Data Validation Package

September and October 2014 Groundwater and Surface Water Sampling at the Shiprock, New Mexico Disposal Site

January 2015

U.S. DEPARTMENT OF ENERGY | Legacy Management

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Sampling Event Summary

Site: Shiprock, New Mexico, Disposal Site

Sampling Period: September 24 – October 3, 2014 and October 6, 2014

Groundwater and surface water sampling and analyses are performed semiannually at the Shiprock, New Mexico, Disposal Site. Sampling and analyses were conducted as specified in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites* (LMS/PRO/S04351, continually updated). Samples were submitted for analyses in three groups identified by a requisition index number (RIN). Samples from floodplain locations were submitted under RIN 14096508 and from terrace locations under RIN 14096510. Terrace location 1071 was not sampled in September because a pump needed replacement. It was sampled October 6 under RIN 14106534.

Monitoring of terrace locations is performed to determine the effectiveness of active remediation. Monitoring of floodplain locations is performed to determine the progress of the natural flushing process.

As identified in the *Final Ground Water Compliance Action Plan for Remediation at the Shiprock, New Mexico, UMTRA Site* (July 2002), the contaminants of concern monitored at the Shiprock Disposal Site are ammonium, manganese, nitrate, selenium, strontium, sulfate, and uranium. Water quality parameters calcium, chloride, magnesium, potassium, and sodium are also monitored as stated in the plan.

Floodplain wells with contaminant concentrations that exceeded compliance standards and cleanup goals presented in the plan are listed in Table 1. Time-concentration graphs for the contaminants of concern in these wells are also included in this report.

Table 1. Shiprock Floodplain Locations that Exceed Compliance Standards and Cleanup Goals

Contaminant	Standard[a]	Location	Concentration
Manganese	2.74	0608	2.8
		0618	3.4
		0625	3.1
		0626	3.1
		0628	3.4
		0735	2.9
		0792	5.3
		0854	3.6
		0857	4.5
		1105	3.9
		1115	4.6
		1128	4.7
		1136	4.0
		1137	6.4
		1138	5.9

Table 1 (continued). Shiprock Floodplain Locations that Exceed Compliance Standards and Cleanup Goals

Contaminant	Standard[a]	Location	Concentration
Nitrate/Nitrite as N	10	0608	18
		0610	330
		0614	83
		0630	38
		0735	580
		0773	13
		0857	14
		1109	77
		1110	88
		1111	22
		1112	39
		1113	160
		1114	98
		1115	330
		1118	44
		1128	690
		1136	16
		1137	29
		1138	21
Selenium	0.05	0610	0.18
		0614	0.42
		0615	0.09
		0630	0.24
		0735	0.15
		0773	0.15
		0793	0.08
		1105	0.13
		1111	0.71
		1112	0.52
		1113	0.42
		1114	0.11
		1118	0.22
		1140	0.40
		1141	0.69
Sulfate	2000	0608	6000
		0610	5900
		0611	4900
		0614	4400
		0615	4400
		0618	6100
		0619	4400
		0622	2400
		0623	2700
		0625	2800
		0626	2200
		0628	6600
		0630	4600
		0734	6000
		0735	9900

Table 1 (continued). Shiprock Floodplain Locations that Exceed Compliance Standards and Cleanup Goals

Contaminant	Standard[a]	Location	Concentration
Sulfate	2000	0736	2700
		0766	5300
		0768	3300
		0775	3900
		0779	9900
		0792	4300
		0793	7000
		0797	4500
		0798	5200
		0854	6900
		0855	3100
		0856	2800
		0857	5500
		1008	4000
		1089	4200
		1104	6600
		1105	7200
		1111	9000
		1112	3500
		1113	3900
		1114	2400
		1115	8300
		1118	7400
		1128	9600
		1135	2700
		1136	3100
		1137	11000
		1138	12000
		1139	14000
		1140	9400
		1141	3800
		1143	2400
Uranium	0.044	0608	0.64
		0610	0.68
		0614	0.64
		0615	0.57
		0618	0.53
		0619	0.10
		0628	0.13
		0630	0.22
		0734	0.11
		0735	0.28
		0766	0.18
		0768	0.07
		0773	0.24
		0775	0.08
Uranium	0.044	0779	1.0
		0792	0.09
		0793	0.68

Table 1 (continued). Shiprock Floodplain Locations that Exceed Compliance Standards and Cleanup Goals

Contaminant	Standard[a]	Location	Concentration
		0798	0.22
		0850	0.05
		0853	0.05
		0854	0.53
		0855	0.06
		0856	0.06
		0857	0.68
		1008	0.22
		1009	0.16
		1089	0.22
		1104	0.51
		1105	0.91
		1109	0.16
		1110	0.19
		1111	0.68
		1112	0.53
		1113	0.42
		1114	0.42
		1115	1.4
		1118	0.55
		1128	1.5
		1135	0.06
		1136	0.35
		1137	1.8
		1138	1.9
		1139	1.6
		1140	0.86
		1141	.081
		1143	0.05

[a] Compliance standards and cleanup goals are listed in *Final Ground Water Compliance Action Plan for Remediation at the Shiprock, New Mexico, UMTRA Site* (July 2002), approved by the U.S. Nuclear Regulatory Commission; units are in milligrams per liter.

Both filtered and unfiltered samples from the river locations were submitted. River location analyte concentrations of filtered and unfiltered samples were compared to statistical background threshold values (BTVs) in Tables 2 and 3. BTVs were calculated using data from location 0898, which is located upstream from the site on the San Juan River and used to perform background versus site comparisons. Elevated analyte concentrations (notably manganese and strontium) were measured at all river locations including location 0899, an upgradient background location. This may have been a result of the high discharge rate observed in the San Juan River at the time of sampling.

Table 2. Background Comparison for Floodplain River Locations (Unfiltered Samples)

Location	Ammonium	Manganese	Nitrate	Selenium	Strontium	Sulfate	Uranium
BTV[a]	**0.1**	**0.93**	**0.82**	**0.0023**	**1.2**	**240**	**0.0075**
0501	0.11	4.0	0.96	0.0048	2.6	110	0.012
0897	ND[b]	4.0	1.1	0.0048	2.7	120	0.0011
0899	ND	4.1	0.94	0.0033	2.5	110	0.0096
0940	ND	4.5	1.1	0.0053	2.7	130	0.0013
0956	0.12	4.6	0.93	0.0056	2.5	110	0.0012
0965	ND	3.6	0.84	0.0031	2.1	140	0.0081
0967	0.1	4.7	1.2	0.0039	2.9	140	0.0012
1203	0.11	4.8	0.93	0.0053	2.8	120	0.0013
1205	0.12	15	0.85	0.0078	3.6	110	0.0016

Units are in milligrams per liter (mg/L).
[a] BTV values are calculated using ProUCL version 5.0 as provided by the USEPA.
[b] ND = Not Detected.

Table 3. Background Comparison for Floodplain River Locations (Filtered Samples)

Location	Ammonium	Manganese	Nitrate/Nitrite as N	Selenium	Strontium	Sulfate	Uranium
BTV[a]	**0.1**	**0.027**	**1.1**	**0.002**	**1.3**	**280**	**0.0036**
0501	ND[b]	0.035	1.0	0.0011	0.43	110	0.0022
0897	0.15	0.030	1.1	0.0012	0.42	120	0.0024
0899	0.13	0.0066	0.94	0.0010	0.45	110	0.0021
0940	ND	0.015	1.1	0.0007	0.42	130	0.0021
0956	ND	0.0035	0.94	0.0011	0.44	110	0.0019
0965	ND	0.0061	0.86	0.0011	0.53	140	0.0020
0967	ND	0.22	1.2	0.0017	0.50	140	0.0032
1203	ND	0.0052	1.0	0.0010	0.42	120	0.0023
1205	ND	0.023	0.93	0.0012	0.43	110	0.0023

Units are in milligrams per liter (mg/L).
[a] BTV values are calculated using ProUCL version 5.0 as provided by the USEPA.
[b] ND = Not Detected.

D Miller — 1/5/15

David Miller, Site Lead
The S.M. Stoller Corporation,
a wholly owned subsidiary of
Huntington Ingalls Industries

Date

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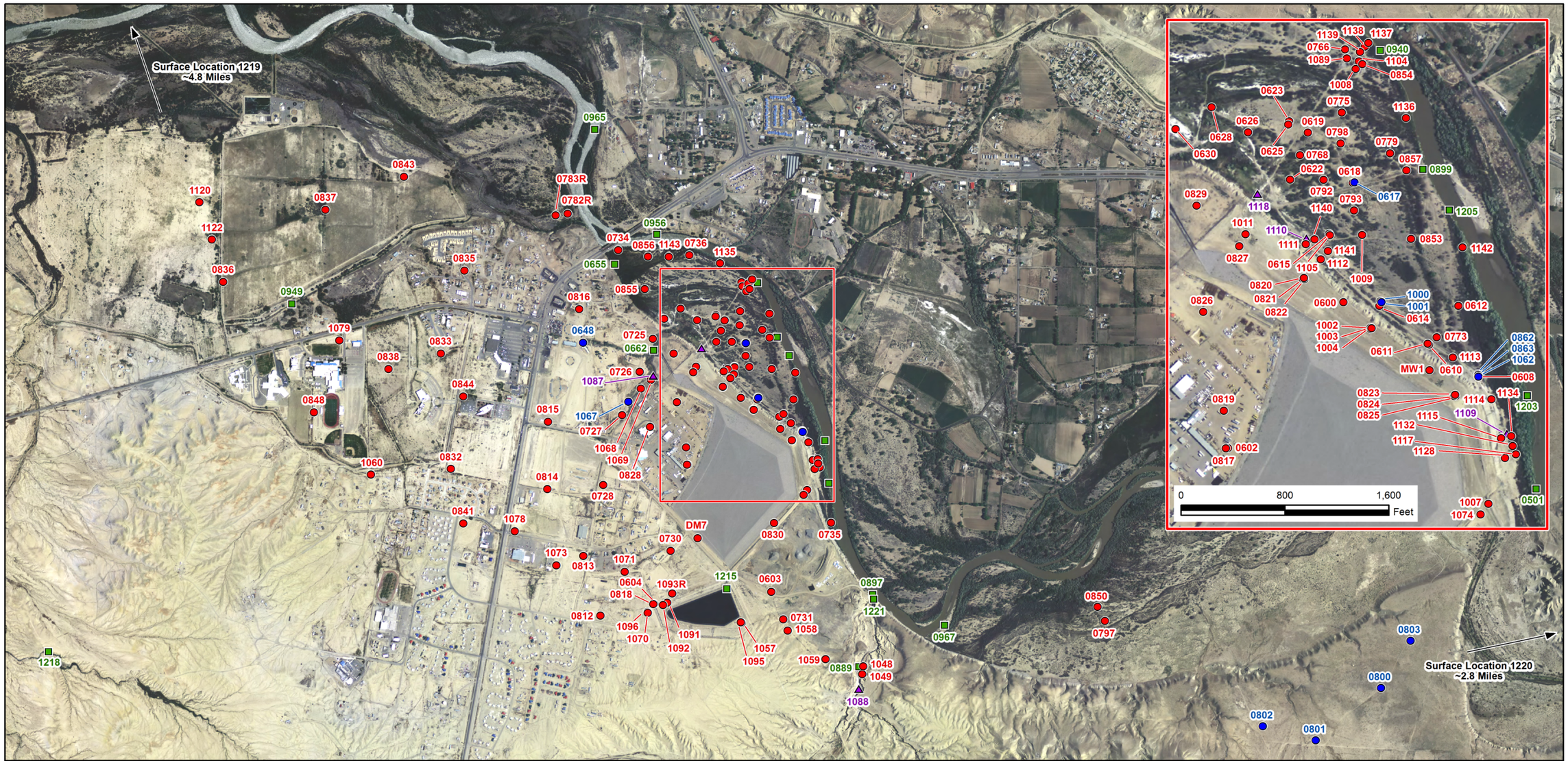

Planned Sampling Map Shiprock, New Mexico, Disposal Site

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Data Assessment Summary

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Water Sampling Field Activities Verification Checklist

Project	Shiprock, New Mexico, Disposal Site	**Date(s) of Water Sampling**	Sep 24 – Oct 3, and Oct 6, 2014
Date(s) of Verification	December 10, 2014	**Name of Verifier**	Stephen Donivan

	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 September 2, 2014. Program Directive SHP 2013-01.
2. Were the sampling locations specified in the planning documents sampled?	No	Monitoring well locations SHP02-0820, -0821, -0823, -0825, -0829, -0832, -1002, 1003, -1004, -1011, -1048, -1060, -1120, -1122, and -DM7, were not sampled because there was insufficient water or they were dry. Surface water locations SHP02-0949 and -1218 were not sampled because they were dry.
3. Were calibrations conducted as specified in the above-named documents?	Yes	Calibrations were performed on September 24 and 26, 2014.
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	Nine duplicate samples were collected.
10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with non-dedicated equipment?	Yes	One equipment blank was collected.
11. Were trip blanks prepared and included with each shipment of VOC samples?	NA	
12. Were the true identities of the QC samples documented?	Yes	
13. Were samples collected in the containers specified?	Yes	
14. Were samples filtered and preserved as specified?	No	Filtered samples from locations 0501, 0897, and 1205 were inadequately filtered at the time of collection. The samples were re-filtered at the laboratory upon receipt.
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	

Laboratory Performance Assessment

General Information

RIN:	14096508
Sample Event:	September 29 – October 3, 2014
Site(s):	Shiprock Disposal Site (Floodplain), New Mexico
Laboratory:	ALS Laboratory Group, Fort Collins, Colorado
Work Order No.:	1410218
Analysis:	Metals and Wet Chemistry
Validator:	Stephen Donivan
Review Date:	December 8, 2014

This validation was performed according to the *Environmental Procedures Catalog* (LMS/POL/S04325, continually updated), *"Standard Practice for Validation of Environmental Data."* The procedure was applied at Level 3, Data Validation. See attached Data Validation Worksheets for supporting documentation on the data review and validation. All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 4.

Table 4. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Ammonia as N	WCH-A-005	EPA 350.1	EPA 350.1
Calcium, Magnesium, Manganese, Potassium, Sodium, Strontium	LMM-01	SW-846 3005	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
Selenium, Uranium	LMM-02	SW-846 3005	SW-846 6020

Data Qualifier Summary

Analytical results were qualified as listed in Table 5. Refer to the attached validation worksheets and the sections below for an explanation of the data qualifiers applied.

Table 5. Data Qualifiers

Sample Number	Location	Analyte	Flag	Reason
1410218-1	0501	Nitrate + Nitrite as N	J	Matrix spike recovery
1410218-44	0956	Manganese	U	Less than 5 times the calibration blank
1410218-44	0956	Uranium	J	Serial dilution result
1410218-63	1118	Manganese	U	Less than 5 times the calibration blank
1410218-70	1138	Uranium	J	Serial dilution result
1410218-76	1203	Manganese	U	Less than 5 times the calibration blank
1410218-80	Equipment Blank	Manganese	U	Less than 5 times the calibration blank
1410218-80	Equipment Blank	Sodium	U	Less than 5 times the method blank
1410218-81	1138 Duplicate	Uranium	J	Serial dilution result

Sample Shipping/Receiving

ALS Laboratory Group in Fort Collins, Colorado, received 85 water samples on October 8, 2014, accompanied by Chain of Custody (COC) forms. Copies of the air bills were included in the receiving documentation. The COC forms were checked to confirm that all of the samples were listed and that signatures and dates were present indicating sample relinquishment and receipt. The sample submittal documents including the COC forms had no errors or omissions.

Preservation and Holding Times

The sample shipments were received intact with the temperatures inside the iced cooler at 1.8 °C, which complies with requirements. All samples were received in the correct container types and had been preserved correctly for the requested analyses with the following exception. The labels for the preserved and unpreserved anions bottles from location 0608 were swapped. The correct tests were assigned to the bottles by the laboratory based on the preservation.

The filtered samples from San Juan River locations 0501, 0897, and 1205 were received only partially filtered. The laboratory re-filtered these samples prior to proceeding with analysis.

All samples were analyzed within the applicable holding times.

Detection and Quantitation Limits

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

Laboratory Instrument Calibration

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data for all analytes.

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

Method EPA 350.1
Calibrations were performed for ammonia as N on September 4, 2014, 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 with acceptable results.

Method EPA 353.2
Calibrations were performed for nitrate + nitrite as N on October 16, 2014, 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 with all calibration checks meeting the acceptance criteria.

Method SW-846 6010B
Calibrations for calcium, magnesium, manganese, potassium, sodium, and strontium were performed October 13, 14, 15, and 17, 2014, 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 calibration checks associated with reported results 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 were within the acceptance range of 70 percent to 130 percent with the exception of two sodium results. The associated sample sodium results were all greater than 5 times the PQL, requiring no qualification.

Method SW-846 6020A
Calibrations for selenium and uranium were performed October 14 and 16, 2014, using four 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 with all calibration checks associated with reported results 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. 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 were performed for chloride and sulfate on October 6, 2014, using five calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency with all calibration checks meeting 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 for all analytes with the exception of three ammonia as N continuing calibration blanks. The samples bracketed by these blanks either contained more than 10 times the concentration of ammonia as N that was detected in the blank or were reanalyzed with an acceptable blank.

Inductively Coupled Plasma Interference Check Sample Analysis

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

Matrix Spike Analysis

Matrix spike and matrix spike duplicate (MS/MSD) samples are used to measure method performance in the sample matrix. The MS/MSD data are not evaluated when the concentration of the unspiked sample is greater than 4 times the spike concentration. The spikes met the recovery and precision criteria for all analytes evaluated with the following exceptions.

The nitrate + nitrite as N spike duplicate recovery from sample 0501 was above the acceptance range with a recovery of 129 percent. The associated sample result is qualified with a "J" flag as an estimated value.

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 the PQL should be less than 20 percent. For results that are less than 5 times the PQL, the range should be no greater than the PQL. The replicate results met these criteria, demonstrating acceptable laboratory precision, for all samples.

Laboratory Control Samples

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 control sample results were acceptable for all analytes.

Metals Serial Dilution

Serial dilutions were prepared and analyzed for the metals analyses to monitor chemical or physical interferences in the sample matrix. Serial dilution data are evaluated when the concentration of the undiluted sample is greater than 50 times the MDL. All evaluated serial dilution data were acceptable with the following exceptions. The uranium serial dilution results

for samples 0956 and 1138 did not meet the acceptance criteria. The associated sample results are qualified with a "J" flag as estimated values.

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 chloride and sulfate data. All peak integrations were satisfactory.

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 6 shows the total anion and cation results in the samples from this event and the charge balance, which is a RPD calculation. Typically, a charge balance difference of 10 percent is considered acceptable.

Table 6. Comparison of Major Anions and Cations

Location	Location Type	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
0501	Surface Water (filtered)	4.74	4.53	2.2
0608	Groundwater	129.27	138.57	3.5
0610	Groundwater	147.46	158.57	3.6
0611	Groundwater	118.64	126.77	3.3
0612	Groundwater	12.12	12.37	1.0
0614	Groundwater	107.50	107.80	0.1
0615	Groundwater	101.51	105.54	2.0
0618	Groundwater	128.68	137.55	3.3
0619	Groundwater	97.29	102.84	2.8
0622	Groundwater	56.06	56.30	0.2
0623	Groundwater	63.99	65.41	1.1
0625	Groundwater	63.98	68.05	3.1
0626	Groundwater	52.12	52.50	0.4
0628	Groundwater	142.73	151.41	3.0
0630	Groundwater	108.96	115.49	2.9
0655	Surface Water	23.21	23.31	0.2
0734	Groundwater	132.97	141.44	3.1
0735	Groundwater	253.86	278.60	4.7
0736	Groundwater	60.82	63.06	1.8
0766	Groundwater	110.13	122.06	5.1
0768	Groundwater	74.53	78.44	2.6

Table 6 (continued). Comparison of Major Anions and Cations

Location	Location Type	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
0773	Groundwater	38.79	39.48	0.9
0775	Groundwater	90.30	90.74	0.2
0779	Groundwater	220.92	229.75	2.0
0782R	Groundwater	13.41	14.21	2.9
0783R	Groundwater	23.49	24.53	2.2
0792	Groundwater	95.15	99.91	2.4
0793	Groundwater	145.28	160.63	5.0
0797	Groundwater	100.00	108.52	4.1
0798	Groundwater	111.99	122.06	4.3
0850	Groundwater	53.65	54.04	0.4
0853	Groundwater	14.53	15.98	4.8
0854	Groundwater	147.17	155.30	2.7
0855	Groundwater	65.55	73.14	5.5
0856	Groundwater	62.53	65.57	2.4
0857	Groundwater	120.10	130.92	4.3
0897	Surface Water (filtered)	4.62	4.46	1.7
0899	Surface Water (filtered)	5.34	4.52	8.3
0940	Surface Water (filtered)	4.81	4.79	0.3
0956	Surface Water (filtered)	4.43	4.56	1.4
0965	Surface Water (filtered)	5.05	5.40	3.4
1008	Groundwater	87.51	94.36	3.8
1009	Groundwater	39.27	35.19	5.5
1089	Groundwater	88.98	90.60	0.9
1104	Groundwater	136.29	152.61	5.7
1105	Groundwater	160.52	166.99	2.0
1109	Groundwater	40.74	40.97	0.3
1110	Groundwater	48.71	47.78	1.0
1111	Groundwater	194.51	211.94	4.3
1112	Groundwater	82.40	85.47	1.8
1113	Groundwater	97.67	100.69	1.5
1114	Groundwater	67.06	68.75	1.2
1115	Groundwater	220.58	224.59	0.9
1117	Groundwater	6.80	7.01	1.5
1118	Surface Water	168.37	179.44	3.2
1128	Groundwater	263.41	271.89	1.6
1132	Groundwater	6.16	6.56	3.1
1134	Groundwater	6.30	6.52	1.7
1135	Groundwater	61.21	63.03	1.5

Table 6 (continued). Comparison of Major Anions and Cations

Location	Location Type	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
1136	Groundwater	81.09	76.87	2.7
1137	Groundwater	239.21	259.80	4.1
1138	Groundwater	279.19	281.60	0.4
1139	Groundwater	288.64	322.53	5.5
1140	Groundwater	195.81	214.76	4.6
1141	Groundwater	85.63	89.58	2.3
1142	Groundwater	7.75	8.05	1.9
1143	Groundwater	54.74	56.22	1.3
1203	Surface Water (filtered)	4.66	4.68	0.3
1205	Surface Water (filtered)	4.55	4.57	0.2

milliequivalents per liter (meq/L)

The charge balance difference was below 10 percent for all locations indicating that there are no significant errors associated with the measurement of major ion concentrations.

Electronic Data Deliverable (EDD) File

The EDD file arrived on October 22, 2014. The Sample Management System EDD validation module was used to verify that the EDD files were complete and in compliance with requirements. The module compares the contents of the files to the requested analyses to ensure all and only the requested data are delivered. The contents of the EDD were manually examined to verify that the sample results accurately reflect the data contained in the sample data package.

SAMPLE MANAGEMENT SYSTEM

General Data Validation Report

RIN: 14096508 **Lab Code:** PAR **Validator:** Stephen Donivan **Validation Date:** 12/03/2014

Project: Shiprock Monitoring **Analysis Type:** ☑ Metals ☑ General Chem ☐ Rad ☐ Organics

# of Samples: 85 **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	There was 1 trip/equipment blank evaluated.
☑ Field Duplicates	There were 5 duplicates evaluated.

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 14096508 **Lab Code:** PAR **Date Due:** 11/05/2014

Matrix: Water **Site Code:** SHP01 **Date Completed:** 10/24/2014

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	10/13/2014	0.0000	1.0000	OK	OK	OK	101.0			2.0	104.0	4.0	98.0
Calcium	ICP/ES	10/14/2014	0.0000	1.0000	OK	OK	OK	99.0	83.0	89.0	1.0	93.0	3.0	112.0
Calcium	ICP/ES	10/15/2014	0.0000	1.0000	OK	OK	OK	99.0	103.0	84.0	2.0	93.0	1.0	104.0
Calcium	ICP/ES	10/17/2014	0.0000	1.0000	OK	OK	OK	101.0	98.0	98.0	0.0	96.0	5.0	123.0
Calcium	ICP/ES	10/17/2014			OK	OK	OK	102.0	84.0	88.0	0.0	94.0	3.0	121.0
Magnesium	ICP/ES	10/13/2014	0.0000	1.0000	OK	OK	OK	101.0			4.0	113.0	1.0	100.0
Magnesium	ICP/ES	10/14/2014	0.0000	1.0000	OK	OK	OK	95.0		91.0	2.0	104.0	3.0	107.0
Magnesium	ICP/ES	10/15/2014	0.0000	1.0000	OK	OK	OK	96.0	105.0		5.0	97.0	0.0	94.0
Magnesium	ICP/ES	10/17/2014	0.0000	1.0000	OK	OK	OK	99.0	98.0	97.0	0.0	104.0	1.0	83.0
Magnesium	ICP/ES	10/17/2014			OK	OK	OK	97.0			2.0	99.0	2.0	107.0
Manganese	ICP/ES	10/13/2014	0.0000	1.0000	OK	OK	OK	105.0	94.0		2.0	110.0	4.0	115.0
Manganese	ICP/ES	10/14/2014	0.0000	1.0000	OK	OK	OK	102.0	87.0	90.0	0.0	99.0	1.0	114.0
Manganese	ICP/ES	10/15/2014	0.0000	1.0000	OK	OK	OK	104.0	106.0	92.0	3.0	95.0	4.0	106.0
Manganese	ICP/ES	10/17/2014	0.0000	1.0000	OK	OK	OK	105.0	104.0	104.0	0.0	99.0	2.0	101.0
Manganese	ICP/ES	10/17/2014			OK	OK	OK	104.0		116.0	4.0	97.0		102.0
Potassium	ICP/ES	10/13/2014	0.0000	1.0000	OK	OK	OK	94.0	98.0	92.0	2.0		0.0	100.0
Potassium	ICP/ES	10/14/2014	0.0000	1.0000	OK	OK	OK	96.0	98.0	99.0	0.0		1.0	113.0
Potassium	ICP/ES	10/15/2014	0.0000	1.0000	OK	OK	OK	96.0	103.0	95.0	4.0		2.0	97.0

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 14096508 **Lab Code:** PAR **Date Due:** 11/05/2014

Matrix: Water **Site Code:** SHP01 **Date Completed:** 10/24/2014

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	10/17/2014	0.0000	1.0000	OK	OK	OK	98.0	94.0	96.0	1.0		2.0	103.0
Potassium	ICP/ES	10/17/2014			OK	OK	OK	96.0	91.0	98.0	2.0		3.0	94.0
Selenium	ICP/MS	10/14/2014	0.0000	1.0000	OK	OK	OK	113.0	111.0	113.0	2.0			95.0
Selenium	ICP/MS	10/14/2014					OK	105.0	100.0	120.0	17.0			72.0
Selenium	ICP/MS	10/16/2014	0.0000	1.0000	OK	OK	OK	110.0	113.0	118.0	4.0			98.0
Selenium	ICP/MS	10/16/2014					OK	105.0	119.0	118.0	1.0			98.0
Selenium	ICP/MS	10/16/2014							123.0	117.0	3.0			
Selenium	ICP/MS	10/17/2014						109.0						
Sodium	ICP/ES	10/13/2014	0.0000	1.0000	OK	OK	OK	94.0			3.0		7.0	112.0
Sodium	ICP/ES	10/14/2014	0.0000	1.0000	OK	OK	OK	98.0			1.0		3.0	150.0
Sodium	ICP/ES	10/15/2014	0.0000	1.0000	OK	OK	OK	97.0			3.0		1.0	108.0
Sodium	ICP/ES	10/17/2014	0.0000	1.0000	OK	OK	OK	99.0	95.0	97.0	1.0		1.0	135.0
Sodium	ICP/ES	10/17/2014			OK	OK	OK	98.0			1.0		4.0	108.0
Strontium	ICP/ES	10/13/2014	0.0000	1.0000	OK	OK	OK	101.0	97.0		3.0	106.0	5.0	109.0
Strontium	ICP/ES	10/14/2014	0.0000	1.0000	OK	OK	OK	104.0	84.0	90.0	0.0	98.0	2.0	112.0
Strontium	ICP/ES	10/15/2014	0.0000	1.0000	OK	OK	OK	103.0			5.0	102.0	0.0	107.0
Strontium	ICP/ES	10/17/2014	0.0000	1.0000	OK	OK	OK	105.0	99.0	101.0	1.0	98.0	1.0	109.0
Strontium	ICP/ES	10/17/2014			OK	OK	OK	103.0		82.0	1.0	101.0	2.0	104.0

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 14096508 **Lab Code:** PAR **Date Due:** 11/05/2014

Matrix: Water **Site Code:** SHP01 **Date Completed:** 10/24/2014

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								
Uranium	ICP/MS	10/14/2014	0.0000	1.0000	OK	OK	OK	97.0			2.0		0.0	80.0
Uranium	ICP/MS	10/14/2014					OK	91.0			12.0		8.0	90.0
Uranium	ICP/MS	10/16/2014	0.0000	1.0000	OK	OK	OK	96.0			1.0		18.0	103.0
Uranium	ICP/MS	10/16/2014					OK	94.0	105.0	99.0	5.0		7.0	103.0
Uranium	ICP/MS	10/16/2014					OK				3.0		15.0	
Uranium	ICP/MS	10/17/2014						89.0						

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 14096508 **Lab Code:** PAR **Date Due:** 11/05/2014

Matrix: Water **Site Code:** SHP01 **Date Completed:** 10/24/2014

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	10/09/2014	0.000	1.0000	OK	OK	OK	107.00	105.0	105.0	0	
AMMONIA AS N	10/10/2014			OK	OK	OK	101.00	98.0	98.0	0	
AMMONIA AS N	10/15/2014			OK	OK	OK	102.00	105.0	104.0	0	
AMMONIA AS N	10/15/2014					OK	105.00	78.0	76.0	1.00	
AMMONIA AS N	10/16/2014			OK	OK	OK	103.00	111.0	112.0	0	
CHLORIDE	10/09/2014	0.000	0.9999	OK	OK	OK	101.00	106.0	104.0	0	
CHLORIDE	10/13/2014			OK	OK	OK	101.00	102.0	101.0	1.00	
CHLORIDE	10/14/2014			OK	OK	OK	102.00	95.0	101.0	5.00	
CHLORIDE	10/14/2014					OK	102.00	102.0	103.0	1.00	
CHLORIDE	10/15/2014			OK	OK	OK	101.00	101.0	100.0	1.00	
Nitrate+Nitrite as N	10/16/2014	0.000	1.0000	OK	OK	OK	100.00	98.0	129.0	10.00	
Nitrate+Nitrite as N	10/16/2014					OK	98.00	100.0	100.0	0	
Nitrate+Nitrite as N	10/16/2014					OK	99.00	101.0	101.0	0	
Nitrate+Nitrite as N	10/16/2014					OK	100.00	96.0	101.0	5.00	
Nitrate+Nitrite as N	10/16/2014					OK	100.00	97.0	102.0	4.00	
SULFATE	10/09/2014	0.000	0.9998	OK	OK	OK	98.00				

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 14096508 **Lab Code:** PAR **Date Due:** 11/05/2014

Matrix: Water **Site Code:** SHP01 **Date Completed:** 10/24/2014

Analyte	Date Analyzed	CALIBRATION				Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	CCV	CCB						
SULFATE	10/13/2014			OK	OK	OK	98.00	105.0	103.0	1.00	
SULFATE	10/14/2014			OK	OK	OK	99.00	94.0	104.0	5.00	
SULFATE	10/14/2014					OK	99.00	100.0	100.0	0	
SULFATE	10/15/2014						98.00	101.0	100.0	1.00	

General Information

RIN:	14096510
Sample Event:	September 29 – October 2, 2014
Site(s):	Shiprock Disposal Site (Terrace), New Mexico
Laboratory:	ALS Laboratory Group, Fort Collins, Colorado
Work Order No.:	1410219
Analysis:	Metals and Wet Chemistry
Validator:	Stephen Donivan
Review Date:	December 9, 2014

This validation was performed according to the *Environmental Procedures Catalog* (LMS/POL/S04325, continually updated), *"Standard Practice for Validation of Environmental Data."* The procedure was applied at Level 3, Data Validation. See attached Data Validation Worksheets for supporting documentation on the data review and validation. All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 7.

Table 7. Analytes and Methods.

Analyte	Line Item Code	Prep Method	Analytical Method
Ammonia as N	WCH-A-005	EPA 350.1	EPA 350.1
Calcium, Magnesium, Manganese, Potassium, Sodium, Strontium	LMM-01	SW-846 3005	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
Selenium, Uranium	LMM-02	SW-846 3005	SW-846 6020

Data Qualifier Summary

Analytical results were qualified as listed in Table 8. Refer to the attached validation worksheets and the sections below for an explanation of the data qualifiers applied.

Table 8. Data Qualifiers

Sample Number	Location	Analyte	Flag	Reason
1410219-2	0602	Selenium	J	Matrix spike recovery
1410219-5	0662	Manganese	U	Less than 5 times the calibration blank
1410219-16	0816	Manganese	U	Less than 5 times the calibration blank
1410219-26	0833	Manganese	U	Less than 5 times the calibration blank
1410219-30	0838	Manganese	U	Less than 5 times the calibration blank
1410219-31	0841	Manganese	U	Less than 5 times the calibration blank
1410219-33	0844	Manganese	U	Less than 5 times the calibration blank
1410219-35	0889	Manganese	U	Less than 5 times the calibration blank
1410219-37	1007	Manganese	U	Less than 5 times the calibration blank
1410219-42	1069	Manganese	U	Less than 5 times the calibration blank
1410219-46	1078	Manganese	J	Field duplicate result
1410219-47	1079	Manganese	U	Less than 5 times the calibration blank
1410219-54	1096	Manganese	J	Field duplicate result
1410219-55	1215	Manganese	U	Less than 5 times the calibration blank
1410219-56	1219	Manganese	U	Less than 5 times the calibration blank
1410219-59	1078 Duplicate	Manganese	J	Field duplicate result
1410219-62	1096 Duplicate	Manganese	J	Field duplicate result

Sample Shipping/Receiving

ALS Laboratory Group in Fort Collins, Colorado, received 63 water samples on October 8, 2014, accompanied by COC forms. Copies of the air bills were included in the receiving documentation. The COC forms were checked to confirm that all of the samples were listed and that signatures and dates were present indicating sample relinquishment and receipt. The sample submittal documents including the COC forms had no errors or omissions.

Preservation and Holding Times

The sample shipments were received intact with the temperatures inside the iced coolers at 0.8 °C and 1.0 °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

The MDL was reported for all analytes as required. The MDL, as defined in 40 CFR 136, is the minimum concentration of an analyte that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. The PQL for these analytes is the lowest concentration that can be reliably measured, and is defined as 5 times the MDL. The reported MDLs for all analytes demonstrate compliance with contractual requirements.

Laboratory Instrument Calibration

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

Method EPA 350.1
Calibrations were performed for ammonia as N on September 4, 2014, 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 with acceptable results.

Method EPA 353.2
Calibrations were performed for nitrate + nitrite as N on October 23, 2014, 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 with all calibration checks meeting the acceptance criteria.

Method SW-846 6010B
Calibrations for calcium, magnesium, manganese, potassium, sodium, and strontium were performed October 13, 14, 15, and 17, 2014, 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 calibration checks associated with reported results 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 were within the acceptance range of 70 percent to 130 percent with the exception of three sodium results. The associated sample sodium results were all greater than 5 times the PQL, requiring no qualification.

Method SW-846 6020A
Calibrations for selenium and uranium were performed October 14 and 17, 2014, using four 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 with all calibration checks associated with reported results 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. 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 were performed for chloride and sulfate on October 6, 2014, using five calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency with all calibration checks meeting 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 for all analytes with the exception of two ammonia as N continuing calibration blanks. The samples bracketed by these blanks either contained more than 10 times the concentration of ammonia as N that was detected in the blank or were reanalyzed with an acceptable blank.

Inductively Coupled Plasma Interference Check Sample Analysis

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

Matrix Spike Analysis

MS/MSD samples are used to measure method performance in the sample matrix. The MS/MSD data are not evaluated when the concentration of the unspiked sample is greater than 4 times the spike concentration. The spikes met the recovery and precision criteria for all analytes evaluated with the following exception.

The selenium spike recoveries from sample 0602 were above the acceptance range. The associated sample result is qualified with a "J" flag as an estimated value.

Laboratory Replicate Analysis

Laboratory replicate analyses are used to determine laboratory precision for each sample matrix. The RPD for replicate results that are greater than 5 times the PQL should be less than 20 percent. For results that are less than 5 times the PQL, the range should be no greater than the PQL. The replicate results met these criteria, demonstrating acceptable laboratory precision, for all samples, with the following exception. The selenium duplicate result for sample 0602 was above the acceptance range. The associated sample result is qualified with a "J" flag as an estimated value.

Laboratory Control Samples

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 control sample results were acceptable for all analytes.

Metals Serial Dilution

Serial dilutions were prepared and analyzed for the metals analyses to monitor chemical or physical interferences in the sample matrix. Serial dilution data are evaluated when the concentration of the undiluted sample is greater than 50 times the MDL. All evaluated serial dilution data were acceptable.

Completeness

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

Chromatography Peak Integration

The integration of analyte peaks was reviewed for all chloride and sulfate data. All peak integrations were satisfactory.

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 9 shows the total anion and cation results in the samples from this event and the charge balance, which is a RPD calculation. Typically, a charge balance difference of 10 percent is considered acceptable.

Table 9. Comparison of Major Anions and Cations

Location	Location Type	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
0600	Groundwater	258.20	278.81	3.84
0602	Groundwater	418.73	454.74	4.12
0603	Groundwater	196.96	211.80	3.63
0604	Groundwater	375.79	416.22	5.11
0662	Surface Water	42.42	44.80	2.72
0725	Groundwater	61.19	63.15	1.58
0726	Groundwater	127.66	139.13	4.30
0727	Groundwater	244.41	266.58	4.34
0728	Groundwater	63.14	63.34	0.16
0731	Groundwater	104.59	108.76	1.96
0812	Groundwater	497.79	513.25	1.53
0813	Groundwater	382.93	417.19	4.28
0814	Groundwater	355.24	404.09	6.43
0815	Groundwater	374.45	400.57	3.37
0816	Groundwater	49.26	50.36	1.11
0817	Groundwater	316.36	336.20	3.04
0818	Groundwater	335.38	367.42	4.56
0819	Groundwater	317.01	354.58	5.59
0822	Groundwater	285.86	317.76	5.28

Table 9 (continued). Comparison of Major Anions and Cations

Location	Location Type	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
0824	Groundwater	295.93	332.91	5.88
0826	Groundwater	261.63	267.78	1.16
0827	Groundwater	183.42	202.95	5.05
0828	Groundwater	47.27	46.50	0.81
0830	Groundwater	40.15	40.47	0.40
0833	Groundwater	95.51	98.70	1.65
0835	Groundwater	6.05	6.01	0.33
0836	Groundwater	67.72	70.07	1.70
0837	Groundwater	72.05	71.97	0.06
0838	Groundwater	137.19	141.69	1.61
0841	Groundwater	335.60	371.14	5.03
0843	Groundwater	48.47	49.29	0.84
0844	Groundwater	291.40	297.29	1.00
0848	Groundwater	354.73	421.76	8.63
0889	Surface Water	73.31	72.84	0.33
1007	Groundwater	334.73	327.23	1.13
1049	Groundwater	398.63	440.75	5.02
1057	Groundwater	223.39	243.13	4.23
1058	Groundwater	161.48	168.15	2.02
1059	Groundwater	222.47	243.86	4.59
1068	Groundwater	196.84	200.08	0.82
1069	Groundwater	278.59	294.77	2.82
1070	Groundwater	359.69	428.85	8.77
1073	Groundwater	327.46	355.20	4.06
1074	Groundwater	307.32	314.25	1.12
1078	Groundwater	325.13	368.81	6.29
1079	Groundwater	136.00	141.36	1.93
1087	Groundwater	199.20	207.20	1.97
1088	Groundwater	403.63	489.38	9.60
1091	Groundwater	375.28	399.11	3.08
1092	Groundwater	377.21	407.94	3.91
1093R	Groundwater	234.43	275.00	7.97
1095	Groundwater	237.86	245.24	1.53
1096	Groundwater	345.31	391.59	6.28
1215	Surface Water	2084.99	2417.31	7.38
1219	Surface Water	49.93	53.02	3.00
1220	Surface Water	37.23	38.59	1.79
1221	Surface Water	562.30	560.24	0.18
MW1	Groundwater	203.97	229.89	5.97

milliequivalents per liter (meq/L)

The charge balance difference was below 10 percent for all locations indicating that there are no significant errors associated with the measurement of major ion concentrations.

EDD File

The EDD file arrived on October 24, 2014. The Sample Management System EDD validation module was used to verify that the EDD files were complete and in compliance with requirements. The module compares the contents of the files to the requested analyses to ensure all and only the requested data are delivered. The contents of the EDD were manually examined to verify that the sample results accurately reflect the data contained in the sample data package.

SAMPLE MANAGEMENT SYSTEM

General Data Validation Report

RIN: 14096510 **Lab Code:** PAR **Validator:** Stephen Donivan **Validation Date:** 12/09/2014

Project: Shiprock Monitoring **Analysis Type:** ☑ Metals ☑ General Chem ☐ Rad ☐ Organics

# of Samples: 63 **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 4 duplicates evaluated.

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 14096510 **Lab Code:** PAR **Date Due:** 11/05/2014

Matrix: Water **Site Code:** SHP01 **Date Completed:** 09/29/2014

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	10/13/2014	0.0000	1.0000	OK	OK	OK	101.0	84.0	89.0	0.0	104.0	5.0	98.0
Calcium	ICP/ES	10/17/2014	0.0000	1.0000	OK	OK	OK	101.0			2.0	98.0	4.0	112.0
Calcium	ICP/ES	10/17/2014					OK	101.0	107.0	98.0	2.0	97.0	5.0	113.0
Calcium	ICP/ES	10/17/2014					OK	99.0	93.0	94.0	0.0		4.0	111.0
Magnesium	ICP/ES	10/13/2014	0.0000	1.0000	OK	OK	OK	101.0			1.0	113.0	3.0	100.0
Magnesium	ICP/ES	10/17/2014	0.0000	1.0000	OK	OK	OK	93.0			1.0	108.0	4.0	107.0
Magnesium	ICP/ES	10/17/2014					OK	93.0	87.0	82.0	2.0	102.0	1.0	99.0
Magnesium	ICP/ES	10/17/2014					OK	91.0			0.0		1.0	90.0
Manganese	ICP/ES	10/13/2014	0.0000	1.0000	OK	OK	OK	105.0	101.0	103.0	2.0	110.0	3.0	115.0
Manganese	ICP/ES	10/17/2014	0.0000	1.0000	OK	OK	OK	102.0	97.0	110.0	5.0	105.0	6.0	114.0
Manganese	ICP/ES	10/17/2014					OK	103.0	106.0	98.0	3.0	101.0	5.0	113.0
Manganese	ICP/ES	10/17/2014					OK	100.0	91.0	96.0	1.0		2.0	103.0
Potassium	ICP/ES	10/13/2014	0.0000	1.0000	OK	OK	OK	94.0	97.0	101.0	2.0		1.0	100.0
Potassium	ICP/ES	10/17/2014	0.0000	1.0000	OK	OK	OK	98.0	95.0	99.0	2.0		1.0	113.0
Potassium	ICP/ES	10/17/2014					OK	101.0	106.0	99.0	3.0		0.0	101.0
Potassium	ICP/ES	10/17/2014					OK	100.0	95.0	100.0	2.0		1.0	108.0
Selenium	ICP/MS	10/14/2014	0.0000	1.0000	OK	OK	OK	113.0			23.0		9.0	95.0
Selenium	ICP/MS	10/17/2014	0.0000	1.0000	OK	OK	OK	116.0	132.0	128.0	3.0			109.0

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 14096510 **Lab Code:** PAR **Date Due:** 11/05/2014

Matrix: Water **Site Code:** SHP01 **Date Completed:** 09/29/2014

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								
Selenium	ICP/MS	10/17/2014					OK	115.0	120.0	112.0	7.0			98.0
Selenium	ICP/MS	10/17/2014					OK	119.0	117.0	115.0	2.0			101.0
Sodium	ICP/ES	10/13/2014	0.0000	1.0000	OK	OK	OK	94.0					2.0	112.0
Sodium	ICP/ES	10/17/2014	0.0000	1.0000	OK	OK	OK	100.0			0.0		1.0	150.0
Sodium	ICP/ES	10/17/2014					OK	102.0					2.0	150.0
Sodium	ICP/ES	10/17/2014					OK	101.0					0.0	135.0
Sodium	ICP/ES	10/20/2014	0.0000	1.0000	OK	OK					3.0			111.0
Strontium	ICP/ES	10/13/2014	0.0000	1.0000	OK	OK	OK	101.0			2.0	106.0	0.0	109.0
Strontium	ICP/ES	10/17/2014	0.0000	1.0000	OK	OK	OK	104.0			1.0	101.0	0.0	112.0
Strontium	ICP/ES	10/17/2014					OK	106.0			4.0	107.0	2.0	111.0
Strontium	ICP/ES	10/17/2014					OK	105.0			1.0		0.0	111.0
Uranium	ICP/MS	10/14/2014	0.0000	1.0000	OK	OK	OK	97.0			5.0		3.0	80.0
Uranium	ICP/MS	10/17/2014	0.0000	1.0000	OK	OK	OK	97.0			5.0		7.0	90.0
Uranium	ICP/MS	10/17/2014					OK	101.0			3.0		8.0	103.0
Uranium	ICP/MS	10/17/2014					OK	102.0			2.0		10.0	105.0

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 14096510 **Lab Code:** PAR **Date Due:** 11/05/2014

Matrix: Water **Site Code:** SHP01 **Date Completed:** 09/29/2014

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	10/16/2014	0.000	1.0000	OK	OK	OK	101.00	100.0	97.0	1.00	
AMMONIA AS N	10/17/2014			OK	OK	OK	101.00	83.0	83.0	0	
AMMONIA AS N	10/20/2014			OK	OK	OK	101.00	103.0	101.0	1.00	
AMMONIA AS N	10/20/2014					OK	104.00	91.0	91.0	0	
CHLORIDE	10/15/2014	0.000	1.0000	OK	OK	OK	101.00				
CHLORIDE	10/16/2014			OK	OK	OK	100.00				
CHLORIDE	10/17/2014							100.0	102.0	1.00	
CHLORIDE	10/20/2014			OK	OK	OK	100.00	102.0	99.0	2.00	
CHLORIDE	10/21/2014			OK	OK	OK	101.00	100.0	100.0	0	
Nitrate+Nitrite as N	10/23/2014	0.000	1.0000	OK	OK	OK	99.00	97.0	85.0	9.00	
Nitrate+Nitrite as N	10/23/2014					OK	99.00	93.0	87.0	5.00	
Nitrate+Nitrite as N	10/23/2014					OK	98.00	97.0	96.0	1.00	
Nitrate+Nitrite as N	10/23/2014					OK	98.00	94.0	93.0	0	
SULFATE	10/15/2014	0.000	1.0000	OK	OK	OK	98.00	101.0	102.0	0	
SULFATE	10/16/2014			OK	OK	OK	99.00				
SULFATE	10/17/2014							103.0	102.0	0	

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 14096510 **Lab Code:** PAR **Date Due:** 11/05/2014

Matrix: Water **Site Code:** SHP01 **Date Completed:** 09/29/2014

Analyte	Date Analyzed	CALIBRATION				Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	CCV	CCB						
SULFATE	10/20/2014			OK	OK	OK	97.00	105.0	101.0	2.00	
SULFATE	10/21/2014			OK	OK	OK	99.00	102.0	102.0	0	

General Information

RIN:	14106534
Sample Event:	October 6, 2014
Site(s):	Shiprock Disposal Site (Terrace), New Mexico
Laboratory:	ALS Laboratory Group, Fort Collins, Colorado
Work Order No.:	1410203
Analysis:	Metals and Wet Chemistry
Validator:	Stephen Donivan
Review Date:	December 10, 2014

This validation was performed according to the *Environmental Procedures Catalog* (LMS/POL/S04325, continually updated), *"Standard Practice for Validation of Environmental Data."* The procedure was applied at Level 3, Data Validation. See attached Data Validation Worksheets for supporting documentation on the data review and validation. All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 10.

Table 10. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Ammonia as N	WCH-A-005	EPA 350.1	EPA 350.1
Calcium, Magnesium, Manganese, Potassium, Sodium, Strontium	LMM-01	SW-846 3005	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
Selenium, Uranium	LMM-02	SW-846 3005	SW-846 6020

Data Qualifier Summary

None of the analytical results required qualification.

Sample Shipping/Receiving

ALS Laboratory Group in Fort Collins, Colorado, received one water sample on October 8, 2014, accompanied by a COC form. A copy of the air bill was included in the receiving documentation. The COC form was checked to confirm that the sample was listed and that signatures and dates were present indicating sample relinquishment and receipt. The sample submittal documents including the COC form had no errors or omissions.

Preservation and Holding Times

The sample shipment was received intact with the temperature inside the iced cooler at 0.2 °C, which complies with requirements. The sample was received in the correct container type and had been preserved correctly for the requested analyses. The sample was analyzed within the applicable holding times.

Detection and Quantitation Limits

The MDL was reported for all analytes as required. The MDL, as defined in 40 CFR 136, is the minimum concentration of an analyte that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. The PQL for these analytes is the lowest concentration that can be reliably measured, and is defined as 5 times the MDL. The reported MDLs for all analytes demonstrate compliance with contractual requirements.

Laboratory Instrument Calibration

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

Method EPA 350.1
Calibrations were performed for ammonia as N on September 4, 2014, 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 with acceptable results.

Method EPA 353.2
Calibrations were performed for nitrate + nitrite as N on October 9, 2014, 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 with all calibration checks meeting the acceptance criteria.

Method SW-846 6010B
Calibrations for calcium, magnesium, manganese, potassium, sodium, and strontium were performed October 13, 2014, 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 calibration checks associated with reported results 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 were within the acceptance range of 70 percent to 130 percent.

Method SW-846 6020A
Calibrations for selenium and uranium were performed October 14, 2014, using four 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 with all calibration checks associated with reported results 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. 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 were performed for chloride and sulfate on October 6, 2014, using five calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency with all calibration checks meeting 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 for all analytes.

Inductively Coupled Plasma Interference Check Sample Analysis

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

Matrix Spike Analysis

MS/MSD samples are used to measure method performance in the sample matrix. The MS/MSD data are not evaluated when the concentration of the unspiked sample is greater than 4 times the spike concentration. The spikes met the recovery and precision criteria for all analytes evaluated.

Laboratory Replicate Analysis

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

Laboratory Control Samples

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 control sample results were acceptable for all analytes.

Metals Serial Dilution

Serial dilutions were prepared and analyzed for the metals analyses to monitor chemical or physical interferences in the sample matrix. Serial dilution data are evaluated when the

concentration of the undiluted sample is greater than 50 times the MDL. All evaluated serial dilution data were acceptable.

Completeness

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

Chromatography Peak Integration

The integration of analyte peaks was reviewed for all chloride and sulfate data. All peak integrations were satisfactory.

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 11 shows the total anion and cation results in the sample from this event and the charge balance, which is a RPD calculation. Typically, a charge balance difference of 10 percent is considered acceptable.

Table 11. Comparison of Major Anions and Cations

Location	Location Type	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
1071	Groundwater	342.36	357.89	2.22

milliequivalents per liter (meq/L)

The charge balance difference was below 10 percent indicating that there are no significant errors associated with the measurement of major ion concentrations.

EDD File

The EDD file arrived on October 17, 2014. The Sample Management System EDD validation module was used to verify that the EDD file was complete and in compliance with requirements. The module compares the contents of the file to the requested analyses to ensure all and only the requested data are delivered. The contents of the EDD were manually examined to verify that the sample results accurately reflect the data contained in the sample data package.

SAMPLE MANAGEMENT SYSTEM

General Data Validation Report

RIN: 14106534 **Lab Code:** PAR **Validator:** Stephen Donivan **Validation Date:** 12/10/2014

Project: Shiprock Monitoring **Analysis Type:** ☑ Metals ☑ General Chem ☐ Rad ☐ Organics

# of Samples: 1 **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

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 14106534 **Lab Code:** PAR **Date Due:** 11/05/2014

Matrix: Water **Site Code:** SHP01 **Date Completed:** 10/17/2014

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	10/13/2014	0.0000	1.0000	OK	OK	OK	101.0			2.0	104.0	1.0	98.0
Magnesium	ICP/ES	10/13/2014	0.0000	1.0000	OK	OK	OK	101.0			1.0	113.0	2.0	100.0
Manganese	ICP/ES	10/13/2014	0.0000	1.0000	OK	OK	OK	105.0	82.0	98.0	2.0	110.0	5.0	115.0
Potassium	ICP/ES	10/13/2014	0.0000	1.0000	OK	OK	OK	94.0	93.0	100.0	3.0		0.0	100.0
Selenium	ICP/MS	10/14/2014	0.0000	1.0000	OK	OK	OK	113.0			1.0	98.0	3.0	95.0
Sodium	ICP/ES	10/13/2014	0.0000	1.0000	OK	OK	OK	94.0			4.0		4.0	112.0
Strontium	ICP/ES	10/13/2014	0.0000	1.0000	OK	OK	OK	101.0			3.0	106.0	3.0	109.0
Uranium	ICP/MS	10/14/2014	0.0000	1.0000	OK	OK	OK	97.0			2.0	103.0	0.0	80.0

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 14106534 **Lab Code:** PAR **Date Due:** 11/05/2014

Matrix: Water **Site Code:** SHP01 **Date Completed:** 10/17/2014

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	10/10/2014	0.000	1.0000	OK	OK	OK	102.00				
CHLORIDE	10/10/2014	0.000	1.0000	OK	OK	OK	100.00	99.0	98.0	1.00	
Nitrate+Nitrite as N	10/09/2014	0.000	1.0000	OK	OK	OK	101.00	83.0	88.0	1.00	
SULFATE	10/10/2014	0.000	1.0000	OK	OK	OK	97.00	99.0	100.0	0	

Sampling Quality Control Assessment

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

Sampling Protocol

Sample results for monitoring wells that met the Category I, II, or III low-flow sampling criteria were qualified with an "F" flag in the database, indicating the wells were purged and sampled using the low-flow sampling method.

Floodplain wells 0734, 0773, and 0797; and terrace wells 0600, 0602, 0604, 0727, 0730, 0812, 0814, 0817, 0819, 0822, 0824, 0826, 0827, 1007, 1058, 1059, 1068, 1069, 1073, 1074, and MW1 were classified as Category II or III. The sample results for these wells were further qualified with a "Q" flag, indicating the data are qualitative because of the sampling technique.

All surface water locations were collected via container immersion or through tubing reel and weight. A filtered sample and a non-filtered sample were collected at San Juan River locations 0501, 0897, 0899, 0940, 0956, 0965, 1203, and 1205. Only non-filtered samples were collected at all other surface water locations as per the Shiprock program directive.

Equipment Blank Assessment

Equipment blanks are prepared and analyzed to document contamination attributable to the sample collection process. One equipment blank was submitted with these samples. Calcium, magnesium, strontium, sulfate, and uranium were detected in this blank. The concentrations of these analytes in the associated samples were much greater than the blank concentration requiring no qualification.

Field Duplicate Assessment

Field duplicate samples are collected and analyzed as an indication of overall precision of the measurement process. The precision observed includes both field and laboratory precision and has more variability than laboratory duplicates, which measure only laboratory performance. The RPD for duplicate results that are greater than 5 times the PQL should be less than 20 percent. The RPD is not used to evaluate results that are less than 5 times the PQL. For these results (RPD is NA on the Field Duplicates report), the range should be no greater than the PQL.

Floodplain duplicate samples were collected from locations 0655, 0854, 0856, 1008, and 1138. The duplicate results met the acceptance criteria for all analytes.

Terrace duplicate samples were collected from locations 0818, 1070, 1078, and 1096. The duplicate results met the acceptance criteria for all analytes with the following exceptions. The manganese duplicate results from locations 1078 and 1096 did not meet the acceptance criteria. The associated sample manganese results are qualified with a "J" flag as estimated values.

SAMPLE MANAGEMENT SYSTEM

Validation Report: Equipment/Trip Blanks

RIN: 14096508 **Lab Code:** PAR **Project:** Shiprock Monitoring **Validation Date:** 12/08/2014

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	1410218-80	SW6010	Calcium	530	B	24	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
1410218-1	MKU 112	0501	29000	1		
1410218-2	MKU 123	0501	180000	1		
1410218-38	MKU 102	0897	28000	1		
1410218-39	MKU 135	0897	180000	1		
1410218-40	MKU 103	0899	29000	1		
1410218-41	MKU 136	0899	180000	1		
1410218-42	MKU 104	0940	29000	1		
1410218-43	MKU 137	0940	190000	1		
1410218-46	MKU 107	0965	37000	1		
1410218-47	MKU 141	0965	160000	1		
1410218-78	MKU 101	1205	30000	1		
1410218-79	MKU 109	1205	380000	1		

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	1410218-80	SW6010	Magnesium	130	B	30	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
1410218-1	MKU 112	0501	3100	1		
1410218-2	MKU 123	0501	30000	1		
1410218-38	MKU 102	0897	2700	1		
1410218-39	MKU 135	0897	27000	1		
1410218-40	MKU 103	0899	2400	1		
1410218-41	MKU 136	0899	26000	1		
1410218-42	MKU 104	0940	2700	1		
1410218-43	MKU 137	0940	32000	1		
1410218-46	MKU 107	0965	3300	1		
1410218-47	MKU 141	0965	22000	1		
1410218-78	MKU 101	1205	2600	1		
1410218-79	MKU 109	1205	43000	1		

Validation Report: Equipment/Trip Blanks

RIN: 14096508 **Lab Code:** PAR **Project:** Shiprock Monitoring **Validation Date:** 12/08/2014

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	1410218-80	SW6010	Strontium	3.3	B	0.26	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
1410218-1	MKU 112	0501	430	1		
1410218-2	MKU 123	0501	2600	1		
1410218-38	MKU 102	0897	420	1		
1410218-39	MKU 135	0897	2700	1		
1410218-40	MKU 103	0899	450	1		
1410218-41	MKU 136	0899	2500	1		
1410218-42	MKU 104	0940	420	1		
1410218-43	MKU 137	0940	2700	1		
1410218-46	MKU 107	0965	530	1		
1410218-47	MKU 141	0965	2100	1		
1410218-78	MKU 101	1205	430	1		
1410218-79	MKU 109	1205	3600	1		

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	1410218-80	SW6020	Uranium	0.01	B	0.0029	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
1410218-1	MKU 112	0501	2.2	5		
1410218-2	MKU 123	0501	12	5		
1410218-38	MKU 102	0897	2.4	5		
1410218-39	MKU 135	0897	11	5		
1410218-40	MKU 103	0899	2.1	5		
1410218-41	MKU 136	0899	9.6	5		
1410218-42	MKU 104	0940	2.1	5		
1410218-43	MKU 137	0940	13	5		
1410218-46	MKU 107	0965	2	5		
1410218-47	MKU 141	0965	8.1	5		
1410218-78	MKU 101	1205	2.3	5		
1410218-79	MKU 109	1205	16	5		

SAMPLE MANAGEMENT SYSTEM

Validation Report: Equipment/Trip Blanks

RIN: 14096508 **Lab Code:** PAR **Project:** Shiprock Monitoring **Validation Date:** 12/08/2014

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	1410218-80	SW9056	SULFATE	0.79		0.5	MG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
1410218-1	MKU 112	0501	110	10		
1410218-2	MKU 123	0501	110	10		
1410218-38	MKU 102	0897	120	5		
1410218-39	MKU 135	0897	120	5		
1410218-40	MKU 103	0899	110	5		
1410218-41	MKU 136	0899	110	5		
1410218-42	MKU 104	0940	130	5		
1410218-43	MKU 137	0940	130	5		
1410218-46	MKU 107	0965	140	5		
1410218-47	MKU 141	0965	140	5		
1410218-78	MKU 101	1205	110	5		
1410218-79	MKU 109	1205	110	5		

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

RIN: 14096508 **Lab Code:** PAR **Project:** Shiprock Monitoring **Validation Date:** 12/03/2014

Duplicate: 2211 **Sample:** 1138

Analyte	Sample Result	Sample Flag	Sample Error	Sample Dilution	Duplicate Result	Duplicate Flag	Duplicate Error	Duplicate Dilution	RPD	RER	Units
AMMONIA AS N	2.5			1	2.1			1	17.39		MG/L
Calcium	460000			10	460000			10	0		UG/L
CHLORIDE	470			250	480			250	2.11		MG/L
Magnesium	1400000			10	1400000			10	0		UG/L
Manganese	5900			10	6000			10	1.68		UG/L
Nitrate+Nitrite as N	21			50	20			50	4.88		MG/L
Potassium	58000			10	58000			10	0		UG/L
Selenium	4.7			5	6.4			50			UG/L
Sodium	3200000			10	3100000			10	3.17		UG/L
Strontium	11000			10	11000			10	0		UG/L
SULFATE	12000			250	13000			250	8.00		MG/L
Uranium	1900			50	1900	E		50	0		UG/L

Duplicate: 2215 **Sample:** 0854

Analyte	Sample Result	Sample Flag	Sample Error	Sample Dilution	Duplicate Result	Duplicate Flag	Duplicate Error	Duplicate Dilution	RPD	RER	Units
AMMONIA AS N	4.7			1	4.8			1	2.11		MG/L
Calcium	490000			10	490000			5	0		UG/L
CHLORIDE	170			100	160			100	6.06		MG/L
Magnesium	410000			10	440000			5	7.06		UG/L
Manganese	3600			10	3600			5	0		UG/L
Nitrate+Nitrite as N	0.016			1	0.015			1			MG/L
Potassium	59000			10	60000			5	1.68		UG/L
Selenium	0.67			5	0.68			5			UG/L
Sodium	2000000			10	1900000			5	5.13		UG/L
Strontium	7300			10	7200			5	1.38		UG/L
SULFATE	6900			100	6900			100	0		MG/L
Uranium	530			5	530			5	0		UG/L

Duplicate: 2592 **Sample:** 1008

Analyte	Sample Result	Sample Flag	Sample Error	Sample Dilution	Duplicate Result	Duplicate Flag	Duplicate Error	Duplicate Dilution	RPD	RER	Units
AMMONIA AS N	3			1	2.9			1	3.39		MG/L
Calcium	420000			5	430000			5	2.35		UG/L
CHLORIDE	88			100	88			100			MG/L
Magnesium	160000			5	160000			5	0		UG/L
Manganese	1500			5	1500			5	0		UG/L
Nitrate+Nitrite as N	0.016			1	0.017			1			MG/L

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

RIN: 14096508 **Lab Code:** PAR **Project:** Shiprock Monitoring **Validation Date:** 12/03/2014

Duplicate: 2592 **Sample:** 1008

Analyte	Sample Result	Sample Flag	Sample Error	Sample Dilution	Duplicate Result	Duplicate Flag	Duplicate Error	Duplicate Dilution	RPD	RER	Units
Potassium	34000			5	35000			5	2.90		UG/L
Selenium	2.5			5	3.6			1	NA		UG/L
Sodium	1200000			5	1200000			5	0		UG/L
Strontium	4800			5	4900			5	2.06		UG/L
SULFATE	4000			100	4000			100	0		MG/L
Uranium	220			5	220			1	0		UG/L

Duplicate: 2593 **Sample:** 0856

Analyte	Sample Result	Sample Flag	Sample Error	Sample Dilution	Duplicate Result	Duplicate Flag	Duplicate Error	Duplicate Dilution	RPD	RER	Units
AMMONIA AS N	0.1	U		1	0.1	U		1			MG/L
Calcium	210000			5	210000			2	0		UG/L
CHLORIDE	75			50	74			50	1.34		MG/L
Magnesium	45000			5	46000			2	2.20		UG/L
Manganese	1400			5	1400			2	0		UG/L
Nitrate+Nitrite as N	0.01	U		1	0.014			1			MG/L
Potassium	13000			5	13000			2	0		UG/L
Selenium	0.54			5	0.48			1			UG/L
Sodium	1100000			5	980000			2	11.54		UG/L
Strontium	7200			5	6900			2	4.26		UG/L
SULFATE	2800			50	2800			50	0		MG/L
Uranium	61			5	60			1	1.65		UG/L

Duplicate: 2594 **Sample:** 0655

Analyte	Sample Result	Sample Flag	Sample Error	Sample Dilution	Duplicate Result	Duplicate Flag	Duplicate Error	Duplicate Dilution	RPD	RER	Units
AMMONIA AS N	0.25			1	0.26			1			MG/L
Calcium	170000			1	170000			1	0		UG/L
CHLORIDE	34			20	32			20	6.06		MG/L
Magnesium	23000			1	24000			1	4.26		UG/L
Manganese	310			1	320			1	3.17		UG/L
Nitrate+Nitrite as N	0.89			5	0.8			5	10.65		MG/L
Potassium	21000			1	21000			1	0		UG/L
Selenium	43			5	51			10	17.02		UG/L
Sodium	280000			1	270000			1	3.64		UG/L
Strontium	4600			1	4500			1	2.20		UG/L
SULFATE	980			20	980			20	0		MG/L

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

RIN: 14096508 **Lab Code:** PAR **Project:** Shiprock Monitoring **Validation Date:** 12/03/2014

Duplicate: 2594 **Sample:** 0655

Analyte	Sample Result	Sample Flag	Sample Error	Sample Dilution	Duplicate Result	Duplicate Flag	Duplicate Error	Duplicate Dilution	RPD	RER	Units
Uranium	9.9			5	10			10	1.01		UG/L

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

RIN: 14096510 **Lab Code:** PAR **Project:** Shiprock Monitoring **Validation Date:** 12/09/2014

Duplicate: 2319 **Sample:** 1078

Analyte	Sample Result	Sample Flag	Sample Error	Sample Dilution	Duplicate Result	Duplicate Flag	Duplicate Error	Duplicate Dilution	RPD	RER	Units
AMMONIA AS N	1.5			1	1.5			1	0		MG/L
Calcium	420000			10	420000			10	0		UG/L
CHLORIDE	990			500	1000			500	1.01		MG/L
Magnesium	930000			10	950000			10	2.13		UG/L
Manganese	87			10	64			10	30.46		UG/L
Nitrate+Nitrite as N	530			500	540			500	1.87		MG/L
Potassium	46000			10	48000			10	4.26		UG/L
Selenium	2800			50	3200			50	13.33		UG/L
Sodium	5200000			50	5300000			50	1.90		UG/L
Strontium	9800			10	10000			10	2.02		UG/L
SULFATE	14000			500	14000			500	0		MG/L
Uranium	130			50	150			50	14.29		UG/L

Duplicate: 2320 **Sample:** 0818

Analyte	Sample Result	Sample Flag	Sample Error	Sample Dilution	Duplicate Result	Duplicate Flag	Duplicate Error	Duplicate Dilution	RPD	RER	Units
AMMONIA AS N	67			25	71			25	5.80		MG/L
Calcium	460000			10	440000			10	4.44		UG/L
CHLORIDE	950			500	960			500	1.05		MG/L
Magnesium	1600000			10	1600000			10	0		UG/L
Manganese	570			10	540			10	5.41		UG/L
Nitrate+Nitrite as N	800			500	710			500	11.92		MG/L
Potassium	69000			10	67000			10	2.94		UG/L
Selenium	2300			100	2700			50	16.00		UG/L
Sodium	4000000			10	4000000			10	0		UG/L
Strontium	13000			10	12000			10	8.00		UG/L
SULFATE	13000			500	13000			500	0		MG/L
Uranium	130			100	150			50	14.29		UG/L

Duplicate: 2665 **Sample:** 1070

Analyte	Sample Result	Sample Flag	Sample Error	Sample Dilution	Duplicate Result	Duplicate Flag	Duplicate Error	Duplicate Dilution	RPD	RER	Units
AMMONIA AS N	3			1	3.6			1	18.18		MG/L
Calcium	410000			10	430000			10	4.76		UG/L
CHLORIDE	1200			500	1100			500	8.70		MG/L
Magnesium	930000			10	980000			10	5.24		UG/L
Manganese	250			10	250			10	0		UG/L
Nitrate+Nitrite as N	670			500	590			500	12.70		MG/L

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

RIN: 14096510 **Lab Code:** PAR **Project:** Shiprock Monitoring **Validation Date:** 12/09/2014

Duplicate: 2665 **Sample:** 1070

Analyte	Sample Result	Sample Flag	Sample Error	Sample Dilution	Duplicate Result	Duplicate Flag	Duplicate Error	Duplicate Dilution	RPD	RER	Units
Potassium	52000			10	53000			10	1.90		UG/L
Selenium	2900			50	2600			50	10.91		UG/L
Sodium	6000000			50	6300000			50	4.88		UG/L
Strontium	9600			10	10000			10	4.08		UG/L
SULFATE	16000			500	16000			500	0		MG/L
Uranium	100			50	88			50	12.77		UG/L

Duplicate: 2811 **Sample:** 1096

Analyte	Sample Result	Sample Flag	Sample Error	Sample Dilution	Duplicate Result	Duplicate Flag	Duplicate Error	Duplicate Dilution	RPD	RER	Units
AMMONIA AS N	0.46			1	0.48			1			MG/L
Calcium	420000			10	420000			10	0		UG/L
CHLORIDE	980			500	900			500	8.51		MG/L
Magnesium	910000			10	940000			10	3.24		UG/L
Manganese	410			10	140			10	98.18		UG/L
Nitrate+Nitrite as N	540			500	490			500	9.71		MG/L
Potassium	52000			10	50000			10	3.92		UG/L
Selenium	2700			50	2400			10	11.76		UG/L
Sodium	5700000			50	5700000			50	0		UG/L
Strontium	9400			10	9400			10	0		UG/L
SULFATE	15000			500	14000			500	6.90		MG/L
Uranium	100			50	90			10	10.53		UG/L

Certification

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

Laboratory Coordinator: Stephe Donivan — Stephen Donivan — 1-2-2015 — Date

Data Validation Lead: Stephe Donivan — Stephen Donivan — 1-2-2015 — Date

Attachment 1
Assessment of Anomalous Data

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Potential Outliers Report

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Potential Outliers Report

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

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

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

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

Unfiltered surface water samples are expected to exhibit high variability in the results due to the nonhomogeneous nature of the samples and were not evaluated for outliers.

