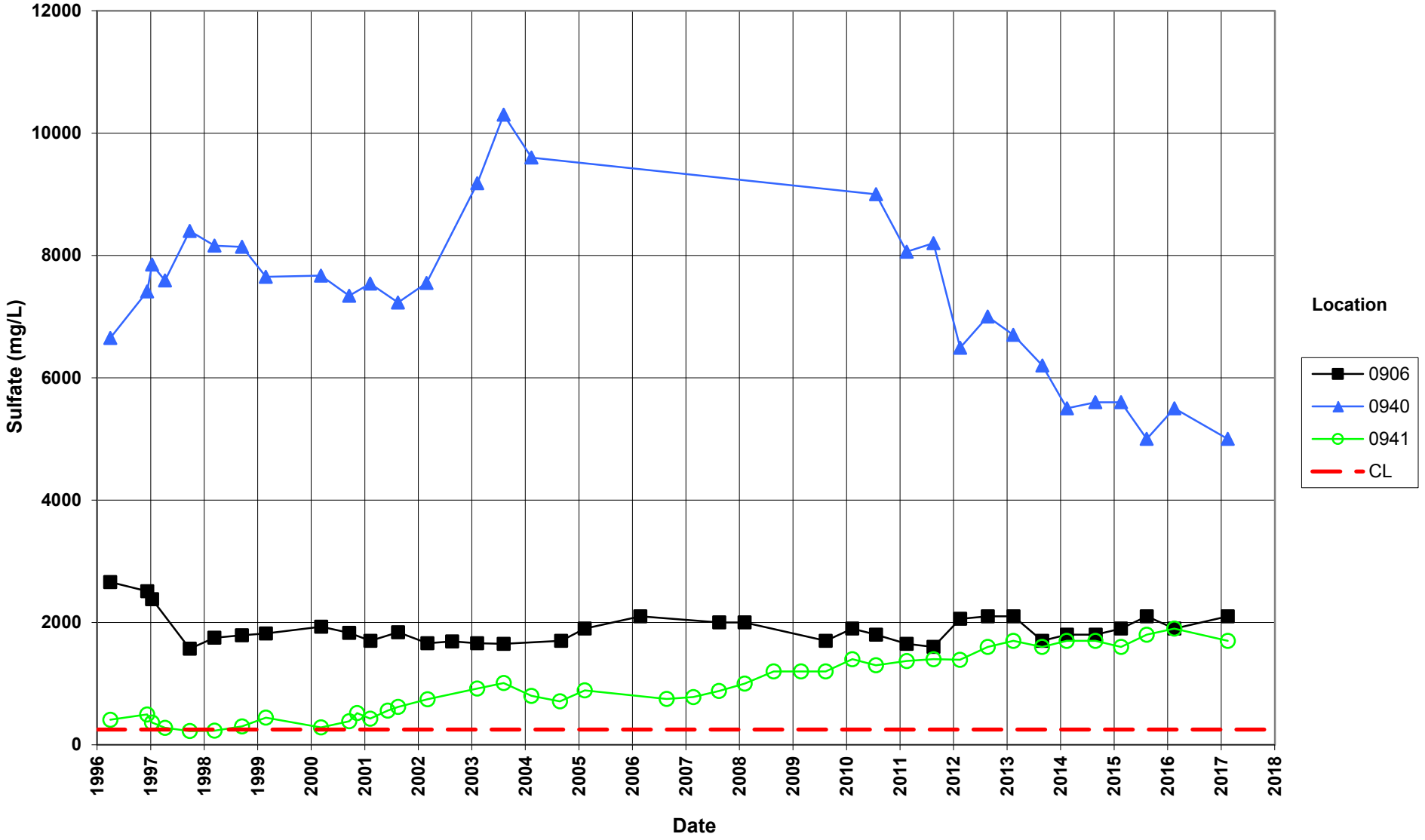
**Tuba City Disposal Site**
**Horizon A Monitoring Wells**
**Nitrate + Nitrite as Nitrogen Concentration**
Maximum Concentration Limit (MCL) = 10.0 mg/L



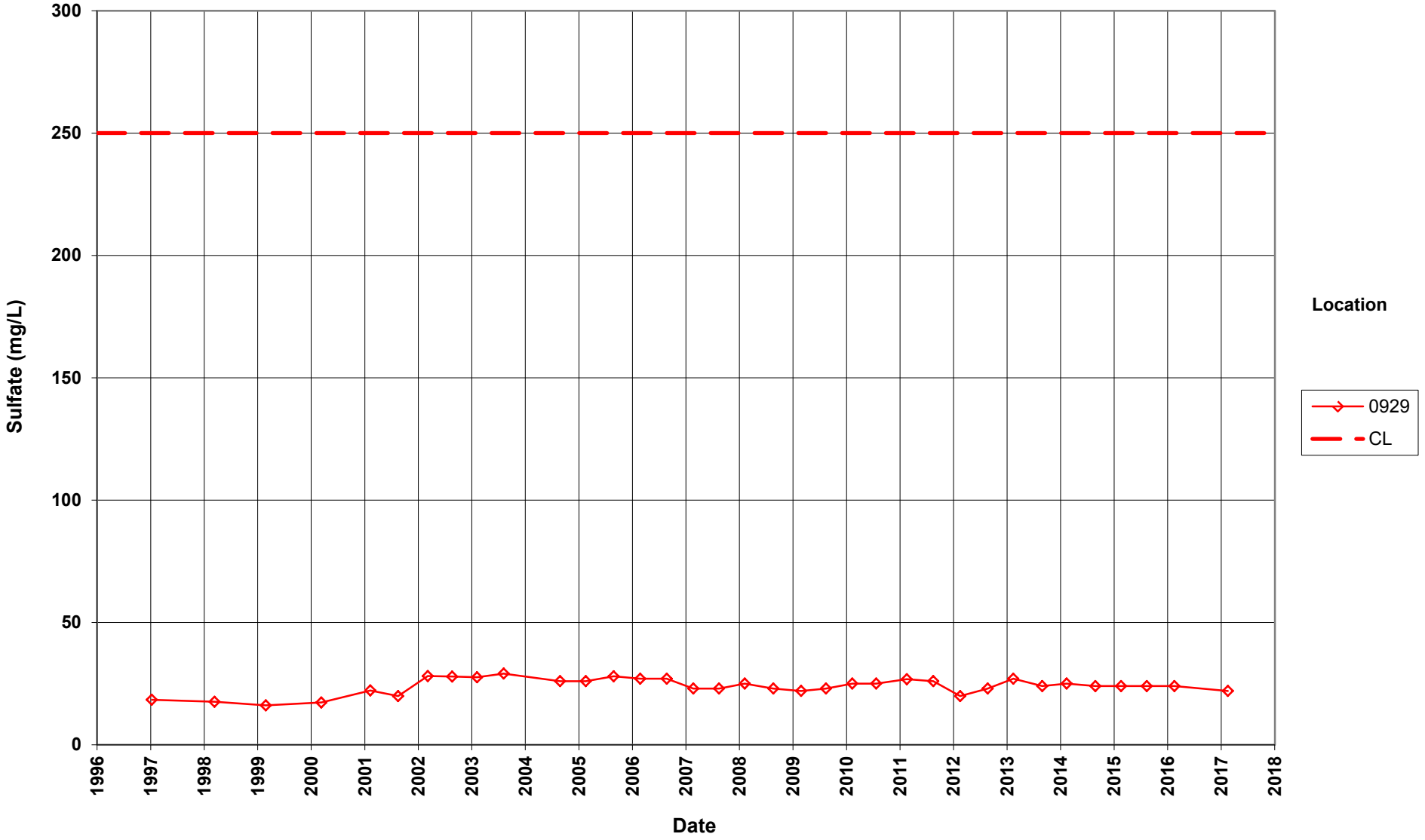
**Tuba City Disposal Site**
**Horizon A Monitoring Wells - Sentinel Well**
**Nitrate + Nitrite as Nitrogen Concentration**
Maximum Concentration Limit (MCL) = 10.0 mg/L



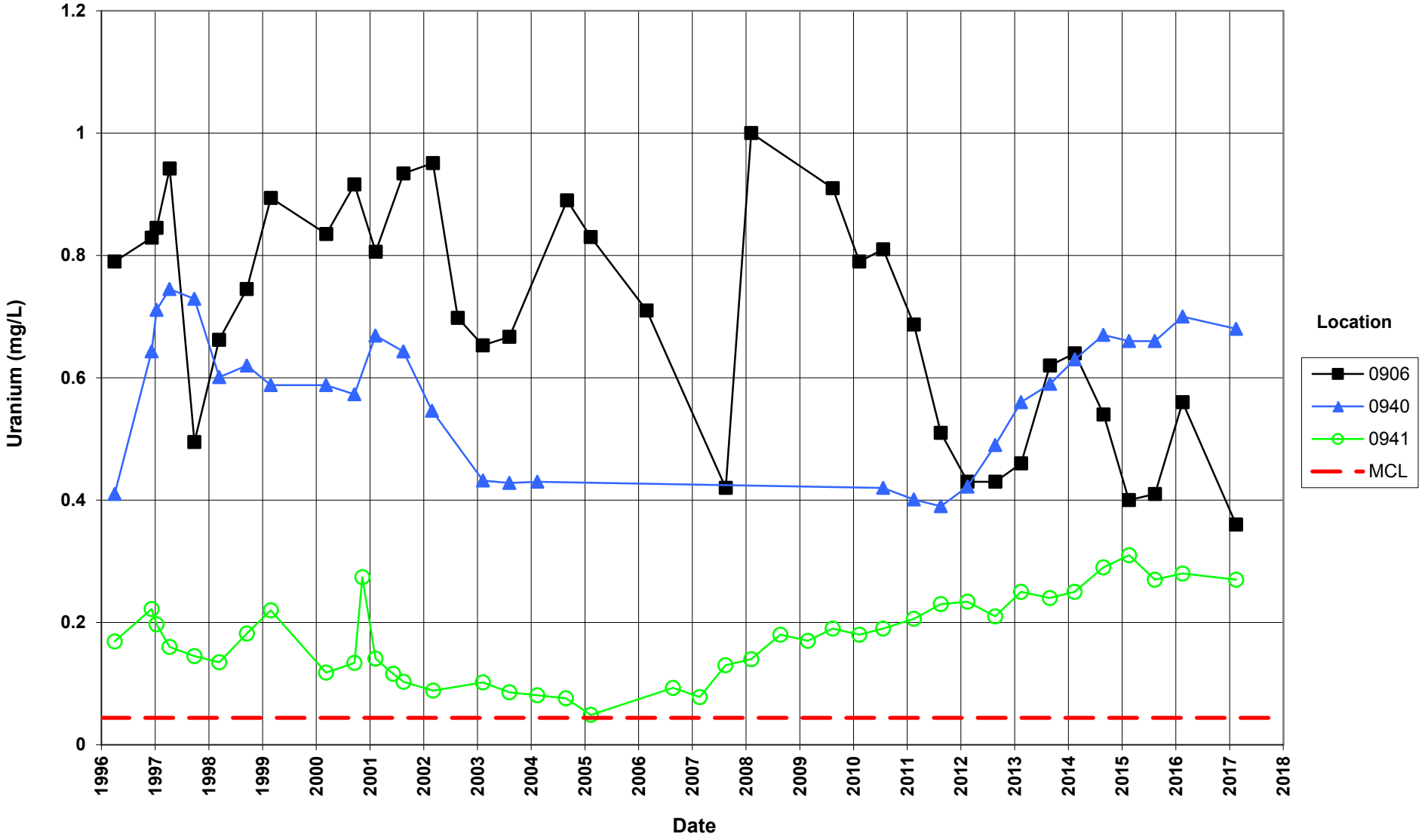
**Tuba City Disposal Site**
**Horizon A Monitoring Wells**
**Sulfate Concentration**
Cleanup Level (CL) = 250 mg/L



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

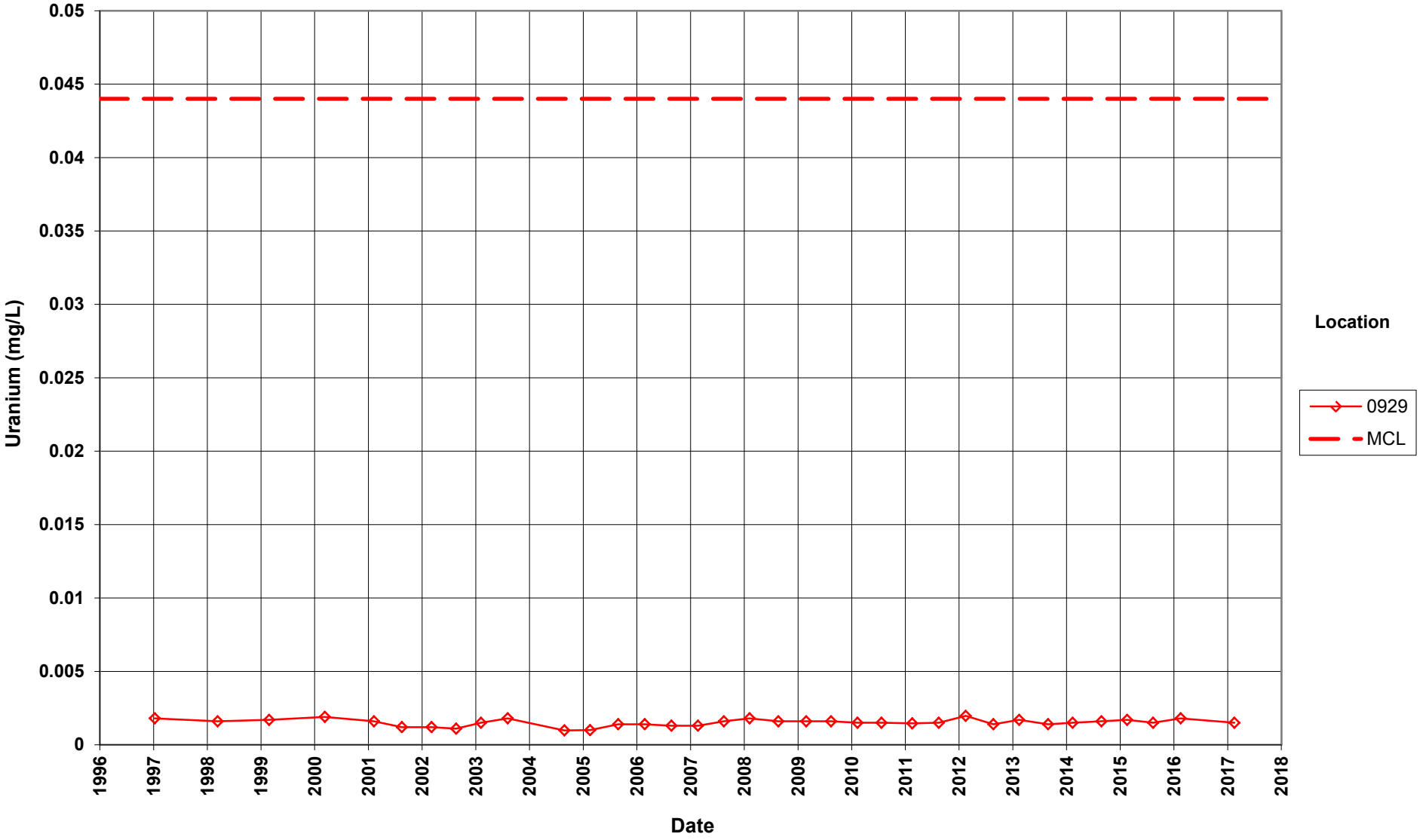


**Tuba City Disposal Site**
**Horizon A Monitoring Wells**
**Uranium Concentration**
Maximum Concentration Limit (MCL) = 0.044 mg/L



