

# Data Validation Package

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**March 2010**  
**Groundwater and Surface Water**  
**Sampling at the**  
**Shiprock, New Mexico, Disposal Site**

**June 2010**

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## **Attachment 1—Assessment of Anomalous Data**

Potential Outliers Report

## **Attachment 2—Data Presentation**

Groundwater Quality Data Floodplain Locations  
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## **Attachment 3—Sampling and Analysis Work Order**

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# Sampling Event Summary

**Site:** Shiprock, New Mexico, Disposal Site

**Sampling Period:** March 22-26, 2010

Groundwater and surface water sampling and analysis are performed semiannually at the Shiprock Disposal Site as specified in the July 2005 *Refinement of Conceptual Model and Recommendations for Improving Remediation Efficiency at the Shiprock, New Mexico, Site*. Sampling and analysis was conducted as specified in *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites* (LMS/PLN/S04351, continually updated) and the *Environmental Procedures Catalog* (LMS/PRO/S04325, continually updated). 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 and the effectiveness of groundwater removal to prevent contaminants from reaching the San Juan River.

The contaminants of concern for the Shiprock Disposal Site are ammonia (as nitrogen), manganese, nitrate + nitrite (as nitrogen), selenium, strontium, sulfate, and uranium. Wells with contaminant concentrations that exceeded 40 CFR 192.02 groundwater standards are listed in Table 1. Time-concentration graphs for the contaminants of concern are included in this report.

*Table 1. Shiprock Locations that Exceed Standards*

Analyte	Standard <sup>a</sup>	Site Code	Location	Concentration
Nitrate + Nitrite as Nitrogen	10	SHP01	0608	130
			0610	190
			0611	120
			0614	420
			0615	14
			0618	350
			0735	370
			0773	130
			0854	100
			1008	83
			1104	37
			1105	270
			1109	51
			1110	100
			1111	12
			1112	300
			1113	620
			1114	150
			1115	220
Selenium	0.01	SHP01	0610	0.160
			0611	0.084
			0614	0.710
			0615	0.130
			0618	0.230
			0622	0.024

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard <sup>a</sup>	Site Code	Location	Concentration
Selenium	0.01	SHP01	0630	0.036
			0734	0.140
			0735	0.044
			0773	0.290
			0775	0.072
			0779	0.023
			0792	0.014
			0793	0.220
			0798	0.140
			0854	0.025
			0855	0.018
			1008	0.032
			1009	0.110
			1089	0.017
			1104	0.047
			1105	0.120
			1109	0.022
			1110	0.530
			1111	0.600
			1112	0.620
			1113	0.033
1114	0.011			
1115	0.031			
1118	0.100			
1128	0.021			
1139	0.013			
1140	0.500			
1141	0.550			
Uranium	0.044	SHP01	0608	0.740
			0610	0.900
			0611	0.520
			0612	0.220
			0614	1.500
			0615	0.970
			0618	2.300
			0619	0.130
			0622	0.073
			0623	0.062
			0630	0.051
			0655	0.069
			0734	0.200
			0735	0.180
			0736	0.087
			0766	0.270
			0768	1.400
			0773	0.680
			0775	0.640
			0779	1.100
			0792	0.790
			0793	0.830
			0798	0.780
			0853	0.055
			0854	2.000
			0855	0.080
0856	0.054			
0857	0.090			
1008	2.500			
1009	0.300			
1089	0.480			
1104	1.100			
1105	1.600			
1109	0.200			

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard <sup>a</sup>	Site Code	Location	Concentration
Uranium	0.044	SHP01	1110	0.890
			1111	0.790
			1112	1.400
			1113	1.200
			1114	0.690
			1115	0.950
			1118	0.670
			1128	1.600
			1135	0.240
			1137	0.490
			1138	0.340
			1139	0.180
			1140	1.300
			1141	0.830
1143	0.065			
Nitrate + Nitrite as Nitrogen	10	SHP02	0600	75
			0602	13
			0603	1700
			0604	1200
			0727	130
			0728	150
			0731	170
			0812	1500
			0813	2300
			0814	930
			0815	600
			0816	36
			0817	500
			0818	850
			0819	130
			0822	14
			0824	260
			0825	11
			0826	47
			0827	22
			0828	100
			0830	33
			0833	370
			0835	81
			0836	20
			0838	310
			0841	690
			0843	19
			0844	700
			0846	22
0889	890			
0949	53			
1007	540			
1048	640			
1049	340			
1059	380			
1068	200			
1070	750			
1071	1100			
1073	1300			
1074	1400			
1078	620			
1079	51			
1087	190			
1088	680			
1091	1000			
1092	1500			

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard <sup>a</sup>	Site Code	Location	Concentration
Nitrate + Nitrite as Nitrogen	10	SHP02	1093R	2300
			1095	1500
			1096	640
			1215	880
			1218	120
			1221	760
			DM7	290
Selenium	0.01	SHP02	0603	0.097
			0604	0.380
			0725	0.019
			0726	0.025
			0731	0.075
			0812	5.600
			0813	0.072
			0814	1.900
			0815	0.039
			0816	0.022
			0818	2.100
			0819	0.075
			0827	0.048
			0828	0.098
			0830	0.024
			0833	0.310
			0835	0.320
			0836	0.160
			0837	0.250
			0838	0.640
			0841	3.400
			0843	0.240
			0844	1.900
			0846	0.210
			0848	0.052
			0889	2.000
			0949	0.370
			1007	0.068
			1048	1.200
1049	1.200			
1068	0.041			
1070	2.900			
1071	2.000			
1073	2.300			
1074	0.270			
1078	3.000			
1079	0.210			
1087	0.056			
1088	1.500			
1091	0.990			
1092	0.480			
1093R	0.670			
1095	0.210			
1096	2.800			
1215	1.400			
1218	0.085			
1221	1.900			
DM7	0.050			
Uranium	0.044	SHP02	0600	0.780
			0602	0.570
			0604	0.077
			0725	0.056
			0727	0.270
			0728	0.220
			0812	0.130



Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard <sup>a</sup>	Site Code	Location	Concentration
Uranium	0.044	SHP02	0813	0.110
			0814	0.082
			0815	0.310
			0817	7.500
			0818	0.095
			0819	0.870
			0820	0.090
			0822	0.083
			0824	0.290
			0825	0.049
			0826	3.300
			0827	0.870
			0828	0.540
			0833	0.190
			0835	0.073
			0837	0.048
			0838	0.068
			0841	0.130
			0844	0.170
			0889	0.200
			1007	2.200
			1048	0.160
			1049	0.160
			1059	0.063
			1068	0.580
			1070	0.096
			1071	0.130
			1073	0.058
			1074	1.900
			1078	0.150
1087	0.470			
1088	0.170			
1091	0.110			
1092	0.057			
1093R	0.130			
1095	0.047			
1096	0.100			
1215	2.100			
1218	0.079			
1221	0.210			

<sup>a</sup> Standards are listed in 40 CFR 192.02 Table 1 to Subpart A; units are in milligrams per liter.

Floodplain river location analyte concentrations for filtered and unfiltered samples were compared to statistical benchmark values derived using data from location 0898, which is upstream of the site on the San Juan River. As shown in Table 2 and Table 3, benchmark values were not exceeded for the river locations adjacent to or downstream from the site.

Table 2. Benchmark Comparison for Floodplain River Locations (Filtered Samples)

Location	Ammonia as N	Manganese	Nitrate+Nitrite as N	Selenium	Strontium	Sulfate	Uranium
Benchmark	0.1	0.025	1.2	0.002	1.20	220	0.003
0501	ND <sup>a</sup>	0.011	0.7	0.001	0.87	160	0.002
0897	ND	0.007	0.6	0.001	0.87	150	0.002
0898 (Benchmark Location)	ND	0.009	0.5	0.001	0.88	160	0.002
0899	ND	0.007	0.5	0.002	0.85	140	0.002
0940	ND	0.006	0.6	0.001	0.86	150	0.002
0956	ND	0.010	0.5	0.001	0.84	140	0.002
0965	ND	0.010	0.5	0.00	0.85	150	0.002
1203	ND	0.017	0.5	0.001	0.89	160	0.002
1205	ND	0.009	0.5	0.001	0.85	140	0.002

<sup>a</sup>ND = Not Detected.

Units are in milligrams per liter.

Table 3. Benchmark Comparison for Floodplain River Locations (Unfiltered Samples)

Location	Ammonia as N	Manganese	Nitrate+Nitrite as N	Selenium	Strontium	Sulfate	Uranium
Benchmark	0.1	2.5	0.8	0.002	2.20	150	0.009
0501	ND <sup>a</sup>	0.3	0.6	0.002	0.95	150	0.003
0897	ND	0.5	0.6	0.001	0.97	150	0.002
0898 (Benchmark Location)	ND	0.8	0.5	0.002	1.00	150	0.003
0899	ND	0.2	0.5	0.002	0.83	140	0.003
0940	ND	0.6	0.5	0.001	0.96	150	0.003
0956	ND	0.3	0.5	0.001	0.86	140	0.002
0965	ND	0.5	0.6	0.001	0.93	150	0.002
1203	ND	0.3	0.7	0.002	0.91	160	0.002
1205	ND	0.3	0.5	0.002	0.84	150	0.002

<sup>a</sup>ND = Not Detected.

Units are in milligrams per liter.

Both filtered and unfiltered samples were submitted from the river locations. A comparison of the results is shown in Table 4 (excluding ammonia as N, which was not detected in any of the river location samples).

Table 4. Floodplain River Locations, Filtered and Unfiltered Samples

Location	Analyte	Result, Filtered	Result Unfiltered	RPD <sup>a</sup>
0501	Calcium	69	75	8.3
	Chloride	20	14	35.3
	Magnesium	13	16	20.6
	Manganese	0.011	0.29	185.4
	Nitrate+Nitrite as N	0.71	0.58	20.2
	Potassium	4.6	5.4	16.0
	Selenium	0.0010	0.0018	57.1
	Sodium	4.2	4.1	2.4
	Strontium	0.87	0.95	8.8
	Sulfate	160	150	6.5
	Uranium	0.0019	0.0025	27.3
0897	Calcium	67	81	18.9
	Chloride	14	14	0
	Magnesium	13	15	14.3
	Manganese	0.0067	.470	194.4
	Nitrate+Nitrite as N	0.62	0.55	12.0
	Potassium	2.8	3.2	13.3
	Selenium	0.0012	0.0013	8.0
	Sodium	41	39	5.0
	Strontium	0.87	0.97	10.9
	Sulfate	150	150	0
	Uranium	0.0018	0.0024	28.6
0898	Calcium	67	89	28.2
	Chloride	15	14	6.9
	Magnesium	12	16	28.6
	Manganese	0.0087	0.8	195.7
	Nitrate+Nitrite as N	0.53	0.53	0
	Potassium	3.0	3.8	23.5
	Selenium	0.0010	0.0015	40.0
	Sodium	43	42	2.4
	Strontium	0.88	1.0	12.8
	Sulfate	160	150	6.5
	Uranium	0.0019	0.0028	38.3
0899	Calcium	65	69	6.0
	Chloride	14	14	0
	Magnesium	12	13	0
	Manganese	0.007	0.23	188.2
	Nitrate+Nitrite as N	0.54	0.51	5.7
	Potassium	2.9	2.7	7.1
	Selenium	0.0016	0.0016	0
	Sodium	40	39	2.5
	Strontium	0.85	0.83	2.3
	Sulfate	140	140	0
	Uranium	0.0024	0.0028	15.4

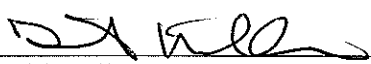
Table 4 (continued). Floodplain River Locations, Filtered and Unfiltered Samples

Location	Analyte	Result, Filtered	Result Unfiltered	RPD <sup>a</sup>
0940	Calcium	67	86	24.8
	Chloride	14	14	0
	Magnesium	12	15	22.2
	Manganese	0.0055	0.64	196.6
	Nitrate+Nitrite as N	0.55	0.53	3.7
	Potassium	2.9	3.4	15.9
	Selenium	0.0011	0.0014	24.0
	Sodium	41	40	2.5
	Strontium	0.86	0.96	11.0
	Sulfate	150	150	0
	Uranium	0.0019	0.0027	34.8
0956	Calcium	66	73	10.1
	Chloride	14	14	0
	Magnesium	12	13	8.0
	Manganese	0.010	0.29	186.7
	Nitrate+Nitrite as N	0.49	0.47	4.2
	Potassium	2.7	2.7	0
	Selenium	0.0010	0.0011	11.5
	Sodium	38	37	2.7
	Strontium	0.84	0.86	2.4
	Sulfate	140	140	0
	Uranium	0.0017	0.0021	21.1
0965	Calcium	67	80	17.7
	Chloride	14	14	0
	Magnesium	12	15	22.2
	Manganese	0.010	0.46	191.5
	Nitrate+Nitrite as N	0.49	0.57	15.1
	Potassium	2.8	3.0	6.9
	Selenium	0.0011	0.0012	8.7
	Sodium	40	38	5.1
	Strontium	0.85	0.93	9.0
	Sulfate	150	150	0
	Uranium	0.0018	0.0024	28.6
1203	Calcium	69	73	5.6
	Chloride	15	15	0
	Magnesium	13	15	14.3
	Manganese	0.017	0.280	177.1
	Nitrate+Nitrite as N	0.53	0.66	21.8
	Potassium	3.0	4.8	46.1
	Selenium	0.0011	0.0017	42.9
	Sodium	41	41	0
	Strontium	0.89	0.91	2.2
	Sulfate	160	160	0
	Uranium	0.0020	0.0024	18.2

Table 4 (continued). Floodplain River Locations, Filtered and Unfiltered Samples

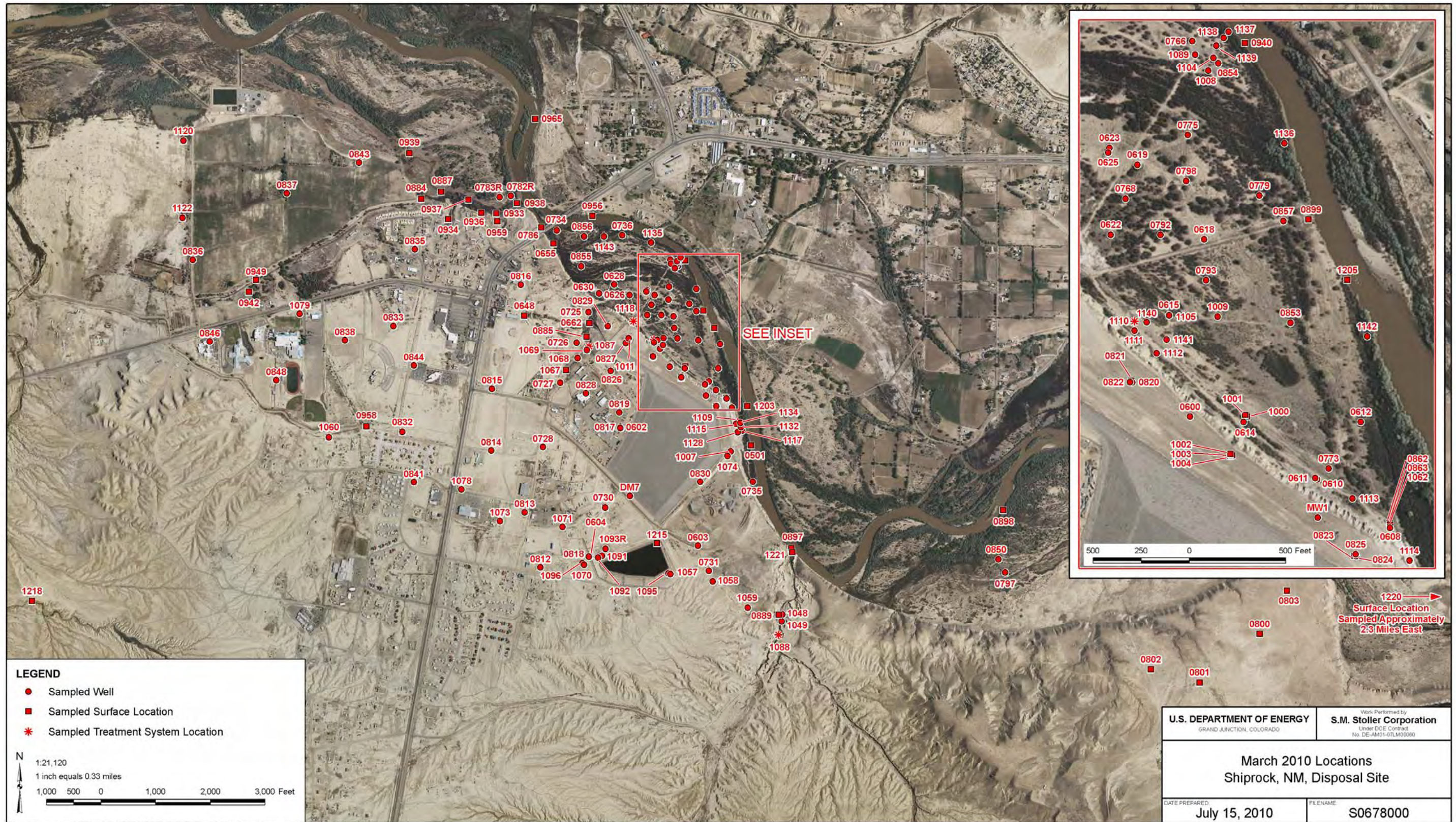
Location	Analyte	Result, Filtered	Result Unfiltered	RPD <sup>a</sup>
1205	Calcium	66	70	5.9
	Chloride	15	15	0
	Magnesium	12	14	15.4
	Manganese	0.0086	0.270	187.7
	Nitrate+Nitrite as N	0.47	0.54	13.9
	Potassium	2.8	4.4	44.4
	Selenium	0.0011	0.0023	70.6
	Sodium	39	38	2.6
	Strontium	0.85	0.84	1.2
	Sulfate	140	150	6.9
	Uranium	0.0019	0.0023	19.0

<sup>a</sup> RPD = Relative Percent Difference. Units are in milligrams per liter.

  
 \_\_\_\_\_  
 David Miller  
 Site Lead, S.M. Stoller

7/21/10  
 \_\_\_\_\_  
 Date

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Shiprock, New Mexico, Disposal Site Sample Monitoring Locations

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# Data Assessment Summary

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## Water Sampling Field Activities Verification Checklist

<b>Project</b>	Shiprock, New Mexico	<b>Date(s) of Water Sampling</b>	March 22-26, 2010
<b>Date(s) of Verification</b>	May 19, 2010	<b>Name of Verifier</b>	Steve Donovan

	<b>Response (Yes, No, NA)</b>	<b>Comments</b>
1. Is the SAP the primary document directing field procedures? List other documents, SOPs, instructions.	Yes	Work Order Letter dated March 4, 2010
2. Were the sampling locations specified in the planning documents sampled?	No	<p>A total of 29 locations were not sampled for the following reasons:</p> <p>12 surface water locations (0884, 0885, 0887, 0933, 0934, 0936, 0937, 0938, 0939, 0942, 0958, and 0959) were dry.</p> <p>13 wells (0730, 0821, 0823, 0829, 0832, 1002, 1003, 1004, 1011, 1060, 1069, 1120, and 1122) were dry.</p> <p>Surface water location 0786 was moist, but did not have enough water to sample.</p> <p>Well 0839 has been destroyed.</p> <p>Well 1057 had a dedicated pump that was not functioning.</p> <p>The location of seep 1219 (requested by the Navajos) was not known at the time of sampling.</p>
2. Was a pre-trip calibration conducted as specified in the above-named documents?	Yes	Pre-trip calibrations were performed on March 19, 2010 and March 24, 2010.
3. Was an operational check of the field equipment conducted daily? Did the operational checks meet criteria?	Yes Yes	
4. Were the number and types (alkalinity, temperature, specific conductance, pH, turbidity, DO, ORP) of field measurements taken as specified?	Yes	
5. Was the category of the well documented?	Yes	
6. Were the following conditions met when purging a Category I well: Was one pump/tubing volume purged prior to sampling? Did the water level stabilize prior to sampling? Did pH, specific conductance, and turbidity measurements stabilize prior to sampling? Was the flow rate less than 500 mL/min? If a portable pump was used, was there a 4-hour delay between pump installation and sampling?	Yes Yes No Yes NA	The pH for wells 0725, 0813, and 0830 did not meet the stability criteria.