Thirty analytical results were identified as potential outliers. Data from many locations show an overall downward or upward shift in concentration for multiple analytes measured by different methods, indicating that these results are representative of the samples collected. There is no indication that there are errors associated with the data identified as potential outliers and the data from this event are acceptable as qualified.

Data Validation Outliers Report - No Field Parameters

Comparison: Historical Data Beginning 01/01/2004 for Filtered Surface Water Samples

Laboratory: ALS Laboratory Group

RIN: 14096508

Report Date: 12/11/2014

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	
SHP01	0501	0001	10/01/2014	Calcium	29.0			86.0			41.0			18	0	No
SHP01	0501	0001	10/01/2014	Magnesium	3.10			16.0			6.80			18	0	No
SHP01	0501	0001	10/01/2014	Nitrate + Nitrite as Nitrogen	1.000	N	J	0.870			0.0270			18	0	No
SHP01	0501	0001	10/01/2014	Sodium	67.0			50.0	E	J	18.0			18	0	No
SHP01	0501	0001	10/01/2014	Strontium	0.430			1.10			0.440			18	0	No
SHP01	0897	0001	10/01/2014	Calcium	28.0			88.0			42.0			20	0	No
SHP01	0897	0001	10/01/2014	Magnesium	2.70			16.0			6.00			20	0	No
SHP01	0897	0001	10/01/2014	Potassium	4.00			3.80	E	J	1.60			20	0	No
SHP01	0897	0001	10/01/2014	Strontium	0.420			1.20			0.470			20	0	No
SHP01	0899	0001	10/01/2014	Ammonia Total as N	0.130			0.1000	U		0.0470	J	U	10	10	NA
SHP01	0899	0001	10/01/2014	Calcium	29.0			77.0			50.0			10	0	Yes
SHP01	0899	0001	10/01/2014	Chloride	7.20			19.0			8.60			10	0	No
SHP01	0899	0001	10/01/2014	Magnesium	2.40			14.0			6.80			10	0	Yes
SHP01	0899	0001	10/01/2014	Nitrate + Nitrite as Nitrogen	0.940			0.610			0.340			10	0	Yes
SHP01	0899	0001	10/01/2014	Potassium	3.50			3.10			1.50			10	0	No
SHP01	0899	0001	10/01/2014	Sodium	64.0			43.0			19.0			10	0	Yes
SHP01	0899	0001	10/01/2014	Strontium	0.450			1.000			0.570			10	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: Historical Data Beginning 01/01/2004 for Filtered Surface Water Samples

Laboratory: ALS Laboratory Group

RIN: 14096508

Report Date: 12/11/2014

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	
SHP01	0940	0001	10/01/2014	Calcium	29.0			97.0			42.0			20	0	No
SHP01	0940	0001	10/01/2014	Magnesium	2.70			21.0			6.30			20	0	No
SHP01	0940	0001	10/01/2014	Strontium	0.420			1.30			0.470			20	0	No
SHP01	0956	0001	10/01/2014	Calcium	31.0			99.0			41.0			21	0	No
SHP01	0956	0001	10/01/2014	Magnesium	2.70			16.0			6.60			21	0	No
SHP01	0956	0001	10/01/2014	Strontium	0.440			1.20			0.460			21	0	No
SHP01	0965	0001	09/30/2014	Calcium	37.0			87.0			42.0			22	0	No
SHP01	0965	0001	09/30/2014	Magnesium	3.30			16.0			6.20			22	0	No
SHP01	1203	0001	10/01/2014	Calcium	29.0			81.0			42.0			20	0	Yes
SHP01	1203	0001	10/01/2014	Magnesium	2.40			15.0			6.80			20	0	Yes
SHP01	1203	0001	10/01/2014	Nitrate + Nitrite as Nitrogen	1.000			0.710			0.01000	U		20	1	No
SHP01	1203	0001	10/01/2014	Strontium	0.420			1.10			0.450			20	0	No
SHP01	1205	0001	10/01/2014	Magnesium	2.60			15.0			4.30			21	0	No
SHP01	1205	0001	10/01/2014	Strontium	0.430			1.10			0.450			21	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.

Data Validation Outliers Report - No Field Parameters

Comparison: Historical Data Beginning 01/01/2004 for Unfiltered Groundwater Samples

Laboratory: ALS Laboratory Group

RIN: 14096508

Report Date: 12/11/2014

					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	
SHP01	0608	N001	10/01/2014	Nitrate + Nitrite as Nitrogen	18.0		F	260	N	FJ	31.0		F	15	0	No
SHP01	0608	N001	10/01/2014	Potassium	50.0		F	130		F	51.3		F	15	0	NA
SHP01	0608	N001	10/01/2014	Uranium	0.640		F	1.20		F	0.660		F	15	0	NA
SHP01	0611	N001	10/01/2014	Selenium	0.00043		F	0.0840		F	0.00049		F	10	0	NA
SHP01	0612	N001	10/01/2014	Ammonia Total as N	1.90		F	1.20		F	0.1000	U	F	12	2	Yes
SHP01	0614	N001	10/02/2014	Chloride	130		F	580		F	170		F	16	0	No
SHP01	0614	N001	10/02/2014	Magnesium	530		F	2300		F	700		F	16	0	No
SHP01	0614	N001	10/02/2014	Nitrate + Nitrite as Nitrogen	83.0		F	610		F	110		F	16	0	No
SHP01	0614	N001	10/02/2014	Potassium	63.0		F	210		F	82.0		F	16	0	No
SHP01	0614	N001	10/02/2014	Sodium	890		F	2460		F	1000		F	16	0	No
SHP01	0614	N001	10/02/2014	Strontium	5.60		F	13.0		F	6.20		F	14	0	No
SHP01	0614	N001	10/02/2014	Sulfate	4400		F	15000		F	5500		F	16	0	No
SHP01	0614	N001	10/02/2014	Uranium	0.640		F	2.40		F	0.930		F	16	0	No
SHP01	0618	N001	10/02/2014	Nitrate + Nitrite as Nitrogen	0.0170		F	350		F	0.0720		F	16	0	No
SHP01	0619	N001	10/01/2014	Strontium	9.90		F	9.70		F	5.90		F	14	0	No
SHP01	0622	N001	10/02/2014	Selenium	0.00340		F	0.230		F	0.00910		F	11	0	No
SHP01	0622	N001	10/02/2014	Uranium	0.0380		F	0.240		F	0.0430		F	11	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: Historical Data Beginning 01/01/2004 for Unfiltered Groundwater Samples

Laboratory: ALS Laboratory Group

RIN: 14096508

Report Date: 12/11/2014

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	
SHP01	0625	N001	10/01/2014	Ammonia Total as N	0.120		F	0.1000	U	F	0.0568	J	UF	11	10	NA
SHP01	0628	N001	09/29/2014	Calcium	290		F	270		F	130		F	13	0	No
SHP01	0628	N001	09/29/2014	Chloride	180		F	160		F	66.0		F	13	0	No
SHP01	0628	N001	09/29/2014	Magnesium	120		F	100.0		F	21.0		F	13	0	No
SHP01	0628	N001	09/29/2014	Potassium	26.0		F	23.0		F	5.73		JF	13	0	Yes
SHP01	0628	N001	09/29/2014	Selenium	0.0480		F	0.00600		F	0.00058		F	13	0	NA
SHP01	0628	N001	09/29/2014	Sodium	2700		F	2000		F	730		F	13	0	Yes
SHP01	0628	N001	09/29/2014	Sulfate	6600		F	5200		F	2200		F	13	0	No
SHP01	0628	N001	09/29/2014	Uranium	0.130		F	0.0800		F	0.00620		F	13	0	Yes
SHP01	0736	N001	09/30/2014	Calcium	270		F	530		F	320		F	12	0	No
SHP01	0736	N001	09/30/2014	Sulfate	2700		F	6400		F	2800		F	12	0	No
SHP01	0766	N001	10/01/2014	Ammonia Total as N	0.220		F	0.150		F	0.0881	J	UF	9	6	NA
SHP01	0766	N001	10/01/2014	Manganese	1.50		F	0.630		F	0.117		F	9	0	Yes
SHP01	0768	N001	10/01/2014	Calcium	180		F	423		F	190		F	13	0	No
SHP01	0768	N001	10/01/2014	Chloride	94.0		F	740		F	110		F	13	0	No
SHP01	0768	N001	10/01/2014	Magnesium	100.0		F	1390		F	150		F	13	0	No
SHP01	0768	N001	10/01/2014	Potassium	25.0		F	180		F	28.0		F	13	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: Historical Data Beginning 01/01/2004 for Unfiltered Groundwater Samples

Laboratory: ALS Laboratory Group

RIN: 14096508

Report Date: 12/11/2014

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	
SHP01	0768	N001	10/01/2014	Selenium	0.00082		F	0.0213	N	FJ	0.0009		F	13	3	No
SHP01	0768	N001	10/01/2014	Sodium	1300		F	7120		F	1400		F	13	0	No
SHP01	0768	N001	10/01/2014	Strontium	5.90		F	15.0		F	6.40		F	10	0	No
SHP01	0768	N001	10/01/2014	Sulfate	3300		F	18600		F	4100		F	13	0	No
SHP01	0768	N001	10/01/2014	Uranium	0.0690		F	1.40		F	0.130		F	13	0	No
SHP01	0773	N001	10/02/2014	Nitrate + Nitrite as Nitrogen	13.0		FQ	130		F	16.0		F	12	0	NA
SHP01	0775	N001	10/01/2014	Selenium	0.00092		F	0.0720		F	0.00098		F	11	2	NA
SHP01	0775	N001	10/01/2014	Uranium	0.0770		F	0.650		F	0.0870		F	11	0	No
SHP01	0782R	N001	09/30/2014	Ammonia Total as N	0.170		F	0.140		F	0.0721	J	UF	12	11	NA
SHP01	0782R	N001	09/30/2014	Selenium	0.000065	B	F	0.00150	U	F	0.000074	B	UF	12	2	No
SHP01	0783R	N001	09/30/2014	Calcium	170		F	120		F	71.0		F	12	0	Yes
SHP01	0783R	N001	09/30/2014	Chloride	36.0		F	29.0		F	14.0		F	12	0	No
SHP01	0783R	N001	09/30/2014	Magnesium	53.0		F	46.0		F	25.0		F	12	0	No
SHP01	0783R	N001	09/30/2014	Selenium	0.00015		F	0.00150	U	F	0.00021		F	12	1	No
SHP01	0783R	N001	09/30/2014	Sodium	240		F	210		F	100.0		F	12	0	No
SHP01	0783R	N001	09/30/2014	Strontium	2.20		F	1.40		F	0.860		F	12	0	Yes
SHP01	0783R	N001	09/30/2014	Sulfate	920		F	710		F	340		F	12	0	Yes

Data Validation Outliers Report - No Field Parameters

Comparison: Historical Data Beginning 01/01/2004 for Unfiltered Groundwater Samples

Laboratory: ALS Laboratory Group

RIN: 14096508

Report Date: 12/11/2014

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	
SHP01	0793	N001	10/02/2014	Nitrate + Nitrite as Nitrogen	0.120		F	33.0		F	2.10		F	11	0	No
SHP01	0793	N001	10/02/2014	Selenium	0.0790		F	0.360		F	0.150		F	11	0	No
SHP01	0793	N001	10/02/2014	Sodium	1700		F	1500		F	510		F	11	0	No
SHP01	0797	N001	10/01/2014	Nitrate + Nitrite as Nitrogen	0.130		FQ	0.110		FQ	0.01000	U	FQ	13	2	No
SHP01	0798	N001	10/01/2014	Magnesium	210		F	1600		F	220		F	11	0	No
SHP01	0854	N001	10/01/2014	Nitrate + Nitrite as Nitrogen	0.0160		F	120		F	0.0930		F	9	0	No
SHP01	0854	N002	10/01/2014	Nitrate + Nitrite as Nitrogen	0.0150		F	120		F	0.0930		F	9	0	No
SHP01	0854	N001	10/01/2014	Selenium	0.00067		F	0.0280		F	0.00068		FJ	9	0	No
SHP01	0855	N001	09/30/2014	Uranium	0.0640		F	0.150		F	0.0650		F	14	0	No
SHP01	0856	N001	09/30/2014	Magnesium	45.0		F	85.9		F	47.0		F	14	0	No
SHP01	0856	N002	09/30/2014	Magnesium	46.0		F	85.9		F	47.0		F	14	0	No
SHP01	1008	N002	10/01/2014	Calcium	430		F	420		F	390		F	11	0	No
SHP01	1008	N002	10/01/2014	Potassium	35.0		F	160		F	36.0		F	11	0	No
SHP01	1008	N001	10/01/2014	Potassium	34.0		F	160		F	36.0		F	11	0	No
SHP01	1008	N001	10/01/2014	Selenium	0.00250		F	0.0320		F	0.00270		F	11	0	No
SHP01	1008	N002	10/01/2014	Uranium	0.220		F	3.10		F	0.240		F	11	0	No
SHP01	1008	N001	10/01/2014	Uranium	0.220		F	3.10		F	0.240		F	11	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: Historical Data Beginning 01/01/2004 for Unfiltered Groundwater Samples

Laboratory: ALS Laboratory Group

RIN: 14096508

Report Date: 12/11/2014

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	
SHP01	1089	N001	09/30/2014	Magnesium	170			780		F	180			14	0	No
SHP01	1089	N001	09/30/2014	Potassium	33.0			86.0		F	35.0			14	0	No
SHP01	1104	N001	09/30/2014	Calcium	470			440			330			13	0	Yes
SHP01	1110	N001	10/01/2014	Ammonia Total as N	26.0			13.0			0.0774	J	U	14	1	NA
SHP01	1110	N001	10/01/2014	Calcium	190			440			330			14	0	NA
SHP01	1110	N001	10/01/2014	Chloride	83.0			510			140			14	0	No
SHP01	1110	N001	10/01/2014	Magnesium	220			1500			440			14	0	No
SHP01	1110	N001	10/01/2014	Potassium	20.0			130			33.1			14	0	NA
SHP01	1110	N001	10/01/2014	Selenium	0.01000			0.750			0.200			14	0	No
SHP01	1110	N001	10/01/2014	Sodium	430			2600			1100			14	0	No
SHP01	1110	N001	10/01/2014	Strontium	2.50			11.0			6.80			14	0	Yes
SHP01	1110	N001	10/01/2014	Sulfate	1700			12000			4600			14	0	NA
SHP01	1110	N001	10/01/2014	Uranium	0.190			1.50			0.370			14	0	No
SHP01	1111	N001	10/02/2014	Manganese	0.130		F	1.10		F	0.340		F	13	0	No
SHP01	1112	N001	10/02/2014	Ammonia Total as N	7.10		F	91.0		F	11.0		F	15	0	No
SHP01	1112	N001	10/02/2014	Calcium	490		F	481		F	360		F	15	0	No
SHP01	1112	N001	10/02/2014	Chloride	94.0		F	480		F	140		F	15	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: Historical Data Beginning 01/01/2004 for Unfiltered Groundwater Samples

Laboratory: ALS Laboratory Group

RIN: 14096508

Report Date: 12/11/2014

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	
SHP01	1112	N001	10/02/2014	Magnesium	370		F	2100		F	700		F	15	0	No
SHP01	1112	N001	10/02/2014	Manganese	0.960		F	3.70		F	1.20		F	15	0	NA
SHP01	1112	N001	10/02/2014	Nitrate + Nitrite as Nitrogen	39.0		F	700		F	56.0		F	15	0	No
SHP01	1112	N001	10/02/2014	Potassium	48.0		F	170		F	72.0		FJ	15	0	No
SHP01	1112	N001	10/02/2014	Sodium	590		F	2730		F	1100		F	15	0	Yes
SHP01	1112	N001	10/02/2014	Strontium	5.50		F	12.0		F	6.70		F	13	0	No
SHP01	1112	N001	10/02/2014	Sulfate	3500		F	13000		F	5600		F	15	0	No
SHP01	1112	N001	10/02/2014	Uranium	0.530		F	2.12	E	J	0.620		F	15	0	No
SHP01	1113	N001	10/01/2014	Ammonia Total as N	0.1000	U	F	98.0		F	0.150		F	8	0	No
SHP01	1113	N001	10/01/2014	Calcium	500		F	490		F	390		F	8	0	No
SHP01	1113	N001	10/01/2014	Magnesium	480		F	1900		F	490		F	8	0	No
SHP01	1113	N001	10/01/2014	Potassium	70.0		F	230		F	77.0		FJ	8	0	No
SHP01	1113	N001	10/01/2014	Selenium	0.420		F	0.320		F	0.00870		F	8	0	No
SHP01	1113	N001	10/01/2014	Uranium	0.420		F	1.70		F	0.630		F	8	0	No
SHP01	1114	N001	10/01/2014	Ammonia Total as N	68.0		F	440		F	70.0		F	14	0	NA
SHP01	1114	N001	10/01/2014	Selenium	0.110		F	0.0430		F	0.00420		F	14	0	Yes
SHP01	1115	N001	09/29/2014	Calcium	480		F	415		F	130		F	17	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: Historical Data Beginning 01/01/2004 for Unfiltered Groundwater Samples

Laboratory: ALS Laboratory Group

RIN: 14096508

Report Date: 12/11/2014

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	
SHP01	1115	N001	09/29/2014	Manganese	4.60		F	3.55	E	F	0.850		F	17	0	NA
SHP01	1115	N001	09/29/2014	Strontium	9.30		F	7.80		F	2.00		F	14	0	No
SHP01	1128	N001	09/29/2014	Calcium	510		F	480		F	330		F	12	0	NA
SHP01	1128	N001	09/29/2014	Nitrate + Nitrite as Nitrogen	690		F	680		FJ	470		F	12	0	No
SHP01	1132	N001	09/29/2014	Selenium	0.000059	B	F	0.00150	UN	F	0.00013		F	12	1	No
SHP01	1135	N001	09/30/2014	Calcium	280		F	407		F	290		F	11	0	No
SHP01	1135	N001	09/30/2014	Magnesium	81.0		F	360		F	88.0		F	11	0	No
SHP01	1135	N001	09/30/2014	Manganese	1.40		F	2.90		F	1.50		F	11	0	NA
SHP01	1135	N001	09/30/2014	Potassium	18.0		F	39.0		F	20.0		F	11	0	No
SHP01	1137	N001	10/01/2014	Calcium	530		F	490		F	124		F	9	0	No
SHP01	1137	N001	10/01/2014	Selenium	0.01000		F	0.00900	E	FJ	0.00200		F	9	0	No
SHP01	1138	N001	10/01/2014	Ammonia Total as N	2.50		F	2.40		F	0.271		F	9	0	NA
SHP01	1138	N002	10/01/2014	Sodium	3100		F	2900		F	490		F	9	0	No
SHP01	1138	N001	10/01/2014	Sodium	3200		F	2900		F	490		F	9	0	No
SHP01	1139	N001	10/01/2014	Calcium	540		F	463		F	66.7		F	10	0	No
SHP01	1139	N001	10/01/2014	Sodium	3700		F	3300		F	183		F	10	0	Yes
SHP01	1140	N001	10/02/2014	Ammonia Total as N	0.600		F	25.0		F	2.30		F	10	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: Historical Data Beginning 01/01/2004 for Unfiltered Groundwater Samples

Laboratory: ALS Laboratory Group

RIN: 14096508

Report Date: 12/11/2014

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	
SHP01	1140	N001	10/02/2014	Nitrate + Nitrite as Nitrogen	4.00		F	320		F	5.50		F	10	0	No
SHP01	1141	N001	10/02/2014	Ammonia Total as N	0.140		F	15.0		F	1.80		F	10	0	Yes
SHP01	1141	N001	10/02/2014	Calcium	560		F	530		F	400		F	10	0	No
SHP01	1141	N001	10/02/2014	Manganese	0.230		F	2.10		F	1.30		F	10	0	Yes
SHP01	1142	N001	10/01/2014	Manganese	0.160		F	1.90		F	0.270		F	11	0	NA
SHP01	1143	N001	09/30/2014	Chloride	64.0		F	96.1			67.0		F	11	0	No
SHP01	1143	N001	09/30/2014	Manganese	0.870		F	8.90		F	0.890		F	11	0	NA
SHP01	1143	N001	09/30/2014	Sulfate	2400		F	3400		F	2500		F	11	0	No
SHP01	1143	N001	09/30/2014	Uranium	0.0450		F	0.0733		F	0.0530		F	11	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.

Data Validation Outliers Report - No Field Parameters
Comparison: All historical Data Beginning 01/01/2004
Laboratory: ALS Laboratory Group
RIN: 14096510
Report Date: 12/11/2014

					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	
SHP02	0602	N001	10/02/2014	Ammonia Total as N	61.0		FQ	380		F	68.0		FQ	13	0	No
SHP02	0602	N001	10/02/2014	Potassium	71.0		FQ	220		F	75.0		JFQ	13	0	No
SHP02	0602	N001	10/02/2014	Sodium	6700		FQ	6200		FQ	3100		F	13	0	No
SHP02	0602	N001	10/02/2014	Strontium	21.0		FQ	19.0		F	11.0		F	13	0	NA
SHP02	0603	N001	10/01/2014	Ammonia Total as N	660		F	1400		F	750		F	14	0	NA
SHP02	0603	N001	10/01/2014	Manganese	65.0		F	63.0		F	25.0		F	14	0	NA
SHP02	0603	N001	10/01/2014	Nitrate + Nitrite as Nitrogen	2200		F	2100		F	780		F	14	0	NA
SHP02	0603	N001	10/01/2014	Strontium	6.00		F	5.90		F	2.40		F	14	0	Yes
SHP02	0725	N001	09/30/2014	Magnesium	63.0		F	170		F	65.0		F	15	0	No
SHP02	0727	N001	10/02/2014	Manganese	1.50		FQ	1.40		F	0.980		FQ	12	0	No
SHP02	0727	N001	10/02/2014	Nitrate + Nitrite as Nitrogen	55.0		FQ	180		F	74.0		FQ	12	0	No
SHP02	0728	N001	09/29/2014	Ammonia Total as N	39.0		F	220		F	47.0		F	14	0	No
SHP02	0728	N001	09/29/2014	Calcium	510		F	500		F	460		F	14	0	No
SHP02	0728	N001	09/29/2014	Chloride	27.0		F	180		F	30.0		F	14	0	No
SHP02	0728	N001	09/29/2014	Magnesium	300		F	1400		F	370		F	14	0	No
SHP02	0728	N001	09/29/2014	Manganese	0.690		F	1.80		F	0.790		F	14	0	No
SHP02	0728	N001	09/29/2014	Nitrate + Nitrite as Nitrogen	4.50		F	500		F	13.0		F	14	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: All historical Data Beginning 01/01/2004
Laboratory: ALS Laboratory Group
RIN: 14096510
Report Date: 12/11/2014

					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	
SHP02	0728	N001	09/29/2014	Potassium	39.0		F	150		F	54.0		F	14	0	No
SHP02	0728	N001	09/29/2014	Sodium	210		F	1400		F	290		F	14	0	No
SHP02	0728	N001	09/29/2014	Strontium	4.40		F	9.90		F	4.50		F	14	0	No
SHP02	0728	N001	09/29/2014	Sulfate	2800		F	8600		F	3200		F	14	0	No
SHP02	0730	0001	09/29/2014	Potassium	14.0		FQ	23.0		F	16.0		FQ	15	0	No
SHP02	0730	0001	09/29/2014	Sodium	62.0		FQ	88.0		FQ	64.0		FQ	15	0	No
SHP02	0731	N001	10/01/2014	Manganese	0.330		F	0.260		F	0.0206		F	14	0	No
SHP02	0731	N001	10/01/2014	Potassium	32.0		F	54.0		FQ	35.0		F	14	0	No
SHP02	0731	N001	10/01/2014	Selenium	0.00910		F	0.250		F	0.0120		F	14	0	NA
SHP02	0812	N001	09/29/2014	Manganese	0.300		FQ	0.290		FQ	0.00480	U	FQ	13	2	No
SHP02	0812	N001	09/29/2014	Selenium	7.00		FQ	6.40		FQ	4.90		FQ	13	0	No
SHP02	0813	N001	10/01/2014	Selenium	0.130		F	0.110		F	0.0146	E	JF	16	0	No
SHP02	0814	N001	09/29/2014	Magnesium	1900		FQ	2200		FQ	2000		FQ	12	0	Yes
SHP02	0814	N001	09/29/2014	Potassium	93.0		FQ	160		JFQ	95.0		FQ	12	0	No
SHP02	0814	N001	09/29/2014	Selenium	2.50		FQ	2.30			1.80		FQ	12	0	No
SHP02	0814	N001	09/29/2014	Sodium	3900		FQ	3880		FQ	2900		FQ	12	0	No
SHP02	0816	0001	10/02/2014	Nitrate + Nitrite as Nitrogen	9.80		F	61.0		F	9.90		F	13	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: All historical Data Beginning 01/01/2004
Laboratory: ALS Laboratory Group
RIN: 14096510
Report Date: 12/11/2014

					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	
SHP02	0816	0001	10/02/2014	Sodium	760		F	720		FQ	290		FQ	13	0	No
SHP02	0818	N002	09/30/2014	Nitrate + Nitrite as Nitrogen	710			1900			730			25	0	NA
SHP02	0819	N001	10/02/2014	Nitrate + Nitrite as Nitrogen	1.20		FQ	130		FQ	11.0		FQ	13	0	No
SHP02	0822	0001	10/01/2014	Nitrate + Nitrite as Nitrogen	0.680		FQ	14.0		FQ	1.70		FQ	8	0	No
SHP02	0822	0001	10/01/2014	Potassium	38.0		FQ	100.0		FQJ	62.0		FQ	8	0	No
SHP02	0822	0001	10/01/2014	Sodium	6200		FQ	6000		FQ	5100		FQ	8	0	NA
SHP02	0822	0001	10/01/2014	Sulfate	5200		FQ	6100		FQ	5400		FQ	8	0	No
SHP02	0822	0001	10/01/2014	Uranium	0.0460		FQ	0.0880		FQ	0.0510		FQ	8	0	No
SHP02	0824	N001	10/01/2014	Manganese	0.660		FQ	0.580		FQ	0.0860	B	FQ	10	0	No
SHP02	0824	N001	10/01/2014	Potassium	42.0		FQ	210	E	JFQ	51.0		FQ	10	0	No
SHP02	0826	N001	10/02/2014	Magnesium	1800		FQ	3000		FQ	1900		FQ	14	0	No
SHP02	0828	0001	10/01/2014	Magnesium	190		F	290		F	200		F	11	0	No
SHP02	0828	0001	10/01/2014	Nitrate + Nitrite as Nitrogen	1.80		F	177		F	5.00		F	11	0	No
SHP02	0828	0001	10/01/2014	Potassium	11.0		F	20.0		FJ	14.0		F	11	0	No
SHP02	0828	0001	10/01/2014	Selenium	0.00480		F	0.130		F	0.00920		F	11	0	No
SHP02	0828	0001	10/01/2014	Sulfate	1400		F	2600		F	1600		F	11	0	No
SHP02	0833	N001	09/30/2014	Chloride	210		F	610		FQ	290		F	13	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: All historical Data Beginning 01/01/2004
Laboratory: ALS Laboratory Group
RIN: 14096510
Report Date: 12/11/2014

					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	
SHP02	0833	N001	09/30/2014	Magnesium	390		F	1500		FQ	510		F	13	0	No
SHP02	0833	N001	09/30/2014	Nitrate + Nitrite as Nitrogen	72.0		F	1260		F	80.0		F	13	0	No
SHP02	0833	N001	09/30/2014	Potassium	18.0		F	49.0		F	19.0		F	13	0	No
SHP02	0833	N001	09/30/2014	Strontium	5.40		F	10.00		F	6.00		F	13	0	No
SHP02	0833	N001	09/30/2014	Sulfate	3800		F	9200		FQ	4200		F	13	0	No
SHP02	0833	N001	09/30/2014	Uranium	0.0690		F	0.260		FQ	0.0970		F	13	0	No
SHP02	0835	N001	09/30/2014	Calcium	49.0		F	650		F	53.0		F	23	0	NA
SHP02	0835	N001	09/30/2014	Chloride	27.0		F	330		F	28.0		F	23	0	No
SHP02	0835	N001	09/30/2014	Magnesium	25.0		F	546		F	34.0		F	23	0	NA
SHP02	0835	N001	09/30/2014	Nitrate + Nitrite as Nitrogen	0.280		F	240		F	0.890		F	23	0	NA
SHP02	0835	N001	09/30/2014	Selenium	0.00200		F	0.587		F	0.00360		FJ	23	0	No
SHP02	0835	N001	09/30/2014	Sodium	34.0		F	1300		F	39.0		F	23	0	No
SHP02	0835	N001	09/30/2014	Sulfate	130		F	4690		JF	190		F	23	0	NA
SHP02	0835	N001	09/30/2014	Uranium	0.00360		F	0.0930		F	0.00500		F	23	0	NA
SHP02	0836	N001	09/30/2014	Chloride	80.0		F	76.0		F	31.0		F	21	0	NA
SHP02	0836	N001	09/30/2014	Manganese	0.210		F	7.20		F	0.220		F	21	0	No
SHP02	0836	N001	09/30/2014	Nitrate + Nitrite as Nitrogen	52.0		F	48.0		F	3.60		F	21	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: All historical Data Beginning 01/01/2004
Laboratory: ALS Laboratory Group
RIN: 14096510
Report Date: 12/11/2014

					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	
SHP02	0836	N001	09/30/2014	Selenium	0.460		F	0.400		F	0.0350		F	21	0	No
SHP02	0836	N001	09/30/2014	Sodium	450		F	391		F	250		F	21	0	NA
SHP02	0836	N001	09/30/2014	Strontium	7.30		F	7.10		F	5.50		F	21	0	No
SHP02	0837	N001	09/30/2014	Chloride	180		F	140		F	38.0		F	14	0	Yes
SHP02	0837	N001	09/30/2014	Nitrate + Nitrite as Nitrogen	94.0		F	64.0		F	3.70		F	14	0	NA
SHP02	0837	N001	09/30/2014	Selenium	0.430		F	0.363	E	F	0.0990		F	14	0	No
SHP02	0837	N001	09/30/2014	Strontium	7.80		F	7.30		F	4.90		F	14	0	No
SHP02	0843	N001	09/30/2014	Sodium	390		F	340		F	190		F	13	0	No
SHP02	0889	N001	09/30/2014	Calcium	160			610			280			22	0	Yes
SHP02	0889	N001	09/30/2014	Chloride	210			2500			280			22	0	No
SHP02	0889	N001	09/30/2014	Magnesium	150			2400			210			22	0	No
SHP02	0889	N001	09/30/2014	Nitrate + Nitrite as Nitrogen	91.0			1340			110	N	J	22	0	No
SHP02	0889	N001	09/30/2014	Selenium	0.220			2.40			0.270			22	0	No
SHP02	0889	N001	09/30/2014	Strontium	1.90			14.0			2.70			22	0	NA
SHP02	0889	N001	09/30/2014	Sulfate	2700			36000			4100			22	0	No
SHP02	0889	N001	09/30/2014	Uranium	0.0210			0.280			0.0270			22	0	No
SHP02	1057	N001	09/29/2014	Potassium	150		F	330		F	160		F	15	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: All historical Data Beginning 01/01/2004
Laboratory: ALS Laboratory Group
RIN: 14096510
Report Date: 12/11/2014

					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	
SHP02	1058	N001	09/30/2014	Selenium	0.00014		FQ	0.00150	UE	FQ	0.0002		FQ	13	2	NA
SHP02	1058	N001	09/30/2014	Sodium	3200		FQ	3160		FQ	1900		FQ	13	0	No
SHP02	1068	0001	09/30/2014	Potassium	97.0		FQ	92.0		FQ	32.5		FQ	12	0	No
SHP02	1068	0001	09/30/2014	Sodium	1400		FQ	1300		FQ	890		FQ	12	0	No
SHP02	1069	0001	10/02/2014	Calcium	470		FQ	450		FQ	410		FQ	5	0	No
SHP02	1069	0001	10/02/2014	Uranium	1.50		FQ	2.30		FQ	1.73	*EN	FQ	5	0	No
SHP02	1070	N001	09/30/2014	Magnesium	930			1600			950			18	0	No
SHP02	1073	0001	10/01/2014	Selenium	2.60		FQ	2.50		FQ	1.90		FQ	13	0	No
SHP02	1074	N001	10/01/2014	Selenium	0.500		FQ	0.470		FQ	0.250		FQ	13	0	No
SHP02	1079	N001	09/30/2014	Magnesium	470		F	240		F	99.0		F	24	0	Yes
SHP02	1079	N001	09/30/2014	Sodium	1500		F	1100		F	250		F	24	0	NA
SHP02	1079	N001	09/30/2014	Strontium	11.0		F	9.40		F	4.20		F	24	0	No
SHP02	1079	N001	09/30/2014	Sulfate	4700		F	3400		F	1600		F	24	0	Yes
SHP02	1079	N001	09/30/2014	Uranium	0.0640		F	0.0550		F	0.0230		F	24	0	Yes
SHP02	1087	N001	09/30/2014	Selenium	0.0920			0.0660			0.0240			24	0	Yes
SHP02	1091	N001	09/30/2014	Nitrate + Nitrite as Nitrogen	780			2300			860			21	0	No
SHP02	1215	N001	09/30/2014	Chloride	4900			4300			1100			16	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: All historical Data Beginning 01/01/2004
Laboratory: ALS Laboratory Group
RIN: 14096510
Report Date: 12/11/2014

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	
SHP02	1215	N001	09/30/2014	Selenium	7.20			5.10			0.860			16	0	No
SHP02	1215	N001	09/30/2014	Sodium	26000			25000			4600			16	0	No
SHP02	1215	N001	09/30/2014	Sulfate	97000			85000			19000			17	0	No
SHP02	1215	N001	09/30/2014	Uranium	9.30			7.40			1.70			17	0	No
SHP02	1219	N001	09/30/2014	Chloride	28.0			26.0			14.5			7	0	No
SHP02	1219	N001	09/30/2014	Uranium	0.0350			0.0306	*EN		0.0260			7	0	No
SHP02	1220	N001	09/30/2014	Sodium	130			120			80.0			9	0	NA
SHP02	1220	N001	09/30/2014	Uranium	0.0430			0.0300			0.0170			9	0	Yes
SHP02	1221	N001	10/01/2014	Calcium	480			450			280			9	0	No
SHP02	MW1	N001	10/01/2014	Calcium	85.0		FQ	79.0		FQ	64.0		FQ	12	0	NA
SHP02	MW1	N001	10/01/2014	Manganese	0.310		FQ	0.210		FQ	0.0560	B	FQ	12	0	NA
SHP02	MW1	N001	10/01/2014	Sodium	4500		FQ	4330		FQ	3400		FQ	12	0	No
SHP02	MW1	N001	10/01/2014	Strontium	9.70		FQ	8.70		FQ	6.40		FQ	12	0	No
SHP02	MW1	N001	10/01/2014	Uranium	0.00340		FQ	0.00260		FQ	0.00036		FQ	12	0	NA

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

NA: Data are not normally or lognormally distributed.

Attachment 2
Data Presentation

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Groundwater Quality Data
Floodplain Locations

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Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0608 WELL SE part of floodplain, well nest

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	10/01/2014	N001	10	-	15	294		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	10	-	15	55		F	#	2.5	
Calcium	mg/L	10/01/2014	N001	10	-	15	330		F	#	0.12	
Chloride	mg/L	10/01/2014	N001	10	-	15	230		F	#	20	
Magnesium	mg/L	10/01/2014	N001	10	-	15	460		F	#	0.15	
Manganese	mg/L	10/01/2014	N001	10	-	15	2.8		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	10	-	15	18		F	#	0.25	
Oxidation Reduction Potential	mV	10/01/2014	N001	10	-	15	165.4		F	#		
pH	s.u.	10/01/2014	N001	10	-	15	7.12		F	#		
Potassium	mg/L	10/01/2014	N001	10	-	15	50		F	#	0.26	
Selenium	mg/L	10/01/2014	N001	10	-	15	0.0049		F	#	0.00032	
Sodium	mg/L	10/01/2014	N001	10	-	15	1600		F	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	10	-	15	9465		F	#		
Strontium	mg/L	10/01/2014	N001	10	-	15	7.4		F	#	0.0013	
Sulfate	mg/L	10/01/2014	N001	10	-	15	6000		F	#	50	
Temperature	C	10/01/2014	N001	10	-	15	20.62		F	#		
Turbidity	NTU	10/01/2014	N001	10	-	15	1.73		F	#		
Uranium	mg/L	10/01/2014	N001	10	-	15	0.64		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0610 WELL SE part of floodplain, well nest

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	10/01/2014	N001	4	-	9	298		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	4	-	9	5.5		F	#	0.5	
Calcium	mg/L	10/01/2014	N001	4	-	9	490		F	#	0.12	
Chloride	mg/L	10/01/2014	N001	4	-	9	220		F	#	20	
Magnesium	mg/L	10/01/2014	N001	4	-	9	820		F	#	0.15	
Manganese	mg/L	10/01/2014	N001	4	-	9	0.19		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	4	-	9	330		F	#	2.5	
Oxidation Reduction Potential	mV	10/01/2014	N001	4	-	9	102.4		F	#		
pH	s.u.	10/01/2014	N001	4	-	9	7.09		F	#		
Potassium	mg/L	10/01/2014	N001	4	-	9	110		F	#	0.26	
Selenium	mg/L	10/01/2014	N001	4	-	9	0.18		F	#	0.0032	
Sodium	mg/L	10/01/2014	N001	4	-	9	1200		F	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	4	-	9	9936		F	#		
Strontium	mg/L	10/01/2014	N001	4	-	9	7.6		F	#	0.0013	
Sulfate	mg/L	10/01/2014	N001	4	-	9	5900		F	#	50	
Temperature	C	10/01/2014	N001	4	-	9	23.42		F	#		
Turbidity	NTU	10/01/2014	N001	4	-	9	0.83		F	#		
Uranium	mg/L	10/01/2014	N001	4	-	9	0.68		F	#	0.00029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0611 WELL SE part of floodplain, well nest

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	10/01/2014	N001	9.5	-	14.5	574		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	9.5	-	14.5	2.7		F	#	0.1	
Calcium	mg/L	10/01/2014	N001	9.5	-	14.5	150		F	#	0.12	
Chloride	mg/L	10/01/2014	N001	9.5	-	14.5	470		F	#	20	
Magnesium	mg/L	10/01/2014	N001	9.5	-	14.5	74		F	#	0.15	
Manganese	mg/L	10/01/2014	N001	9.5	-	14.5	0.058		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	9.5	-	14.5	0.11		F	#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	9.5	-	14.5	92.7		F	#		
pH	s.u.	10/01/2014	N001	9.5	-	14.5	7.24		F	#		
Potassium	mg/L	10/01/2014	N001	9.5	-	14.5	13		F	#	0.26	
Selenium	mg/L	10/01/2014	N001	9.5	-	14.5	0.00043		F	#	0.000032	
Sodium	mg/L	10/01/2014	N001	9.5	-	14.5	2400		F	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	9.5	-	14.5	10093		F	#		
Strontium	mg/L	10/01/2014	N001	9.5	-	14.5	6.5		F	#	0.0013	
Sulfate	mg/L	10/01/2014	N001	9.5	-	14.5	4900		F	#	50	
Temperature	C	10/01/2014	N001	9.5	-	14.5	22.71		F	#		
Turbidity	NTU	10/01/2014	N001	9.5	-	14.5	2.65		F	#		
Uranium	mg/L	10/01/2014	N001	9.5	-	14.5	0.0052		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0612 WELL SE part of floodplain, well nest

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	10/01/2014	N001	5	-	10	216		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	5	-	10	1.9		F	#	0.1	
Calcium	mg/L	10/01/2014	N001	5	-	10	91		F	#	0.024	
Chloride	mg/L	10/01/2014	N001	5	-	10	27		F	#	2	
Magnesium	mg/L	10/01/2014	N001	5	-	10	41		F	#	0.03	
Manganese	mg/L	10/01/2014	N001	5	-	10	1.6		F	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	5	-	10	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	5	-	10	-9.3		F	#		
pH	s.u.	10/01/2014	N001	5	-	10	7.22		F	#		
Potassium	mg/L	10/01/2014	N001	5	-	10	5.3		F	#	0.052	
Selenium	mg/L	10/01/2014	N001	5	-	10	0.00033		F	#	0.000032	
Sodium	mg/L	10/01/2014	N001	5	-	10	90		F	#	0.047	
Specific Conductance	umhos /cm	10/01/2014	N001	5	-	10	1138		F	#		
Strontium	mg/L	10/01/2014	N001	5	-	10	1		F	#	0.00026	
Sulfate	mg/L	10/01/2014	N001	5	-	10	350		F	#	5	
Temperature	C	10/01/2014	N001	5	-	10	18.87		F	#		
Turbidity	NTU	10/01/2014	N001	5	-	10	0.85		F	#		
Uranium	mg/L	10/01/2014	N001	5	-	10	0.034		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0614 WELL SE part of floodplain, well nest

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	10/02/2014	N001	10	-	15	330		F	#		
Ammonia Total as N	mg/L	10/02/2014	N001	10	-	15	28		F	#	2.5	
Calcium	mg/L	10/02/2014	N001	10	-	15	430		F	#	0.12	
Chloride	mg/L	10/02/2014	N001	10	-	15	130		F	#	10	
Magnesium	mg/L	10/02/2014	N001	10	-	15	530		F	#	0.15	
Manganese	mg/L	10/02/2014	N001	10	-	15	2.6		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	10	-	15	83		F	#	1	
Oxidation Reduction Potential	mV	10/02/2014	N001	10	-	15	167.4		F	#		
pH	s.u.	10/02/2014	N001	10	-	15	7.06		F	#		
Potassium	mg/L	10/02/2014	N001	10	-	15	63		F	#	0.26	
Selenium	mg/L	10/02/2014	N001	10	-	15	0.42		F	#	0.0032	
Sodium	mg/L	10/02/2014	N001	10	-	15	890		F	#	0.23	
Specific Conductance	umhos /cm	10/02/2014	N001	10	-	15	7540		F	#		
Strontium	mg/L	10/02/2014	N001	10	-	15	5.6		F	#	0.0013	
Sulfate	mg/L	10/02/2014	N001	10	-	15	4400		F	#	50	
Temperature	C	10/02/2014	N001	10	-	15	16.68		F	#		
Turbidity	NTU	10/02/2014	N001	10	-	15	1.52		F	#		
Uranium	mg/L	10/02/2014	N001	10	-	15	0.64		F	#	0.00029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0615 WELL S of floodplain fence, well nest

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	10/02/2014	N001	4.5	-	9.5	510		F	#		
Ammonia Total as N	mg/L	10/02/2014	N001	4.5	-	9.5	3.2		F	#	0.1	
Calcium	mg/L	10/02/2014	N001	4.5	-	9.5	540		F	#	0.12	
Chloride	mg/L	10/02/2014	N001	4.5	-	9.5	130		F	#	10	
Magnesium	mg/L	10/02/2014	N001	4.5	-	9.5	410		F	#	0.15	
Manganese	mg/L	10/02/2014	N001	4.5	-	9.5	1.9		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	4.5	-	9.5	0.95		F	#	0.05	
Oxidation Reduction Potential	mV	10/02/2014	N001	4.5	-	9.5	119.4		F	#		
pH	s.u.	10/02/2014	N001	4.5	-	9.5	7.11		F	#		
Potassium	mg/L	10/02/2014	N001	4.5	-	9.5	52		F	#	0.26	
Selenium	mg/L	10/02/2014	N001	4.5	-	9.5	0.087		F	#	0.0016	
Sodium	mg/L	10/02/2014	N001	4.5	-	9.5	900		F	#	0.23	
Specific Conductance	umhos /cm	10/02/2014	N001	4.5	-	9.5	7154		F	#		
Strontium	mg/L	10/02/2014	N001	4.5	-	9.5	6.1		F	#	0.0013	
Sulfate	mg/L	10/02/2014	N001	4.5	-	9.5	4400		F	#	50	
Temperature	C	10/02/2014	N001	4.5	-	9.5	22.33		F	#		
Turbidity	NTU	10/02/2014	N001	4.5	-	9.5	1.27		F	#		
Uranium	mg/L	10/02/2014	N001	4.5	-	9.5	0.57		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0618 WELL Center of floodplain, well nest, just N of floodplain fence

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	10/02/2014	N001	11	-	16	358		F	#		
Ammonia Total as N	mg/L	10/02/2014	N001	11	-	16	21		F	#	2.5	
Calcium	mg/L	10/02/2014	N001	11	-	16	420		F	#	0.12	
Chloride	mg/L	10/02/2014	N001	11	-	16	120		F	#	20	
Magnesium	mg/L	10/02/2014	N001	11	-	16	480		F	#	0.15	
Manganese	mg/L	10/02/2014	N001	11	-	16	3.4		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	11	-	16	0.017		F	#	0.01	
Oxidation Reduction Potential	mV	10/02/2014	N001	11	-	16	-69.9		F	#		
pH	s.u.	10/02/2014	N001	11	-	16	6.99		F	#		
Potassium	mg/L	10/02/2014	N001	11	-	16	54		F	#	0.26	
Selenium	mg/L	10/02/2014	N001	11	-	16	0.0023		F	#	0.00032	
Sodium	mg/L	10/02/2014	N001	11	-	16	1500		F	#	0.23	
Specific Conductance	umhos /cm	10/02/2014	N001	11	-	16	9707		F	#		
Strontium	mg/L	10/02/2014	N001	11	-	16	5.3		F	#	0.0013	
Sulfate	mg/L	10/02/2014	N001	11	-	16	6100		F	#	50	
Temperature	C	10/02/2014	N001	11	-	16	19.77		F	#		
Turbidity	NTU	10/02/2014	N001	11	-	16	3.37		F	#		
Uranium	mg/L	10/02/2014	N001	11	-	16	0.53		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0619 WELL Center of floodplain

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	10/01/2014	N001	8	-	13	378		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	8	-	13	0.62		F	#	0.1	
Calcium	mg/L	10/01/2014	N001	8	-	13	340		F	#	0.12	
Chloride	mg/L	10/01/2014	N001	8	-	13	130		F	#	10	
Magnesium	mg/L	10/01/2014	N001	8	-	13	120		F	#	0.15	
Manganese	mg/L	10/01/2014	N001	8	-	13	2.4		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	8	-	13	0.017		F	#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	8	-	13	-28.7		F	#		
pH	s.u.	10/01/2014	N001	8	-	13	7.26		F	#		
Potassium	mg/L	10/01/2014	N001	8	-	13	23		F	#	0.26	
Selenium	mg/L	10/01/2014	N001	8	-	13	0.00066		F	#	0.000032	
Sodium	mg/L	10/01/2014	N001	8	-	13	1600		F	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	8	-	13	8071		F	#		
Strontium	mg/L	10/01/2014	N001	8	-	13	9.9		F	#	0.0013	
Sulfate	mg/L	10/01/2014	N001	8	-	13	4400		F	#	50	
Temperature	C	10/01/2014	N001	8	-	13	19.32		F	#		
Turbidity	NTU	10/01/2014	N001	8	-	13	2.06		F	#		
Uranium	mg/L	10/01/2014	N001	8	-	13	0.1		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0622 WELL Center of floodplain, well nest, N of floodplain fence

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	10/02/2014	N001	5	-	10	222		F	#		
Ammonia Total as N	mg/L	10/02/2014	N001	5	-	10	0.1	U	F	#	0.1	
Calcium	mg/L	10/02/2014	N001	5	-	10	170		F	#	0.12	
Chloride	mg/L	10/02/2014	N001	5	-	10	67		F	#	10	
Magnesium	mg/L	10/02/2014	N001	5	-	10	59		F	#	0.15	
Manganese	mg/L	10/02/2014	N001	5	-	10	1.2		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	5	-	10	0.012		F	#	0.01	
Oxidation Reduction Potential	mV	10/02/2014	N001	5	-	10	-63.1		F	#		
pH	s.u.	10/02/2014	N001	5	-	10	7.36		F	#		
Potassium	mg/L	10/02/2014	N001	5	-	10	15		F	#	0.26	
Selenium	mg/L	10/02/2014	N001	5	-	10	0.0034		F	#	0.00032	
Sodium	mg/L	10/02/2014	N001	5	-	10	970		F	#	0.23	
Specific Conductance	umhos /cm	10/02/2014	N001	5	-	10	4874		F	#		
Strontium	mg/L	10/02/2014	N001	5	-	10	6		F	#	0.0013	
Sulfate	mg/L	10/02/2014	N001	5	-	10	2400		F	#	25	
Temperature	C	10/02/2014	N001	5	-	10	18.78		F	#		
Turbidity	NTU	10/02/2014	N001	5	-	10	2.73		F	#		
Uranium	mg/L	10/02/2014	N001	5	-	10	0.038		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0623 WELL Center of floodplain, well nest

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	10/01/2014	N001	10	-	15	358		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	10	-	15	0.16		F	#	0.1	
Calcium	mg/L	10/01/2014	N001	10	-	15	240		F	#	0.12	
Chloride	mg/L	10/01/2014	N001	10	-	15	72		F	#	10	
Magnesium	mg/L	10/01/2014	N001	10	-	15	44		F	#	0.15	
Manganese	mg/L	10/01/2014	N001	10	-	15	2.4		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	10	-	15	0.014		F	#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	10	-	15	10.3		F	#		
pH	s.u.	10/01/2014	N001	10	-	15	7.06		F	#		
Potassium	mg/L	10/01/2014	N001	10	-	15	12		F	#	0.26	
Selenium	mg/L	10/01/2014	N001	10	-	15	0.0008		F	#	0.00016	
Sodium	mg/L	10/01/2014	N001	10	-	15	1100		F	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	10	-	15	5557		F	#		
Strontium	mg/L	10/01/2014	N001	10	-	15	10		F	#	0.0013	
Sulfate	mg/L	10/01/2014	N001	10	-	15	2700		F	#	25	
Temperature	C	10/01/2014	N001	10	-	15	18.93		F	#		
Turbidity	NTU	10/01/2014	N001	10	-	15	3.71		F	#		
Uranium	mg/L	10/01/2014	N001	10	-	15	0.039		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0625 WELL Center of floodplain, well nest

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	10/01/2014	N001	4.5	-	9.5	382		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	4.5	-	9.5	0.12		F	#	0.1	
Calcium	mg/L	10/01/2014	N001	4.5	-	9.5	240		F	#	0.12	
Chloride	mg/L	10/01/2014	N001	4.5	-	9.5	75		F	#	10	
Magnesium	mg/L	10/01/2014	N001	4.5	-	9.5	44		F	#	0.15	
Manganese	mg/L	10/01/2014	N001	4.5	-	9.5	3.1		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	4.5	-	9.5	0.01		F	#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	4.5	-	9.5	26.8		F	#		
pH	s.u.	10/01/2014	N001	4.5	-	9.5	7.07		F	#		
Potassium	mg/L	10/01/2014	N001	4.5	-	9.5	11		F	#	0.26	
Selenium	mg/L	10/01/2014	N001	4.5	-	9.5	0.0011		F	#	0.00016	
Sodium	mg/L	10/01/2014	N001	4.5	-	9.5	1100		F	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	4.5	-	9.5	5654		F	#		
Strontium	mg/L	10/01/2014	N001	4.5	-	9.5	11		F	#	0.0013	
Sulfate	mg/L	10/01/2014	N001	4.5	-	9.5	2800		F	#	25	
Temperature	C	10/01/2014	N001	4.5	-	9.5	20.65		F	#		
Turbidity	NTU	10/01/2014	N001	4.5	-	9.5	1.95		F	#		
Uranium	mg/L	10/01/2014	N001	4.5	-	9.5	0.04		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0626 WELL Center of floodplain, just NE of wetland

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	09/30/2014	N001	9.5	-	14.5	250		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	9.5	-	14.5	0.1		F	#	0.1	
Calcium	mg/L	09/30/2014	N001	9.5	-	14.5	180		F	#	0.12	
Chloride	mg/L	09/30/2014	N001	9.5	-	14.5	60		F	#	10	
Magnesium	mg/L	09/30/2014	N001	9.5	-	14.5	27		F	#	0.15	
Manganese	mg/L	09/30/2014	N001	9.5	-	14.5	3.1		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	9.5	-	14.5	0.012		F	#	0.01	
Oxidation Reduction Potential	mV	09/30/2014	N001	9.5	-	14.5	2		F	#		
pH	s.u.	09/30/2014	N001	9.5	-	14.5	7.32		F	#		
Potassium	mg/L	09/30/2014	N001	9.5	-	14.5	10		F	#	0.26	
Selenium	mg/L	09/30/2014	N001	9.5	-	14.5	0.0018		F	#	0.000032	
Sodium	mg/L	09/30/2014	N001	9.5	-	14.5	930		F	#	0.23	
Specific Conductance	umhos /cm	09/30/2014	N001	9.5	-	14.5	4693		F	#		
Strontium	mg/L	09/30/2014	N001	9.5	-	14.5	8.9		F	#	0.0013	
Sulfate	mg/L	09/30/2014	N001	9.5	-	14.5	2200		F	#	25	
Temperature	C	09/30/2014	N001	9.5	-	14.5	18		F	#		
Turbidity	NTU	09/30/2014	N001	9.5	-	14.5	3.54		F	#		
Uranium	mg/L	09/30/2014	N001	9.5	-	14.5	0.02		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0628 WELL Center of floodplain, well nest, just N of wetland

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	09/29/2014	N001	6	-	10	446		F	#		
Ammonia Total as N	mg/L	09/29/2014	N001	6	-	10	0.1	U	F	#	0.1	
Calcium	mg/L	09/29/2014	N001	6	-	10	290		F	#	0.12	
Chloride	mg/L	09/29/2014	N001	6	-	10	180		F	#	20	
Magnesium	mg/L	09/29/2014	N001	6	-	10	120		F	#	0.15	
Manganese	mg/L	09/29/2014	N001	6	-	10	3.4		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/29/2014	N001	6	-	10	0.016		F	#	0.01	
Oxidation Reduction Potential	mV	09/29/2014	N001	6	-	10	-82.6		F	#		
pH	s.u.	09/29/2014	N001	6	-	10	7.25		F	#		
Potassium	mg/L	09/29/2014	N001	6	-	10	26		F	#	0.26	
Selenium	mg/L	09/29/2014	N001	6	-	10	0.048		F	#	0.00016	
Sodium	mg/L	09/29/2014	N001	6	-	10	2700		F	#	0.47	
Specific Conductance	umhos /cm	09/29/2014	N001	6	-	10	11753		F	#		
Strontium	mg/L	09/29/2014	N001	6	-	10	12		F	#	0.0013	
Sulfate	mg/L	09/29/2014	N001	6	-	10	6600		F	#	50	
Temperature	C	09/29/2014	N001	6	-	10	17.04		F	#		
Turbidity	NTU	09/29/2014	N001	6	-	10	5.57		F	#		
Uranium	mg/L	09/29/2014	N001	6	-	10	0.13		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0630 WELL Just N of mouth of Bob Lee Wash, well nest

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	09/30/2014	N001	5	-	10	582		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	5	-	10	0.1	U	F	#	0.1	
Calcium	mg/L	09/30/2014	N001	5	-	10	430		F	#	0.12	
Chloride	mg/L	09/30/2014	N001	5	-	10	190		F	#	10	
Magnesium	mg/L	09/30/2014	N001	5	-	10	260		F	#	0.15	
Manganese	mg/L	09/30/2014	N001	5	-	10	2.1		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	5	-	10	38		F	#	0.5	
Oxidation Reduction Potential	mV	09/30/2014	N001	5	-	10	165.1		F	#		
pH	s.u.	09/30/2014	N001	5	-	10	6.86		F	#		
Potassium	mg/L	09/30/2014	N001	5	-	10	17		F	#	0.26	
Selenium	mg/L	09/30/2014	N001	5	-	10	0.24		F	#	0.0016	
Sodium	mg/L	09/30/2014	N001	5	-	10	1500		F	#	0.23	
Specific Conductance	umhos /cm	09/30/2014	N001	5	-	10	8330		F	#		
Strontium	mg/L	09/30/2014	N001	5	-	10	19		F	#	0.0013	
Sulfate	mg/L	09/30/2014	N001	5	-	10	4600		F	#	50	
Temperature	C	09/30/2014	N001	5	-	10	18.86		F	#		
Turbidity	NTU	09/30/2014	N001	5	-	10	1.11		F	#		
Uranium	mg/L	09/30/2014	N001	5	-	10	0.22		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0734 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	09/30/2014	0001	2	-	4	586		FQ	#		
Ammonia Total as N	mg/L	09/30/2014	0001	2	-	4	0.1	U	FQ	#	0.1	
Calcium	mg/L	09/30/2014	0001	2	-	4	430		FQ	#	0.12	
Chloride	mg/L	09/30/2014	0001	2	-	4	160		FQ	#	20	
Magnesium	mg/L	09/30/2014	0001	2	-	4	290		FQ	#	0.15	
Manganese	mg/L	09/30/2014	0001	2	-	4	0.88		FQ	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	0001	2	-	4	4		FQ	#	0.1	
Oxidation Reduction Potential	mV	09/30/2014	N001	2	-	4	124.7		FQ	#		
pH	s.u.	09/30/2014	N001	2	-	4	7.23		FQ	#		
Potassium	mg/L	09/30/2014	0001	2	-	4	16		FQ	#	0.26	
Selenium	mg/L	09/30/2014	0001	2	-	4	0.017		FQ	#	0.00032	
Sodium	mg/L	09/30/2014	0001	2	-	4	2000		FQ	#	0.23	
Specific Conductance	umhos /cm	09/30/2014	N001	2	-	4	10189		FQ	#		
Strontium	mg/L	09/30/2014	0001	2	-	4	11		FQ	#	0.0013	
Sulfate	mg/L	09/30/2014	0001	2	-	4	6000		FQ	#	50	
Temperature	C	09/30/2014	N001	2	-	4	18.1		FQ	#		
Turbidity	NTU	09/30/2014	N001	2	-	4	11.9		FQ	#		
Uranium	mg/L	09/30/2014	0001	2	-	4	0.11		FQ	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0735 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	09/30/2014	N001	3	-	8	806		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	3	-	8	16		F	#	2.5	
Calcium	mg/L	09/30/2014	N001	3	-	8	420		F	#	0.24	
Chloride	mg/L	09/30/2014	N001	3	-	8	530		F	#	50	
Magnesium	mg/L	09/30/2014	N001	3	-	8	1000		F	#	0.3	
Manganese	mg/L	09/30/2014	N001	3	-	8	2.9		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	3	-	8	580		F	#	5	
Oxidation Reduction Potential	mV	09/30/2014	N001	3	-	8	80.1		F	#		
pH	s.u.	09/30/2014	N001	3	-	8	6.82		F	#		
Potassium	mg/L	09/30/2014	N001	3	-	8	54		F	#	0.52	
Selenium	mg/L	09/30/2014	N001	3	-	8	0.15		F	#	0.00032	
Sodium	mg/L	09/30/2014	N001	3	-	8	3400		F	#	0.47	
Specific Conductance	umhos /cm	09/30/2014	N001	3	-	8	18452		F	#		
Strontium	mg/L	09/30/2014	N001	3	-	8	11		F	#	0.0026	
Sulfate	mg/L	09/30/2014	N001	3	-	8	9900		F	#	120	
Temperature	C	09/30/2014	N001	3	-	8	16.15		F	#		
Turbidity	NTU	09/30/2014	N001	3	-	8	5.85		F	#		
Uranium	mg/L	09/30/2014	N001	3	-	8	0.28		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0736 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	09/30/2014	N001	3	-	5	246		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	3	-	5	0.1	U	F	#	0.1	
Calcium	mg/L	09/30/2014	N001	3	-	5	270		F	#	0.12	
Chloride	mg/L	09/30/2014	N001	3	-	5	68		F	#	10	
Magnesium	mg/L	09/30/2014	N001	3	-	5	41		F	#	0.15	
Manganese	mg/L	09/30/2014	N001	3	-	5	0.33		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	3	-	5	0.049		F	#	0.01	
Oxidation Reduction Potential	mV	09/30/2014	N001	3	-	5	8.2		F	#		
pH	s.u.	09/30/2014	N001	3	-	5	7.55		F	#		
Potassium	mg/L	09/30/2014	N001	3	-	5	15		F	#	0.26	
Selenium	mg/L	09/30/2014	N001	3	-	5	0.00058		F	#	0.000032	
Sodium	mg/L	09/30/2014	N001	3	-	5	1000		F	#	0.23	
Specific Conductance	umhos /cm	09/30/2014	N001	3	-	5	5330		F	#		
Strontium	mg/L	09/30/2014	N001	3	-	5	3.9		F	#	0.0013	
Sulfate	mg/L	09/30/2014	N001	3	-	5	2700		F	#	25	
Temperature	C	09/30/2014	N001	3	-	5	20.91		F	#		
Turbidity	NTU	09/30/2014	N001	3	-	5	2.03		F	#		
Uranium	mg/L	09/30/2014	N001	3	-	5	0.046		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0766 WELL Well Point

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	10/01/2014	N001	6.25	-	8.75	402		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	6.25	-	8.75	0.22		F	#	0.1	
Calcium	mg/L	10/01/2014	N001	6.25	-	8.75	370		F	#	0.12	
Chloride	mg/L	10/01/2014	N001	6.25	-	8.75	130		F	#	20	
Magnesium	mg/L	10/01/2014	N001	6.25	-	8.75	200		F	#	0.15	
Manganese	mg/L	10/01/2014	N001	6.25	-	8.75	1.5		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	6.25	-	8.75	0.028		F	#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	6.25	-	8.75	-201.7		F	#		
pH	s.u.	10/01/2014	N001	6.25	-	8.75	7.27		F	#		
Potassium	mg/L	10/01/2014	N001	6.25	-	8.75	44		F	#	0.26	
Selenium	mg/L	10/01/2014	N001	6.25	-	8.75	0.0014		F	#	0.00016	
Sodium	mg/L	10/01/2014	N001	6.25	-	8.75	1700		F	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	6.25	-	8.75	9185		F	#		
Strontium	mg/L	10/01/2014	N001	6.25	-	8.75	5.7		F	#	0.0013	
Sulfate	mg/L	10/01/2014	N001	6.25	-	8.75	5300		F	#	50	
Temperature	C	10/01/2014	N001	6.25	-	8.75	23.57		F	#		
Turbidity	NTU	10/01/2014	N001	6.25	-	8.75	4.97		F	#		
Uranium	mg/L	10/01/2014	N001	6.25	-	8.75	0.18		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0768 WELL Well Point

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	10/01/2014	N001	4.58 - 7.08	354		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	4.58 - 7.08	0.1	U	F	#	0.1	
Calcium	mg/L	10/01/2014	N001	4.58 - 7.08	180		F	#	0.12	
Chloride	mg/L	10/01/2014	N001	4.58 - 7.08	94		F	#	20	
Magnesium	mg/L	10/01/2014	N001	4.58 - 7.08	100		F	#	0.15	
Manganese	mg/L	10/01/2014	N001	4.58 - 7.08	1.7		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	4.58 - 7.08	0.014		F	#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	4.58 - 7.08	-106.3		F	#		
pH	s.u.	10/01/2014	N001	4.58 - 7.08	7.26		F	#		
Potassium	mg/L	10/01/2014	N001	4.58 - 7.08	25		F	#	0.26	
Selenium	mg/L	10/01/2014	N001	4.58 - 7.08	0.00082		F	#	0.00016	
Sodium	mg/L	10/01/2014	N001	4.58 - 7.08	1300		F	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	4.58 - 7.08	6735		F	#		
Strontium	mg/L	10/01/2014	N001	4.58 - 7.08	5.9		F	#	0.0013	
Sulfate	mg/L	10/01/2014	N001	4.58 - 7.08	3300		F	#	50	
Temperature	C	10/01/2014	N001	4.58 - 7.08	18.92		F	#		
Turbidity	NTU	10/01/2014	N001	4.58 - 7.08	4.39		F	#		
Uranium	mg/L	10/01/2014	N001	4.58 - 7.08	0.069		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0773 WELL Well Point

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	10/02/2014	N001	4	-	6.5	276		FQ	#		
Ammonia Total as N	mg/L	10/02/2014	N001	4	-	6.5	3.3		FQ	#	0.1	
Calcium	mg/L	10/02/2014	N001	4	-	6.5	200		FQ	#	0.12	
Chloride	mg/L	10/02/2014	N001	4	-	6.5	64		FQ	#	10	
Magnesium	mg/L	10/02/2014	N001	4	-	6.5	180		FQ	#	0.15	
Manganese	mg/L	10/02/2014	N001	4	-	6.5	0.3		FQ	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	4	-	6.5	13		FQ	#	0.2	
Oxidation Reduction Potential	mV	10/02/2014	N001	4	-	6.5	153.6		FQ	#		
pH	s.u.	10/02/2014	N001	4	-	6.5	6.77		FQ	#		
Potassium	mg/L	10/02/2014	N001	4	-	6.5	26		FQ	#	0.26	
Selenium	mg/L	10/02/2014	N001	4	-	6.5	0.15		FQ	#	0.00032	
Sodium	mg/L	10/02/2014	N001	4	-	6.5	300		FQ	#	0.23	
Specific Conductance	umhos /cm	10/02/2014	N001	4	-	6.5	2937		FQ	#		
Strontium	mg/L	10/02/2014	N001	4	-	6.5	2.4		FQ	#	0.0013	
Sulfate	mg/L	10/02/2014	N001	4	-	6.5	1500		FQ	#	25	
Temperature	C	10/02/2014	N001	4	-	6.5	21.87		FQ	#		
Turbidity	NTU	10/02/2014	N001	4	-	6.5	3.6		FQ	#		
Uranium	mg/L	10/02/2014	N001	4	-	6.5	0.24		FQ	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0775 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	10/01/2014	N001	4.25	-	6.75	354		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	4.25	-	6.75	0.29		F	#	0.1	
Calcium	mg/L	10/01/2014	N001	4.25	-	6.75	460		F	#	0.12	
Chloride	mg/L	10/01/2014	N001	4.25	-	6.75	87		F	#	20	
Magnesium	mg/L	10/01/2014	N001	4.25	-	6.75	120		F	#	0.15	
Manganese	mg/L	10/01/2014	N001	4.25	-	6.75	2.4		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	4.25	-	6.75	0.022		F	#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	4.25	-	6.75	-54.9		F	#		
pH	s.u.	10/01/2014	N001	4.25	-	6.75	7.14		F	#		
Potassium	mg/L	10/01/2014	N001	4.25	-	6.75	30		F	#	0.26	
Selenium	mg/L	10/01/2014	N001	4.25	-	6.75	0.00092		F	#	0.00016	
Sodium	mg/L	10/01/2014	N001	4.25	-	6.75	1300		F	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	4.25	-	6.75	7294		F	#		
Strontium	mg/L	10/01/2014	N001	4.25	-	6.75	6.4		F	#	0.0013	
Sulfate	mg/L	10/01/2014	N001	4.25	-	6.75	3900		F	#	50	
Temperature	C	10/01/2014	N001	4.25	-	6.75	22.06		F	#		
Turbidity	NTU	10/01/2014	N001	4.25	-	6.75	3.12		F	#		
Uranium	mg/L	10/01/2014	N001	4.25	-	6.75	0.077		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0779 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	09/30/2014	N001	7	-	9.5	742		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	7	-	9.5	2.2		F	#	0.1	
Calcium	mg/L	09/30/2014	N001	7	-	9.5	320		F	#	0.24	
Chloride	mg/L	09/30/2014	N001	7	-	9.5	290		F	#	40	
Magnesium	mg/L	09/30/2014	N001	7	-	9.5	870		F	#	0.3	
Manganese	mg/L	09/30/2014	N001	7	-	9.5	1.4		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	7	-	9.5	8.5		F	#	0.25	
Oxidation Reduction Potential	mV	09/30/2014	N001	7	-	9.5	21.7		F	#		
pH	s.u.	09/30/2014	N001	7	-	9.5	7.17		F	#		
Potassium	mg/L	09/30/2014	N001	7	-	9.5	100		F	#	0.52	
Selenium	mg/L	09/30/2014	N001	7	-	9.5	0.048		F	#	0.0032	
Sodium	mg/L	09/30/2014	N001	7	-	9.5	3000		F	#	0.47	
Specific Conductance	umhos /cm	09/30/2014	N001	7	-	9.5	16038		F	#		
Strontium	mg/L	09/30/2014	N001	7	-	9.5	8.7		F	#	0.0026	
Sulfate	mg/L	09/30/2014	N001	7	-	9.5	9900		F	#	100	
Temperature	C	09/30/2014	N001	7	-	9.5	19.88		F	#		
Turbidity	NTU	09/30/2014	N001	7	-	9.5	2.36		F	#		
Uranium	mg/L	09/30/2014	N001	7	-	9.5	1		F	#	0.00029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0782R WELL Island area NW of US Hwy 491 bridge.