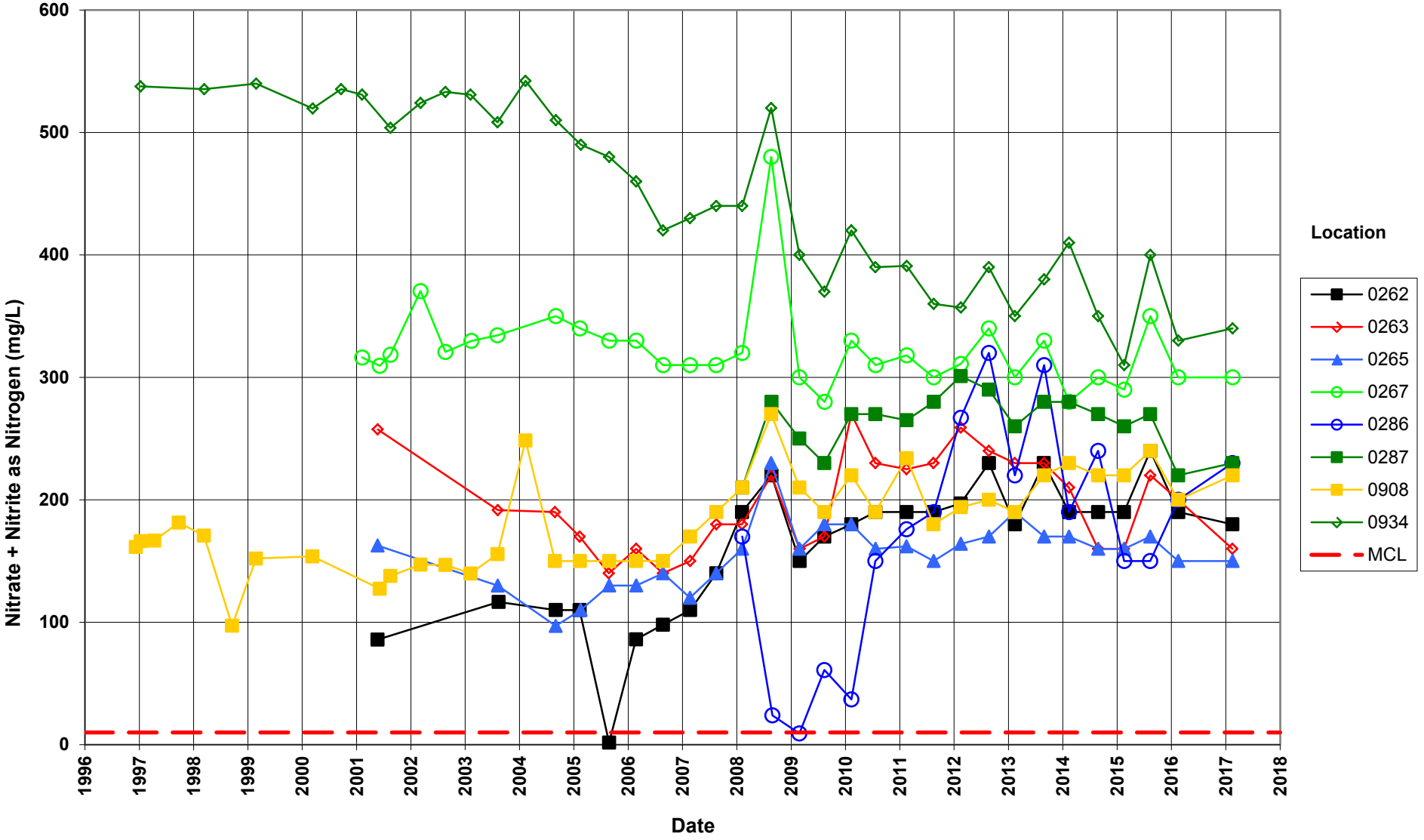
# Tuba City Disposal Site
## Horizon A Monitoring Wells - Sentinel Well
## Uranium Concentration

Maximum Concentration Limit (MCL) = 0.044 mg/L



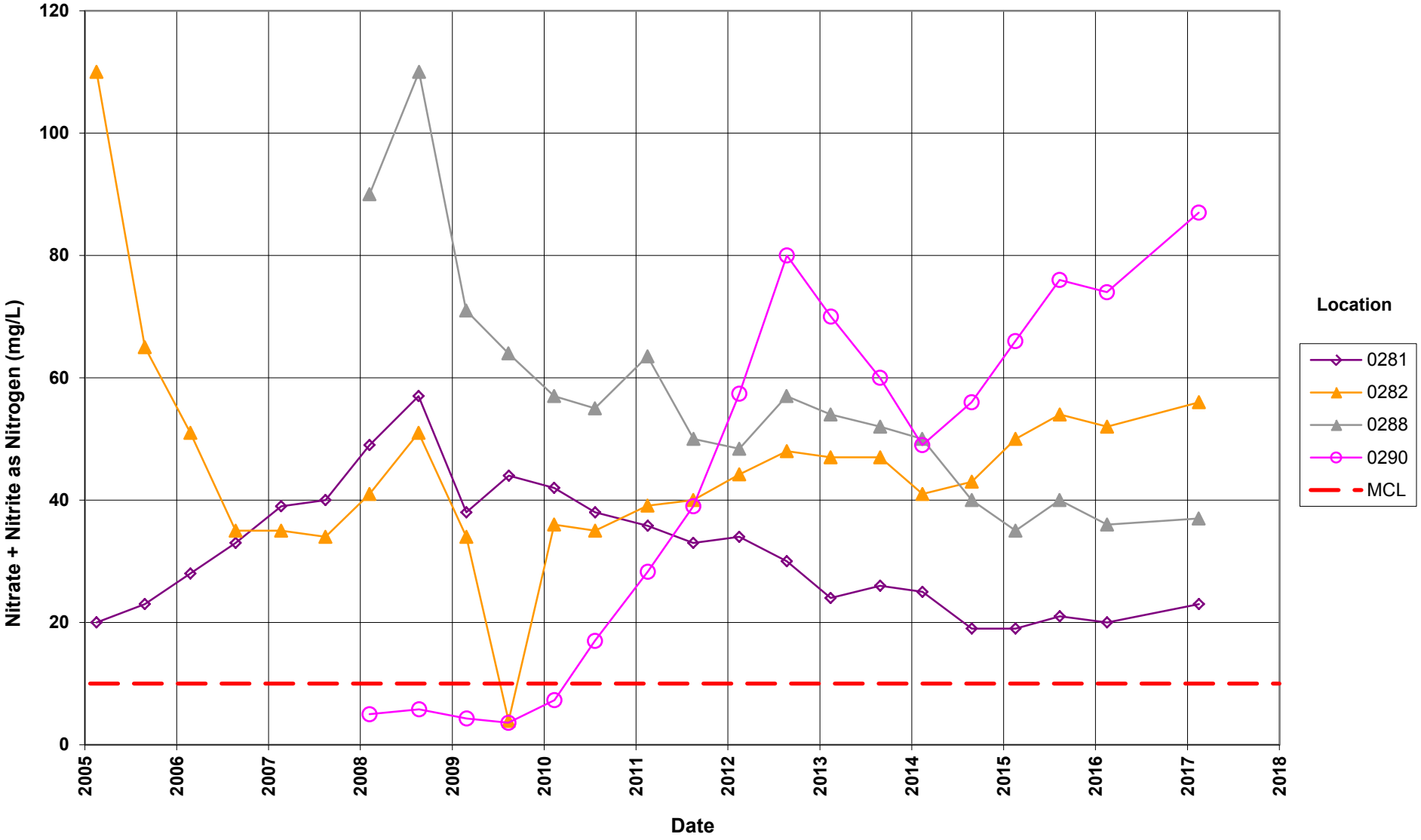
# Tuba City Disposal Site
## Horizon B Monitoring Wells
## Nitrate + Nitrite as Nitrogen Concentration