## Water Sampling Field Activities Verification Checklist (continued)

	Response (Yes, No, NA)	Comments
7. 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	
8. Were duplicates taken at a frequency of one per 20 samples?	Yes	Eight duplicate samples were collected.
9. 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.
10. Were trip blanks prepared and included with each shipment of VOC samples?	NA	
11. Were QC samples assigned a fictitious site identification number?	Yes	
Was the true identity of the samples recorded on the Quality Assurance Sample Log or in the Field Data Collection System (FDSC) report?	Yes	
12. Were samples collected in the containers specified?	Yes	
13. Were samples filtered and preserved as specified?	Yes	
14. Were the number and types of samples collected as specified?	Yes	
15. Were chain of custody records completed and was sample custody maintained?	Yes	
16. Are field data sheets signed and dated by both team members (hardcopies) or are dates present for the "Date Signed" fields (FDSC)?	Yes	
17. Was all other 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, Floodplain Locations

### General Information

Report Number (RIN): 10032912  
 Sample Event: March 22-26, 2010  
 Site(s): Shiprock Disposal Site (Floodplain), New Mexico  
 Laboratory: ALS Laboratory Group, Fort Collins, Colorado  
 Work Order No.: 1003318  
 Analysis: Metals and Wet Chemistry  
 Validator: Steve Donovan  
 Review Date: May 14, 2010

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

*Table 5. Analytes and Methods*

Analyte	Line Item Code	Prep Method	Analytical Method
Ammonia as N	WCH-A-005	EPA 350.1	EPA 350.1
Calcium, Magnesium, Manganese, Potassium, Sodium, Strontium	LMM-01	SW-846 3005A	SW-846 6010B
Chloride	MIS-A-039	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 3005A	SW-846 6020A
Sulfate	MIS-A-044	SW-846 9056	SW-846 9056

### Data Qualifier Summary

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

*Table 6. Data Qualifier Summary*

Sample Number	Location	Analyte	Flag	Reason
1003318-2	0501	Magnesium	J	Matrix spike failure
1003318-2	0501	Potassium	J	Matrix spike failure
1003318-2	0501	Sodium	J	Serial dilution failure

## Sample Shipping/Receiving

ALS Laboratory Group in Fort Collins, Colorado, received 83 water samples on March 31, 2010, accompanied by Chain of Custody (COC) forms. The COC forms were checked to confirm that all of the samples were listed on the forms 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. The receiving documentation included copies of the shipping labels listing the air waybill numbers.

## Preservation and Holding Times

The sample shipments were received intact with the temperatures inside the iced coolers between 2.2 °C and 2.8 °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 exceptions. The metals aliquot for sample 0619 was received with a pH greater than two because of the buffering capacity of the sample. Prior to analysis, the laboratory acidified and equilibrated this aliquot to a pH less than two as required. All samples were analyzed within the required holding time.

## Laboratory Instrument Calibration

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

### *Method MCAWW 350.1*

Calibration was performed for ammonia as N on April 13, 2010, using six calibration standards to establish a linear curve. The calibration curve correlation coefficient value was greater than 0.995 and the absolute value of the intercept was less than 3 times the method detection limit (MDL), demonstrating acceptable instrument performance. Initial and continuing calibration verification checks were made at the required frequency resulting in 16 verification checks. All calibration checks met the acceptance criteria.

### *Method MCAWW 353.2*

Calibration was performed for nitrate + nitrite as N on April 12, 2010, using seven calibration standards to establish a linear curve. The calibration curve correlation coefficient value was greater than 0.995 and the absolute value of the intercept was less than 3 times the MDL, demonstrating acceptable instrument performance. Initial and continuing calibration verification checks were made at the required frequency resulting in 16 verification checks. All calibration checks met the acceptance criteria.

#### *Method SW-846 6010B*

Three calibrations for calcium, magnesium, manganese, potassium, sodium, and strontium were performed between April 22 and April 26, 2010, using single point calibrations. Initial and continuing calibration verification checks were made at the required frequency resulting in 49 verification checks. All calibration checks met the acceptance criteria. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curve near the practical quantitation limit (PQL) and all results were within the acceptance range.

#### *Method SW-846 6020A*

Four calibrations for selenium and uranium were performed between April 19 and April 21, 2010, 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, demonstrating acceptable instrument performance. Initial and continuing calibration verification checks were made at the required frequency resulting in 24 verification checks. All calibration checks met the acceptance criteria. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curve near the PQL and all results were within the acceptance range. Mass calibration and resolution verifications were performed at the beginning of each analytical run in accordance with the analytical procedure. Internal standard recoveries associated with requested analytes were stable and within acceptable ranges.

#### *Method SW-846 9056*

Calibrations were performed for chloride and sulfate on April 6, 2010, 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, demonstrating acceptable instrument performance. Initial and continuing calibration verification checks were made at the required frequency resulting in 16 verification checks. All calibration checks met the acceptance criteria.

#### Method and Calibration Blanks

Method blanks are analyzed to assess any contamination that may have occurred during sample preparation. Calibration blanks are analyzed to assess instrument contamination prior to and during sample analysis. All initial and continuing calibration blank results associated with the samples were below the PQL. Many magnesium, manganese, and strontium calibration blanks were negative and the absolute values were greater than the MDL but less than the PQL. All associated sample results were greater than 5 times the MDL.

#### Inductively Coupled Plasma Interference Check Sample Analysis

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

#### Matrix Spike Analysis

Matrix spike and matrix spike duplicate (MS/MSD) pairs were analyzed for all analytes as a measure of method performance in the sample matrix. The MS data are not evaluated when the

concentration of the unspiked sample is greater than 4 times the spike concentration. The spike recoveries met the recovery criteria for all analytes evaluated with the following exceptions. The magnesium and potassium MS recoveries did not meet the acceptance criteria for one sample each. The associated sample results are qualified with a “J” flag as estimated values.

#### Laboratory Replicate Analysis

Laboratory replicate analyses are used to determine laboratory precision for each sample matrix. The relative percent difference for replicate results that are greater than 5 times the PQL should be less than 20 percent. For results that are less than 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 PQL for method 6010B or greater than 100 times the PQL for method 6020A. All evaluated serial dilution data were acceptable with the following exception. The sodium serial dilution results failed to meet the acceptance criteria for one sample. The associated sample result is qualified with a “J” flag as an estimated value.

#### Detection Limits/Dilutions

Samples were diluted in a consistent and acceptable manner when required or to reduce interferences. The required detection limits were achieved for all analytes.

#### 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. There were no manual integrations performed and all peak integrations were satisfactory.



## Electronic Data Deliverable (EDD) File

The EDD file arrived on April 29, 2010. 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: 10032912    Lab Code: PAR    Validator: Steve Donovan    Validation Date: 5/14/2010

Project: Shiprock Monitoring    Analysis Type:     Metals     General Chem     Rad     Organics

# of Samples: 83    Matrix: WATER    Requested Analysis Completed: Yes

### Chain of Custody

Present: OK    Signed: OK    Dated: OK

### Sample

Integrity: OK    Preservation: OK    Temperature: OK

### Select Quality Parameters

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

All analyses were completed within the applicable holding times.

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

There was 1 trip/equipment blank evaluated.

There were 3 duplicates evaluated.

**SAMPLE MANAGEMENT SYSTEM**  
**Metals Data Validation Worksheet**

RIN: 10032912      Lab Code: PAR      Date Due: 4/28/2010  
 Matrix: Water      Site Code: SHP      Date Completed: 4/30/2010

Analyte	Date Analyzed	CALIBRATION						Method	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
		Int.	R^2	ICV	CCV	ICB	CCB								
CALCIUM	04/22/2010			OK	OK	OK	OK	OK	102.0	101.0	100.0	0.0	103.0	0.0	107.0
CALCIUM	04/22/2010							OK	102.0	103.0	101.0	1.0	104.0	7.0	107.0
CALCIUM	04/23/2010			OK	OK	OK	OK	OK	100.0	100.0	102.0	1.0	104.0	0.0	105.0
CALCIUM	04/23/2010							OK	99.0	101.0	100.0	0.0	103.0	1.0	103.0
CALCIUM	04/26/2010			OK	OK	OK	OK	OK		112.0	104.0	3.0	103.0	0.0	104.0
MAGNESIUM	04/22/2010			OK	OK	OK	OK	OK	103.0	101.0	101.0	0.0	105.0	1.0	108.0
MAGNESIUM	04/22/2010							OK	104.0	102.0	100.0	1.0	106.0	7.0	104.0
MAGNESIUM	04/23/2010			OK	OK	OK	OK	OK	103.0	103.0	106.0	2.0	106.0	1.0	104.0
MAGNESIUM	04/23/2010							OK	102.0	102.0	102.0	0.0	107.0	1.0	104.0
MAGNESIUM	04/26/2010			OK	OK	OK	OK	OK		123.0	117.0	4.0	107.0	2.0	103.0
MANGANESE	04/22/2010			OK	OK	OK	OK	OK	98.0	94.0	93.0	1.0	90.0	1.0	102.0
MANGANESE	04/22/2010							OK	99.0	91.0	87.0	1.0	90.0	3.0	96.0
MANGANESE	04/23/2010			OK	OK	OK	OK	OK	100.0	96.0	99.0	2.0	89.0	3.0	94.0
MANGANESE	04/23/2010							OK	99.0	91.0	89.0	0.0	92.0	3.0	103.0
MANGANESE	04/26/2010			OK	OK	OK	OK	OK		115.0	119.0	3.0	90.0		100.0
POTASSIUM	04/22/2010			OK	OK	OK	OK	OK	95.0	101.0	100.0	1.0			80.0
POTASSIUM	04/22/2010							OK	97.0	112.0	110.0	1.0			79.0
POTASSIUM	04/23/2010			OK	OK	OK	OK	OK	97.0	107.0	112.0	4.0			76.0

**SAMPLE MANAGEMENT SYSTEM**  
**Metals Data Validation Worksheet**

RIN: 10032912      Lab Code: PAR      Date Due: 4/28/2010  
 Matrix: Water      Site Code: SHP      Date Completed: 4/30/2010

Analyte	Date Analyzed	CALIBRATION						Method	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
		Int.	R^2	ICV	CCV	ICB	CCB								
POTASSIUM	04/23/2010							OK	96.0	113.0	112.0	1.0			80.0
POTASSIUM	04/26/2010			OK	OK	OK	OK	OK		134.0	129.0	4.0			79.0
SELENIUM	04/19/2010	0.0000	1.0000	OK	OK	OK	OK	OK		106.0	107.0	1.0	104.0	9.0	121.0
SELENIUM	04/19/2010									103.0	104.0	1.0	103.0		109.0
SELENIUM	04/20/2010	0.0000	1.0000	OK	OK	OK	OK	OK	106.0	104.0	103.0	2.0	102.0		110.0
SELENIUM	04/20/2010								110.0	111.0	110.0	1.0	98.0		112.0
SELENIUM	04/21/2010	0.0000	1.0000	OK	OK	OK	OK	OK	110.0	104.0	104.0	0.0			118.0
SELENIUM	04/21/2010								104.0	120.0	110.0	9.0			117.0
SODIUM	04/22/2010			OK	OK	OK	OK	OK	95.0	92.0	90.0	1.0		3.0	92.0
SODIUM	04/22/2010							OK	96.0	104.0	99.0	2.0		12.0	90.0
SODIUM	04/23/2010			OK	OK	OK	OK	OK	97.0	98.0	105.0	3.0		3.0	87.0
SODIUM	04/23/2010							OK	95.0	103.0	101.0	1.0		3.0	89.0
SODIUM	04/26/2010			OK	OK	OK	OK	OK		113.0	106.0	3.0		2.0	87.0
STRONTIUM	04/22/2010			OK	OK	OK	OK	OK	102.0	95.0	93.0	0.0	98.0	2.0	101.0
STRONTIUM	04/22/2010							OK	103.0	100.0	96.0	2.0	99.0	3.0	100.0
STRONTIUM	04/23/2010			OK	OK	OK	OK	OK	98.0	85.0	92.0	2.0	94.0	6.0	95.0
STRONTIUM	04/23/2010							OK	97.0	88.0	84.0	1.0	97.0	6.0	95.0
STRONTIUM	04/26/2010			OK	OK	OK	OK	OK		105.0	106.0	0.0	95.0		95.0

**SAMPLE MANAGEMENT SYSTEM**  
**Metals Data Validation Worksheet**

RIN: 10032912      Lab Code: PAR      Date Due: 4/28/2010  
 Matrix: Water      Site Code: SHP      Date Completed: 4/30/2010

Analyte	Date Analyzed	CALIBRATION						Method	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
		Int.	R^2	ICV	CCV	ICB	CCB								
URANIUM	04/19/2010	0.0000	1.0000	OK	OK	OK	OK	OK		94.0	95.0	1.0	104.0	3.0	90.0
URANIUM	04/19/2010									93.0	96.0	2.0	102.0	2.0	105.0
URANIUM	04/20/2010	0.0000	1.0000	OK	OK	OK	OK	OK	116.0	115.0	120.0	4.0	104.0	3.0	90.0
URANIUM	04/20/2010								115.0	121.0	124.0	2.0	103.0	2.0	95.0
URANIUM	04/21/2010	0.0000	1.0000	OK	OK	OK	OK	OK	104.0	92.0	93.0	1.0		9.0	110.0
URANIUM	04/21/2010								103.0	116.0	107.0	6.0			100.0

**SAMPLE MANAGEMENT SYSTEM**  
**Wet Chemistry Data Validation Worksheet**

RIN: 10032912      Lab Code: PAR      Date Due: 4/28/2010  
 Matrix: Water      Site Code: SHP      Date Completed: 4/30/2010

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
AMMONIA AS N	04/13/2010	0.000	0.9999	OK	OK	OK	OK	96.00	103.0	101.0	2.00		
AMMONIA AS N	04/13/2010						OK	97.00	103.0	104.0	1.00		
AMMONIA AS N	04/13/2010						OK	96.00	75.0	76.0	1.00		
AMMONIA AS N	04/13/2010						OK	97.00					
AMMONIA AS N	04/13/2010						OK	98.00					
CHLORIDE	04/06/2010	0.000	0.9999	OK	OK	OK	OK		93.0	94.0	1.00		
CHLORIDE	04/06/2010								95.0				
CHLORIDE	04/07/2010				OK		OK	93.00	97.0	95.0	2.00		
CHLORIDE	04/07/2010						OK	90.00	98.0	92.0	3.00		
CHLORIDE	04/07/2010						OK	93.00	96.0	94.0	1.00		
CHLORIDE	04/07/2010						OK	94.00	96.0				
CHLORIDE	04/07/2010						OK	94.00	96.0				
CHLORIDE	04/08/2010				OK		OK		95.0				
NITRATE/NITRITE AS N	04/12/2010	0.000	0.9997	OK	OK	OK	OK	99.00	110.0	105.0	2.00		
NITRATE/NITRITE AS N	04/12/2010						OK	99.00	93.0	93.0	0		
NITRATE/NITRITE AS N	04/12/2010						OK	99.00	111.0	111.0	0		

**SAMPLE MANAGEMENT SYSTEM**  
**Wet Chemistry Data Validation Worksheet**

**RIN:** 10032912      **Lab Code:** PAR      **Date Due:** 4/28/2010  
**Matrix:** Water      **Site Code:** SHP      **Date Completed:** 4/30/2010

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
NITRATE/NITRITE AS N	04/12/2010							OK	99.00	107.0	105.0	2.00	
NITRATE/NITRITE AS N	04/12/2010							OK	100.00				
SULFATE	04/06/2010	0.000	0.9999	OK	OK	OK	OK		97.0	91.0	1.00		
SULFATE	04/06/2010								94.0				
SULFATE	04/07/2010				OK		OK	OK	96.00	104.0	99.0	1.00	
SULFATE	04/07/2010							OK	93.00	103.0	88.0	2.00	
SULFATE	04/07/2010							OK	95.00	98.0	97.0	1.00	
SULFATE	04/07/2010							OK	96.00	95.0			
SULFATE	04/07/2010							OK	96.00	99.0			
SULFATE	04/08/2010				OK		OK		99.0				

## Laboratory Performance Assessment, Terrace Locations

### General Information

Report Number (RIN): 10032913  
 Sample Event: March 22-26, 2010  
 Site(s): Shiprock Disposal Site (Terrace), New Mexico  
 Laboratory: ALS Laboratory Group, Fort Collins, Colorado  
 Work Order No.: 1003319  
 Analysis: Metals and Wet Chemistry  
 Validator: Steve Donovan  
 Review Date: May 17, 2010

This validation was performed according to the *Environmental Procedures Catalog* (LMS/PRO/S04325, continually updated), “Standard Practice for Validation of Laboratory Data.” The procedure was applied at Level 3, Data Validation. See attached Data Validation Worksheets for supporting documentation on the data review and validation. All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 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 3005A	SW-846 6010B
Chloride	MIS-A-039	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 3005A	SW-846 6020A
Sulfate	MIS-A-044	SW-846 9056	SW-846 9056

### 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 Qualifier Summary*

Sample Number	Location	Analyte	Flag	Reason
1003319-6	0725	Potassium	J	Matrix spike failure
1003319-38	0949	Potassium	J	Matrix spike failure
1003319-41	1049	Nitrate+Nitrite as N	J	Matrix spike failure
1003319-60	1220	Potassium	J	Matrix spike failure



### Sample Shipping/Receiving

ALS Laboratory Group in Fort Collins, Colorado, received 68 water samples on March 31, 2010, accompanied by COC forms. The COC forms were checked to confirm that all of the samples were listed on the forms 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. The receiving documentation included copies of the shipping labels listing the air waybill numbers.

### Preservation and Holding Times

The sample shipments were received intact with the temperatures inside the iced coolers between 2.2 °C and 2.8 °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 exceptions. Nine acidified sample aliquots were received with a pH values greater than two because of the buffering capacity of the samples. Prior to analysis, the laboratory acidified and equilibrated these aliquots to a pH less than two as required. All samples were analyzed within the required holding time.

### Laboratory Instrument Calibration

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

#### *Method MCAWW 350.1*

Calibration was performed for ammonia as N on April 1, 2010, using six calibration standards to establish a linear curve. The calibration curve correlation coefficient value was greater than 0.995 and the absolute value of the intercept was less than 3 times the MDL, demonstrating acceptable instrument performance. Initial and continuing calibration verification checks were made at the required frequency resulting in 14 verification checks. All calibration checks met the acceptance criteria.

#### *Method MCAWW 353.2*

Calibration was performed for nitrate + nitrite as N on April 5, 2010, using seven calibration standards to establish a linear curve. The calibration curve correlation coefficient value was greater than 0.995 and the absolute value of the intercept was less than 3 times the MDL, demonstrating acceptable instrument performance. Initial and continuing calibration verification checks were made at the required frequency resulting in 11 verification checks. All calibration checks met the acceptance criteria.

#### *Method SW-846 6010B*

Three calibrations for calcium, magnesium, manganese, potassium, sodium, and strontium were performed between April 23 and April 28, 2010, using single point calibrations. Initial and continuing calibration verification checks were made at the required frequency resulting in 46 verification checks. All calibration checks met the acceptance criteria. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curve near the PQL and all results were within the acceptance range.

#### *Method SW-846 6020A*

Three calibrations for selenium and uranium were performed between April 19 and April 22, 2010, 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 resulting in 27 verification checks. All calibration checks met the acceptance criteria. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curve near the PQL and all results were within the acceptance range. Mass calibration and resolution verifications were performed at the beginning of each analytical run in accordance with the analytical procedure. Internal standard recoveries associated with requested analytes were stable and within acceptable ranges.

#### *Method SW-846 9056*

Calibrations were performed for chloride and sulfate on March 12, 2010, using five calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency resulting in 20 verification checks. All calibration checks met the acceptance criteria.

#### Method and Calibration Blanks

Method blanks are analyzed to assess any contamination that may have occurred during sample preparation. Calibration blanks are analyzed to assess instrument contamination prior to and during sample analysis. All initial and continuing calibration blank results associated with the samples were below the PQL. Many magnesium, manganese, and strontium calibration blanks were negative and the absolute values were greater than the MDL but less than the PQL. All associated sample results were greater than 5 times the MDL.

#### 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 pairs were analyzed for all analytes as a measure of method performance in the sample matrix. The MS data are not evaluated when the concentration of the unspiked sample is greater than 4 times the spike concentration. The spike recoveries met the recovery criteria for all analytes evaluated with the following exceptions. The nitrate + nitrite as N MSD recovery did not meet the acceptance criteria for one sample and the potassium MS recoveries did not meet

the acceptance criteria for three samples. The associated sample results are qualified with a “J” flag as estimated values.

#### Laboratory Replicate Analysis

Laboratory replicate analyses are used to determine laboratory precision for each sample matrix. The relative percent difference for replicate results that are greater than 5 times the PQL should be less than 20 percent. For results that are less than 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 PQL for method 6010B or greater than 100 times the PQL for method 6020A. All evaluated serial dilution data were acceptable with the following exception. The sodium serial dilution results failed to meet the acceptance criteria for one sample. The associated sample result is qualified with a “J” flag as an estimated value.

#### Detection Limits/Dilutions

Samples were diluted in a consistent and acceptable manner when required or to reduce interferences. The required detection limits were achieved for all analytes.

#### 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. There were no manual integrations performed and all peak integrations were satisfactory.

#### Electronic Data Deliverable File

The EDD file arrived on May 3, 2010. 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: 10032913    Lab Code: PAR    Validator: Steve Donovan    Validation Date: 5/17/2010  
Project: Shiprock Monitoring    Analysis Type:  Metals     General Chem     Rad     Organics  
# of Samples: 68    Matrix: WATER    Requested Analysis Completed: Yes

### Chain of Custody

Present: OK    Signed: OK    Dated: OK

### Sample

Integrity: OK    Preservation: OK    Temperature: OK

### Select Quality Parameters

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

All analyses were completed within the applicable holding times.