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	09/30/2014	N001	4.71	-	9.46	172		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	4.71	-	9.46	0.17		F	#	0.1	
Calcium	mg/L	09/30/2014	N001	4.71	-	9.46	73		F	#	0.024	
Chloride	mg/L	09/30/2014	N001	4.71	-	9.46	20		F	#	2	
Magnesium	mg/L	09/30/2014	N001	4.71	-	9.46	22		F	#	0.03	
Manganese	mg/L	09/30/2014	N001	4.71	-	9.46	1.6		F	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	4.71	-	9.46	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/30/2014	N001	4.71	-	9.46	113.1		F	#		
pH	s.u.	09/30/2014	N001	4.71	-	9.46	7.33		F	#		
Potassium	mg/L	09/30/2014	N001	4.71	-	9.46	3.6		F	#	0.052	
Selenium	mg/L	09/30/2014	N001	4.71	-	9.46	0.000065	B	F	#	0.000032	
Sodium	mg/L	09/30/2014	N001	4.71	-	9.46	180		F	#	0.047	
Specific Conductance	umhos /cm	09/30/2014	N001	4.71	-	9.46	1296		F	#		
Strontium	mg/L	09/30/2014	N001	4.71	-	9.46	0.95		F	#	0.00026	
Sulfate	mg/L	09/30/2014	N001	4.71	-	9.46	490		F	#	5	
Temperature	C	09/30/2014	N001	4.71	-	9.46	17.14		F	#		
Turbidity	NTU	09/30/2014	N001	4.71	-	9.46	0.62		F	#		
Uranium	mg/L	09/30/2014	N001	4.71	-	9.46	0.0074		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0783R WELL Island area NW of US Hwy 491 bridge.

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	09/30/2014	N001	4.38 - 9.38	218		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	4.38 - 9.38	0.1	U	F	#	0.1	
Calcium	mg/L	09/30/2014	N001	4.38 - 9.38	170		F	#	0.024	
Chloride	mg/L	09/30/2014	N001	4.38 - 9.38	36		F	#	4	
Magnesium	mg/L	09/30/2014	N001	4.38 - 9.38	53		F	#	0.03	
Manganese	mg/L	09/30/2014	N001	4.38 - 9.38	1.8		F	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	4.38 - 9.38	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/30/2014	N001	4.38 - 9.38	120.1		F	#		
pH	s.u.	09/30/2014	N001	4.38 - 9.38	7.34		F	#		
Potassium	mg/L	09/30/2014	N001	4.38 - 9.38	5.9		F	#	0.052	
Selenium	mg/L	09/30/2014	N001	4.38 - 9.38	0.00015		F	#	0.000032	
Sodium	mg/L	09/30/2014	N001	4.38 - 9.38	240		F	#	0.047	
Specific Conductance	umhos /cm	09/30/2014	N001	4.38 - 9.38	2090		F	#		
Strontium	mg/L	09/30/2014	N001	4.38 - 9.38	2.2		F	#	0.00026	
Sulfate	mg/L	09/30/2014	N001	4.38 - 9.38	920		F	#	10	
Temperature	C	09/30/2014	N001	4.38 - 9.38	22.75		F	#		
Turbidity	NTU	09/30/2014	N001	4.38 - 9.38	2.34		F	#		
Uranium	mg/L	09/30/2014	N001	4.38 - 9.38	0.0091		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0792 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	10/02/2014	N001	6	-	8	378		F	#		
Ammonia Total as N	mg/L	10/02/2014	N001	6	-	8	0.25		F	#	0.1	
Calcium	mg/L	10/02/2014	N001	6	-	8	420		F	#	0.12	
Chloride	mg/L	10/02/2014	N001	6	-	8	100		F	#	20	
Magnesium	mg/L	10/02/2014	N001	6	-	8	150		F	#	0.15	
Manganese	mg/L	10/02/2014	N001	6	-	8	5.3		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	6	-	8	0.023		F	#	0.01	
Oxidation Reduction Potential	mV	10/02/2014	N001	6	-	8	-80.2		F	#		
pH	s.u.	10/02/2014	N001	6	-	8	7.38		F	#		
Potassium	mg/L	10/02/2014	N001	6	-	8	31		F	#	0.26	
Selenium	mg/L	10/02/2014	N001	6	-	8	0.0018		F	#	0.00016	
Sodium	mg/L	10/02/2014	N001	6	-	8	1400		F	#	0.23	
Specific Conductance	umhos /cm	10/02/2014	N001	6	-	8	8057		F	#		
Strontium	mg/L	10/02/2014	N001	6	-	8	6.7		F	#	0.0013	
Sulfate	mg/L	10/02/2014	N001	6	-	8	4300		F	#	50	
Temperature	C	10/02/2014	N001	6	-	8	18.92		F	#		
Turbidity	NTU	10/02/2014	N001	6	-	8	2.34		F	#		
Uranium	mg/L	10/02/2014	N001	6	-	8	0.089		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0793 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	10/02/2014	N001	5.2	-	7.2	490		F	#		
Ammonia Total as N	mg/L	10/02/2014	N001	5.2	-	7.2	4.9		F	#	0.1	
Calcium	mg/L	10/02/2014	N001	5.2	-	7.2	380		F	#	0.12	
Chloride	mg/L	10/02/2014	N001	5.2	-	7.2	180		F	#	20	
Magnesium	mg/L	10/02/2014	N001	5.2	-	7.2	610		F	#	0.15	
Manganese	mg/L	10/02/2014	N001	5.2	-	7.2	0.16		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	5.2	-	7.2	0.12		F	#	0.01	
Oxidation Reduction Potential	mV	10/02/2014	N001	5.2	-	7.2	8.7		F	#		
pH	s.u.	10/02/2014	N001	5.2	-	7.2	7.03		F	#		
Potassium	mg/L	10/02/2014	N001	5.2	-	7.2	67		F	#	0.26	
Selenium	mg/L	10/02/2014	N001	5.2	-	7.2	0.079		F	#	0.0032	
Sodium	mg/L	10/02/2014	N001	5.2	-	7.2	1700		F	#	0.23	
Specific Conductance	umhos /cm	10/02/2014	N001	5.2	-	7.2	10817		F	#		
Strontium	mg/L	10/02/2014	N001	5.2	-	7.2	6.5		F	#	0.0013	
Sulfate	mg/L	10/02/2014	N001	5.2	-	7.2	7000		F	#	50	
Temperature	C	10/02/2014	N001	5.2	-	7.2	21.97		F	#		
Turbidity	NTU	10/02/2014	N001	5.2	-	7.2	2.79		F	#		
Uranium	mg/L	10/02/2014	N001	5.2	-	7.2	0.68		F	#	0.00029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0797 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	10/01/2014	N001	7.3	-	9.3	346		FQ	#		
Ammonia Total as N	mg/L	10/01/2014	N001	7.3	-	9.3	0.1	U	FQ	#	0.1	
Calcium	mg/L	10/01/2014	N001	7.3	-	9.3	420		FQ	#	0.12	
Chloride	mg/L	10/01/2014	N001	7.3	-	9.3	280		FQ	#	20	
Magnesium	mg/L	10/01/2014	N001	7.3	-	9.3	110		FQ	#	0.15	
Manganese	mg/L	10/01/2014	N001	7.3	-	9.3	0.58		FQ	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	7.3	-	9.3	0.13		FQ	#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	7.3	-	9.3	79.8		FQ	#		
pH	s.u.	10/01/2014	N001	7.3	-	9.3	7.19		FQ	#		
Potassium	mg/L	10/01/2014	N001	7.3	-	9.3	8.3		FQ	#	0.26	
Selenium	mg/L	10/01/2014	N001	7.3	-	9.3	0.0008		FQ	#	0.00016	
Sodium	mg/L	10/01/2014	N001	7.3	-	9.3	1600		FQ	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	7.3	-	9.3	8566		FQ	#		
Strontium	mg/L	10/01/2014	N001	7.3	-	9.3	7.8		FQ	#	0.0013	
Sulfate	mg/L	10/01/2014	N001	7.3	-	9.3	4500		FQ	#	50	
Temperature	C	10/01/2014	N001	7.3	-	9.3	20.41		FQ	#		
Turbidity	NTU	10/01/2014	N001	7.3	-	9.3	8.1		FQ	#		
Uranium	mg/L	10/01/2014	N001	7.3	-	9.3	0.025		FQ	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0798 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	10/01/2014	N001	7.1	-	9.1	478		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	7.1	-	9.1	1.6		F	#	0.1	
Calcium	mg/L	10/01/2014	N001	7.1	-	9.1	480		F	#	0.12	
Chloride	mg/L	10/01/2014	N001	7.1	-	9.1	150		F	#	20	
Magnesium	mg/L	10/01/2014	N001	7.1	-	9.1	210		F	#	0.15	
Manganese	mg/L	10/01/2014	N001	7.1	-	9.1	2.2		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	7.1	-	9.1	0.017		F	#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	7.1	-	9.1	3.5		F	#		
pH	s.u.	10/01/2014	N001	7.1	-	9.1	7.1		F	#		
Potassium	mg/L	10/01/2014	N001	7.1	-	9.1	36		F	#	0.26	
Selenium	mg/L	10/01/2014	N001	7.1	-	9.1	0.0012		F	#	0.00016	
Sodium	mg/L	10/01/2014	N001	7.1	-	9.1	1600		F	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	7.1	-	9.1	8980		F	#		
Strontium	mg/L	10/01/2014	N001	7.1	-	9.1	6.2		F	#	0.0013	
Sulfate	mg/L	10/01/2014	N001	7.1	-	9.1	5200		F	#	50	
Temperature	C	10/01/2014	N001	7.1	-	9.1	19.66		F	#		
Turbidity	NTU	10/01/2014	N001	7.1	-	9.1	2.49		F	#		
Uranium	mg/L	10/01/2014	N001	7.1	-	9.1	0.22		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0850 WELL Background area 1 mi E of Disposal Cell

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	10/01/2014	N001	5.6	-	15.4	456		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	5.6	-	15.4	0.1	U	F	#	0.1	
Calcium	mg/L	10/01/2014	N001	5.6	-	15.4	200		F	#	0.12	
Chloride	mg/L	10/01/2014	N001	5.6	-	15.4	190		F	#	10	
Magnesium	mg/L	10/01/2014	N001	5.6	-	15.4	47		F	#	0.15	
Manganese	mg/L	10/01/2014	N001	5.6	-	15.4	0.42		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	5.6	-	15.4	0.046		F	#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	5.6	-	15.4	60		F	#		
pH	s.u.	10/01/2014	N001	5.6	-	15.4	7.23		F	#		
Potassium	mg/L	10/01/2014	N001	5.6	-	15.4	5.7		F	#	0.26	
Selenium	mg/L	10/01/2014	N001	5.6	-	15.4	0.0035		F	#	0.00016	
Sodium	mg/L	10/01/2014	N001	5.6	-	15.4	910		F	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	5.6	-	15.4	4834		F	#		
Strontium	mg/L	10/01/2014	N001	5.6	-	15.4	3.1		F	#	0.0013	
Sulfate	mg/L	10/01/2014	N001	5.6	-	15.4	1900		F	#	25	
Temperature	C	10/01/2014	N001	5.6	-	15.4	18.92		F	#		
Turbidity	NTU	10/01/2014	N001	5.6	-	15.4	9.27		F	#		
Uranium	mg/L	10/01/2014	N001	5.6	-	15.4	0.053		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0853 WELL S of floodplain fence

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	10/02/2014	N001	10	-	15	240		F	#		
Ammonia Total as N	mg/L	10/02/2014	N001	10	-	15	14		F	#	2.5	
Calcium	mg/L	10/02/2014	N001	10	-	15	120		F	#	0.024	
Chloride	mg/L	10/02/2014	N001	10	-	15	20		F	#	2	
Magnesium	mg/L	10/02/2014	N001	10	-	15	35		F	#	0.03	
Manganese	mg/L	10/02/2014	N001	10	-	15	0.64		F	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	10	-	15	0.019		F	#	0.01	
Oxidation Reduction Potential	mV	10/02/2014	N001	10	-	15	71.5		F	#		
pH	s.u.	10/02/2014	N001	10	-	15	7.13		F	#		
Potassium	mg/L	10/02/2014	N001	10	-	15	11		F	#	0.052	
Selenium	mg/L	10/02/2014	N001	10	-	15	0.00014		F	#	0.000032	
Sodium	mg/L	10/02/2014	N001	10	-	15	100		F	#	0.047	
Specific Conductance	umhos /cm	10/02/2014	N001	10	-	15	1398		F	#		
Strontium	mg/L	10/02/2014	N001	10	-	15	1.3		F	#	0.00026	
Sulfate	mg/L	10/02/2014	N001	10	-	15	510		F	#	5	
Temperature	C	10/02/2014	N001	10	-	15	21.91		F	#		
Turbidity	NTU	10/02/2014	N001	10	-	15	5.43		F	#		
Uranium	mg/L	10/02/2014	N001	10	-	15	0.046		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0854 WELL NE part of floodplain

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	10/01/2014	N001	9.05 - 11.55	342		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	9.05 - 11.55	4.7		F	#	0.1	
Ammonia Total as N	mg/L	10/01/2014	N002	9.05 - 11.55	4.8		F	#	0.1	
Calcium	mg/L	10/01/2014	N001	9.05 - 11.55	490		F	#	0.24	
Calcium	mg/L	10/01/2014	N002	9.05 - 11.55	490		F	#	0.12	
Chloride	mg/L	10/01/2014	N001	9.05 - 11.55	170		F	#	20	
Chloride	mg/L	10/01/2014	N002	9.05 - 11.55	160		F	#	20	
Magnesium	mg/L	10/01/2014	N001	9.05 - 11.55	410		F	#	0.3	
Magnesium	mg/L	10/01/2014	N002	9.05 - 11.55	440		F	#	0.15	
Manganese	mg/L	10/01/2014	N001	9.05 - 11.55	3.6		F	#	0.0024	
Manganese	mg/L	10/01/2014	N002	9.05 - 11.55	3.6		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	9.05 - 11.55	0.016		F	#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N002	9.05 - 11.55	0.015		F	#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	9.05 - 11.55	-133.7		F	#		
pH	s.u.	10/01/2014	N001	9.05 - 11.55	7.09		F	#		
Potassium	mg/L	10/01/2014	N001	9.05 - 11.55	59		F	#	0.52	
Potassium	mg/L	10/01/2014	N002	9.05 - 11.55	60		F	#	0.26	
Selenium	mg/L	10/01/2014	N001	9.05 - 11.55	0.00067		F	#	0.00016	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0854 WELL NE part of floodplain

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	10/01/2014	N002	9.05	-	11.55	0.00068		F	#	0.00016	
Sodium	mg/L	10/01/2014	N001	9.05	-	11.55	2000		F	#	0.47	
Sodium	mg/L	10/01/2014	N002	9.05	-	11.55	1900		F	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	9.05	-	11.55	11183		F	#		
Strontium	mg/L	10/01/2014	N001	9.05	-	11.55	7.3		F	#	0.0026	
Strontium	mg/L	10/01/2014	N002	9.05	-	11.55	7.2		F	#	0.0013	
Sulfate	mg/L	10/01/2014	N001	9.05	-	11.55	6900		F	#	50	
Sulfate	mg/L	10/01/2014	N002	9.05	-	11.55	6900		F	#	50	
Temperature	C	10/01/2014	N001	9.05	-	11.55	21.74		F	#		
Turbidity	NTU	10/01/2014	N001	9.05	-	11.55	2.78		F	#		
Uranium	mg/L	10/01/2014	N001	9.05	-	11.55	0.53		F	#	0.000015	
Uranium	mg/L	10/01/2014	N002	9.05	-	11.55	0.53		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0855 WELL NW part of floodplain

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	09/30/2014	N001	4.9	-	14.9	290		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	4.9	-	14.9	0.1	U	F	#	0.1	
Calcium	mg/L	09/30/2014	N001	4.9	-	14.9	290		F	#	0.12	
Chloride	mg/L	09/30/2014	N001	4.9	-	14.9	85		F	#	10	
Magnesium	mg/L	09/30/2014	N001	4.9	-	14.9	85		F	#	0.15	
Manganese	mg/L	09/30/2014	N001	4.9	-	14.9	1.7		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	4.9	-	14.9	5.6		F	#	0.1	
Oxidation Reduction Potential	mV	09/30/2014	N001	4.9	-	14.9	91.3		F	#		
pH	s.u.	09/30/2014	N001	4.9	-	14.9	7.11		F	#		
Potassium	mg/L	09/30/2014	N001	4.9	-	14.9	12		F	#	0.26	
Selenium	mg/L	09/30/2014	N001	4.9	-	14.9	0.043		F	#	0.00032	
Sodium	mg/L	09/30/2014	N001	4.9	-	14.9	1000		F	#	0.23	
Specific Conductance	umhos /cm	09/30/2014	N001	4.9	-	14.9	5820		F	#		
Strontium	mg/L	09/30/2014	N001	4.9	-	14.9	12		F	#	0.0013	
Sulfate	mg/L	09/30/2014	N001	4.9	-	14.9	3100		F	#	25	
Temperature	C	09/30/2014	N001	4.9	-	14.9	15.89		F	#		
Turbidity	NTU	09/30/2014	N001	4.9	-	14.9	6.62		F	#		
Uranium	mg/L	09/30/2014	N001	4.9	-	14.9	0.064		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0856 WELL NW part of floodplain

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	09/30/2014	N001	18.8	-	23.8	258		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	18.8	-	23.8	0.1	U	F	#	0.1	
Ammonia Total as N	mg/L	09/30/2014	N002	18.8	-	23.8	0.1	U	F	#	0.1	
Calcium	mg/L	09/30/2014	N001	18.8	-	23.8	210		F	#	0.12	
Calcium	mg/L	09/30/2014	N002	18.8	-	23.8	210		F	#	0.049	
Chloride	mg/L	09/30/2014	N001	18.8	-	23.8	75		F	#	10	
Chloride	mg/L	09/30/2014	N002	18.8	-	23.8	74		F	#	10	
Magnesium	mg/L	09/30/2014	N001	18.8	-	23.8	45		F	#	0.15	
Magnesium	mg/L	09/30/2014	N002	18.8	-	23.8	46		F	#	0.06	
Manganese	mg/L	09/30/2014	N001	18.8	-	23.8	1.4		F	#	0.0012	
Manganese	mg/L	09/30/2014	N002	18.8	-	23.8	1.4		F	#	0.00049	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	18.8	-	23.8	0.01	U	F	#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N002	18.8	-	23.8	0.014		F	#	0.01	
Oxidation Reduction Potential	mV	09/30/2014	N001	18.8	-	23.8	11.4		F	#		
pH	s.u.	09/30/2014	N001	18.8	-	23.8	7.4		F	#		
Potassium	mg/L	09/30/2014	N001	18.8	-	23.8	13		F	#	0.26	
Potassium	mg/L	09/30/2014	N002	18.8	-	23.8	13		F	#	0.1	
Selenium	mg/L	09/30/2014	N001	18.8	-	23.8	0.00054		F	#	0.00016	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0856 WELL NW part of floodplain

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	09/30/2014	N002	18.8	-	23.8	0.00048		F	#	0.000032	
Sodium	mg/L	09/30/2014	N001	18.8	-	23.8	1100		F	#	0.23	
Sodium	mg/L	09/30/2014	N002	18.8	-	23.8	980		F	#	0.093	
Specific Conductance	umhos /cm	09/30/2014	N001	18.8	-	23.8	5429		F	#		
Strontium	mg/L	09/30/2014	N001	18.8	-	23.8	7.2		F	#	0.0013	
Strontium	mg/L	09/30/2014	N002	18.8	-	23.8	6.9		F	#	0.00052	
Sulfate	mg/L	09/30/2014	N001	18.8	-	23.8	2800		F	#	25	
Sulfate	mg/L	09/30/2014	N002	18.8	-	23.8	2800		F	#	25	
Temperature	C	09/30/2014	N001	18.8	-	23.8	15.45		F	#		
Turbidity	NTU	09/30/2014	N001	18.8	-	23.8	1.37		F	#		
Uranium	mg/L	09/30/2014	N001	18.8	-	23.8	0.061		F	#	0.000015	
Uranium	mg/L	09/30/2014	N002	18.8	-	23.8	0.06		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0857 WELL Near E end of floodplain fence

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	10/02/2014	N001	13.2	-	18.2	474		F	#		
Ammonia Total as N	mg/L	10/02/2014	N001	13.2	-	18.2	11		F	#	0.5	
Calcium	mg/L	10/02/2014	N001	13.2	-	18.2	450		F	#	0.12	
Chloride	mg/L	10/02/2014	N001	13.2	-	18.2	210		F	#	20	
Magnesium	mg/L	10/02/2014	N001	13.2	-	18.2	530		F	#	0.15	
Manganese	mg/L	10/02/2014	N001	13.2	-	18.2	4.5		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	13.2	-	18.2	14		F	#	0.2	
Oxidation Reduction Potential	mV	10/02/2014	N001	13.2	-	18.2	94.8		F	#		
pH	s.u.	10/02/2014	N001	13.2	-	18.2	6.95		F	#		
Potassium	mg/L	10/02/2014	N001	13.2	-	18.2	36		F	#	0.26	
Selenium	mg/L	10/02/2014	N001	13.2	-	18.2	0.012		F	#	0.0016	
Sodium	mg/L	10/02/2014	N001	13.2	-	18.2	1200		F	#	0.23	
Specific Conductance	umhos /cm	10/02/2014	N001	13.2	-	18.2	9044		F	#		
Strontium	mg/L	10/02/2014	N001	13.2	-	18.2	6.7		F	#	0.0013	
Sulfate	mg/L	10/02/2014	N001	13.2	-	18.2	5500		F	#	50	
Temperature	C	10/02/2014	N001	13.2	-	18.2	17.5		F	#		
Turbidity	NTU	10/02/2014	N001	13.2	-	18.2	2.54		F	#		
Uranium	mg/L	10/02/2014	N001	13.2	-	18.2	0.68		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1008 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	10/01/2014	N001	6.9	-	16.9	430		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	6.9	-	16.9	3		F	#	0.1	
Ammonia Total as N	mg/L	10/01/2014	N002	6.9	-	16.9	2.9		F	#	0.1	
Calcium	mg/L	10/01/2014	N001	6.9	-	16.9	420		F	#	0.12	
Calcium	mg/L	10/01/2014	N002	6.9	-	16.9	430		F	#	0.12	
Chloride	mg/L	10/01/2014	N001	6.9	-	16.9	88		F	#	20	
Chloride	mg/L	10/01/2014	N002	6.9	-	16.9	88		F	#	20	
Magnesium	mg/L	10/01/2014	N001	6.9	-	16.9	160		F	#	0.15	
Magnesium	mg/L	10/01/2014	N002	6.9	-	16.9	160		F	#	0.15	
Manganese	mg/L	10/01/2014	N001	6.9	-	16.9	1.5		F	#	0.0012	
Manganese	mg/L	10/01/2014	N002	6.9	-	16.9	1.5		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	6.9	-	16.9	0.016		F	#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N002	6.9	-	16.9	0.017		F	#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	6.9	-	16.9	-24		F	#		
pH	s.u.	10/01/2014	N001	6.9	-	16.9	7.09		F	#		
Potassium	mg/L	10/01/2014	N001	6.9	-	16.9	34		F	#	0.26	
Potassium	mg/L	10/01/2014	N002	6.9	-	16.9	35		F	#	0.26	
Selenium	mg/L	10/01/2014	N001	6.9	-	16.9	0.0025		F	#	0.00016	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1008 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	10/01/2014	N002	6.9	-	16.9	0.0036		F	#	0.000032	
Sodium	mg/L	10/01/2014	N001	6.9	-	16.9	1200		F	#	0.23	
Sodium	mg/L	10/01/2014	N002	6.9	-	16.9	1200		F	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	6.9	-	16.9	7259		F	#		
Strontium	mg/L	10/01/2014	N001	6.9	-	16.9	4.8		F	#	0.0013	
Strontium	mg/L	10/01/2014	N002	6.9	-	16.9	4.9		F	#	0.0013	
Sulfate	mg/L	10/01/2014	N001	6.9	-	16.9	4000		F	#	50	
Sulfate	mg/L	10/01/2014	N002	6.9	-	16.9	4000		F	#	50	
Temperature	C	10/01/2014	N001	6.9	-	16.9	20.15		F	#		
Turbidity	NTU	10/01/2014	N001	6.9	-	16.9	4.38		F	#		
Uranium	mg/L	10/01/2014	N001	6.9	-	16.9	0.22		F	#	0.000015	
Uranium	mg/L	10/01/2014	N002	6.9	-	16.9	0.22		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1009 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	10/02/2014	N001	7.4	-	17.4	153		F	#		
Ammonia Total as N	mg/L	10/02/2014	N001	7.4	-	17.4	12		F	#	0.5	
Calcium	mg/L	10/02/2014	N001	7.4	-	17.4	310		F	#	0.12	
Chloride	mg/L	10/02/2014	N001	7.4	-	17.4	32		F	#	10	
Magnesium	mg/L	10/02/2014	N001	7.4	-	17.4	140		F	#	0.15	
Manganese	mg/L	10/02/2014	N001	7.4	-	17.4	1		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	7.4	-	17.4	0.015		F	#	0.01	
Oxidation Reduction Potential	mV	10/02/2014	N001	7.4	-	17.4	95.6		F	#		
pH	s.u.	10/02/2014	N001	7.4	-	17.4	6.99		F	#		
Potassium	mg/L	10/02/2014	N001	7.4	-	17.4	19		F	#	0.26	
Selenium	mg/L	10/02/2014	N001	7.4	-	17.4	0.0046		F	#	0.00016	
Sodium	mg/L	10/02/2014	N001	7.4	-	17.4	250		F	#	0.23	
Specific Conductance	umhos /cm	10/02/2014	N001	7.4	-	17.4	3061		F	#		
Strontium	mg/L	10/02/2014	N001	7.4	-	17.4	3.2		F	#	0.0013	
Sulfate	mg/L	10/02/2014	N001	7.4	-	17.4	1500		F	#	25	
Temperature	C	10/02/2014	N001	7.4	-	17.4	21.66		F	#		
Turbidity	NTU	10/02/2014	N001	7.4	-	17.4	2.44		F	#		
Uranium	mg/L	10/02/2014	N001	7.4	-	17.4	0.16		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1089 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	09/30/2014	N002	4.8	-	14.8	382			#		
Ammonia Total as N	mg/L	09/30/2014	N001	4.8	-	14.8	0.44			#	0.1	
Calcium	mg/L	09/30/2014	N001	4.8	-	14.8	350			#	0.12	
Chloride	mg/L	09/30/2014	N001	4.8	-	14.8	110			#	20	
Magnesium	mg/L	09/30/2014	N001	4.8	-	14.8	170			#	0.15	
Manganese	mg/L	09/30/2014	N001	4.8	-	14.8	0.78			#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	4.8	-	14.8	0.72			#	0.01	
Oxidation Reduction Potential	mV	09/30/2014	N002	4.8	-	14.8	117.7			#		
pH	s.u.	09/30/2014	N002	4.8	-	14.8	7.24			#		
Potassium	mg/L	09/30/2014	N001	4.8	-	14.8	33			#	0.26	
Selenium	mg/L	09/30/2014	N001	4.8	-	14.8	0.005			#	0.00016	
Sodium	mg/L	09/30/2014	N001	4.8	-	14.8	1300			#	0.23	
Specific Conductance	umhos /cm	09/30/2014	N002	4.8	-	14.8	7759			#		
Strontium	mg/L	09/30/2014	N001	4.8	-	14.8	5.1			#	0.0013	
Sulfate	mg/L	09/30/2014	N001	4.8	-	14.8	4200			#	50	
Temperature	C	09/30/2014	N002	4.8	-	14.8	23.15			#		
Turbidity	NTU	09/30/2014	N002	4.8	-	14.8	1.1			#		
Uranium	mg/L	09/30/2014	N001	4.8	-	14.8	0.22			#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1104 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	09/30/2014	N001	10	-	15	530			#		
Ammonia Total as N	mg/L	09/30/2014	N001	10	-	15	1.9			#	0.1	
Calcium	mg/L	09/30/2014	N001	10	-	15	470			#	0.12	
Chloride	mg/L	09/30/2014	N001	10	-	15	160			#	20	
Magnesium	mg/L	09/30/2014	N001	10	-	15	400			#	0.15	
Manganese	mg/L	09/30/2014	N001	10	-	15	2.1			#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	10	-	15	1.1			#	0.1	
Oxidation Reduction Potential	mV	09/30/2014	N001	10	-	15	132.5			#		
pH	s.u.	09/30/2014	N001	10	-	15	7.17			#		
Potassium	mg/L	09/30/2014	N001	10	-	15	53			#	0.26	
Selenium	mg/L	09/30/2014	N001	10	-	15	0.0071			#	0.00016	
Sodium	mg/L	09/30/2014	N001	10	-	15	1800			#	0.23	
Specific Conductance	umhos /cm	09/30/2014	N001	10	-	15	10374			#		
Strontium	mg/L	09/30/2014	N001	10	-	15	6.7			#	0.0013	
Sulfate	mg/L	09/30/2014	N001	10	-	15	6600			#	50	
Temperature	C	09/30/2014	N001	10	-	15	24.11			#		
Turbidity	NTU	09/30/2014	N001	10	-	15	1.2			#		
Uranium	mg/L	09/30/2014	N001	10	-	15	0.51			#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1105 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	10/02/2014	N001	4.5 - 14.5	528		F	#		
Ammonia Total as N	mg/L	10/02/2014	N001	4.5 - 14.5	17		F	#	2.5	
Calcium	mg/L	10/02/2014	N001	4.5 - 14.5	540		F	#	0.12	
Chloride	mg/L	10/02/2014	N001	4.5 - 14.5	210		F	#	20	
Magnesium	mg/L	10/02/2014	N001	4.5 - 14.5	740		F	#	0.15	
Manganese	mg/L	10/02/2014	N001	4.5 - 14.5	3.9		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	4.5 - 14.5	8.4		F	#	0.2	
Oxidation Reduction Potential	mV	10/02/2014	N001	4.5 - 14.5	135.4		F	#		
pH	s.u.	10/02/2014	N001	4.5 - 14.5	7		F	#		
Potassium	mg/L	10/02/2014	N001	4.5 - 14.5	68		F	#	0.26	
Selenium	mg/L	10/02/2014	N001	4.5 - 14.5	0.13		F	#	0.0016	
Sodium	mg/L	10/02/2014	N001	4.5 - 14.5	1600		F	#	0.23	
Specific Conductance	umhos /cm	10/02/2014	N001	4.5 - 14.5	10385		F	#		
Strontium	mg/L	10/02/2014	N001	4.5 - 14.5	7.3		F	#	0.0013	
Sulfate	mg/L	10/02/2014	N001	4.5 - 14.5	7200		F	#	50	
Temperature	C	10/02/2014	N001	4.5 - 14.5	20.74		F	#		
Turbidity	NTU	10/02/2014	N001	4.5 - 14.5	2.16		F	#		
Uranium	mg/L	10/02/2014	N001	4.5 - 14.5	0.91		F	#	0.00015	

General Water Quality Data by Location (USEE105) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1109 TREATMENT SYSTEM Sump to the Trench 2 Treatment System

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	09/30/2014	N001	0	-	0	216			#		
Ammonia Total as N	mg/L	09/30/2014	N001	0	-	0	25			#	2.5	
Calcium	mg/L	09/30/2014	N001	0	-	0	170			#	0.12	
Chloride	mg/L	09/30/2014	N001	0	-	0	71			#	10	
Magnesium	mg/L	09/30/2014	N001	0	-	0	190			#	0.15	
Manganese	mg/L	09/30/2014	N001	0	-	0	0.49			#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	0	-	0	77			#	0.5	
Oxidation Reduction Potential	mV	09/30/2014	N001	0	-	0	105.8			#		
pH	s.u.	09/30/2014	N001	0	-	0	7.46			#		
Potassium	mg/L	09/30/2014	N001	0	-	0	17			#	0.26	
Selenium	mg/L	09/30/2014	N001	0	-	0	0.019			#	0.00032	
Sodium	mg/L	09/30/2014	N001	0	-	0	330			#	0.23	
Specific Conductance	umhos /cm	09/30/2014	N001	0	-	0	3534			#		
Strontium	mg/L	09/30/2014	N001	0	-	0	2.2			#	0.0013	
Sulfate	mg/L	09/30/2014	N001	0	-	0	1400			#	25	
Temperature	C	09/30/2014	N001	0	-	0	20.8			#		
Turbidity	NTU	09/30/2014	N001	0	-	0	2.46			#		
Uranium	mg/L	09/30/2014	N001	0	-	0	0.16			#	0.000029	

General Water Quality Data by Location (USEE105) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1110 TREATMENT SYSTEM Sump to the Trench 1 Treatment System

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	10/01/2014	N001	0	-	0	188			#		
Ammonia Total as N	mg/L	10/01/2014	N001	0	-	0	26			#	2.5	
Calcium	mg/L	10/01/2014	N001	0	-	0	190			#	0.12	
Chloride	mg/L	10/01/2014	N001	0	-	0	83			#	10	
Magnesium	mg/L	10/01/2014	N001	0	-	0	220			#	0.15	
Manganese	mg/L	10/01/2014	N001	0	-	0	1.2			#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	0	-	0	88			#	0.5	
Oxidation Reduction Potential	mV	10/01/2014	N001	0	-	0	41.6			#		
pH	s.u.	10/01/2014	N001	0	-	0	7.25			#		
Potassium	mg/L	10/01/2014	N001	0	-	0	20			#	0.26	
Selenium	mg/L	10/01/2014	N001	0	-	0	0.01			#	0.0016	
Sodium	mg/L	10/01/2014	N001	0	-	0	430			#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	0	-	0	4137			#		
Strontium	mg/L	10/01/2014	N001	0	-	0	2.5			#	0.0013	
Sulfate	mg/L	10/01/2014	N001	0	-	0	1700			#	25	
Temperature	C	10/01/2014	N001	0	-	0	21.85			#		
Turbidity	NTU	10/01/2014	N001	0	-	0	4.5			#		
Uranium	mg/L	10/01/2014	N001	0	-	0	0.19			#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1111 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	10/02/2014	N001	7 - 12	740		F	#		
Ammonia Total as N	mg/L	10/02/2014	N001	7 - 12	0.1	U	F	#	0.1	
Calcium	mg/L	10/02/2014	N001	7 - 12	400		F	#	0.12	
Chloride	mg/L	10/02/2014	N001	7 - 12	290		F	#	40	
Magnesium	mg/L	10/02/2014	N001	7 - 12	830		F	#	0.15	
Manganese	mg/L	10/02/2014	N001	7 - 12	0.13		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	7 - 12	22		F	#	0.25	
Oxidation Reduction Potential	mV	10/02/2014	N001	7 - 12	164.3		F	#		
pH	s.u.	10/02/2014	N001	7 - 12	7.45		F	#		
Potassium	mg/L	10/02/2014	N001	7 - 12	64		F	#	0.26	
Selenium	mg/L	10/02/2014	N001	7 - 12	0.71		F	#	0.0016	
Sodium	mg/L	10/02/2014	N001	7 - 12	2400		F	#	0.23	
Specific Conductance	umhos /cm	10/02/2014	N001	7 - 12	13039		F	#		
Strontium	mg/L	10/02/2014	N001	7 - 12	11		F	#	0.0013	
Sulfate	mg/L	10/02/2014	N001	7 - 12	9000		F	#	100	
Temperature	C	10/02/2014	N001	7 - 12	20.36		F	#		
Turbidity	NTU	10/02/2014	N001	7 - 12	1.96		F	#		
Uranium	mg/L	10/02/2014	N001	7 - 12	0.68		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1112 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	10/02/2014	N001	7 - 12	358		F	#		
Ammonia Total as N	mg/L	10/02/2014	N001	7 - 12	7.1		F	#	0.5	
Calcium	mg/L	10/02/2014	N001	7 - 12	490		F	#	0.12	
Chloride	mg/L	10/02/2014	N001	7 - 12	94		F	#	10	
Magnesium	mg/L	10/02/2014	N001	7 - 12	370		F	#	0.15	
Manganese	mg/L	10/02/2014	N001	7 - 12	0.96		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	7 - 12	39		F	#	0.5	
Oxidation Reduction Potential	mV	10/02/2014	N001	7 - 12	154.9		F	#		
pH	s.u.	10/02/2014	N001	7 - 12	7.08		F	#		
Potassium	mg/L	10/02/2014	N001	7 - 12	48		F	#	0.26	
Selenium	mg/L	10/02/2014	N001	7 - 12	0.52		F	#	0.0016	
Sodium	mg/L	10/02/2014	N001	7 - 12	590		F	#	0.23	
Specific Conductance	umhos /cm	10/02/2014	N001	7 - 12	5689		F	#		
Strontium	mg/L	10/02/2014	N001	7 - 12	5.5		F	#	0.0013	
Sulfate	mg/L	10/02/2014	N001	7 - 12	3500		F	#	25	
Temperature	C	10/02/2014	N001	7 - 12	19.85		F	#		
Turbidity	NTU	10/02/2014	N001	7 - 12	0.36		F	#		
Uranium	mg/L	10/02/2014	N001	7 - 12	0.53		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1113 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	10/01/2014	N001	7	-	12	220		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	7	-	12	0.1	U	F	#	0.1	
Calcium	mg/L	10/01/2014	N001	7	-	12	500		F	#	0.12	
Chloride	mg/L	10/01/2014	N001	7	-	12	130		F	#	20	
Magnesium	mg/L	10/01/2014	N001	7	-	12	480		F	#	0.15	
Manganese	mg/L	10/01/2014	N001	7	-	12	0.023	B	F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	7	-	12	160		F	#	1	
Oxidation Reduction Potential	mV	10/01/2014	N001	7	-	12	139.8		F	#		
pH	s.u.	10/01/2014	N001	7	-	12	7.23		F	#		
Potassium	mg/L	10/01/2014	N001	7	-	12	70		F	#	0.26	
Selenium	mg/L	10/01/2014	N001	7	-	12	0.42		F	#	0.0016	
Sodium	mg/L	10/01/2014	N001	7	-	12	720		F	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	7	-	12	6930		F	#		
Strontium	mg/L	10/01/2014	N001	7	-	12	5.6		F	#	0.0013	
Sulfate	mg/L	10/01/2014	N001	7	-	12	3900		F	#	50	
Temperature	C	10/01/2014	N001	7	-	12	21.33		F	#		
Turbidity	NTU	10/01/2014	N001	7	-	12	3.76		F	#		
Uranium	mg/L	10/01/2014	N001	7	-	12	0.42		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1114 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	10/01/2014	N001	7	-	12	448		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	7	-	12	68		F	#	2.5	
Calcium	mg/L	10/01/2014	N001	7	-	12	220		F	#	0.12	
Chloride	mg/L	10/01/2014	N001	7	-	12	100		F	#	10	
Magnesium	mg/L	10/01/2014	N001	7	-	12	340		F	#	0.15	
Manganese	mg/L	10/01/2014	N001	7	-	12	2.3		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	7	-	12	98		F	#	1	
Oxidation Reduction Potential	mV	10/01/2014	N001	7	-	12	151.8		F	#		
pH	s.u.	10/01/2014	N001	7	-	12	7		F	#		
Potassium	mg/L	10/01/2014	N001	7	-	12	39		F	#	0.26	
Selenium	mg/L	10/01/2014	N001	7	-	12	0.11		F	#	0.00032	
Sodium	mg/L	10/01/2014	N001	7	-	12	510		F	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	7	-	12	4746		F	#		
Strontium	mg/L	10/01/2014	N001	7	-	12	3.3		F	#	0.0013	
Sulfate	mg/L	10/01/2014	N001	7	-	12	2400		F	#	25	
Temperature	C	10/01/2014	N001	7	-	12	20		F	#		
Turbidity	NTU	10/01/2014	N001	7	-	12	1.88		F	#		
Uranium	mg/L	10/01/2014	N001	7	-	12	0.42		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1115 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	09/29/2014	N001	7	-	12	1030		F	#		
Ammonia Total as N	mg/L	09/29/2014	N001	7	-	12	350		F	#	20	
Calcium	mg/L	09/29/2014	N001	7	-	12	480		F	#	0.24	
Chloride	mg/L	09/29/2014	N001	7	-	12	270		F	#	40	
Magnesium	mg/L	09/29/2014	N001	7	-	12	1300		F	#	0.3	
Manganese	mg/L	09/29/2014	N001	7	-	12	4.6		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/29/2014	N001	7	-	12	330		F	#	2.5	
Oxidation Reduction Potential	mV	09/29/2014	N001	7	-	12	216.6		F	#		
pH	s.u.	09/29/2014	N001	7	-	12	6.67		F	#		
Potassium	mg/L	09/29/2014	N001	7	-	12	140		F	#	0.52	
Selenium	mg/L	09/29/2014	N001	7	-	12	0.039		F	#	0.0016	
Sodium	mg/L	09/29/2014	N001	7	-	12	1400		F	#	0.47	
Specific Conductance	umhos /cm	09/29/2014	N001	7	-	12	14032		F	#		
Strontium	mg/L	09/29/2014	N001	7	-	12	9.3		F	#	0.0026	
Sulfate	mg/L	09/29/2014	N001	7	-	12	8300		F	#	100	
Temperature	C	09/29/2014	N001	7	-	12	19.73		F	#		
Turbidity	NTU	09/29/2014	N001	7	-	12	1.34		F	#		
Uranium	mg/L	09/29/2014	N001	7	-	12	1.4		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1117 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	09/29/2014	N001	7 - 12	142		F	#		
Ammonia Total as N	mg/L	09/29/2014	N001	7 - 12	0.35		F	#	0.1	
Calcium	mg/L	09/29/2014	N001	7 - 12	70		F	#	0.024	
Chloride	mg/L	09/29/2014	N001	7 - 12	15		F	#	1	
Magnesium	mg/L	09/29/2014	N001	7 - 12	13		F	#	0.03	
Manganese	mg/L	09/29/2014	N001	7 - 12	0.35		F	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	09/29/2014	N001	7 - 12	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/29/2014	N001	7 - 12	38		F	#		
pH	s.u.	09/29/2014	N001	7 - 12	7.44		F	#		
Potassium	mg/L	09/29/2014	N001	7 - 12	2.6		F	#	0.052	
Selenium	mg/L	09/29/2014	N001	7 - 12	0.00016	U	F	#	0.00016	
Sodium	mg/L	09/29/2014	N001	7 - 12	49		F	#	0.047	
Specific Conductance	umhos /cm	09/29/2014	N001	7 - 12	763		F	#		
Strontium	mg/L	09/29/2014	N001	7 - 12	0.76		F	#	0.00026	
Sulfate	mg/L	09/29/2014	N001	7 - 12	180		F	#	2.5	
Temperature	C	09/29/2014	N001	7 - 12	19.37		F	#		
Turbidity	NTU	09/29/2014	N001	7 - 12	2.14		F	#		
Uranium	mg/L	09/29/2014	N001	7 - 12	0.0042		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1128 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	09/29/2014	N001	6.81 - 11.81	644		F	#		
Ammonia Total as N	mg/L	09/29/2014	N001	6.81 - 11.81	390		F	#	20	
Calcium	mg/L	09/29/2014	N001	6.81 - 11.81	510		F	#	0.24	
Chloride	mg/L	09/29/2014	N001	6.81 - 11.81	350		F	#	50	
Magnesium	mg/L	09/29/2014	N001	6.81 - 11.81	1500		F	#	0.3	
Manganese	mg/L	09/29/2014	N001	6.81 - 11.81	4.7		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/29/2014	N001	6.81 - 11.81	690		F	#	5	
Oxidation Reduction Potential	mV	09/29/2014	N001	6.81 - 11.81	144.7		F	#		
pH	s.u.	09/29/2014	N001	6.81 - 11.81	6.66		F	#		
Potassium	mg/L	09/29/2014	N001	6.81 - 11.81	150		F	#	0.52	
Selenium	mg/L	09/29/2014	N001	6.81 - 11.81	0.028		F	#	0.0016	
Sodium	mg/L	09/29/2014	N001	6.81 - 11.81	1900		F	#	0.47	
Specific Conductance	umhos /cm	09/29/2014	N001	6.81 - 11.81	16829		F	#		
Strontium	mg/L	09/29/2014	N001	6.81 - 11.81	10		F	#	0.0026	
Sulfate	mg/L	09/29/2014	N001	6.81 - 11.81	9600		F	#	120	
Temperature	C	09/29/2014	N001	6.81 - 11.81	19.24		F	#		
Turbidity	NTU	09/29/2014	N001	6.81 - 11.81	3.2		F	#		
Uranium	mg/L	09/29/2014	N001	6.81 - 11.81	1.5		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1132 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	09/29/2014	N001	6.07	-	11.07	152		F	#		
Ammonia Total as N	mg/L	09/29/2014	N001	6.07	-	11.07	0.98		F	#	0.1	
Calcium	mg/L	09/29/2014	N001	6.07	-	11.07	52		F	#	0.024	
Chloride	mg/L	09/29/2014	N001	6.07	-	11.07	14		F	#	1	
Magnesium	mg/L	09/29/2014	N001	6.07	-	11.07	15		F	#	0.03	
Manganese	mg/L	09/29/2014	N001	6.07	-	11.07	0.36		F	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	09/29/2014	N001	6.07	-	11.07	0.016		F	#	0.01	
Oxidation Reduction Potential	mV	09/29/2014	N001	6.07	-	11.07	16		F	#		
pH	s.u.	09/29/2014	N001	6.07	-	11.07	7.62		F	#		
Potassium	mg/L	09/29/2014	N001	6.07	-	11.07	2.9		F	#	0.052	
Selenium	mg/L	09/29/2014	N001	6.07	-	11.07	0.000059	B	F	#	0.000032	
Sodium	mg/L	09/29/2014	N001	6.07	-	11.07	50		F	#	0.047	
Specific Conductance	umhos /cm	09/29/2014	N001	6.07	-	11.07	630		F	#		
Strontium	mg/L	09/29/2014	N001	6.07	-	11.07	0.63		F	#	0.00026	
Sulfate	mg/L	09/29/2014	N001	6.07	-	11.07	150		F	#	2.5	
Temperature	C	09/29/2014	N001	6.07	-	11.07	18.6		F	#		
Turbidity	NTU	09/29/2014	N001	6.07	-	11.07	0.94		F	#		
Uranium	mg/L	09/29/2014	N001	6.07	-	11.07	0.011		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1134 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	10/01/2014	N001	8.16 - 13.16	162		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	8.16 - 13.16	0.75		F	#	0.1	
Calcium	mg/L	10/01/2014	N001	8.16 - 13.16	63		F	#	0.024	
Chloride	mg/L	10/01/2014	N001	8.16 - 13.16	13		F	#	1	
Magnesium	mg/L	10/01/2014	N001	8.16 - 13.16	12		F	#	0.03	
Manganese	mg/L	10/01/2014	N001	8.16 - 13.16	0.49		F	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	8.16 - 13.16	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	8.16 - 13.16	83.3		F	#		
pH	s.u.	10/01/2014	N001	8.16 - 13.16	7.28		F	#		
Potassium	mg/L	10/01/2014	N001	8.16 - 13.16	2.3		F	#	0.052	
Selenium	mg/L	10/01/2014	N001	8.16 - 13.16	0.000056	B	F	#	0.000032	
Sodium	mg/L	10/01/2014	N001	8.16 - 13.16	47		F	#	0.047	
Specific Conductance	umhos /cm	10/01/2014	N001	8.16 - 13.16	635		F	#		
Strontium	mg/L	10/01/2014	N001	8.16 - 13.16	0.68		F	#	0.00026	
Sulfate	mg/L	10/01/2014	N001	8.16 - 13.16	140		F	#	2.5	
Temperature	C	10/01/2014	N001	8.16 - 13.16	16.74		F	#		
Turbidity	NTU	10/01/2014	N001	8.16 - 13.16	1.72		F	#		
Uranium	mg/L	10/01/2014	N001	8.16 - 13.16	0.01		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1135 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	09/30/2014	N001	6.39 - 11.39	242		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	6.39 - 11.39	0.28		F	#	0.1	
Calcium	mg/L	09/30/2014	N001	6.39 - 11.39	280		F	#	0.12	
Chloride	mg/L	09/30/2014	N001	6.39 - 11.39	70		F	#	10	
Magnesium	mg/L	09/30/2014	N001	6.39 - 11.39	81		F	#	0.15	
Manganese	mg/L	09/30/2014	N001	6.39 - 11.39	1.4		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	6.39 - 11.39	0.02		F	#	0.01	
Oxidation Reduction Potential	mV	09/30/2014	N001	6.39 - 11.39	-25.5		F	#		
pH	s.u.	09/30/2014	N001	6.39 - 11.39	7.21		F	#		
Potassium	mg/L	09/30/2014	N001	6.39 - 11.39	18		F	#	0.26	
Selenium	mg/L	09/30/2014	N001	6.39 - 11.39	0.00031		F	#	0.000032	
Sodium	mg/L	09/30/2014	N001	6.39 - 11.39	920		F	#	0.23	
Specific Conductance	umhos /cm	09/30/2014	N001	6.39 - 11.39	5278		F	#		
Strontium	mg/L	09/30/2014	N001	6.39 - 11.39	3.3		F	#	0.0013	
Sulfate	mg/L	09/30/2014	N001	6.39 - 11.39	2700		F	#	25	
Temperature	C	09/30/2014	N001	6.39 - 11.39	18.31		F	#		
Turbidity	NTU	09/30/2014	N001	6.39 - 11.39	8.28		F	#		
Uranium	mg/L	09/30/2014	N001	6.39 - 11.39	0.064		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1136 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	10/02/2014	N001	6.29 - 11.29	404		F	#		
Ammonia Total as N	mg/L	10/02/2014	N001	6.29 - 11.29	0.63		F	#	0.5	
Calcium	mg/L	10/02/2014	N001	6.29 - 11.29	350		F	#	0.12	
Chloride	mg/L	10/02/2014	N001	6.29 - 11.29	110		F	#	10	
Magnesium	mg/L	10/02/2014	N001	6.29 - 11.29	340		F	#	0.15	
Manganese	mg/L	10/02/2014	N001	6.29 - 11.29	4		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	6.29 - 11.29	16		F	#	0.2	
Oxidation Reduction Potential	mV	10/02/2014	N001	6.29 - 11.29	194.9		F	#		
pH	s.u.	10/02/2014	N001	6.29 - 11.29	7.12		F	#		
Potassium	mg/L	10/02/2014	N001	6.29 - 11.29	11		F	#	0.26	
Selenium	mg/L	10/02/2014	N001	6.29 - 11.29	0.0029		F	#	0.00016	
Sodium	mg/L	10/02/2014	N001	6.29 - 11.29	810		F	#	0.23	
Specific Conductance	umhos /cm	10/02/2014	N001	6.29 - 11.29	6039		F	#		
Strontium	mg/L	10/02/2014	N001	6.29 - 11.29	4.7		F	#	0.0013	
Sulfate	mg/L	10/02/2014	N001	6.29 - 11.29	3100		F	#	25	
Temperature	C	10/02/2014	N001	6.29 - 11.29	15.63		F	#		
Turbidity	NTU	10/02/2014	N001	6.29 - 11.29	9.84		F	#		
Uranium	mg/L	10/02/2014	N001	6.29 - 11.29	0.35		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1137 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	10/01/2014	N001	9.4	-	14.4	716		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	9.4	-	14.4	0.81		F	#	0.1	
Calcium	mg/L	10/01/2014	N001	9.4	-	14.4	530		F	#	0.24	
Chloride	mg/L	10/01/2014	N001	9.4	-	14.4	510		F	#	40	
Magnesium	mg/L	10/01/2014	N001	9.4	-	14.4	1300		F	#	0.3	
Manganese	mg/L	10/01/2014	N001	9.4	-	14.4	6.4		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	9.4	-	14.4	29		F	#	0.5	
Oxidation Reduction Potential	mV	10/01/2014	N001	9.4	-	14.4	135.4		F	#		
pH	s.u.	10/01/2014	N001	9.4	-	14.4	7.12		F	#		
Potassium	mg/L	10/01/2014	N001	9.4	-	14.4	45		F	#	0.52	
Selenium	mg/L	10/01/2014	N001	9.4	-	14.4	0.01		F	#	0.00032	
Sodium	mg/L	10/01/2014	N001	9.4	-	14.4	2400		F	#	0.47	
Specific Conductance	umhos /cm	10/01/2014	N001	9.4	-	14.4	15419		F	#		
Strontium	mg/L	10/01/2014	N001	9.4	-	14.4	11		F	#	0.0026	
Sulfate	mg/L	10/01/2014	N001	9.4	-	14.4	11000		F	#	100	
Temperature	C	10/01/2014	N001	9.4	-	14.4	14.95		F	#		
Turbidity	NTU	10/01/2014	N001	9.4	-	14.4	4.86		F	#		
Uranium	mg/L	10/01/2014	N001	9.4	-	14.4	1.8		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1138 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	10/01/2014	N001	8.09	-	13.09	850		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	8.09	-	13.09	2.5		F	#	0.1	
Ammonia Total as N	mg/L	10/01/2014	N002	8.09	-	13.09	2.1		F	#	0.1	
Calcium	mg/L	10/01/2014	N001	8.09	-	13.09	460		F	#	0.24	
Calcium	mg/L	10/01/2014	N002	8.09	-	13.09	460		F	#	0.24	
Chloride	mg/L	10/01/2014	N001	8.09	-	13.09	470		F	#	50	
Chloride	mg/L	10/01/2014	N002	8.09	-	13.09	480		F	#	50	
Magnesium	mg/L	10/01/2014	N001	8.09	-	13.09	1400		F	#	0.3	
Magnesium	mg/L	10/01/2014	N002	8.09	-	13.09	1400		F	#	0.3	
Manganese	mg/L	10/01/2014	N001	8.09	-	13.09	5.9		F	#	0.0024	
Manganese	mg/L	10/01/2014	N002	8.09	-	13.09	6		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	8.09	-	13.09	21		F	#	0.5	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N002	8.09	-	13.09	20		F	#	0.5	
Oxidation Reduction Potential	mV	10/01/2014	N001	8.09	-	13.09	73.4		F	#		
pH	s.u.	10/01/2014	N001	8.09	-	13.09	7.13		F	#		
Potassium	mg/L	10/01/2014	N001	8.09	-	13.09	58		F	#	0.52	
Potassium	mg/L	10/01/2014	N002	8.09	-	13.09	58		F	#	0.52	
Selenium	mg/L	10/01/2014	N001	8.09	-	13.09	0.0047		F	#	0.00016	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1138 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	10/01/2014	N002	8.09 - 13.09	0.0064		F	#	0.0016	
Sodium	mg/L	10/01/2014	N001	8.09 - 13.09	3200		F	#	0.47	
Sodium	mg/L	10/01/2014	N002	8.09 - 13.09	3100		F	#	0.47	
Specific Conductance	umhos /cm	10/01/2014	N001	8.09 - 13.09	17860		F	#		
Strontium	mg/L	10/01/2014	N001	8.09 - 13.09	11		F	#	0.0026	
Strontium	mg/L	10/01/2014	N002	8.09 - 13.09	11		F	#	0.0026	
Sulfate	mg/L	10/01/2014	N001	8.09 - 13.09	12000		F	#	120	
Sulfate	mg/L	10/01/2014	N002	8.09 - 13.09	13000		F	#	120	
Temperature	C	10/01/2014	N001	8.09 - 13.09	16.75		F	#		
Turbidity	NTU	10/01/2014	N001	8.09 - 13.09	3.27		F	#		
Uranium	mg/L	10/01/2014	N001	8.09 - 13.09	1.9		FJ	#	0.00015	
Uranium	mg/L	10/01/2014	N002	8.09 - 13.09	1.9	E	FJ	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1139 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	10/01/2014	N001	6.19 - 11.19	886		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	6.19 - 11.19	0.1	U	F	#	0.1	
Calcium	mg/L	10/01/2014	N001	6.19 - 11.19	540		F	#	0.24	
Chloride	mg/L	10/01/2014	N001	6.19 - 11.19	450		F	#	50	
Magnesium	mg/L	10/01/2014	N001	6.19 - 11.19	1200		F	#	0.3	
Manganese	mg/L	10/01/2014	N001	6.19 - 11.19	0.6		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	6.19 - 11.19	8.9		F	#	0.25	
Oxidation Reduction Potential	mV	10/01/2014	N001	6.19 - 11.19	74.2		F	#		
pH	s.u.	10/01/2014	N001	6.19 - 11.19	7.19		F	#		
Potassium	mg/L	10/01/2014	N001	6.19 - 11.19	71		F	#	0.52	
Selenium	mg/L	10/01/2014	N001	6.19 - 11.19	0.013		F	#	0.00032	
Sodium	mg/L	10/01/2014	N001	6.19 - 11.19	3700		F	#	0.47	
Specific Conductance	umhos /cm	10/01/2014	N001	6.19 - 11.19	19620		F	#		
Strontium	mg/L	10/01/2014	N001	6.19 - 11.19	11		F	#	0.0026	
Sulfate	mg/L	10/01/2014	N001	6.19 - 11.19	14000		F	#	120	
Temperature	C	10/01/2014	N001	6.19 - 11.19	20.05		F	#		
Turbidity	NTU	10/01/2014	N001	6.19 - 11.19	1.87		F	#		
Uranium	mg/L	10/01/2014	N001	6.19 - 11.19	1.6		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1140 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	10/02/2014	N001	7.6	-	12.6	642		F	#		
Ammonia Total as N	mg/L	10/02/2014	N001	7.6	-	12.6	0.6		F	#	0.5	
Calcium	mg/L	10/02/2014	N001	7.6	-	12.6	440		F	#	0.24	
Chloride	mg/L	10/02/2014	N001	7.6	-	12.6	210		F	#	40	
Magnesium	mg/L	10/02/2014	N001	7.6	-	12.6	760		F	#	0.3	
Manganese	mg/L	10/02/2014	N001	7.6	-	12.6	1.4		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	7.6	-	12.6	4		F	#	0.2	
Oxidation Reduction Potential	mV	10/02/2014	N001	7.6	-	12.6	145.6		F	#		
pH	s.u.	10/02/2014	N001	7.6	-	12.6	7.22		F	#		
Potassium	mg/L	10/02/2014	N001	7.6	-	12.6	94		F	#	0.52	
Selenium	mg/L	10/02/2014	N001	7.6	-	12.6	0.4		F	#	0.0016	
Sodium	mg/L	10/02/2014	N001	7.6	-	12.6	2500		F	#	0.47	
Specific Conductance	umhos /cm	10/02/2014	N001	7.6	-	12.6	13254		F	#		
Strontium	mg/L	10/02/2014	N001	7.6	-	12.6	7.3		F	#	0.0026	
Sulfate	mg/L	10/02/2014	N001	7.6	-	12.6	9400		F	#	100	
Temperature	C	10/02/2014	N001	7.6	-	12.6	20.82		F	#		
Turbidity	NTU	10/02/2014	N001	7.6	-	12.6	1.85		F	#		
Uranium	mg/L	10/02/2014	N001	7.6	-	12.6	0.86		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1141 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	10/02/2014	N001	5.6 - 10.6	360		F	#		
Ammonia Total as N	mg/L	10/02/2014	N001	5.6 - 10.6	0.14		F	#	0.1	
Calcium	mg/L	10/02/2014	N001	5.6 - 10.6	560		F	#	0.12	
Chloride	mg/L	10/02/2014	N001	5.6 - 10.6	70		F	#	10	
Magnesium	mg/L	10/02/2014	N001	5.6 - 10.6	370		F	#	0.15	
Manganese	mg/L	10/02/2014	N001	5.6 - 10.6	0.23		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	5.6 - 10.6	18		F	#	0.2	
Oxidation Reduction Potential	mV	10/02/2014	N001	5.6 - 10.6	148.3		F	#		
pH	s.u.	10/02/2014	N001	5.6 - 10.6	6.97		F	#		
Potassium	mg/L	10/02/2014	N001	5.6 - 10.6	40		F	#	0.26	
Selenium	mg/L	10/02/2014	N001	5.6 - 10.6	0.69		F	#	0.00032	
Sodium	mg/L	10/02/2014	N001	5.6 - 10.6	600		F	#	0.23	
Specific Conductance	umhos /cm	10/02/2014	N001	5.6 - 10.6	5770		F	#		
Strontium	mg/L	10/02/2014	N001	5.6 - 10.6	5.6		F	#	0.0013	
Sulfate	mg/L	10/02/2014	N001	5.6 - 10.6	3800		F	#	25	
Temperature	C	10/02/2014	N001	5.6 - 10.6	19.62		F	#		
Turbidity	NTU	10/02/2014	N001	5.6 - 10.6	0.91		F	#		
Uranium	mg/L	10/02/2014	N001	5.6 - 10.6	0.81		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1142 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	10/01/2014	N001	9	-	14	194		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	9	-	14	0.1	U	F	#	0.1	
Calcium	mg/L	10/01/2014	N001	9	-	14	86		F	#	0.024	
Chloride	mg/L	10/01/2014	N001	9	-	14	15		F	#	2	
Magnesium	mg/L	10/01/2014	N001	9	-	14	14		F	#	0.03	
Manganese	mg/L	10/01/2014	N001	9	-	14	0.16		F	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	9	-	14	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	9	-	14	4.8		F	#		
pH	s.u.	10/01/2014	N001	9	-	14	7.12		F	#		
Potassium	mg/L	10/01/2014	N001	9	-	14	2.2		F	#	0.052	
Selenium	mg/L	10/01/2014	N001	9	-	14	0.00059		F	#	0.000032	
Sodium	mg/L	10/01/2014	N001	9	-	14	51		F	#	0.047	
Specific Conductance	umhos /cm	10/01/2014	N001	9	-	14	729		F	#		
Strontium	mg/L	10/01/2014	N001	9	-	14	0.95		F	#	0.00026	
Sulfate	mg/L	10/01/2014	N001	9	-	14	180		F	#	5	
Temperature	C	10/01/2014	N001	9	-	14	15.72		F	#		
Turbidity	NTU	10/01/2014	N001	9	-	14	1.54		F	#		
Uranium	mg/L	10/01/2014	N001	9	-	14	0.0056		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1143 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	09/30/2014	N001	8.3	-	13.3	222		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	8.3	-	13.3	0.1		F	#	0.1	
Calcium	mg/L	09/30/2014	N001	8.3	-	13.3	180		F	#	0.12	
Chloride	mg/L	09/30/2014	N001	8.3	-	13.3	64		F	#	10	
Magnesium	mg/L	09/30/2014	N001	8.3	-	13.3	60		F	#	0.15	
Manganese	mg/L	09/30/2014	N001	8.3	-	13.3	0.87		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	8.3	-	13.3	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/30/2014	N001	8.3	-	13.3	-29.4		F	#		
pH	s.u.	09/30/2014	N001	8.3	-	13.3	7.43		F	#		
Potassium	mg/L	09/30/2014	N001	8.3	-	13.3	12		F	#	0.26	
Selenium	mg/L	09/30/2014	N001	8.3	-	13.3	0.00015		F	#	0.000032	
Sodium	mg/L	09/30/2014	N001	8.3	-	13.3	930		F	#	0.23	
Specific Conductance	umhos /cm	09/30/2014	N001	8.3	-	13.3	4843		F	#		
Strontium	mg/L	09/30/2014	N001	8.3	-	13.3	2.4		F	#	0.0013	
Sulfate	mg/L	09/30/2014	N001	8.3	-	13.3	2400		F	#	25	
Temperature	C	09/30/2014	N001	8.3	-	13.3	16.6		F	#		
Turbidity	NTU	09/30/2014	N001	8.3	-	13.3	1.43		F	#		
Uranium	mg/L	09/30/2014	N001	8.3	-	13.3	0.045		F	#	0.0000029	