Maximum Concentration Limit (MCL) = 10.0 mg/L

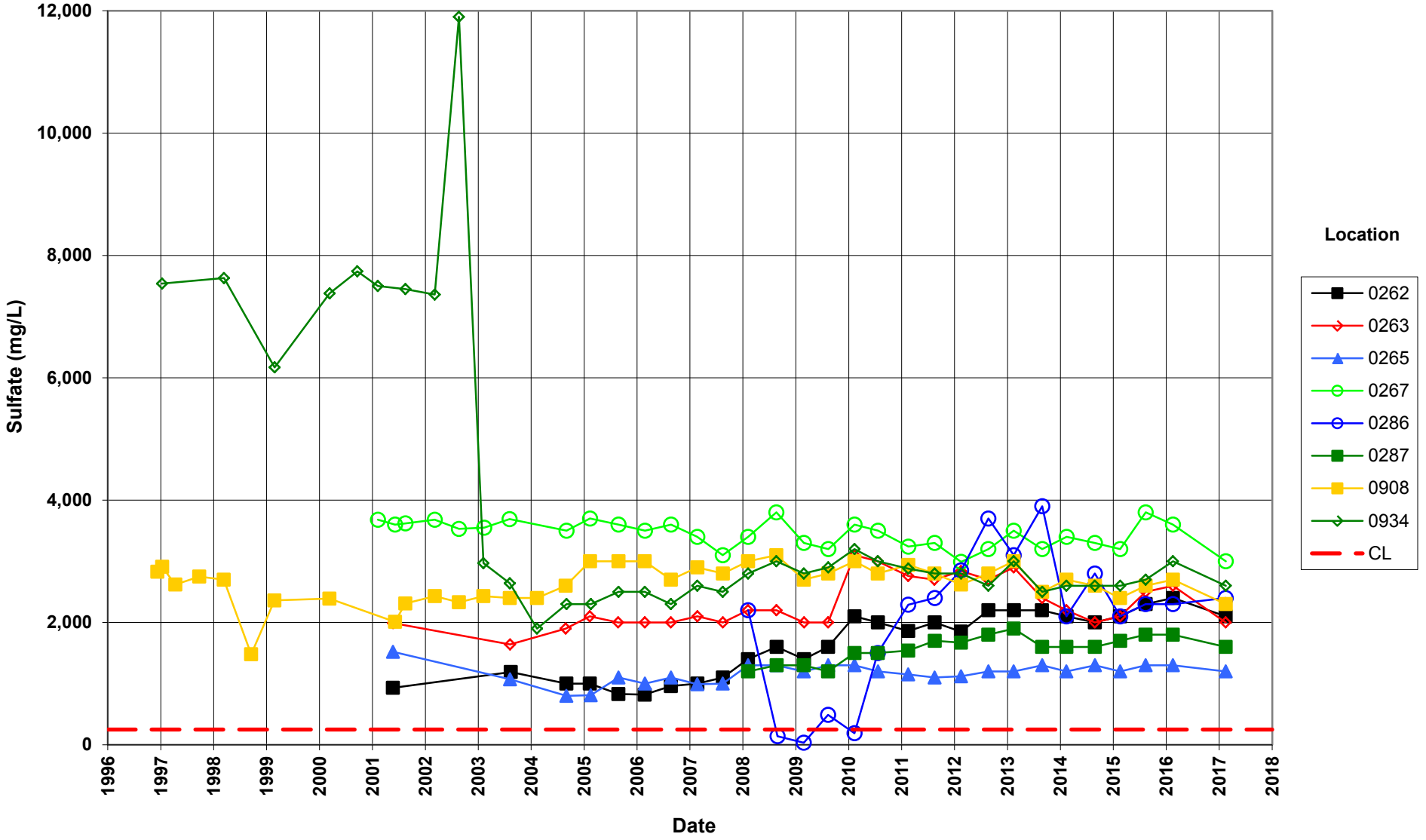


# Tuba City Disposal Site
## Horizon B Monitoring Wells
## Nitrate + Nitrite as Nitrogen Concentration

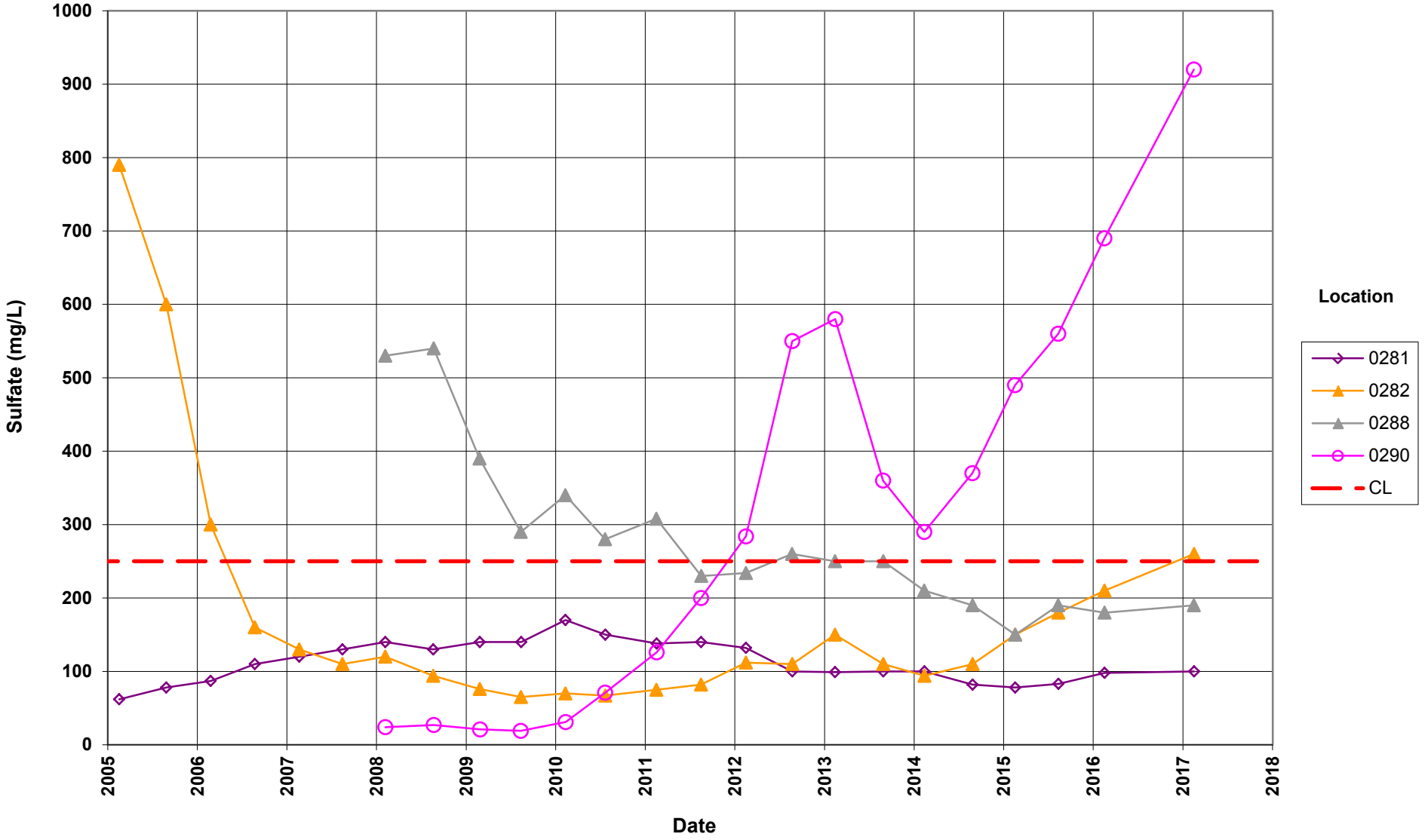
Maximum Concentration Limit (MCL) = 10.0 mg/L



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

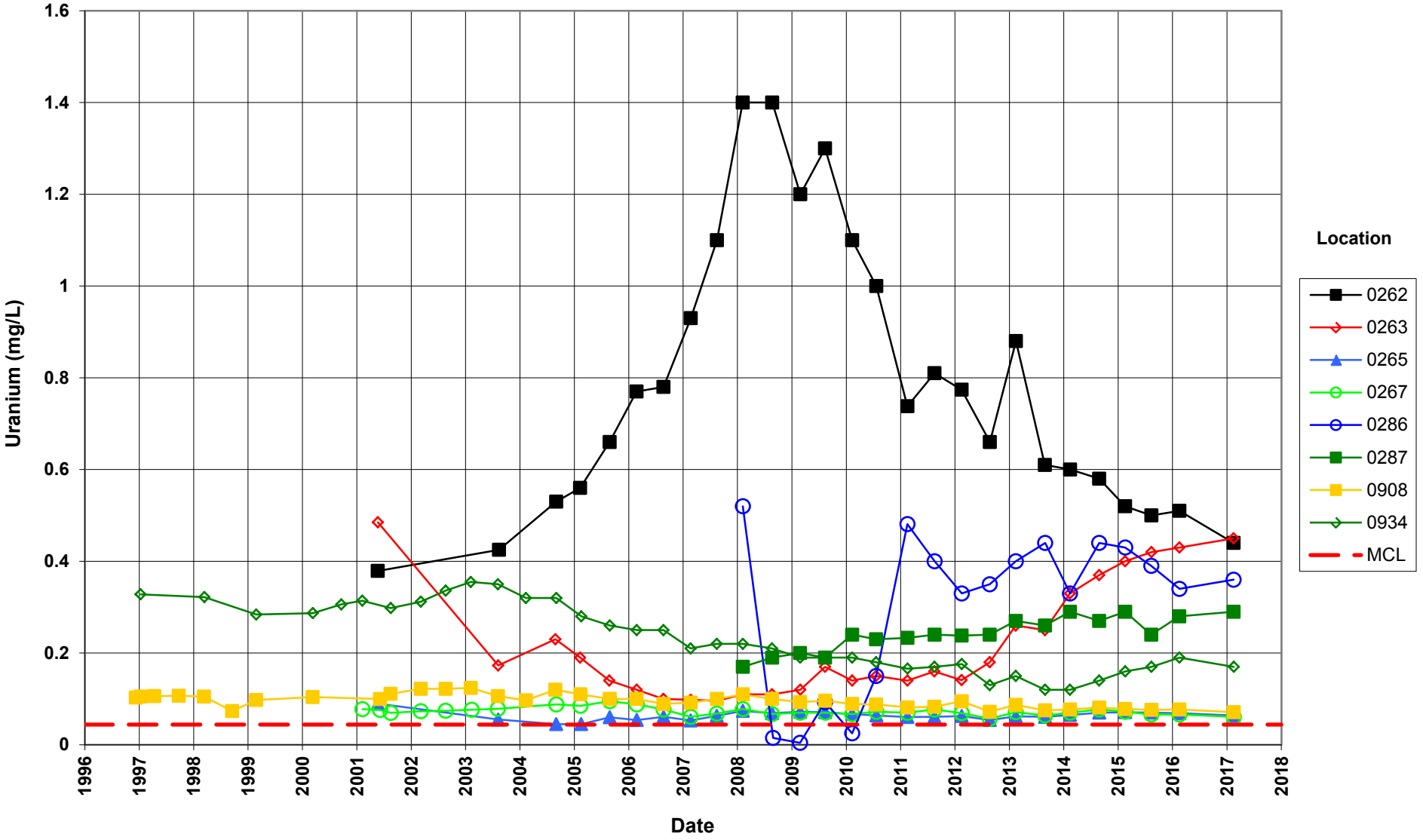


**Tuba City Disposal Site**
**Horizon B Monitoring Wells**
**Sulfate Concentration**
Cleanup Level (CL) = 250 mg/L



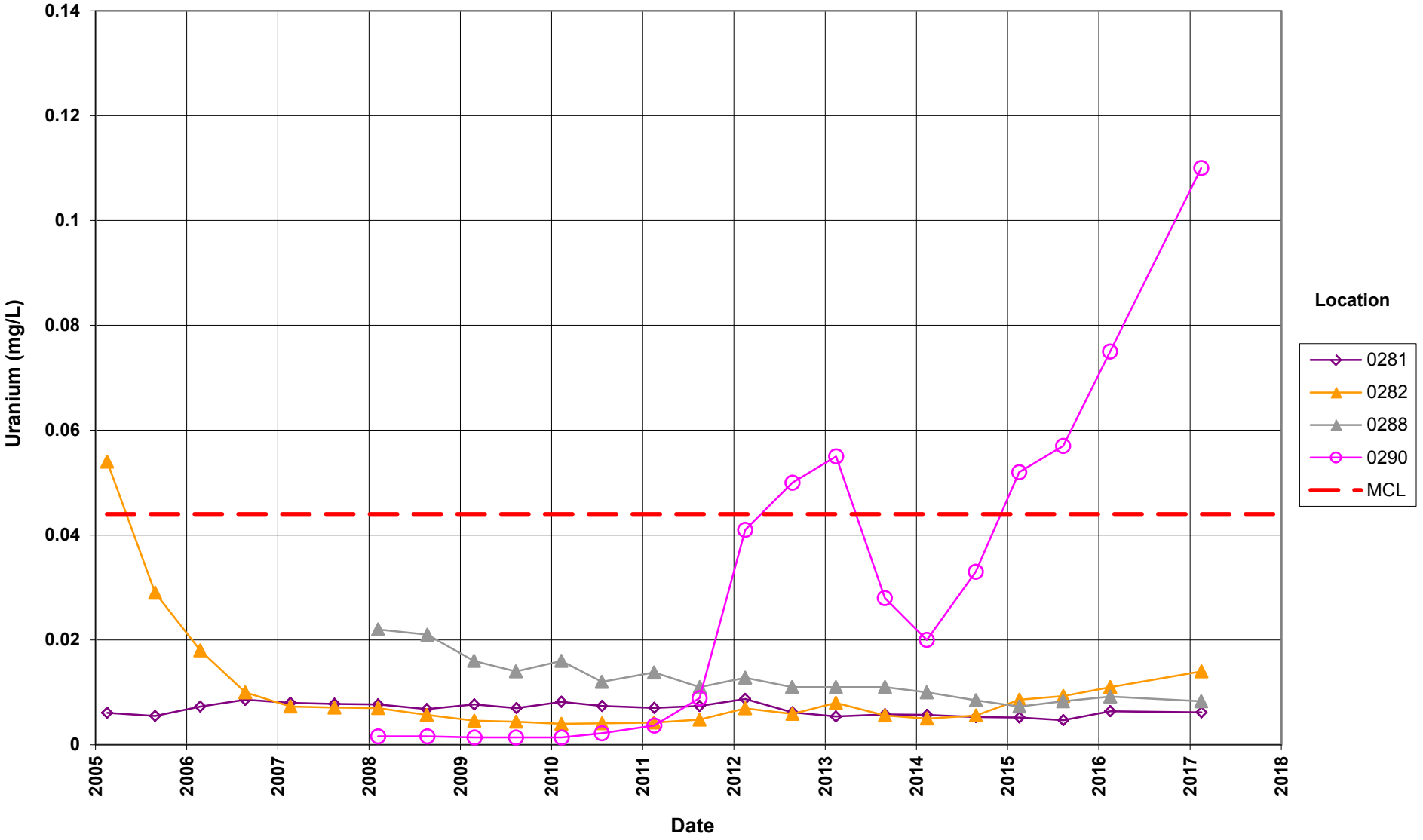
# Tuba City Disposal Site
# Horizon B Monitoring Wells
# Uranium Concentration