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

There were 5 duplicates evaluated.

**SAMPLE MANAGEMENT SYSTEM**  
**Metals Data Validation Worksheet**

RIN: 10032913      Lab Code: PAR      Date Due: 4/28/2010  
 Matrix: Water      Site Code: SHP      Date Completed: 5/4/2010

Analyte	Date Analyzed	CALIBRATION						Method	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
		Int.	R^2	ICV	CCV	ICB	CCB								
CALCIUM	04/23/2010			OK	OK	OK	OK	OK	99.0	95.0	92.0	0.0	103.0	0.0	103.0
CALCIUM	04/24/2010			OK	OK	OK	OK	OK	96.0	82.0	91.0	1.0	103.0	4.0	104.0
CALCIUM	04/24/2010								96.0	101.0	96.0	0.0	106.0	4.0	107.0
CALCIUM	04/26/2010			OK	OK	OK	OK			93.0	90.0	1.0	105.0		105.0
MAGNESIUM	04/23/2010			OK	OK	OK	OK	OK	102.0	98.0	98.0	0.0	107.0	1.0	104.0
MAGNESIUM	04/24/2010			OK	OK	OK	OK	OK	98.0	90.0	94.0	1.0	107.0	2.0	103.0
MAGNESIUM	04/24/2010								99.0	97.0	95.0	1.0	110.0	3.0	108.0
MAGNESIUM	04/26/2010			OK	OK	OK	OK			113.0	111.0	1.0	107.0		105.0
MANGANESE	04/23/2010			OK	OK	OK	OK	OK	98.0	96.0	97.0	1.0	92.0	1.0	103.0
MANGANESE	04/24/2010			OK	OK	OK	OK	OK	97.0	97.0	98.0	1.0	90.0	5.0	100.0
MANGANESE	04/24/2010								98.0	93.0	88.0	1.0	93.0		105.0
MANGANESE	04/26/2010			OK	OK	OK	OK			111.0	108.0	2.0	94.0		105.0
POTASSIUM	04/23/2010			OK	OK	OK	OK	OK	97.0	130.0	131.0	1.0			80.0
POTASSIUM	04/24/2010			OK	OK	OK	OK	OK	96.0	121.0	123.0	2.0			79.0
POTASSIUM	04/24/2010								97.0	120.0	117.0	3.0			80.0
POTASSIUM	04/26/2010			OK	OK	OK	OK			129.0	127.0	2.0			81.0
SELENIUM	04/21/2010	0.0000	1.0000	OK	OK	OK	OK	OK	105.0	103.0	99.0	3.0	104.0	9.0	121.0
SELENIUM	04/22/2010	0.0000	1.0000	OK	OK	OK	OK	OK	100.0	97.0	73.0	2.0	98.0	3.0	109.0

**SAMPLE MANAGEMENT SYSTEM**  
**Metals Data Validation Worksheet**

RIN: 10032913      Lab Code: PAR      Date Due: 4/28/2010  
 Matrix: Water      Site Code: SHP      Date Completed: 5/4/2010

Analyte	Date Analyzed	CALIBRATION						Method	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
		Int.	R^2	ICV	CCV	ICB	CCB								
SELENIUM	04/22/2010							OK	102.0	105.0	103.0	2.0	97.0	2.0	127.0
SODIUM	04/23/2010			OK	OK	OK	OK	OK	96.0	143.0	129.0	1.0		0.0	89.0
SODIUM	04/24/2010			OK	OK	OK	OK	OK	94.0	89.0	107.0	1.0		7.0	87.0
SODIUM	04/24/2010								93.0	99.0	91.0	2.0		3.0	90.0
SODIUM	04/26/2010			OK	OK	OK	OK			104.0	103.0	0.0			91.0
STRONTIUM	04/23/2010			OK	OK	OK	OK	OK	97.0	96.0	60.0	2.0	97.0	2.0	95.0
STRONTIUM	04/24/2010			OK	OK	OK	OK	OK	95.0	65.0	82.0	1.0	95.0	1.0	95.0
STRONTIUM	04/24/2010								95.0	95.0	93.0	2.0	93.0	2.0	97.0
STRONTIUM	04/26/2010			OK	OK	OK	OK			89.0	87.0	0.0	93.0		95.0
URANIUM	04/21/2010	0.0000	1.0000	OK	OK	OK	OK	OK	103.0	101.0	90.0	3.0	104.0	4.0	90.0
URANIUM	04/22/2010	0.0000	1.0000	OK	OK	OK	OK	OK	103.0	112.0	102.0	3.0	103.0	4.0	105.0
URANIUM	04/22/2010							OK	101.0	104.0	105.0	0.0	108.0	6.0	80.0

**SAMPLE MANAGEMENT SYSTEM**  
**Wet Chemistry Data Validation Worksheet**

RIN: 10032913      Lab Code: PAR      Date Due: 4/28/2010  
 Matrix: Water      Site Code: SHP      Date Completed: 5/4/2010

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
AMMONIA AS N	04/01/2010	0.000	1.0000	OK	OK	OK	OK	OK	96.00	78.0	80.0	2.00	
AMMONIA AS N	04/01/2010							OK	97.00	104.0	106.0	2.00	
AMMONIA AS N	04/01/2010							OK	98.00				
AMMONIA AS N	04/01/2010							OK	97.00				
CHLORIDE	04/01/2010	0.000	1.0000	OK	OK	OK	OK	OK	95.00	98.0	100.0	1.00	
CHLORIDE	04/01/2010							OK	94.00	98.0			
CHLORIDE	04/02/2010							OK	93.00	99.0	96.0	1.00	
CHLORIDE	04/02/2010							OK	94.00	95.0	97.0	1.00	
CHLORIDE	04/02/2010									99.0			
NITRATE/NITRITE AS N	04/05/2010	0.000	0.9999	OK	OK	OK	OK	OK	100.00	109.0	98.0	3.00	
NITRATE/NITRITE AS N	04/05/2010							OK	102.00	113.0	142.0	10.00	
NITRATE/NITRITE AS N	04/05/2010							OK	100.00	86.0	120.0	7.00	
NITRATE/NITRITE AS N	04/05/2010							OK	100.00				
SULFATE	04/01/2010	0.000	1.0000	OK	OK	OK	OK	OK	94.00	98.0	97.0	0	
SULFATE	04/01/2010							OK	93.00	99.0	96.0	0	
SULFATE	04/01/2010							OK		95.0			

**SAMPLE MANAGEMENT SYSTEM**  
**Wet Chemistry Data Validation Worksheet**

**RIN:** 10032913      **Lab Code:** PAR      **Date Due:** 4/28/2010  
**Matrix:** Water      **Site Code:** SHP      **Date Completed:** 5/4/2010

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R <sup>2</sup>	ICV	CCV	ICB	CCB						
SULFATE	04/02/2010							OK	91.00	100.0	100.0	0	
SULFATE	04/02/2010								93.00	100.0			



## 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.

All wells met the Category I criteria and were sampled with dedicated tubing using the low-flow purge procedure with the following exceptions:

- Floodplain well 0797; and terrace wells 0600, 0602, 0604, 0817, 0819, 0820, 0824, 0825, 0826, 0827, 1058, 1059, 1074, and DM7 were classified as Category II.
- Floodplain well 0734; and terrace wells 0814, 0816, 0822, 0846, 1007, 1149, 1168, 1173, and MW1 were classified as Category III.
- The pH stability criteria were not met for Terrace wells 0725, 0813, and 0830.

The sample results for these wells were qualified with a “Q” flag, indicating the data are qualitative because of the sampling technique.

Both filtered and unfiltered samples were collected from floodplain river locations 0501, 0897, 0898, 0899, 0940, 0956, 0965, 1203, and 1205.

Floodplain groundwater location 0734 had a turbidity value greater than ten NTUs. The sample from this location was filtered.

Terrace surface locations 0662, 0889, 0949, 1220, and 1221, and groundwater locations 0604, 0814, 0846, 1068, 1073, 1092, and DM7 had turbidity values greater than ten NTUs. Samples from these locations were filtered.

### Equipment Blank Assessment

Equipment blanks are prepared and analyzed to document contamination attributable to the sample collection process. One equipment blank associated with the SHP01 river locations was submitted with these samples. Calcium, selenium, and uranium were detected in this blank. The associated sample concentrations for these analytes were greater than 5 times the blank concentration.

**SAMPLE MANAGEMENT SYSTEM**

**Validation Report: Equipment/Trip Blanks**

RIN: 10032912    Lab Code: PAR    Project: Shiprock Monitoring    Validation Date: 5/14/2010

**Blank Data**

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	1003318-83	SW6010	CALCIUM	110	B	12	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
1003318-1	IEX 245	0501	75000	1		
1003318-38	IEX 234	0897	81000	1		
1003318-40	IEX 235	0898	89000	1		
1003318-42	IEX 272	0899	69000	1		
1003318-44	IEX 236	0940	86000	1		
1003318-46	IEX 237	0956	73000	1		
1003318-48	IEX 239	0965	80000	1		
1003318-76	IEX 240	1203	73000	1		
1003318-78	IEX 233	1205	70000	1		

**Blank Data**

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	1003318-83	SW6020	SELENIUM	0.095	B	0.032	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
1003318-1	IEX 245	0501	1.8	1		
1003318-38	IEX 234	0897	1.3	1		
1003318-40	IEX 235	0898	1.5	1		
1003318-42	IEX 272	0899	1.6	1		
1003318-44	IEX 236	0940	1.4	1		
1003318-46	IEX 237	0956	1.1	1		
1003318-48	IEX 239	0965	1.2	1		
1003318-76	IEX 240	1203	1.7	1		
1003318-78	IEX 233	1205	2.3	1		

**Blank Data**

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	1003318-83	SW6020	URANIUM	0.003	B	0.0029	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
1003318-1	IEX 245	0501	2.5	1		
1003318-38	IEX 234	0897	2.4	1		

**SAMPLE MANAGEMENT SYSTEM**

**Validation Report: Equipment/Trip Blanks**

RIN: 10032912    Lab Code: PAR    Project: Shiprock Monitoring    Validation Date: 5/14/2010

**Blank Data**

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	1003318-83		URANIUM				

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
1003318-40	IEX 235	0898	2.8	1		
1003318-42	IEX 272	0899	2.8	1		
1003318-44	IEX 236	0940	2.7	1		
1003318-46	IEX 237	0956	2.1	1		
1003318-48	IEX 239	0965	2.4	1		
1003318-76	IEX 240	1203	2.4	1		
1003318-78	IEX 233	1205	2.3	1		

## 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 relative percent difference for duplicate results that are greater than 5 times the PQL should be less than 20 percent. For results that are less than 5 times the PQL, the range should be no greater than the PQL. Duplicate samples were collected from floodplain locations 0853, 1117, and 1135, and terrace locations 0725, 0815, 0830, 0841, and 0949. The duplicate results met these criteria, demonstrating acceptable overall precision.

**SAMPLE MANAGEMENT SYSTEM**  
**Validation Report: Field Duplicates**

RIN: 10032912    Lab Code: PAR    Project: Shiprock Monitoring    Validation Date: 5/14/2010

Duplicate: 2604

Sample: 1117

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	0.1	U		1	0.1	U		1			MG/L
CALCIUM	76000			1	76000			1	0		UG/L
CHLORIDE	21			5	13			5	47.06		MG/L
MAGNESIUM	13000			1	13000			1	0		UG/L
MANGANESE	300			1	270			1	10.53		UG/L
NITRATE/NITRITE AS N	0.01	U		1	0.01	U		1			MG/L
POTASSIUM	1600			1	1600			1	0		UG/L
SELENIUM	0.45			1	0.62			1	31.78		UG/L
SODIUM	34000			1	34000			1	0		UG/L
STRONTIUM	740			1	740			1	0		UG/L
SULFATE	140			5	140			5	0		MG/L
URANIUM	9.2			1	9.4			1	2.15		UG/L

Duplicate: 2729

Sample: 0853

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	10			5	11			5	9.52		MG/L
CALCIUM	110000			1	110000			1	0		UG/L
CHLORIDE	14			10	14			10	0		MG/L
MAGNESIUM	32000			1	32000			1	0		UG/L
MANGANESE	450			1	460			1	2.20		UG/L
NITRATE/NITRITE AS N	0.018			1	0.021			1			MG/L
POTASSIUM	9300			1	9200			1	1.08		UG/L
SELENIUM	0.13			1	0.32			2			UG/L
SODIUM	69000			1	72000			1	4.26		UG/L
STRONTIUM	1200			1	1100			1	8.70		UG/L
SULFATE	410			10	420			10	2.41		MG/L
URANIUM	55			1	50			2	9.52		UG/L

Duplicate: 2731

Sample: 1135

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	0.1	U		1	0.1	U		1			MG/L
CALCIUM	380000			5	380000			5	0		UG/L
CHLORIDE	110			100	110			100	0		MG/L
MAGNESIUM	360000			5	360000			5	0		UG/L
MANGANESE	2900			5	2900			5	0		UG/L
NITRATE/NITRITE AS N	0.01	U		1	0.028			1			MG/L

**SAMPLE MANAGEMENT SYSTEM**  
**Validation Report: Field Duplicates**

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RIN: 10032912    Lab Code: PAR    Project: Shiprock Monitoring    Validation Date: 5/14/2010

Duplicate: 2731

Sample: 1135

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
POTASSIUM	39000			5	38000			5	2.60		UG/L
SELENIUM	0.46	B		5	0.7			5			UG/L
SODIUM	1400000			100	1500000			100	6.90		UG/L
STRONTIUM	5300			5	5200			5	1.90		UG/L
SULFATE	5800			100	5800			100	0		MG/L
URANIUM	240			5	240			5	0		UG/L

**SAMPLE MANAGEMENT SYSTEM**  
**Validation Report: Field Duplicates**

RIN: 10032913    Lab Code: PAR    Project: Shiprock Monitoring    Validation Date: 5/17/2010

Duplicate: 2810

Sample: 0830

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	0.1			1	0.1	U		1			MG/L
CALCIUM	520000			10	550000			2	5.61		UG/L
CHLORIDE	51			20	52			50	1.94		MG/L
MAGNESIUM	39000			1	40000			2	2.53		UG/L
MANGANESE	2100			1	2100			2	0		UG/L
NITRATE/NITRITE AS N	33			20	32			20	3.08		MG/L
POTASSIUM	3500			1	2600			2	29.51		UG/L
SELENIUM	24			2	23			10	4.26		UG/L
SODIUM	130000			1	120000			2	8.00		UG/L
STRONTIUM	230			1	240			2	4.26		UG/L
SULFATE	1600			20	1500			50	6.45		MG/L
URANIUM	4.1			2	4.2			10	2.41		UG/L

Duplicate: 2811

Sample: 0815

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	0.1	U		1	0.1	U		1			MG/L
CALCIUM	440000			10	430000			10	2.30		UG/L
CHLORIDE	600			200	590			200	1.68		MG/L
MAGNESIUM	2600000			10	2500000			10	3.92		UG/L
MANGANESE	1400			10	1400			10	0		UG/L
NITRATE/NITRITE AS N	600			500	720			500	18.18		MG/L
POTASSIUM	100000			10	110000			10	9.52		UG/L
SELENIUM	39			100	43			20	9.76		UG/L
SODIUM	3400000			100	3000000			100	12.50		UG/L
STRONTIUM	12000			10	12000			10	0		UG/L
SULFATE	15000			200	14000			200	6.90		MG/L
URANIUM	310			100	340			20	9.23		UG/L

Duplicate: 2812

Sample: 0949

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	0.1	U		1	0.1	U		1			MG/L
CALCIUM	500000			5	500000			5	0		UG/L
CHLORIDE	100			50	100			50	0		MG/L
MAGNESIUM	200000			5	200000			5	0		UG/L
MANGANESE	16	B		5	12	B		5	28.57		UG/L
NITRATE/NITRITE AS N	53			50	45			50	16.33		MG/L

**SAMPLE MANAGEMENT SYSTEM**  
**Validation Report: Field Duplicates**

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RIN: 10032913    Lab Code: PAR    Project: Shiprock Monitoring    Validation Date: 5/17/2010

Duplicate: 2812

Sample: 0949

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
POTASSIUM	9200	N		5	8400			5	9.09		UG/L
SELENIUM	370			10	350			10	5.56		UG/L
SODIUM	490000			5	470000			5	4.17		UG/L
STRONTIUM	5500			5	5700			5	3.57		UG/L
SULFATE	2700			50	2600			50	3.77		MG/L
URANIUM	39			10	35			10	10.81		UG/L

Duplicate: 2813

Sample: 0725

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	0.1	U		1	0.1	U		1			MG/L
CALCIUM	330000			5	330000			5	0		UG/L
CHLORIDE	86			50	87			50	1.16		MG/L
MAGNESIUM	73000			5	73000			5	0		UG/L
MANGANESE	88			5	74			5	17.28		UG/L
NITRATE/NITRITE AS N	8			10	7.5			10	6.45		MG/L
POTASSIUM	10000	N		5	9700			5	3.05		UG/L
SELENIUM	19			10	18			10	5.41		UG/L
SODIUM	1000000			5	1000000			5	0		UG/L
STRONTIUM	11000			5	12000			5	8.70		UG/L
SULFATE	3100			50	3100			50	0		MG/L
URANIUM	56			10	54			10	3.64		UG/L

Duplicate: 2814

Sample: 0841

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	0.1	U		1	0.1	U		1			MG/L
CALCIUM	410000			10	400000			10	2.47		UG/L
CHLORIDE	960			200	980			200	2.06		MG/L
MAGNESIUM	950000			10	910000			10	4.30		UG/L
MANGANESE	9.6	B		10	18	B		10	60.87		UG/L
NITRATE/NITRITE AS N	690			500	660			500	4.44		MG/L
POTASSIUM	87000			10	83000			10	4.71		UG/L
SELENIUM	3400			20	3600			20	5.71		UG/L
SODIUM	5800000			100	5500000			100	5.31		UG/L
STRONTIUM	9100			10	8800			10	3.35		UG/L
SULFATE	16000			200	16000			200	0		MG/L



**SAMPLE MANAGEMENT SYSTEM**  
**Validation Report: Field Duplicates**

RIN: 10032913    Lab Code: PAR    Project: Shiprock Monitoring    Validation Date: 5/17/2010

Duplicate: 2814

Sample: 0841

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
URANIUM	130		20		140		20		7.41		UG/L

### Certification

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

Laboratory Coordinator: Steve Donovan 7-19-2010  
Steve Donovan Date

Data Validation Lead: Steve Donovan 7-19-2010  
Steve Donovan 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 may result from transcription errors, data-coding errors, or measurement system problems. However, outliers may also represent true extreme values of a distribution and indicate more variability in the population than was expected.

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

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

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

The data were assessed separately for filtered and unfiltered samples.

The data identified as potentially anomalous are generally from locations where analyte concentrations are trending upward or downward. There were no data errors indicated from the review of potential outliers and the data from this event are acceptable as qualified.

**Data Validation Outliers Report - No Field Parameters**

**Comparison: All Historical Data for Filtered Samples**

Laboratory: ALS Laboratory Group

RIN: 10032912

Report Date: 5/20/2010

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect	
						Lab	Data		Lab	Data		Lab	Data			
SHP01	0501	0001	03/23/2010	Chloride	20			18			6			11	0	No
SHP01	0501	0001	03/23/2010	Potassium	4.6	N	J	3.88			1.95			11	0	No
SHP02	0604	0001	03/24/2010	Chloride	2300		FQ	3400		L	2380		L	8	0	No
SHP02	0604	0001	03/24/2010	Potassium	62		FQ	59		FQ	27.9		L	7	0	No
SHP02	0814	0001	03/24/2010	Potassium	140		FQ	130		FQ	84.6		L	7	0	No
SHP02	0814	0001	03/24/2010	Selenium	1.9		FQ	3.3		L	2		FQ	8	0	No
SHP02	0814	0001	03/24/2010	Uranium	0.082		FQ	0.281			0.096		FQ	10	0	No

**STATISTICAL TESTS:**

The distribution of the data is tested for normality or lognormality using the Shapiro-Wilk Test

Outliers are identified using Dixon's Test when there are 25 or fewer data points.

Outliers are identified using Rosner's Test when there are 26 or more data points.

See Data Quality Assessment: Statistical Methods for Practitioners, EPA QC/G-9S, February 2006.