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

LAB QUALIFIERS:

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

DATA QUALIFIERS:

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

QA QUALIFIER:

#	Validated according to quality assurance guidelines.

Groundwater Quality Data
Terrace Locations

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Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0600 WELL Just N of Disposal Cell

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	10/01/2014	N001	29	-	48.8	1304		FQ	#		
Ammonia Total as N	mg/L	10/01/2014	N001	29	-	48.8	18		FQ	#	2.5	
Calcium	mg/L	10/01/2014	N001	29	-	48.8	270		FQ	#	0.24	
Chloride	mg/L	10/01/2014	N001	29	-	48.8	1300		FQ	#	100	
Magnesium	mg/L	10/01/2014	N001	29	-	48.8	250		FQ	#	0.3	
Manganese	mg/L	10/01/2014	N001	29	-	48.8	0.26		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	29	-	48.8	110		FQ	#	1	
Oxidation Reduction Potential	mV	10/01/2014	N001	29	-	48.8	17.1		FQ	#		
pH	s.u.	10/01/2014	N001	29	-	48.8	6.87		FQ	#		
Potassium	mg/L	10/01/2014	N001	29	-	48.8	33		FQ	#	0.52	
Selenium	mg/L	10/01/2014	N001	29	-	48.8	0.0018		FQ	#	0.00016	
Sodium	mg/L	10/01/2014	N001	29	-	48.8	5100		FQ	#	2.3	
Specific Conductance	umhos /cm	10/01/2014	N001	29	-	48.8	20662		FQ	#		
Strontium	mg/L	10/01/2014	N001	29	-	48.8	8.7		FQ	#	0.0026	
Sulfate	mg/L	10/01/2014	N001	29	-	48.8	10000		FQ	#	250	
Temperature	C	10/01/2014	N001	29	-	48.8	17.92		FQ	#		
Turbidity	NTU	10/01/2014	N001	29	-	48.8	4.91		FQ	#		
Uranium	mg/L	10/01/2014	N001	29	-	48.8	0.81		FQ	#	0.00029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0602 WELL Just W of Disposal Cell; NECA yard

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	10/02/2014	N001	27 - 47	1544		FQ	#		
Ammonia Total as N	mg/L	10/02/2014	N001	27 - 47	61		FQ	#	2.5	
Calcium	mg/L	10/02/2014	N001	27 - 47	440		FQ	#	0.24	
Chloride	mg/L	10/02/2014	N001	27 - 47	2400		FQ	#	100	
Magnesium	mg/L	10/02/2014	N001	27 - 47	1200		FQ	#	0.3	
Manganese	mg/L	10/02/2014	N001	27 - 47	0.75		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	27 - 47	31		FQ	#	0.5	
Oxidation Reduction Potential	mV	10/02/2014	N001	27 - 47	226.2		FQ	#		
pH	s.u.	10/02/2014	N001	27 - 47	7.05		FQ	#		
Potassium	mg/L	10/02/2014	N001	27 - 47	71		FQ	#	0.52	
Selenium	mg/L	10/02/2014	N001	27 - 47	0.0064	N*	FQJ	#	0.00032	
Sodium	mg/L	10/02/2014	N001	27 - 47	6700		FQ	#	2.3	
Specific Conductance	umhos /cm	10/02/2014	N001	27 - 47	29573		FQ	#		
Strontium	mg/L	10/02/2014	N001	27 - 47	21		FQ	#	0.0026	
Sulfate	mg/L	10/02/2014	N001	27 - 47	17000		FQ	#	250	
Temperature	C	10/02/2014	N001	27 - 47	17.22		FQ	#		
Turbidity	NTU	10/02/2014	N001	27 - 47	4.31		FQ	#		
Uranium	mg/L	10/02/2014	N001	27 - 47	0.51		FQ	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0603 WELL Just SE of Disposal Cell

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	10/01/2014	N001	25.9	-	35.9	116		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	25.9	-	35.9	660		F	#	50	
Calcium	mg/L	10/01/2014	N001	25.9	-	35.9	1200		F	#	0.24	
Chloride	mg/L	10/01/2014	N001	25.9	-	35.9	160		F	#	40	
Magnesium	mg/L	10/01/2014	N001	25.9	-	35.9	670		F	#	0.3	
Manganese	mg/L	10/01/2014	N001	25.9	-	35.9	65		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	25.9	-	35.9	2200		F	#	20	
Oxidation Reduction Potential	mV	10/01/2014	N001	25.9	-	35.9	300.8		F	#		
pH	s.u.	10/01/2014	N001	25.9	-	35.9	6.16		F	#		
Potassium	mg/L	10/01/2014	N001	25.9	-	35.9	130		F	#	0.52	
Selenium	mg/L	10/01/2014	N001	25.9	-	35.9	0.089		F	#	0.00032	
Sodium	mg/L	10/01/2014	N001	25.9	-	35.9	720		F	#	0.47	
Specific Conductance	umhos /cm	10/01/2014	N001	25.9	-	35.9	17155		F	#		
Strontium	mg/L	10/01/2014	N001	25.9	-	35.9	6		F	#	0.0026	
Sulfate	mg/L	10/01/2014	N001	25.9	-	35.9	2300		F	#	100	
Temperature	C	10/01/2014	N001	25.9	-	35.9	18.47		F	#		
Turbidity	NTU	10/01/2014	N001	25.9	-	35.9	3.34		F	#		
Uranium	mg/L	10/01/2014	N001	25.9	-	35.9	0.0062		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0604 WELL Just W of radon cover borrow pit

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	10/02/2014	N001	62.7	-	72.7	932		FQ	#		
Ammonia Total as N	mg/L	10/02/2014	N001	62.7	-	72.7	1.2		FQ	#	0.1	
Calcium	mg/L	10/02/2014	N001	62.7	-	72.7	510		FQ	#	0.24	
Chloride	mg/L	10/02/2014	N001	62.7	-	72.7	2200		FQ	#	100	
Magnesium	mg/L	10/02/2014	N001	62.7	-	72.7	1700		FQ	#	0.3	
Manganese	mg/L	10/02/2014	N001	62.7	-	72.7	0.98		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	62.7	-	72.7	1200		FQ	#	10	
Oxidation Reduction Potential	mV	10/02/2014	N001	62.7	-	72.7	258.5		FQ	#		
pH	s.u.	10/02/2014	N001	62.7	-	72.7	6.91		FQ	#		
Potassium	mg/L	10/02/2014	N001	62.7	-	72.7	48		FQ	#	0.52	
Selenium	mg/L	10/02/2014	N001	62.7	-	72.7	0.87		FQ	#	0.00032	
Sodium	mg/L	10/02/2014	N001	62.7	-	72.7	4800		FQ	#	0.47	
Specific Conductance	umhos /cm	10/02/2014	N001	62.7	-	72.7	26464		FQ	#		
Strontium	mg/L	10/02/2014	N001	62.7	-	72.7	19		FQ	#	0.0026	
Sulfate	mg/L	10/02/2014	N001	62.7	-	72.7	12000		FQ	#	250	
Temperature	C	10/02/2014	N001	62.7	-	72.7	15.47		FQ	#		
Turbidity	NTU	10/02/2014	N001	62.7	-	72.7	7.91		FQ	#		
Uranium	mg/L	10/02/2014	N001	62.7	-	72.7	0.1		FQ	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0725 WELL West side, lower Bob Lee Wash

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	09/30/2014	N001	7.5	-	17.5	240		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	7.5	-	17.5	0.1	U	F	#	0.1	
Calcium	mg/L	09/30/2014	N001	7.5	-	17.5	240		F	#	0.12	
Chloride	mg/L	09/30/2014	N001	7.5	-	17.5	72		F	#	10	
Magnesium	mg/L	09/30/2014	N001	7.5	-	17.5	63		F	#	0.15	
Manganese	mg/L	09/30/2014	N001	7.5	-	17.5	0.051		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	7.5	-	17.5	1.5		F	#	0.1	
Oxidation Reduction Potential	mV	09/30/2014	N001	7.5	-	17.5	113.9		F	#		
pH	s.u.	09/30/2014	N001	7.5	-	17.5	7.22		F	#		
Potassium	mg/L	09/30/2014	N001	7.5	-	17.5	11		F	#	0.26	
Selenium	mg/L	09/30/2014	N001	7.5	-	17.5	0.014		F	#	0.00032	
Sodium	mg/L	09/30/2014	N001	7.5	-	17.5	1000		F	#	0.23	
Specific Conductance	umhos /cm	09/30/2014	N001	7.5	-	17.5	5190		F	#		
Strontium	mg/L	09/30/2014	N001	7.5	-	17.5	11		F	#	0.0013	
Sulfate	mg/L	09/30/2014	N001	7.5	-	17.5	2700		F	#	25	
Temperature	C	09/30/2014	N001	7.5	-	17.5	19.81		F	#		
Turbidity	NTU	09/30/2014	N001	7.5	-	17.5	2.99		F	#		
Uranium	mg/L	09/30/2014	N001	7.5	-	17.5	0.065		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0726 WELL West side, upper Bob Lee Wash

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	09/30/2014	N001	27.2	-	37.2	560		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	27.2	-	37.2	2.7		F	#	0.1	
Calcium	mg/L	09/30/2014	N001	27.2	-	37.2	150		F	#	0.12	
Chloride	mg/L	09/30/2014	N001	27.2	-	37.2	430		F	#	20	
Magnesium	mg/L	09/30/2014	N001	27.2	-	37.2	130		F	#	0.15	
Manganese	mg/L	09/30/2014	N001	27.2	-	37.2	0.31		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	27.2	-	37.2	18		F	#	0.25	
Oxidation Reduction Potential	mV	09/30/2014	N001	27.2	-	37.2	115		F	#		
pH	s.u.	09/30/2014	N001	27.2	-	37.2	7.35		F	#		
Potassium	mg/L	09/30/2014	N001	27.2	-	37.2	16		F	#	0.26	
Selenium	mg/L	09/30/2014	N001	27.2	-	37.2	0.019		F	#	0.00032	
Sodium	mg/L	09/30/2014	N001	27.2	-	37.2	2500		F	#	0.47	
Specific Conductance	umhos /cm	09/30/2014	N001	27.2	-	37.2	11742		F	#		
Strontium	mg/L	09/30/2014	N001	27.2	-	37.2	5.9		F	#	0.0013	
Sulfate	mg/L	09/30/2014	N001	27.2	-	37.2	5500		F	#	50	
Temperature	C	09/30/2014	N001	27.2	-	37.2	17.5		F	#		
Turbidity	NTU	09/30/2014	N001	27.2	-	37.2	6.19		F	#		
Uranium	mg/L	09/30/2014	N001	27.2	-	37.2	0.025		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0727 WELL West side, upper Bob Lee Wash

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	10/02/2014	N001	6.7	-	16.7	1202		FQ	#		
Ammonia Total as N	mg/L	10/02/2014	N001	6.7	-	16.7	25		FQ	#	2.5	
Calcium	mg/L	10/02/2014	N001	6.7	-	16.7	440		FQ	#	0.24	
Chloride	mg/L	10/02/2014	N001	6.7	-	16.7	340		FQ	#	40	
Magnesium	mg/L	10/02/2014	N001	6.7	-	16.7	1600		FQ	#	0.3	
Manganese	mg/L	10/02/2014	N001	6.7	-	16.7	1.5		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	6.7	-	16.7	55		FQ	#	0.5	
Oxidation Reduction Potential	mV	10/02/2014	N001	6.7	-	16.7	199.9		FQ	#		
pH	s.u.	10/02/2014	N001	6.7	-	16.7	6.57		FQ	#		
Potassium	mg/L	10/02/2014	N001	6.7	-	16.7	72		FQ	#	0.52	
Selenium	mg/L	10/02/2014	N001	6.7	-	16.7	0.0018		FQ	#	0.00016	
Sodium	mg/L	10/02/2014	N001	6.7	-	16.7	2000		FQ	#	0.47	
Specific Conductance	umhos /cm	10/02/2014	N001	6.7	-	16.7	14815		FQ	#		
Strontium	mg/L	10/02/2014	N001	6.7	-	16.7	11		FQ	#	0.0026	
Sulfate	mg/L	10/02/2014	N001	6.7	-	16.7	11000		FQ	#	100	
Temperature	C	10/02/2014	N001	6.7	-	16.7	20.9		FQ	#		
Turbidity	NTU	10/02/2014	N001	6.7	-	16.7	4.62		FQ	#		
Uranium	mg/L	10/02/2014	N001	6.7	-	16.7	0.28		FQ	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0728 WELL W of Disposal Cell

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	09/29/2014	N001	17	-	27	198		F	#		
Ammonia Total as N	mg/L	09/29/2014	N001	17	-	27	39		F	#	2.5	
Calcium	mg/L	09/29/2014	N001	17	-	27	510		F	#	0.12	
Chloride	mg/L	09/29/2014	N001	17	-	27	27		F	#	10	
Magnesium	mg/L	09/29/2014	N001	17	-	27	300		F	#	0.15	
Manganese	mg/L	09/29/2014	N001	17	-	27	0.69		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/29/2014	N001	17	-	27	4.5		F	#	0.1	
Oxidation Reduction Potential	mV	09/29/2014	N001	17	-	27	156.4		F	#		
pH	s.u.	09/29/2014	N001	17	-	27	6.94		F	#		
Potassium	mg/L	09/29/2014	N001	17	-	27	39		F	#	0.26	
Selenium	mg/L	09/29/2014	N001	17	-	27	0.0012		F	#	0.00016	
Sodium	mg/L	09/29/2014	N001	17	-	27	210		F	#	0.23	
Specific Conductance	umhos /cm	09/29/2014	N001	17	-	27	3955		F	#		
Strontium	mg/L	09/29/2014	N001	17	-	27	4.4		F	#	0.0013	
Sulfate	mg/L	09/29/2014	N001	17	-	27	2800		F	#	25	
Temperature	C	09/29/2014	N001	17	-	27	15.8		F	#		
Turbidity	NTU	09/29/2014	N001	17	-	27	2.79		F	#		
Uranium	mg/L	09/29/2014	N001	17	-	27	0.17		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0730 WELL Just SW of Disposal Cell

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	09/29/2014	N001	26.93 - 36.93	0		FQ	#		
Calcium	mg/L	09/29/2014	0001	26.93 - 36.93	570		FQ	#	0.12	
Magnesium	mg/L	09/29/2014	0001	26.93 - 36.93	110		FQ	#	0.15	
Manganese	mg/L	09/29/2014	0001	26.93 - 36.93	19		FQ	#	0.0012	
Oxidation Reduction Potential	mV	09/29/2014	N001	26.93 - 36.93	252.7		FQ	#		
pH	s.u.	09/29/2014	N001	26.93 - 36.93	4.82		FQ	#		
Potassium	mg/L	09/29/2014	0001	26.93 - 36.93	14		FQ	#	0.26	
Selenium	mg/L	09/29/2014	0001	26.93 - 36.93	0.016		FQ	#	0.00032	
Sodium	mg/L	09/29/2014	0001	26.93 - 36.93	62		FQ	#	0.23	
Specific Conductance	umhos /cm	09/29/2014	N001	26.93 - 36.93	3490		FQ	#		
Strontium	mg/L	09/29/2014	0001	26.93 - 36.93	2.8		FQ	#	0.0013	
Temperature	C	09/29/2014	N001	26.93 - 36.93	15.61		FQ	#		
Turbidity	NTU	09/29/2014	N001	26.93 - 36.93	146		FQ	#		
Uranium	mg/L	09/29/2014	0001	26.93 - 36.93	0.0097		FQ	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0731 WELL SE of Disposal Cell

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	10/01/2014	N001	17	-	27	396		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	17	-	27	20		F	#	2.5	
Calcium	mg/L	10/01/2014	N001	17	-	27	460		F	#	0.12	
Chloride	mg/L	10/01/2014	N001	17	-	27	130		F	#	20	
Magnesium	mg/L	10/01/2014	N001	17	-	27	450		F	#	0.15	
Manganese	mg/L	10/01/2014	N001	17	-	27	0.33		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	17	-	27	78		F	#	1	
Oxidation Reduction Potential	mV	10/01/2014	N001	17	-	27	243.7		F	#		
pH	s.u.	10/01/2014	N001	17	-	27	6.91		F	#		
Potassium	mg/L	10/01/2014	N001	17	-	27	32		F	#	0.26	
Selenium	mg/L	10/01/2014	N001	17	-	27	0.0091		F	#	0.00032	
Sodium	mg/L	10/01/2014	N001	17	-	27	970		F	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	17	-	27	7880		F	#		
Strontium	mg/L	10/01/2014	N001	17	-	27	8.2		F	#	0.0013	
Sulfate	mg/L	10/01/2014	N001	17	-	27	4400		F	#	50	
Temperature	C	10/01/2014	N001	17	-	27	17.85		F	#		
Turbidity	NTU	10/01/2014	N001	17	-	27	1.5		F	#		
Uranium	mg/L	10/01/2014	N001	17	-	27	0.036		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0812 WELL W of radon cover borrow pit

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	09/29/2014	N001	51.3 - 61.3	764		FQ	#		
Ammonia Total as N	mg/L	09/29/2014	N001	51.3 - 61.3	0.1	U	FQ	#	0.1	
Calcium	mg/L	09/29/2014	N001	51.3 - 61.3	470		FQ	#	0.24	
Chloride	mg/L	09/29/2014	N001	51.3 - 61.3	2300		FQ	#	200	
Magnesium	mg/L	09/29/2014	N001	51.3 - 61.3	2200		FQ	#	0.3	
Manganese	mg/L	09/29/2014	N001	51.3 - 61.3	0.3		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/29/2014	N001	51.3 - 61.3	1400		FQ	#	10	
Oxidation Reduction Potential	mV	09/29/2014	N001	51.3 - 61.3	235		FQ	#		
pH	s.u.	09/29/2014	N001	51.3 - 61.3	6.78		FQ	#		
Potassium	mg/L	09/29/2014	N001	51.3 - 61.3	64		FQ	#	0.52	
Selenium	mg/L	09/29/2014	N001	51.3 - 61.3	7		FQ	#	0.0032	
Sodium	mg/L	09/29/2014	N001	51.3 - 61.3	6700		FQ	#	2.3	
Specific Conductance	umhos /cm	09/29/2014	N001	51.3 - 61.3	32504		FQ	#		
Strontium	mg/L	09/29/2014	N001	51.3 - 61.3	15		FQ	#	0.0026	
Sulfate	mg/L	09/29/2014	N001	51.3 - 61.3	16000		FQ	#	500	
Temperature	C	09/29/2014	N001	51.3 - 61.3	16.4		FQ	#		
Turbidity	NTU	09/29/2014	N001	51.3 - 61.3	9.23		FQ	#		
Uranium	mg/L	09/29/2014	N001	51.3 - 61.3	0.15		FQ	#	0.00029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0813 WELL W of radon cover borrow pit

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	10/01/2014	N001	40.8	-	50.8	860		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	40.8	-	50.8	55		F	#	2.5	
Calcium	mg/L	10/01/2014	N001	40.8	-	50.8	640		F	#	0.24	
Chloride	mg/L	10/01/2014	N001	40.8	-	50.8	840		F	#	100	
Magnesium	mg/L	10/01/2014	N001	40.8	-	50.8	2700		F	#	0.3	
Manganese	mg/L	10/01/2014	N001	40.8	-	50.8	0.82		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	40.8	-	50.8	2500		F	#	20	
Oxidation Reduction Potential	mV	10/01/2014	N001	40.8	-	50.8	161.6		F	#		
pH	s.u.	10/01/2014	N001	40.8	-	50.8	6.64		F	#		
Potassium	mg/L	10/01/2014	N001	40.8	-	50.8	110		F	#	0.52	
Selenium	mg/L	10/01/2014	N001	40.8	-	50.8	0.13		F	#	0.00032	
Sodium	mg/L	10/01/2014	N001	40.8	-	50.8	2800		F	#	0.47	
Specific Conductance	umhos /cm	10/01/2014	N001	40.8	-	50.8	26381		F	#		
Strontium	mg/L	10/01/2014	N001	40.8	-	50.8	18		F	#	0.0026	
Sulfate	mg/L	10/01/2014	N001	40.8	-	50.8	9500		F	#	250	
Temperature	C	10/01/2014	N001	40.8	-	50.8	16.83		F	#		
Turbidity	NTU	10/01/2014	N001	40.8	-	50.8	1.79		F	#		
Uranium	mg/L	10/01/2014	N001	40.8	-	50.8	0.11		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0814 WELL South edge of fairgrounds, flush mount.

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	09/29/2014	N001	23.8	-	33.8	650		FQ	#		
Ammonia Total as N	mg/L	09/29/2014	N001	23.8	-	33.8	52		FQ	#	2.5	
Calcium	mg/L	09/29/2014	N001	23.8	-	33.8	460		FQ	#	0.24	
Chloride	mg/L	09/29/2014	N001	23.8	-	33.8	1000		FQ	#	100	
Magnesium	mg/L	09/29/2014	N001	23.8	-	33.8	1900		FQ	#	0.3	
Manganese	mg/L	09/29/2014	N001	23.8	-	33.8	1.4		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/29/2014	N001	23.8	-	33.8	1000		FQ	#	10	
Oxidation Reduction Potential	mV	09/29/2014	N001	23.8	-	33.8	209.7		FQ	#		
pH	s.u.	09/29/2014	N001	23.8	-	33.8	7.01		FQ	#		
Potassium	mg/L	09/29/2014	N001	23.8	-	33.8	93		FQ	#	0.52	
Selenium	mg/L	09/29/2014	N001	23.8	-	33.8	2.5		FQ	#	0.0016	
Sodium	mg/L	09/29/2014	N001	23.8	-	33.8	3900		FQ	#	0.47	
Specific Conductance	umhos /cm	09/29/2014	N001	23.8	-	33.8	24135		FQ	#		
Strontium	mg/L	09/29/2014	N001	23.8	-	33.8	13		FQ	#	0.0026	
Sulfate	mg/L	09/29/2014	N001	23.8	-	33.8	14000		FQ	#	250	
Temperature	C	09/29/2014	N001	23.8	-	33.8	17.62		FQ	#		
Turbidity	NTU	09/29/2014	N001	23.8	-	33.8	9.94		FQ	#		
Uranium	mg/L	09/29/2014	N001	23.8	-	33.8	0.1		FQ	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0815 WELL Fairgrounds, just N of Uranium Blvd., flush mount.

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	09/29/2014	N001	22.3	-	32.3	1410		F	#		
Ammonia Total as N	mg/L	09/29/2014	N001	22.3	-	32.3	0.97		F	#	0.1	
Calcium	mg/L	09/29/2014	N001	22.3	-	32.3	450		F	#	0.24	
Chloride	mg/L	09/29/2014	N001	22.3	-	32.3	560		F	#	100	
Magnesium	mg/L	09/29/2014	N001	22.3	-	32.3	2400		F	#	0.3	
Manganese	mg/L	09/29/2014	N001	22.3	-	32.3	1.5		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/29/2014	N001	22.3	-	32.3	620		F	#	10	
Oxidation Reduction Potential	mV	09/29/2014	N001	22.3	-	32.3	180		F	#		
pH	s.u.	09/29/2014	N001	22.3	-	32.3	6.57		F	#		
Potassium	mg/L	09/29/2014	N001	22.3	-	32.3	79		F	#	0.52	
Selenium	mg/L	09/29/2014	N001	22.3	-	32.3	0.03		F	#	0.00032	
Sodium	mg/L	09/29/2014	N001	22.3	-	32.3	3500		F	#	0.47	
Specific Conductance	umhos /cm	09/29/2014	N001	22.3	-	32.3	22365		F	#		
Strontium	mg/L	09/29/2014	N001	22.3	-	32.3	13		F	#	0.0026	
Sulfate	mg/L	09/29/2014	N001	22.3	-	32.3	15000		F	#	250	
Temperature	C	09/29/2014	N001	22.3	-	32.3	19.2		F	#		
Turbidity	NTU	09/29/2014	N001	22.3	-	32.3	4.22		F	#		
Uranium	mg/L	09/29/2014	N001	22.3	-	32.3	0.34		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0816 WELL N of artesian well 648

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	10/02/2014	0001	20.1	-	25.1	208		F	#		
Ammonia Total as N	mg/L	10/02/2014	0001	20.1	-	25.1	0.1	U	F	#	0.1	
Calcium	mg/L	10/02/2014	0001	20.1	-	25.1	120		F	#	0.12	
Chloride	mg/L	10/02/2014	0001	20.1	-	25.1	63		F	#	10	
Magnesium	mg/L	10/02/2014	0001	20.1	-	25.1	120		F	#	0.15	
Manganese	mg/L	10/02/2014	0001	20.1	-	25.1	0.0063	B	UF	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	0001	20.1	-	25.1	9.8		F	#	0.1	
Oxidation Reduction Potential	mV	10/02/2014	N001	20.1	-	25.1	152.6		F	#		
pH	s.u.	10/02/2014	N001	20.1	-	25.1	7.68		F	#		
Potassium	mg/L	10/02/2014	0001	20.1	-	25.1	11		F	#	0.26	
Selenium	mg/L	10/02/2014	0001	20.1	-	25.1	0.013		F	#	0.00016	
Sodium	mg/L	10/02/2014	0001	20.1	-	25.1	760		F	#	0.23	
Specific Conductance	umhos /cm	10/02/2014	N001	20.1	-	25.1	4181		F	#		
Strontium	mg/L	10/02/2014	0001	20.1	-	25.1	2.4		F	#	0.0013	
Sulfate	mg/L	10/02/2014	0001	20.1	-	25.1	2100		F	#	25	
Temperature	C	10/02/2014	N001	20.1	-	25.1	17.9		F	#		
Turbidity	NTU	10/02/2014	N001	20.1	-	25.1	13		F	#		
Uranium	mg/L	10/02/2014	0001	20.1	-	25.1	0.014		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0817 WELL Just W of Disposal Cell, NECA yard

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	10/02/2014	N001	21.6 - 31.62	1600		FQ	#		
Ammonia Total as N	mg/L	10/02/2014	N001	21.6 - 31.62	970		FQ	#	50	
Calcium	mg/L	10/02/2014	N001	21.6 - 31.62	460		FQ	#	0.24	
Chloride	mg/L	10/02/2014	N001	21.6 - 31.62	560		FQ	#	100	
Magnesium	mg/L	10/02/2014	N001	21.6 - 31.62	1800		FQ	#	0.3	
Manganese	mg/L	10/02/2014	N001	21.6 - 31.62	2.3		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	21.6 - 31.62	540		FQ	#	5	
Oxidation Reduction Potential	mV	10/02/2014	N001	21.6 - 31.62	233.7		FQ	#		
pH	s.u.	10/02/2014	N001	21.6 - 31.62	6.53		FQ	#		
Potassium	mg/L	10/02/2014	N001	21.6 - 31.62	240		FQ	#	0.52	
Selenium	mg/L	10/02/2014	N001	21.6 - 31.62	0.0032		FQ	#	0.00032	
Sodium	mg/L	10/02/2014	N001	21.6 - 31.62	1600		FQ	#	0.47	
Specific Conductance	umhos /cm	10/02/2014	N001	21.6 - 31.62	21273		FQ	#		
Strontium	mg/L	10/02/2014	N001	21.6 - 31.62	12		FQ	#	0.0026	
Sulfate	mg/L	10/02/2014	N001	21.6 - 31.62	12000		FQ	#	250	
Temperature	C	10/02/2014	N001	21.6 - 31.62	17.28		FQ	#		
Turbidity	NTU	10/02/2014	N001	21.6 - 31.62	6.01		FQ	#		
Uranium	mg/L	10/02/2014	N001	21.6 - 31.62	6.9		FQ	#	0.0029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0818 WELL Just W of radon cover borrow pit

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	09/30/2014	N001	52	-	61.5	642			#		
Ammonia Total as N	mg/L	09/30/2014	N001	52	-	61.5	67			#	2.5	
Ammonia Total as N	mg/L	09/30/2014	N002	52	-	61.5	71			#	2.5	
Calcium	mg/L	09/30/2014	N001	52	-	61.5	460			#	0.24	
Calcium	mg/L	09/30/2014	N002	52	-	61.5	440			#	0.24	
Chloride	mg/L	09/30/2014	N001	52	-	61.5	950			#	100	
Chloride	mg/L	09/30/2014	N002	52	-	61.5	960			#	100	
Magnesium	mg/L	09/30/2014	N001	52	-	61.5	1600			#	0.3	
Magnesium	mg/L	09/30/2014	N002	52	-	61.5	1600			#	0.3	
Manganese	mg/L	09/30/2014	N001	52	-	61.5	0.57			#	0.0024	
Manganese	mg/L	09/30/2014	N002	52	-	61.5	0.54			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	52	-	61.5	800			#	5	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N002	52	-	61.5	710			#	5	
Oxidation Reduction Potential	mV	09/30/2014	N001	52	-	61.5	230.6			#		
pH	s.u.	09/30/2014	N001	52	-	61.5	6.93			#		
Potassium	mg/L	09/30/2014	N001	52	-	61.5	69			#	0.52	
Potassium	mg/L	09/30/2014	N002	52	-	61.5	67			#	0.52	
Selenium	mg/L	09/30/2014	N001	52	-	61.5	2.3			#	0.0032	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0818 WELL Just W of radon cover borrow pit

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	09/30/2014	N002	52	-	61.5	2.7			#	0.0016	
Sodium	mg/L	09/30/2014	N001	52	-	61.5	4000			#	0.47	
Sodium	mg/L	09/30/2014	N002	52	-	61.5	4000			#	0.47	
Specific Conductance	umhos /cm	09/30/2014	N001	52	-	61.5	23335			#		
Strontium	mg/L	09/30/2014	N001	52	-	61.5	13			#	0.0026	
Strontium	mg/L	09/30/2014	N002	52	-	61.5	12			#	0.0026	
Sulfate	mg/L	09/30/2014	N001	52	-	61.5	13000			#	250	
Sulfate	mg/L	09/30/2014	N002	52	-	61.5	13000			#	250	
Temperature	C	09/30/2014	N001	52	-	61.5	15.3			#		
Turbidity	NTU	09/30/2014	N001	52	-	61.5	1.06			#		
Uranium	mg/L	09/30/2014	N001	52	-	61.5	0.13			#	0.00029	
Uranium	mg/L	09/30/2014	N002	52	-	61.5	0.15			#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0819 WELL Just W of Disposal Cell, NECA yard, flush mount.

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	10/02/2014	N001	15.67 - 25.67	2008		FQ	#		
Ammonia Total as N	mg/L	10/02/2014	N001	15.67 - 25.67	340		FQ	#	20	
Calcium	mg/L	10/02/2014	N001	15.67 - 25.67	440		FQ	#	0.24	
Chloride	mg/L	10/02/2014	N001	15.67 - 25.67	810		FQ	#	100	
Magnesium	mg/L	10/02/2014	N001	15.67 - 25.67	1600		FQ	#	0.3	
Manganese	mg/L	10/02/2014	N001	15.67 - 25.67	1.7		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	15.67 - 25.67	1.2		FQ	#	0.01	
Oxidation Reduction Potential	mV	10/02/2014	N001	15.67 - 25.67	181.3		FQ	#		
pH	s.u.	10/02/2014	N001	15.67 - 25.67	6.44		FQ	#		
Potassium	mg/L	10/02/2014	N001	15.67 - 25.67	160		FQ	#	0.52	
Selenium	mg/L	10/02/2014	N001	15.67 - 25.67	0.0047		FQ	#	0.00016	
Sodium	mg/L	10/02/2014	N001	15.67 - 25.67	3100		FQ	#	0.47	
Specific Conductance	umhos /cm	10/02/2014	N001	15.67 - 25.67	20243		FQ	#		
Strontium	mg/L	10/02/2014	N001	15.67 - 25.67	10		FQ	#	0.0026	
Sulfate	mg/L	10/02/2014	N001	15.67 - 25.67	14000		FQ	#	250	
Temperature	C	10/02/2014	N001	15.67 - 25.67	18.33		FQ	#		
Turbidity	NTU	10/02/2014	N001	15.67 - 25.67	4.7		FQ	#		
Uranium	mg/L	10/02/2014	N001	15.67 - 25.67	1.1		FQ	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0822 WELL Just N of Disposal Cell, well nest

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	10/01/2014	0001	199	-	201.5	458		FQ	#		
Ammonia Total as N	mg/L	10/01/2014	0001	199	-	201.5	2.4		FQ	#	0.1	
Calcium	mg/L	10/01/2014	0001	199	-	201.5	160		FQ	#	0.24	
Chloride	mg/L	10/01/2014	0001	199	-	201.5	7100		FQ	#	100	
Magnesium	mg/L	10/01/2014	0001	199	-	201.5	81		FQ	#	0.3	
Manganese	mg/L	10/01/2014	0001	199	-	201.5	0.44		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	0001	199	-	201.5	0.68		FQ	#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	199	-	201.5	-85.9		FQ	#		
pH	s.u.	10/01/2014	N001	199	-	201.5	7.18		FQ	#		
Potassium	mg/L	10/01/2014	0001	199	-	201.5	38		FQ	#	0.52	
Selenium	mg/L	10/01/2014	0001	199	-	201.5	0.00079		FQ	#	0.00016	
Sodium	mg/L	10/01/2014	0001	199	-	201.5	6200		FQ	#	2.3	
Specific Conductance	umhos /cm	10/01/2014	N001	199	-	201.5	26180		FQ	#		
Strontium	mg/L	10/01/2014	0001	199	-	201.5	17		FQ	#	0.0026	
Sulfate	mg/L	10/01/2014	0001	199	-	201.5	5200		FQ	#	250	
Temperature	C	10/01/2014	N001	199	-	201.5	18.32		FQ	#		
Turbidity	NTU	10/01/2014	N001	199	-	201.5	22.5		FQ	#		
Uranium	mg/L	10/01/2014	0001	199	-	201.5	0.046		FQ	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0824 WELL Just NE of Disposal Cell, well nest

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	10/01/2014	N001	198.5	-	201	336		FQ	#		
Ammonia Total as N	mg/L	10/01/2014	N001	198.5	-	201	4.8		FQ	#	1	
Calcium	mg/L	10/01/2014	N001	198.5	-	201	190		FQ	#	0.24	
Chloride	mg/L	10/01/2014	N001	198.5	-	201	7700		FQ	#	100	
Magnesium	mg/L	10/01/2014	N001	198.5	-	201	75		FQ	#	0.3	
Manganese	mg/L	10/01/2014	N001	198.5	-	201	0.66		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	198.5	-	201	10		FQ	#	0.5	
Oxidation Reduction Potential	mV	10/01/2014	N001	198.5	-	201	-78.2		FQ	#		
pH	s.u.	10/01/2014	N001	198.5	-	201	7.14		FQ	#		
Potassium	mg/L	10/01/2014	N001	198.5	-	201	42		FQ	#	0.52	
Selenium	mg/L	10/01/2014	N001	198.5	-	201	0.0005		FQ	#	0.00016	
Sodium	mg/L	10/01/2014	N001	198.5	-	201	6400		FQ	#	2.3	
Specific Conductance	umhos /cm	10/01/2014	N001	198.5	-	201	27968		FQ	#		
Strontium	mg/L	10/01/2014	N001	198.5	-	201	21		FQ	#	0.0026	
Sulfate	mg/L	10/01/2014	N001	198.5	-	201	5200		FQ	#	250	
Temperature	C	10/01/2014	N001	198.5	-	201	18.85		FQ	#		
Turbidity	NTU	10/01/2014	N001	198.5	-	201	7.74		FQ	#		
Uranium	mg/L	10/01/2014	N001	198.5	-	201	0.092		FQ	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0826 WELL Just West of Disposal Cell, NECA yard, flush mount.

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	10/02/2014	N001	10	-	20	1380		FQ	#		
Ammonia Total as N	mg/L	10/02/2014	N001	10	-	20	83		FQ	#	2.5	
Calcium	mg/L	10/02/2014	N001	10	-	20	440		FQ	#	0.24	
Chloride	mg/L	10/02/2014	N001	10	-	20	360		FQ	#	50	
Magnesium	mg/L	10/02/2014	N001	10	-	20	1800		FQ	#	0.3	
Manganese	mg/L	10/02/2014	N001	10	-	20	2.4		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	10	-	20	14		FQ	#	0.2	
Oxidation Reduction Potential	mV	10/02/2014	N001	10	-	20	198.1		FQ	#		
pH	s.u.	10/02/2014	N001	10	-	20	6.57		FQ	#		
Potassium	mg/L	10/02/2014	N001	10	-	20	110		FQ	#	0.52	
Selenium	mg/L	10/02/2014	N001	10	-	20	0.0034		FQ	#	0.00032	
Sodium	mg/L	10/02/2014	N001	10	-	20	1900		FQ	#	0.47	
Specific Conductance	umhos /cm	10/02/2014	N001	10	-	20	15343		FQ	#		
Strontium	mg/L	10/02/2014	N001	10	-	20	11		FQ	#	0.0026	
Sulfate	mg/L	10/02/2014	N001	10	-	20	11000		FQ	#	120	
Temperature	C	10/02/2014	N001	10	-	20	18.16		FQ	#		
Turbidity	NTU	10/02/2014	N001	10	-	20	3.83		FQ	#		
Uranium	mg/L	10/02/2014	N001	10	-	20	1.5		FQ	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0827 WELL Just NW of Disposal Cell

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	10/01/2014	N001	19.9	-	29.9	1438		FQ	#		
Ammonia Total as N	mg/L	10/01/2014	N001	19.9	-	29.9	6		FQ	#	2.5	
Calcium	mg/L	10/01/2014	N001	19.9	-	29.9	460		FQ	#	0.24	
Chloride	mg/L	10/01/2014	N001	19.9	-	29.9	380		FQ	#	20	
Magnesium	mg/L	10/01/2014	N001	19.9	-	29.9	980		FQ	#	0.3	
Manganese	mg/L	10/01/2014	N001	19.9	-	29.9	0.64		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	19.9	-	29.9	15		FQ	#	0.2	
Oxidation Reduction Potential	mV	10/01/2014	N001	19.9	-	29.9	159.5		FQ	#		
pH	s.u.	10/01/2014	N001	19.9	-	29.9	6.5		FQ	#		
Potassium	mg/L	10/01/2014	N001	19.9	-	29.9	36		FQ	#	0.52	
Selenium	mg/L	10/01/2014	N001	19.9	-	29.9	0.033		FQ	#	0.0016	
Sodium	mg/L	10/01/2014	N001	19.9	-	29.9	1800		FQ	#	0.47	
Specific Conductance	umhos /cm	10/01/2014	N001	19.9	-	29.9	15649		FQ	#		
Strontium	mg/L	10/01/2014	N001	19.9	-	29.9	10		FQ	#	0.0026	
Sulfate	mg/L	10/01/2014	N001	19.9	-	29.9	7800		FQ	#	50	
Temperature	C	10/01/2014	N001	19.9	-	29.9	17.42		FQ	#		
Turbidity	NTU	10/01/2014	N001	19.9	-	29.9	6.41		FQ	#		
Uranium	mg/L	10/01/2014	N001	19.9	-	29.9	0.88		FQ	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0828 WELL Just E of upper Bob Lee Wash, NECA yard

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	10/01/2014	0001	5.3	-	15.3	692		F	#		
Ammonia Total as N	mg/L	10/01/2014	0001	5.3	-	15.3	0.93		F	#	0.1	
Calcium	mg/L	10/01/2014	0001	5.3	-	15.3	320		F	#	0.12	
Chloride	mg/L	10/01/2014	0001	5.3	-	15.3	120		F	#	10	
Magnesium	mg/L	10/01/2014	0001	5.3	-	15.3	190		F	#	0.15	
Manganese	mg/L	10/01/2014	0001	5.3	-	15.3	1.1		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	0001	5.3	-	15.3	1.8		F	#	0.05	
Oxidation Reduction Potential	mV	10/01/2014	N001	5.3	-	15.3	40.2		F	#		
pH	s.u.	10/01/2014	N001	5.3	-	15.3	7.03		F	#		
Potassium	mg/L	10/01/2014	0001	5.3	-	15.3	11		F	#	0.26	
Selenium	mg/L	10/01/2014	0001	5.3	-	15.3	0.0048		F	#	0.00032	
Sodium	mg/L	10/01/2014	0001	5.3	-	15.3	350		F	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	5.3	-	15.3	3519		F	#		
Strontium	mg/L	10/01/2014	0001	5.3	-	15.3	4.4		F	#	0.0013	
Sulfate	mg/L	10/01/2014	0001	5.3	-	15.3	1400		F	#	25	
Temperature	C	10/01/2014	N001	5.3	-	15.3	18.21		F	#		
Turbidity	NTU	10/01/2014	N001	5.3	-	15.3	25.4		F	#		
Uranium	mg/L	10/01/2014	0001	5.3	-	15.3	0.41		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0830 WELL Just SE of Disposal Cell

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	10/01/2014	N001	7.7	-	17.7	0		F	#		
Ammonia Total as N	mg/L	10/01/2014	N001	7.7	-	17.7	0.79		F	#	0.1	
Calcium	mg/L	10/01/2014	N001	7.7	-	17.7	600		F	#	0.12	
Chloride	mg/L	10/01/2014	N001	7.7	-	17.7	38		F	#	10	
Magnesium	mg/L	10/01/2014	N001	7.7	-	17.7	53		F	#	0.15	
Manganese	mg/L	10/01/2014	N001	7.7	-	17.7	4.7		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	7.7	-	17.7	56		F	#	0.5	
Oxidation Reduction Potential	mV	10/01/2014	N001	7.7	-	17.7	434.1		F	#		
pH	s.u.	10/01/2014	N001	7.7	-	17.7	3.83		F	#		
Potassium	mg/L	10/01/2014	N001	7.7	-	17.7	4.9	B	F	#	0.26	
Selenium	mg/L	10/01/2014	N001	7.7	-	17.7	0.026		F	#	0.00032	
Sodium	mg/L	10/01/2014	N001	7.7	-	17.7	130		F	#	0.23	
Specific Conductance	umhos /cm	10/01/2014	N001	7.7	-	17.7	3095		F	#		
Strontium	mg/L	10/01/2014	N001	7.7	-	17.7	0.4		F	#	0.0013	
Sulfate	mg/L	10/01/2014	N001	7.7	-	17.7	1700		F	#	25	
Temperature	C	10/01/2014	N001	7.7	-	17.7	22.75		F	#		
Turbidity	NTU	10/01/2014	N001	7.7	-	17.7	5.49		F	#		
Uranium	mg/L	10/01/2014	N001	7.7	-	17.7	0.0056		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0833 WELL Just NE of Dine College tract

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	09/30/2014	N001	24.9	-	34.9	426		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	24.9	-	34.9	0.1	U	F	#	0.1	
Calcium	mg/L	09/30/2014	N001	24.9	-	34.9	440		F	#	0.12	
Chloride	mg/L	09/30/2014	N001	24.9	-	34.9	210		F	#	20	
Magnesium	mg/L	09/30/2014	N001	24.9	-	34.9	390		F	#	0.15	
Manganese	mg/L	09/30/2014	N001	24.9	-	34.9	0.014	B	UF	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	24.9	-	34.9	72		F	#	1	
Oxidation Reduction Potential	mV	09/30/2014	N001	24.9	-	34.9	148.1		F	#		
pH	s.u.	09/30/2014	N001	24.9	-	34.9	7.12		F	#		
Potassium	mg/L	09/30/2014	N001	24.9	-	34.9	18		F	#	0.26	
Selenium	mg/L	09/30/2014	N001	24.9	-	34.9	0.24		F	#	0.00032	
Sodium	mg/L	09/30/2014	N001	24.9	-	34.9	940		F	#	0.23	
Specific Conductance	umhos /cm	09/30/2014	N001	24.9	-	34.9	6658		F	#		
Strontium	mg/L	09/30/2014	N001	24.9	-	34.9	5.4		F	#	0.0013	
Sulfate	mg/L	09/30/2014	N001	24.9	-	34.9	3800		F	#	50	
Temperature	C	09/30/2014	N001	24.9	-	34.9	16.79		F	#		
Turbidity	NTU	09/30/2014	N001	24.9	-	34.9	1.62		F	#		
Uranium	mg/L	09/30/2014	N001	24.9	-	34.9	0.069		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0835 WELL Housing area between 2nd Wash and 3rd Wash

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	09/30/2014	N001	21.9 - 31.9	126		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	21.9 - 31.9	0.1	U	F	#	0.1	
Calcium	mg/L	09/30/2014	N001	21.9 - 31.9	49		F	#	0.024	
Chloride	mg/L	09/30/2014	N001	21.9 - 31.9	27		F	#	1	
Magnesium	mg/L	09/30/2014	N001	21.9 - 31.9	25		F	#	0.03	
Manganese	mg/L	09/30/2014	N001	21.9 - 31.9	0.03		F	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	21.9 - 31.9	0.28		F	#	0.01	
Oxidation Reduction Potential	mV	09/30/2014	N001	21.9 - 31.9	91.3		F	#		
pH	s.u.	09/30/2014	N001	21.9 - 31.9	7.8		F	#		
Potassium	mg/L	09/30/2014	N001	21.9 - 31.9	1.9		F	#	0.052	
Selenium	mg/L	09/30/2014	N001	21.9 - 31.9	0.002		F	#	0.00016	
Sodium	mg/L	09/30/2014	N001	21.9 - 31.9	34		F	#	0.047	
Specific Conductance	umhos /cm	09/30/2014	N001	21.9 - 31.9	583		F	#		
Strontium	mg/L	09/30/2014	N001	21.9 - 31.9	0.58		F	#	0.00026	
Sulfate	mg/L	09/30/2014	N001	21.9 - 31.9	130		F	#	2.5	
Temperature	C	09/30/2014	N001	21.9 - 31.9	18.38		F	#		
Turbidity	NTU	09/30/2014	N001	21.9 - 31.9	2.34		F	#		
Uranium	mg/L	09/30/2014	N001	21.9 - 31.9	0.0036		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0836 WELL SW part of Blueeyes Ranch, N of US Hwy 64

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	09/30/2014	N001	26.8	-	36.8	290		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	26.8	-	36.8	0.1	U	F	#	0.1	
Calcium	mg/L	09/30/2014	N001	26.8	-	36.8	530		F	#	0.12	
Chloride	mg/L	09/30/2014	N001	26.8	-	36.8	80		F	#	10	
Magnesium	mg/L	09/30/2014	N001	26.8	-	36.8	260		F	#	0.15	
Manganese	mg/L	09/30/2014	N001	26.8	-	36.8	0.21		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	26.8	-	36.8	52		F	#	0.5	
Oxidation Reduction Potential	mV	09/30/2014	N001	26.8	-	36.8	131		F	#		
pH	s.u.	09/30/2014	N001	26.8	-	36.8	6.91		F	#		
Potassium	mg/L	09/30/2014	N001	26.8	-	36.8	5.7		F	#	0.26	
Selenium	mg/L	09/30/2014	N001	26.8	-	36.8	0.46		F	#	0.00032	
Sodium	mg/L	09/30/2014	N001	26.8	-	36.8	450		F	#	0.23	
Specific Conductance	umhos /cm	09/30/2014	N001	26.8	-	36.8	4616		F	#		
Strontium	mg/L	09/30/2014	N001	26.8	-	36.8	7.3		F	#	0.0013	
Sulfate	mg/L	09/30/2014	N001	26.8	-	36.8	2800		F	#	25	
Temperature	C	09/30/2014	N001	26.8	-	36.8	15.42		F	#		
Turbidity	NTU	09/30/2014	N001	26.8	-	36.8	4.03		F	#		
Uranium	mg/L	09/30/2014	N001	26.8	-	36.8	0.058		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0837 WELL Center of Blueeyes Ranch, N of US Hwy 64

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	09/30/2014	N001	17 - 27.1	198		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	17 - 27.1	0.1	U	F	#	0.1	
Calcium	mg/L	09/30/2014	N001	17 - 27.1	640		F	#	0.12	
Chloride	mg/L	09/30/2014	N001	17 - 27.1	180		F	#	10	
Magnesium	mg/L	09/30/2014	N001	17 - 27.1	260		F	#	0.15	
Manganese	mg/L	09/30/2014	N001	17 - 27.1	3.9		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	17 - 27.1	94		F	#	1	
Oxidation Reduction Potential	mV	09/30/2014	N001	17 - 27.1	159.5		F	#		
pH	s.u.	09/30/2014	N001	17 - 27.1	6.81		F	#		
Potassium	mg/L	09/30/2014	N001	17 - 27.1	11		F	#	0.26	
Selenium	mg/L	09/30/2014	N001	17 - 27.1	0.43		F	#	0.00032	
Sodium	mg/L	09/30/2014	N001	17 - 27.1	420		F	#	0.23	
Specific Conductance	umhos /cm	09/30/2014	N001	17 - 27.1	5066		F	#		
Strontium	mg/L	09/30/2014	N001	17 - 27.1	7.8		F	#	0.0013	
Sulfate	mg/L	09/30/2014	N001	17 - 27.1	2700		F	#	25	
Temperature	C	09/30/2014	N001	17 - 27.1	13.76		F	#		
Turbidity	NTU	09/30/2014	N001	17 - 27.1	6.58		F	#		
Uranium	mg/L	09/30/2014	N001	17 - 27.1	0.035		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0838 WELL W part of Dine College tract

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	09/30/2014	N001	21.9 - 31.9	192		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	21.9 - 31.9	0.1	U	F	#	0.1	
Calcium	mg/L	09/30/2014	N001	21.9 - 31.9	450		F	#	0.12	
Chloride	mg/L	09/30/2014	N001	21.9 - 31.9	300		F	#	20	
Magnesium	mg/L	09/30/2014	N001	21.9 - 31.9	700		F	#	0.15	
Manganese	mg/L	09/30/2014	N001	21.9 - 31.9	0.022	B	UF	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	21.9 - 31.9	150		F	#	2	
Oxidation Reduction Potential	mV	09/30/2014	N001	21.9 - 31.9	150.7		F	#		
pH	s.u.	09/30/2014	N001	21.9 - 31.9	7.16		F	#		
Potassium	mg/L	09/30/2014	N001	21.9 - 31.9	17		F	#	0.26	
Selenium	mg/L	09/30/2014	N001	21.9 - 31.9	0.42		F	#	0.00032	
Sodium	mg/L	09/30/2014	N001	21.9 - 31.9	1300		F	#	0.23	
Specific Conductance	umhos /cm	09/30/2014	N001	21.9 - 31.9	9013		F	#		
Strontium	mg/L	09/30/2014	N001	21.9 - 31.9	8		F	#	0.0013	
Sulfate	mg/L	09/30/2014	N001	21.9 - 31.9	5700		F	#	50	
Temperature	C	09/30/2014	N001	21.9 - 31.9	16.17		F	#		
Turbidity	NTU	09/30/2014	N001	21.9 - 31.9	1.67		F	#		
Uranium	mg/L	09/30/2014	N001	21.9 - 31.9	0.15		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0841 WELL S of Multipurpose Center tract, W of US Hwy 491

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	09/30/2014	N001	42	-	52	778		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	42	-	52	0.1	U	F	#	0.1	
Calcium	mg/L	09/30/2014	N001	42	-	52	440		F	#	0.24	
Chloride	mg/L	09/30/2014	N001	42	-	52	880		F	#	100	
Magnesium	mg/L	09/30/2014	N001	42	-	52	940		F	#	0.3	
Manganese	mg/L	09/30/2014	N001	42	-	52	0.046	B	UF	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	42	-	52	550		F	#	5	
Oxidation Reduction Potential	mV	09/30/2014	N001	42	-	52	86.3		F	#		
pH	s.u.	09/30/2014	N001	42	-	52	7.16		F	#		
Potassium	mg/L	09/30/2014	N001	42	-	52	48		F	#	0.52	
Selenium	mg/L	09/30/2014	N001	42	-	52	3.7		F	#	0.0016	
Sodium	mg/L	09/30/2014	N001	42	-	52	5400		F	#	2.3	
Specific Conductance	umhos /cm	09/30/2014	N001	42	-	52	19586		F	#		
Strontium	mg/L	09/30/2014	N001	42	-	52	9.8		F	#	0.0026	
Sulfate	mg/L	09/30/2014	N001	42	-	52	14000		F	#	250	
Temperature	C	09/30/2014	N001	42	-	52	16.28		F	#		
Turbidity	NTU	09/30/2014	N001	42	-	52	9.89		F	#		
Uranium	mg/L	09/30/2014	N001	42	-	52	0.14		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0843 WELL E part of Blueeyes Ranch, N of US Hwy 64

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	09/30/2014	N001	11.9	-	21.9	284		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	11.9	-	21.9	0.1	U	F	#	0.1	
Calcium	mg/L	09/30/2014	N001	11.9	-	21.9	410		F	#	0.12	
Chloride	mg/L	09/30/2014	N001	11.9	-	21.9	88		F	#	10	
Magnesium	mg/L	09/30/2014	N001	11.9	-	21.9	130		F	#	0.15	
Manganese	mg/L	09/30/2014	N001	11.9	-	21.9	2		UF	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	11.9	-	21.9	22		F	#	0.25	
Oxidation Reduction Potential	mV	09/30/2014	N001	11.9	-	21.9	138.9		F	#		
pH	s.u.	09/30/2014	N001	11.9	-	21.9	7.08		F	#		
Potassium	mg/L	09/30/2014	N001	11.9	-	21.9	9.4		F	#	0.26	
Selenium	mg/L	09/30/2014	N001	11.9	-	21.9	0.54		F	#	0.00032	
Sodium	mg/L	09/30/2014	N001	11.9	-	21.9	390		F	#	0.23	
Specific Conductance	umhos /cm	09/30/2014	N001	11.9	-	21.9	3639		F	#		
Strontium	mg/L	09/30/2014	N001	11.9	-	21.9	4.9		F	#	0.0013	
Sulfate	mg/L	09/30/2014	N001	11.9	-	21.9	1900		F	#	25	
Temperature	C	09/30/2014	N001	11.9	-	21.9	15.88		F	#		
Turbidity	NTU	09/30/2014	N001	11.9	-	21.9	9.43		F	#		
Uranium	mg/L	09/30/2014	N001	11.9	-	21.9	0.029		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0844 WELL W part of Multipurpose Center tract, W of US Hwy 491, flush mount.

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	09/30/2014	N001	28.91 - 38.91	672		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	28.91 - 38.91	0.1	U	F	#	0.1	
Calcium	mg/L	09/30/2014	N001	28.91 - 38.91	490		F	#	0.24	
Chloride	mg/L	09/30/2014	N001	28.91 - 38.91	910		F	#	50	
Magnesium	mg/L	09/30/2014	N001	28.91 - 38.91	1800		F	#	0.3	
Manganese	mg/L	09/30/2014	N001	28.91 - 38.91	0.018	B	F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	28.91 - 38.91	700		F	#	5	
Oxidation Reduction Potential	mV	09/30/2014	N001	28.91 - 38.91	29.5		F	#		
pH	s.u.	09/30/2014	N001	28.91 - 38.91	7.38		F	#		
Potassium	mg/L	09/30/2014	N001	28.91 - 38.91	46		F	#	0.52	
Selenium	mg/L	09/30/2014	N001	28.91 - 38.91	1.9		F	#	0.0016	
Sodium	mg/L	09/30/2014	N001	28.91 - 38.91	2700		F	#	0.47	
Specific Conductance	umhos /cm	09/30/2014	N001	28.91 - 38.91	15125		F	#		
Strontium	mg/L	09/30/2014	N001	28.91 - 38.91	13		F	#	0.0026	
Sulfate	mg/L	09/30/2014	N001	28.91 - 38.91	10000		F	#	120	
Temperature	C	09/30/2014	N001	28.91 - 38.91	16.68		F	#		
Turbidity	NTU	09/30/2014	N001	28.91 - 38.91	3.34		F	#		
Uranium	mg/L	09/30/2014	N001	28.91 - 38.91	0.21		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0848 WELL Just W of Shiprock High School track, S of US Hwy 64

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	09/30/2014	N001	45 - 142.58	1698		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	45 - 142.58	9.2		F	#	0.5	
Calcium	mg/L	09/30/2014	N001	45 - 142.58	370		F	#	0.24	
Chloride	mg/L	09/30/2014	N001	45 - 142.58	1200		F	#	100	
Magnesium	mg/L	09/30/2014	N001	45 - 142.58	470		F	#	0.3	
Manganese	mg/L	09/30/2014	N001	45 - 142.58	2.9		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	45 - 142.58	0.049		F	#	0.01	
Oxidation Reduction Potential	mV	09/30/2014	N001	45 - 142.58	3.6		F	#		
pH	s.u.	09/30/2014	N001	45 - 142.58	6.79		F	#		
Potassium	mg/L	09/30/2014	N001	45 - 142.58	28		F	#	0.52	
Selenium	mg/L	09/30/2014	N001	45 - 142.58	0.054		F	#	0.00032	
Sodium	mg/L	09/30/2014	N001	45 - 142.58	6800		F	#	2.3	
Specific Conductance	umhos /cm	09/30/2014	N001	45 - 142.58	20809		F	#		
Strontium	mg/L	09/30/2014	N001	45 - 142.58	20		F	#	0.0026	
Sulfate	mg/L	09/30/2014	N001	45 - 142.58	17000		F	#	250	
Temperature	C	09/30/2014	N001	45 - 142.58	17.24		F	#		
Turbidity	NTU	09/30/2014	N001	45 - 142.58	2.93		F	#		
Uranium	mg/L	09/30/2014	N001	45 - 142.58	0.018		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1007 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	10/01/2014	0001	36.8 - 46.3	1080		FQ	#		
Ammonia Total as N	mg/L	10/01/2014	0001	36.8 - 46.3	19		FQ	#	2.5	
Calcium	mg/L	10/01/2014	0001	36.8 - 46.3	470		FQ	#	0.24	
Chloride	mg/L	10/01/2014	0001	36.8 - 46.3	560		FQ	#	100	
Magnesium	mg/L	10/01/2014	0001	36.8 - 46.3	2200		FQ	#	0.3	
Manganese	mg/L	10/01/2014	0001	36.8 - 46.3	1.7		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	0001	36.8 - 46.3	560		FQ	#	5	
Oxidation Reduction Potential	mV	10/01/2014	N001	36.8 - 46.3	259		FQ	#		
pH	s.u.	10/01/2014	N001	36.8 - 46.3	6.54		FQ	#		
Potassium	mg/L	10/01/2014	0001	36.8 - 46.3	100		FQ	#	0.52	
Selenium	mg/L	10/01/2014	0001	36.8 - 46.3	0.054		FQ	#	0.0016	
Sodium	mg/L	10/01/2014	0001	36.8 - 46.3	2900		FQ	#	0.47	
Specific Conductance	umhos /cm	10/01/2014	N001	36.8 - 46.3	19224		FQ	#		
Strontium	mg/L	10/01/2014	0001	36.8 - 46.3	13		FQ	#	0.0026	
Sulfate	mg/L	10/01/2014	0001	36.8 - 46.3	12000		FQ	#	250	
Temperature	C	10/01/2014	N001	36.8 - 46.3	17.33		FQ	#		
Turbidity	NTU	10/01/2014	N001	36.8 - 46.3	22.7		FQ	#		
Uranium	mg/L	10/01/2014	0001	36.8 - 46.3	2.7		FQ	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1049 WELL Many Devils Wash, just E of knickpoint, flush mount.