Maximum Concentration Limit (MCL) = 0.044 mg/L

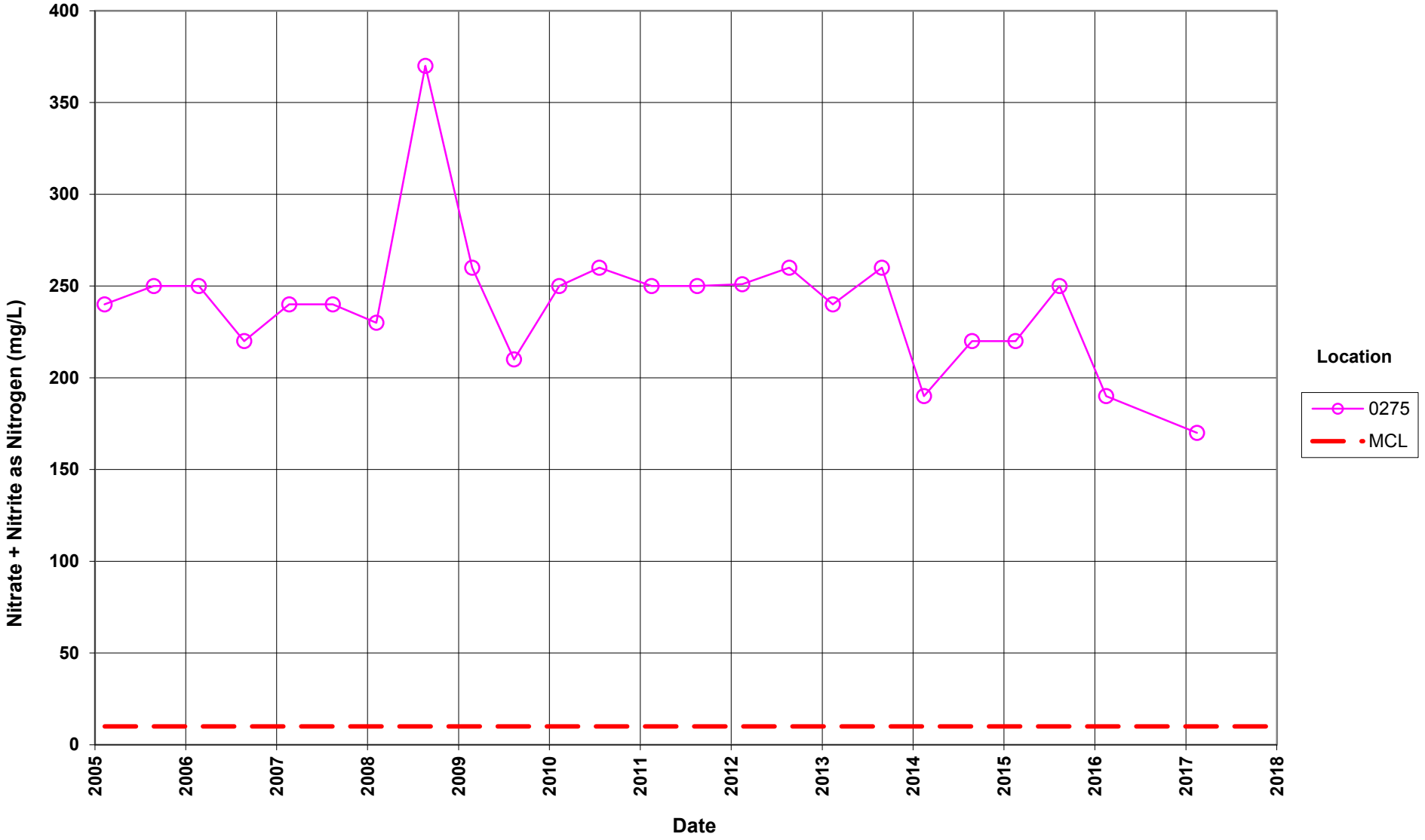


# Tuba City Disposal Site
# Horizon B Monitoring Wells
# Uranium Concentration

Maximum Concentration Limit (MCL) = 0.044 mg/L

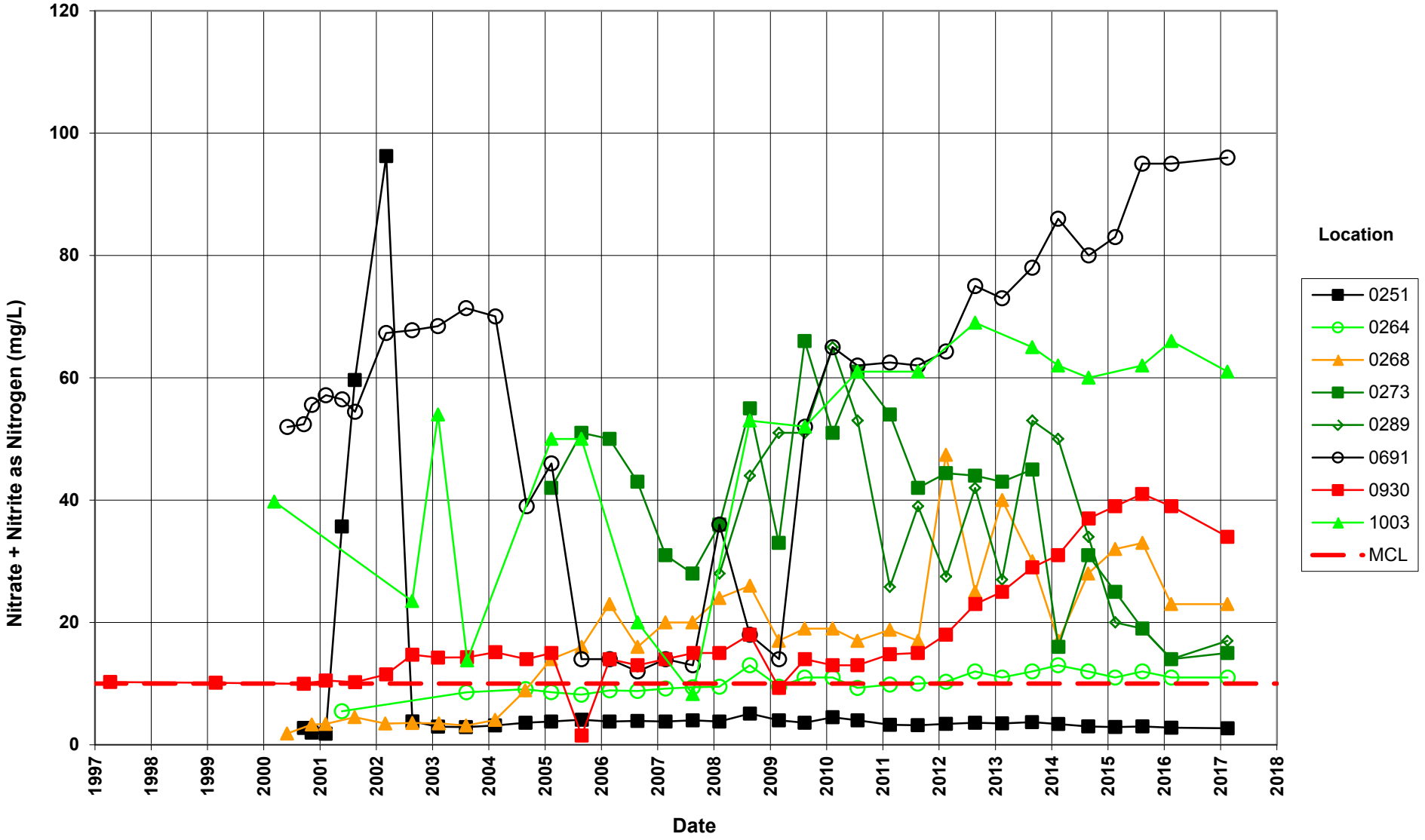


**Tuba City Disposal Site**
**Horizons C, D, E, & I Monitoring Wells**
**Nitrate + Nitrite as Nitrogen Concentration**
Maximum Concentration Limit (MCL) = 10.0 mg/L



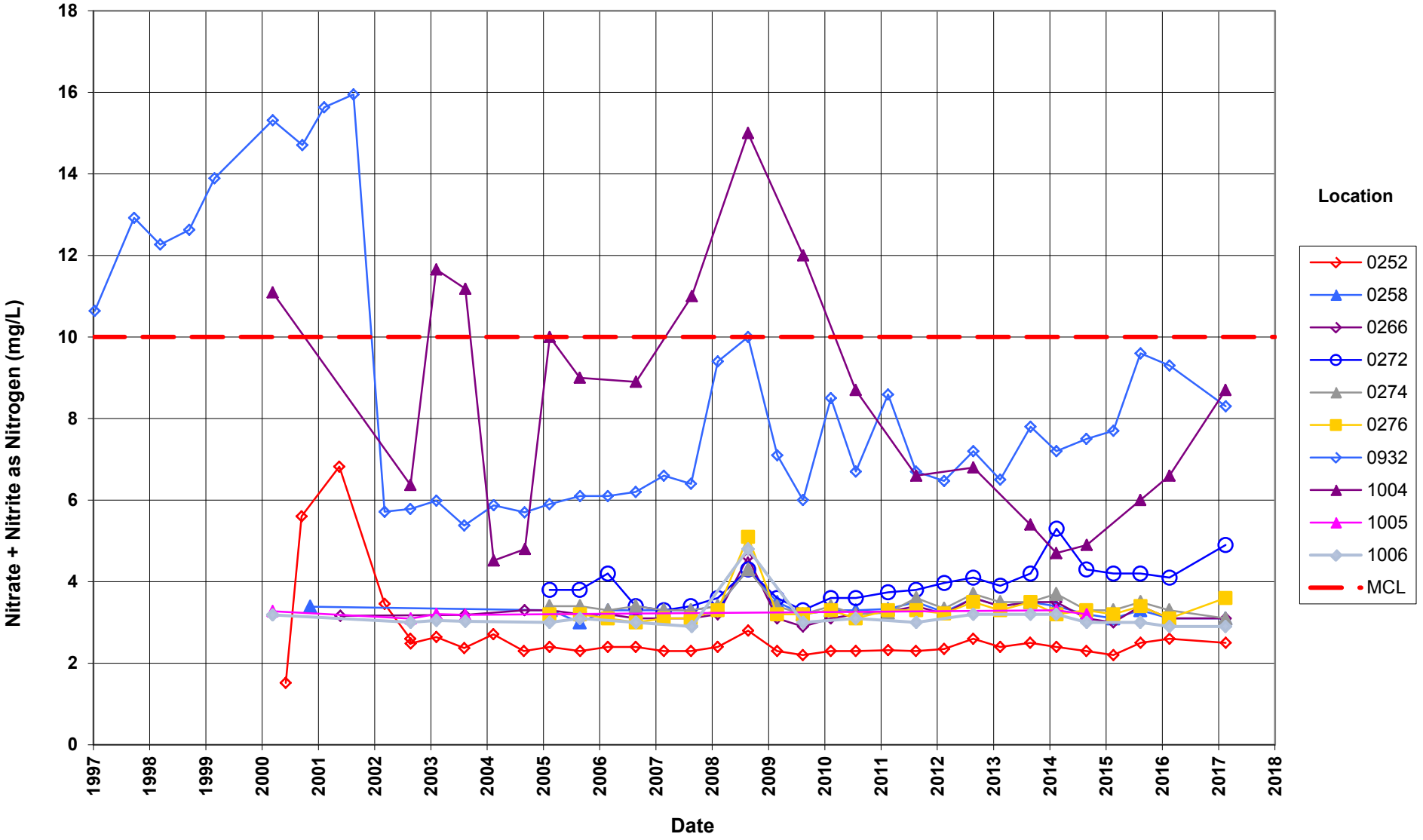
# Tuba City Disposal Site
## Horizons C, D, E, & I Monitoring Wells
## Nitrate + Nitrite as Nitrogen Concentration

Maximum Concentration Limit (MCL) = 10.0 mg/L

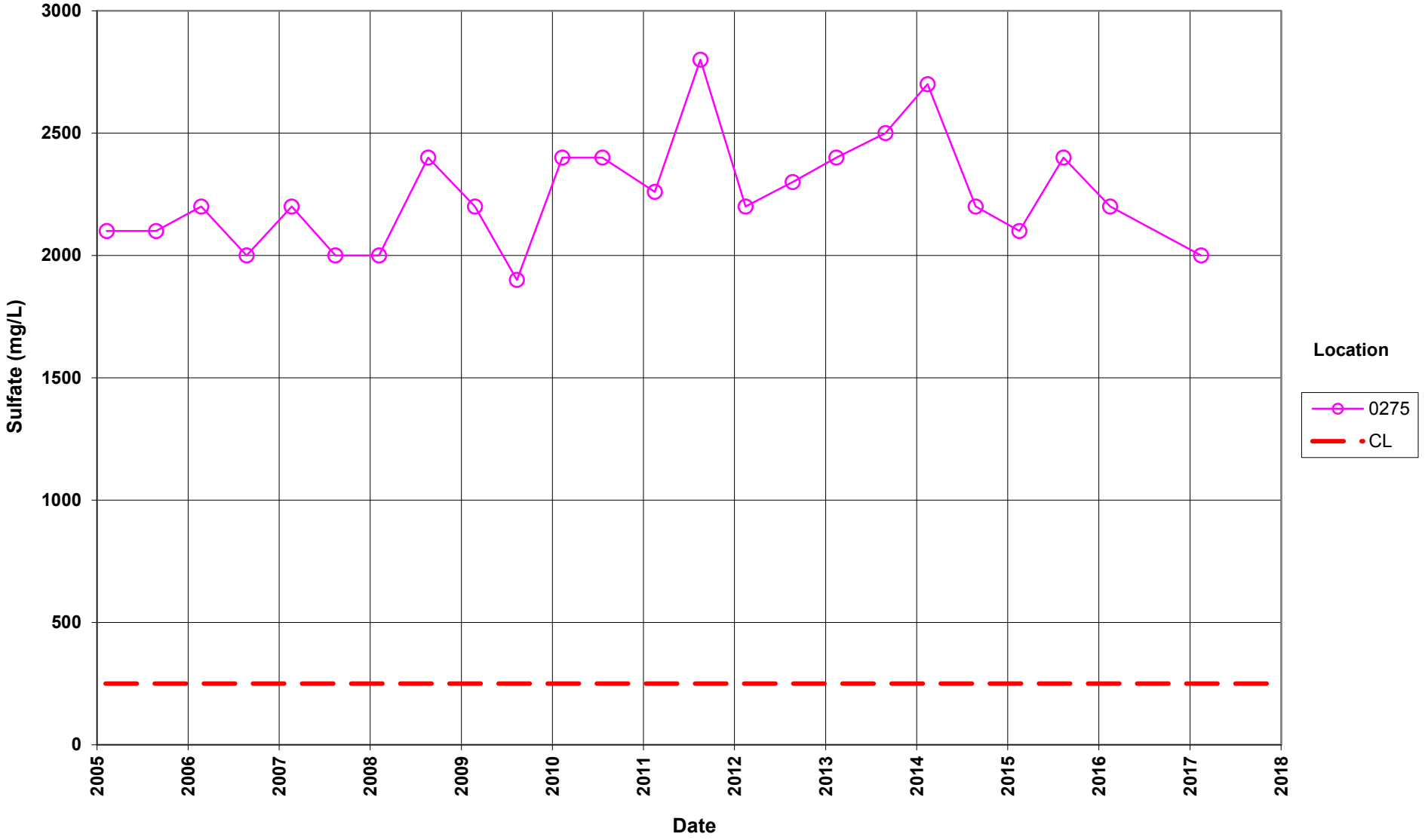


# Tuba City Disposal Site
## Horizons C, D, E, & I Monitoring Wells
## Nitrate + Nitrite as Nitrogen Concentration

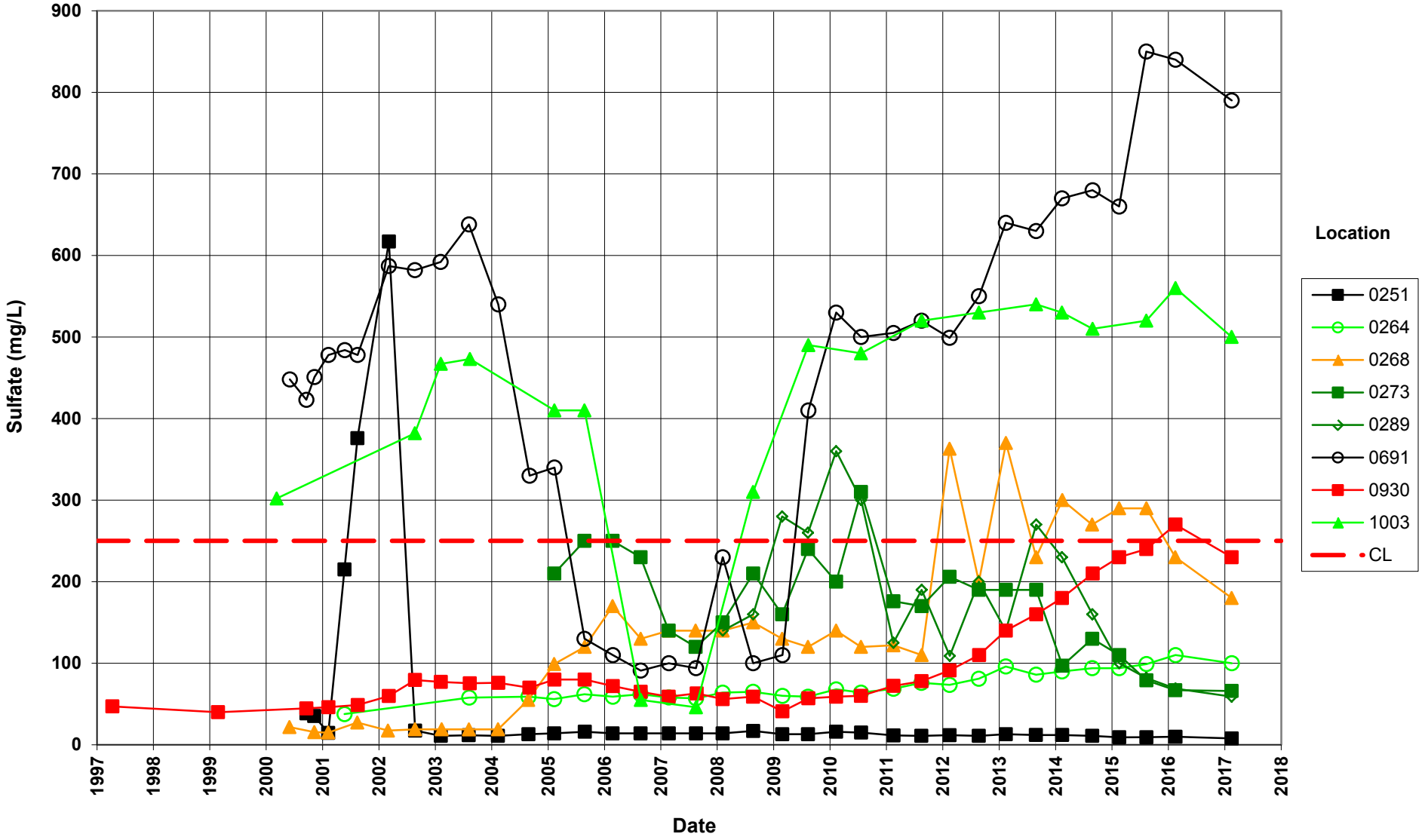
Maximum Concentration Limit (MCL) = 10.0 mg/L