**Data Validation Outliers Report - No Field Parameters**

**Comparison: All Historical Data for Unfiltered Samples**

Laboratory: ALS Laboratory Group

RIN: 10032912

Report Date: 5/20/2010

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab Data	Result	Qualifiers Lab Data	Result	Qualifiers Lab Data	N	N Below Detect			
SHP01	0608	N001	03/23/2010	Ammonia Total as N	99	F	240			100	F	9	0	No	
SHP01	0612	N001	03/23/2010	Magnesium	200	F	170		F	35	F	5	0	No	
SHP01	0612	N001	03/23/2010	Sulfate	2100	F	1911			350	F	5	0	No	
SHP01	0614	N001	03/23/2010	Chloride	310	F	580		F	350	F	9	0	No	
SHP01	0614	N001	03/23/2010	Magnesium	1600	F	2900			1640		9	0	No	
SHP01	0614	N001	03/23/2010	Selenium	0.71	F	0.31		F	0.093	F	5	0	Yes	
SHP01	0614	N001	03/23/2010	Sodium	1700	F	3600			1900	FJ	9	0	No	
SHP01	0614	N001	03/23/2010	Sulfate	9500	F	15000		F	9700	F	9	0	No	
SHP01	0614	N001	03/23/2010	Uranium	1.5	F	2.8343			1.8	F	9	0	No	
SHP01	0615	N001	03/24/2010	Selenium	0.13	F	0.664	S		0.18	F	6	0	No	
SHP01	0619	N001	03/25/2010	Calcium	240	F	365			250	F	7	0	No	
SHP01	0619	N001	03/25/2010	Chloride	72	F	415			75	F	7	0	No	
SHP01	0619	N001	03/25/2010	Magnesium	99	F	1060			110	F	7	0	No	
SHP01	0619	N001	03/25/2010	Potassium	22	F	76		F	24		7	0	No	
SHP01	0619	N001	03/25/2010	Sodium	960	F	2510			1000		7	0	No	
SHP01	0619	N001	03/25/2010	Sulfate	2900	F	9840			3000	F	7	0	No	
SHP01	0619	N001	03/25/2010	Uranium	0.13	F	1.2			0.17	F	7	0	No	
SHP01	0626	N001	03/26/2010	Chloride	68	F	110		F	72	F	5	0	No	

**Data Validation Outliers Report - No Field Parameters**

**Comparison: All Historical Data for Unfiltered Samples**

Laboratory: ALS Laboratory Group

RIN: 10032912

Report Date: 5/20/2010

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab Data	Result	Qualifiers Lab Data	Result	Qualifiers Lab Data	N	N Below Detect			
SHP01	0626	N001	03/26/2010	Potassium	10	F	18.8		11		5	0	No		
SHP01	0626	N001	03/26/2010	Sodium	930	F	1380		980	FJ	5	0	No		
SHP01	0626	N001	03/26/2010	Sulfate	2600	F	3400	F	2700	F	5	0	No		
SHP01	0626	N001	03/26/2010	Uranium	0.035	F	0.174		0.039	F	5	0	No		
SHP01	0628	N001	03/26/2010	Calcium	130	F	383		208		5	0	No		
SHP01	0628	N001	03/26/2010	Chloride	80	F	140	F	92	F	5	0	No		
SHP01	0628	N001	03/26/2010	Magnesium	46	F	130		48	F	5	0	No		
SHP01	0628	N001	03/26/2010	Potassium	8.3	F	20	F	11		5	0	No		
SHP01	0628	N001	03/26/2010	Sodium	950	F	1600	F	1100	F	5	0	No		
SHP01	0628	N001	03/26/2010	Sulfate	2700	F	4800	F	3300	F	5	0	No		
SHP01	0628	N001	03/26/2010	Uranium	0.034	F	0.182		0.039	F	5	0	No		
SHP01	0630	N001	03/26/2010	Potassium	9.8	F	141		10	FJ	5	0	No		
SHP01	0630	N001	03/26/2010	Strontium	16	F	14.3		9.2	F	5	0	No		
SHP01	0655	N001	03/26/2010	Manganese	0.2		1.16		0.28		5	0	No		
SHP01	0655	N001	03/26/2010	Strontium	13		12		1.92		5	0	No		
SHP01	0736	N001	03/26/2010	Chloride	87	F	655		99	F	5	0	No		
SHP01	0736	N001	03/26/2010	Sulfate	4100	F	20800		4600	F	5	0	No		
SHP01	1009	N001	03/24/2010	Sulfate	2700	F	4235		2900	F	5	0	No		

**Data Validation Outliers Report - No Field Parameters**

**Comparison: All Historical Data for Unfiltered Samples**

Laboratory: ALS Laboratory Group

RIN: 10032912

Report Date: 5/20/2010

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab Data	Result	Qualifiers Lab Data	Result	Qualifiers Lab Data	N	N Below Detect			
SHP01	1105	N001	03/24/2010	Chloride	340	F	636		350	F	5	0	No		
SHP01	1105	N001	03/24/2010	Sulfate	9600	F	16000	F	9900	F	5	0	No		
SHP01	1111	N001	03/24/2010	Chloride	340	F	602		350	F	6	0	No		
SHP01	1111	N001	03/24/2010	Sodium	1700	F	6100		1800	F	6	0	No		
SHP01	1111	N001	03/24/2010	Sulfate	7900	F	13185		8100	F	6	0	No		
SHP01	1111	N001	03/24/2010	Uranium	0.79	F	1.588		0.87	F	6	0	No		
SHP01	1112	N001	03/26/2010	Chloride	300	F	529		360	F	5	0	No		
SHP01	1112	N001	03/26/2010	Magnesium	1400	F	2100	F	1700	F	5	0	No		
SHP01	1112	N001	03/26/2010	Sodium	1600	F	5200		1900	F	5	0	No		
SHP01	1112	N001	03/26/2010	Sulfate	8300	F	14676		9900	F	5	0	No		
SHP01	1112	N001	03/26/2010	Uranium	1.4	F	2.3749		1.6035		5	0	No		
SHP01	1113	N001	03/23/2010	Ammonia Total as N	0.15	F	98	F	0.21	F	6	0	No		
SHP01	1117	N001	03/23/2010	Chloride	21	F	16		7	F	8	0	No		
SHP01	1118	N001	03/26/2010	Calcium	390		428		410		5	0	No		
SHP01	1118	N001	03/26/2010	Chloride	360		290		168		5	0	No		
SHP01	1118	N001	03/26/2010	Magnesium	930		810		400		5	0	No		
SHP01	1118	N001	03/26/2010	Potassium	58		44	J	21		5	0	No		
SHP01	1118	N001	03/26/2010	Sodium	1500		1300	J	710		5	0	No		

**Data Validation Outliers Report - No Field Parameters**

**Comparison: All Historical Data for Unfiltered Samples**

Laboratory: ALS Laboratory Group

RIN: 10032912

Report Date: 5/20/2010

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect	
						Lab	Data		Lab	Data		Lab	Data			
SHP01	1118	N001	03/26/2010	Sulfate	7100			6700			4739			5	0	No
SHP01	1118	N001	03/26/2010	Uranium	0.67			0.64			0.2835			5	0	No
SHP02	0725	N001	03/24/2010	Uranium	0.056		FQ	0.503			0.062		F	6	0	No
SHP02	0725	N002	03/24/2010	Uranium	0.054		FQ	0.503			0.062		F	6	0	No
SHP02	0726	N001	03/24/2010	Selenium	0.025		F	0.013		F	0.0018		F	6	2	Yes
SHP02	0726	N001	03/24/2010	Sodium	1200		F	2070			1300		F	5	0	No
SHP02	0726	N001	03/24/2010	Sulfate	4800		F	6840			5200		F	5	0	No
SHP02	0726	N001	03/24/2010	Uranium	0.019		F	0.029			0.02		F	6	0	No
SHP02	0727	N001	03/24/2010	Selenium	0.0017		F	0.05		UIN W*	0.002		F	5	3	No
SHP02	0728	N001	03/24/2010	Sodium	460		F	1400		F	527			5	0	No
SHP02	0728	N001	03/24/2010	Strontium	5.4		F	9.9		F	7		F	5	0	No
SHP02	0728	N001	03/24/2010	Sulfate	3800		F	8600		F	4370			5	0	No
SHP02	0728	N001	03/24/2010	Uranium	0.22		F	0.556			0.27		F	6	0	No
SHP02	0731	N001	03/24/2010	Manganese	0.089		F	0.47			0.14		F	6	0	No
SHP02	0731	N001	03/24/2010	Sodium	840		F	1130			960		F	6	0	No
SHP02	0731	N001	03/24/2010	Sulfate	4000		F	5100		F	4600		F	6	0	Yes
SHP02	0731	N001	03/24/2010	Uranium	0.03		F	0.052			0.035		F	7	0	No
SHP02	0841	N001	03/24/2010	Manganese	0.0096	B	F	0.11	B	F	0.015	B	F	6	0	No

**Data Validation Outliers Report - No Field Parameters**

**Comparison: All Historical Data for Unfiltered Samples**

Laboratory: ALS Laboratory Group

RIN: 10032912

Report Date: 5/20/2010

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab Data	Result	Qualifiers Lab Data	Result	Qualifiers Lab Data	N	N Below Detect			
SHP02	0841	N002	03/24/2010	Nitrate + Nitrite as Nitrogen	660	F	920	F	680	F	6	0	No		
SHP02	0841	N002	03/24/2010	Selenium	3.6	F	3.3	F	3	F	6	0	No		
SHP02	0841	N001	03/24/2010	Selenium	3.4	F	3.3	F	3	F	6	0	No		
SHP02	1079	N001	03/22/2010	Chloride	71	F	98	F	81	F	5	0	No		
SHP02	1079	N001	03/22/2010	Nitrate + Nitrite as Nitrogen	51	F	71	F	52	F	5	0	No		
SHP02	1079	N001	03/22/2010	Strontium	4.8	F	5.7	F	4.9	F	5	0	No		
SHP02	1079	N001	03/22/2010	Uranium	0.031	F	0.03	F	0.026	F	5	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.

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# **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: 5/20/2010

Location: 0608 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	10	- 15	99		F	0	10	
Calcium	mg/L	03/23/2010	N001	10	- 15	320		F	0	0.06	
Chloride	mg/L	03/23/2010	N001	10	- 15	200		F	0	20	
Magnesium	mg/L	03/23/2010	N001	10	- 15	560		F	0	0.065	
Manganese	mg/L	03/23/2010	N001	10	- 15	2.6		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	10	- 15	130		F	0	1	
Oxidation Reduction Potential	mV	03/23/2010	N001	10	- 15	163		F	0		
pH	s.u.	03/23/2010	N001	10	- 15	7.03		F	0		
Potassium	mg/L	03/23/2010	N001	10	- 15	71		F	0	0.54	
Selenium	mg/L	03/23/2010	N001	10	- 15	0.0039		F	0	0.00032	
Sodium	mg/L	03/23/2010	N001	10	- 15	1000		F	0	0.033	
Specific Conductance	umhos/cm	03/23/2010	N001	10	- 15	8359		F	0		
Strontium	mg/L	03/23/2010	N001	10	- 15	6.1		F	0	0.00039	
Sulfate	mg/L	03/23/2010	N001	10	- 15	4800		F	0	50	
Temperature	C	03/23/2010	N001	10	- 15	9.98		F	0		
Turbidity	NTU	03/23/2010	N001	10	- 15	6.13		F	0		
Uranium	mg/L	03/23/2010	N001	10	- 15	0.74		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0610 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	4	- 9	0.76		F	0	0.1	
Calcium	mg/L	03/23/2010	N001	4	- 9	430		F	0	0.06	
Chloride	mg/L	03/23/2010	N001	4	- 9	130		F	0	20	
Magnesium	mg/L	03/23/2010	N001	4	- 9	710		F	0	0.065	
Manganese	mg/L	03/23/2010	N001	4	- 9	0.0096	B	F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	4	- 9	190		F	0	2	
Oxidation Reduction Potential	mV	03/23/2010	N001	4	- 9	150.5		F	0		
pH	s.u.	03/23/2010	N001	4	- 9	7.32		F	0		
Potassium	mg/L	03/23/2010	N001	4	- 9	83		F	0	0.54	
Selenium	mg/L	03/23/2010	N001	4	- 9	0.16		F	0	0.0032	
Sodium	mg/L	03/23/2010	N001	4	- 9	800		F	0	0.033	
Specific Conductance	umhos/cm	03/23/2010	N001	4	- 9	8291		F	0		
Strontium	mg/L	03/23/2010	N001	4	- 9	5.5		F	0	0.00039	
Sulfate	mg/L	03/23/2010	N001	4	- 9	4800		F	0	50	
Temperature	C	03/23/2010	N001	4	- 9	10.15		F	0		
Turbidity	NTU	03/23/2010	N001	4	- 9	2.3		F	0		
Uranium	mg/L	03/23/2010	N001	4	- 9	0.9		F	0	0.00029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0611 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	9.5	- 14.5	10		F	0	0.5	
Calcium	mg/L	03/23/2010	N001	9.5	- 14.5	350		F	0	0.06	
Chloride	mg/L	03/23/2010	N001	9.5	- 14.5	220		F	0	20	
Magnesium	mg/L	03/23/2010	N001	9.5	- 14.5	460		F	0	0.065	
Manganese	mg/L	03/23/2010	N001	9.5	- 14.5	0.51		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	9.5	- 14.5	120		F	0	1	
Oxidation Reduction Potential	mV	03/23/2010	N001	9.5	- 14.5	156.2		F	0		
pH	s.u.	03/23/2010	N001	9.5	- 14.5	7.07		F	0		
Potassium	mg/L	03/23/2010	N001	9.5	- 14.5	45		F	0	0.54	
Selenium	mg/L	03/23/2010	N001	9.5	- 14.5	0.084		F	0	0.00032	
Sodium	mg/L	03/23/2010	N001	9.5	- 14.5	1300		F	0	0.66	
Specific Conductance	umhos/cm	03/23/2010	N001	9.5	- 14.5	8859		F	0		
Strontium	mg/L	03/23/2010	N001	9.5	- 14.5	8.7		F	0	0.00039	
Sulfate	mg/L	03/23/2010	N001	9.5	- 14.5	4900		F	0	50	
Temperature	C	03/23/2010	N001	9.5	- 14.5	10.59		F	0		
Turbidity	NTU	03/23/2010	N001	9.5	- 14.5	5.65		F	0		
Uranium	mg/L	03/23/2010	N001	9.5	- 14.5	0.52		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0612 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	5	- 10	0.52		F	0	0.1	
Calcium	mg/L	03/23/2010	N001	5	- 10	260		F	0	0.024	
Chloride	mg/L	03/23/2010	N001	5	- 10	68		F	0	10	
Magnesium	mg/L	03/23/2010	N001	5	- 10	200		F	0	0.026	
Manganese	mg/L	03/23/2010	N001	5	- 10	2.2		F	0	0.00023	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	5	- 10	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/23/2010	N001	5	- 10	-31.6		F	0		
pH	s.u.	03/23/2010	N001	5	- 10	7.18		F	0		
Potassium	mg/L	03/23/2010	N001	5	- 10	12		F	0	0.22	
Selenium	mg/L	03/23/2010	N001	5	- 10	0.0019		F	0	0.00016	
Sodium	mg/L	03/23/2010	N001	5	- 10	440		F	0	0.013	
Specific Conductance	umhos/cm	03/23/2010	N001	5	- 10	3800		F	0		
Strontium	mg/L	03/23/2010	N001	5	- 10	3.3		F	0	0.00016	
Sulfate	mg/L	03/23/2010	N001	5	- 10	2100		F	0	25	
Temperature	C	03/23/2010	N001	5	- 10	9.15		F	0		
Turbidity	NTU	03/23/2010	N001	5	- 10	3.4		F	0		
Uranium	mg/L	03/23/2010	N001	5	- 10	0.22		F	0	0.000015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0614 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	10	- 15	48		F	0	5	
Calcium	mg/L	03/23/2010	N001	10	- 15	440		F	0	0.12	
Chloride	mg/L	03/23/2010	N001	10	- 15	310		F	0	40	
Magnesium	mg/L	03/23/2010	N001	10	- 15	1600		F	0	0.13	
Manganese	mg/L	03/23/2010	N001	10	- 15	3		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	10	- 15	420		F	0	5	
Oxidation Reduction Potential	mV	03/23/2010	N001	10	- 15	164		F	0		
pH	s.u.	03/23/2010	N001	10	- 15	6.95		F	0		
Potassium	mg/L	03/23/2010	N001	10	- 15	150		F	0	1.1	
Selenium	mg/L	03/23/2010	N001	10	- 15	0.71		F	0	0.0032	
Sodium	mg/L	03/23/2010	N001	10	- 15	1700		F	0	0.066	
Specific Conductance	umhos/cm	03/23/2010	N001	10	- 15	14777		F	0		
Strontium	mg/L	03/23/2010	N001	10	- 15	9.1		F	0	0.00078	
Sulfate	mg/L	03/23/2010	N001	10	- 15	9500		F	0	100	
Temperature	C	03/23/2010	N001	10	- 15	12.01		F	0		
Turbidity	NTU	03/23/2010	N001	10	- 15	3.63		F	0		
Uranium	mg/L	03/23/2010	N001	10	- 15	1.5		F	0	0.00029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0615 WELL S of floodplain fence, well nest

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	4.5	- 9.5	1.9		F	0	0.1	
Calcium	mg/L	03/24/2010	N001	4.5	- 9.5	470		F	0	0.06	
Chloride	mg/L	03/24/2010	N001	4.5	- 9.5	99		F	0	10	
Magnesium	mg/L	03/24/2010	N001	4.5	- 9.5	580		F	0	0.065	
Manganese	mg/L	03/24/2010	N001	4.5	- 9.5	0.54		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	4.5	- 9.5	14		F	0	0.1	
Oxidation Reduction Potential	mV	03/24/2010	N001	4.5	- 9.5	136		F	0		
pH	s.u.	03/24/2010	N001	4.5	- 9.5	7.1		F	0		
Potassium	mg/L	03/24/2010	N001	4.5	- 9.5	61		F	0	0.54	
Selenium	mg/L	03/24/2010	N001	4.5	- 9.5	0.13		F	0	0.00032	
Sodium	mg/L	03/24/2010	N001	4.5	- 9.5	670		F	0	0.033	
Specific Conductance	umhos/cm	03/24/2010	N001	4.5	- 9.5	6729		F	0		
Strontium	mg/L	03/24/2010	N001	4.5	- 9.5	5.5		F	0	0.00039	
Sulfate	mg/L	03/24/2010	N001	4.5	- 9.5	4500		F	0	25	
Temperature	C	03/24/2010	N001	4.5	- 9.5	10		F	0		
Turbidity	NTU	03/24/2010	N001	4.5	- 9.5	6.65		F	0		
Uranium	mg/L	03/24/2010	N001	4.5	- 9.5	0.97		F	0	0.000029	



**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0618 WELL Center of floodplain, well nest, just N of floodplain fence

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	11	- 16	42		F	0	5	
Calcium	mg/L	03/24/2010	N001	11	- 16	480		F	0	0.12	
Chloride	mg/L	03/24/2010	N001	11	- 16	630		F	0	40	
Magnesium	mg/L	03/24/2010	N001	11	- 16	2100		F	0	0.13	
Manganese	mg/L	03/24/2010	N001	11	- 16	9.7		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	11	- 16	350		F	0	5	
Oxidation Reduction Potential	mV	03/24/2010	N001	11	- 16	160.3		F	0		
pH	s.u.	03/24/2010	N001	11	- 16	6.78		F	0		
Potassium	mg/L	03/24/2010	N001	11	- 16	130		F	0	1.1	
Selenium	mg/L	03/24/2010	N001	11	- 16	0.23		F	0	0.0065	
Sodium	mg/L	03/24/2010	N001	11	- 16	3000		F	0	0.66	
Specific Conductance	umhos/cm	03/24/2010	N001	11	- 16	20192		F	0		
Strontium	mg/L	03/24/2010	N001	11	- 16	11		F	0	0.00078	
Sulfate	mg/L	03/24/2010	N001	11	- 16	14000		F	0	100	
Temperature	C	03/24/2010	N001	11	- 16	13.98		F	0		
Turbidity	NTU	03/24/2010	N001	11	- 16	2.53		F	0		
Uranium	mg/L	03/24/2010	N001	11	- 16	2.3		F	0	0.00058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0619 WELL Center of floodplain

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	8	- 13	0.33		F	0	0.1	
Calcium	mg/L	03/25/2010	N001	8	- 13	240		F	0	0.06	
Chloride	mg/L	03/25/2010	N001	8	- 13	72		F	0	10	
Magnesium	mg/L	03/25/2010	N001	8	- 13	99		F	0	0.065	
Manganese	mg/L	03/25/2010	N001	8	- 13	1.2		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	8	- 13	0.075		F	0	0.01	
Oxidation Reduction Potential	mV	03/25/2010	N001	8	- 13	68.7		F	0		
pH	s.u.	03/25/2010	N001	8	- 13	7.15		F	0		
Potassium	mg/L	03/25/2010	N001	8	- 13	22		F	0	0.54	
Selenium	mg/L	03/25/2010	N001	8	- 13	0.00096		F	0	0.00016	
Sodium	mg/L	03/25/2010	N001	8	- 13	960		F	0	0.033	
Specific Conductance	umhos/cm	03/25/2010	N001	8	- 13	5506		F	0		
Strontium	mg/L	03/25/2010	N001	8	- 13	6		F	0	0.00039	
Sulfate	mg/L	03/25/2010	N001	8	- 13	2900		F	0	25	
Temperature	C	03/25/2010	N001	8	- 13	12.46		F	0		
Turbidity	NTU	03/25/2010	N001	8	- 13	2.68		F	0		
Uranium	mg/L	03/25/2010	N001	8	- 13	0.13		F	0	0.000015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0622 WELL Center of floodplain, well nest, N of floodplain fence