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	09/30/2014	N001	4.3	-	9.3	686		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	4.3	-	9.3	0.1	U	F	#	0.1	
Calcium	mg/L	09/30/2014	N001	4.3	-	9.3	410		F	#	0.24	
Chloride	mg/L	09/30/2014	N001	4.3	-	9.3	1300		F	#	100	
Magnesium	mg/L	09/30/2014	N001	4.3	-	9.3	1200		F	#	0.3	
Manganese	mg/L	09/30/2014	N001	4.3	-	9.3	0.026	B	UF	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	4.3	-	9.3	510		F	#	5	
Oxidation Reduction Potential	mV	09/30/2014	N001	4.3	-	9.3	132.5		F	#		
pH	s.u.	09/30/2014	N001	4.3	-	9.3	7.36		F	#		
Potassium	mg/L	09/30/2014	N001	4.3	-	9.3	34		F	#	0.52	
Selenium	mg/L	09/30/2014	N001	4.3	-	9.3	1.2		F	#	0.0016	
Sodium	mg/L	09/30/2014	N001	4.3	-	9.3	6400		F	#	2.3	
Specific Conductance	umhos /cm	09/30/2014	N001	4.3	-	9.3	27924		F	#		
Strontium	mg/L	09/30/2014	N001	4.3	-	9.3	9.9		F	#	0.0026	
Sulfate	mg/L	09/30/2014	N001	4.3	-	9.3	17000		F	#	250	
Temperature	C	09/30/2014	N001	4.3	-	9.3	17.42		F	#		
Turbidity	NTU	09/30/2014	N001	4.3	-	9.3	9.59		F	#		
Uranium	mg/L	09/30/2014	N001	4.3	-	9.3	0.15		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1057 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	09/29/2014	N001	36.66 - 41.66	310		F	#		
Ammonia Total as N	mg/L	09/29/2014	N001	36.66 - 41.66	260		F	#	10	
Calcium	mg/L	09/29/2014	N001	36.66 - 41.66	660		F	#	0.24	
Chloride	mg/L	09/29/2014	N001	36.66 - 41.66	290		F	#	50	
Magnesium	mg/L	09/29/2014	N001	36.66 - 41.66	1300		F	#	0.3	
Manganese	mg/L	09/29/2014	N001	36.66 - 41.66	12		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/29/2014	N001	36.66 - 41.66	1600		F	#	20	
Oxidation Reduction Potential	mV	09/29/2014	N001	36.66 - 41.66	242.6		F	#		
pH	s.u.	09/29/2014	N001	36.66 - 41.66	6.46		F	#		
Potassium	mg/L	09/29/2014	N001	36.66 - 41.66	150		F	#	0.52	
Selenium	mg/L	09/29/2014	N001	36.66 - 41.66	0.057		F	#	0.00032	
Sodium	mg/L	09/29/2014	N001	36.66 - 41.66	1400		F	#	0.47	
Specific Conductance	umhos /cm	09/29/2014	N001	36.66 - 41.66	16050		F	#		
Strontium	mg/L	09/29/2014	N001	36.66 - 41.66	9.6		F	#	0.0026	
Sulfate	mg/L	09/29/2014	N001	36.66 - 41.66	5500		F	#	120	
Temperature	C	09/29/2014	N001	36.66 - 41.66	16.16		F	#		
Turbidity	NTU	09/29/2014	N001	36.66 - 41.66	1.59		F	#		
Uranium	mg/L	09/29/2014	N001	36.66 - 41.66	0.05		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1058 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	09/30/2014	N001	41.7 - 51.2	566		FQ	#		
Ammonia Total as N	mg/L	09/30/2014	N001	41.7 - 51.2	4.3		FQ	#	0.1	
Calcium	mg/L	09/30/2014	N001	41.7 - 51.2	230		FQ	#	0.24	
Chloride	mg/L	09/30/2014	N001	41.7 - 51.2	1500		FQ	#	40	
Magnesium	mg/L	09/30/2014	N001	41.7 - 51.2	120		FQ	#	0.3	
Manganese	mg/L	09/30/2014	N001	41.7 - 51.2	0.29		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	41.7 - 51.2	0.015		FQ	#	0.01	
Oxidation Reduction Potential	mV	09/30/2014	N001	41.7 - 51.2	-77.3		FQ	#		
pH	s.u.	09/30/2014	N001	41.7 - 51.2	7.16		FQ	#		
Potassium	mg/L	09/30/2014	N001	41.7 - 51.2	15		FQ	#	0.52	
Selenium	mg/L	09/30/2014	N001	41.7 - 51.2	0.00014		FQ	#	0.000032	
Sodium	mg/L	09/30/2014	N001	41.7 - 51.2	3200		FQ	#	0.47	
Specific Conductance	umhos /cm	09/30/2014	N001	41.7 - 51.2	13779		FQ	#		
Strontium	mg/L	09/30/2014	N001	41.7 - 51.2	11		FQ	#	0.0026	
Sulfate	mg/L	09/30/2014	N001	41.7 - 51.2	5500		FQ	#	100	
Temperature	C	09/30/2014	N001	41.7 - 51.2	16.8		FQ	#		
Turbidity	NTU	09/30/2014	N001	41.7 - 51.2	1.63		FQ	#		
Uranium	mg/L	09/30/2014	N001	41.7 - 51.2	0.0031		FQ	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1059 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	09/30/2014	N001	39.5	-	49	588		FQ	#		
Ammonia Total as N	mg/L	09/30/2014	N001	39.5	-	49	1.4		FQ	#	0.1	
Calcium	mg/L	09/30/2014	N001	39.5	-	49	320		FQ	#	0.24	
Chloride	mg/L	09/30/2014	N001	39.5	-	49	750		FQ	#	50	
Magnesium	mg/L	09/30/2014	N001	39.5	-	49	330		FQ	#	0.3	
Manganese	mg/L	09/30/2014	N001	39.5	-	49	0.074		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	39.5	-	49	330		FQ	#	2.5	
Oxidation Reduction Potential	mV	09/30/2014	N001	39.5	-	49	26.2		FQ	#		
pH	s.u.	09/30/2014	N001	39.5	-	49	7.11		FQ	#		
Potassium	mg/L	09/30/2014	N001	39.5	-	49	21		FQ	#	0.52	
Selenium	mg/L	09/30/2014	N001	39.5	-	49	0.0073		FQ	#	0.00032	
Sodium	mg/L	09/30/2014	N001	39.5	-	49	4100		FQ	#	0.47	
Specific Conductance	umhos /cm	09/30/2014	N001	39.5	-	49	17945		FQ	#		
Strontium	mg/L	09/30/2014	N001	39.5	-	49	17		FQ	#	0.0026	
Sulfate	mg/L	09/30/2014	N001	39.5	-	49	9000		FQ	#	120	
Temperature	C	09/30/2014	N001	39.5	-	49	16.72		FQ	#		
Turbidity	NTU	09/30/2014	N001	39.5	-	49	4.5		FQ	#		
Uranium	mg/L	09/30/2014	N001	39.5	-	49	0.067		FQ	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1068 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	09/30/2014	N001	6.95	-	8.95	648		FQ	#		
Ammonia Total as N	mg/L	09/30/2014	0001	6.95	-	8.95	120		FQ	#	20	
Calcium	mg/L	09/30/2014	0001	6.95	-	8.95	520		FQ	#	0.24	
Chloride	mg/L	09/30/2014	0001	6.95	-	8.95	290		FQ	#	20	
Magnesium	mg/L	09/30/2014	0001	6.95	-	8.95	1200		FQ	#	0.3	
Manganese	mg/L	09/30/2014	0001	6.95	-	8.95	1.5		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	0001	6.95	-	8.95	290		FQ	#	2.5	
Oxidation Reduction Potential	mV	09/30/2014	N001	6.95	-	8.95	72.5		FQ	#		
pH	s.u.	09/30/2014	N001	6.95	-	8.95	7.33		FQ	#		
Potassium	mg/L	09/30/2014	0001	6.95	-	8.95	97		FQ	#	0.52	
Selenium	mg/L	09/30/2014	0001	6.95	-	8.95	0.027		FQ	#	0.0016	
Sodium	mg/L	09/30/2014	0001	6.95	-	8.95	1400		FQ	#	0.47	
Specific Conductance	umhos /cm	09/30/2014	N001	6.95	-	8.95	10605		FQ	#		
Strontium	mg/L	09/30/2014	0001	6.95	-	8.95	11		FQ	#	0.0026	
Sulfate	mg/L	09/30/2014	0001	6.95	-	8.95	7600		FQ	#	50	
Temperature	C	09/30/2014	N001	6.95	-	8.95	20.71		FQ	#		
Turbidity	NTU	09/30/2014	N001	6.95	-	8.95	28.3		FQ	#		
Uranium	mg/L	09/30/2014	0001	6.95	-	8.95	0.68		FQ	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1069 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	10/02/2014	0001	4.35 - 6.35	520		FQ	#		
Ammonia Total as N	mg/L	10/02/2014	0001	4.35 - 6.35	0.69		FQ	#	0.1	
Calcium	mg/L	10/02/2014	0001	4.35 - 6.35	470		FQ	#	0.24	
Chloride	mg/L	10/02/2014	0001	4.35 - 6.35	570		FQ	#	50	
Magnesium	mg/L	10/02/2014	0001	4.35 - 6.35	1700		FQ	#	0.3	
Manganese	mg/L	10/02/2014	0001	4.35 - 6.35	0.015	B	UFQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	0001	4.35 - 6.35	550		FQ	#	5	
Oxidation Reduction Potential	mV	10/02/2014	N001	4.35 - 6.35	241.1		FQ	#		
pH	s.u.	10/02/2014	N001	4.35 - 6.35	7.35		FQ	#		
Potassium	mg/L	10/02/2014	0001	4.35 - 6.35	74		FQ	#	0.52	
Selenium	mg/L	10/02/2014	0001	4.35 - 6.35	0.29		FQ	#	0.0016	
Sodium	mg/L	10/02/2014	0001	4.35 - 6.35	2600		FQ	#	0.47	
Specific Conductance	umhos /cm	10/02/2014	N001	4.35 - 6.35	17989		FQ	#		
Strontium	mg/L	10/02/2014	0001	4.35 - 6.35	13		FQ	#	0.0026	
Sulfate	mg/L	10/02/2014	0001	4.35 - 6.35	11000		FQ	#	120	
Temperature	C	10/02/2014	N001	4.35 - 6.35	19.63		FQ	#		
Turbidity	NTU	10/02/2014	N001	4.35 - 6.35	89.7		FQ	#		
Uranium	mg/L	10/02/2014	0001	4.35 - 6.35	1.5		FQ	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1070 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	09/30/2014	N001	52.5 - 62	702			#		
Ammonia Total as N	mg/L	09/30/2014	N001	52.5 - 62	3			#	0.1	
Ammonia Total as N	mg/L	09/30/2014	N002	52.5 - 62	3.6			#	0.1	
Calcium	mg/L	09/30/2014	N001	52.5 - 62	410			#	0.24	
Calcium	mg/L	09/30/2014	N002	52.5 - 62	430			#	0.24	
Chloride	mg/L	09/30/2014	N001	52.5 - 62	1200			#	100	
Chloride	mg/L	09/30/2014	N002	52.5 - 62	1100			#	100	
Magnesium	mg/L	09/30/2014	N001	52.5 - 62	930			#	0.3	
Magnesium	mg/L	09/30/2014	N002	52.5 - 62	980			#	0.3	
Manganese	mg/L	09/30/2014	N001	52.5 - 62	0.25			#	0.0024	
Manganese	mg/L	09/30/2014	N002	52.5 - 62	0.25			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	52.5 - 62	670			#	5	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N002	52.5 - 62	590			#	5	
Oxidation Reduction Potential	mV	09/30/2014	N001	52.5 - 62	206.3			#		
pH	s.u.	09/30/2014	N001	52.5 - 62	7.26			#		
Potassium	mg/L	09/30/2014	N001	52.5 - 62	52			#	0.52	
Potassium	mg/L	09/30/2014	N002	52.5 - 62	53			#	0.52	
Selenium	mg/L	09/30/2014	N001	52.5 - 62	2.9			#	0.0016	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1070 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	09/30/2014	N002	52.5 - 62	2.6			#	0.0016	
Sodium	mg/L	09/30/2014	N001	52.5 - 62	6000			#	2.3	
Sodium	mg/L	09/30/2014	N002	52.5 - 62	6300			#	2.3	
Specific Conductance	umhos /cm	09/30/2014	N001	52.5 - 62	27108			#		
Strontium	mg/L	09/30/2014	N001	52.5 - 62	9.6			#	0.0026	
Strontium	mg/L	09/30/2014	N002	52.5 - 62	10			#	0.0026	
Sulfate	mg/L	09/30/2014	N001	52.5 - 62	16000			#	250	
Sulfate	mg/L	09/30/2014	N002	52.5 - 62	16000			#	250	
Temperature	C	09/30/2014	N001	52.5 - 62	17.97			#		
Turbidity	NTU	09/30/2014	N001	52.5 - 62	5.01			#		
Uranium	mg/L	09/30/2014	N001	52.5 - 62	0.1			#	0.00015	
Uranium	mg/L	09/30/2014	N002	52.5 - 62	0.088			#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1071 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	10/06/2014	0001	36.5	-	46	452			#		
Ammonia Total as N	mg/L	10/06/2014	0001	36.5	-	46	20			#	2.5	
Calcium	mg/L	10/06/2014	0001	36.5	-	46	470			#	0.24	
Chloride	mg/L	10/06/2014	0001	36.5	-	46	1000			#	100	
Magnesium	mg/L	10/06/2014	0001	36.5	-	46	1300			#	0.3	
Manganese	mg/L	10/06/2014	0001	36.5	-	46	3.6			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/06/2014	0001	36.5	-	46	700			#	5	
Oxidation Reduction Potential	mV	10/06/2014	N001	36.5	-	46	192			#		
pH	s.u.	10/06/2014	N001	36.5	-	46	7.27			#		
Potassium	mg/L	10/06/2014	0001	36.5	-	46	60			#	0.52	
Selenium	mg/L	10/06/2014	0001	36.5	-	46	2.5			#	0.0016	
Sodium	mg/L	10/06/2014	0001	36.5	-	46	4800			#	0.47	
Specific Conductance	umhos /cm	10/06/2014	N001	36.5	-	46	23650			#		
Strontium	mg/L	10/06/2014	0001	36.5	-	46	11			#	0.0026	
Sulfate	mg/L	10/06/2014	0001	36.5	-	46	13000			#	250	
Temperature	C	10/06/2014	N001	36.5	-	46	18.4			#		
Turbidity	NTU	10/06/2014	N001	36.5	-	46	85			#		
Uranium	mg/L	10/06/2014	0001	36.5	-	46	0.13			#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1073 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	10/01/2014	N001	40.5	-	50	184		FQ	#		
Ammonia Total as N	mg/L	10/01/2014	0001	40.5	-	50	46		FQ	#	2.5	
Calcium	mg/L	10/01/2014	0001	40.5	-	50	510		FQ	#	0.24	
Chloride	mg/L	10/01/2014	0001	40.5	-	50	1200		FQ	#	100	
Magnesium	mg/L	10/01/2014	0001	40.5	-	50	1800		FQ	#	0.3	
Manganese	mg/L	10/01/2014	0001	40.5	-	50	0.56		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	0001	40.5	-	50	950		FQ	#	10	
Oxidation Reduction Potential	mV	10/01/2014	N001	40.5	-	50	137.3		FQ	#		
pH	s.u.	10/01/2014	N001	40.5	-	50	7.08		FQ	#		
Potassium	mg/L	10/01/2014	0001	40.5	-	50	100		FQ	#	0.52	
Selenium	mg/L	10/01/2014	0001	40.5	-	50	2.6		FQ	#	0.0016	
Sodium	mg/L	10/01/2014	0001	40.5	-	50	3400		FQ	#	0.47	
Specific Conductance	umhos /cm	10/01/2014	N001	40.5	-	50	20924		FQ	#		
Strontium	mg/L	10/01/2014	0001	40.5	-	50	11		FQ	#	0.0026	
Sulfate	mg/L	10/01/2014	0001	40.5	-	50	12000		FQ	#	250	
Temperature	C	10/01/2014	N001	40.5	-	50	16.17		FQ	#		
Turbidity	NTU	10/01/2014	N001	40.5	-	50	14.7		FQ	#		
Uranium	mg/L	10/01/2014	0001	40.5	-	50	0.09		FQ	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1074 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	10/01/2014	N001	27	-	36.5	1192		FQ	#		
Ammonia Total as N	mg/L	10/01/2014	N001	27	-	36.5	6.5		FQ	#	1	
Calcium	mg/L	10/01/2014	N001	27	-	36.5	570		FQ	#	0.24	
Chloride	mg/L	10/01/2014	N001	27	-	36.5	1100		FQ	#	100	
Magnesium	mg/L	10/01/2014	N001	27	-	36.5	2100		FQ	#	0.3	
Manganese	mg/L	10/01/2014	N001	27	-	36.5	1.7		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	27	-	36.5	1300		FQ	#	10	
Oxidation Reduction Potential	mV	10/01/2014	N001	27	-	36.5	162.3		FQ	#		
pH	s.u.	10/01/2014	N001	27	-	36.5	6.76		FQ	#		
Potassium	mg/L	10/01/2014	N001	27	-	36.5	41		FQ	#	0.52	
Selenium	mg/L	10/01/2014	N001	27	-	36.5	0.5		FQ	#	0.0032	
Sodium	mg/L	10/01/2014	N001	27	-	36.5	2400		FQ	#	0.47	
Specific Conductance	umhos /cm	10/01/2014	N001	27	-	36.5	20276		FQ	#		
Strontium	mg/L	10/01/2014	N001	27	-	36.5	12		FQ	#	0.0026	
Sulfate	mg/L	10/01/2014	N001	27	-	36.5	8000		FQ	#	250	
Temperature	C	10/01/2014	N001	27	-	36.5	20.39		FQ	#		
Turbidity	NTU	10/01/2014	N001	27	-	36.5	8.62		FQ	#		
Uranium	mg/L	10/01/2014	N001	27	-	36.5	2.2		FQ	#	0.00029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1078 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	09/30/2014	N001	35.5	-	45	578			#		
Ammonia Total as N	mg/L	09/30/2014	N001	35.5	-	45	1.5			#	0.1	
Ammonia Total as N	mg/L	09/30/2014	N002	35.5	-	45	1.5			#	0.1	
Calcium	mg/L	09/30/2014	N001	35.5	-	45	420			#	0.24	
Calcium	mg/L	09/30/2014	N002	35.5	-	45	420			#	0.24	
Chloride	mg/L	09/30/2014	N001	35.5	-	45	990			#	100	
Chloride	mg/L	09/30/2014	N002	35.5	-	45	1000			#	100	
Magnesium	mg/L	09/30/2014	N001	35.5	-	45	930			#	0.3	
Magnesium	mg/L	09/30/2014	N002	35.5	-	45	950			#	0.3	
Manganese	mg/L	09/30/2014	N001	35.5	-	45	0.087		J	#	0.0024	
Manganese	mg/L	09/30/2014	N002	35.5	-	45	0.064		J	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	35.5	-	45	530			#	5	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N002	35.5	-	45	540			#	5	
Oxidation Reduction Potential	mV	09/30/2014	N001	35.5	-	45	241.6			#		
pH	s.u.	09/30/2014	N001	35.5	-	45	7.16			#		
Potassium	mg/L	09/30/2014	N001	35.5	-	45	46			#	0.52	
Potassium	mg/L	09/30/2014	N002	35.5	-	45	48			#	0.52	
Selenium	mg/L	09/30/2014	N001	35.5	-	45	2.8			#	0.0016	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1078 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	09/30/2014	N002	35.5 - 45	3.2			#	0.0016	
Sodium	mg/L	09/30/2014	N001	35.5 - 45	5200			#	2.3	
Sodium	mg/L	09/30/2014	N002	35.5 - 45	5300			#	2.3	
Specific Conductance	umhos /cm	09/30/2014	N001	35.5 - 45	23733			#		
Strontium	mg/L	09/30/2014	N001	35.5 - 45	9.8			#	0.0026	
Strontium	mg/L	09/30/2014	N002	35.5 - 45	10			#	0.0026	
Sulfate	mg/L	09/30/2014	N001	35.5 - 45	14000			#	250	
Sulfate	mg/L	09/30/2014	N002	35.5 - 45	14000			#	250	
Temperature	C	09/30/2014	N001	35.5 - 45	17.22			#		
Turbidity	NTU	09/30/2014	N001	35.5 - 45	1.25			#		
Uranium	mg/L	09/30/2014	N001	35.5 - 45	0.13			#	0.00015	
Uranium	mg/L	09/30/2014	N002	35.5 - 45	0.15			#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1079 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	09/30/2014	N001	10.5	-	20	412		F	#		
Ammonia Total as N	mg/L	09/30/2014	N001	10.5	-	20	0.1	U	F	#	0.1	
Calcium	mg/L	09/30/2014	N001	10.5	-	20	630		F	#	0.12	
Chloride	mg/L	09/30/2014	N001	10.5	-	20	440		F	#	20	
Magnesium	mg/L	09/30/2014	N001	10.5	-	20	470		F	#	0.15	
Manganese	mg/L	09/30/2014	N001	10.5	-	20	0.0093	B	UF	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	10.5	-	20	320		F	#	2.5	
Oxidation Reduction Potential	mV	09/30/2014	N001	10.5	-	20	47.3		F	#		
pH	s.u.	09/30/2014	N001	10.5	-	20	6.91		F	#		
Potassium	mg/L	09/30/2014	N001	10.5	-	20	16		F	#	0.26	
Selenium	mg/L	09/30/2014	N001	10.5	-	20	0.53		F	#	0.00032	
Sodium	mg/L	09/30/2014	N001	10.5	-	20	1500		F	#	0.23	
Specific Conductance	umhos /cm	09/30/2014	N001	10.5	-	20	9479		F	#		
Strontium	mg/L	09/30/2014	N001	10.5	-	20	11		F	#	0.0013	
Sulfate	mg/L	09/30/2014	N001	10.5	-	20	4700		F	#	50	
Temperature	C	09/30/2014	N001	10.5	-	20	16.76		F	#		
Turbidity	NTU	09/30/2014	N001	10.5	-	20	4.72		F	#		
Uranium	mg/L	09/30/2014	N001	10.5	-	20	0.064		F	#	0.000029	

General Water Quality Data by Location (USEE105) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1087 TREATMENT SYSTEM Sump from interceptor trenches in Bob Lee Wash

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	09/30/2014	N001	0	-	0	606			#		
Ammonia Total as N	mg/L	09/30/2014	N001	0	-	0	180			#	10	
Calcium	mg/L	09/30/2014	N001	0	-	0	470			#	0.24	
Chloride	mg/L	09/30/2014	N001	0	-	0	300			#	40	
Magnesium	mg/L	09/30/2014	N001	0	-	0	1200			#	0.3	
Manganese	mg/L	09/30/2014	N001	0	-	0	1.3			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	0	-	0	310			#	2.5	
Oxidation Reduction Potential	mV	09/30/2014	N001	0	-	0	92.9			#		
pH	s.u.	09/30/2014	N001	0	-	0	6.77			#		
Potassium	mg/L	09/30/2014	N001	0	-	0	120			#	0.52	
Selenium	mg/L	09/30/2014	N001	0	-	0	0.092			#	0.0016	
Sodium	mg/L	09/30/2014	N001	0	-	0	1400			#	0.47	
Specific Conductance	umhos /cm	09/30/2014	N001	0	-	0	13535			#		
Strontium	mg/L	09/30/2014	N001	0	-	0	9.7			#	0.0026	
Sulfate	mg/L	09/30/2014	N001	0	-	0	7900			#	100	
Temperature	C	09/30/2014	N001	0	-	0	22.23			#		
Turbidity	NTU	09/30/2014	N001	0	-	0	1.47			#		
Uranium	mg/L	09/30/2014	N001	0	-	0	0.59			#	0.00015	

General Water Quality Data by Location (USEE105) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1088 TREATMENT SYSTEM Sump from interceptor trenches in Many Devils Wash

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	09/30/2014	N001	0	-	0	680			#		
Ammonia Total as N	mg/L	09/30/2014	N001	0	-	0	0.12			#	0.1	
Calcium	mg/L	09/30/2014	N001	0	-	0	400			#	0.24	
Chloride	mg/L	09/30/2014	N001	0	-	0	1400			#	100	
Magnesium	mg/L	09/30/2014	N001	0	-	0	1000			#	0.3	
Manganese	mg/L	09/30/2014	N001	0	-	0	0.17			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	0	-	0	570			#	5	
Oxidation Reduction Potential	mV	09/30/2014	N001	0	-	0	142.7			#		
pH	s.u.	09/30/2014	N001	0	-	0	7.52			#		
Potassium	mg/L	09/30/2014	N001	0	-	0	42			#	0.52	
Selenium	mg/L	09/30/2014	N001	0	-	0	1.6			#	0.0016	
Sodium	mg/L	09/30/2014	N001	0	-	0	6900			#	2.3	
Specific Conductance	umhos /cm	09/30/2014	N001	0	-	0	303012			#		
Strontium	mg/L	09/30/2014	N001	0	-	0	9.5			#	0.0026	
Sulfate	mg/L	09/30/2014	N001	0	-	0	19000			#	250	
Temperature	C	09/30/2014	N001	0	-	0	19.77			#		
Turbidity	NTU	09/30/2014	N001	0	-	0	7.33			#		
Uranium	mg/L	09/30/2014	N001	0	-	0	0.15			#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1091 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	09/30/2014	N001	33	-	43	904			#		
Ammonia Total as N	mg/L	09/30/2014	N001	33	-	43	0.1	U		#	0.1	
Calcium	mg/L	09/30/2014	N001	33	-	43	450			#	0.24	
Chloride	mg/L	09/30/2014	N001	33	-	43	1200			#	100	
Magnesium	mg/L	09/30/2014	N001	33	-	43	2100			#	0.3	
Manganese	mg/L	09/30/2014	N001	33	-	43	1.3			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	33	-	43	780			#	10	
Oxidation Reduction Potential	mV	09/30/2014	N001	33	-	43	242.3			#		
pH	s.u.	09/30/2014	N001	33	-	43	6.82			#		
Potassium	mg/L	09/30/2014	N001	33	-	43	57			#	0.52	
Selenium	mg/L	09/30/2014	N001	33	-	43	0.72			#	0.0016	
Sodium	mg/L	09/30/2014	N001	33	-	43	4100			#	0.47	
Specific Conductance	umhos /cm	09/30/2014	N001	33	-	43	24383			#		
Strontium	mg/L	09/30/2014	N001	33	-	43	14			#	0.0026	
Sulfate	mg/L	09/30/2014	N001	33	-	43	14000			#	250	
Temperature	C	09/30/2014	N001	33	-	43	16.3			#		
Turbidity	NTU	09/30/2014	N001	33	-	43	2.18			#		
Uranium	mg/L	09/30/2014	N001	33	-	43	0.13			#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1092 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	09/30/2014	N001	33	-	43	842			#		
Ammonia Total as N	mg/L	09/30/2014	0001	33	-	43	13			#	2.5	
Calcium	mg/L	09/30/2014	0001	33	-	43	440			#	0.24	
Chloride	mg/L	09/30/2014	0001	33	-	43	1300			#	100	
Magnesium	mg/L	09/30/2014	0001	33	-	43	1800			#	0.3	
Manganese	mg/L	09/30/2014	0001	33	-	43	1.7			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	0001	33	-	43	590			#	5	
Oxidation Reduction Potential	mV	09/30/2014	N001	33	-	43	204.2			#		
pH	s.u.	09/30/2014	N001	33	-	43	7.02			#		
Potassium	mg/L	09/30/2014	0001	33	-	43	61			#	0.52	
Selenium	mg/L	09/30/2014	0001	33	-	43	1.3			#	0.0016	
Sodium	mg/L	09/30/2014	0001	33	-	43	4700			#	0.47	
Specific Conductance	umhos /cm	09/30/2014	N001	33	-	43	24721			#		
Strontium	mg/L	09/30/2014	0001	33	-	43	13			#	0.0026	
Sulfate	mg/L	09/30/2014	0001	33	-	43	15000			#	250	
Temperature	C	09/30/2014	N001	33	-	43	18.57			#		
Turbidity	NTU	09/30/2014	N001	33	-	43	38.9			#		
Uranium	mg/L	09/30/2014	0001	33	-	43	0.13			#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1093R WELL a replacement extraction well for 1093

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	09/30/2014	N001	34	-	38	444			#		
Ammonia Total as N	mg/L	09/30/2014	N001	34	-	38	270			#	2	
Calcium	mg/L	09/30/2014	N001	34	-	38	960			#	0.24	
Chloride	mg/L	09/30/2014	N001	34	-	38	460			#	50	
Magnesium	mg/L	09/30/2014	N001	34	-	38	1200			#	0.3	
Manganese	mg/L	09/30/2014	N001	34	-	38	17			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	34	-	38	2000			#	20	
Oxidation Reduction Potential	mV	09/30/2014	N001	34	-	38	21			#		
pH	s.u.	09/30/2014	N001	34	-	38	6.55			#		
Potassium	mg/L	09/30/2014	N001	34	-	38	120			#	0.52	
Selenium	mg/L	09/30/2014	N001	34	-	38	0.35			#	0.00032	
Sodium	mg/L	09/30/2014	N001	34	-	38	1500			#	0.47	
Specific Conductance	umhos /cm	09/30/2014	N001	34	-	38	18144			#		
Strontium	mg/L	09/30/2014	N001	34	-	38	9.3			#	0.0026	
Sulfate	mg/L	09/30/2014	N001	34	-	38	5300			#	120	
Temperature	C	09/30/2014	N001	34	-	38	18.77			#		
Turbidity	NTU	09/30/2014	N001	34	-	38	1.91			#		
Uranium	mg/L	09/30/2014	N001	34	-	38	0.1			#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1095 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	09/30/2014	N001	39 - 49	340			#		
Ammonia Total as N	mg/L	09/30/2014	N001	39 - 49	490			#	10	
Calcium	mg/L	09/30/2014	N001	39 - 49	800			#	0.24	
Chloride	mg/L	09/30/2014	N001	39 - 49	280			#	50	
Magnesium	mg/L	09/30/2014	N001	39 - 49	1300			#	0.3	
Manganese	mg/L	09/30/2014	N001	39 - 49	27			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	39 - 49	1800			#	20	
Oxidation Reduction Potential	mV	09/30/2014	N001	39 - 49	211.3			#		
pH	s.u.	09/30/2014	N001	39 - 49	6.73			#		
Potassium	mg/L	09/30/2014	N001	39 - 49	140			#	0.52	
Selenium	mg/L	09/30/2014	N001	39 - 49	0.13			#	0.00032	
Sodium	mg/L	09/30/2014	N001	39 - 49	1200			#	0.47	
Specific Conductance	umhos /cm	09/30/2014	N001	39 - 49	18242			#		
Strontium	mg/L	09/30/2014	N001	39 - 49	9.1			#	0.0026	
Sulfate	mg/L	09/30/2014	N001	39 - 49	4900			#	120	
Temperature	C	09/30/2014	N001	39 - 49	16.18			#		
Turbidity	NTU	09/30/2014	N001	39 - 49	4.96			#		
Uranium	mg/L	09/30/2014	N001	39 - 49	0.059			#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1096 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	09/30/2014	N001	57.5 - 66.5	654			#		
Ammonia Total as N	mg/L	09/30/2014	N001	57.5 - 66.5	0.46			#	0.1	
Ammonia Total as N	mg/L	09/30/2014	N002	57.5 - 66.5	0.48			#	0.1	
Calcium	mg/L	09/30/2014	N001	57.5 - 66.5	420			#	0.24	
Calcium	mg/L	09/30/2014	N002	57.5 - 66.5	420			#	0.24	
Chloride	mg/L	09/30/2014	N001	57.5 - 66.5	980			#	100	
Chloride	mg/L	09/30/2014	N002	57.5 - 66.5	900			#	100	
Magnesium	mg/L	09/30/2014	N001	57.5 - 66.5	910			#	0.3	
Magnesium	mg/L	09/30/2014	N002	57.5 - 66.5	940			#	0.3	
Manganese	mg/L	09/30/2014	N001	57.5 - 66.5	0.41		J	#	0.0024	
Manganese	mg/L	09/30/2014	N002	57.5 - 66.5	0.14		J	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	57.5 - 66.5	540			#	5	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N002	57.5 - 66.5	490			#	5	
Oxidation Reduction Potential	mV	09/30/2014	N001	57.5 - 66.5	199.4			#		
pH	s.u.	09/30/2014	N001	57.5 - 66.5	7.05			#		
Potassium	mg/L	09/30/2014	N001	57.5 - 66.5	52			#	0.52	
Potassium	mg/L	09/30/2014	N002	57.5 - 66.5	50			#	0.52	
Selenium	mg/L	09/30/2014	N001	57.5 - 66.5	2.7			#	0.0016	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1096 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	09/30/2014	N002	57.5 - 66.5	2.4			#	0.00032	
Sodium	mg/L	09/30/2014	N001	57.5 - 66.5	5700			#	2.3	
Sodium	mg/L	09/30/2014	N002	57.5 - 66.5	5700			#	2.3	
Specific Conductance	umhos /cm	09/30/2014	N001	57.5 - 66.5	24631			#		
Strontium	mg/L	09/30/2014	N001	57.5 - 66.5	9.4			#	0.0026	
Strontium	mg/L	09/30/2014	N002	57.5 - 66.5	9.4			#	0.0026	
Sulfate	mg/L	09/30/2014	N001	57.5 - 66.5	15000			#	250	
Sulfate	mg/L	09/30/2014	N002	57.5 - 66.5	14000			#	250	
Temperature	C	09/30/2014	N001	57.5 - 66.5	18.44			#		
Turbidity	NTU	09/30/2014	N001	57.5 - 66.5	2.53			#		
Uranium	mg/L	09/30/2014	N001	57.5 - 66.5	0.1			#	0.00015	
Uranium	mg/L	09/30/2014	N002	57.5 - 66.5	0.09			#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: MW1 WELL Just N of Disposal Cell

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	10/01/2014	N001	-	1520		FQ	#		
Ammonia Total as N	mg/L	10/01/2014	N001	-	1.8		FQ	#	0.1	
Calcium	mg/L	10/01/2014	N001	-	85		FQ	#	0.24	
Chloride	mg/L	10/01/2014	N001	-	5300		FQ	#	100	
Magnesium	mg/L	10/01/2014	N001	-	39		FQ	#	0.3	
Manganese	mg/L	10/01/2014	N001	-	0.31		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	-	0.14		FQ	#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	-	10.2		FQ	#		
pH	s.u.	10/01/2014	N001	-	6.96		FQ	#		
Potassium	mg/L	10/01/2014	N001	-	17		FQ	#	0.52	
Selenium	mg/L	10/01/2014	N001	-	0.00074		FQ	#	0.00016	
Sodium	mg/L	10/01/2014	N001	-	4500		FQ	#	0.47	
Specific Conductance	umhos /cm	10/01/2014	N001	-	19513		FQ	#		
Strontium	mg/L	10/01/2014	N001	-	9.7		FQ	#	0.0026	
Sulfate	mg/L	10/01/2014	N001	-	2400		FQ	#	120	
Temperature	C	10/01/2014	N001	-	18.71		FQ	#		
Turbidity	NTU	10/01/2014	N001	-	8.51		FQ	#		
Uranium	mg/L	10/01/2014	N001	-	0.0034		FQ	#	0.000015	

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
Floodplain Locations

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Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0501 SURFACE LOCATION S. bank San Juan River just E of Disposal Cell

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	10/01/2014	0001	98			#		
Ammonia Total as N	mg/L	10/01/2014	0001	0.1	U		#	0.1	
Ammonia Total as N	mg/L	10/01/2014	N002	0.11			#	0.1	
Calcium	mg/L	10/01/2014	0001	29			#	0.024	
Calcium	mg/L	10/01/2014	N002	180			#	0.024	
Chloride	mg/L	10/01/2014	0001	7.5			#	0.2	
Chloride	mg/L	10/01/2014	N002	7.4			#	0.2	
Magnesium	mg/L	10/01/2014	0001	3.1			#	0.03	
Magnesium	mg/L	10/01/2014	N002	30			#	0.03	
Manganese	mg/L	10/01/2014	0001	0.035			#	0.00024	
Manganese	mg/L	10/01/2014	N002	4			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	0001	1	N	J	#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N002	0.96			#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	132.1			#		
pH	s.u.	10/01/2014	N001	8.21			#		
Potassium	mg/L	10/01/2014	0001	4.3			#	0.052	
Potassium	mg/L	10/01/2014	N002	13			#	0.052	
Selenium	mg/L	10/01/2014	0001	0.0011			#	0.00016	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0501 SURFACE LOCATION S. bank San Juan River just E of Disposal Cell

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	10/01/2014	N002	0.0048			#	0.00016	
Sodium	mg/L	10/01/2014	0001	67			#	0.047	
Sodium	mg/L	10/01/2014	N002	75			#	0.047	
Specific Conductance	umhos/cm	10/01/2014	N001	513			#		
Strontium	mg/L	10/01/2014	0001	0.43			#	0.00026	
Strontium	mg/L	10/01/2014	N002	2.6			#	0.00026	
Sulfate	mg/L	10/01/2014	0001	110			#	5	
Sulfate	mg/L	10/01/2014	N002	110			#	5	
Temperature	C	10/01/2014	N001	17.21			#		
Turbidity	NTU	10/01/2014	N001	1000	>		#		
Uranium	mg/L	10/01/2014	0001	0.0022			#	0.000015	
Uranium	mg/L	10/01/2014	N002	0.012			#	0.000015	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0655 SURFACE LOCATION Ditch in NW end of floodplain

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	09/30/2014	N001	94			#		
Ammonia Total as N	mg/L	09/30/2014	N001	0.25			#	0.1	
Ammonia Total as N	mg/L	09/30/2014	N002	0.26			#	0.1	
Calcium	mg/L	09/30/2014	N001	170			#	0.024	
Calcium	mg/L	09/30/2014	N002	170			#	0.024	
Chloride	mg/L	09/30/2014	N001	34			#	4	
Chloride	mg/L	09/30/2014	N002	32			#	4	
Magnesium	mg/L	09/30/2014	N001	23			#	0.03	
Magnesium	mg/L	09/30/2014	N002	24			#	0.03	
Manganese	mg/L	09/30/2014	N001	0.31			#	0.00024	
Manganese	mg/L	09/30/2014	N002	0.32			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	0.89			#	0.05	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N002	0.8			#	0.05	
Oxidation Reduction Potential	mV	09/30/2014	N001	36.4			#		
pH	s.u.	09/30/2014	N001	7.65			#		
Potassium	mg/L	09/30/2014	N001	21			#	0.052	
Potassium	mg/L	09/30/2014	N002	21			#	0.052	
Selenium	mg/L	09/30/2014	N001	0.043			#	0.00016	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0655 SURFACE LOCATION Ditch in NW end of floodplain

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	09/30/2014	N002	0.051			#	0.00032	
Sodium	mg/L	09/30/2014	N001	280			#	0.047	
Sodium	mg/L	09/30/2014	N002	270			#	0.047	
Specific Conductance	umhos/cm	09/30/2014	N001	2138			#		
Strontium	mg/L	09/30/2014	N001	4.6			#	0.00026	
Strontium	mg/L	09/30/2014	N002	4.5			#	0.00026	
Sulfate	mg/L	09/30/2014	N001	980			#	10	
Sulfate	mg/L	09/30/2014	N002	980			#	10	
Temperature	C	09/30/2014	N001	13.97			#		
Turbidity	NTU	09/30/2014	N001	5.96			#		
Uranium	mg/L	09/30/2014	N001	0.0099			#	0.000015	
Uranium	mg/L	09/30/2014	N002	0.01			#	0.000029	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0897 SURFACE LOCATION S. bank San Juan River, just below Many Devils Wash confluence

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	10/01/2014	0001	84			#		
Ammonia Total as N	mg/L	10/01/2014	0001	0.15			#	0.1	
Ammonia Total as N	mg/L	10/01/2014	N002	0.1	U		#	0.1	
Calcium	mg/L	10/01/2014	0001	28			#	0.024	
Calcium	mg/L	10/01/2014	N002	180			#	0.024	
Chloride	mg/L	10/01/2014	0001	7.2			#	1	
Chloride	mg/L	10/01/2014	N002	7.4			#	1	
Magnesium	mg/L	10/01/2014	0001	2.7			#	0.03	
Magnesium	mg/L	10/01/2014	N002	27			#	0.03	
Manganese	mg/L	10/01/2014	0001	0.03			#	0.00024	
Manganese	mg/L	10/01/2014	N002	4			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	0001	1.1			#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N002	1.1			#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	201.1			#		
pH	s.u.	10/01/2014	N001	8.11			#		
Potassium	mg/L	10/01/2014	0001	4			#	0.052	
Potassium	mg/L	10/01/2014	N002	12			#	0.052	
Selenium	mg/L	10/01/2014	0001	0.0012			#	0.00016	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0897 SURFACE LOCATION S. bank San Juan River, just below Many Devils Wash confluence

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	10/01/2014	N002	0.0048			#	0.00016	
Sodium	mg/L	10/01/2014	0001	66			#	0.047	
Sodium	mg/L	10/01/2014	N002	77			#	0.047	
Specific Conductance	umhos/cm	10/01/2014	N001	639			#		
Strontium	mg/L	10/01/2014	0001	0.42			#	0.00026	
Strontium	mg/L	10/01/2014	N002	2.7			#	0.00026	
Sulfate	mg/L	10/01/2014	0001	120			#	2.5	
Sulfate	mg/L	10/01/2014	N002	120			#	2.5	
Temperature	C	10/01/2014	N001	16.13			#		
Turbidity	NTU	10/01/2014	N001	1000	>		#		
Uranium	mg/L	10/01/2014	0001	0.0024			#	0.000015	
Uranium	mg/L	10/01/2014	N002	0.011			#	0.000015	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0899 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	10/01/2014	N001	98			#		
Ammonia Total as N	mg/L	10/01/2014	0001	0.13			#	0.1	
Ammonia Total as N	mg/L	10/01/2014	N002	0.1	U		#	0.1	
Calcium	mg/L	10/01/2014	0001	29			#	0.024	
Calcium	mg/L	10/01/2014	N002	180			#	0.024	
Chloride	mg/L	10/01/2014	0001	7.2			#	1	
Chloride	mg/L	10/01/2014	N002	7			#	1	
Magnesium	mg/L	10/01/2014	0001	2.4			#	0.03	
Magnesium	mg/L	10/01/2014	N002	26			#	0.03	
Manganese	mg/L	10/01/2014	0001	0.0066			#	0.00024	
Manganese	mg/L	10/01/2014	N002	4.1			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	0001	0.94			#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N002	0.94			#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	188.7			#		
pH	s.u.	10/01/2014	N001	8.21			#		
Potassium	mg/L	10/01/2014	0001	3.5			#	0.052	
Potassium	mg/L	10/01/2014	N002	10			#	0.052	
Selenium	mg/L	10/01/2014	0001	0.00096			#	0.00016	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0899 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	10/01/2014	N002	0.0033			#	0.00016	
Sodium	mg/L	10/01/2014	0001	64			#	0.047	
Sodium	mg/L	10/01/2014	N002	68			#	0.047	
Specific Conductance	umhos/cm	10/01/2014	N001	465			#		
Strontium	mg/L	10/01/2014	0001	0.45			#	0.00026	
Strontium	mg/L	10/01/2014	N002	2.5			#	0.00026	
Sulfate	mg/L	10/01/2014	0001	110			#	2.5	
Sulfate	mg/L	10/01/2014	N002	110			#	2.5	
Temperature	C	10/01/2014	N001	16.31			#		
Turbidity	NTU	10/01/2014	N001	1000	>		#		
Uranium	mg/L	10/01/2014	0001	0.0021			#	0.000015	
Uranium	mg/L	10/01/2014	N002	0.0096			#	0.000015	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0940 SURFACE LOCATION S. bank San Juan River about 2500 ft E of US Hwy 491 bridge

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	10/01/2014	0001	90			#		
Ammonia Total as N	mg/L	10/01/2014	0001	0.1	U		#	0.1	
Ammonia Total as N	mg/L	10/01/2014	N002	0.1	U		#	0.1	
Calcium	mg/L	10/01/2014	0001	29			#	0.024	
Calcium	mg/L	10/01/2014	N002	190			#	0.024	
Chloride	mg/L	10/01/2014	0001	7.2			#	1	
Chloride	mg/L	10/01/2014	N002	7			#	1	
Magnesium	mg/L	10/01/2014	0001	2.7			#	0.03	
Magnesium	mg/L	10/01/2014	N002	32			#	0.03	
Manganese	mg/L	10/01/2014	0001	0.015			#	0.00024	
Manganese	mg/L	10/01/2014	N002	4.5			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	0001	1.1			#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N002	1.1			#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	173			#		
pH	s.u.	10/01/2014	N001	7.86			#		
Potassium	mg/L	10/01/2014	0001	3.5			#	0.052	
Potassium	mg/L	10/01/2014	N002	13			#	0.052	
Selenium	mg/L	10/01/2014	0001	0.00066			#	0.00016	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0940 SURFACE LOCATION S. bank San Juan River about 2500 ft E of US Hwy 491 bridge

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	10/01/2014	N002	0.0053			#	0.00016	
Sodium	mg/L	10/01/2014	0001	68			#	0.047	
Sodium	mg/L	10/01/2014	N002	77			#	0.047	
Specific Conductance	umhos/cm	10/01/2014	N001	523			#		
Strontium	mg/L	10/01/2014	0001	0.42			#	0.00026	
Strontium	mg/L	10/01/2014	N002	2.7			#	0.00026	
Sulfate	mg/L	10/01/2014	0001	130			#	2.5	
Sulfate	mg/L	10/01/2014	N002	130			#	2.5	
Temperature	C	10/01/2014	N001	13.6			#		
Turbidity	NTU	10/01/2014	N001	1000	>		#		
Uranium	mg/L	10/01/2014	0001	0.0021			#	0.000015	
Uranium	mg/L	10/01/2014	N002	0.013			#	0.000015	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0956 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	10/01/2014	N001	100			#		
Ammonia Total as N	mg/L	10/01/2014	0001	0.1	U		#	0.1	
Ammonia Total as N	mg/L	10/01/2014	N002	0.12			#	0.1	
Calcium	mg/L	10/01/2014	0001	31			#	0.024	
Calcium	mg/L	10/01/2014	N002	190			#	0.024	
Chloride	mg/L	10/01/2014	0001	7			#	1	
Chloride	mg/L	10/01/2014	N002	6.7			#	1	
Magnesium	mg/L	10/01/2014	0001	2.7			#	0.03	
Magnesium	mg/L	10/01/2014	N002	29			#	0.03	
Manganese	mg/L	10/01/2014	0001	0.0035	B	U	#	0.00024	
Manganese	mg/L	10/01/2014	N002	4.6			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	0001	0.94			#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N002	0.93			#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	91.1			#		
pH	s.u.	10/01/2014	N001	8.24			#		
Potassium	mg/L	10/01/2014	0001	3.4			#	0.052	
Potassium	mg/L	10/01/2014	N002	11			#	0.052	
Selenium	mg/L	10/01/2014	0001	0.0011			#	0.00016	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0956 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	10/01/2014	N002	0.0056			#	0.00016	
Sodium	mg/L	10/01/2014	0001	59			#	0.047	
Sodium	mg/L	10/01/2014	N002	68			#	0.047	
Specific Conductance	umhos/cm	10/01/2014	N001	551			#		
Strontium	mg/L	10/01/2014	0001	0.44			#	0.00026	
Strontium	mg/L	10/01/2014	N002	2.5			#	0.00026	
Sulfate	mg/L	10/01/2014	0001	110			#	2.5	
Sulfate	mg/L	10/01/2014	N002	110			#	2.5	
Temperature	C	10/01/2014	N001	16.22			#		
Turbidity	NTU	10/01/2014	N001	1000	>		#		
Uranium	mg/L	10/01/2014	0001	0.0019	E	J	#	0.000015	
Uranium	mg/L	10/01/2014	N002	0.012			#	0.000015	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0965 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	09/30/2014	0001	112			#		
Ammonia Total as N	mg/L	09/30/2014	0001	0.1	U		#	0.1	
Ammonia Total as N	mg/L	09/30/2014	N002	0.1	U		#	0.1	
Calcium	mg/L	09/30/2014	0001	37			#	0.024	
Calcium	mg/L	09/30/2014	N002	160			#	0.024	
Chloride	mg/L	09/30/2014	0001	6.5			#	1	
Chloride	mg/L	09/30/2014	N002	6.6			#	1	
Magnesium	mg/L	09/30/2014	0001	3.3			#	0.03	
Magnesium	mg/L	09/30/2014	N002	22			#	0.03	
Manganese	mg/L	09/30/2014	0001	0.0061			#	0.00024	
Manganese	mg/L	09/30/2014	N002	3.6			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	0001	0.86			#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N002	0.84			#	0.01	
Oxidation Reduction Potential	mV	09/30/2014	N001	170.2			#		
pH	s.u.	09/30/2014	N001	7.39			#		
Potassium	mg/L	09/30/2014	0001	3.5			#	0.052	
Potassium	mg/L	09/30/2014	N002	9.6			#	0.052	
Selenium	mg/L	09/30/2014	0001	0.0011			#	0.00016	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0965 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	09/30/2014	N002	0.0031			#	0.00016	
Sodium	mg/L	09/30/2014	0001	65			#	0.047	
Sodium	mg/L	09/30/2014	N002	70			#	0.047	
Specific Conductance	umhos/cm	09/30/2014	N001	602			#		
Strontium	mg/L	09/30/2014	0001	0.53			#	0.00026	
Strontium	mg/L	09/30/2014	N002	2.1			#	0.00026	
Sulfate	mg/L	09/30/2014	0001	140			#	2.5	
Sulfate	mg/L	09/30/2014	N002	140			#	2.5	
Temperature	C	09/30/2014	N001	16.01			#		
Turbidity	NTU	09/30/2014	N001	1000	>		#		
Uranium	mg/L	09/30/2014	0001	0.002			#	0.000015	
Uranium	mg/L	09/30/2014	N002	0.0081			#	0.000015	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0967 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	10/01/2014	N001	98			#		
Ammonia Total as N	mg/L	10/01/2014	0001	0.1	U		#	0.1	
Ammonia Total as N	mg/L	10/01/2014	N002	0.1			#	0.1	
Calcium	mg/L	10/01/2014	0001	34			#	0.024	
Calcium	mg/L	10/01/2014	N002	210			#	0.024	
Chloride	mg/L	10/01/2014	0001	7.3			#	1	
Chloride	mg/L	10/01/2014	N002	7.1			#	1	
Magnesium	mg/L	10/01/2014	0001	4.9			#	0.03	
Magnesium	mg/L	10/01/2014	N002	29			#	0.03	
Manganese	mg/L	10/01/2014	0001	0.22			#	0.00024	
Manganese	mg/L	10/01/2014	N002	4.7			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	0001	1.2			#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N002	1.2			#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	185.8			#		
pH	s.u.	10/01/2014	N001	7.97			#		
Potassium	mg/L	10/01/2014	0001	5.5			#	0.052	
Potassium	mg/L	10/01/2014	N002	12			#	0.052	
Selenium	mg/L	10/01/2014	0001	0.0017			#	0.00016	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 0967 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	10/01/2014	N002	0.0039			#	0.00016	
Sodium	mg/L	10/01/2014	0001	77			#	0.047	
Sodium	mg/L	10/01/2014	N002	87			#	0.047	
Specific Conductance	umhos/cm	10/01/2014	N001	609			#		
Strontium	mg/L	10/01/2014	0001	0.5			#	0.00026	
Strontium	mg/L	10/01/2014	N002	2.9			#	0.00026	
Sulfate	mg/L	10/01/2014	0001	140			#	2.5	
Sulfate	mg/L	10/01/2014	N002	140			#	2.5	
Temperature	C	10/01/2014	N001	17.22			#		
Turbidity	NTU	10/01/2014	N001	1000	>		#		
Uranium	mg/L	10/01/2014	0001	0.0032			#	0.000015	
Uranium	mg/L	10/01/2014	N002	0.012			#	0.000015	

General Water Quality Data by Location (USEE105) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1118 TREATMENT SYSTEM Sump - seep vault

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	09/30/2014	N001	0 - 0	660			#		
Ammonia Total as N	mg/L	09/30/2014	N001	0 - 0	0.1	U		#	0.1	
Calcium	mg/L	09/30/2014	N001	0 - 0	430			#	0.12	
Chloride	mg/L	09/30/2014	N001	0 - 0	320			#	20	
Magnesium	mg/L	09/30/2014	N001	0 - 0	820			#	0.15	
Manganese	mg/L	09/30/2014	N001	0 - 0	0.0093	B	U	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	0 - 0	44			#	0.5	
Oxidation Reduction Potential	mV	09/30/2014	N001	0 - 0	114.9			#		
pH	s.u.	09/30/2014	N001	0 - 0	7.58			#		
Potassium	mg/L	09/30/2014	N001	0 - 0	37			#	0.26	
Selenium	mg/L	09/30/2014	N001	0 - 0	0.22			#	0.0016	
Sodium	mg/L	09/30/2014	N001	0 - 0	1800			#	0.23	
Specific Conductance	umhos /cm	09/30/2014	N001	0 - 0	11806			#		
Strontium	mg/L	09/30/2014	N001	0 - 0	10			#	0.0013	
Sulfate	mg/L	09/30/2014	N001	0 - 0	7400			#	50	
Temperature	C	09/30/2014	N001	0 - 0	18			#		
Turbidity	NTU	09/30/2014	N001	0 - 0	12.3			#		
Uranium	mg/L	09/30/2014	N001	0 - 0	0.55			#	0.00015	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1203 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	10/01/2014	0001	96			#		
Ammonia Total as N	mg/L	10/01/2014	0001	0.1	U		#	0.1	
Ammonia Total as N	mg/L	10/01/2014	N002	0.11			#	0.1	
Calcium	mg/L	10/01/2014	0001	29			#	0.024	
Calcium	mg/L	10/01/2014	N002	200			#	0.024	
Chloride	mg/L	10/01/2014	0001	6.9			#	1	
Chloride	mg/L	10/01/2014	N002	6.9			#	1	
Magnesium	mg/L	10/01/2014	0001	2.4			#	0.03	
Magnesium	mg/L	10/01/2014	N002	32			#	0.03	
Manganese	mg/L	10/01/2014	0001	0.0052		U	#	0.00024	
Manganese	mg/L	10/01/2014	N002	4.8			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	0001	1			#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N002	0.93			#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	166.4			#		
pH	s.u.	10/01/2014	N001	8.23			#		
Potassium	mg/L	10/01/2014	0001	3.5			#	0.052	
Potassium	mg/L	10/01/2014	N002	13			#	0.052	
Selenium	mg/L	10/01/2014	0001	0.001			#	0.00016	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1203 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	10/01/2014	N002	0.0053			#	0.00016	
Sodium	mg/L	10/01/2014	0001	67			#	0.047	
Sodium	mg/L	10/01/2014	N002	77			#	0.047	
Specific Conductance	umhos/cm	10/01/2014	N001	512			#		
Strontium	mg/L	10/01/2014	0001	0.42			#	0.00026	
Strontium	mg/L	10/01/2014	N002	2.8			#	0.00026	
Sulfate	mg/L	10/01/2014	0001	120			#	2.5	
Sulfate	mg/L	10/01/2014	N002	120			#	2.5	
Temperature	C	10/01/2014	N001	17.45			#		
Turbidity	NTU	10/01/2014	N001	1000	>		#		
Uranium	mg/L	10/01/2014	0001	0.0023			#	0.000015	
Uranium	mg/L	10/01/2014	N002	0.013			#	0.000015	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1205 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	10/01/2014	0001	101			#		
Ammonia Total as N	mg/L	10/01/2014	0001	0.1	U		#	0.1	
Ammonia Total as N	mg/L	10/01/2014	N002	0.12			#	0.1	
Calcium	mg/L	10/01/2014	0001	30			#	0.024	
Calcium	mg/L	10/01/2014	N002	380			#	0.024	
Chloride	mg/L	10/01/2014	0001	6.9			#	1	
Chloride	mg/L	10/01/2014	N002	7.1			#	1	
Magnesium	mg/L	10/01/2014	0001	2.6			#	0.03	
Magnesium	mg/L	10/01/2014	N002	43			#	0.03	
Manganese	mg/L	10/01/2014	0001	0.023			#	0.00024	
Manganese	mg/L	10/01/2014	N002	15			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	0001	0.93			#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N002	0.85			#	0.01	
Oxidation Reduction Potential	mV	10/01/2014	N001	165.7			#		
pH	s.u.	10/01/2014	N001	8.24			#		
Potassium	mg/L	10/01/2014	0001	3.6			#	0.052	
Potassium	mg/L	10/01/2014	N002	14			#	0.052	
Selenium	mg/L	10/01/2014	0001	0.0012			#	0.00016	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014
Location: 1205 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	10/01/2014	N002	0.0078			#	0.00016	
Sodium	mg/L	10/01/2014	0001	63			#	0.047	
Sodium	mg/L	10/01/2014	N002	77			#	0.047	
Specific Conductance	umhos/cm	10/01/2014	N001	487			#		
Strontium	mg/L	10/01/2014	0001	0.43			#	0.00026	
Strontium	mg/L	10/01/2014	N002	3.6			#	0.00026	
Sulfate	mg/L	10/01/2014	0001	110			#	2.5	
Sulfate	mg/L	10/01/2014	N002	110			#	2.5	
Temperature	C	10/01/2014	N001	16.43			#		
Turbidity	NTU	10/01/2014	N001	1000	>		#		
Uranium	mg/L	10/01/2014	0001	0.0023			#	0.000015	
Uranium	mg/L	10/01/2014	N002	0.016			#	0.000015	

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

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

N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z	Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:

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

QA QUALIFIER:

#	Validated according to quality assurance guidelines.

Surface Water Quality Data
Terrace Locations

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Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0662 SURFACE LOCATION Bob Lee Wash, just below outflow ditch confluence

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	10/02/2014	N001	78			#		
Ammonia Total as N	mg/L	10/02/2014	N001	0.1	U		#	0.1	
Calcium	mg/L	10/02/2014	N001	120			#	0.12	
Chloride	mg/L	10/02/2014	N001	56			#	10	
Magnesium	mg/L	10/02/2014	N001	14			#	0.15	
Manganese	mg/L	10/02/2014	N001	0.017	B	U	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	10/02/2014	N001	0.21			#	0.01	
Oxidation Reduction Potential	mV	10/02/2014	N001	150.9			#		
pH	s.u.	10/02/2014	N001	8.43			#		
Potassium	mg/L	10/02/2014	N001	8			#	0.26	
Selenium	mg/L	10/02/2014	N001	0.000059	B		#	0.000032	
Sodium	mg/L	10/02/2014	N001	800			#	0.23	
Specific Conductance	umhos/cm	10/02/2014	N001	4136			#		
Strontium	mg/L	10/02/2014	N001	12			#	0.0013	
Sulfate	mg/L	10/02/2014	N001	2000			#	25	
Temperature	C	10/02/2014	N001	18.01			#		
Turbidity	NTU	10/02/2014	N001	18.2			#		
Uranium	mg/L	10/02/2014	N001	0.00022			#	0.0000029	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 0889 SURFACE LOCATION Many Devils Wash, just below knickpoint

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	09/30/2014	N001	210			#		
Ammonia Total as N	mg/L	09/30/2014	N001	0.13			#	0.1	
Calcium	mg/L	09/30/2014	N001	160			#	0.12	
Chloride	mg/L	09/30/2014	N001	210			#	20	
Magnesium	mg/L	09/30/2014	N001	150			#	0.15	
Manganese	mg/L	09/30/2014	N001	0.018	B	U	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	91			#	1	
Oxidation Reduction Potential	mV	09/30/2014	N001	143.6			#		
pH	s.u.	09/30/2014	N001	7.96			#		
Potassium	mg/L	09/30/2014	N001	29			#	0.26	
Selenium	mg/L	09/30/2014	N001	0.22			#	0.0016	
Sodium	mg/L	09/30/2014	N001	1200			#	0.23	
Specific Conductance	umhos/cm	09/30/2014	N001	6662			#		
Strontium	mg/L	09/30/2014	N001	1.9			#	0.0013	
Sulfate	mg/L	09/30/2014	N001	2700			#	50	
Temperature	C	09/30/2014	N001	21			#		
Turbidity	NTU	09/30/2014	N001	20.2			#		
Uranium	mg/L	09/30/2014	N001	0.021			#	0.00015	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1215 SURFACE LOCATION Evaporation Pond

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	09/30/2014	N001	838			#		
Ammonia Total as N	mg/L	09/30/2014	N001	16			#	2.5	
Calcium	mg/L	09/30/2014	N001	530			#	1.2	
Chloride	mg/L	09/30/2014	N001	4900			#	400	
Magnesium	mg/L	09/30/2014	N001	11000			#	1.5	
Manganese	mg/L	09/30/2014	N001	0.1	B	U	#	0.012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	3400			#	20	
Oxidation Reduction Potential	mV	09/30/2014	N001	129.5			#		
pH	s.u.	09/30/2014	N001	8.23			#		
Potassium	mg/L	09/30/2014	N001	840			#	2.6	
Selenium	mg/L	09/30/2014	N001	7.2			#	0.0065	
Sodium	mg/L	09/30/2014	N001	26000			#	12	
Specific Conductance	umhos/cm	09/30/2014	N001	85734			#		
Strontium	mg/L	09/30/2014	N001	17			#	0.013	
Sulfate	mg/L	09/30/2014	N001	97000			#	1000	
Temperature	C	09/30/2014	N001	21.13			#		
Turbidity	NTU	09/30/2014	N001	5.24			#		
Uranium	mg/L	09/30/2014	N001	9.3			#	0.00058	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1219 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	09/30/2014	N001	408			#		
Ammonia Total as N	mg/L	09/30/2014	N001	0.1	U		#	0.1	
Calcium	mg/L	09/30/2014	N001	570			#	0.12	
Chloride	mg/L	09/30/2014	N001	28			#	10	
Magnesium	mg/L	09/30/2014	N001	150			#	0.15	
Manganese	mg/L	09/30/2014	N001	0.018	B	U	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	4.8			#	0.05	
Oxidation Reduction Potential	mV	09/30/2014	N001	203.5			#		
pH	s.u.	09/30/2014	N001	6.84			#		
Potassium	mg/L	09/30/2014	N001	11			#	0.26	
Selenium	mg/L	09/30/2014	N001	0.04			#	0.00032	
Sodium	mg/L	09/30/2014	N001	200			#	0.23	
Specific Conductance	umhos/cm	09/30/2014	N001	3594			#		
Strontium	mg/L	09/30/2014	N001	7.1			#	0.0013	
Sulfate	mg/L	09/30/2014	N001	2100			#	25	
Temperature	C	09/30/2014	N001	20.42			#		
Turbidity	NTU	09/30/2014	N001	8.68			#		
Uranium	mg/L	09/30/2014	N001	0.035			#	0.000029	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1220 SURFACE LOCATION Seep at the Eagles Nest Arroyo east of town

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	09/30/2014	N001	314			#		
Ammonia Total as N	mg/L	09/30/2014	N001	0.1	U		#	0.1	
Calcium	mg/L	09/30/2014	N001	430			#	0.12	
Chloride	mg/L	09/30/2014	N001	38			#	10	
Magnesium	mg/L	09/30/2014	N001	120			#	0.15	
Manganese	mg/L	09/30/2014	N001	0.26			#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	09/30/2014	N001	0.089			#	0.01	
Oxidation Reduction Potential	mV	09/30/2014	N001	170.8			#		
pH	s.u.	09/30/2014	N001	7.64			#		
Potassium	mg/L	09/30/2014	N001	4.9	B		#	0.26	
Selenium	mg/L	09/30/2014	N001	0.025			#	0.00032	
Sodium	mg/L	09/30/2014	N001	130			#	0.23	
Specific Conductance	umhos/cm	09/30/2014	N001	2749			#		
Strontium	mg/L	09/30/2014	N001	5.3			#	0.0013	
Sulfate	mg/L	09/30/2014	N001	1500			#	25	
Temperature	C	09/30/2014	N001	16.48			#		
Turbidity	NTU	09/30/2014	N001	5.43			#		
Uranium	mg/L	09/30/2014	N001	0.043			#	0.000029	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014
Location: 1221 SURFACE LOCATION Many Devils Wash, 10 feet up from the river.