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

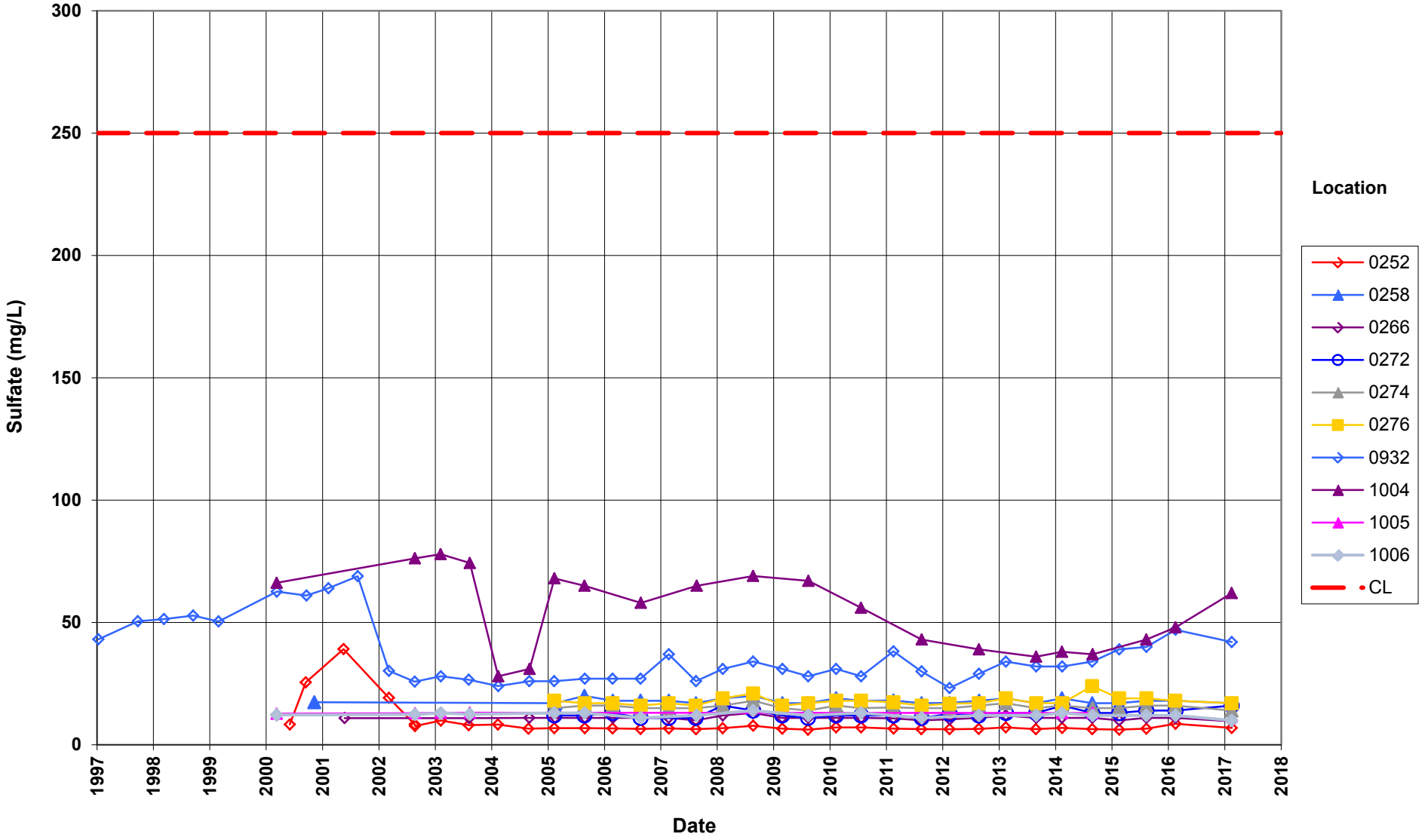


**Tuba City Disposal Site**
**Horizons C, D, E, & I Monitoring Wells**
**Sulfate Concentration**
Cleanup Level (CL) = 250 mg/L



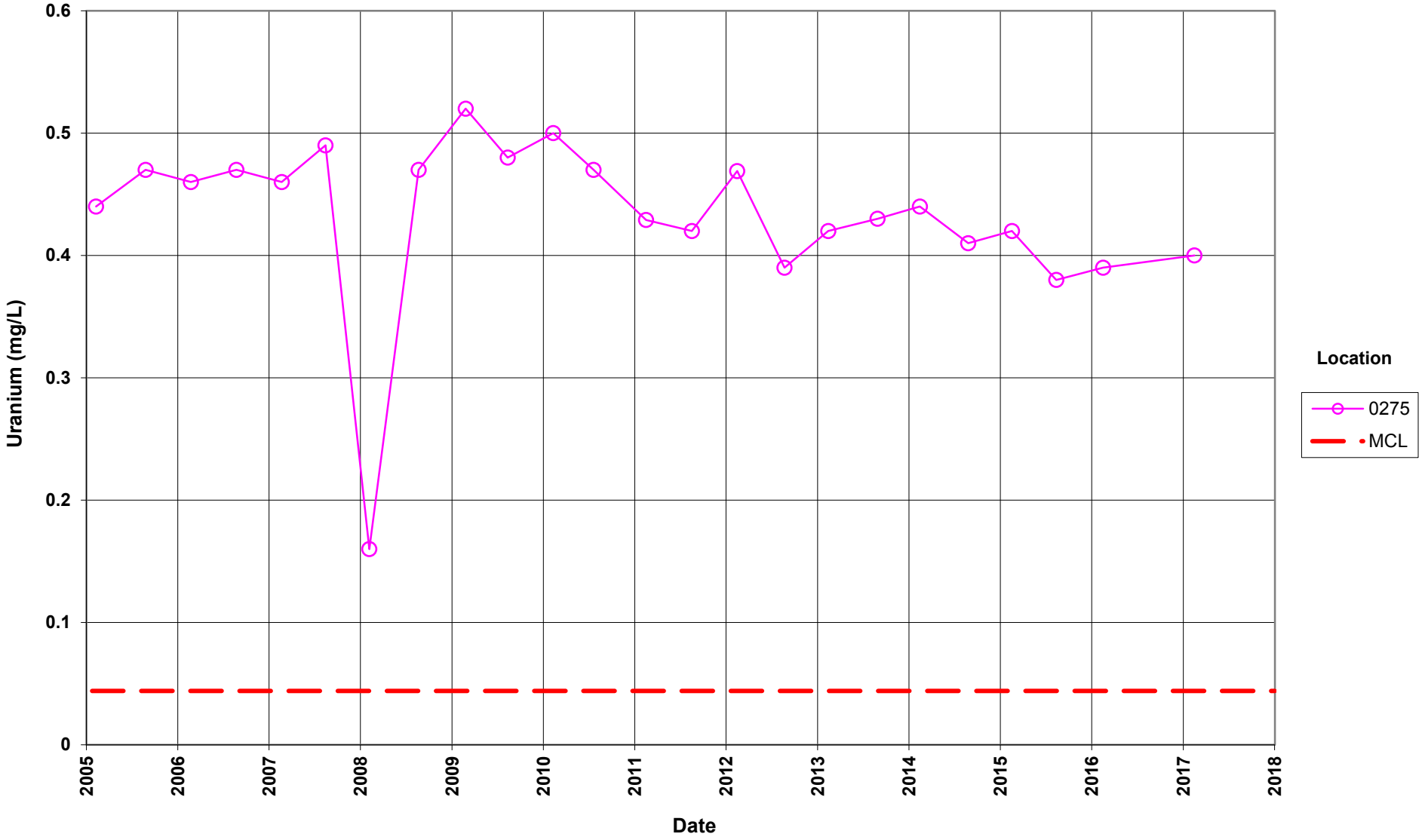
# Tuba City Disposal Site
## Horizons C, D, E, & I Monitoring Wells
## Sulfate Concentration

Cleanup Level (CL) = 250 mg/L



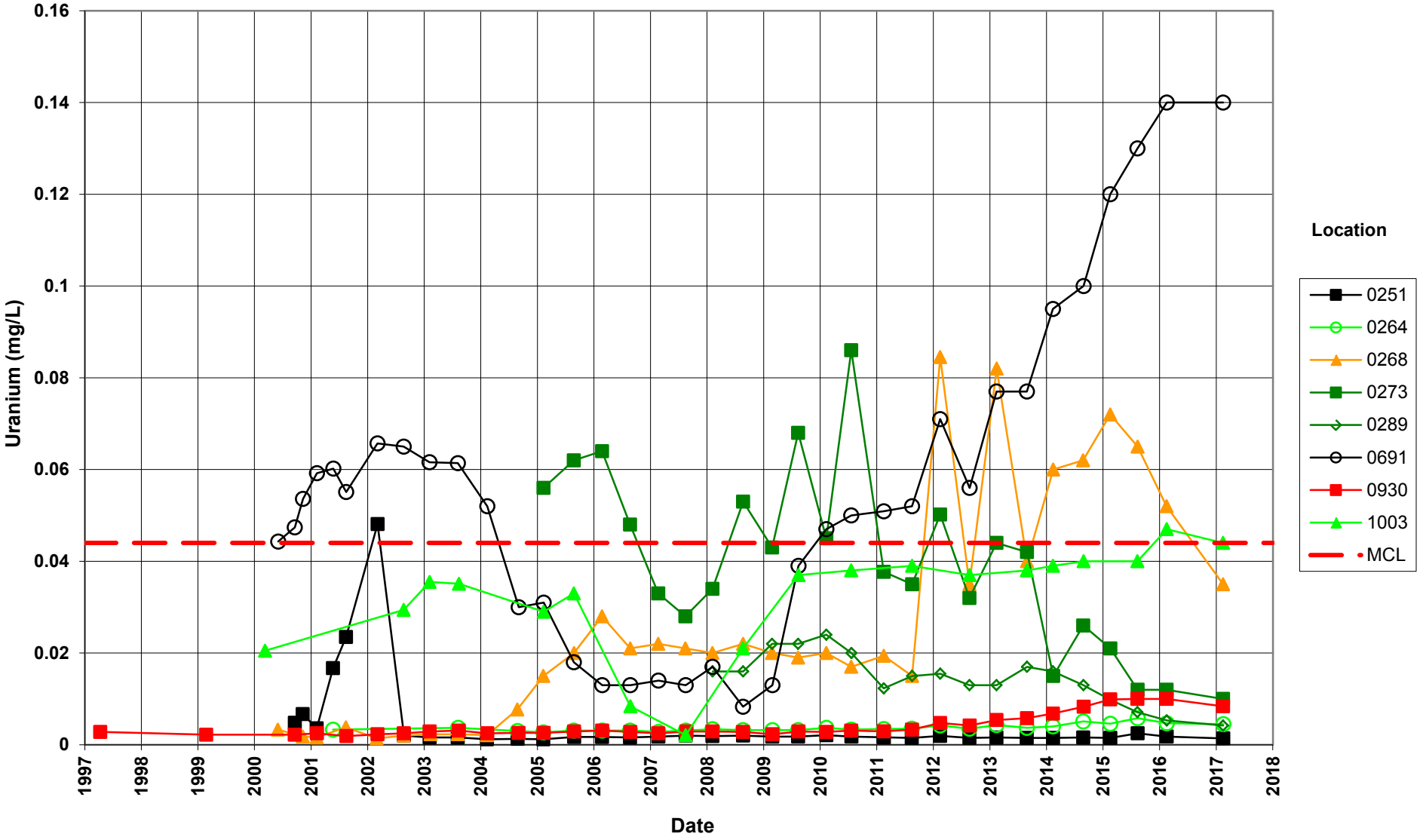
**Tuba City Disposal Site**
**Horizons C, D, E, & I Monitoring Wells**
**Uranium Concentration**