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	5	- 10	0.1	U	F	0	0.1	
Calcium	mg/L	03/24/2010	N001	5	- 10	190		F	0	0.06	
Chloride	mg/L	03/24/2010	N001	5	- 10	68		F	0	10	
Magnesium	mg/L	03/24/2010	N001	5	- 10	94		F	0	0.065	
Manganese	mg/L	03/24/2010	N001	5	- 10	6.2		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	5	- 10	0.02		F	0	0.01	
Oxidation Reduction Potential	mV	03/24/2010	N001	5	- 10	130.6		F	0		
pH	s.u.	03/24/2010	N001	5	- 10	7.29		F	0		
Potassium	mg/L	03/24/2010	N001	5	- 10	18		F	0	0.54	
Selenium	mg/L	03/24/2010	N001	5	- 10	0.024		F	0	0.00032	
Sodium	mg/L	03/24/2010	N001	5	- 10	830		F	0	0.033	
Specific Conductance	umhos/cm	03/24/2010	N001	5	- 10	4945		F	0		
Strontium	mg/L	03/24/2010	N001	5	- 10	4.8		F	0	0.00039	
Sulfate	mg/L	03/24/2010	N001	5	- 10	2600		F	0	25	
Temperature	C	03/24/2010	N001	5	- 10	11.24		F	0		
Turbidity	NTU	03/24/2010	N001	5	- 10	5.68		F	0		
Uranium	mg/L	03/24/2010	N001	5	- 10	0.073		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0623 WELL Center of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	10	- 15	0.1	U	F	0	0.1	
Calcium	mg/L	03/25/2010	N001	10	- 15	240		F	0	0.06	
Chloride	mg/L	03/25/2010	N001	10	- 15	67		F	0	10	
Magnesium	mg/L	03/25/2010	N001	10	- 15	60		F	0	0.065	
Manganese	mg/L	03/25/2010	N001	10	- 15	2.7		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	10	- 15	0.067		F	0	0.01	
Oxidation Reduction Potential	mV	03/25/2010	N001	10	- 15	52.1		F	0		
pH	s.u.	03/25/2010	N001	10	- 15	7.14		F	0		
Potassium	mg/L	03/25/2010	N001	10	- 15	15		F	0	0.54	
Selenium	mg/L	03/25/2010	N001	10	- 15	0.0019		F	0	0.00032	
Sodium	mg/L	03/25/2010	N001	10	- 15	940		F	0	0.033	
Specific Conductance	umhos/cm	03/25/2010	N001	10	- 15	5269		F	0		
Strontium	mg/L	03/25/2010	N001	10	- 15	8.4		F	0	0.00039	
Sulfate	mg/L	03/25/2010	N001	10	- 15	2700		F	0	25	
Temperature	C	03/25/2010	N001	10	- 15	12.9		F	0		
Turbidity	NTU	03/25/2010	N001	10	- 15	3.33		F	0		
Uranium	mg/L	03/25/2010	N001	10	- 15	0.062		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0625 WELL Center of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	4.5	- 9.5	0.1	U	F	0	0.1	
Calcium	mg/L	03/25/2010	N001	4.5	- 9.5	230		F	0	0.06	
Chloride	mg/L	03/25/2010	N001	4.5	- 9.5	64		F	0	10	
Magnesium	mg/L	03/25/2010	N001	4.5	- 9.5	51		F	0	0.065	
Manganese	mg/L	03/25/2010	N001	4.5	- 9.5	4.3		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	4.5	- 9.5	0.045		F	0	0.01	
Oxidation Reduction Potential	mV	03/25/2010	N001	4.5	- 9.5	31.8		F	0		
pH	s.u.	03/25/2010	N001	4.5	- 9.5	7.11		F	0		
Potassium	mg/L	03/25/2010	N001	4.5	- 9.5	13		F	0	0.54	
Selenium	mg/L	03/25/2010	N001	4.5	- 9.5	0.002		F	0	0.00032	
Sodium	mg/L	03/25/2010	N001	4.5	- 9.5	920		F	0	0.033	
Specific Conductance	umhos/cm	03/25/2010	N001	4.5	- 9.5	5107		F	0		
Strontium	mg/L	03/25/2010	N001	4.5	- 9.5	8.9		F	0	0.00039	
Sulfate	mg/L	03/25/2010	N001	4.5	- 9.5	2600		F	0	25	
Temperature	C	03/25/2010	N001	4.5	- 9.5	11.13		F	0		
Turbidity	NTU	03/25/2010	N001	4.5	- 9.5	9.68		F	0		
Uranium	mg/L	03/25/2010	N001	4.5	- 9.5	0.04		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0626 WELL Center of floodplain, just NE of wetland

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/26/2010	N001	9.5	- 14.5	0.1	U	F	0	0.1	
Calcium	mg/L	03/26/2010	N001	9.5	- 14.5	240		F	0	0.06	
Chloride	mg/L	03/26/2010	N001	9.5	- 14.5	68		F	0	10	
Magnesium	mg/L	03/26/2010	N001	9.5	- 14.5	46		F	0	0.065	
Manganese	mg/L	03/26/2010	N001	9.5	- 14.5	4.5		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2010	N001	9.5	- 14.5	0.032		F	0	0.01	
Oxidation Reduction Potential	mV	03/26/2010	N001	9.5	- 14.5	57.4		F	0		
pH	s.u.	03/26/2010	N001	9.5	- 14.5	7.14		F	0		
Potassium	mg/L	03/26/2010	N001	9.5	- 14.5	10		F	0	0.54	
Selenium	mg/L	03/26/2010	N001	9.5	- 14.5	0.00098		F	0	0.00016	
Sodium	mg/L	03/26/2010	N001	9.5	- 14.5	930		F	0	0.033	
Specific Conductance	umhos/cm	03/26/2010	N001	9.5	- 14.5	5224		F	0		
Strontium	mg/L	03/26/2010	N001	9.5	- 14.5	12		F	0	0.00039	
Sulfate	mg/L	03/26/2010	N001	9.5	- 14.5	2600		F	0	25	
Temperature	C	03/26/2010	N001	9.5	- 14.5	9.33		F	0		
Turbidity	NTU	03/26/2010	N001	9.5	- 14.5	5.55		F	0		
Uranium	mg/L	03/26/2010	N001	9.5	- 14.5	0.035		F	0	0.000015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0628 WELL Center of floodplain, well nest, just N of wetland

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/26/2010	N001	6	- 10	0.1	U	F	0	0.1	
Calcium	mg/L	03/26/2010	N001	6	- 10	130		F	0	0.06	
Chloride	mg/L	03/26/2010	N001	6	- 10	80		F	0	10	
Magnesium	mg/L	03/26/2010	N001	6	- 10	46		F	0	0.065	
Manganese	mg/L	03/26/2010	N001	6	- 10	1.9		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2010	N001	6	- 10	0.013		F	0	0.01	
Oxidation Reduction Potential	mV	03/26/2010	N001	6	- 10	165		F	0		
pH	s.u.	03/26/2010	N001	6	- 10	7.68		F	0		
Potassium	mg/L	03/26/2010	N001	6	- 10	8.3		F	0	0.54	
Selenium	mg/L	03/26/2010	N001	6	- 10	0.006		F	0	0.00032	
Sodium	mg/L	03/26/2010	N001	6	- 10	950		F	0	0.033	
Specific Conductance	umhos/cm	03/26/2010	N001	6	- 10	5230		F	0		
Strontium	mg/L	03/26/2010	N001	6	- 10	6.1		F	0	0.00039	
Sulfate	mg/L	03/26/2010	N001	6	- 10	2700		F	0	25	
Temperature	C	03/26/2010	N001	6	- 10	6.7		F	0		
Turbidity	NTU	03/26/2010	N001	6	- 10	2.93		F	0		
Uranium	mg/L	03/26/2010	N001	6	- 10	0.034		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0630 WELL Just N of mouth of Bob Lee Wash, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/26/2010	N001	5	- 10	0.1	U	F	0	0.1	
Calcium	mg/L	03/26/2010	N001	5	- 10	260		F	0	0.06	
Chloride	mg/L	03/26/2010	N001	5	- 10	77		F	0	10	
Magnesium	mg/L	03/26/2010	N001	5	- 10	49		F	0	0.065	
Manganese	mg/L	03/26/2010	N001	5	- 10	2		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2010	N001	5	- 10	3.5		F	0	0.05	
Oxidation Reduction Potential	mV	03/26/2010	N001	5	- 10	163		F	0		
pH	s.u.	03/26/2010	N001	5	- 10	7.52		F	0		
Potassium	mg/L	03/26/2010	N001	5	- 10	9.8		F	0	0.54	
Selenium	mg/L	03/26/2010	N001	5	- 10	0.036		F	0	0.00032	
Sodium	mg/L	03/26/2010	N001	5	- 10	900		F	0	0.033	
Specific Conductance	umhos/cm	03/26/2010	N001	5	- 10	5270		F	0		
Strontium	mg/L	03/26/2010	N001	5	- 10	16		F	0	0.00039	
Sulfate	mg/L	03/26/2010	N001	5	- 10	2800		F	0	25	
Temperature	C	03/26/2010	N001	5	- 10	9.3		F	0		
Turbidity	NTU	03/26/2010	N001	5	- 10	3.39		F	0		
Uranium	mg/L	03/26/2010	N001	5	- 10	0.051		F	0	0.000029	



**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0734 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/26/2010	0001	2	-	4	0.1	U	FQ	0	0.1	
Calcium	mg/L	03/26/2010	0001	2	-	4	440		FQ	0	0.12	
Chloride	mg/L	03/26/2010	0001	2	-	4	190		FQ	0	20	
Magnesium	mg/L	03/26/2010	0001	2	-	4	400		FQ	0	0.13	
Manganese	mg/L	03/26/2010	0001	2	-	4	0.012	B	FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2010	0001	2	-	4	0.4		FQ	0	0.01	
Oxidation Reduction Potential	mV	03/26/2010	N001	2	-	4	198		FQ	0		
pH	s.u.	03/26/2010	N001	2	-	4	7.36		FQ	0		
Potassium	mg/L	03/26/2010	0001	2	-	4	19		FQ	0	1.1	
Selenium	mg/L	03/26/2010	0001	2	-	4	0.14		FQ	0	0.00032	
Sodium	mg/L	03/26/2010	0001	2	-	4	2400		FQ	0	0.066	
Specific Conductance	umhos/cm	03/26/2010	N001	2	-	4	11160		FQ	0		
Strontium	mg/L	03/26/2010	0001	2	-	4	11		FQ	0	0.00078	
Sulfate	mg/L	03/26/2010	0001	2	-	4	7700		FQ	0	50	
Temperature	C	03/26/2010	N001	2	-	4	8.3		FQ	0		
Turbidity	NTU	03/26/2010	N001	2	-	4	125		FQ	0		
Uranium	mg/L	03/26/2010	0001	2	-	4	0.2		FQ	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0735 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/22/2010	N001	3	- 8	9.9		F	0	0.5	
Calcium	mg/L	03/22/2010	N001	3	- 8	290		F	0	0.12	
Chloride	mg/L	03/22/2010	N001	3	- 8	350		F	0	20	
Magnesium	mg/L	03/22/2010	N001	3	- 8	800		F	0	0.13	
Manganese	mg/L	03/22/2010	N001	3	- 8	1.9		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2010	N001	3	- 8	370		F	0	2	
Oxidation Reduction Potential	mV	03/22/2010	N001	3	- 8	227.7		F	0		
pH	s.u.	03/22/2010	N001	3	- 8	6.93		F	0		
Potassium	mg/L	03/22/2010	N001	3	- 8	44		F	0	1.1	
Selenium	mg/L	03/22/2010	N001	3	- 8	0.044		F	0	0.00032	
Sodium	mg/L	03/22/2010	N001	3	- 8	2200		F	0	0.066	
Specific Conductance	umhos/cm	03/22/2010	N001	3	- 8	13501		F	0		
Strontium	mg/L	03/22/2010	N001	3	- 8	7.1		F	0	0.00078	
Sulfate	mg/L	03/22/2010	N001	3	- 8	6900		F	0	50	
Temperature	C	03/22/2010	N001	3	- 8	8.24		F	0		
Turbidity	NTU	03/22/2010	N001	3	- 8	6.78		F	0		
Uranium	mg/L	03/22/2010	N001	3	- 8	0.18		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0736 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/26/2010	N001	3	- 5	0.1	U	F	0	0.1	
Calcium	mg/L	03/26/2010	N001	3	- 5	390		F	0	0.06	
Chloride	mg/L	03/26/2010	N001	3	- 5	87		F	0	20	
Magnesium	mg/L	03/26/2010	N001	3	- 5	130		F	0	0.065	
Manganese	mg/L	03/26/2010	N001	3	- 5	0.15		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2010	N001	3	- 5	0.13		F	0	0.01	
Oxidation Reduction Potential	mV	03/26/2010	N001	3	- 5	23		F	0		
pH	s.u.	03/26/2010	N001	3	- 5	7.34		F	0		
Potassium	mg/L	03/26/2010	N001	3	- 5	36		F	0	0.54	
Selenium	mg/L	03/26/2010	N001	3	- 5	0.00047	B	F	0	0.00016	
Sodium	mg/L	03/26/2010	N001	3	- 5	1300		F	0	0.66	
Specific Conductance	umhos/cm	03/26/2010	N001	3	- 5	7092		F	0		
Strontium	mg/L	03/26/2010	N001	3	- 5	6.2		F	0	0.00039	
Sulfate	mg/L	03/26/2010	N001	3	- 5	4100		F	0	50	
Temperature	C	03/26/2010	N001	3	- 5	9.8		F	0		
Turbidity	NTU	03/26/2010	N001	3	- 5	1.62		F	0		
Uranium	mg/L	03/26/2010	N001	3	- 5	0.087		F	0	0.000015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0766 WELL Well Point

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	6.25	- 8.75	0.1	U	F	0	0.1	
Calcium	mg/L	03/25/2010	N001	6.25	- 8.75	340		F	0	0.06	
Chloride	mg/L	03/25/2010	N001	6.25	- 8.75	120		F	0	20	
Magnesium	mg/L	03/25/2010	N001	6.25	- 8.75	390		F	0	0.065	
Manganese	mg/L	03/25/2010	N001	6.25	- 8.75	0.17		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	6.25	- 8.75	0.088		F	0	0.01	
Oxidation Reduction Potential	mV	03/25/2010	N001	6.25	- 8.75	-57.2		F	0		
pH	s.u.	03/25/2010	N001	6.25	- 8.75	7.42		F	0		
Potassium	mg/L	03/25/2010	N001	6.25	- 8.75	54		F	0	0.54	
Selenium	mg/L	03/25/2010	N001	6.25	- 8.75	0.0014		F	0	0.00032	
Sodium	mg/L	03/25/2010	N001	6.25	- 8.75	1600		F	0	0.66	
Specific Conductance	umhos/cm	03/25/2010	N001	6.25	- 8.75	9242		F	0		
Strontium	mg/L	03/25/2010	N001	6.25	- 8.75	4.8		F	0	0.00039	
Sulfate	mg/L	03/25/2010	N001	6.25	- 8.75	5900		F	0	50	
Temperature	C	03/25/2010	N001	6.25	- 8.75	11.91		F	0		
Turbidity	NTU	03/25/2010	N001	6.25	- 8.75	3.99		F	0		
Uranium	mg/L	03/25/2010	N001	6.25	- 8.75	0.27		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0768 WELL Well Point

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	4.58	- 7.08	0.1	U	F	0	0.1	
Calcium	mg/L	03/25/2010	N001	4.58	- 7.08	320		F	0	0.12	
Chloride	mg/L	03/25/2010	N001	4.58	- 7.08	350		F	0	40	
Magnesium	mg/L	03/25/2010	N001	4.58	- 7.08	590		F	0	0.13	
Manganese	mg/L	03/25/2010	N001	4.58	- 7.08	1.7		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	4.58	- 7.08	0.023		F	0	0.01	
Oxidation Reduction Potential	mV	03/25/2010	N001	4.58	- 7.08	17.1		F	0		
pH	s.u.	03/25/2010	N001	4.58	- 7.08	7.25		F	0		
Potassium	mg/L	03/25/2010	N001	4.58	- 7.08	180		F	0	1.1	
Selenium	mg/L	03/25/2010	N001	4.58	- 7.08	0.0088		F	0	0.00065	
Sodium	mg/L	03/25/2010	N001	4.58	- 7.08	4700		F	0	0.66	
Specific Conductance	umhos/cm	03/25/2010	N001	4.58	- 7.08	22800		F	0		
Strontium	mg/L	03/25/2010	N001	4.58	- 7.08	11		F	0	0.00078	
Sulfate	mg/L	03/25/2010	N001	4.58	- 7.08	14000		F	0	100	
Temperature	C	03/25/2010	N001	4.58	- 7.08	9.34		F	0		
Turbidity	NTU	03/25/2010	N001	4.58	- 7.08	5.84		F	0		
Uranium	mg/L	03/25/2010	N001	4.58	- 7.08	1.4		F	0	0.000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0773 WELL Well Point

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	4	- 6.5	0.19		F	0	0.1	
Calcium	mg/L	03/23/2010	N001	4	- 6.5	490		F	0	0.06	
Chloride	mg/L	03/23/2010	N001	4	- 6.5	110		F	0	20	
Magnesium	mg/L	03/23/2010	N001	4	- 6.5	530		F	0	0.065	
Manganese	mg/L	03/23/2010	N001	4	- 6.5	0.00057	U	F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	4	- 6.5	130		F	0	1	
Oxidation Reduction Potential	mV	03/23/2010	N001	4	- 6.5	148		F	0		
pH	s.u.	03/23/2010	N001	4	- 6.5	7.41		F	0		
Potassium	mg/L	03/23/2010	N001	4	- 6.5	66		F	0	0.54	
Selenium	mg/L	03/23/2010	N001	4	- 6.5	0.29		F	0	0.00032	
Sodium	mg/L	03/23/2010	N001	4	- 6.5	650		F	0	0.033	
Specific Conductance	umhos/cm	03/23/2010	N001	4	- 6.5	6887		F	0		
Strontium	mg/L	03/23/2010	N001	4	- 6.5	5		F	0	0.00039	
Sulfate	mg/L	03/23/2010	N001	4	- 6.5	4100		F	0	50	
Temperature	C	03/23/2010	N001	4	- 6.5	11.29		F	0		
Turbidity	NTU	03/23/2010	N001	4	- 6.5	2.23		F	0		
Uranium	mg/L	03/23/2010	N001	4	- 6.5	0.68		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0775 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	4.25	- 6.75	0.1	U	F	0	0.1	
Calcium	mg/L	03/25/2010	N001	4.25	- 6.75	420		F	0	0.12	
Chloride	mg/L	03/25/2010	N001	4.25	- 6.75	170		F	0	20	
Magnesium	mg/L	03/25/2010	N001	4.25	- 6.75	400		F	0	0.13	
Manganese	mg/L	03/25/2010	N001	4.25	- 6.75	0.34		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	4.25	- 6.75	0.18		F	0	0.01	
Oxidation Reduction Potential	mV	03/25/2010	N001	4.25	- 6.75	92		F	0		
pH	s.u.	03/25/2010	N001	4.25	- 6.75	7.39		F	0		
Potassium	mg/L	03/25/2010	N001	4.25	- 6.75	72		F	0	1.1	
Selenium	mg/L	03/25/2010	N001	4.25	- 6.75	0.072		F	0	0.00032	
Sodium	mg/L	03/25/2010	N001	4.25	- 6.75	2300		F	0	0.066	
Specific Conductance	umhos/cm	03/25/2010	N001	4.25	- 6.75	11926		F	0		
Strontium	mg/L	03/25/2010	N001	4.25	- 6.75	7.1		F	0	0.00078	
Sulfate	mg/L	03/25/2010	N001	4.25	- 6.75	7600		F	0	50	
Temperature	C	03/25/2010	N001	4.25	- 6.75	11.94		F	0		
Turbidity	NTU	03/25/2010	N001	4.25	- 6.75	3.48		F	0		
Uranium	mg/L	03/25/2010	N001	4.25	- 6.75	0.64		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0779 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	7	- 9.5	1.3		F	0	0.1	
Calcium	mg/L	03/25/2010	N001	7	- 9.5	260		F	0	0.12	
Chloride	mg/L	03/25/2010	N001	7	- 9.5	200		F	0	20	
Magnesium	mg/L	03/25/2010	N001	7	- 9.5	660		F	0	0.13	
Manganese	mg/L	03/25/2010	N001	7	- 9.5	1.6		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	7	- 9.5	4.2		F	0	0.05	
Oxidation Reduction Potential	mV	03/25/2010	N001	7	- 9.5	222.6		F	0		
pH	s.u.	03/25/2010	N001	7	- 9.5	7.28		F	0		
Potassium	mg/L	03/25/2010	N001	7	- 9.5	77		F	0	1.1	
Selenium	mg/L	03/25/2010	N001	7	- 9.5	0.023		F	0	0.00065	
Sodium	mg/L	03/25/2010	N001	7	- 9.5	1500		F	0	0.066	
Specific Conductance	umhos/cm	03/25/2010	N001	7	- 9.5	9896		F	0		
Strontium	mg/L	03/25/2010	N001	7	- 9.5	6		F	0	0.00078	
Sulfate	mg/L	03/25/2010	N001	7	- 9.5	6400		F	0	50	
Temperature	C	03/25/2010	N001	7	- 9.5	9.51		F	0		
Turbidity	NTU	03/25/2010	N001	7	- 9.5	3.21		F	0		
Uranium	mg/L	03/25/2010	N001	7	- 9.5	1.1		F	0	0.000058	