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (as $CaCO_3$)	mg/L	10/01/2014	N001	536			#		
Ammonia Total as N	mg/L	10/01/2014	N001	0.1	U		#	0.1	
Calcium	mg/L	10/01/2014	N001	480			#	0.24	
Chloride	mg/L	10/01/2014	N001	1800			#	200	
Magnesium	mg/L	10/01/2014	N001	1500			#	0.3	
Manganese	mg/L	10/01/2014	N001	0.054			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	10/01/2014	N001	570			#	5	
Oxidation Reduction Potential	mV	10/01/2014	N001	251.4			#		
pH	s.u.	10/01/2014	N001	7.93			#		
Potassium	mg/L	10/01/2014	N001	60			#	0.52	
Selenium	mg/L	10/01/2014	N001	1.9			#	0.0016	
Sodium	mg/L	10/01/2014	N001	9500			#	4.7	
Specific Conductance	umhos/cm	10/01/2014	N001	35666			#		
Strontium	mg/L	10/01/2014	N001	10			#	0.0026	
Sulfate	mg/L	10/01/2014	N001	22000			#	500	
Temperature	C	10/01/2014	N001	18.67			#		
Turbidity	NTU	10/01/2014	N001	13.1			#		
Uranium	mg/L	10/01/2014	N001	0.2			#	0.00015	

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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Equipment Blank Data

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BLANKS REPORT

LAB: PARAGON/ALS LABORATORY GROUP (Fort Collins, CO)
RIN: 14096508
Report Date: 12/11/2014

Parameter	Site Code	Location ID	Sample Date	Sample ID	Units	Result	Qualifiers Lab	Qualifiers Data	Detection Limit	Uncertainty	Sample Type
Ammonia Total as N	SHP01	0999	10/01/2014	N001	mg/L	0.1	U		0.1		E
Calcium	SHP01	0999	10/01/2014	N001	mg/L	0.53	B		0.024		E
Chloride	SHP01	0999	10/01/2014	N001	mg/L	0.2	U		0.2		E
Magnesium	SHP01	0999	10/01/2014	N001	mg/L	0.13	B		0.03		E
Manganese	SHP01	0999	10/01/2014	N001	mg/L	0.0016	B	U	0.00024		E
Nitrate + Nitrite as Nitrogen	SHP01	0999	10/01/2014	N001	mg/L	0.01	U		0.01		E
Potassium	SHP01	0999	10/01/2014	N001	mg/L	0.052	U		0.052		E
Selenium	SHP01	0999	10/01/2014	N001	mg/L	0.000032	U		0.000032		E
Sodium	SHP01	0999	10/01/2014	N001	mg/L	0.19	B	U	0.047		E
Strontium	SHP01	0999	10/01/2014	N001	mg/L	0.0033	B		0.00026		E
Sulfate	SHP01	0999	10/01/2014	N001	mg/L	0.79			0.5		E
Uranium	SHP01	0999	10/01/2014	N001	mg/L	0.00001	B		0.0000029		E

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.		

SAMPLE TYPES:

E	Equipment Blank.

Static Water Level Data
Floodplain Locations

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STATIC WATER LEVELS (USEE700) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014

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
0608		4893.35	10/01/2014	14:40:43	6.44	4886.91	
0610		4895.7	10/01/2014	16:13:19	10.4	4885.3	
0611		4895.62	10/01/2014	15:40:07	10.22	4885.4	
0612		4893.35	10/01/2014	16:51:36	7.52	4885.83	
0614		4892.79	10/02/2014	09:50:03	8.26	4884.53	
0615		4892.23	10/02/2014	12:36:42	8.01	4884.22	
0617		4891.9	10/02/2014	09:55:00	8.08	4883.82	
0618		4891.51	10/02/2014	10:10:06	7.6	4883.91	
0619		4892.19	10/01/2014	16:35:32	8.1	4884.09	
0622		4890.06	10/02/2014	11:15:20	4.85	4885.21	
0623		4891.19	10/01/2014	17:30:31	6.75	4884.44	
0625		4891.23	10/01/2014	17:00:49	6.56	4884.67	
0626		4891.4	09/30/2014	18:05:52	5.63	4885.77	
0628		4889.87	09/29/2014	18:00:48	3.83	4886.04	
0630		4887.62	09/30/2014	10:15:12	1.68	4885.94	
0734		4886.55	09/30/2014	11:30:42	5.1	4881.45	
0735		4895.85	09/30/2014	16:45:29	5.78	4890.07	
0736		4887.99	09/30/2014	14:45:50	6.11	4881.88	
0766		4892.55	10/01/2014	13:45:41	10.42	4882.13	
0768		4892.33	10/01/2014	18:00:53	7.75	4884.58	
0773		4894.87	10/02/2014	09:24:18	9.21	4885.66	
0775		4892.2	10/01/2014	15:30:32	9.03	4883.17	
0779		4893.86	09/30/2014	15:55:15	10.26	4883.6	
0782R		4884.75	09/30/2014	10:58:41	7.08	4877.67	
0783R		4884.09	09/30/2014	10:29:36	7.68	4876.41	
0792		4891.52	10/02/2014	10:35:06	7.44	4884.08	
0793		4891.05	10/02/2014	11:55:16	7.19	4883.86	
0797		4908.04	10/01/2014	11:35:19	9.36	4898.68	

STATIC WATER LEVELS (USEE700) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014

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
0798		4891.55	10/01/2014	16:05:35	8.15	4883.4	
0850	B	4907.51	10/01/2014	10:55:45	9.12	4898.39	
0851	B	4906.45	10/02/2014	07:11:00	8.13	4898.32	
0852	B	4907.37	10/02/2014	07:13:00	9.03	4898.34	
0853		4891.41	10/02/2014	11:50:26	7.3	4884.11	
0854		4890.09	10/01/2014	14:20:11	7.86	4882.23	
0855		4888.18	09/30/2014	10:55:23	5.82	4882.36	
0856		4887.57	09/30/2014	12:45:11	6.26	4881.31	
0857		4894.02	10/02/2014	09:35:55	9.81	4884.21	
0862		4893.83	10/01/2014	14:16:00	88.92	4804.91	
0863		4893	10/01/2014	14:17:00	78.04	4814.96	
1000		4892.17	10/02/2014	08:27:00	8.01	4884.16	
1001		4892.44	10/02/2014	09:41:00	14.02	4878.42	
1008		4890.8	10/01/2014	14:50:55	8.33	4882.47	
1009		4892.1	10/02/2014	12:10:30	8.2	4883.9	
1062		4892.51	10/01/2014	13:02:00	7.63	4884.88	
1089		4891.9	09/30/2014	16:35:54			F
1104		4891.95	09/30/2014	16:20:39			F
1105	O	4892.4	10/02/2014	12:10:47	7.93	4884.47	
1110		4891.11	10/01/2014	12:55:24			F
1111		4889.85	10/02/2014	11:00:36	5.44	4884.41	
1112		4890.01	10/02/2014	10:16:58	5.7	4884.31	
1113		4892	10/01/2014	15:06:18	5.84	4886.16	
1114		4892.86	10/01/2014	13:55:11	5.33	4887.53	
1115		4895.59	09/29/2014	15:24:49	7.43	4888.16	
1117		4896.7	09/29/2014	16:06:20	8.19	4888.51	
1118		4889.86	09/30/2014	15:45:58			F
1128		4897.63	09/29/2014	16:52:08	9.28	4888.35	

STATIC WATER LEVELS (USEE700) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 12/11/2014

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
1132		4894.5	09/29/2014	16:29:05	6.16	4888.34	
1134		4895.88	10/01/2014	13:16:55	8.31	4887.57	
1135		4890.71	09/30/2014	17:30:05	7.92	4882.79	
1136		4892.47	10/02/2014	09:35:37	8.58	4883.89	
1137		4891.3	10/01/2014	10:30:55	7.8	4883.5	
1138		4891.48	10/01/2014	11:30:39	8.23	4883.25	
1139		4890.44	10/01/2014	12:05:42	7.7	4882.74	
1140		4891.53	10/02/2014	11:19:49	6.95	4884.58	
1141		4892.48	10/02/2014	10:37:09	7.95	4884.53	
1142		4894.34	10/01/2014	17:15:38	8.54	4885.8	
1143		4888.07	09/30/2014	15:15:13	6.53	4881.54	

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

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Static Water Level Data
Terrace Locations

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STATIC WATER LEVELS (USEE700) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014

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
0600		4955.87	10/01/2014	11:25:42	33.62	4922.25	
0602		4956.89	10/02/2014	09:20:36	22.59	4934.3	
0603		4978.62	10/01/2014	15:10:21	31.93	4946.69	
0604		4995.87	10/02/2014	08:45:39	56.48	4939.39	
0648		4943.8	10/02/2014	09:36:00			F
0725		4908.58	09/30/2014	17:40:20	13.82	4894.76	
0726		4939.95	09/30/2014	17:10:27	24.92	4915.03	
0727		4940.65	10/02/2014	10:40:50	7.41	4933.24	
0728		4964.46	09/29/2014	16:15:25	24.63	4939.83	
0730		4977.75	09/29/2014	16:35:44	35.9	4941.85	
0731		4972.15	10/01/2014	15:35:49	25.31	4946.84	
0800		4995.76	10/01/2014	09:35:00			D
0801		4995.29	10/01/2014	09:34:00			D
0802		4996.01	10/01/2014	09:31:00			D
0803		4994.4	10/01/2014	10:36:00			D
0812		5004.98	09/29/2014	14:40:57	61.41	4943.57	
0813		4984.37	10/01/2014	17:55:04	43.88	4940.49	
0814		4968.12	09/29/2014	15:10:25	32.36	4935.76	
0815		4953.67	09/29/2014	15:45:47	26.51	4927.16	
0816		4937.92	10/02/2014	11:20:07	25.09	4912.83	
0817		4957.34	10/02/2014	09:10:43	19.32	4938.02	
0818		4993.52	09/30/2014	09:15:51			F
0819		4955.76	10/02/2014	09:40:48	20.35	4935.41	
0820		4954.95	10/01/2014	10:46:00			D
0821		4955.46	10/01/2014	11:17:00			D
0822		4954.42	10/01/2014	11:10:47	139.21	4815.21	
0823		4957.65	10/01/2014	12:38:00			D
0824		4958.21	10/01/2014	12:25:45	192	4766.21	

STATIC WATER LEVELS (USEE700) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014

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
0825		4958.68	10/01/2014	12:35:00			D
0826		4950.73	10/02/2014	10:00:49	17.71	4933.02	
0827		4946.92	10/01/2014	10:35:18	26.52	4920.4	
0828		4957.43	10/01/2014	17:00:50	18.46	4938.97	
0829		4941.94	09/30/2014	15:17:00			D
0830		4960.77	10/01/2014	14:45:10	16.67	4944.1	
0832		4964.65	09/30/2014	15:42:00			D
0832		4964.65	10/02/2014	07:19:00			D
0833		4940.52	09/30/2014	13:24:54	27.85	4912.67	
0835		4930.48	09/30/2014	12:10:24	19.18	4911.3	
0836		4901.74	09/30/2014	11:41:08	32.62	4869.12	
0837		4889.54	09/30/2014	09:08:01	23.98	4865.56	
0838		4937.7	09/30/2014	12:48:00	29.31	4908.39	
0841		4984.05	09/30/2014	17:04:41			B
0843		4883.56	09/30/2014	09:57:58	16	4867.56	
0844		4948.46	09/30/2014	15:28:02	32.2	4916.26	
0848		4949.91	09/30/2014	14:31:46	45.38	4904.53	
1002		4957.63	10/01/2014	11:40:00			D
1003		4957.84	10/01/2014	11:41:00			D
1004		4957.61	10/01/2014	11:38:00			D
1007		4962.01	10/01/2014	13:55:02	44.54	4917.47	
1011		4945.96	10/02/2014	10:19:00			D
1048		4921.35	09/30/2014	13:08:00			D
1049		4923.89	09/30/2014	13:45:21	5.68	4918.21	
1057		4984.83	09/29/2014	18:05:27	39.47	4945.36	
1058		4973.58	09/30/2014	14:30:15	28.2	4945.38	
1059		4970.52	09/30/2014	14:45:31	23.68	4946.84	
1060		4970.62	10/01/2014	12:55:00			D

STATIC WATER LEVELS (USEE700) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 12/11/2014

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
1060		4970.62	10/02/2014	07:15:00			D
1067		4930.77	10/02/2014	09:52:00			D
1068		4927.97	09/30/2014	17:36:19	7.38	4920.59	
1069		4922.62	10/02/2014	10:50:38	3.89	4918.73	
1070		5000.62	09/30/2014	09:45:40			F
1073		4991.43	10/01/2014	17:25:17	50.25	4941.18	
1074		4959.52	10/01/2014	14:20:19	33.53	4925.99	
1078		4982.94	09/30/2014	08:35:17			F
1079		4925.22	09/30/2014	16:25:51	20.72	4904.5	
1087			09/30/2014	15:10:14			F
1088			09/30/2014	14:05:31			F
1091		4976.18	09/30/2014	10:25:12			F
1092		4976.17	09/30/2014	12:30:58			F
1093R		4973	09/30/2014	10:15:55			F
1095	O	4980.33	09/30/2014	10:55:46			F
1096	O	5000.2	09/30/2014	09:50:59			F
1120		4890.98	10/01/2014	12:52:00			D
1120		4890.98	10/02/2014	07:17:00			D
1122		4893.62	10/01/2014	12:54:00			D
1122		4893.62	10/02/2014	07:18:00			D
MW1		4955.64	10/01/2014	11:55:07	55.82	4899.82	

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

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Time-Concentration Graphs
Floodplain Groundwater Locations

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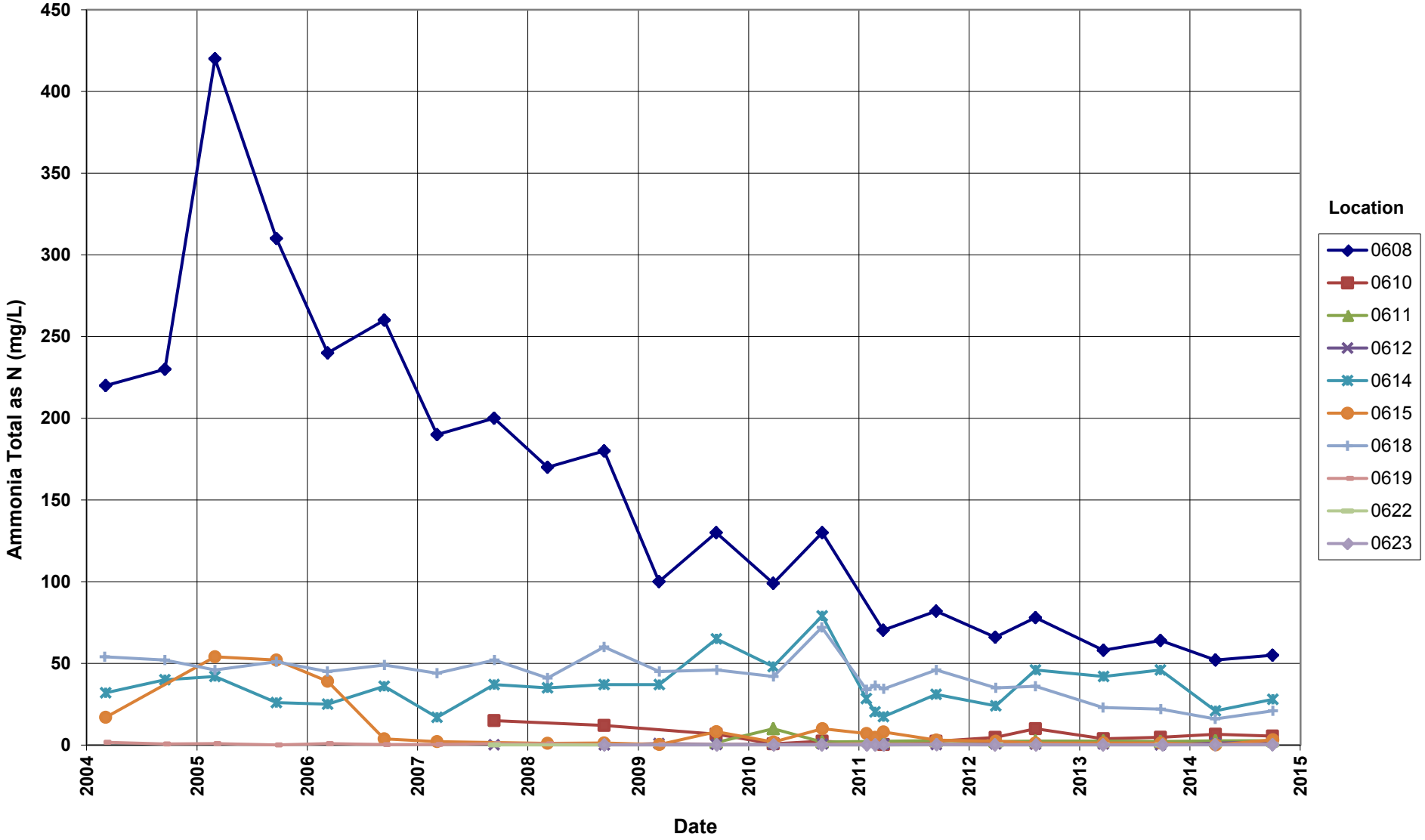
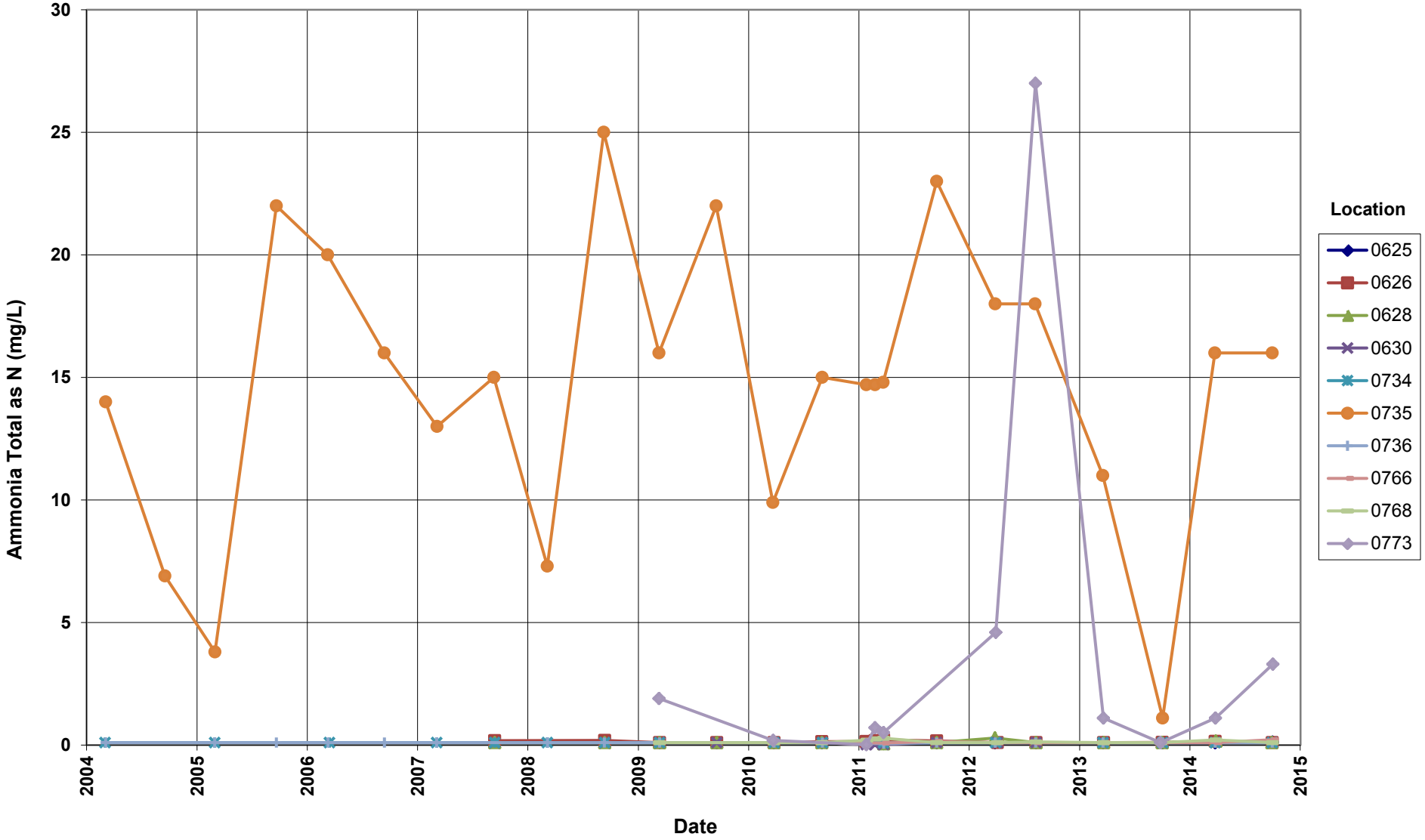
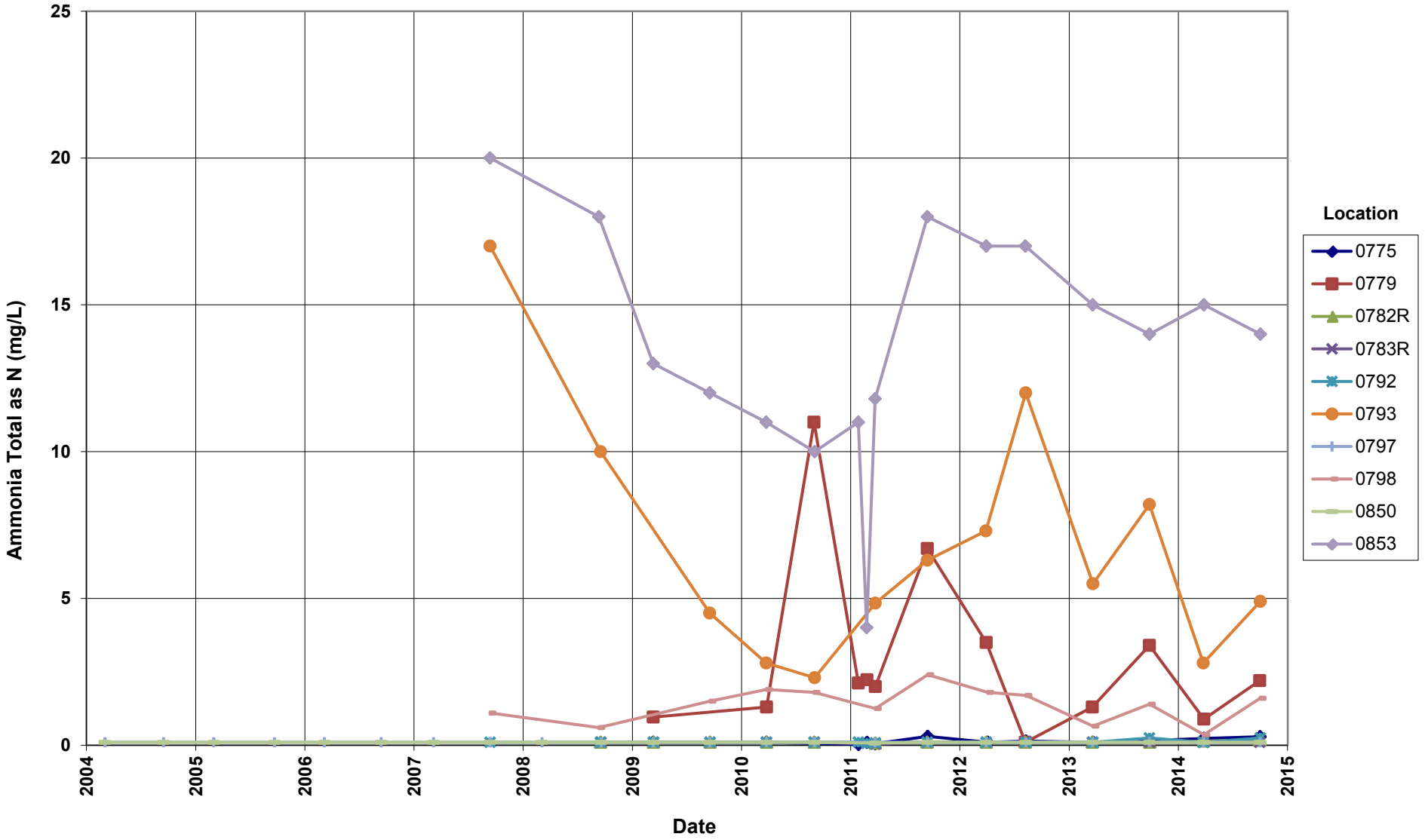
Shiprock Disposal Site (Floodplain)
Ammonia Total as N Concentration



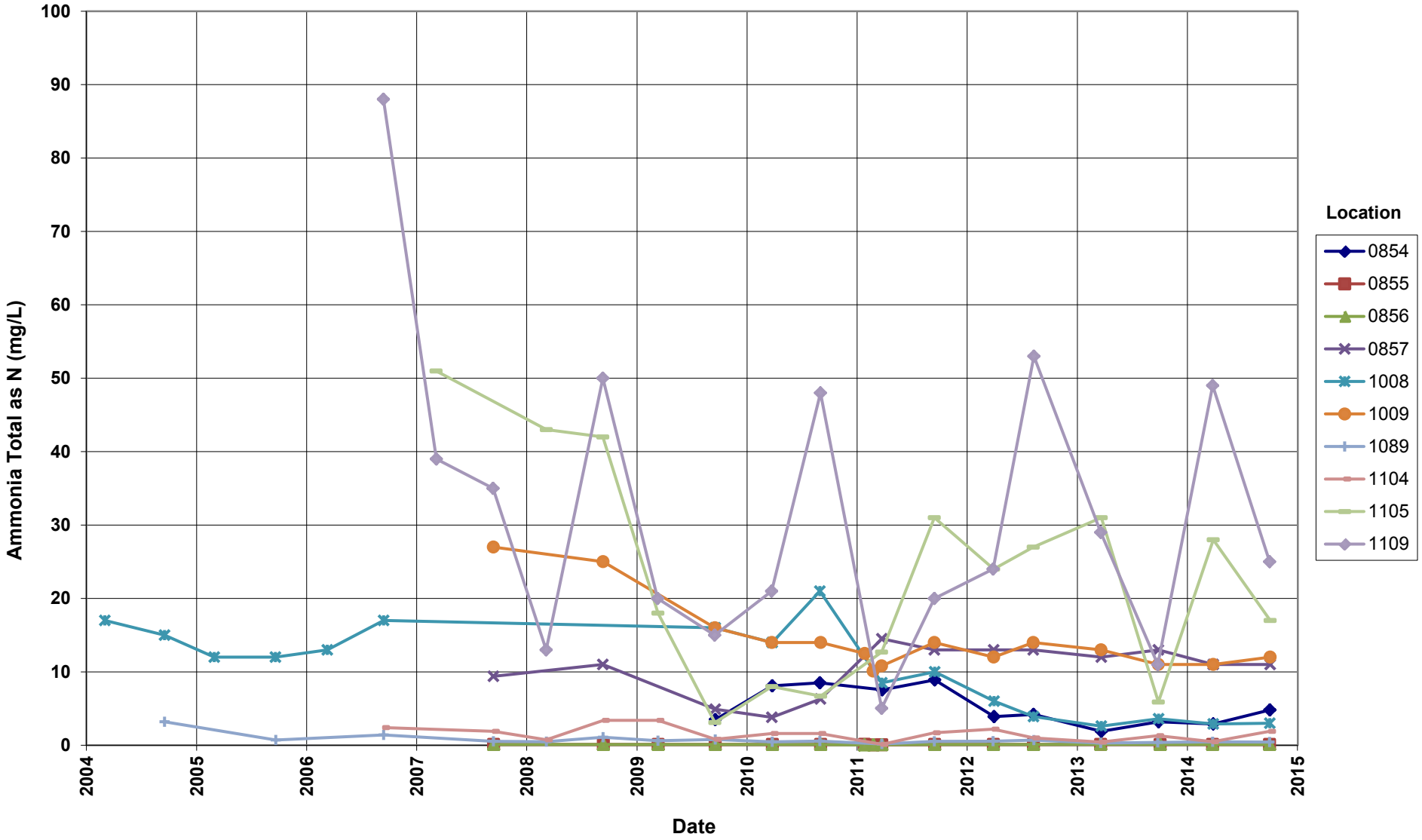
Shiprock Disposal Site (Floodplain)
Ammonia Total as N Concentration



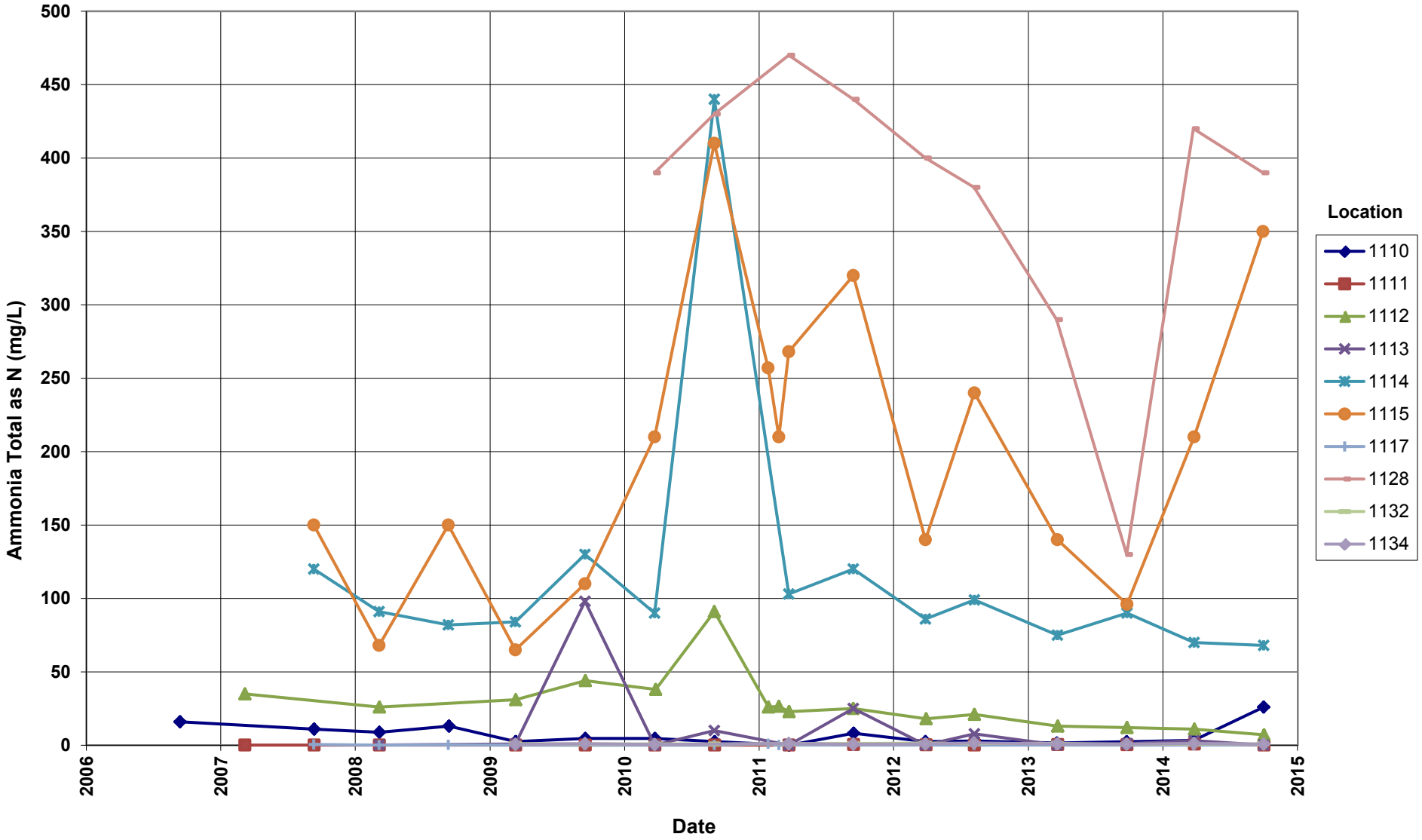
Shiprock Disposal Site (Floodplain)
Ammonia Total as N Concentration

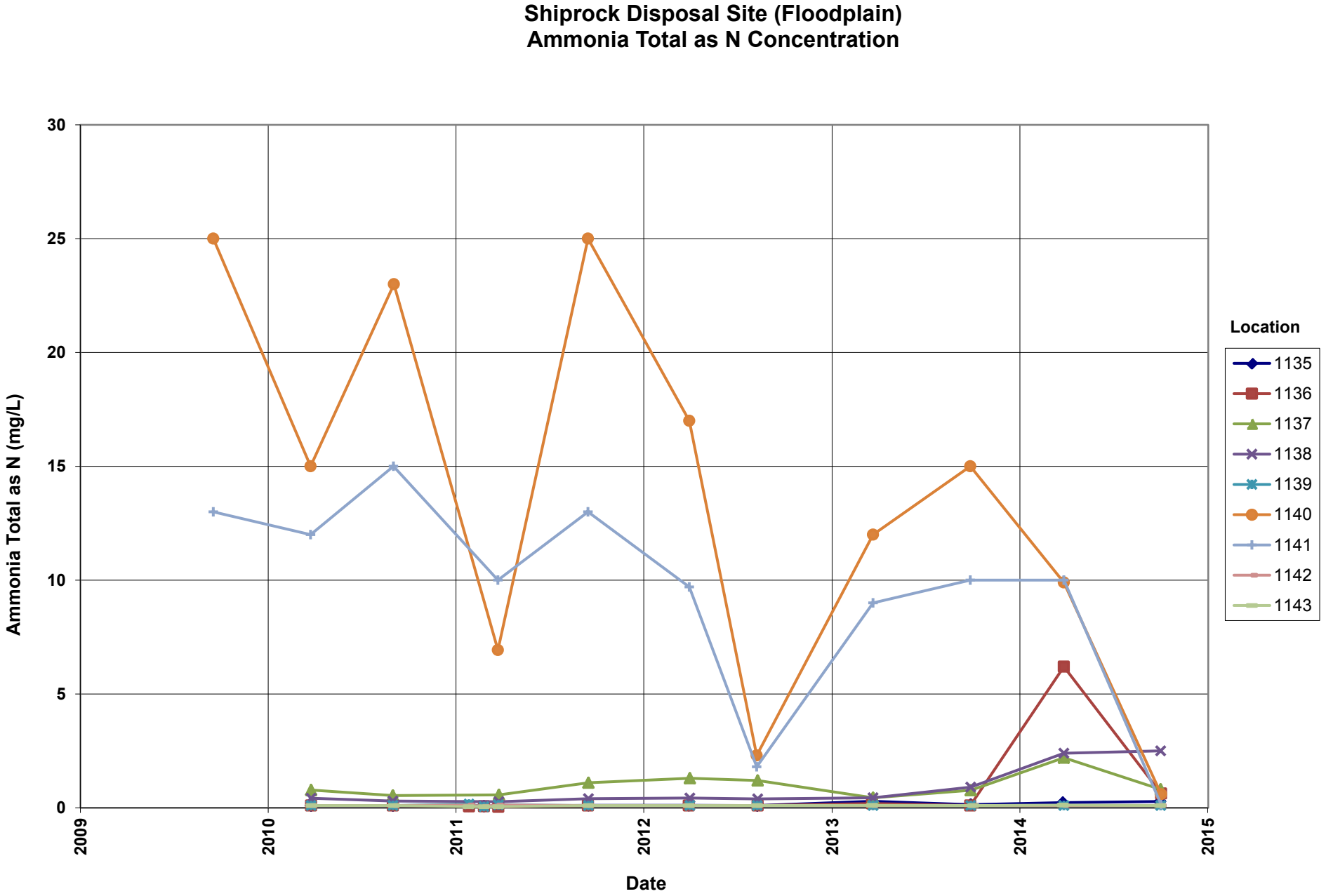


Shiprock Disposal Site (Floodplain)
Ammonia Total as N Concentration

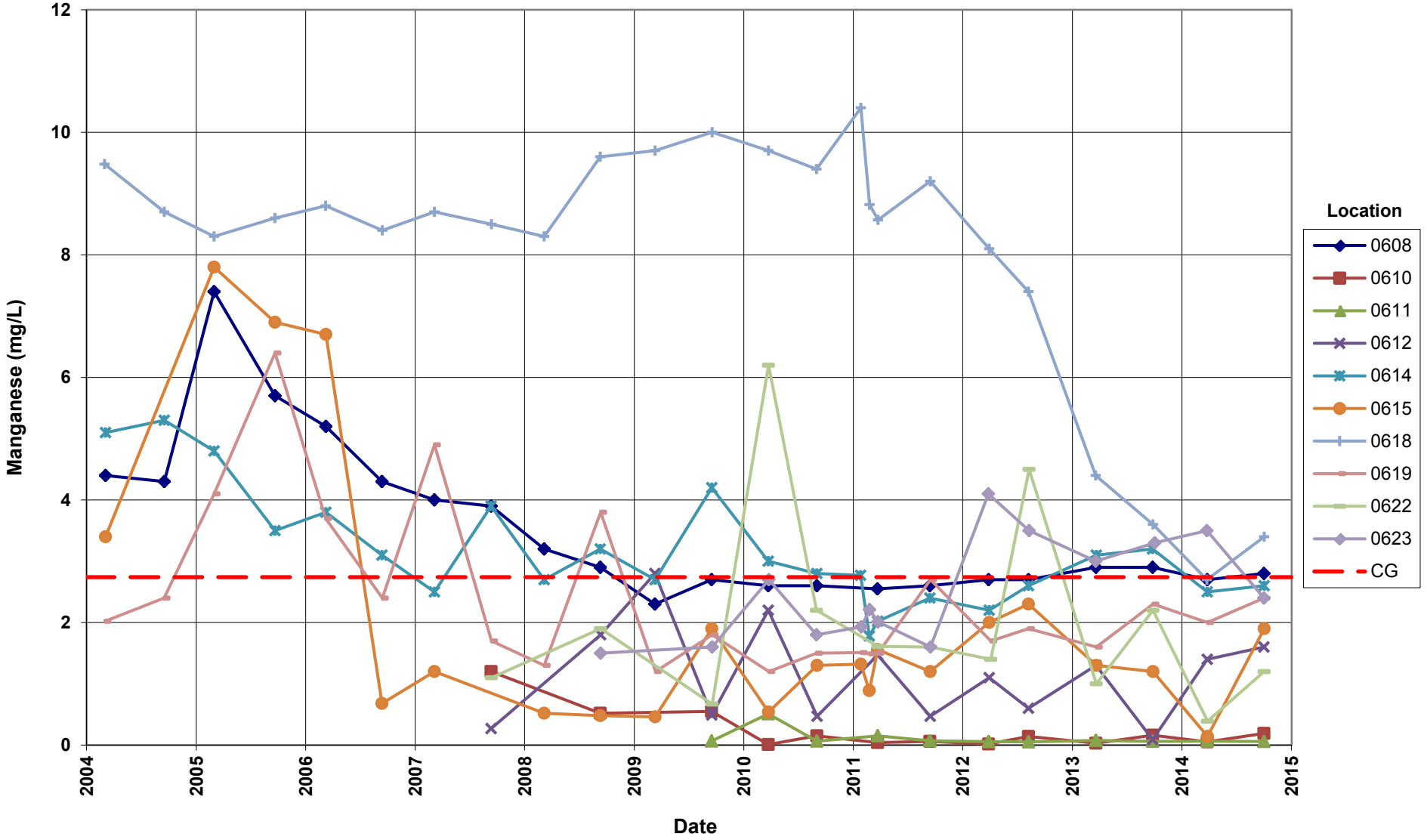


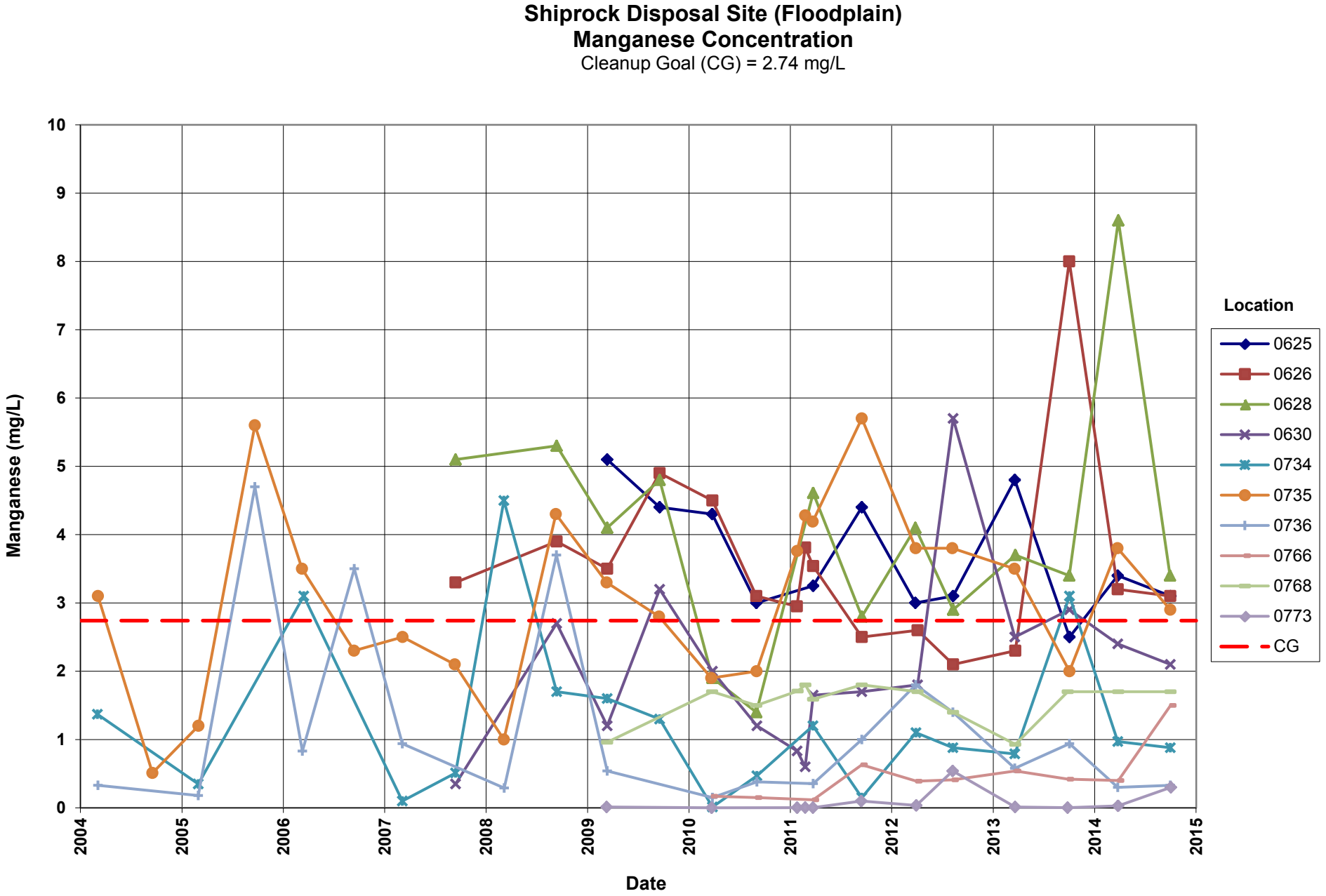
Shiprock Disposal Site (Floodplain)
Ammonia Total as N Concentration

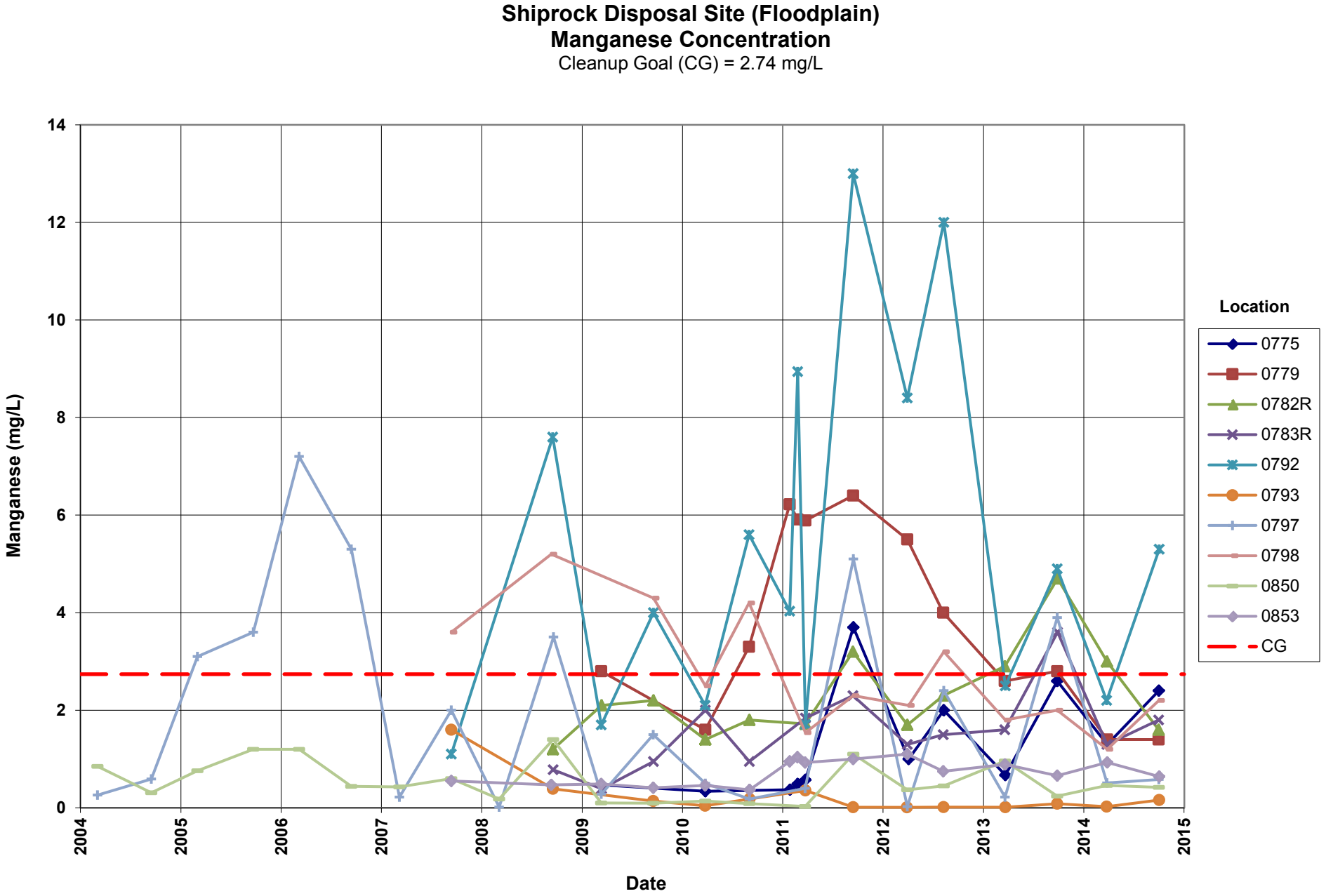


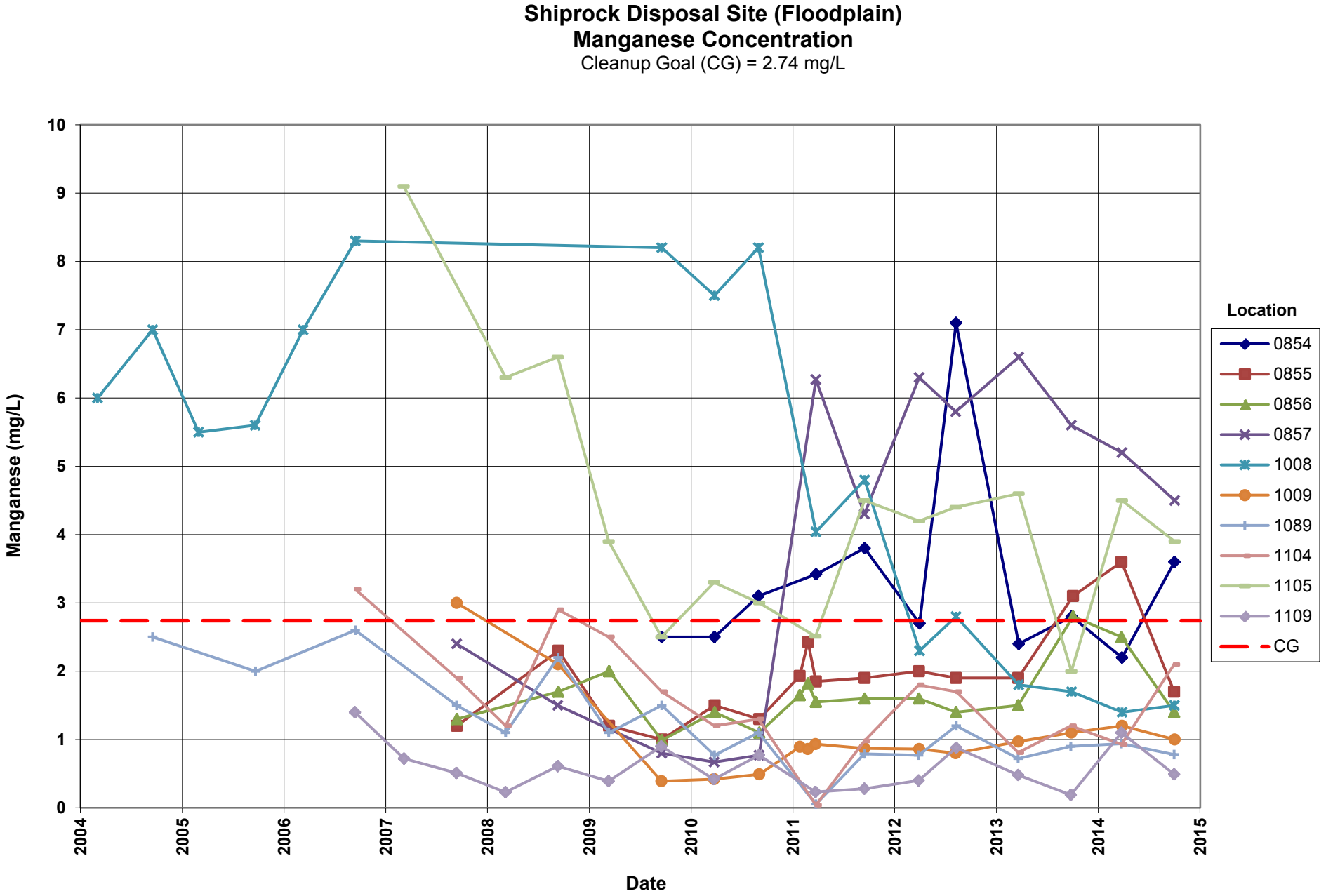

Shiprock Disposal Site (Floodplain)
Ammonia Total as N Concentration
Ammonia Total as N (mg/L)
30
25
20
15
10
5
0
2009
2010
2011
2012
2013
2014
2015
Date
Location
1135
1136
1137
1138
1139
1140
1141
1142
1143

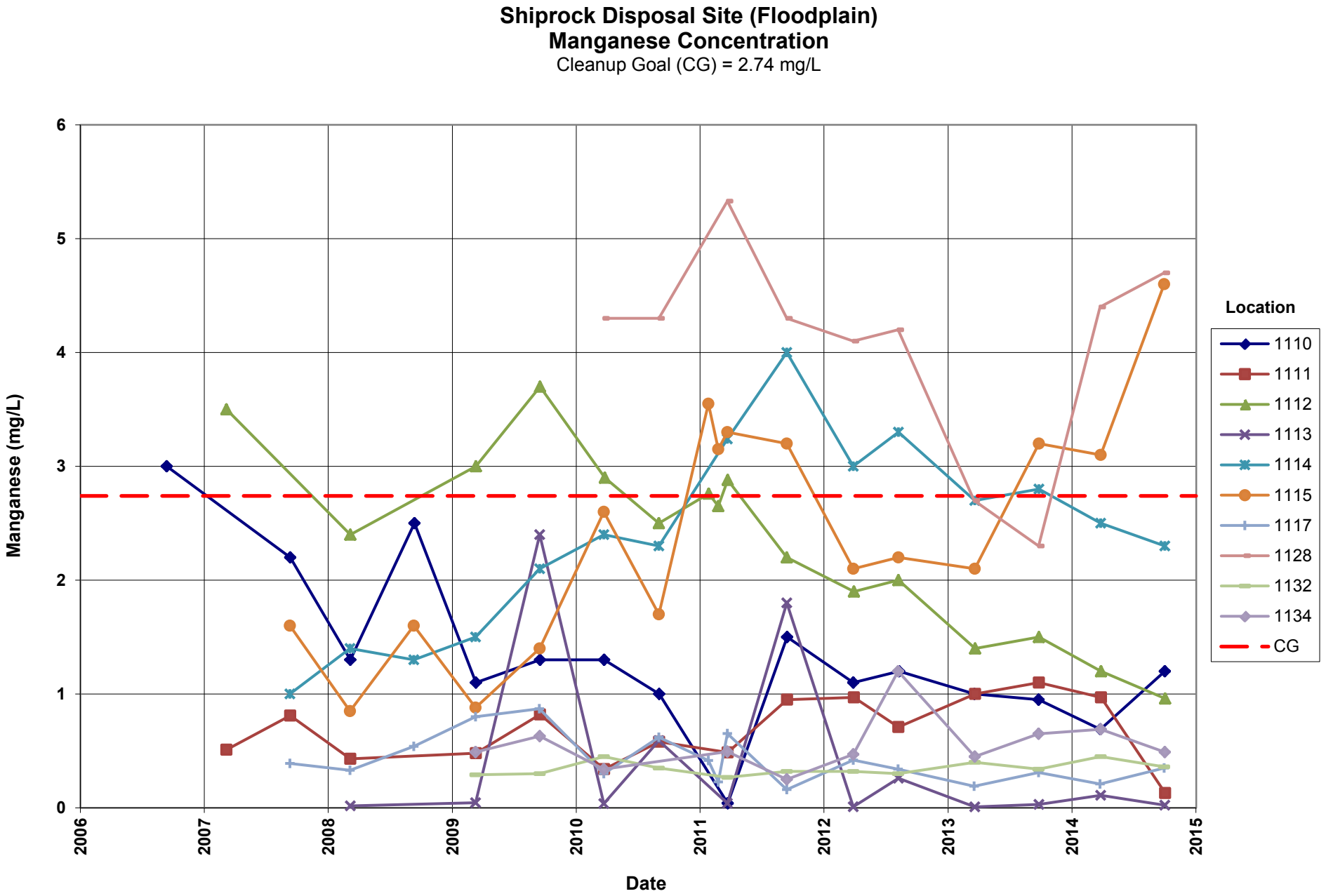
Shiprock Disposal Site (Floodplain)
Manganese Concentration
Cleanup Goal (CG) = 2.74 mg/L

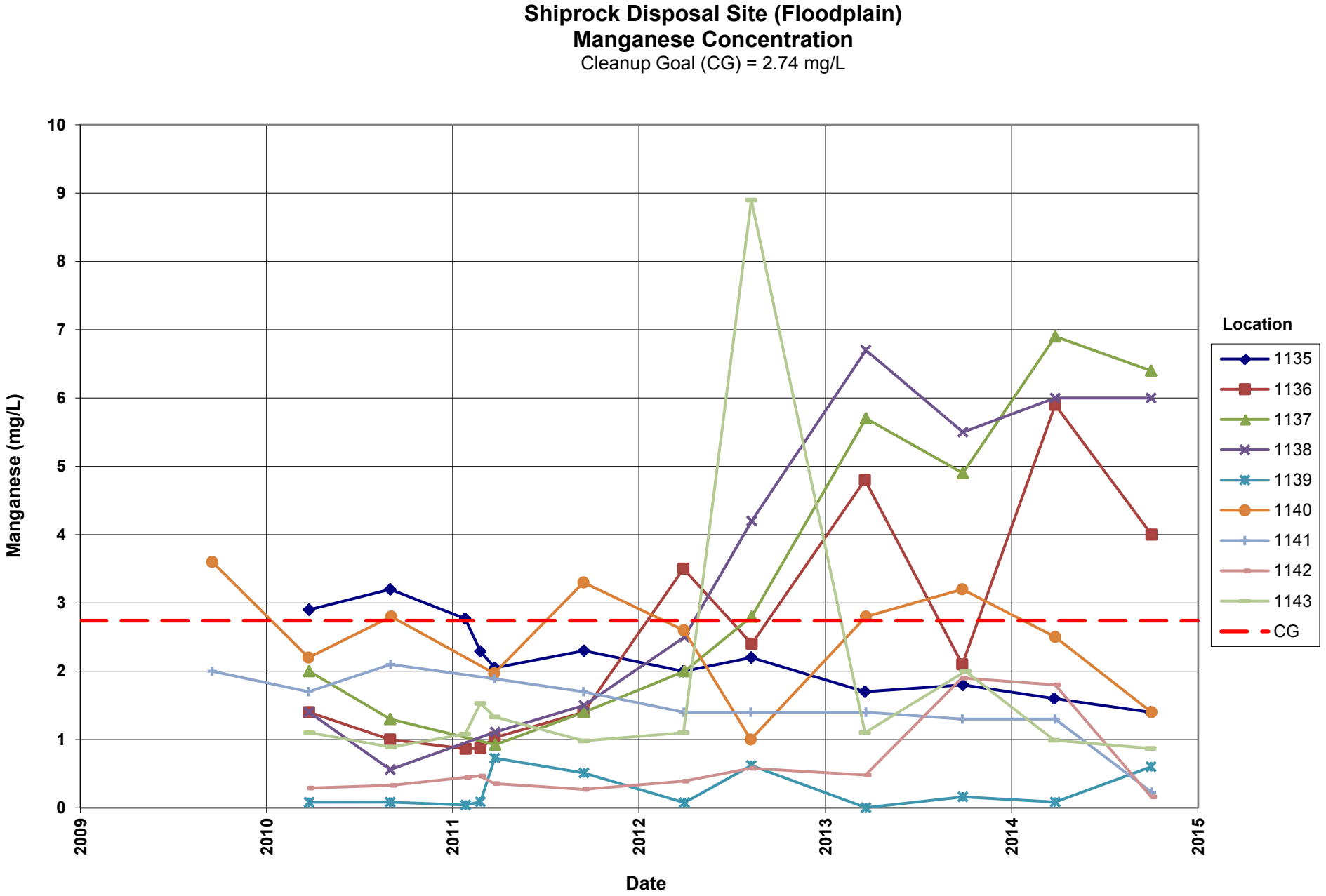



Shiprock Disposal Site (Floodplain)
Manganese Concentration
Cleanup Goal (CG) = 2.74 mg/L
Manganese (mg/L)
Date
Location
0625
0626
0628
0630
0734
0735
0736
0766
0768
0773
CG

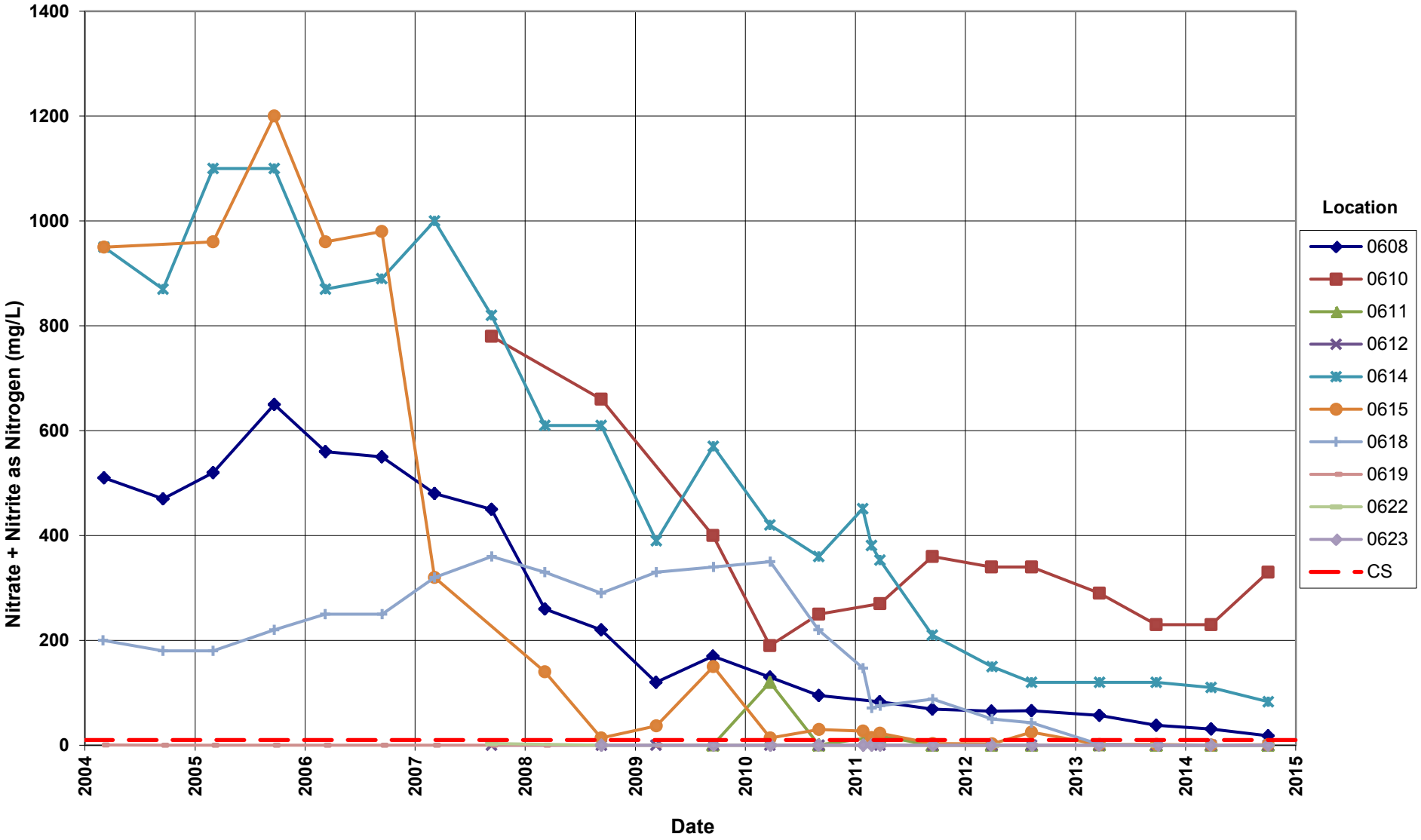

Shiprock Disposal Site (Floodplain)
Manganese Concentration
Cleanup Goal (CG) = 2.74 mg/L
Manganese (mg/L)
0
2
4
6
8
10
12
14
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Date
Location
0775
0779
0782R
0783R
0792
0793
0797
0798
0850
0853
CG


Shiprock Disposal Site (Floodplain)
Manganese Concentration
Cleanup Goal (CG) = 2.74 mg/L
Manganese (mg/L)
Date
Location
0854
0855
0856
0857
1008
1009
1089
1104
1105
1109
CG