Maximum Concentration Limit (MCL) = 0.044 mg/L



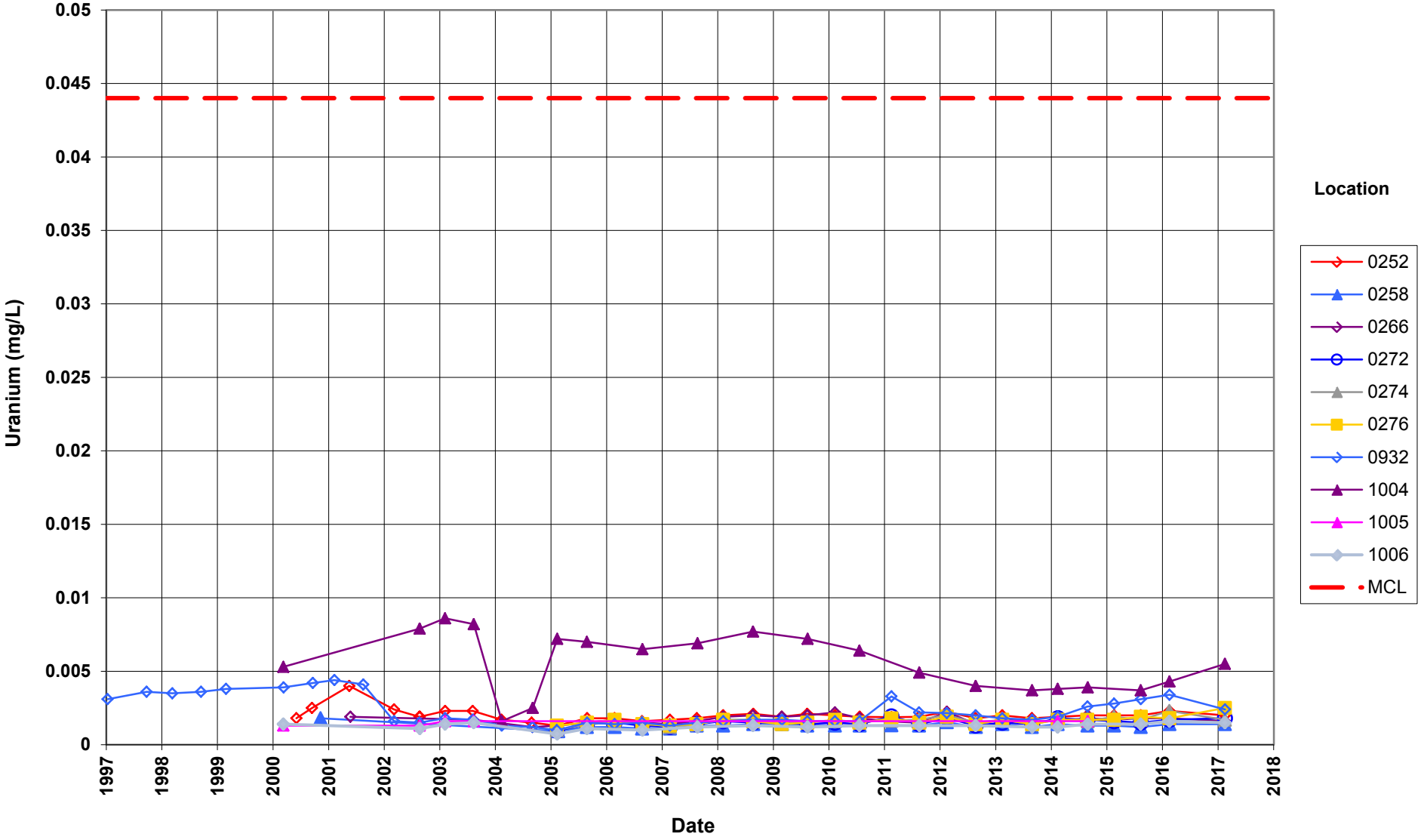
# Tuba City Disposal Site
## Horizons C, D, E, & I Monitoring Wells
## Uranium Concentration

Maximum Concentration Limit (MCL) = 0.044 mg/L



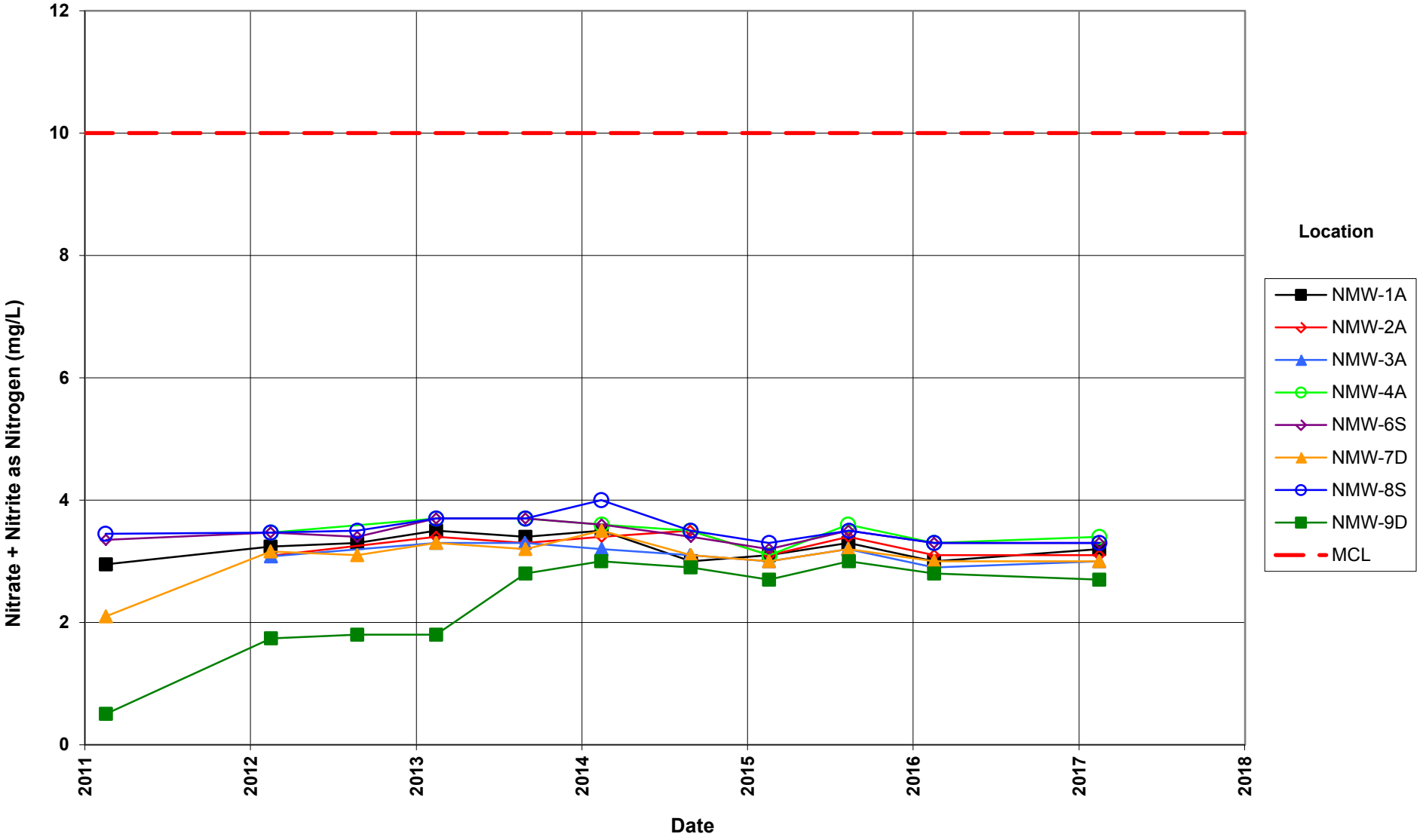
# Tuba City Disposal Site
## Horizons C, D, E, & I Monitoring Wells
## Uranium Concentration

Maximum Concentration Limit (MCL) = 0.044 mg/L



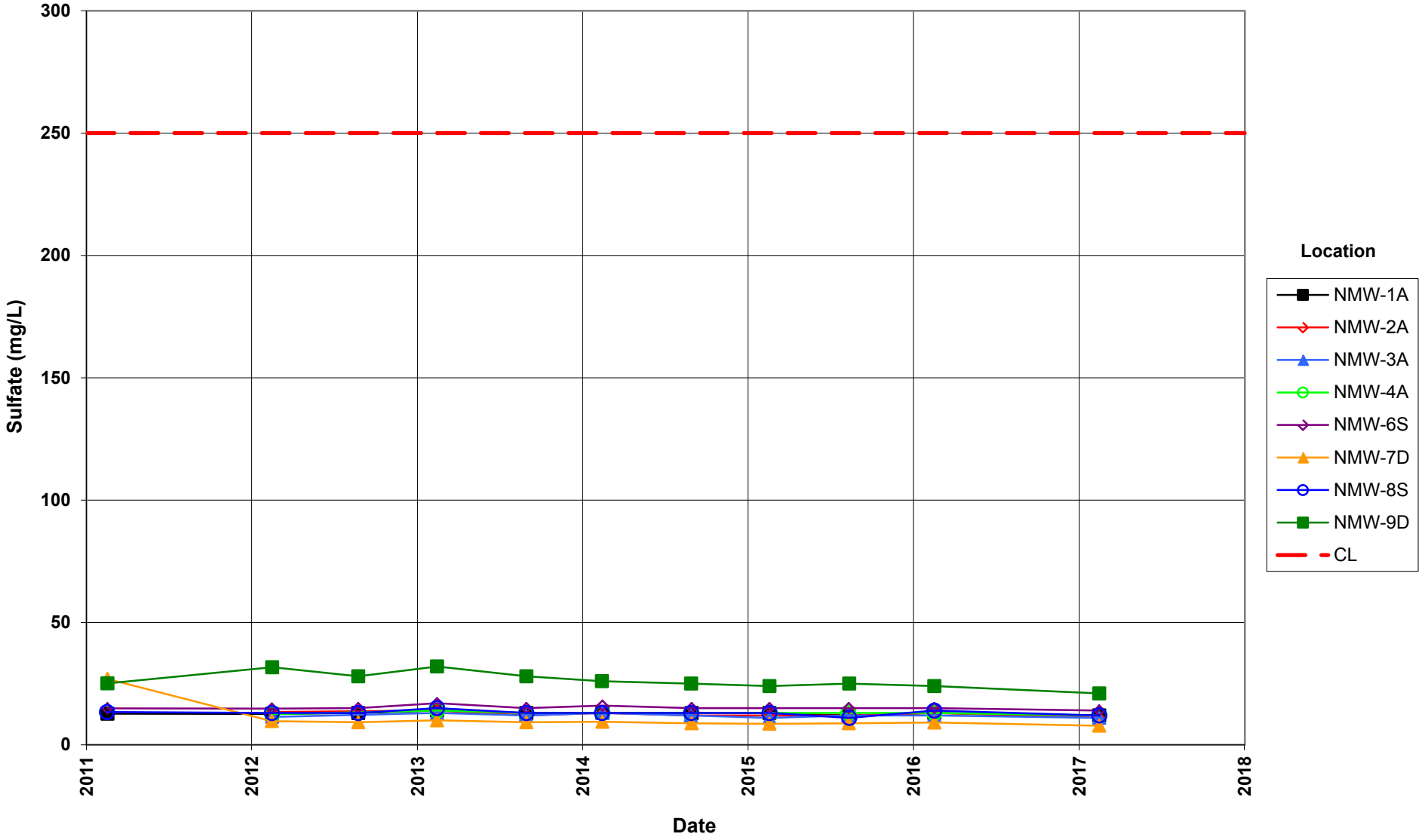
# Tuba City Disposal Site
# Navajo Monitoring Wells
# Nitrate + Nitrite as Nitrogen Concentration

Maximum Concentration Limit (MCL) = 10.0 mg/L



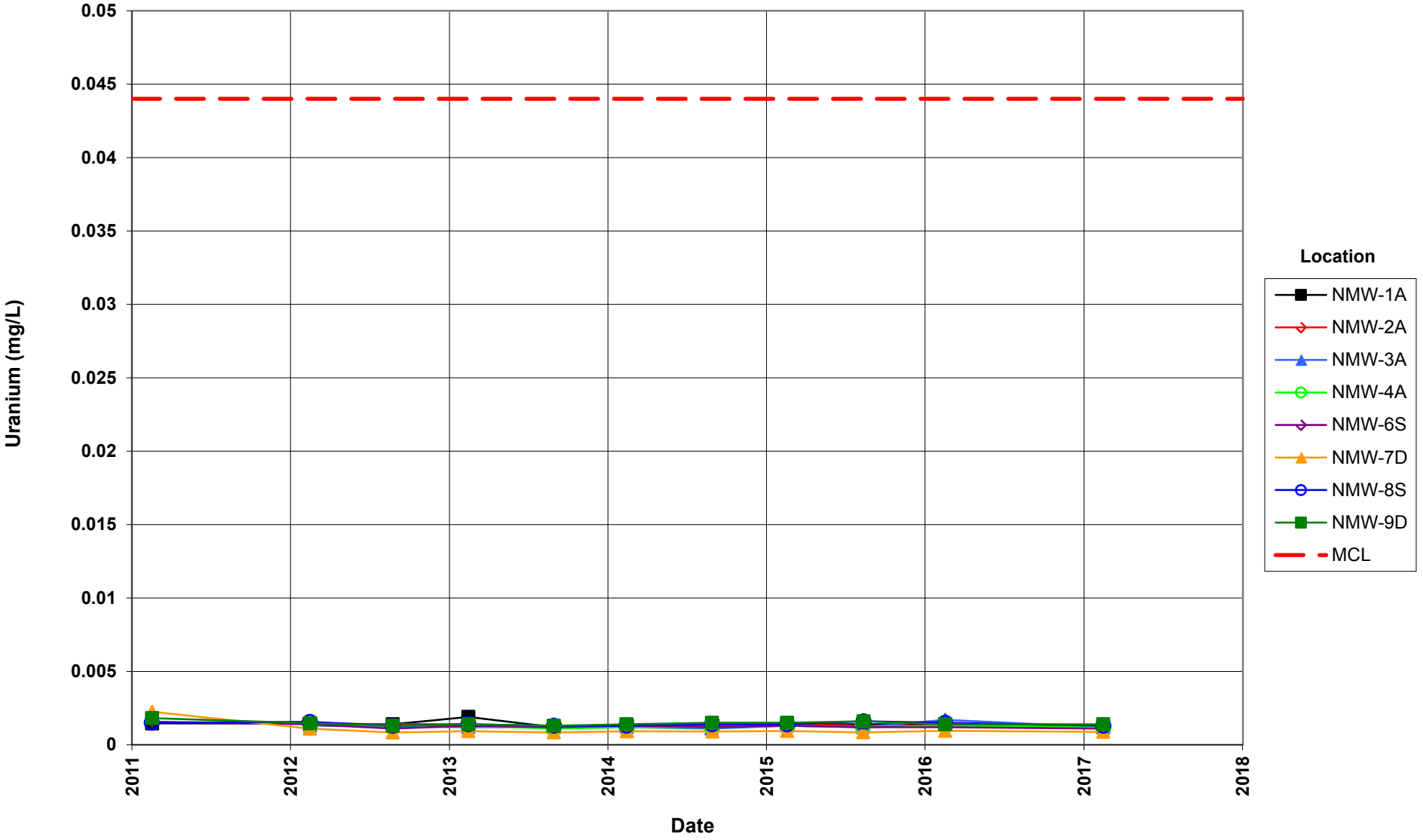
# Tuba City Disposal Site
# Navajo Monitoring Wells
# Sulfate Concentration

Cleanup Level (CL) = 250 mg/L



# Tuba City Disposal Site
# Navajo Monitoring Wells
# Uranium Concentration

Maximum Concentration Limit (MCL) = 0.044 mg/L



# Attachment 4

# 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 11 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 (February 2016) that required further review.