**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0782R WELL Island area NW of US Hwy 666 bridge.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	4.71	- 9.46	0.1	U	F	0	0.1	
Calcium	mg/L	03/25/2010	N001	4.71	- 9.46	80		F	0	0.012	
Chloride	mg/L	03/25/2010	N001	4.71	- 9.46	17		F	0	2	
Magnesium	mg/L	03/25/2010	N001	4.71	- 9.46	24		F	0	0.013	
Manganese	mg/L	03/25/2010	N001	4.71	- 9.46	1.4		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	4.71	- 9.46	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/25/2010	N001	4.71	- 9.46	53		F	0		
pH	s.u.	03/25/2010	N001	4.71	- 9.46	7.35		F	0		
Potassium	mg/L	03/25/2010	N001	4.71	- 9.46	2.7		F	0	0.11	
Selenium	mg/L	03/25/2010	N001	4.71	- 9.46	0.0001		F	0	0.000032	
Sodium	mg/L	03/25/2010	N001	4.71	- 9.46	74		F	0	0.0066	
Specific Conductance	umhos/cm	03/25/2010	N001	4.71	- 9.46	935		F	0		
Strontium	mg/L	03/25/2010	N001	4.71	- 9.46	0.92		F	0	0.000078	
Sulfate	mg/L	03/25/2010	N001	4.71	- 9.46	310		F	0	5	
Temperature	C	03/25/2010	N001	4.71	- 9.46	10.3		F	0		
Turbidity	NTU	03/25/2010	N001	4.71	- 9.46	3.73		F	0		
Uranium	mg/L	03/25/2010	N001	4.71	- 9.46	0.0047		F	0	0.0000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0783R WELL Island area NW of US Hwy 666 bridge.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	4.375 - 9.375	0.1	U	F	0	0.1	
Calcium	mg/L	03/25/2010	N001	4.375 - 9.375	120		F	0	0.012	
Chloride	mg/L	03/25/2010	N001	4.375 - 9.375	21		F	0	4	
Magnesium	mg/L	03/25/2010	N001	4.375 - 9.375	46		F	0	0.013	
Manganese	mg/L	03/25/2010	N001	4.375 - 9.375	2		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	4.375 - 9.375	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/25/2010	N001	4.375 - 9.375	115		F	0		
pH	s.u.	03/25/2010	N001	4.375 - 9.375	7.67		F	0		
Potassium	mg/L	03/25/2010	N001	4.375 - 9.375	3.7		F	0	0.11	
Selenium	mg/L	03/25/2010	N001	4.375 - 9.375	0.00036		F	0	0.000032	
Sodium	mg/L	03/25/2010	N001	4.375 - 9.375	130		F	0	0.0066	
Specific Conductance	umhos/cm	03/25/2010	N001	4.375 - 9.375	1475		F	0		
Strontium	mg/L	03/25/2010	N001	4.375 - 9.375	1.4		F	0	0.000078	
Sulfate	mg/L	03/25/2010	N001	4.375 - 9.375	610		F	0	10	
Temperature	C	03/25/2010	N001	4.375 - 9.375	11.1		F	0		
Turbidity	NTU	03/25/2010	N001	4.375 - 9.375	8.35		F	0		
Uranium	mg/L	03/25/2010	N001	4.375 - 9.375	0.01		F	0	0.0000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0792 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	6	-	8	0.1	U	F	0	0.1	
Calcium	mg/L	03/24/2010	N001	6	-	8	380		F	0	0.12	
Chloride	mg/L	03/24/2010	N001	6	-	8	230		F	0	40	
Magnesium	mg/L	03/24/2010	N001	6	-	8	610		F	0	0.13	
Manganese	mg/L	03/24/2010	N001	6	-	8	2.1		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	6	-	8	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/24/2010	N001	6	-	8	139.8		F	0		
pH	s.u.	03/24/2010	N001	6	-	8	7.67		F	0		
Potassium	mg/L	03/24/2010	N001	6	-	8	79		F	0	1.1	
Selenium	mg/L	03/24/2010	N001	6	-	8	0.014		F	0	0.00065	
Sodium	mg/L	03/24/2010	N001	6	-	8	3000		F	0	0.66	
Specific Conductance	umhos/cm	03/24/2010	N001	6	-	8	14775		F	0		
Strontium	mg/L	03/24/2010	N001	6	-	8	9.7		F	0	0.00078	
Sulfate	mg/L	03/24/2010	N001	6	-	8	10000		F	0	100	
Temperature	C	03/24/2010	N001	6	-	8	11.37		F	0		
Turbidity	NTU	03/24/2010	N001	6	-	8	9.01		F	0		
Uranium	mg/L	03/24/2010	N001	6	-	8	0.79		F	0	0.000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0793 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	5.2	- 7.2	2.8		F	0	0.1	
Calcium	mg/L	03/24/2010	N001	5.2	- 7.2	270		F	0	0.06	
Chloride	mg/L	03/24/2010	N001	5.2	- 7.2	83		F	0	10	
Magnesium	mg/L	03/24/2010	N001	5.2	- 7.2	400		F	0	0.065	
Manganese	mg/L	03/24/2010	N001	5.2	- 7.2	0.042		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	5.2	- 7.2	5.1		F	0	0.05	
Oxidation Reduction Potential	mV	03/24/2010	N001	5.2	- 7.2	146.6		F	0		
pH	s.u.	03/24/2010	N001	5.2	- 7.2	7.13		F	0		
Potassium	mg/L	03/24/2010	N001	5.2	- 7.2	33		F	0	0.54	
Selenium	mg/L	03/24/2010	N001	5.2	- 7.2	0.22		F	0	0.00032	
Sodium	mg/L	03/24/2010	N001	5.2	- 7.2	510		F	0	0.033	
Specific Conductance	umhos/cm	03/24/2010	N001	5.2	- 7.2	5073		F	0		
Strontium	mg/L	03/24/2010	N001	5.2	- 7.2	3.6		F	0	0.00039	
Sulfate	mg/L	03/24/2010	N001	5.2	- 7.2	3000		F	0	25	
Temperature	C	03/24/2010	N001	5.2	- 7.2	10.44		F	0		
Turbidity	NTU	03/24/2010	N001	5.2	- 7.2	2.48		F	0		
Uranium	mg/L	03/24/2010	N001	5.2	- 7.2	0.83		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0797 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	7.3	- 9.3	0.1	U	FQ	0	0.1	
Calcium	mg/L	03/25/2010	N001	7.3	- 9.3	420		FQ	0	0.06	
Chloride	mg/L	03/25/2010	N001	7.3	- 9.3	220		FQ	0	20	
Magnesium	mg/L	03/25/2010	N001	7.3	- 9.3	100		FQ	0	0.065	
Manganese	mg/L	03/25/2010	N001	7.3	- 9.3	0.5		FQ	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	7.3	- 9.3	0.024		FQ	0	0.01	
Oxidation Reduction Potential	mV	03/25/2010	N001	7.3	- 9.3	66		FQ	0		
pH	s.u.	03/25/2010	N001	7.3	- 9.3	7.98		FQ	0		
Potassium	mg/L	03/25/2010	N001	7.3	- 9.3	6.3		FQ	0	0.54	
Selenium	mg/L	03/25/2010	N001	7.3	- 9.3	0.0005	B	FQ	0	0.00016	
Sodium	mg/L	03/25/2010	N001	7.3	- 9.3	1100		FQ	0	0.033	
Specific Conductance	umhos/cm	03/25/2010	N001	7.3	- 9.3	7538		FQ	0		
Strontium	mg/L	03/25/2010	N001	7.3	- 9.3	7		FQ	0	0.00039	
Sulfate	mg/L	03/25/2010	N001	7.3	- 9.3	3200		FQ	0	50	
Temperature	C	03/25/2010	N001	7.3	- 9.3	13.24		FQ	0		
Turbidity	NTU	03/25/2010	N001	7.3	- 9.3	8.25		FQ	0		
Uranium	mg/L	03/25/2010	N001	7.3	- 9.3	0.037		FQ	0	0.000015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0798 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	7.1	- 9.1	1.9		F	0	0.1	
Calcium	mg/L	03/25/2010	N001	7.1	- 9.1	410		F	0	0.12	
Chloride	mg/L	03/25/2010	N001	7.1	- 9.1	240		F	0	20	
Magnesium	mg/L	03/25/2010	N001	7.1	- 9.1	610		F	0	0.13	
Manganese	mg/L	03/25/2010	N001	7.1	- 9.1	2.5		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	7.1	- 9.1	1.9		F	0	0.01	
Oxidation Reduction Potential	mV	03/25/2010	N001	7.1	- 9.1	99.8		F	0		
pH	s.u.	03/25/2010	N001	7.1	- 9.1	7.07		F	0		
Potassium	mg/L	03/25/2010	N001	7.1	- 9.1	64		F	0	1.1	
Selenium	mg/L	03/25/2010	N001	7.1	- 9.1	0.14		F	0	0.00032	
Sodium	mg/L	03/25/2010	N001	7.1	- 9.1	1900		F	0	0.066	
Specific Conductance	umhos/cm	03/25/2010	N001	7.1	- 9.1	11594		F	0		
Strontium	mg/L	03/25/2010	N001	7.1	- 9.1	7.2		F	0	0.00078	
Sulfate	mg/L	03/25/2010	N001	7.1	- 9.1	7300		F	0	50	
Temperature	C	03/25/2010	N001	7.1	- 9.1	12.88		F	0		
Turbidity	NTU	03/25/2010	N001	7.1	- 9.1	1.72		F	0		
Uranium	mg/L	03/25/2010	N001	7.1	- 9.1	0.78		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0850 WELL Background area 1 mi E of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	5.6	- 15.4	0.1	U	F	0	0.1	
Calcium	mg/L	03/25/2010	N001	5.6	- 15.4	31		F	0	0.024	
Chloride	mg/L	03/25/2010	N001	5.6	- 15.4	54		F	0	4	
Magnesium	mg/L	03/25/2010	N001	5.6	- 15.4	9		F	0	0.026	
Manganese	mg/L	03/25/2010	N001	5.6	- 15.4	0.14		F	0	0.00023	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	5.6	- 15.4	0.01		F	0	0.01	
Oxidation Reduction Potential	mV	03/25/2010	N001	5.6	- 15.4	6.2		F	0		
pH	s.u.	03/25/2010	N001	5.6	- 15.4	8.61		F	0		
Potassium	mg/L	03/25/2010	N001	5.6	- 15.4	1.7	B	F	0	0.22	
Selenium	mg/L	03/25/2010	N001	5.6	- 15.4	0.002		F	0	0.000065	
Sodium	mg/L	03/25/2010	N001	5.6	- 15.4	410		F	0	0.013	
Specific Conductance	umhos/cm	03/25/2010	N001	5.6	- 15.4	2479		F	0		
Strontium	mg/L	03/25/2010	N001	5.6	- 15.4	0.53		F	0	0.00016	
Sulfate	mg/L	03/25/2010	N001	5.6	- 15.4	770		F	0	10	
Temperature	C	03/25/2010	N001	5.6	- 15.4	13.13		F	0		
Turbidity	NTU	03/25/2010	N001	5.6	- 15.4	9.82		F	0		
Uranium	mg/L	03/25/2010	N001	5.6	- 15.4	0.037		F	0	0.0000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0853 WELL S of floodplain fence

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	10	- 15	10		F	0	0.5	
Ammonia Total as N	mg/L	03/24/2010	N002	10	- 15	11		F	0	0.5	
Calcium	mg/L	03/24/2010	N001	10	- 15	110		F	0	0.012	
Calcium	mg/L	03/24/2010	N002	10	- 15	110		F	0	0.012	
Chloride	mg/L	03/24/2010	N001	10	- 15	14		F	0	2	
Chloride	mg/L	03/24/2010	N002	10	- 15	14		F	0	2	
Magnesium	mg/L	03/24/2010	N001	10	- 15	32		F	0	0.013	
Magnesium	mg/L	03/24/2010	N002	10	- 15	32		F	0	0.013	
Manganese	mg/L	03/24/2010	N001	10	- 15	0.45		F	0	0.00011	
Manganese	mg/L	03/24/2010	N002	10	- 15	0.46		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	10	- 15	0.018		F	0	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N002	10	- 15	0.021		F	0	0.01	
Oxidation Reduction Potential	mV	03/24/2010	N001	10	- 15	147.4		F	0		
pH	s.u.	03/24/2010	N001	10	- 15	7.46		F	0		
Potassium	mg/L	03/24/2010	N001	10	- 15	9.3		F	0	0.11	
Potassium	mg/L	03/24/2010	N002	10	- 15	9.2		F	0	0.11	
Selenium	mg/L	03/24/2010	N001	10	- 15	0.00013		F	0	0.000032	



**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0853 WELL S of floodplain fence

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/24/2010	N002	10	- 15	0.00032		F	0	0.000065	
Sodium	mg/L	03/24/2010	N001	10	- 15	69		F	0	0.0066	
Sodium	mg/L	03/24/2010	N002	10	- 15	72		F	0	0.0066	
Specific Conductance	umhos /cm	03/24/2010	N001	10	- 15	1110		F	0		
Strontium	mg/L	03/24/2010	N001	10	- 15	1.2		F	0	0.000078	
Strontium	mg/L	03/24/2010	N002	10	- 15	1.1		F	0	0.000078	
Sulfate	mg/L	03/24/2010	N001	10	- 15	410		F	0	5	
Sulfate	mg/L	03/24/2010	N002	10	- 15	420		F	0	5	
Temperature	C	03/24/2010	N001	10	- 15	10.51		F	0		
Turbidity	NTU	03/24/2010	N001	10	- 15	8.91		F	0		
Uranium	mg/L	03/24/2010	N001	10	- 15	0.055		F	0	0.0000029	
Uranium	mg/L	03/24/2010	N002	10	- 15	0.05		F	0	0.0000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0854 WELL NE part of floodplain

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	9.05	- 11.55	8.1		F	0	0.5	
Calcium	mg/L	03/25/2010	N001	9.05	- 11.55	490		F	0	0.12	
Chloride	mg/L	03/25/2010	N001	9.05	- 11.55	490		F	0	40	
Magnesium	mg/L	03/25/2010	N001	9.05	- 11.55	1500		F	0	0.13	
Manganese	mg/L	03/25/2010	N001	9.05	- 11.55	2.5		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	9.05	- 11.55	100		F	0	1	
Oxidation Reduction Potential	mV	03/25/2010	N001	9.05	- 11.55	125.3		F	0		
pH	s.u.	03/25/2010	N001	9.05	- 11.55	7.08		F	0		
Potassium	mg/L	03/25/2010	N001	9.05	- 11.55	85		F	0	1.1	
Selenium	mg/L	03/25/2010	N001	9.05	- 11.55	0.025		F	0	0.00065	
Sodium	mg/L	03/25/2010	N001	9.05	- 11.55	2400		F	0	0.066	
Specific Conductance	umhos/cm	03/25/2010	N001	9.05	- 11.55	15973		F	0		
Strontium	mg/L	03/25/2010	N001	9.05	- 11.55	10		F	0	0.00078	
Sulfate	mg/L	03/25/2010	N001	9.05	- 11.55	12000		F	0	100	
Temperature	C	03/25/2010	N001	9.05	- 11.55	10.84		F	0		
Turbidity	NTU	03/25/2010	N001	9.05	- 11.55	5.9		F	0		
Uranium	mg/L	03/25/2010	N001	9.05	- 11.55	2		F	0	0.000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0855 WELL NW part of floodplain

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/26/2010	N001	4.9	- 14.9	0.1	U	F	0	0.1	
Calcium	mg/L	03/26/2010	N001	4.9	- 14.9	290		F	0	0.06	
Chloride	mg/L	03/26/2010	N001	4.9	- 14.9	81		F	0	10	
Magnesium	mg/L	03/26/2010	N001	4.9	- 14.9	73		F	0	0.065	
Manganese	mg/L	03/26/2010	N001	4.9	- 14.9	1.5		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2010	N001	4.9	- 14.9	0.15		F	0	0.01	
Oxidation Reduction Potential	mV	03/26/2010	N001	4.9	- 14.9	164		F	0		
pH	s.u.	03/26/2010	N001	4.9	- 14.9	7.49		F	0		
Potassium	mg/L	03/26/2010	N001	4.9	- 14.9	12		F	0	0.54	
Selenium	mg/L	03/26/2010	N001	4.9	- 14.9	0.018		F	0	0.00032	
Sodium	mg/L	03/26/2010	N001	4.9	- 14.9	1100		F	0	0.033	
Specific Conductance	umhos/cm	03/26/2010	N001	4.9	- 14.9	5890		F	0		
Strontium	mg/L	03/26/2010	N001	4.9	- 14.9	9.3		F	0	0.00039	
Sulfate	mg/L	03/26/2010	N001	4.9	- 14.9	3200		F	0	25	
Temperature	C	03/26/2010	N001	4.9	- 14.9	7.4		F	0		
Turbidity	NTU	03/26/2010	N001	4.9	- 14.9	9.34		F	0		
Uranium	mg/L	03/26/2010	N001	4.9	- 14.9	0.08		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0856 WELL NW part of floodplain

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/26/2010	N001	18.8	- 23.8	0.1	U	F	0	0.1	
Calcium	mg/L	03/26/2010	N001	18.8	- 23.8	200		F	0	0.06	
Chloride	mg/L	03/26/2010	N001	18.8	- 23.8	68		F	0	10	
Magnesium	mg/L	03/26/2010	N001	18.8	- 23.8	54		F	0	0.065	
Manganese	mg/L	03/26/2010	N001	18.8	- 23.8	1.4		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2010	N001	18.8	- 23.8	0.032		F	0	0.01	
Oxidation Reduction Potential	mV	03/26/2010	N001	18.8	- 23.8	178		F	0		
pH	s.u.	03/26/2010	N001	18.8	- 23.8	7.64		F	0		
Potassium	mg/L	03/26/2010	N001	18.8	- 23.8	14		F	0	0.54	
Selenium	mg/L	03/26/2010	N001	18.8	- 23.8	0.00058		F	0	0.00016	
Sodium	mg/L	03/26/2010	N001	18.8	- 23.8	870		F	0	0.033	
Specific Conductance	umhos/cm	03/26/2010	N001	18.8	- 23.8	5020		F	0		
Strontium	mg/L	03/26/2010	N001	18.8	- 23.8	6		F	0	0.00039	
Sulfate	mg/L	03/26/2010	N001	18.8	- 23.8	2700		F	0	25	
Temperature	C	03/26/2010	N001	18.8	- 23.8	10.7		F	0		
Turbidity	NTU	03/26/2010	N001	18.8	- 23.8	3.76		F	0		
Uranium	mg/L	03/26/2010	N001	18.8	- 23.8	0.054		F	0	0.000015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0857 WELL Near E end of floodplain fence