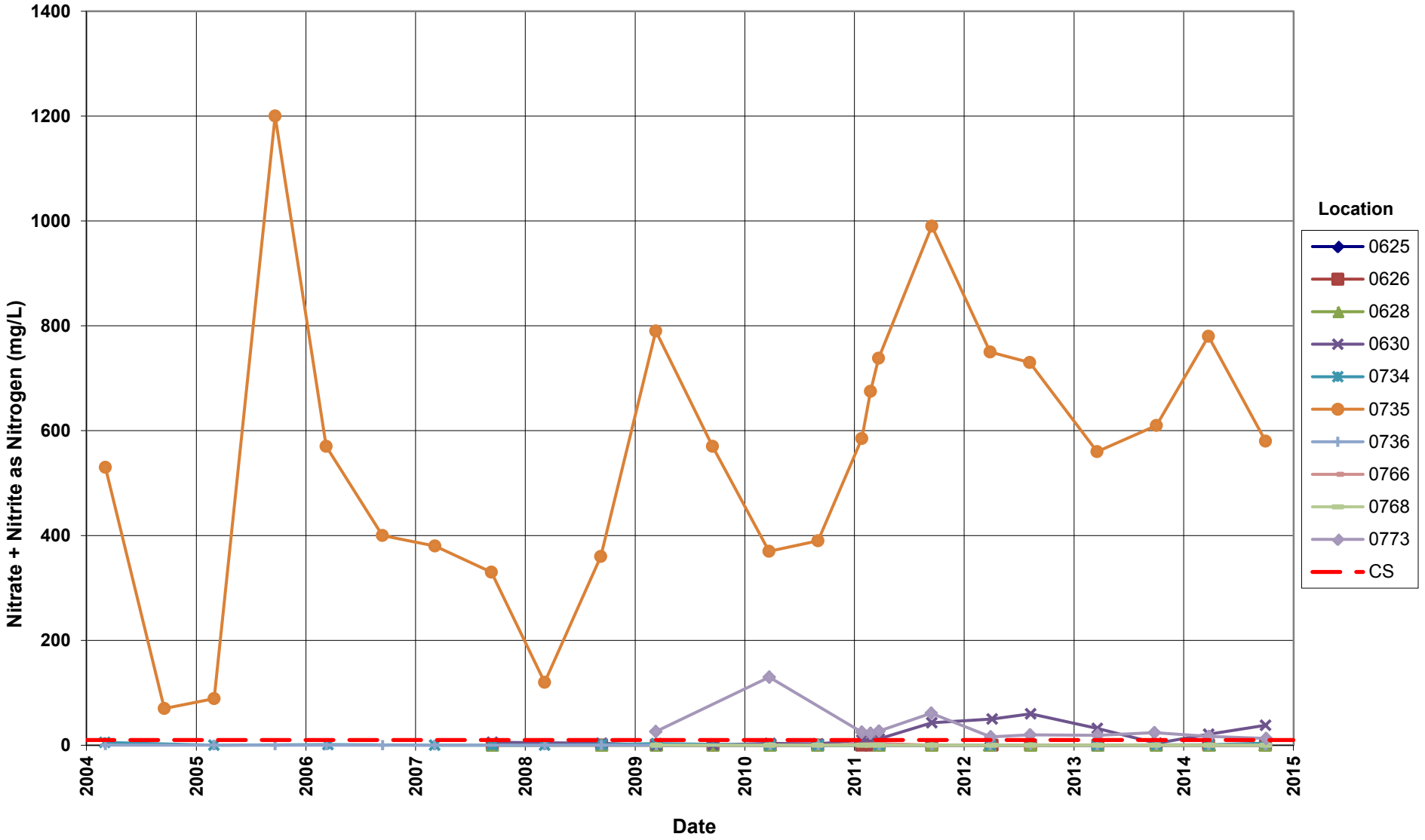

Shiprock Disposal Site (Floodplain)
Manganese Concentration
Cleanup Goal (CG) = 2.74 mg/L
Manganese (mg/L)
Date
0
1
2
3
4
5
6
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Location
1110
1111
1112
1113
1114
1115
1117
1128
1132
1134
CG


Shiprock Disposal Site (Floodplain)
Manganese Concentration
Cleanup Goal (CG) = 2.74 mg/L
Manganese (mg/L)
10
9
8
7
6
5
4
3
2
1
0
2009
2010
2011
2012
2013
2014
2015
Date
Location
1135
1136
1137
1138
1139
1140
1141
1142
1143
CG

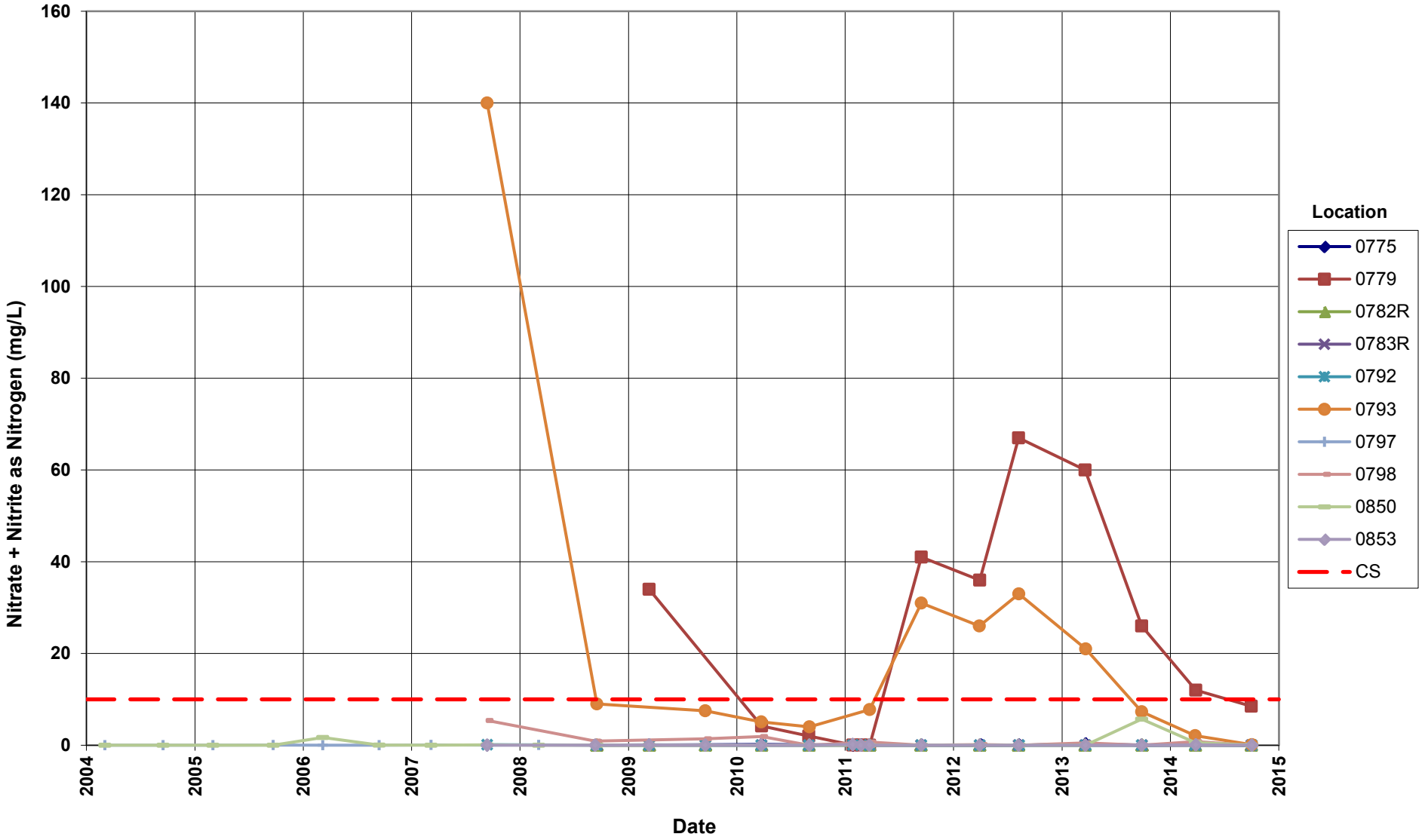
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
Compliance Standard (CS) = 10 mg/L



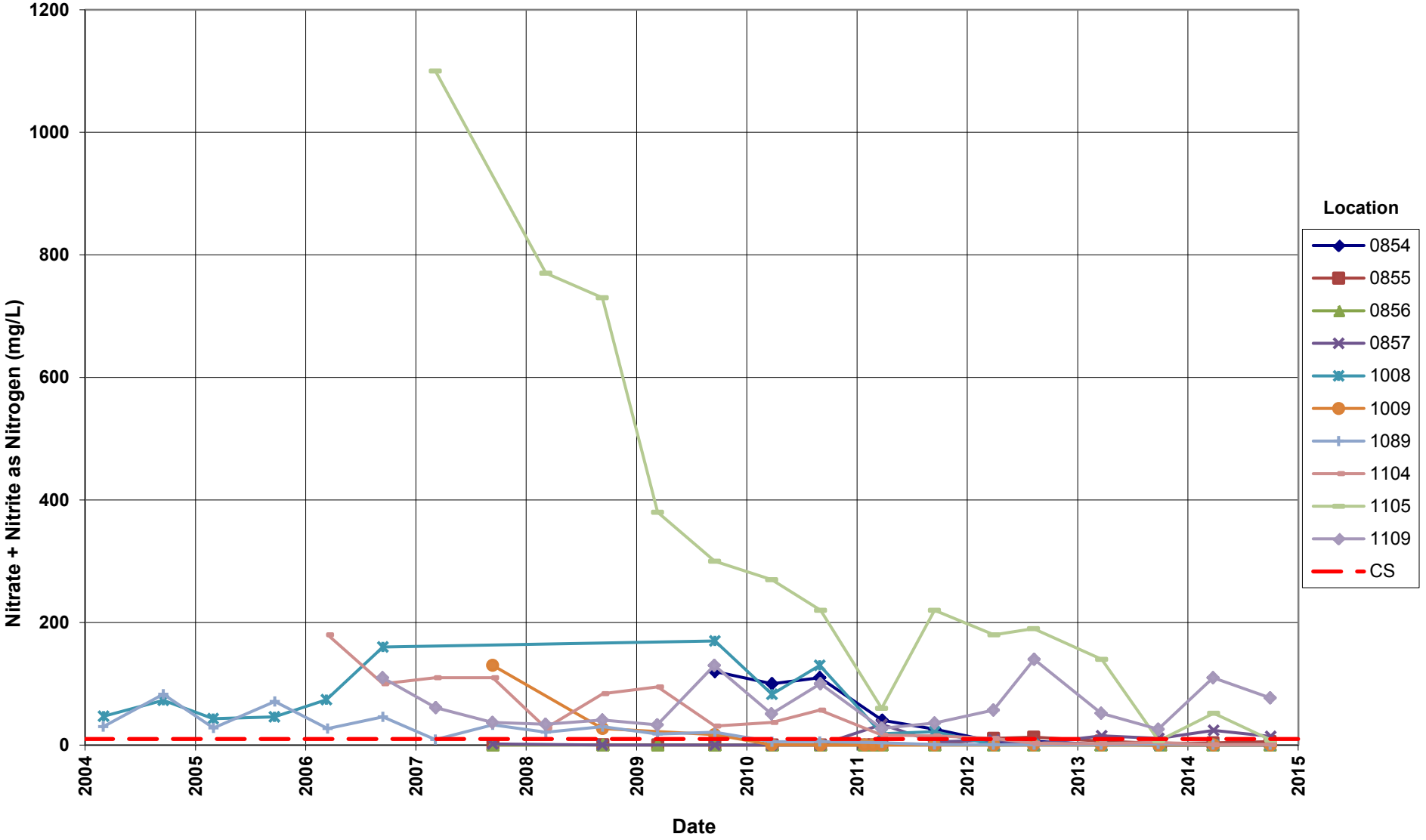
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
Compliance Standard (CS) = 10 mg/L



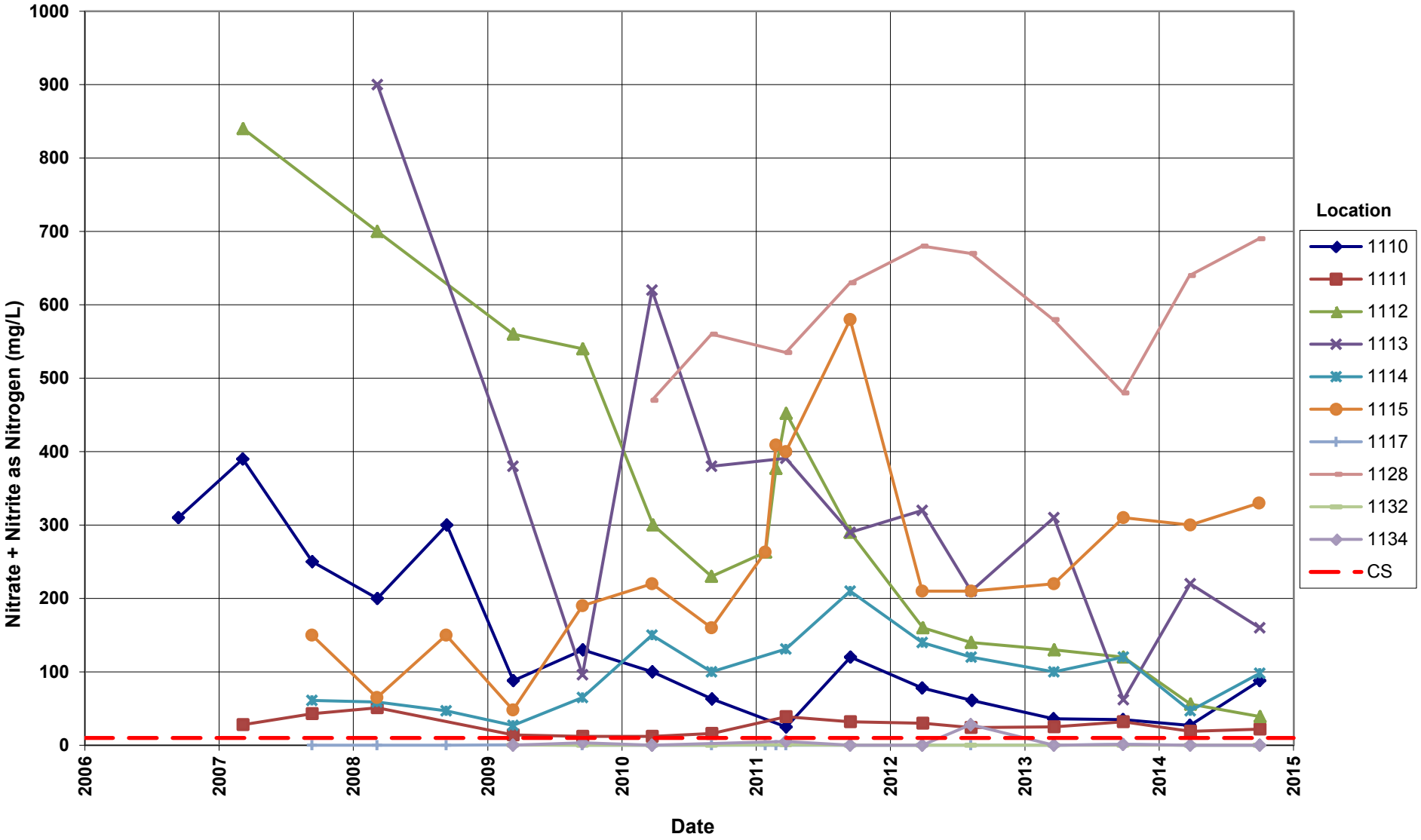
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
Compliance Standard (CS) = 10 mg/L



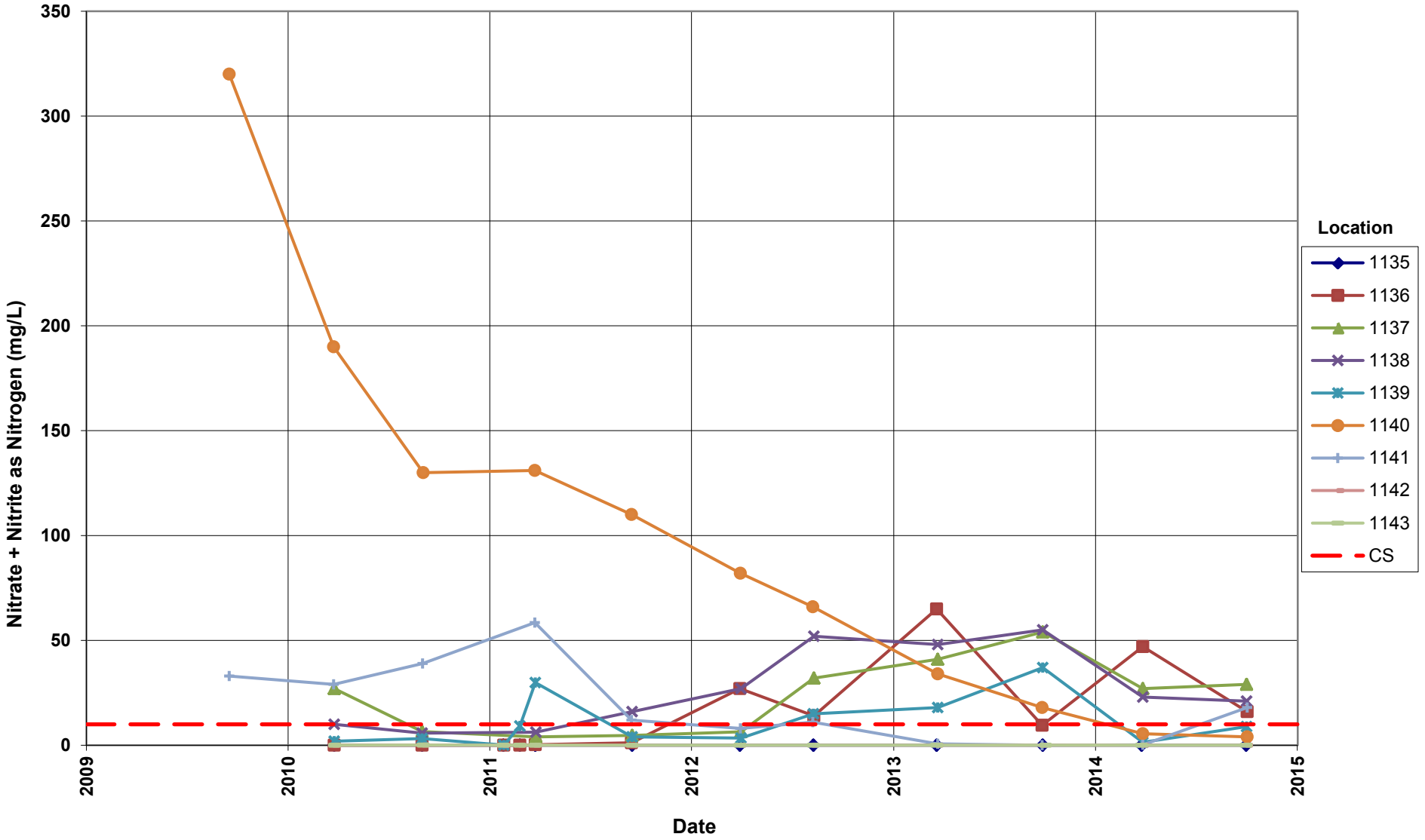
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
Compliance Standard (CS) = 10 mg/L

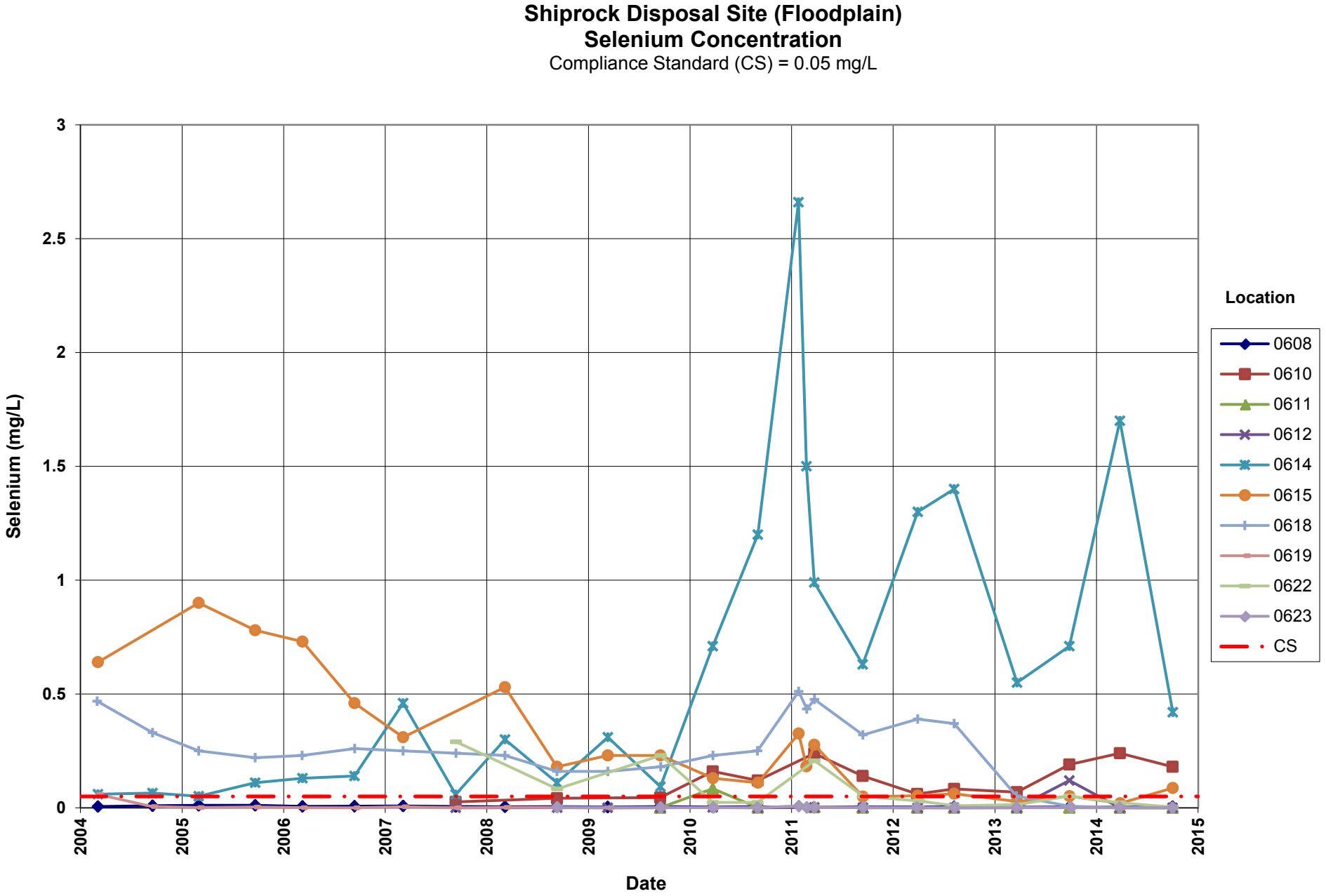


Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
Compliance Standard (CS) = 10 mg/L

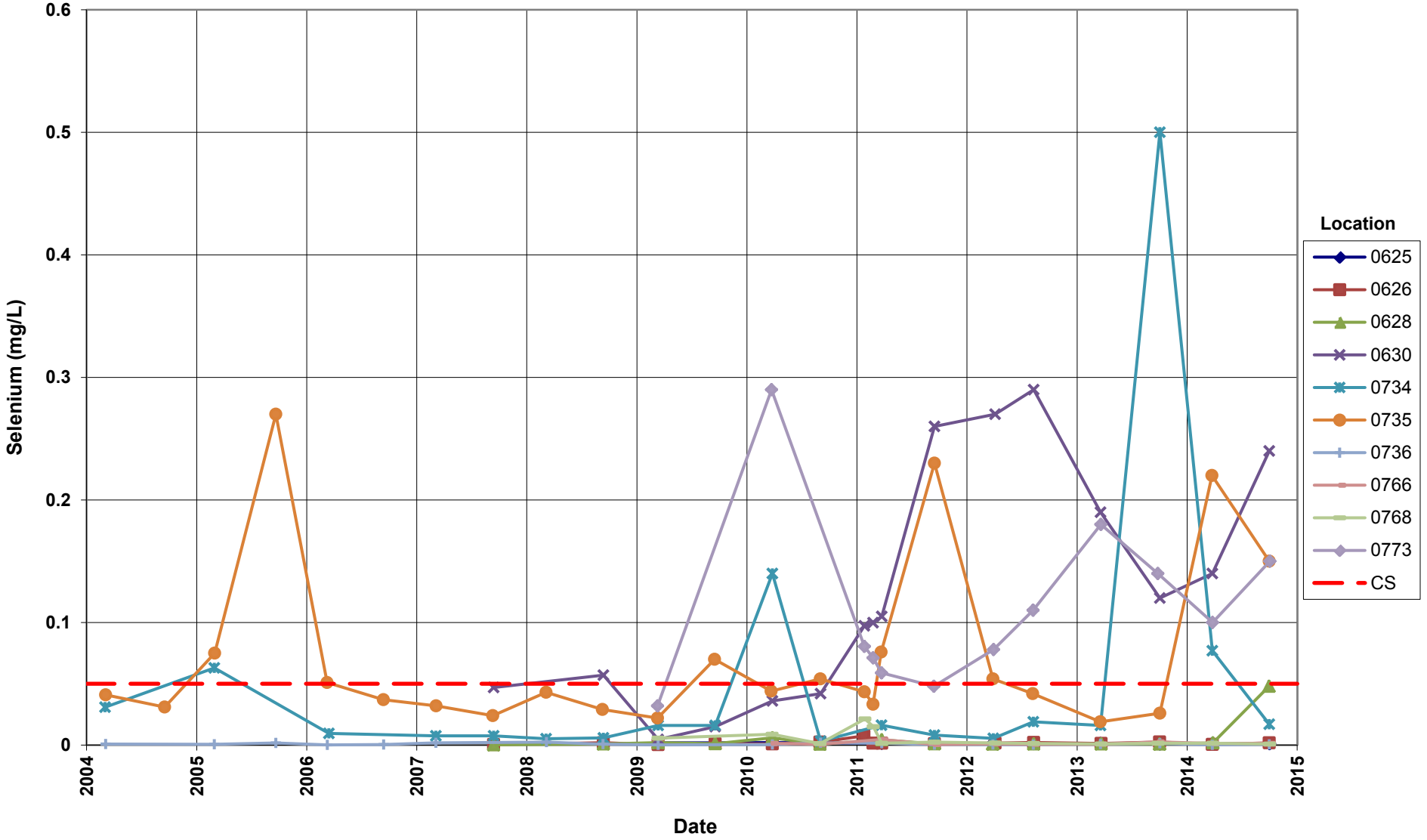


Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
Compliance Standard (CS) = 10 mg/L

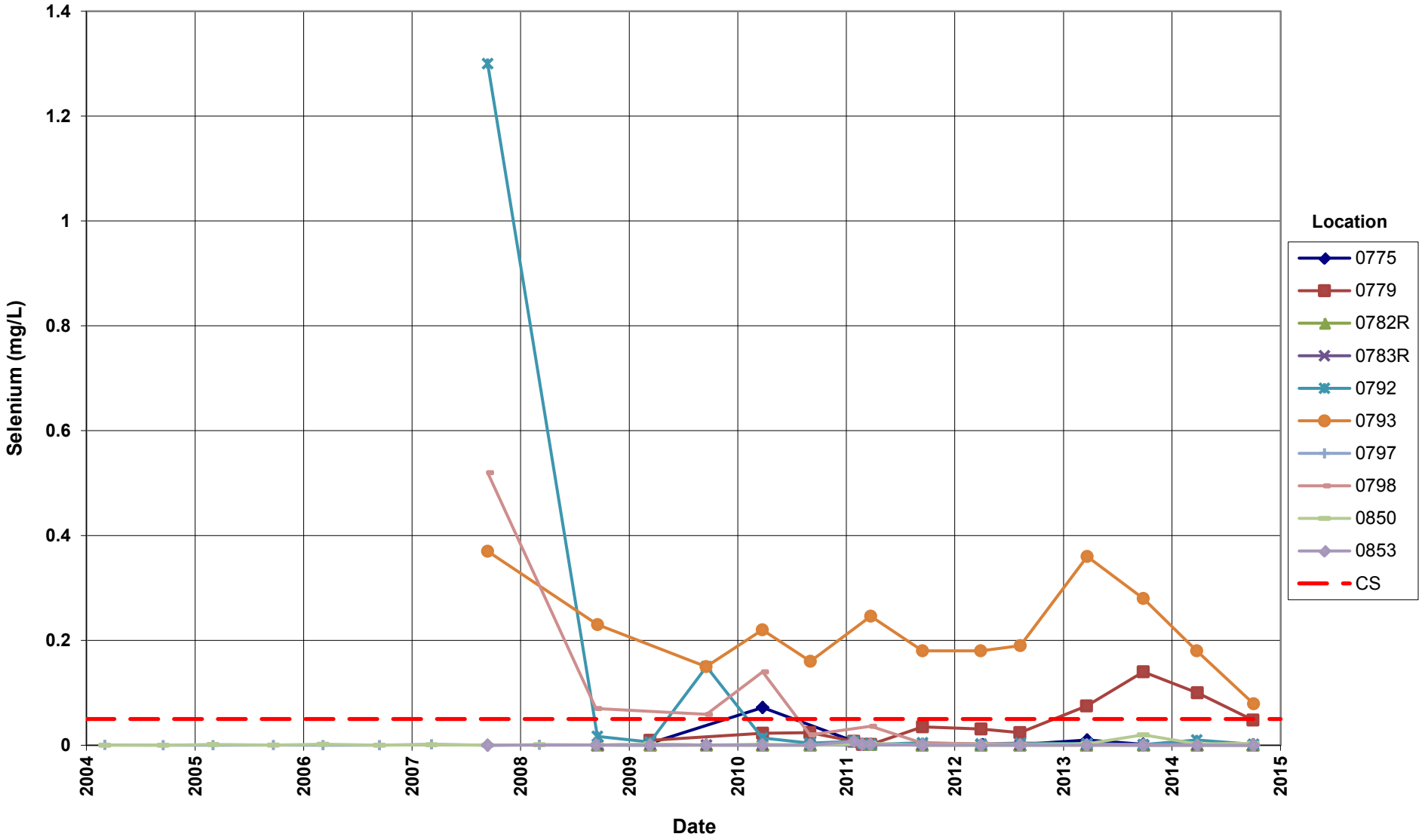



Shiprock Disposal Site (Floodplain)
Selenium Concentration
Compliance Standard (CS) = 0.05 mg/L
Selenium (mg/L)
3
2.5
2
1.5
1
0.5
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Date
Location
0608
0610
0611
0612
0614
0615
0618
0619
0622
0623
CS

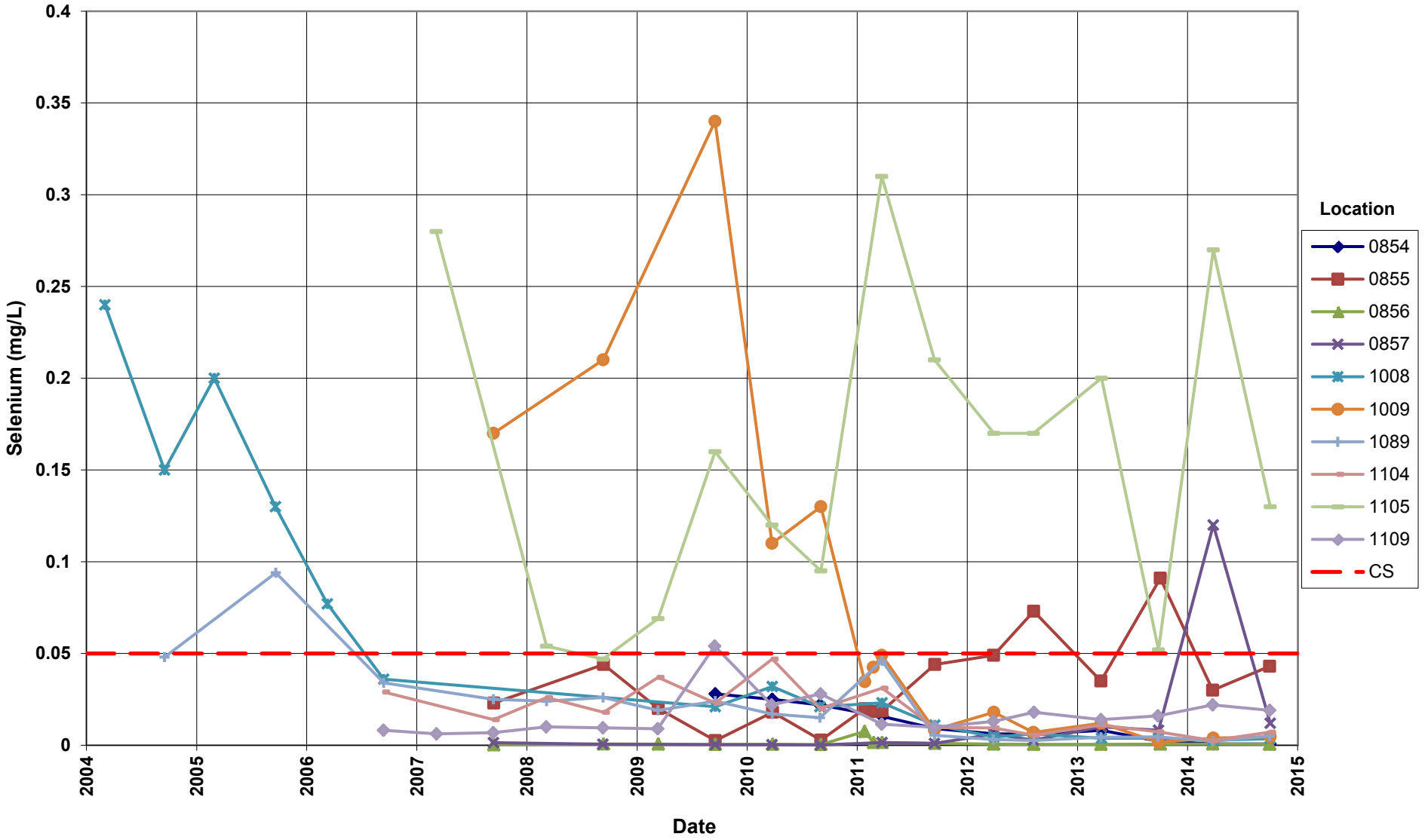
Shiprock Disposal Site (Floodplain)
Selenium Concentration
Compliance Standard (CS) = 0.05 mg/L

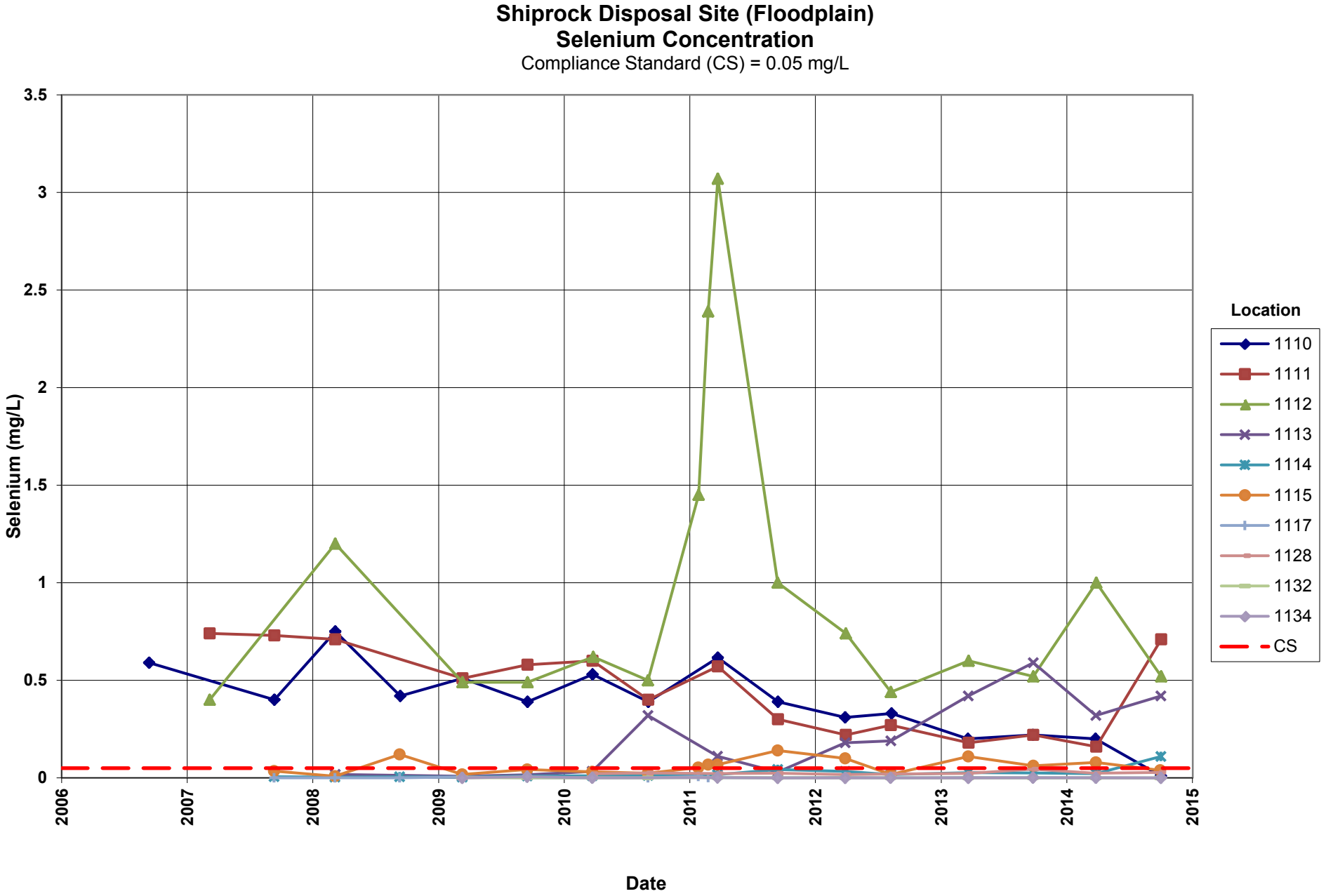


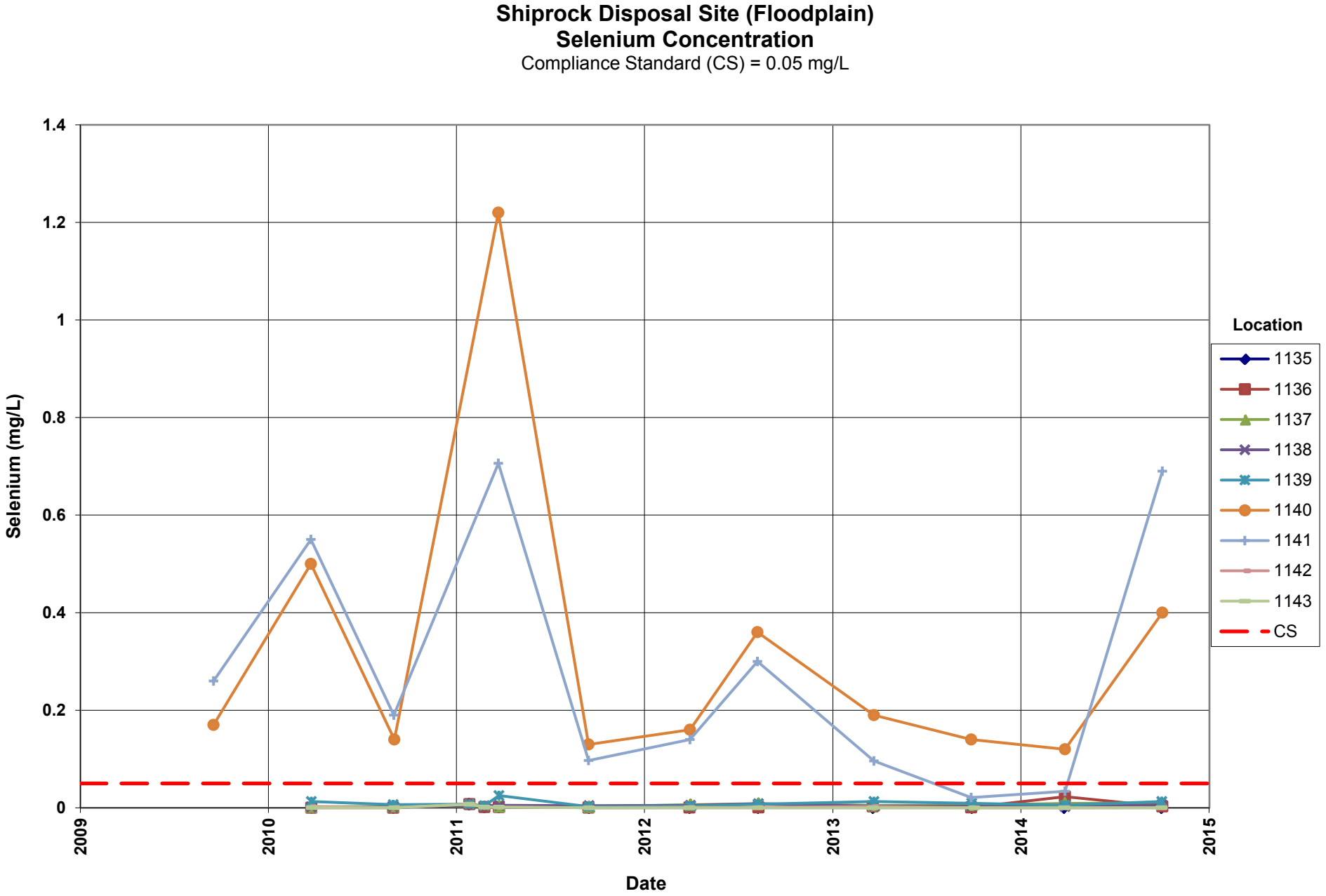
Shiprock Disposal Site (Floodplain)
Selenium Concentration
Compliance Standard (CS) = 0.05 mg/L



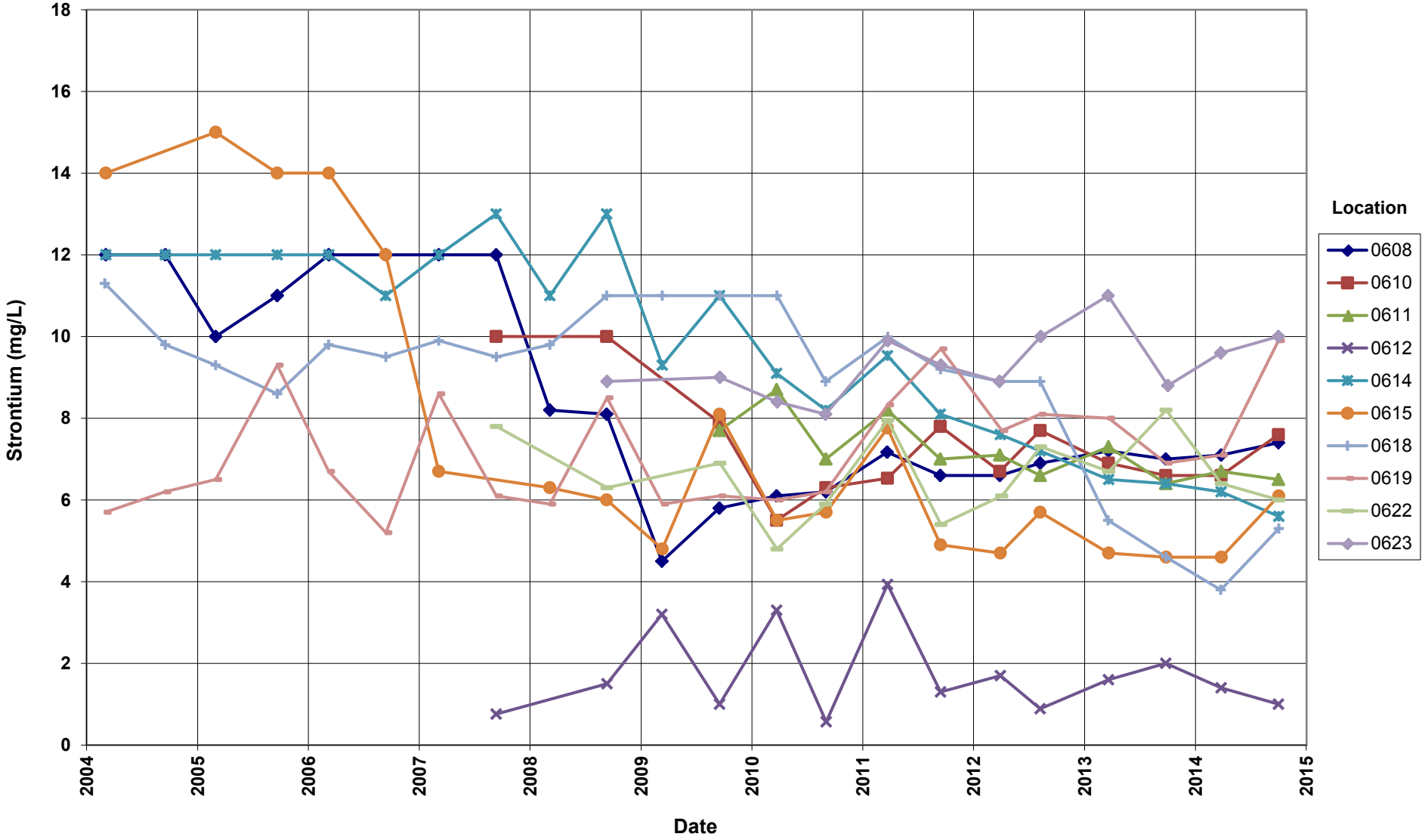
Shiprock Disposal Site (Floodplain)
Selenium Concentration
Compliance Standard (CS) = 0.05 mg/L

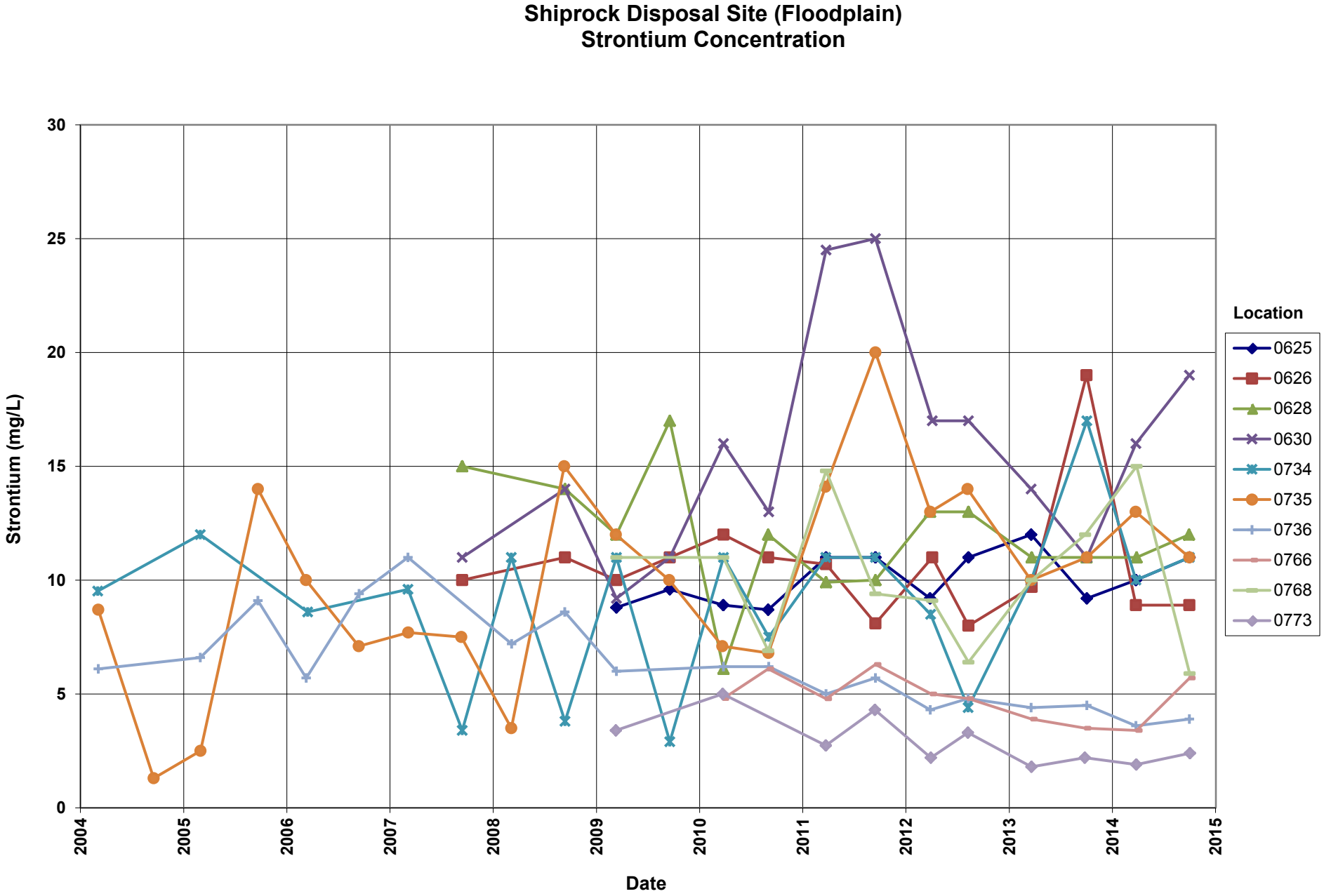


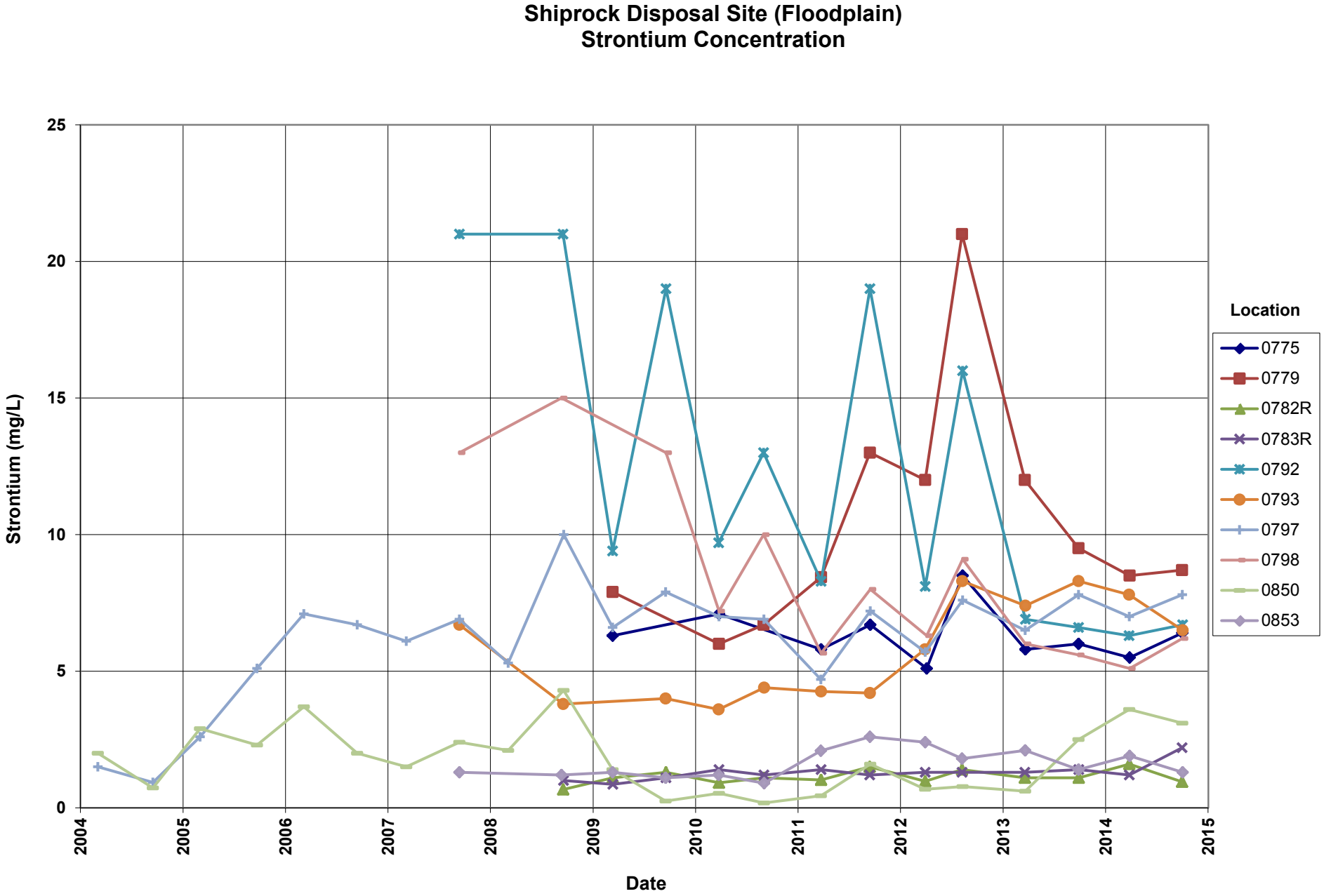

Shiprock Disposal Site (Floodplain)
Selenium Concentration
Compliance Standard (CS) = 0.05 mg/L
Selenium (mg/L)
3.5
3
2.5
2
1.5
1
0.5
0
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Date
Location
1110
1111
1112
1113
1114
1115
1117
1128
1132
1134
CS


Shiprock Disposal Site (Floodplain)
Selenium Concentration
Compliance Standard (CS) = 0.05 mg/L
Selenium (mg/L)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2009
2010
2011
2012
2013
2014
2015
Date
Location
1135
1136
1137
1138
1139
1140
1141
1142
1143
CS

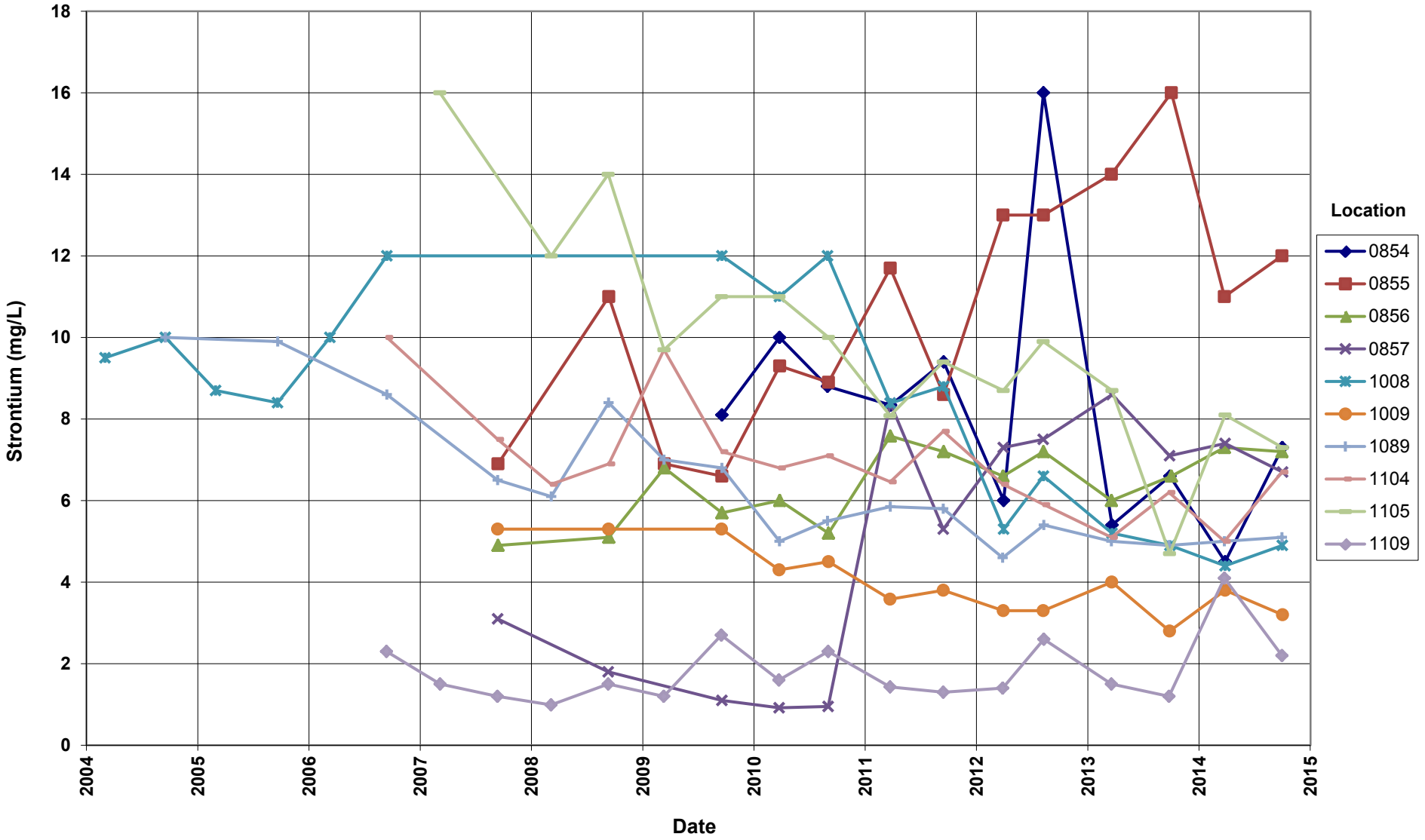
Shiprock Disposal Site (Floodplain)
Strontium Concentration



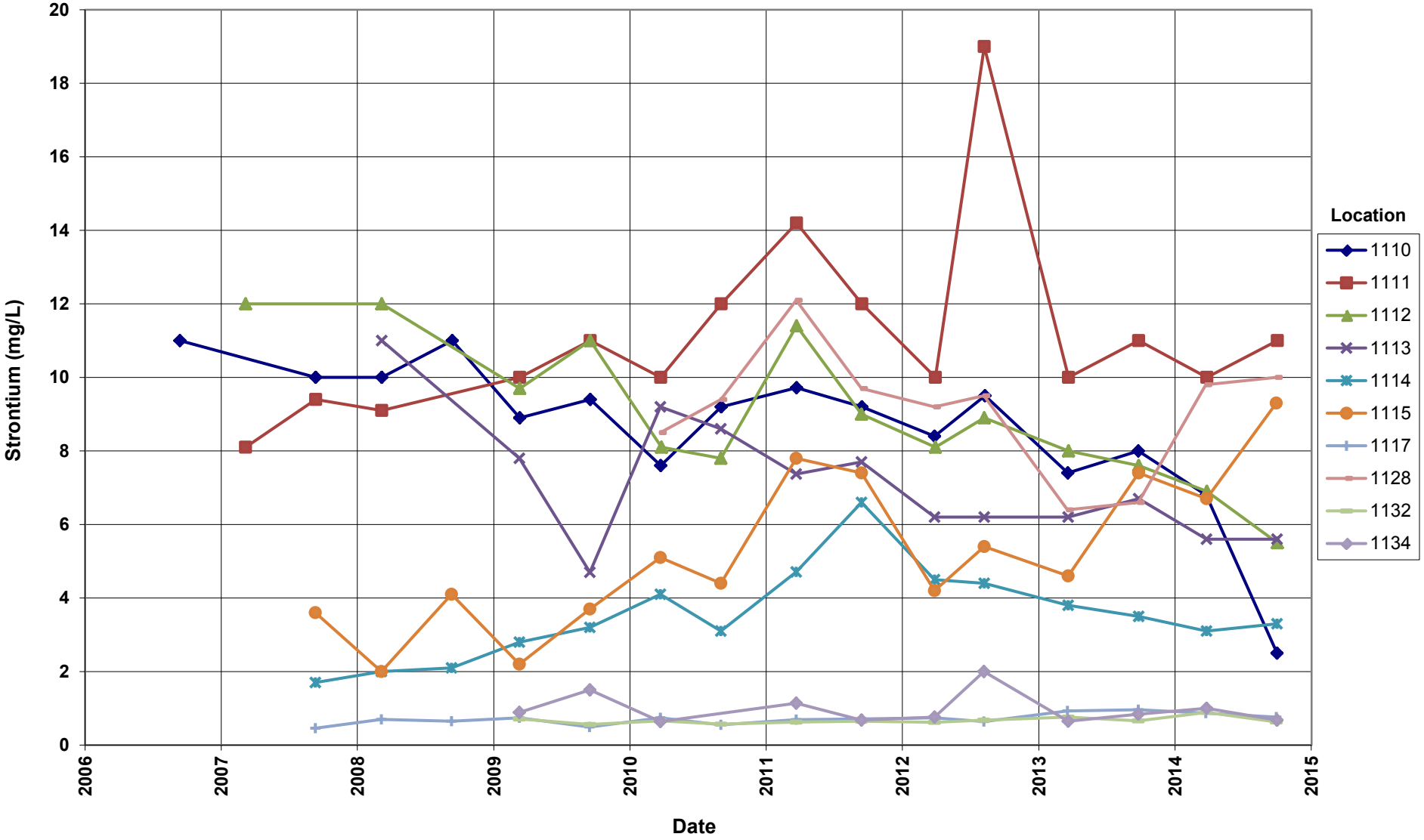

Shiprock Disposal Site (Floodplain)
Strontium Concentration
Strontium (mg/L)
30
25
20
15
10
5
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Date
Location
0625
0626
0628
0630
0734
0735
0736
0766
0768
0773

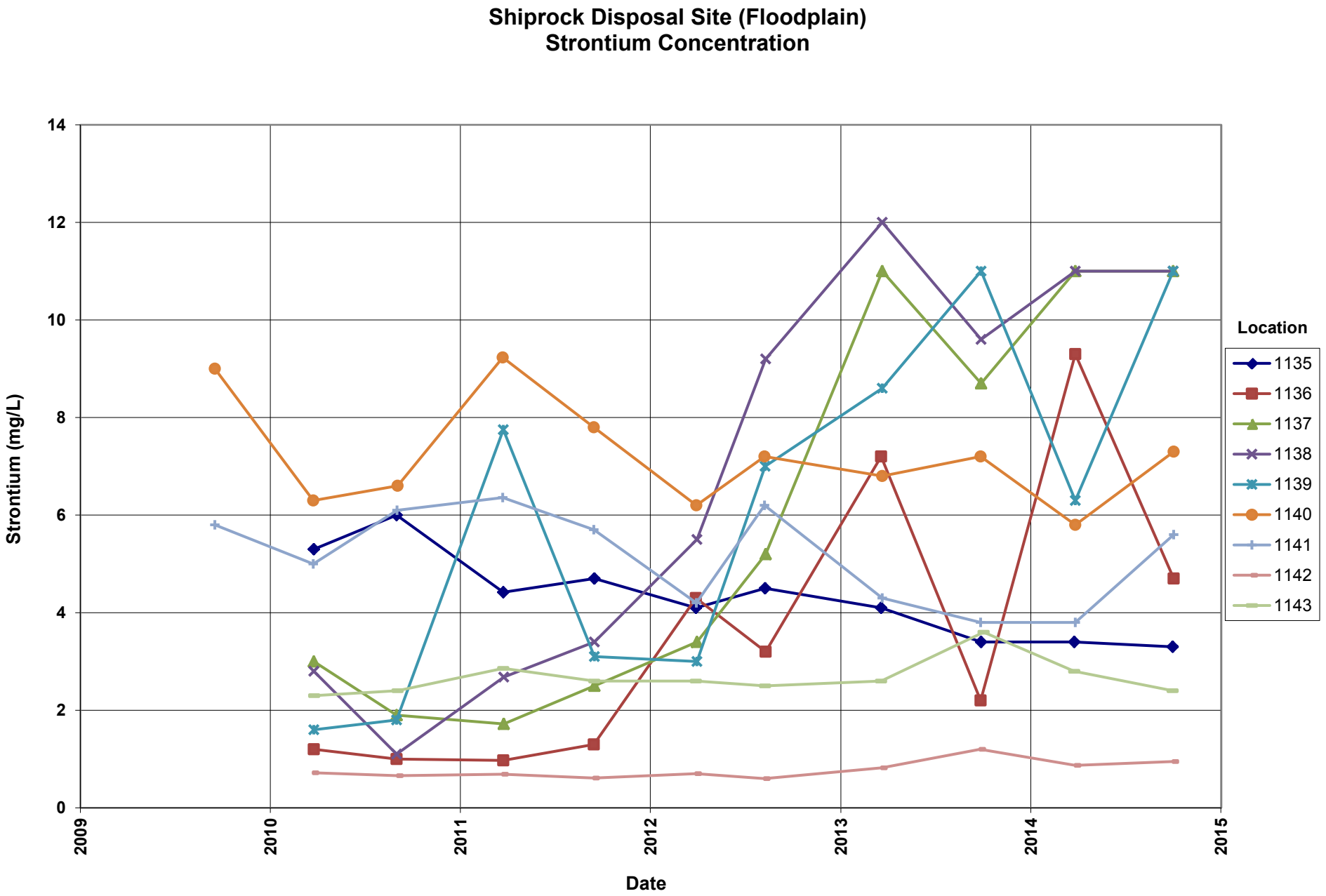

Shiprock Disposal Site (Floodplain)
Strontium Concentration
Strontium (mg/L)
25
20
15
10
5
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Date
Location
0775
0779
0782R
0783R
0792
0793
0797
0798
0850
0853