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**Data Validation Outliers Report - No Field Parameters**
**Comparison: All historical Data Beginning 1/1/2007**
Laboratory: ALS Laboratory Group
RIN: 17028279
Report Date: 3/17/2017

| | | | | | 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 | 02/15/2017 | Nitrate + Nitrite as Nitrogen | 2.70 | | FQ | 5.10 | N | FQ | 2.80 | | FQ | 21 | 0 | No |
| TUB01 | 0251 | N001 | 02/15/2017 | Sulfate | 7.80 | | FQ | 17.0 | | FQ | 9.00 | | FQ | 21 | 0 | No |
| TUB01 | 0258 | N001 | 02/14/2017 | Selenium | 0.00220 | | FQ | 0.00190 | | FQ | 0.00130 | | FQ | 19 | 2 | No |
| TUB01 | 0262 | N001 | 02/14/2017 | Manganese | 0.0340 | | FQ | 0.0300 | | FQ | 0.00057 | U | JFQ | 20 | 3 | No |
| TUB01 | 0262 | N001 | 02/14/2017 | Molybdenum | 0.260 | | FQ | 1.70 | | FQ | 0.280 | | FQ | 20 | 0 | No |
| TUB01 | 0262 | N001 | 02/14/2017 | Selenium | 0.0360 | | FQ | 0.110 | | FQ | 0.0390 | | FQ | 20 | 0 | No |
| TUB01 | 0262 | N001 | 02/14/2017 | Uranium | 0.440 | | FQ | 1.40 | | FQ | 0.500 | | FQ | 20 | 0 | No |
| TUB01 | 0263 | 0001 | 02/14/2017 | Ammonia Total as N | 0.380 | | FQ | 0.290 | | FQ | 0.0160 | U | QF | 20 | 18 | NA |
| TUB01 | 0263 | 0001 | 02/14/2017 | Chloride | 88.0 | | FQ | 170 | | FQ | 90.0 | | FQ | 20 | 0 | No |
| TUB01 | 0263 | 0001 | 02/14/2017 | Molybdenum | 0.150 | | FQ | 0.110 | | FQ | 0.0120 | | QF | 20 | 0 | No |
| TUB01 | 0263 | 0001 | 02/14/2017 | Uranium | 0.450 | | FQ | 0.430 | | FQ | 0.0960 | | QF | 20 | 0 | NA |
| TUB01 | 0264 | N001 | 02/15/2017 | Iron | 0.0630 | J | FQ | 0.0570 | B | FQ | 0.00140 | U | FQ | 20 | 15 | No |
| TUB01 | 0264 | N001 | 02/15/2017 | Silicon | 6.40 | | FQ | 6.30 | | FQ | 5.50 | | FQ | 18 | 0 | No |
| TUB01 | 0266 | N001 | 02/15/2017 | Sulfate | 9.60 | | FQ | 13.0 | | FJ | 10.00 | | FJ | 19 | 0 | NA |
| TUB01 | 0267 | 0001 | 02/15/2017 | Selenium | 0.0380 | | FQ | 0.0626 | | F | 0.0390 | | FQ | 20 | 0 | No |
| TUB01 | 0267 | 0001 | 02/15/2017 | Total Dissolved Solids | 6600 | | FQ | 8000 | | F | 6920 | | F | 20 | 0 | No |
| TUB01 | 0272 | N001 | 02/14/2017 | Calcium | 39.0 | | FQ | 35.0 | | FQ | 30.0 | | F | 23 | 0 | Yes |
| TUB01 | 0272 | N001 | 02/14/2017 | Magnesium | 8.20 | | FQ | 7.59 | | F | 6.50 | | F | 23 | 0 | Yes |

**Data Validation Outliers Report - No Field Parameters**
**Comparison: All historical Data Beginning 1/1/2007**
Laboratory: ALS Laboratory Group
RIN: 17028279
Report Date: 3/17/2017

| | | | | | 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 | 0272 | N001 | 02/14/2017 | Potassium | 1.90 | | FQ | 1.87 | BE | F | 0.810 | B | FJ | 23 | 0 | NA |
| TUB01 | 0272 | N001 | 02/14/2017 | Sodium | 7.70 | | FQ | 7.50 | | FQ | 5.50 | | FQ | 23 | 0 | No |
| TUB01 | 0273 | N001 | 02/14/2017 | Molybdenum | 0.00840 | | FQ | 0.0300 | | FQ | 0.00860 | | FQ | 19 | 0 | No |
| TUB01 | 0273 | N001 | 02/14/2017 | Sulfate | 66.0 | | FQ | 310 | | FQ | 67.0 | | FQ | 19 | 0 | No |
| TUB01 | 0273 | N001 | 02/14/2017 | Uranium | 0.01000 | | FQ | 0.0860 | | FQ | 0.0120 | | FQ | 19 | 0 | No |
| TUB01 | 0274 | N001 | 02/14/2017 | Nitrate + Nitrite as Nitrogen | 3.10 | | FQ | 4.30 | | FQ | 3.20 | | FQ | 19 | 0 | NA |
| TUB01 | 0275 | N001 | 02/14/2017 | Arsenic | 0.00069 | J | F | 0.00340 | U | F | 0.00077 | | F | 19 | 2 | NA |
| TUB01 | 0275 | N002 | 02/14/2017 | Arsenic | 0.00067 | J | F | 0.00340 | U | F | 0.00077 | | F | 19 | 2 | NA |
| TUB01 | 0275 | N002 | 02/14/2017 | Molybdenum | 0.00084 | J | F | 0.00054 | B | UF | 0.00011 | U | F | 19 | 11 | Yes |
| TUB01 | 0275 | N001 | 02/14/2017 | Molybdenum | 0.00078 | J | F | 0.00054 | B | UF | 0.00011 | U | F | 19 | 11 | Yes |
| TUB01 | 0275 | N001 | 02/14/2017 | Nitrate + Nitrite as Nitrogen | 160 | | F | 370 | | FJ | 190 | | F | 19 | 0 | NA |
| TUB01 | 0275 | N002 | 02/14/2017 | Nitrate + Nitrite as Nitrogen | 170 | | F | 370 | | FJ | 190 | | F | 19 | 0 | NA |
| TUB01 | 0275 | N002 | 02/14/2017 | Silicon | 8.50 | | F | 8.40 | | F | 3.00 | | F | 17 | 0 | NA |
| TUB01 | 0275 | N001 | 02/14/2017 | Total Dissolved Solids | 4400 | | F | 5800 | | F | 4600 | | F | 19 | 0 | No |
| TUB01 | 0275 | N002 | 02/14/2017 | Total Dissolved Solids | 4400 | | F | 5800 | | F | 4600 | | F | 19 | 0 | No |
| TUB01 | 0276 | N001 | 02/14/2017 | Molybdenum | 0.00038 | J | F | 0.00204 | B | UF | 0.00039 | | F | 21 | 7 | NA |
| TUB01 | 0276 | N002 | 02/14/2017 | Selenium | 0.00250 | | F | 0.00236 | B | F | 0.00063 | J | F | 21 | 1 | NA |
| TUB01 | 0276 | N002 | 02/14/2017 | Uranium | 0.00250 | | JF | 0.00191 | | F | 0.00130 | | F | 21 | 0 | Yes |

**Data Validation Outliers Report - No Field Parameters**
**Comparison: All historical Data Beginning 1/1/2007**
Laboratory: ALS Laboratory Group
RIN: 17028279
Report Date: 3/17/2017

| 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 | 0281 | 0001 | 02/15/2017 | Manganese | 0.00062 | J | UFQ | 0.0310 | | FQ | 0.00210 | J | FQ | 19 | 0 | No |
| TUB01 | 0282 | 0001 | 02/15/2017 | Calcium | 200 | | FQ | 180 | | FQ | 97.0 | | FQ | 19 | 0 | No |
| TUB01 | 0282 | 0001 | 02/15/2017 | Chloride | 58.0 | | FQ | 57.0 | | FQ | 36.4 | | FQ | 19 | 0 | No |
| TUB01 | 0282 | 0001 | 02/15/2017 | Magnesium | 40.0 | | FQ | 35.0 | | FQ | 18.0 | | FQ | 19 | 0 | No |
| TUB01 | 0282 | 0001 | 02/15/2017 | Nitrate + Nitrite as Nitrogen | 56.0 | | FQ | 54.0 | | FQ | 3.90 | | F | 19 | 0 | NA |
| TUB01 | 0282 | 0001 | 02/15/2017 | Selenium | 0.00250 | | FQ | 0.00220 | | FQ | 0.00061 | J | JFQ | 19 | 1 | NA |
| TUB01 | 0282 | 0001 | 02/15/2017 | Sodium | 25.0 | | FQ | 22.0 | | FQ | 13.0 | | FQ | 19 | 0 | No |
| TUB01 | 0282 | 0001 | 02/15/2017 | Sulfate | 260 | | FQ | 210 | | FQ | 65.0 | | F | 19 | 0 | No |
| TUB01 | 0282 | 0001 | 02/15/2017 | Total Dissolved Solids | 920 | | FQ | 830 | | FQ | 510 | | FQ | 19 | 0 | No |
| TUB01 | 0282 | 0001 | 02/15/2017 | Uranium | 0.0140 | | FQ | 0.0110 | | FQ | 0.00400 | | FQ | 19 | 0 | Yes |
| TUB01 | 0286 | N001 | 02/14/2017 | Silicon | 8.90 | | FQ | 8.80 | | FQ | 5.70 | | FQ | 15 | 0 | No |
| TUB01 | 0289 | N001 | 02/14/2017 | Calcium | 70.0 | | FQ | 260 | | FQ | 76.0 | | FQ | 17 | 0 | No |
| TUB01 | 0289 | N001 | 02/14/2017 | Chloride | 13.0 | | FQ | 33.0 | | FQ | 14.0 | | FQ | 17 | 0 | No |
| TUB01 | 0289 | N001 | 02/14/2017 | Magnesium | 13.0 | | FQ | 43.0 | | FQ | 15.0 | | FQ | 17 | 0 | No |
| TUB01 | 0289 | N001 | 02/14/2017 | Manganese | 0.00150 | J | UFQ | 0.0254 | | FQ | 0.00240 | B | FQ | 17 | 1 | No |
| TUB01 | 0289 | N001 | 02/14/2017 | Potassium | 2.10 | | FQ | 4.10 | | FQ | 2.20 | | FQ | 17 | 0 | No |
| TUB01 | 0289 | N001 | 02/14/2017 | Sodium | 14.0 | | FQ | 45.0 | | FQ | 18.0 | | FQ | 17 | 0 | No |
| TUB01 | 0289 | N001 | 02/14/2017 | Sulfate | 59.0 | | FQ | 360 | | FQ | 69.0 | | FQ | 17 | 0 | No |

**Data Validation Outliers Report - No Field Parameters**
**Comparison: All historical Data Beginning 1/1/2007**
Laboratory: ALS Laboratory Group
RIN: 17028279
Report Date: 3/17/2017

| | | | | | Current | | | Historical Maximum | | | Historical Minimum | | | Number of Data Points | | Statistical Outlier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Qualifiers | | | Qualifiers | | | Qualifiers | | | | |
| Site Code | Location Code | Sample ID | Sample Date | Analyte | Result | Lab | Data | Result | Lab | Data | Result | Lab | Data | N | N Below Detect | |
| TUB01 | 0289 | N001 | 02/14/2017 | Uranium | 0.00420 | | FQ | 0.0240 | | FQ | 0.00530 | | FQ | 17 | 0 | Yes |
| TUB01 | 0290 | N001 | 02/14/2017 | Calcium | 460 | | FQ | 350 | | FQ | 35.0 | | FQ | 17 | 0 | No |
| TUB01 | 0290 | N001 | 02/14/2017 | Chloride | 81.0 | | FQ | 70.0 | | FQ | 13.0 | | FQ | 17 | 0 | No |
| TUB01 | 0290 | N001 | 02/14/2017 | Magnesium | 76.0 | | FQ | 59.0 | | FQ | 5.80 | | FQ | 17 | 0 | No |
| TUB01 | 0290 | N001 | 02/14/2017 | Nitrate + Nitrite as Nitrogen | 87.0 | | FQ | 80.0 | | FQ | 3.60 | | FQ | 17 | 0 | No |
| TUB01 | 0290 | N001 | 02/14/2017 | Selenium | 0.0170 | | FQ | 0.0110 | | FQ | 0.00140 | E | FQ | 17 | 0 | No |
| TUB01 | 0290 | N001 | 02/14/2017 | Silica | 20.0 | | FQ | 19.0 | | FQ | 11.0 | | FQ | 17 | 0 | No |
| TUB01 | 0290 | N001 | 02/14/2017 | Silicon | 9.40 | | FQ | 8.70 | | FQ | 5.40 | | FQ | 15 | 0 | No |
| TUB01 | 0290 | N001 | 02/14/2017 | Sodium | 110 | | FQ | 83.0 | | FQ | 13.0 | | FQ | 17 | 0 | No |
| TUB01 | 0290 | N001 | 02/14/2017 | Sulfate | 920 | | FQ | 690 | | FQ | 19.0 | | FQ | 17 | 0 | No |
| TUB01 | 0290 | N001 | 02/14/2017 | Total Dissolved Solids | 2300 | | FQ | 1600 | | F | 180 | | FQ | 17 | 0 | NA |
| TUB01 | 0290 | N001 | 02/14/2017 | Uranium | 0.110 | | FQ | 0.0750 | | FQ | 0.00140 | | FQ | 17 | 0 | NA |
| TUB01 | 0691 | N001 | 02/14/2017 | Magnesium | 78.0 | | F | 76.0 | | F | 13.0 | | F | 21 | 0 | No |
| TUB01 | 0691 | N001 | 02/14/2017 | Nitrate + Nitrite as Nitrogen | 96.0 | | F | 95.0 | | F | 13.0 | | F | 21 | 0 | No |
| TUB01 | 0691 | N001 | 02/14/2017 | Silica | 19.0 | | F | 17.0 | | F | 12.0 | | F | 21 | 0 | No |
| TUB01 | 0691 | N001 | 02/14/2017 | Silicon | 8.90 | | F | 8.00 | | F | 5.80 | | F | 19 | 0 | No |
| TUB01 | 0906 | N001 | 02/14/2017 | Magnesium | 500 | | FQ | 450 | | | 240 | | FQ | 16 | 0 | No |
| TUB01 | 0906 | N001 | 02/14/2017 | Uranium | 0.360 | | FQ | 1.000 | | | 0.400 | | FQ | 16 | 0 | No |