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	13.2	- 18.2	3.8		F	0	0.1	
Calcium	mg/L	03/24/2010	N001	13.2	- 18.2	75		F	0	0.012	
Chloride	mg/L	03/24/2010	N001	13.2	- 18.2	17		F	0	4	
Magnesium	mg/L	03/24/2010	N001	13.2	- 18.2	51		F	0	0.013	
Manganese	mg/L	03/24/2010	N001	13.2	- 18.2	0.67		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	13.2	- 18.2	0.18		F	0	0.01	
Oxidation Reduction Potential	mV	03/24/2010	N001	13.2	- 18.2	125.8		F	0		
pH	s.u.	03/24/2010	N001	13.2	- 18.2	7.41		F	0		
Potassium	mg/L	03/24/2010	N001	13.2	- 18.2	10		F	0	0.11	
Selenium	mg/L	03/24/2010	N001	13.2	- 18.2	0.00029		F	0	0.000032	
Sodium	mg/L	03/24/2010	N001	13.2	- 18.2	140		F	0	0.0066	
Specific Conductance	umhos/cm	03/24/2010	N001	13.2	- 18.2	1347		F	0		
Strontium	mg/L	03/24/2010	N001	13.2	- 18.2	0.92		F	0	0.000078	
Sulfate	mg/L	03/24/2010	N001	13.2	- 18.2	470		F	0	10	
Temperature	C	03/24/2010	N001	13.2	- 18.2	13.42		F	0		
Turbidity	NTU	03/24/2010	N001	13.2	- 18.2	2.34		F	0		
Uranium	mg/L	03/24/2010	N001	13.2	- 18.2	0.09		F	0	0.0000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1008 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	6.9	- 16.9	14		F	0	0.5	
Calcium	mg/L	03/25/2010	N001	6.9	- 16.9	400		F	0	0.12	
Chloride	mg/L	03/25/2010	N001	6.9	- 16.9	710		F	0	40	
Magnesium	mg/L	03/25/2010	N001	6.9	- 16.9	2100		F	0	0.13	
Manganese	mg/L	03/25/2010	N001	6.9	- 16.9	7.5		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	6.9	- 16.9	83		F	0	1	
Oxidation Reduction Potential	mV	03/25/2010	N001	6.9	- 16.9	129.9		F	0		
pH	s.u.	03/25/2010	N001	6.9	- 16.9	6.91		F	0		
Potassium	mg/L	03/25/2010	N001	6.9	- 16.9	130		F	0	1.1	
Selenium	mg/L	03/25/2010	N001	6.9	- 16.9	0.032		F	0	0.0032	
Sodium	mg/L	03/25/2010	N001	6.9	- 16.9	4000		F	0	0.66	
Specific Conductance	umhos/cm	03/25/2010	N001	6.9	- 16.9	21415		F	0		
Strontium	mg/L	03/25/2010	N001	6.9	- 16.9	11		F	0	0.00078	
Sulfate	mg/L	03/25/2010	N001	6.9	- 16.9	16000		F	0	100	
Temperature	C	03/25/2010	N001	6.9	- 16.9	12.57		F	0		
Turbidity	NTU	03/25/2010	N001	6.9	- 16.9	2.14		F	0		
Uranium	mg/L	03/25/2010	N001	6.9	- 16.9	2.5		F	0	0.00029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1009 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	7.4 - 17.4	14		F	0	0.5	
Calcium	mg/L	03/24/2010	N001	7.4 - 17.4	450		F	0	0.06	
Chloride	mg/L	03/24/2010	N001	7.4 - 17.4	43		F	0	10	
Magnesium	mg/L	03/24/2010	N001	7.4 - 17.4	270		F	0	0.065	
Manganese	mg/L	03/24/2010	N001	7.4 - 17.4	0.42		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	7.4 - 17.4	0.42		F	0	0.01	
Oxidation Reduction Potential	mV	03/24/2010	N001	7.4 - 17.4	131.8		F	0		
pH	s.u.	03/24/2010	N001	7.4 - 17.4	6.97		F	0		
Potassium	mg/L	03/24/2010	N001	7.4 - 17.4	26		F	0	0.54	
Selenium	mg/L	03/24/2010	N001	7.4 - 17.4	0.11		F	0	0.00032	
Sodium	mg/L	03/24/2010	N001	7.4 - 17.4	320		F	0	0.033	
Specific Conductance	umhos/cm	03/24/2010	N001	7.4 - 17.4	4535		F	0		
Strontium	mg/L	03/24/2010	N001	7.4 - 17.4	4.3		F	0	0.00039	
Sulfate	mg/L	03/24/2010	N001	7.4 - 17.4	2700		F	0	25	
Temperature	C	03/24/2010	N001	7.4 - 17.4	13.21		F	0		
Turbidity	NTU	03/24/2010	N001	7.4 - 17.4	4.46		F	0		
Uranium	mg/L	03/24/2010	N001	7.4 - 17.4	0.3		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1089 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	4.8	- 14.8	0.47			0	0.1	
Calcium	mg/L	03/25/2010	N001	4.8	- 14.8	330			0	0.06	
Chloride	mg/L	03/25/2010	N001	4.8	- 14.8	150			0	20	
Magnesium	mg/L	03/25/2010	N001	4.8	- 14.8	410			0	0.065	
Manganese	mg/L	03/25/2010	N001	4.8	- 14.8	0.77			0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	4.8	- 14.8	5.4			0	0.1	
Oxidation Reduction Potential	mV	03/25/2010	N001	4.8	- 14.8	26			0		
pH	s.u.	03/25/2010	N001	4.8	- 14.8	7.71			0		
Potassium	mg/L	03/25/2010	N001	4.8	- 14.8	56			0	0.54	
Selenium	mg/L	03/25/2010	N001	4.8	- 14.8	0.017			0	0.00032	
Sodium	mg/L	03/25/2010	N001	4.8	- 14.8	1500			0	0.66	
Specific Conductance	umhos/cm	03/25/2010	N001	4.8	- 14.8	9358			0		
Strontium	mg/L	03/25/2010	N001	4.8	- 14.8	5			0	0.00039	
Sulfate	mg/L	03/25/2010	N001	4.8	- 14.8	5700			0	50	
Temperature	C	03/25/2010	N001	4.8	- 14.8	11.7			0		
Turbidity	NTU	03/25/2010	N001	4.8	- 14.8	5.24			0		
Uranium	mg/L	03/25/2010	N001	4.8	- 14.8	0.48			0	0.000029	



**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1104 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	-	1.6			0	0.1	
Calcium	mg/L	03/25/2010	N001	-	350			0	0.12	
Chloride	mg/L	03/25/2010	N001	-	320			0	20	
Magnesium	mg/L	03/25/2010	N001	-	980			0	0.13	
Manganese	mg/L	03/25/2010	N001	-	1.2			0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	-	37			0	0.5	
Oxidation Reduction Potential	mV	03/25/2010	N001	-	35.6			0		
pH	s.u.	03/25/2010	N001	-	7.45			0		
Potassium	mg/L	03/25/2010	N001	-	62			0	1.1	
Selenium	mg/L	03/25/2010	N001	-	0.047			0	0.0016	
Sodium	mg/L	03/25/2010	N001	-	2100			0	0.066	
Specific Conductance	umhos/cm	03/25/2010	N001	-	12336			0		
Strontium	mg/L	03/25/2010	N001	-	6.8			0	0.00078	
Sulfate	mg/L	03/25/2010	N001	-	8100			0	50	
Temperature	C	03/25/2010	N001	-	10.94			0		
Turbidity	NTU	03/25/2010	N001	-	3.05			0		
Uranium	mg/L	03/25/2010	N001	-	1.1			0	0.00015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1105 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	4.5 - 14.5	8		F	0	0.5	
Calcium	mg/L	03/24/2010	N001	4.5 - 14.5	500		F	0	0.12	
Chloride	mg/L	03/24/2010	N001	4.5 - 14.5	340		F	0	20	
Magnesium	mg/L	03/24/2010	N001	4.5 - 14.5	1400		F	0	0.13	
Manganese	mg/L	03/24/2010	N001	4.5 - 14.5	3.3		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	4.5 - 14.5	270		F	0	2	
Oxidation Reduction Potential	mV	03/24/2010	N001	4.5 - 14.5	149.1		F	0		
pH	s.u.	03/24/2010	N001	4.5 - 14.5	6.89		F	0		
Potassium	mg/L	03/24/2010	N001	4.5 - 14.5	110		F	0	1.1	
Selenium	mg/L	03/24/2010	N001	4.5 - 14.5	0.12		F	0	0.0016	
Sodium	mg/L	03/24/2010	N001	4.5 - 14.5	2200		F	0	0.066	
Specific Conductance	umhos/cm	03/24/2010	N001	4.5 - 14.5	14562		F	0		
Strontium	mg/L	03/24/2010	N001	4.5 - 14.5	11		F	0	0.00078	
Sulfate	mg/L	03/24/2010	N001	4.5 - 14.5	9600		F	0	50	
Temperature	C	03/24/2010	N001	4.5 - 14.5	12.64		F	0		
Turbidity	NTU	03/24/2010	N001	4.5 - 14.5	6.88		F	0		
Uranium	mg/L	03/24/2010	N001	4.5 - 14.5	1.6		F	0	0.00015	

**General Water Quality Data by Location (USEE105) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

**REPORT DATE: 5/20/2010**

**Location: 1109 TREATMENT SYSTEM**

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Ammonia Total as N	mg/L	03/23/2010	N001	0	-	0	21			0	1	
Calcium	mg/L	03/23/2010	N001	0	-	0	120			0	0.12	
Chloride	mg/L	03/23/2010	N001	0	-	0	45			0	4	
Magnesium	mg/L	03/23/2010	N001	0	-	0	170			0	0.13	
Manganese	mg/L	03/23/2010	N001	0	-	0	0.42			0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	0	-	0	51			0	0.5	
Oxidation Reduction Potential	mV	03/23/2010	N001	0	-	0	159.9			0		
pH	s.u.	03/23/2010	N001	0	-	0	7.31			0		
Potassium	mg/L	03/23/2010	N001	0	-	0	9.9	B		0	1.1	
Selenium	mg/L	03/23/2010	N001	0	-	0	0.022			0	0.000065	
Sodium	mg/L	03/23/2010	N001	0	-	0	210			0	0.066	
Specific Conductance	umhos/cm	03/23/2010	N001	0	-	0	2655			0		
Strontium	mg/L	03/23/2010	N001	0	-	0	1.6			0	0.00078	
Sulfate	mg/L	03/23/2010	N001	0	-	0	1100			0	10	
Temperature	C	03/23/2010	N001	0	-	0	10.37			0		
Turbidity	NTU	03/23/2010	N001	0	-	0	4.49			0		
Uranium	mg/L	03/23/2010	N001	0	-	0	0.2			0	0.0000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1111 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	7	- 12	0.1	U	F	0	0.1	
Calcium	mg/L	03/24/2010	N001	7	- 12	390		F	0	0.06	
Chloride	mg/L	03/24/2010	N001	7	- 12	340		F	0	20	
Magnesium	mg/L	03/24/2010	N001	7	- 12	990		F	0	0.065	
Manganese	mg/L	03/24/2010	N001	7	- 12	0.34		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	7	- 12	12		F	0	0.1	
Oxidation Reduction Potential	mV	03/24/2010	N001	7	- 12	159.2		F	0		
pH	s.u.	03/24/2010	N001	7	- 12	6.84		F	0		
Potassium	mg/L	03/24/2010	N001	7	- 12	60		F	0	0.54	
Selenium	mg/L	03/24/2010	N001	7	- 12	0.6		F	0	0.00032	
Sodium	mg/L	03/24/2010	N001	7	- 12	1700		F	0	0.66	
Specific Conductance	umhos/cm	03/24/2010	N001	7	- 12	12056		F	0		
Strontium	mg/L	03/24/2010	N001	7	- 12	10		F	0	0.00039	
Sulfate	mg/L	03/24/2010	N001	7	- 12	7900		F	0	50	
Temperature	C	03/24/2010	N001	7	- 12	10.38		F	0		
Turbidity	NTU	03/24/2010	N001	7	- 12	2.58		F	0		
Uranium	mg/L	03/24/2010	N001	7	- 12	0.79		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1112 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/26/2010	N001	7	- 12	38		F	0	2	
Calcium	mg/L	03/26/2010	N001	7	- 12	410		F	0	0.06	
Chloride	mg/L	03/26/2010	N001	7	- 12	300		F	0	20	
Magnesium	mg/L	03/26/2010	N001	7	- 12	1400		F	0	0.065	
Manganese	mg/L	03/26/2010	N001	7	- 12	2.9		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2010	N001	7	- 12	300		F	0	2	
Oxidation Reduction Potential	mV	03/26/2010	N001	7	- 12	55.1		F	0		
pH	s.u.	03/26/2010	N001	7	- 12	6.94		F	0		
Potassium	mg/L	03/26/2010	N001	7	- 12	130		F	0	0.54	
Selenium	mg/L	03/26/2010	N001	7	- 12	0.62		F	0	0.0032	
Sodium	mg/L	03/26/2010	N001	7	- 12	1600		F	0	0.66	
Specific Conductance	umhos/cm	03/26/2010	N001	7	- 12	13198		F	0		
Strontium	mg/L	03/26/2010	N001	7	- 12	8.1		F	0	0.00039	
Sulfate	mg/L	03/26/2010	N001	7	- 12	8300		F	0	50	
Temperature	C	03/26/2010	N001	7	- 12	9.46		F	0		
Turbidity	NTU	03/26/2010	N001	7	- 12	0.91		F	0		
Uranium	mg/L	03/26/2010	N001	7	- 12	1.4		F	0	0.00029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1113 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	7	- 12	0.15		F	0	0.1	
Calcium	mg/L	03/23/2010	N001	7	- 12	430		F	0	0.12	
Chloride	mg/L	03/23/2010	N001	7	- 12	270		F	0	20	
Magnesium	mg/L	03/23/2010	N001	7	- 12	1400		F	0	0.13	
Manganese	mg/L	03/23/2010	N001	7	- 12	0.037	B	F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	7	- 12	620		F	0	5	
Oxidation Reduction Potential	mV	03/23/2010	N001	7	- 12	158.4		F	0		
pH	s.u.	03/23/2010	N001	7	- 12	7.41		F	0		
Potassium	mg/L	03/23/2010	N001	7	- 12	160		F	0	1.1	
Selenium	mg/L	03/23/2010	N001	7	- 12	0.033		F	0	0.0016	
Sodium	mg/L	03/23/2010	N001	7	- 12	1600		F	0	0.066	
Specific Conductance	umhos/cm	03/23/2010	N001	7	- 12	13361		F	0		
Strontium	mg/L	03/23/2010	N001	7	- 12	9.2		F	0	0.00078	
Sulfate	mg/L	03/23/2010	N001	7	- 12	7300		F	0	50	
Temperature	C	03/23/2010	N001	7	- 12	7.9		F	0		
Turbidity	NTU	03/23/2010	N001	7	- 12	9.01		F	0		
Uranium	mg/L	03/23/2010	N001	7	- 12	1.2		F	0	0.00015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1114 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	7	- 12	90		F	0	10	
Calcium	mg/L	03/23/2010	N001	7	- 12	250		F	0	0.06	
Chloride	mg/L	03/23/2010	N001	7	- 12	140		F	0	20	
Magnesium	mg/L	03/23/2010	N001	7	- 12	520		F	0	0.065	
Manganese	mg/L	03/23/2010	N001	7	- 12	2.4		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	7	- 12	150		F	0	1	
Oxidation Reduction Potential	mV	03/23/2010	N001	7	- 12	162.6		F	0		
pH	s.u.	03/23/2010	N001	7	- 12	7.06		F	0		
Potassium	mg/L	03/23/2010	N001	7	- 12	57		F	0	0.54	
Selenium	mg/L	03/23/2010	N001	7	- 12	0.011		F	0	0.00032	
Sodium	mg/L	03/23/2010	N001	7	- 12	600		F	0	0.033	
Specific Conductance	umhos/cm	03/23/2010	N001	7	- 12	6644		F	0		
Strontium	mg/L	03/23/2010	N001	7	- 12	4.1		F	0	0.00039	
Sulfate	mg/L	03/23/2010	N001	7	- 12	3300		F	0	50	
Temperature	C	03/23/2010	N001	7	- 12	8.41		F	0		
Turbidity	NTU	03/23/2010	N001	7	- 12	9.93		F	0		
Uranium	mg/L	03/23/2010	N001	7	- 12	0.69		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1115 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	7	- 12	210		F	0	10	
Calcium	mg/L	03/23/2010	N001	7	- 12	290		F	0	0.06	
Chloride	mg/L	03/23/2010	N001	7	- 12	170		F	0	20	
Magnesium	mg/L	03/23/2010	N001	7	- 12	780		F	0	0.065	
Manganese	mg/L	03/23/2010	N001	7	- 12	2.6		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	7	- 12	220		F	0	2	
Oxidation Reduction Potential	mV	03/23/2010	N001	7	- 12	211		F	0		
pH	s.u.	03/23/2010	N001	7	- 12	6.83		F	0		
Potassium	mg/L	03/23/2010	N001	7	- 12	96		F	0	0.54	
Selenium	mg/L	03/23/2010	N001	7	- 12	0.031		F	0	0.00032	
Sodium	mg/L	03/23/2010	N001	7	- 12	900		F	0	0.033	
Specific Conductance	umhos/cm	03/23/2010	N001	7	- 12	9453		F	0		
Strontium	mg/L	03/23/2010	N001	7	- 12	5.1		F	0	0.00039	
Sulfate	mg/L	03/23/2010	N001	7	- 12	4900		F	0	50	
Temperature	C	03/23/2010	N001	7	- 12	10.61		F	0		
Turbidity	NTU	03/23/2010	N001	7	- 12	2.34		F	0		
Uranium	mg/L	03/23/2010	N001	7	- 12	0.95		F	0	0.000029	