Shiprock Disposal Site (Floodplain)
Strontium Concentration

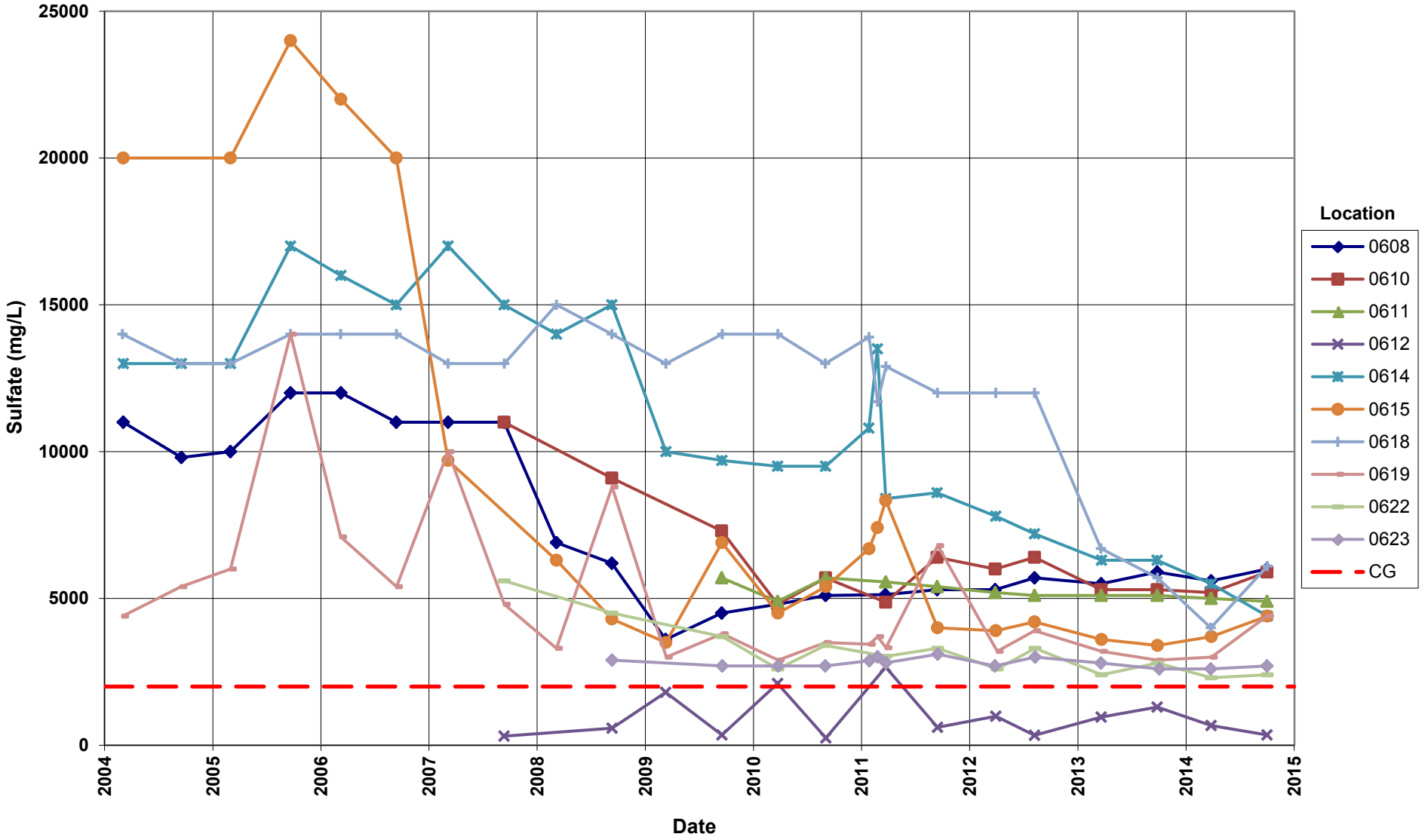


Shiprock Disposal Site (Floodplain)
Strontium Concentration

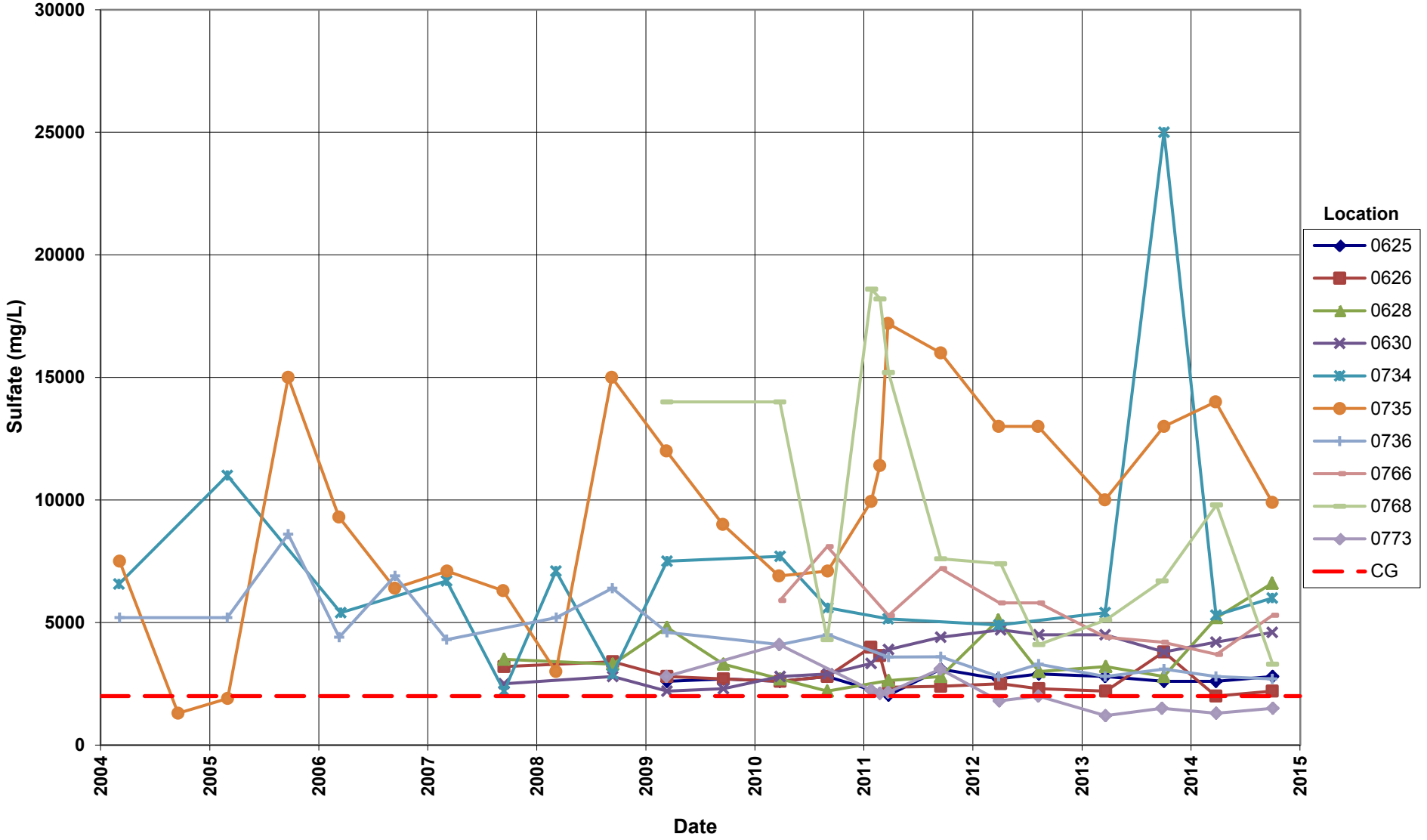



Shiprock Disposal Site (Floodplain)
Strontium Concentration
Strontium (mg/L)
0
2
4
6
8
10
12
14
2009
2010
2011
2012
2013
2014
2015
Date
Location
1135
1136
1137
1138
1139
1140
1141
1142
1143

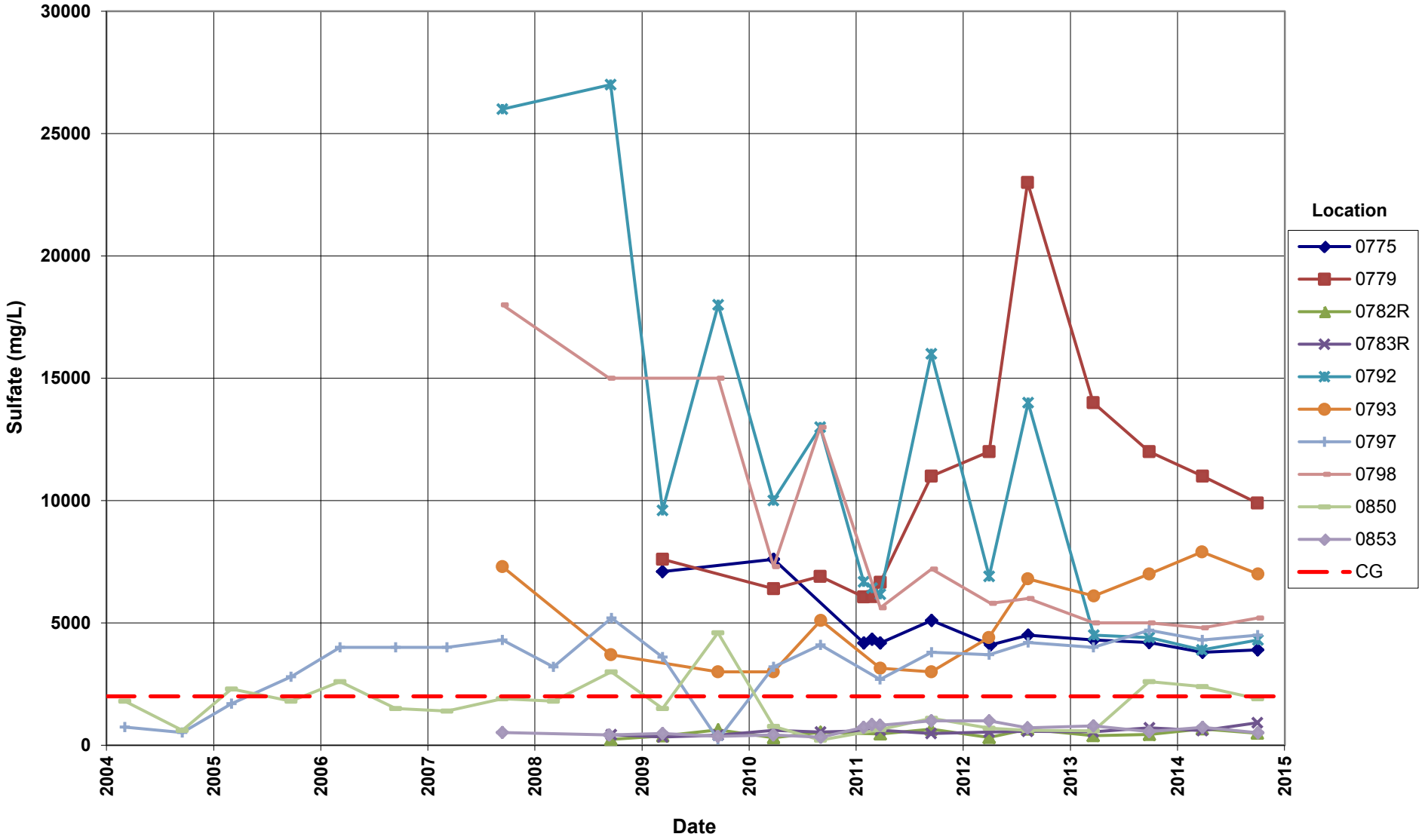
Shiprock Disposal Site (Floodplain)
Sulfate Concentration
Cleanup Goal (CG) = 2,000 mg/L

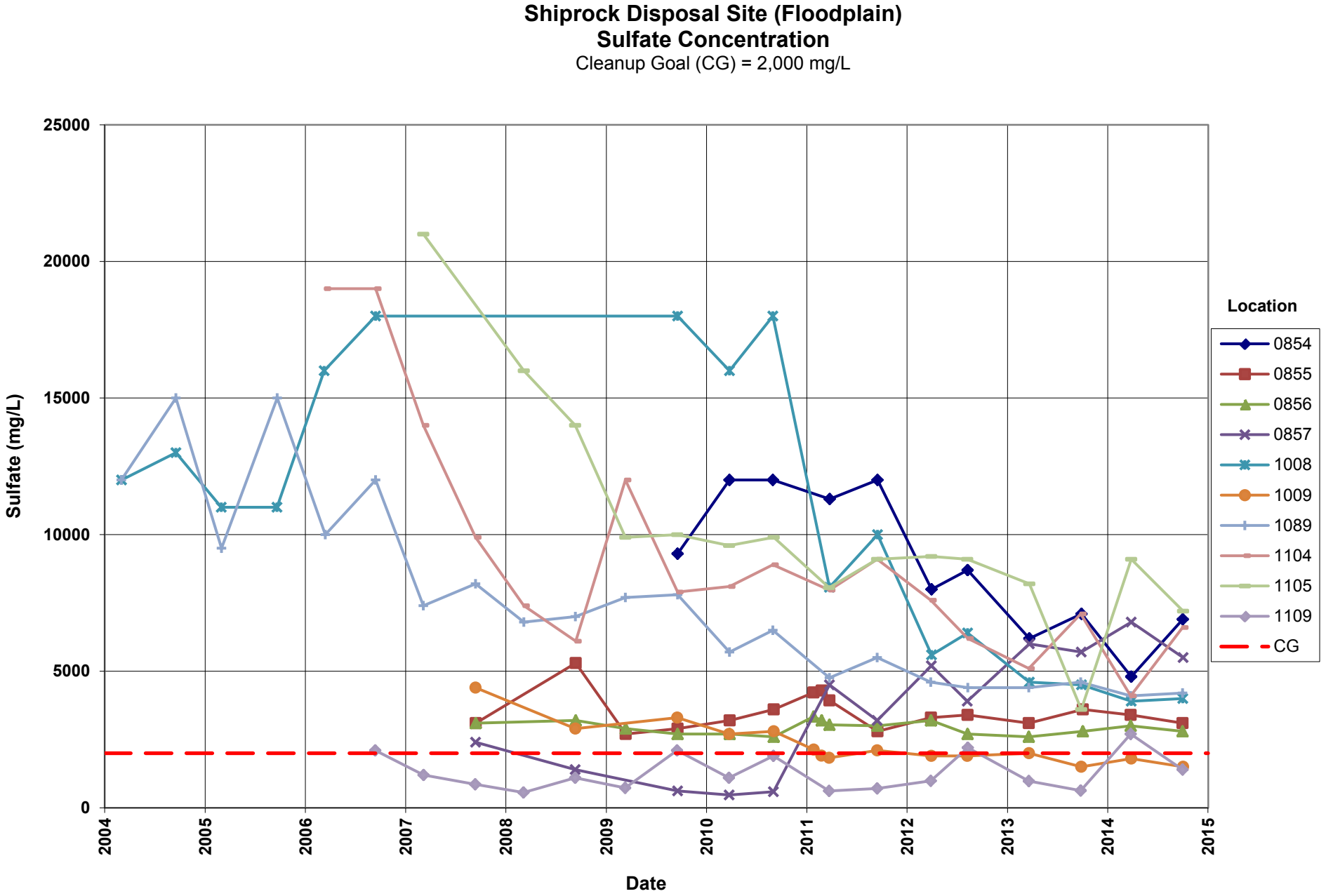


Shiprock Disposal Site (Floodplain)
Sulfate Concentration
Cleanup Goal (CG) = 2,000 mg/L

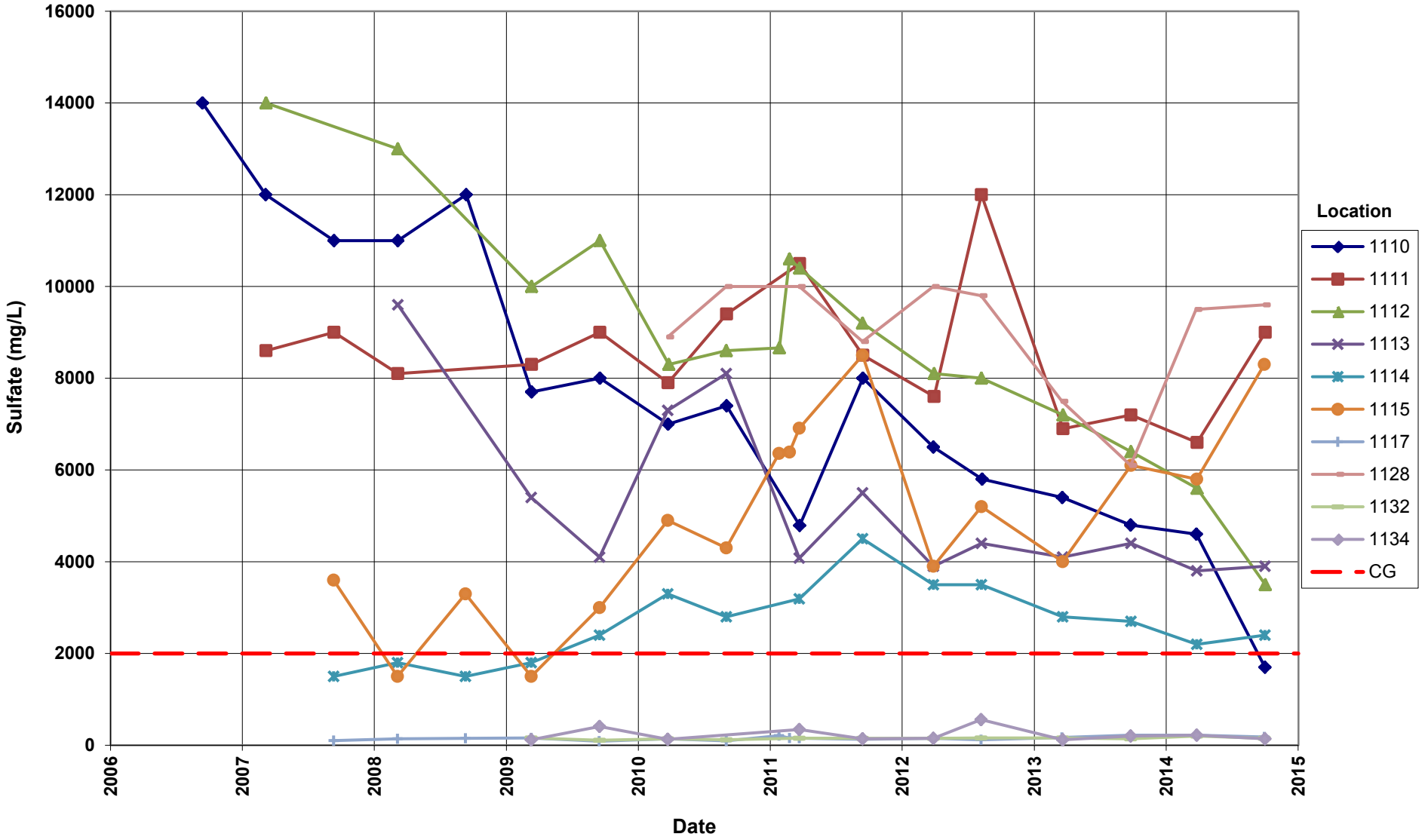


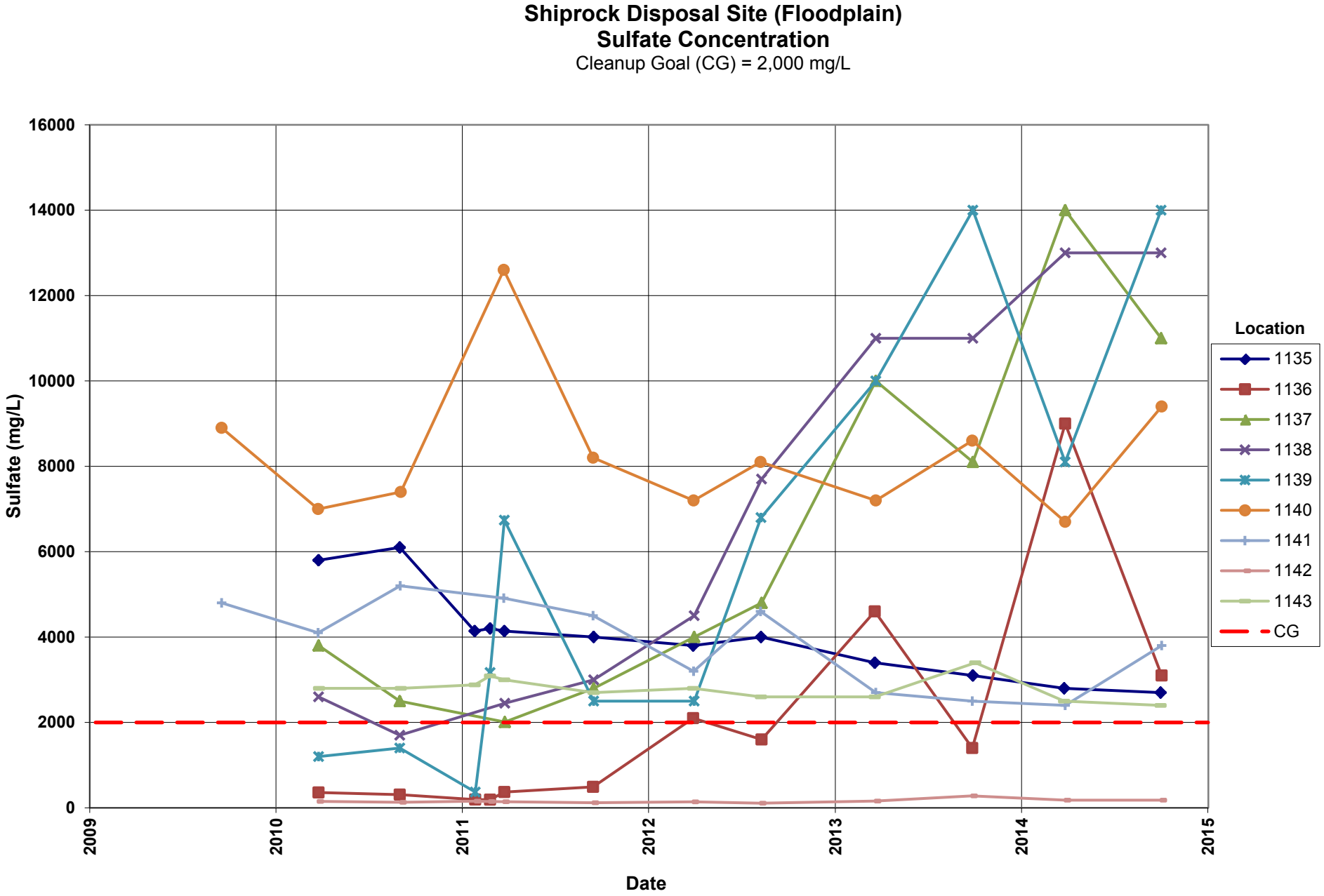
Shiprock Disposal Site (Floodplain)
Sulfate Concentration
Cleanup Goal (CG) = 2,000 mg/L



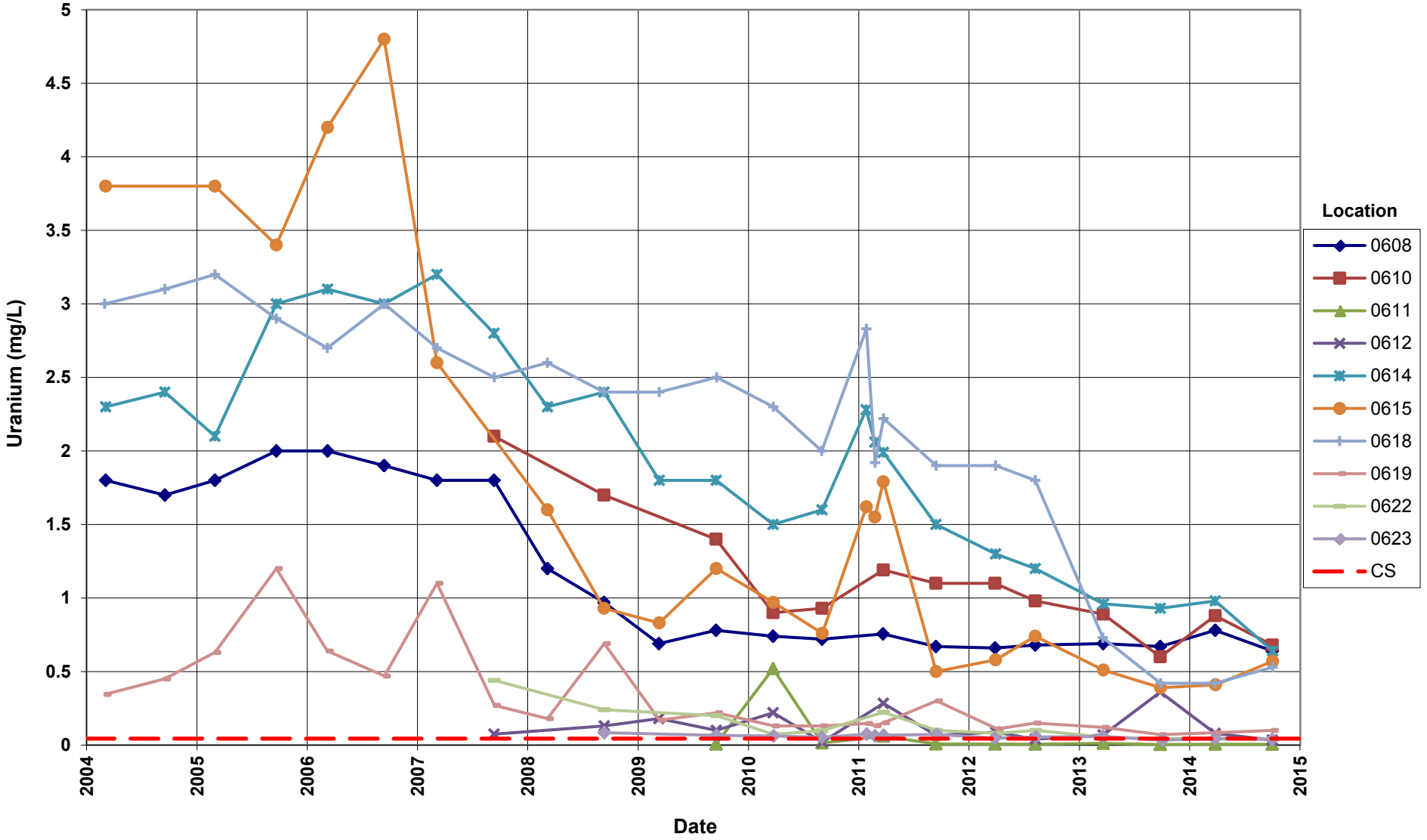

Shiprock Disposal Site (Floodplain)
Sulfate Concentration
Cleanup Goal (CG) = 2,000 mg/L
Sulfate (mg/L)
25000
20000
15000
10000
5000
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Date
Location
0854
0855
0856
0857
1008
1009
1089
1104
1105
1109
CG

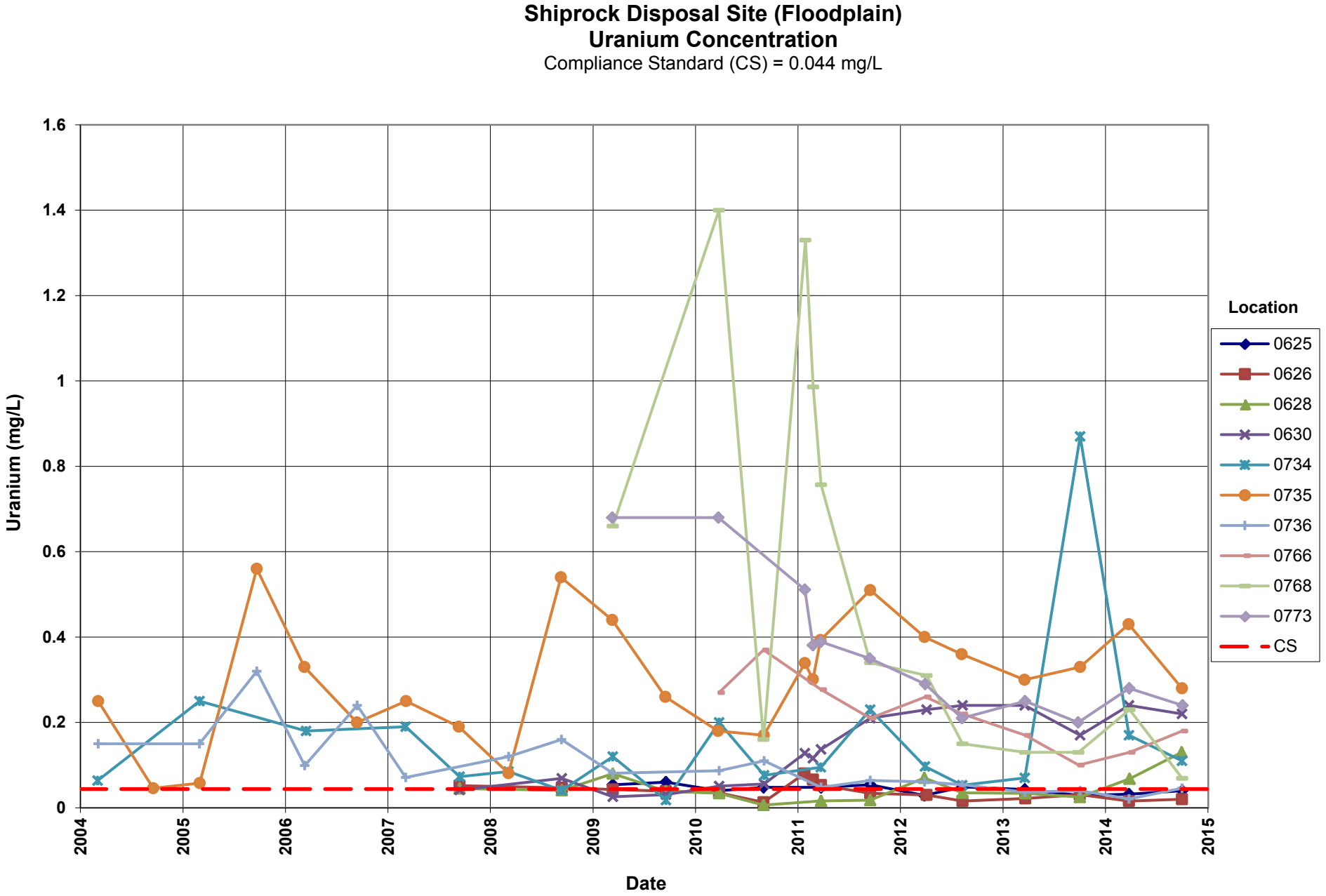
Shiprock Disposal Site (Floodplain)
Sulfate Concentration
Cleanup Goal (CG) = 2,000 mg/L

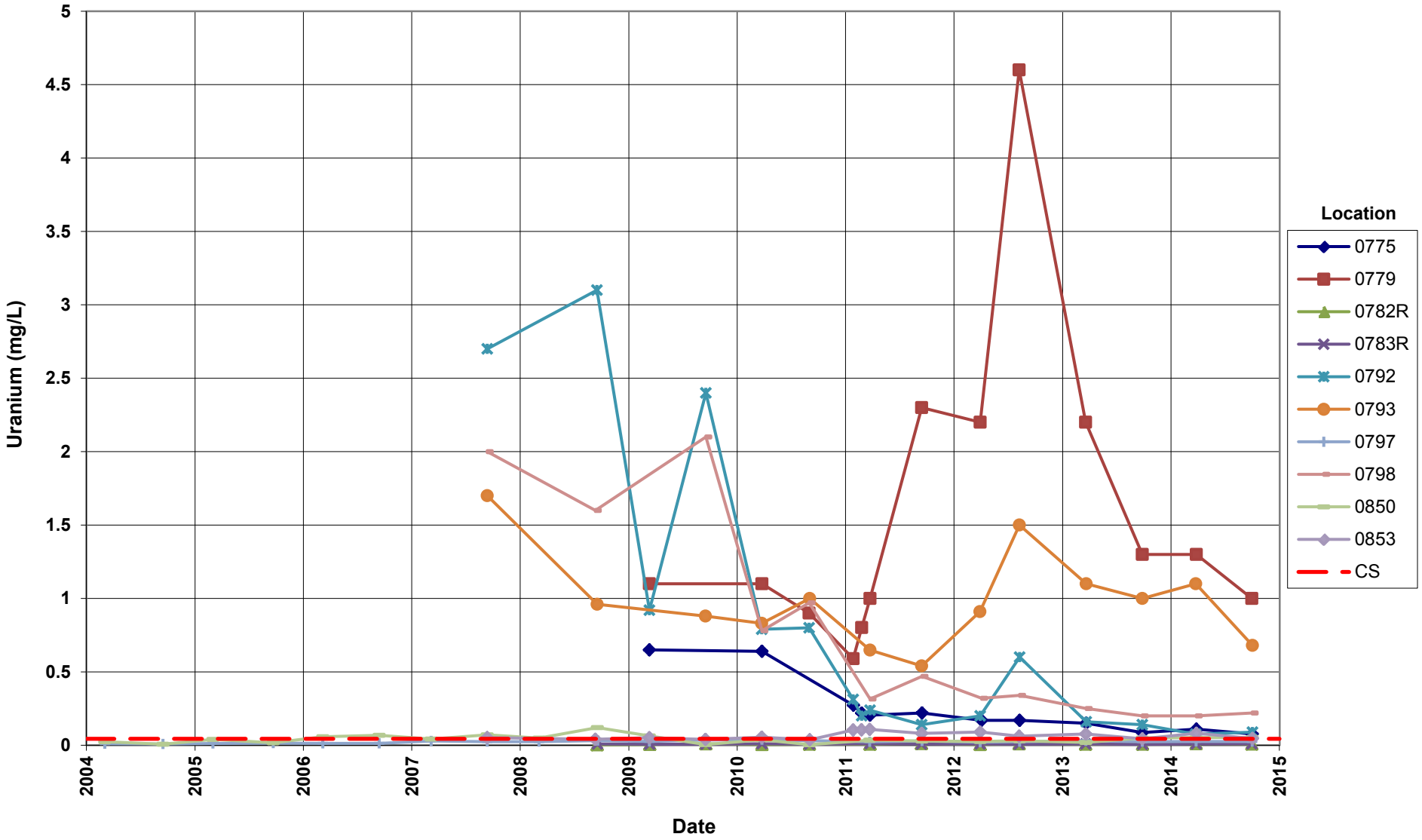


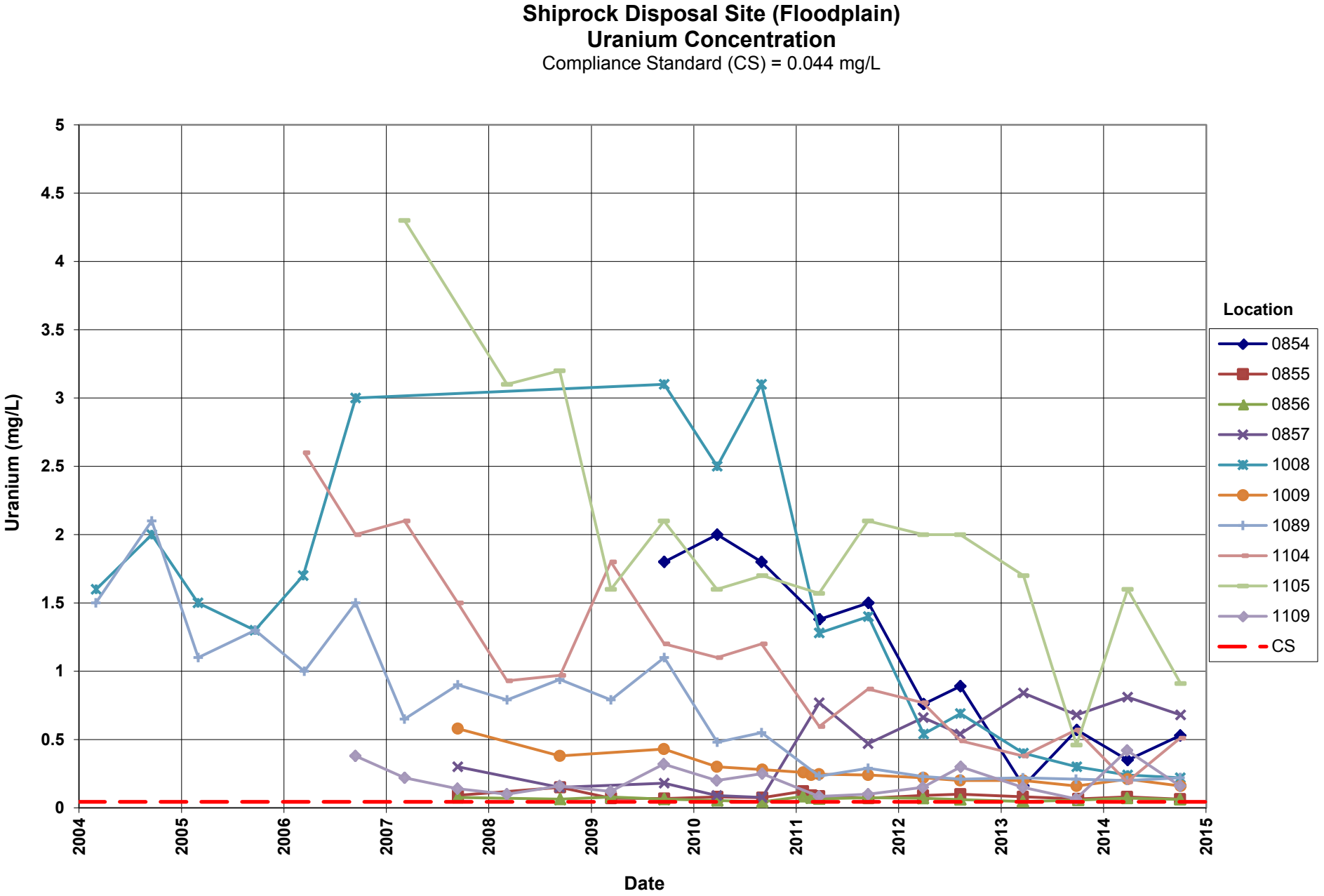

Shiprock Disposal Site (Floodplain)
Sulfate Concentration
Cleanup Goal (CG) = 2,000 mg/L
Sulfate (mg/L)
16000
14000
12000
10000
8000
6000
4000
2000
0
2009
2010
2011
2012
2013
2014
2015
Date
Location
1135
1136
1137
1138
1139
1140
1141
1142
1143
CG

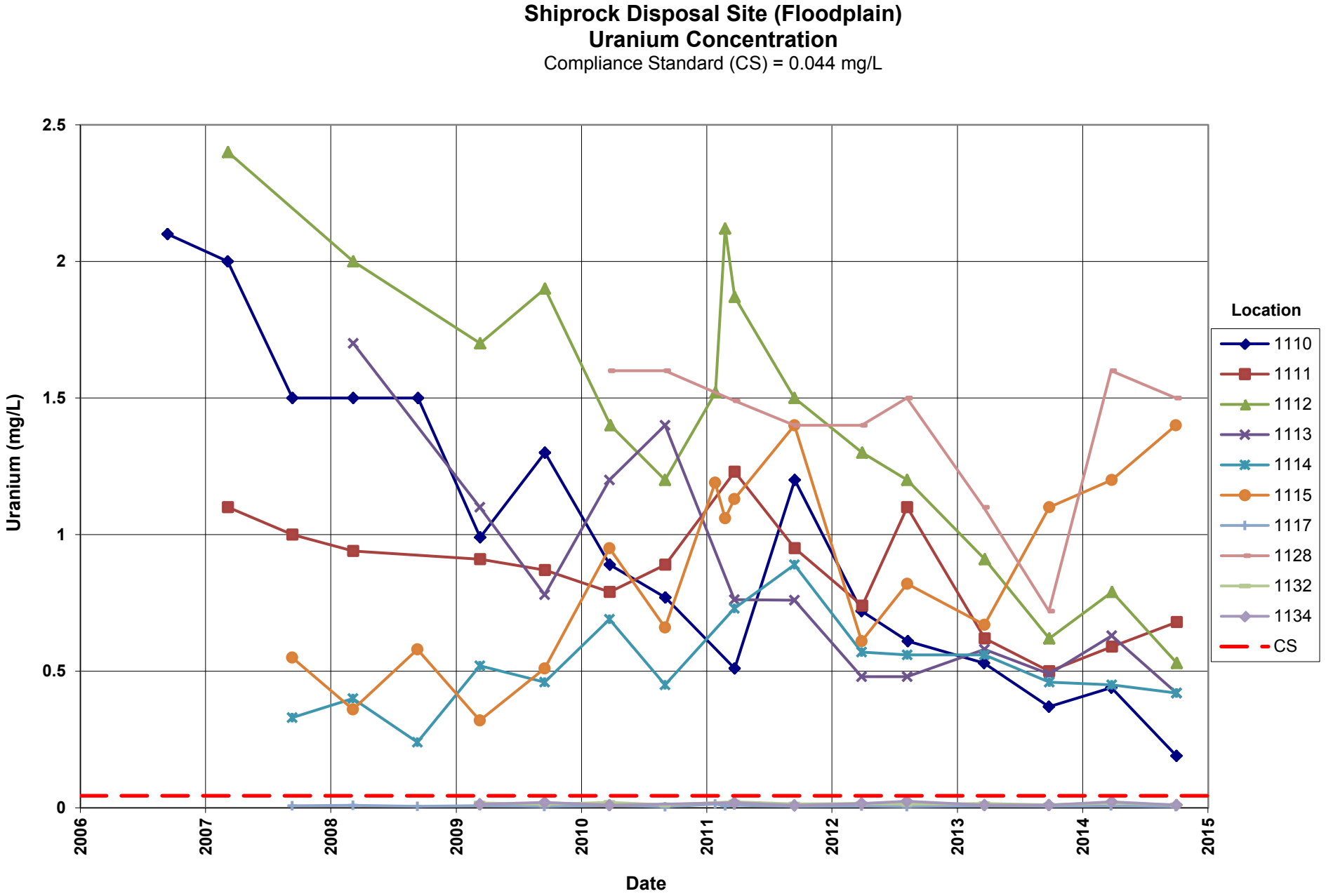
Shiprock Disposal Site (Floodplain)
Uranium Concentration
Compliance Standard (CS) = 0.044 mg/L



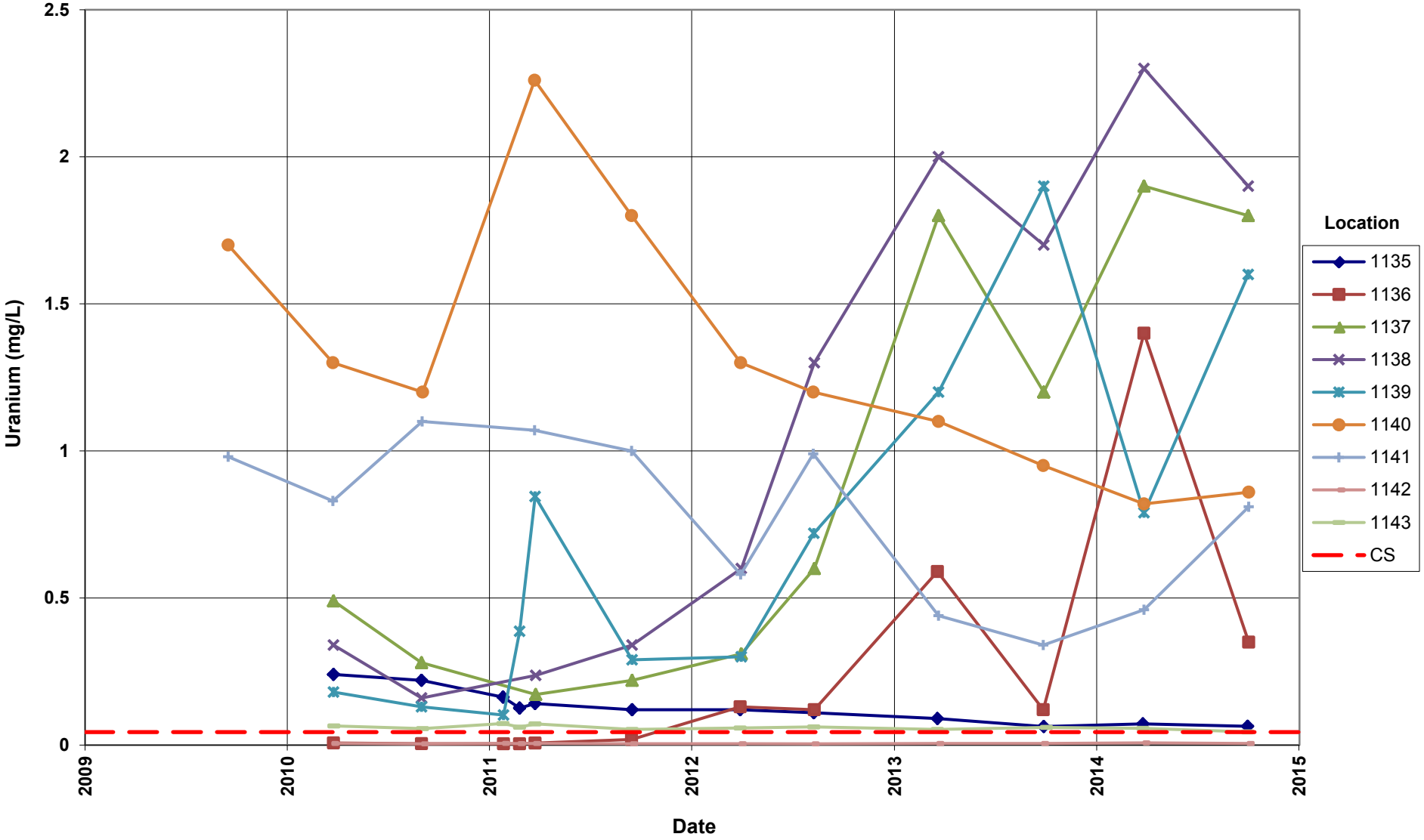

Shiprock Disposal Site (Floodplain)
Uranium Concentration
Compliance Standard (CS) = 0.044 mg/L
Uranium (mg/L)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Date
Location
0625
0626
0628
0630
0734
0735
0736
0766
0768
0773
CS


Shiprock Disposal Site (Floodplain)
Uranium Concentration
Compliance Standard (CS) = 0.044 mg/L
Uranium (mg/L)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Date
Location
0775
0779
0782R
0783R
0792
0793
0797
0798
0850
0853
CS


Shiprock Disposal Site (Floodplain)
Uranium Concentration
Compliance Standard (CS) = 0.044 mg/L
Uranium (mg/L)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Date
Location
0854
0855
0856
0857
1008
1009
1089
1104
1105
1109
CS


Shiprock Disposal Site (Floodplain)
Uranium Concentration
Compliance Standard (CS) = 0.044 mg/L
Uranium (mg/L)
2.5
2
1.5
1
0.5
0
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Date
Location
1110
1111
1112
1113
1114
1115
1117
1128
1132
1134
CS

Shiprock Disposal Site (Floodplain)
Uranium Concentration
Compliance Standard (CS) = 0.044 mg/L



Attachment 3
Sampling and Analysis Work Order

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Stoller

September 2, 2014

Task Assignment 501
Control Number 14-0831

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

SUBJECT: Contract No. DE-LM0000415, The S.M. Stoller Corporation, a wholly owned subsidiary of Huntington Ingalls Industries (Stoller)
Task Assignment 501, LTS&M 1
September 2014 Environmental Sampling at the Shiprock, New Mexico, Disposal Site

REFERENCE: Task Assignment 501, 2-501-1-02-119, Shiprock, New Mexico, Disposal Site

Dear Mr. Kautsky:

The purpose of this letter is to inform you of the upcoming sampling event at Shiprock, New Mexico. Enclosed are the map and tables specifying sample locations and analytes for monitoring at the Shiprock 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 September 29, 2014.

Samples collected at the following SHP01 (floodplain) locations will be both filtered and unfiltered: 0501, 0897, 0898, 0899, 0940, 0956, 0965, 1203, and 1205.

The following lists show the monitoring wells (along with associated zone of completion) and surface locations scheduled for sampling during this event.

MONITORING WELLS

Floodplain

608 Km	622 Al	736 Al	792 Al	855 Al	1105 Al	1115 Al	1137 Al
610 Al	623 Al	766 Al	793 Al	856 Al	1109 Nr	1117 Al	1138 Al
611 Al/Km	625 Al	768 Al	797 Al	857 Al	1110 Nr	1128 Al	1139 Al
612 Al	626 Al	773 Al	798 Al	1008 Al	1111 Al	1132 Al	1140 Al
614 Al	628 Al	775 Al	850 Al	1009 Al	1112 Al	1134 Al	1141 Al
615 Al	630 Al	779 Al	853 Al	1089 Al	1113 Al	1135 Al	1142 Al
618 Al	734 Al	782R Al	854 Al	1104 Al	1114 Al	1136 Al	1143 Al
619 Al	735 Al	783R Al					

A SUBSIDIARY OF HUNTINGTON INGALLS INDUSTRIES
2597 Legacy Way • Grand Junction, CO 81503-1789 • Telephone (970) 248-6000 • Fax (970) 248-6040

Terrace

600 Km	812 Al/Km	822 Km	833 Al	1003 Km	1068 Al	1091 Al
602 Km	813 Al/Km	823 Km	835 Al	1004 Km	1069 Al/Km	1092 Al
603 Al/Km	814 Al/Km	824 Km	836 Al	1007 Al/Km	1070 Al/Km	1093R Al
604 Km	815 Al/Km	825 Km	837 Al	1011 Al/Km	1071 Al/Km	1095 Al
725 Al/Km	816 Al/Km	826 Al/Km	838 Al	1048	1073 Al	1096 Al
726 Km	817 Km	827 Al/Km	841 Al	1049 Al/Km	1074 Al/Km	1120 Al
727 Km	818 Al	828 Al/Km	843 Al	1057 Al/Km	1078 Al/Km	1122 Al
728 Al/Km	819 Km	829 Km	844 Al/Km	1058 Km	1079 Al	DM7 Km
730 Al	820 Km	830 Km	848 Al/Km	1059 Km	1087 Nr	MW1 Km
731 Al/Km	821 Km	832 Al/Km	1002 Km	1060 Al/Km	1088 Nr	

SURFACE LOCATIONS

Floodplain

501	897	940	965	1118	1203	1205
655	899	956	967			

Terrace

662	949	1215	1218	1219	1220	1221
889						

All samples will be collected as directed in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites*. Access agreements are being reviewed and are expected to be complete by the beginning of fieldwork.

Please contact me at (970) 248-6652 if you have any questions.

Sincerely,

David Miller
Site Lead

DM/lcg/lb

Enclosures (3)

cc: (electronic)
Christina Pennal, DOE
Steve Donivan, Stoller
Lauren Goodknight, Stoller
David Miller, Stoller
EDD Delivery
rc-grand.junction
File: SHP 400.02(A)

Sampling Frequencies for Locations at Shiprock, New Mexico

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
Monitoring Wells						
FLOODPLAIN - SHP01						
608		X				Low flow
610		X				
611		X				
612		X				
614		X				Low flow
615		X				Low flow
617					X	Data logger only
618		X				Low flow
619		X				Low flow
622		X				
623		X				
625		X				
626		X				
628		X				
630		X				
734		X				Low flow
735		X				Low flow
736		X				Low flow; data logger
766		X				
768		X				
773		X				
775		X				
779		X				
782R		X				
783R		X				
792		X				
793		X				
797		X				Low flow
798		X				
850		X				Low flow
853		X				
854		X				Data logger
855		X				
856		X				
857		X				Data logger
862					X	WLs only
863					X	WLs only
1000					X	WLs only
1001					X	WLs only

Sampling Frequencies for Locations at Shiprock, New Mexico

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
1008		X				Data logger
1009		X				
1062					X	WLs only
1089		X				U, SO_4, N as NO_3 only at vault
FLOODPLAIN - SHP01						
1104		X				U, SO_4, N as NO_3 only at vault
1105		X				
1109		X				Trench 2; U, SO_4, N as NO_3 only at vault
1110		X				Trench 1; U, SO_4, N as NO_3 only at vault
1111		X				Well point; U, SO_4, N as NO_3 only. Purge 1 casing vol then sample
1112		X				Well point; U, SO_4, N as NO_3 only. Purge 1 casing vol then sample
1113		X				Well point; U, SO_4, N as NO_3 only. Purge 1 casing vol then sample
1114		X				Well point; U, SO_4, N as NO_3 only. Purge 1 casing vol then sample
1115		X				Well point; U, SO_4, N as NO_3 only. Purge 1 casing vol then sample
1117		X				Well point; U, SO_4, N as NO_3 only. Purge 1 casing vol then sample
1128		X				
1132		X				
1134		X				
1135		X				
1136		X				
1137		X				
1138		X				
1139		X				
1140		X				
1141		X				
1142		X				
1143		X				
TERRACE - SHP02						
600		X				
602		X				Data logger
603		X				
604		X				Data logger

Sampling Frequencies for Locations at Shiprock, New Mexico

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
648				Odd year		Measure flow rate semiannually; sample biennially; next in 2013
725		X				Data logger
726		X				
727		X				
728		X				Data logger
730		X				Data logger
731		X				Data logger
800					X	WLs only
801					X	WLs only
802					X	WLs only
803					X	WLs only
812		X				
813		X				Data logger
814		X				
815		X				
816		X				
817		X				Low flow
TERRACE - SHP02						
818		X				Ext. well; U, SO4, N as NO3 only at vault
819		X				Data logger
820		X				
821		X				
822		X				
823		X				
824		X				
825		X				
826		X				Data logger
827		X				Data logger
828		X				Data logger
829		X				
830		X				Data logger
832		X				
833		X				
835		X				Low flow; data logger
836		X				Low flow; data logger
837		X				Data logger
838		X				Low flow
841		X				Low flow; data logger
843		X				Data logger
844		X				

Sampling Frequencies for Locations at Shiprock, New Mexico

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
848		X				Data logger
1002		X				
1003		X				
1004		X				
1007		X				
1011		X				
1048		X				
1049		X				
1057		X				
1058		X				
1059		X				
1060		X				
1067					X	WL only; Bob Lee Wash
1068		X				Bob Lee Wash
1069		X				Bob Lee Wash; data logger
1070		X				Ext. well; U, SO4, N as NO3 only at vault
1071		X				Ext. well; U, SO4, N as NO_3 only at vault
1073		X				Data logger
1074		X				
1078		X				Ext. well; U, SO_4, N as NO_3 only at vault
1079		X				Low flow
1087		X				SUMP-Bob Lee Wash
TERRACE - SHP02						
1088		X				SUMP-Many Devils Wash
1091		X				Ext. well; U, SO_4, N as NO_3 only at vault
1092		X				Ext. well; U, SO_4, N as NO_3 only at vault
1093R		X				Ext. well; U, SO_4, N as NO_3 only at vault
1095		X				Ext. well; U, SO_4, N as NO_3 only at vault
1096		X				Ext. well; U, SO_4, N as NO_3 only at vault
1120		X				
1122		X				
MW1		X				
DM7		X				
Surface Locations						
FLOODPLAIN - SHP01						
501		X				East of disposal cell
655		X				Drainage channel
897		X				Just below mouth of Many

Sampling Frequencies for Locations at Shiprock, New Mexico

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
						Devils Wash
898					X	San Juan River upgradient
899		X				
940		X				Just NE of 1004, San Juan River
956		X				San Juan River at intake
965		X				San Juan River about 1500' below dist. Channel
967		X				San Juan River upgradient
1118		X				Seep sump (423/426) U, SO_4, N as NO_3 only at vault
1203		X				East of disposal cell
1205		X				San Juan River E of well 853
TERRACE - SHP02						
662		X				Lower Bob Lee Wash
889		X				Many Devils Wash
949		X				
1215		X				
1218		X				
1219		X				
1220		X				
1221		X				

Sampling conducted in March and September

Notes: All San Juan River locations will have both filtered and unfiltered samples collected

Constituent Sampling Breakdown

Site	Shiprock				
Analyte	**Groundwater**	**Surface Water**	**Required Detection Limit (mg/L)**	**Analytical Method**	**Line Item Code**
Approx. No. Samples/yr	256	38			
Field Measurements					
Alkalinity	X	X			
Dissolved Oxygen					
Redox Potential	X	X			
pH	X	X			
Specific Conductance	X	X			
Turbidity	X	X			
Temperature	X	X			
Laboratory Measurements					
Aluminum					
Ammonia as N (NH_3-N)	X	X	0.1	EPA 350.1	WCH-A-005
Calcium	X	X	5	SW-846 6010	LMM-01
Chloride	X	X	0.5	SW-846 9056	MIS-A-039
Chromium					
Gross Alpha					
Gross Beta					
Iron					
Lead					
Magnesium	X	X	5	SW-846 6010	LMM-01
Manganese	X	X	0.005	SW-846 6010	LMM-01
Molybdenum					
Nickel					
Nickel-63					
Nitrate + Nitrite as N (NO_3+NO_2)-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					
Sodium	X	X	1	SW-846 6010	LMM-01
Strontium	X	X	0.2	SW-846 6010	LMM-01
Sulfate	X	X	0.5	SW-846 9056	MIS-A-044
Sulfide					
Total Dissolved Solids					
Total Organic Carbon					
Uranium	X	X	0.0001	SW-846 6020	LMM-02
Vanadium					
Zinc					
Total No. of Analytes	12	12			

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

Attachment 4
Trip Report

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Stoller
Grand Junction Office
established 1959

Memorandum

DATE: November 4, 2014

TO: Dave Miller

FROM: Tashina Jasso

SUBJECT: Sampling Trip Report

Site: Shiprock, NM

Dates of Sampling Event: September 29-October 3, and October 6, 2014.

Team Members: Alison Kuhlman, Dan Sellers, David Atkinson, Gretchen Baer, Jeff Price, Rob Rice, and Tashina Jasso.

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

Type	Planned Locations	Sampled Locations
Monitoring Wells	128	113
Surface Locations	19	17

Locations Not Sampled/Reason: Monitoring well locations SHP02-0820, -0821, -0823, -0825, -0829, -0832, -1002, -1003, -1004, -1011, -1048, -1060, -1120, -1122, and -DM7, were not sampled because there was insufficient water or they were dry.

Surface water locations SHP02-0949 and -1218 were also not sampled because they were dry.

Location Specific Information:

Location IDs	Comments
SHP01-0618, SHP01-0766, SHP01-0854	Strong sulfur odors were observed at these locations.
SHP01-0655	Surface location was observed to have more water than usual in past sampling events which may have diluted water in this location.
SHP02-0816	Previously sampled under Category III stabilization criteria, was able to sample under Category I criteria during this sampling event.
SHP02-0826	Previously sampled under Category I stabilization criteria, was unable to maintain water level stability at low flow rate, sampled as a Category II.
SHP01-0766, SHP01-0779, SHP01-0854	Well structure is unprotected PVC tubing and no ability to lock.

Location IDs	Comments
SHP02-0725	Drop tubing was previously set at 12 ft. (measured from TOC), added additional tubing to 15 ft. 5 in. after water level dropped.
SHP01-1109	Low flow rate of 8 gpm, filter was cleaned and improved flow rate to 27 gpm.
SHP01-0734	Downhole tubing found outside of well, was cleaned and replaced pump head tubing. This well becomes dry rapidly and recovers slowly. Collected all sample bottles first and then field measurements were taken.
SHP01-1110	Cracked filter housing was replaced.
SHP02-0730	Category III location, metals was the only sample collected.
SHP02-0828	Black flecks observed in purge water, suspected from intruding irrigation water as there is a gap on cap.
SHP02-0830	Drop tubing was previously set at 15.9 ft. (measured from TOC), added additional tubing to 19 ft. 2 in. to reach water.
SHP02-0841	Issues initially with check ball not sealing, after approximately 4 minutes of cycling, the check ball functioned properly. Water level is below top of pump.
SHP02-1048	Tubing was pulled from location and was unable to be replaced, suspected that well is broken at the top of screen.
SHP02-1068	Metals sample was collected at approximately 75% bottle capacity because of Category III classification and low volume of water available.
SHP02-1092	Field measurements collected at 10:35, because of the well becoming dry the location was returned to at 12:30 and all samples were collected at that time.
SHP01-1118	Vault for this location was flooded, sampled as surface water location without filtering.
SHP02-1071	This location was returned to on October 6, 2014, to sample because of a pump that needed replacement. Field measurements and sample information can be found under RIN 14106534 for this location.

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

False ID	Ticket #	True ID	Sample Type
2319	MKU 240	SHP02-1078	Duplicate
2320	MKU 241	SHP02-0818	Duplicate
2665	MKU 271	SHP02-1070	Duplicate
2811	MKU 233	SHP02-1096	Duplicate
2594	MKU 177	SHP01-0655	Duplicate
2593	MKU 176	SHP01-0856	Duplicate
2210	MKU 170	SHP01-0940	RINST/EQBLANK
2211	MKU 171	SHP01-1138	Duplicate
2215	MKU 169	SHP01-0854	Duplicate
2592	MKU 175	SHP01-1008	Duplicate

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

RIN Number Assigned: Samples were assigned to RIN 14096508 (SHP01), 14096510 (SHP02), and 14106534 (SHP02). Field data sheets can be found in Crow\sms\14096508, Crow\sms\14096510, and Crow\sms\14106534.

Sample Shipment: Samples were shipped in two different shipments. The first shipment was overnight via FedEx to ALS Laboratory Group in Fort Collins, CO, from Grand Junction, CO, on Tuesday, October 7, 2014. The second shipment was shipped overnight via FedEx to ALS Laboratory Group Fort Collins, CO, from the field in Tuba City, AZ, on Tuesday, October 7, 2014.

Datalogger Download: Fifteen transducers were downloaded. The data was uploaded to SEEPro database on October 23, 2014.

Water Level Measurements: Water levels were measured in all sampled wells and in 22 additional wells. Water level data for these 22 wells (SHP01_10292014) and (SHP02_10272014) can be found in Crow/sms/FDCS/WATERLEVELS.

Well Inspection Summary: None.

Sampling Method: Samples were collected according to the *Sampling and Analysis Plan for the U. S. Department of Energy Office of Legacy Management Sites* (LMS/PLN/S04351, continually updated) and Program Directive # SHP-2013-01.

All surface water locations were collected via container immersion or through tubing reel and weight. A filtered sample and a non-filtered sample were collected at every San Juan River location and only non-filtered samples at all other surface water locations as per the Shiprock program directive.

Field Variance: The Alk2 titrator was noted as breaking at location 1105 on October 2, 2014, and was replaced. Additionally on October 1, 2014, it was suspected that the number dial gear for the Alk4 titrator was slipping occasionally. All subsequent alkalinity readings with the Alk4 titrator were checked twice to confirm that the recorded measurements were accurate.

Equipment: With the exception of two titrators all of the equipment functioned properly; see field variance section for details. Filters used to filter river samples during this event were suspect of not filtering all sediment. Evidence of sediment (very minor) was visible in four 500 ml bottles from four river locations. The river was extremely muddy and at times required up to 4 filters to collect 1 liter of water.

Institutional Controls:

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

Site Issues:

Disposal Cell/Drainage Structure Integrity: No issues observed.
Vegetation/Noxious Weed Concerns: Access to the following locations has become overgrown and is difficult to access: 0735 and 0655 and all river locations.
Maintenance Requirements: Well 1048 is suspected to have a break at top of screen.
Access Issues: Location 0833 is located near the new Navajo Tribal Utility Authority Data and Fiber-Optic Center. Samplers were approached by NTUA officials who were unaware of sampling activities. The NTUA representative requested that they be

notified in advance of any future sampling activities.
Safety Issues: None.

Corrective Action Required/Taken: Well location 1048 needs further inspection with the downhole camera to determine if well is broken at top of screen.

Review and/or change sample protocol for filtering and non-filtering Shiprock locations. Review method for filtering extremely muddy water.

At location 0625, the removal of a wasp nest from inside the well casing is needed. An attempt should be made to seal gaps in the casing to prevent wasps from entering.

Weed/vegetation and brush removal is needed at all surface locations along the river and at locations 0735 and 0655. Vegetation is reducing access, making it hazardous near and next to the river.

Contact information for location 0833 should be updated to include new information received from NTUA officials.

(TJ/lcg)

cc: (electronic)
Mark Kautsky, DOE
David Miller, Stoller
Steve Donivan, Stoller
EDD Delivery