**Data Validation Outliers Report - No Field Parameters**
**Comparison: All historical Data Beginning 1/1/2007**
Laboratory: ALS Laboratory Group
RIN: 17028279
Report Date: 3/17/2017

| | | | | | 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 | 0908 | N001 | 02/15/2017 | Arsenic | 0.00064 | J | FQ | 0.00440 | B | QF | 0.00068 | | FQ | 19 | 0 | NA |
| TUB01 | 0908 | N001 | 02/15/2017 | Magnesium | 400 | | FQ | 520 | | QF | 410 | | FQ | 19 | 0 | No |
| TUB01 | 0908 | N001 | 02/15/2017 | Selenium | 0.0140 | | FQ | 0.0290 | | FQ | 0.0150 | | FQ | 19 | 0 | No |
| TUB01 | 0908 | N001 | 02/15/2017 | Sodium | 250 | | FQ | 310 | | FQ | 260 | | FQ | 19 | 0 | No |
| TUB01 | 0908 | N001 | 02/15/2017 | Sulfate | 2300 | | FQ | 3100 | | FQJ | 2400 | | FQ | 19 | 0 | No |
| TUB01 | 0908 | N001 | 02/15/2017 | Total Dissolved Solids | 4900 | | FQ | 6000 | | FQJ | 5200 | | FQ | 19 | 0 | No |
| TUB01 | 0908 | N001 | 02/15/2017 | Uranium | 0.0710 | | FQ | 0.110 | | FQ | 0.0720 | | FQ | 19 | 0 | No |
| TUB01 | 0930 | N001 | 02/14/2017 | Silica | 15.0 | | F | 14.2 | | F | 12.0 | | F | 20 | 0 | No |
| TUB01 | 0930 | N001 | 02/14/2017 | Silicon | 6.90 | | F | 6.40 | | F | 5.50 | | F | 17 | 0 | No |
| TUB01 | 0932 | N001 | 02/15/2017 | Silica | 13.0 | | F | 12.8 | | F | 11.0 | | F | 22 | 0 | NA |
| TUB01 | 0932 | N001 | 02/15/2017 | Silicon | 5.90 | | F | 5.80 | | F | 5.10 | | F | 19 | 0 | No |
| TUB01 | 0934 | N001 | 02/15/2017 | Arsenic | 0.00049 | J | FQ | 0.00421 | B | QF | 0.00052 | | QF | 22 | 1 | NA |
| TUB01 | 0934 | N001 | 02/15/2017 | Chloride | 200 | | FQ | 280 | | FQ | 202 | | QF | 22 | 0 | No |
| TUB01 | 0934 | N001 | 02/15/2017 | Silicon | 9.50 | | FQ | 9.20 | | FQ | 7.60 | | FQ | 20 | 0 | No |
| TUB01 | 0934 | N001 | 02/15/2017 | Total Dissolved Solids | 6200 | | FQ | 8600 | | FQJ | 6300 | | FQ | 22 | 0 | No |
| TUB01 | 0940 | N001 | 02/14/2017 | Chloride | 130 | | FQ | 180 | | FQ | 140 | | FQ | 13 | 0 | No |
| TUB01 | 0940 | N001 | 02/14/2017 | Molybdenum | 0.00032 | U | FQ | 0.00360 | | FQ | 0.00036 | J | FQ | 13 | 1 | No |
| TUB01 | 0940 | N001 | 02/14/2017 | Selenium | 0.0520 | | FQ | 0.0897 | | FQ | 0.0530 | | FQ | 13 | 0 | No |

**Data Validation Outliers Report - No Field Parameters**
**Comparison: All historical Data Beginning 1/1/2007**
Laboratory: ALS Laboratory Group
RIN: 17028279
Report Date: 3/17/2017

| | | | | | 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 | 0940 | N001 | 02/14/2017 | Silica | 20.0 | | FQ | 19.2 | | FQ | 14.0 | | FQ | 13 | 0 | No |
| TUB01 | 0940 | N001 | 02/14/2017 | Silicon | 9.30 | | FQ | 8.80 | | FQ | 6.70 | | FQ | 11 | 0 | No |
| TUB01 | 0940 | N001 | 02/14/2017 | Total Dissolved Solids | 8800 | | FQ | 17000 | | FQ | 9300 | | JFQ | 13 | 0 | No |
| TUB01 | 0941 | 0001 | 02/14/2017 | Silica | 22.0 | | FQ | 20.0 | | FQ | 15.0 | | | 19 | 0 | Yes |
| TUB01 | 0941 | 0001 | 02/14/2017 | Silicon | 10.00 | | FQ | 9.40 | | FQ | 7.20 | | | 17 | 0 | No |
| TUB01 | 1003 | N001 | 02/14/2017 | Magnesium | 51.0 | | F | 49.0 | | F | 9.60 | | F | 11 | 1 | NA |
| TUB01 | 1003 | N001 | 02/14/2017 | Silica | 17.0 | | F | 16.0 | | F | 13.0 | | F | 11 | 0 | No |
| TUB01 | 1003 | N001 | 02/14/2017 | Silicon | 8.00 | | F | 7.30 | | F | 6.00 | | F | 11 | 0 | No |
| TUB01 | 1004 | N001 | 02/14/2017 | Silica | 14.0 | | F | 13.0 | | F | 11.0 | | F | 11 | 0 | No |
| TUB01 | 1004 | N001 | 02/14/2017 | Silicon | 6.40 | | F | 6.00 | | F | 5.20 | | F | 11 | 0 | No |
| TUB01 | 1004 | N001 | 02/14/2017 | Sodium | 16.0 | | F | 15.0 | | F | 11.0 | | F | 11 | 0 | No |
| TUB01 | 1006 | N001 | 02/14/2017 | Arsenic | 0.00140 | | F | 0.00340 | | F | 0.00170 | | F | 11 | 0 | NA |
| TUB01 | 1006 | N001 | 02/14/2017 | Chloride | 8.30 | | F | 9.90 | | F | 8.40 | | F | 11 | 0 | No |
| TUB01 | 1006 | N001 | 02/14/2017 | Potassium | 2.60 | | F | 2.50 | | QF | 1.50 | | FJ | 11 | 0 | No |
| TUB01 | 1006 | N001 | 02/14/2017 | Sulfate | 10.00 | | F | 14.0 | | FJ | 11.0 | | F | 11 | 0 | No |
| TUB01 | 1007 | N001 | 02/14/2017 | Potassium | 2.20 | | F | 2.10 | | F | 1.10 | | FJ | 11 | 0 | No |
| TUB01 | 1007 | N001 | 02/14/2017 | Silica | 14.0 | | F | 13.0 | | F | 11.0 | | F | 11 | 0 | No |
| TUB01 | 1007 | N001 | 02/14/2017 | Silicon | 6.40 | | F | 6.10 | | F | 5.10 | | F | 11 | 0 | No |

**Data Validation Outliers Report - No Field Parameters**
**Comparison: All historical Data Beginning 1/1/2007**
Laboratory: ALS Laboratory Group
RIN: 17028279
Report Date: 3/17/2017

| | | | | | 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 | 1007 | N001 | 02/14/2017 | Sulfate | 11.0 | | F | 14.0 | | FJ | 12.0 | | F | 11 | 0 | NA |
| TUB01 | 1007 | N001 | 02/14/2017 | Uranium | 0.00150 | | F | 0.00140 | | F | 0.00120 | | F | 11 | 0 | No |
| TUB01 | 1569 | 0001 | 02/15/2017 | Manganese | 3.50 | | | 450 | | | 17.0 | | | 22 | 0 | Yes |
| TUB01 | 1570 | 0001 | 02/15/2017 | Arsenic | 0.0240 | | | 3.60 | | | 0.0330 | | | 22 | 0 | NA |
| TUB01 | 1570 | 0001 | 02/15/2017 | Manganese | 3.40 | | | 520 | | | 29.0 | | | 22 | 0 | No |
| TUB01 | NMW-1A | N001 | 02/14/2017 | Silica | 12.0 | | F | 11.6 | | F | 9.90 | | F | 11 | 0 | No |
| TUB01 | NMW-1A | N001 | 02/14/2017 | Silicon | 5.60 | | F | 5.30 | | F | 4.60 | | F | 8 | 0 | No |
| TUB01 | NMW-2A | N001 | 02/14/2017 | Silica | 12.0 | | F | 11.5 | | F | 9.80 | | F | 9 | 0 | No |
| TUB01 | NMW-2A | N001 | 02/14/2017 | Silicon | 5.70 | | F | 5.30 | | F | 4.60 | | F | 8 | 0 | No |
| TUB01 | NMW-2A | N001 | 02/14/2017 | Sulfate | 11.0 | | F | 14.0 | | F | 12.0 | | F | 10 | 0 | NA |
| TUB01 | NMW-2A | N001 | 02/14/2017 | Total Dissolved Solids | 170 | | F | 160 | | F | 140 | | FQ | 10 | 0 | No |
| TUB01 | NMW-3A | N001 | 02/14/2017 | Magnesium | 6.40 | | F | 6.30 | | F | 5.80 | | F | 10 | 1 | Yes |
| TUB01 | NMW-3A | N001 | 02/14/2017 | Silicon | 5.80 | | F | 5.50 | | F | 4.80 | | F | 8 | 0 | No |
| TUB01 | NMW-4A | N001 | 02/14/2017 | Silica | 12.0 | | F | 11.0 | | F | 9.20 | | F | 8 | 0 | No |
| TUB01 | NMW-4A | N001 | 02/14/2017 | Silicon | 5.40 | | F | 5.00 | | F | 4.30 | | F | 7 | 0 | Yes |
| TUB01 | NMW-4A | N001 | 02/14/2017 | Total Dissolved Solids | 170 | | F | 160 | | F | 130 | | JF | 9 | 0 | No |
| TUB01 | NMW-6S | N001 | 02/14/2017 | Magnesium | 6.60 | | FQ | 6.50 | | FQ | 6.10 | | F | 10 | 0 | No |
| TUB01 | NMW-6S | N001 | 02/14/2017 | Silica | 13.0 | | FQ | 12.2 | | F | 9.80 | | FQ | 9 | 0 | No |

**Data Validation Outliers Report - No Field Parameters**
**Comparison: All historical Data Beginning 1/1/2007**
Laboratory: ALS Laboratory Group
RIN: 17028279
Report Date: 3/17/2017

| | | | | | 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 | NMW-6S | N001 | 02/14/2017 | Silicon | 5.90 | | FQ | 5.50 | | FQ | 4.60 | | FQ | 7 | 0 | No |
| TUB01 | NMW-6S | N001 | 02/14/2017 | Sulfate | 14.0 | | FQ | 17.0 | | F | 14.8 | | F | 10 | 0 | NA |
| TUB01 | NMW-6S | N001 | 02/14/2017 | Total Dissolved Solids | 180 | | FQ | 170 | | F | 150 | | FQ | 10 | 0 | NA |
| TUB01 | NMW-7D | N001 | 02/14/2017 | Calcium | 29.0 | | FQ | 28.7 | | F | 26.0 | | FQ | 10 | 0 | No |
| TUB01 | NMW-7D | N001 | 02/14/2017 | Silicon | 6.10 | | FQ | 6.00 | | FQ | 5.10 | | FQ | 7 | 0 | No |
| TUB01 | NMW-7D | N001 | 02/14/2017 | Sulfate | 7.80 | | FQ | 26.9 | | F | 8.60 | | FQ | 10 | 0 | NA |
| TUB01 | NMW-8S | N001 | 02/14/2017 | Silicon | 5.30 | | F | 5.00 | | F | 4.30 | | F | 8 | 0 | No |
| TUB01 | NMW-8S | N001 | 02/14/2017 | Total Dissolved Solids | 170 | | F | 160 | | F | 130 | | F | 11 | 0 | No |
| TUB01 | NMW-9D | N001 | 02/14/2017 | Chloride | 10.00 | | FQ | 12.1 | | F | 10.5 | | QF | 10 | 0 | NA |
| TUB01 | NMW-9D | N001 | 02/14/2017 | Manganese | 0.0200 | | FQ | 0.620 | | F | 0.0290 | | FQ | 10 | 0 | No |
| TUB01 | NMW-9D | N001 | 02/14/2017 | Molybdenum | 0.00180 | J | FQ | 0.0162 | | F | 0.00190 | | FQ | 10 | 0 | NA |
| TUB01 | NMW-9D | N001 | 02/14/2017 | Sulfate | 21.0 | | FQ | 32.0 | | FQ | 24.0 | | FQ | 10 | 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.