**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1117 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	7	- 12	0.1	U	F	0	0.1	
Ammonia Total as N	mg/L	03/23/2010	N002	7	- 12	0.1	U	F	0	0.1	
Calcium	mg/L	03/23/2010	N001	7	- 12	76		F	0	0.012	
Calcium	mg/L	03/23/2010	N002	7	- 12	76		F	0	0.012	
Chloride	mg/L	03/23/2010	N001	7	- 12	21		F	0	1	
Chloride	mg/L	03/23/2010	N002	7	- 12	13		F	0	1	
Magnesium	mg/L	03/23/2010	N001	7	- 12	13		F	0	0.013	
Magnesium	mg/L	03/23/2010	N002	7	- 12	13		F	0	0.013	
Manganese	mg/L	03/23/2010	N001	7	- 12	0.3		F	0	0.00011	
Manganese	mg/L	03/23/2010	N002	7	- 12	0.27		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	7	- 12	0.01	U	F	0	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N002	7	- 12	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/23/2010	N001	7	- 12	162.6		F	0		
pH	s.u.	03/23/2010	N001	7	- 12	7.53		F	0		
Potassium	mg/L	03/23/2010	N001	7	- 12	1.6		F	0	0.11	
Potassium	mg/L	03/23/2010	N002	7	- 12	1.6		F	0	0.11	
Selenium	mg/L	03/23/2010	N001	7	- 12	0.00045		F	0	0.000032	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1117 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/23/2010	N002	7	- 12	0.00062		F	0	0.000032	
Sodium	mg/L	03/23/2010	N001	7	- 12	34		F	0	0.0066	
Sodium	mg/L	03/23/2010	N002	7	- 12	34		F	0	0.0066	
Specific Conductance	umhos /cm	03/23/2010	N001	7	- 12	621		F	0		
Strontium	mg/L	03/23/2010	N001	7	- 12	0.74		F	0	0.000078	
Strontium	mg/L	03/23/2010	N002	7	- 12	0.74		F	0	0.000078	
Sulfate	mg/L	03/23/2010	N001	7	- 12	140		F	0	2.5	
Sulfate	mg/L	03/23/2010	N002	7	- 12	140		F	0	2.5	
Temperature	C	03/23/2010	N001	7	- 12	8.7		F	0		
Turbidity	NTU	03/23/2010	N001	7	- 12	2.22		F	0		
Uranium	mg/L	03/23/2010	N001	7	- 12	0.0092		F	0	0.0000029	
Uranium	mg/L	03/23/2010	N002	7	- 12	0.0094		F	0	0.0000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1128 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	6.81	- 11.81	390		F	0	10	
Calcium	mg/L	03/23/2010	N001	6.81	- 11.81	470		F	0	0.12	
Chloride	mg/L	03/23/2010	N001	6.81	- 11.81	300		F	0	40	
Magnesium	mg/L	03/23/2010	N001	6.81	- 11.81	1500		F	0	0.13	
Manganese	mg/L	03/23/2010	N001	6.81	- 11.81	4.3		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	6.81	- 11.81	470		F	0	5	
Oxidation Reduction Potential	mV	03/23/2010	N001	6.81	- 11.81	236.1		F	0		
pH	s.u.	03/23/2010	N001	6.81	- 11.81	6.64		F	0		
Potassium	mg/L	03/23/2010	N001	6.81	- 11.81	150		F	0	1.1	
Selenium	mg/L	03/23/2010	N001	6.81	- 11.81	0.021		F	0	0.00065	
Sodium	mg/L	03/23/2010	N001	6.81	- 11.81	1400		F	0	0.066	
Specific Conductance	umhos/cm	03/23/2010	N001	6.81	- 11.81	15122		F	0		
Strontium	mg/L	03/23/2010	N001	6.81	- 11.81	8.5		F	0	0.00078	
Sulfate	mg/L	03/23/2010	N001	6.81	- 11.81	8900		F	0	100	
Temperature	C	03/23/2010	N001	6.81	- 11.81	10.38		F	0		
Turbidity	NTU	03/23/2010	N001	6.81	- 11.81	3.55		F	0		
Uranium	mg/L	03/23/2010	N001	6.81	- 11.81	1.6		F	0	0.000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1132 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	6.07	- 11.07	0.92		F	0	0.1	
Calcium	mg/L	03/23/2010	N001	6.07	- 11.07	58		F	0	0.012	
Chloride	mg/L	03/23/2010	N001	6.07	- 11.07	12		F	0	1	
Magnesium	mg/L	03/23/2010	N001	6.07	- 11.07	18		F	0	0.013	
Manganese	mg/L	03/23/2010	N001	6.07	- 11.07	0.45		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	6.07	- 11.07	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/23/2010	N001	6.07	- 11.07	158.4		F	0		
pH	s.u.	03/23/2010	N001	6.07	- 11.07	7.75		F	0		
Potassium	mg/L	03/23/2010	N001	6.07	- 11.07	2.1		F	0	0.11	
Selenium	mg/L	03/23/2010	N001	6.07	- 11.07	0.00075		F	0	0.000032	
Sodium	mg/L	03/23/2010	N001	6.07	- 11.07	35		F	0	0.0066	
Specific Conductance	umhos/cm	03/23/2010	N001	6.07	- 11.07	561		F	0		
Strontium	mg/L	03/23/2010	N001	6.07	- 11.07	0.66		F	0	0.000078	
Sulfate	mg/L	03/23/2010	N001	6.07	- 11.07	140		F	0	2.5	
Temperature	C	03/23/2010	N001	6.07	- 11.07	8.99		F	0		
Turbidity	NTU	03/23/2010	N001	6.07	- 11.07	2.2		F	0		
Uranium	mg/L	03/23/2010	N001	6.07	- 11.07	0.02		F	0	0.0000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1134 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	8.16	- 13.16	0.56		F	0	0.1	
Calcium	mg/L	03/23/2010	N001	8.16	- 13.16	61		F	0	0.012	
Chloride	mg/L	03/23/2010	N001	8.16	- 13.16	12		F	0	1	
Magnesium	mg/L	03/23/2010	N001	8.16	- 13.16	12		F	0	0.013	
Manganese	mg/L	03/23/2010	N001	8.16	- 13.16	0.34		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	8.16	- 13.16	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/23/2010	N001	8.16	- 13.16	44.6		F	0		
pH	s.u.	03/23/2010	N001	8.16	- 13.16	7.57		F	0		
Potassium	mg/L	03/23/2010	N001	8.16	- 13.16	1.9		F	0	0.11	
Selenium	mg/L	03/23/2010	N001	8.16	- 13.16	0.00018		F	0	0.000032	
Sodium	mg/L	03/23/2010	N001	8.16	- 13.16	35		F	0	0.0066	
Specific Conductance	umhos/cm	03/23/2010	N001	8.16	- 13.16	544		F	0		
Strontium	mg/L	03/23/2010	N001	8.16	- 13.16	0.64		F	0	0.000078	
Sulfate	mg/L	03/23/2010	N001	8.16	- 13.16	130		F	0	2.5	
Temperature	C	03/23/2010	N001	8.16	- 13.16	11.25		F	0		
Turbidity	NTU	03/23/2010	N001	8.16	- 13.16	1.86		F	0		
Uranium	mg/L	03/23/2010	N001	8.16	- 13.16	0.0095		F	0	0.0000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1135 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	6.39	- 11.39	0.1	U	F	0	0.1	
Ammonia Total as N	mg/L	03/25/2010	N002	6.39	- 11.39	0.1	U	F	0	0.1	
Calcium	mg/L	03/25/2010	N001	6.39	- 11.39	380		F	0	0.06	
Calcium	mg/L	03/25/2010	N002	6.39	- 11.39	380		F	0	0.06	
Chloride	mg/L	03/25/2010	N001	6.39	- 11.39	110		F	0	20	
Chloride	mg/L	03/25/2010	N002	6.39	- 11.39	110		F	0	20	
Magnesium	mg/L	03/25/2010	N001	6.39	- 11.39	360		F	0	0.065	
Magnesium	mg/L	03/25/2010	N002	6.39	- 11.39	360		F	0	0.065	
Manganese	mg/L	03/25/2010	N001	6.39	- 11.39	2.9		F	0	0.00057	
Manganese	mg/L	03/25/2010	N002	6.39	- 11.39	2.9		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	6.39	- 11.39	0.01	U	F	0	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N002	6.39	- 11.39	0.028		F	0	0.01	
Oxidation Reduction Potential	mV	03/25/2010	N001	6.39	- 11.39	64.3		F	0		
pH	s.u.	03/25/2010	N001	6.39	- 11.39	7.15		F	0		
Potassium	mg/L	03/25/2010	N001	6.39	- 11.39	39		F	0	0.54	
Potassium	mg/L	03/25/2010	N002	6.39	- 11.39	38		F	0	0.54	
Selenium	mg/L	03/25/2010	N001	6.39	- 11.39	0.00046	B	F	0	0.00016	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1135 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/25/2010	N002	6.39 - 11.39	0.0007		F	0	0.00016	
Sodium	mg/L	03/25/2010	N001	6.39 - 11.39	1400		F	0	0.66	
Sodium	mg/L	03/25/2010	N002	6.39 - 11.39	1500		F	0	0.66	
Specific Conductance	umhos /cm	03/25/2010	N001	6.39 - 11.39	8944		F	0		
Strontium	mg/L	03/25/2010	N001	6.39 - 11.39	5.3		F	0	0.00039	
Strontium	mg/L	03/25/2010	N002	6.39 - 11.39	5.2		F	0	0.00039	
Sulfate	mg/L	03/25/2010	N001	6.39 - 11.39	5800		F	0	50	
Sulfate	mg/L	03/25/2010	N002	6.39 - 11.39	5800		F	0	50	
Temperature	C	03/25/2010	N001	6.39 - 11.39	11.05		F	0		
Turbidity	NTU	03/25/2010	N001	6.39 - 11.39	9.61		F	0		
Uranium	mg/L	03/25/2010	N001	6.39 - 11.39	0.24		F	0	0.000015	
Uranium	mg/L	03/25/2010	N002	6.39 - 11.39	0.24		F	0	0.000015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1136 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	6.29	- 11.29	0.1	U	F	0	0.1	
Calcium	mg/L	03/25/2010	N001	6.29	- 11.29	110		F	0	0.012	
Chloride	mg/L	03/25/2010	N001	6.29	- 11.29	19		F	0	2	
Magnesium	mg/L	03/25/2010	N001	6.29	- 11.29	31		F	0	0.013	
Manganese	mg/L	03/25/2010	N001	6.29	- 11.29	1.4		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	6.29	- 11.29	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/25/2010	N001	6.29	- 11.29	120.2		F	0		
pH	s.u.	03/25/2010	N001	6.29	- 11.29	7.43		F	0		
Potassium	mg/L	03/25/2010	N001	6.29	- 11.29	3.2		F	0	0.11	
Selenium	mg/L	03/25/2010	N001	6.29	- 11.29	0.00013		F	0	0.000032	
Sodium	mg/L	03/25/2010	N001	6.29	- 11.29	79		F	0	0.0066	
Specific Conductance	umhos/cm	03/25/2010	N001	6.29	- 11.29	1049		F	0		
Strontium	mg/L	03/25/2010	N001	6.29	- 11.29	1.2		F	0	0.000078	
Sulfate	mg/L	03/25/2010	N001	6.29	- 11.29	360		F	0	5	
Temperature	C	03/25/2010	N001	6.29	- 11.29	9.12		F	0		
Turbidity	NTU	03/25/2010	N001	6.29	- 11.29	2.23		F	0		
Uranium	mg/L	03/25/2010	N001	6.29	- 11.29	0.0072		F	0	0.0000029	



**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1137 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	9.4	- 14.4	0.78		F	0	0.1	
Calcium	mg/L	03/25/2010	N001	9.4	- 14.4	170		F	0	0.06	
Chloride	mg/L	03/25/2010	N001	9.4	- 14.4	120		F	0	20	
Magnesium	mg/L	03/25/2010	N001	9.4	- 14.4	440		F	0	0.065	
Manganese	mg/L	03/25/2010	N001	9.4	- 14.4	2		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	9.4	- 14.4	27		F	0	0.2	
Oxidation Reduction Potential	mV	03/25/2010	N001	9.4	- 14.4	118.4		F	0		
pH	s.u.	03/25/2010	N001	9.4	- 14.4	7.37		F	0		
Potassium	mg/L	03/25/2010	N001	9.4	- 14.4	22		F	0	0.54	
Selenium	mg/L	03/25/2010	N001	9.4	- 14.4	0.002		F	0	0.00032	
Sodium	mg/L	03/25/2010	N001	9.4	- 14.4	1000		F	0	0.033	
Specific Conductance	umhos/cm	03/25/2010	N001	9.4	- 14.4	6646		F	0		
Strontium	mg/L	03/25/2010	N001	9.4	- 14.4	3		F	0	0.00039	
Sulfate	mg/L	03/25/2010	N001	9.4	- 14.4	3800		F	0	50	
Temperature	C	03/25/2010	N001	9.4	- 14.4	9.68		F	0		
Turbidity	NTU	03/25/2010	N001	9.4	- 14.4	7.6		F	0		
Uranium	mg/L	03/25/2010	N001	9.4	- 14.4	0.49		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1138 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	8.09	- 13.09	0.42		F	0	0.1	
Calcium	mg/L	03/25/2010	N001	8.09	- 13.09	300		F	0	0.06	
Chloride	mg/L	03/25/2010	N001	8.09	- 13.09	68		F	0	10	
Magnesium	mg/L	03/25/2010	N001	8.09	- 13.09	260		F	0	0.065	
Manganese	mg/L	03/25/2010	N001	8.09	- 13.09	1.4		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	8.09	- 13.09	10		F	0	0.1	
Oxidation Reduction Potential	mV	03/25/2010	N001	8.09	- 13.09	124.1		F	0		
pH	s.u.	03/25/2010	N001	8.09	- 13.09	7.44		F	0		
Potassium	mg/L	03/25/2010	N001	8.09	- 13.09	19		F	0	0.54	
Selenium	mg/L	03/25/2010	N001	8.09	- 13.09	0.0014		F	0	0.00032	
Sodium	mg/L	03/25/2010	N001	8.09	- 13.09	510		F	0	0.033	
Specific Conductance	umhos/cm	03/25/2010	N001	8.09	- 13.09	4476		F	0		
Strontium	mg/L	03/25/2010	N001	8.09	- 13.09	2.8		F	0	0.00039	
Sulfate	mg/L	03/25/2010	N001	8.09	- 13.09	2600		F	0	25	
Temperature	C	03/25/2010	N001	8.09	- 13.09	10.73		F	0		
Turbidity	NTU	03/25/2010	N001	8.09	- 13.09	7.21		F	0		
Uranium	mg/L	03/25/2010	N001	8.09	- 13.09	0.34		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1139 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	6.19	- 11.19	0.1	U	F	0	0.1	
Calcium	mg/L	03/25/2010	N001	6.19	- 11.19	140		F	0	0.012	
Chloride	mg/L	03/25/2010	N001	6.19	- 11.19	29		F	0	4	
Magnesium	mg/L	03/25/2010	N001	6.19	- 11.19	160		F	0	0.013	
Manganese	mg/L	03/25/2010	N001	6.19	- 11.19	0.081		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	6.19	- 11.19	1.9		F	0	0.05	
Oxidation Reduction Potential	mV	03/25/2010	N001	6.19	- 11.19	112.2		F	0		
pH	s.u.	03/25/2010	N001	6.19	- 11.19	7.54		F	0		
Potassium	mg/L	03/25/2010	N001	6.19	- 11.19	15		F	0	0.11	
Selenium	mg/L	03/25/2010	N001	6.19	- 11.19	0.013		F	0	0.000065	
Sodium	mg/L	03/25/2010	N001	6.19	- 11.19	240		F	0	0.066	
Specific Conductance	umhos/cm	03/25/2010	N001	6.19	- 11.19	2396		F	0		
Strontium	mg/L	03/25/2010	N001	6.19	- 11.19	1.6		F	0	0.000078	
Sulfate	mg/L	03/25/2010	N001	6.19	- 11.19	1200		F	0	10	
Temperature	C	03/25/2010	N001	6.19	- 11.19	10.6		F	0		
Turbidity	NTU	03/25/2010	N001	6.19	- 11.19	6.63		F	0		
Uranium	mg/L	03/25/2010	N001	6.19	- 11.19	0.18		F	0	0.000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1140 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	7.6	- 12.6	15		F	0	0.5	
Calcium	mg/L	03/24/2010	N001	7.6	- 12.6	430		F	0	0.06	
Chloride	mg/L	03/24/2010	N001	7.6	- 12.6	220		F	0	20	
Magnesium	mg/L	03/24/2010	N001	7.6	- 12.6	1100		F	0	0.065	
Manganese	mg/L	03/24/2010	N001	7.6	- 12.6	2.2		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	7.6	- 12.6	190		F	0	2	
Oxidation Reduction Potential	mV	03/24/2010	N001	7.6	- 12.6	155.8		F	0		
pH	s.u.	03/24/2010	N001	7.6	- 12.6	6.99		F	0		
Potassium	mg/L	03/24/2010	N001	7.6	- 12.6	92		F	0	0.54	
Selenium	mg/L	03/24/2010	N001	7.6	- 12.6	0.5		F	0	0.0016	
Sodium	mg/L	03/24/2010	N001	7.6	- 12.6	1100		F	0	0.66	
Specific Conductance	umhos/cm	03/24/2010	N001	7.6	- 12.6	10826		F	0		
Strontium	mg/L	03/24/2010	N001	7.6	- 12.6	6.3		F	0	0.00039	
Sulfate	mg/L	03/24/2010	N001	7.6	- 12.6	7000		F	0	50	
Temperature	C	03/24/2010	N001	7.6	- 12.6	11.14		F	0		
Turbidity	NTU	03/24/2010	N001	7.6	- 12.6	4.71		F	0		
Uranium	mg/L	03/24/2010	N001	7.6	- 12.6	1.3		F	0	0.00015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1141 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	5.6	- 10.6	12		F	0	0.5	
Calcium	mg/L	03/24/2010	N001	5.6	- 10.6	460		F	0	0.06	
Chloride	mg/L	03/24/2010	N001	5.6	- 10.6	77		F	0	10	
Magnesium	mg/L	03/24/2010	N001	5.6	- 10.6	560		F	0	0.065	
Manganese	mg/L	03/24/2010	N001	5.6	- 10.6	1.7		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	5.6	- 10.6	29		F	0	0.2	
Oxidation Reduction Potential	mV	03/24/2010	N001	5.6	- 10.6	142.8		F	0		
pH	s.u.	03/24/2010	N001	5.6	- 10.6	6.98		F	0		
Potassium	mg/L	03/24/2010	N001	5.6	- 10.6	57		F	0	0.54	
Selenium	mg/L	03/24/2010	N001	5.6	- 10.6	0.55		F	0	0.0016	
Sodium	mg/L	03/24/2010	N001	5.6	- 10.6	540		F	0	0.033	
Specific Conductance	umhos/cm	03/24/2010	N001	5.6	- 10.6	6270		F	0		
Strontium	mg/L	03/24/2010	N001	5.6	- 10.6	5		F	0	0.00039	
Sulfate	mg/L	03/24/2010	N001	5.6	- 10.6	4100		F	0	25	
Temperature	C	03/24/2010	N001	5.6	- 10.6	12.44		F	0		
Turbidity	NTU	03/24/2010	N001	5.6	- 10.6	6.74		F	0		
Uranium	mg/L	03/24/2010	N001	5.6	- 10.6	0.83		F	0	0.00015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1142 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	9	- 14	0.1	U	F	0	0.1	
Calcium	mg/L	03/24/2010	N001	9	- 14	67		F	0	0.012	
Chloride	mg/L	03/24/2010	N001	9	- 14	14		F	0	1	
Magnesium	mg/L	03/24/2010	N001	9	- 14	14		F	0	0.013	
Manganese	mg/L	03/24/2010	N001	9	- 14	0.29		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	9	- 14	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/24/2010	N001	9	- 14	166		F	0		
pH	s.u.	03/24/2010	N001	9	- 14	7.7		F	0		
Potassium	mg/L	03/24/2010	N001	9	- 14	2		F	0	0.11	
Selenium	mg/L	03/24/2010	N001	9	- 14	0.0027		F	0	0.000032	
Sodium	mg/L	03/24/2010	N001	9	- 14	33		F	0	0.0066	
Specific Conductance	umhos/cm	03/24/2010	N001	9	- 14	562		F	0		
Strontium	mg/L	03/24/2010	N001	9	- 14	0.72		F	0	0.000078	
Sulfate	mg/L	03/24/2010	N001	9	- 14	150		F	0	2.5	
Temperature	C	03/24/2010	N001	9	- 14	8.87		F	0		
Turbidity	NTU	03/24/2010	N001	9	- 14	8.51		F	0		
Uranium	mg/L	03/24/2010	N001	9	- 14	0.0056		F	0	0.0000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1143 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/26/2010	N001	8.3 - 13.3	0.1	U	F	0	0.1	
Calcium	mg/L	03/26/2010	N001	8.3 - 13.3	230		F	0	0.012	
Chloride	mg/L	03/26/2010	N001	8.3 - 13.3	77		F	0	10	
Magnesium	mg/L	03/26/2010	N001	8.3 - 13.3	76		F	0	0.013	
Manganese	mg/L	03/26/2010	N001	8.3 - 13.3	1.1		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2010	N001	8.3 - 13.3	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/26/2010	N001	8.3 - 13.3	31.8		F	0		
pH	s.u.	03/26/2010	N001	8.3 - 13.3	7.44		F	0		
Potassium	mg/L	03/26/2010	N001	8.3 - 13.3	22		F	0	0.11	
Selenium	mg/L	03/26/2010	N001	8.3 - 13.3	0.00049	B	F	0	0.00016	
Sodium	mg/L	03/26/2010	N001	8.3 - 13.3	830		F	0	0.66	
Specific Conductance	umhos /cm	03/26/2010	N001	8.3 - 13.3	5186		F	0		
Strontium	mg/L	03/26/2010	N001	8.3 - 13.3	2.3		F	0	0.000078	
Sulfate	mg/L	03/26/2010	N001	8.3 - 13.3	2800		F	0	25	
Temperature	C	03/26/2010	N001	8.3 - 13.3	8.8		F	0		
Turbidity	NTU	03/26/2010	N001	8.3 - 13.3	4.97		F	0		
Uranium	mg/L	03/26/2010	N001	8.3 - 13.3	0.065		F	0	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.



# **Groundwater Quality Data Terrace Locations**

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**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0600 WELL Just N of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	29	- 48.8	28		FQ	0	1	
Calcium	mg/L	03/23/2010	N001	29	- 48.8	270		FQ	0	0.12	
Chloride	mg/L	03/23/2010	N001	29	- 48.8	1300		FQ	0	40	
Magnesium	mg/L	03/23/2010	N001	29	- 48.8	290		FQ	0	0.13	
Manganese	mg/L	03/23/2010	N001	29	- 48.8	0.27		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	29	- 48.8	75		FQ	0	0.5	
Oxidation Reduction Potential	mV	03/23/2010	N001	29	- 48.8	-15		FQ	0		
pH	s.u.	03/23/2010	N001	29	- 48.8	6.94		FQ	0		
Potassium	mg/L	03/23/2010	N001	29	- 48.8	51		FQ	0	1.1	
Selenium	mg/L	03/23/2010	N001	29	- 48.8	0.0017		FQ	0	0.00032	
Sodium	mg/L	03/23/2010	N001	29	- 48.8	4500		FQ	0	0.66	
Specific Conductance	umhos/cm	03/23/2010	N001	29	- 48.8	20270		FQ	0		
Strontium	mg/L	03/23/2010	N001	29	- 48.8	7.8		FQ	0	0.00078	
Sulfate	mg/L	03/23/2010	N001	29	- 48.8	9900		FQ	0	100	
Temperature	C	03/23/2010	N001	29	- 48.8	15.3		FQ	0		
Turbidity	NTU	03/23/2010	N001	29	- 48.8	5.05		FQ	0		
Uranium	mg/L	03/23/2010	N001	29	- 48.8	0.78		FQ	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0602 WELL Just W of Disposal Cell; NECA yard

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	27	- 47	310		FQ	0	10	
Calcium	mg/L	03/24/2010	N001	27	- 47	420		FQ	0	0.12	
Chloride	mg/L	03/24/2010	N001	27	- 47	990		FQ	0	40	
Magnesium	mg/L	03/24/2010	N001	27	- 47	2400		FQ	0	0.13	
Manganese	mg/L	03/24/2010	N001	27	- 47	1.7		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	27	- 47	13		FQ	0	0.2	
Oxidation Reduction Potential	mV	03/24/2010	N001	27	- 47	186.1		FQ	0		
pH	s.u.	03/24/2010	N001	27	- 47	7.13		FQ	0		
Potassium	mg/L	03/24/2010	N001	27	- 47	220		FQ	0	1.1	
Selenium	mg/L	03/24/2010	N001	27	- 47	0.0083		FQ	0	0.00032	
Sodium	mg/L	03/24/2010	N001	27	- 47	3200		FQ	0	0.66	
Specific Conductance	umhos/cm	03/24/2010	N001	27	- 47	25701		FQ	0		
Strontium	mg/L	03/24/2010	N001	27	- 47	11		FQ	0	0.00078	
Sulfate	mg/L	03/24/2010	N001	27	- 47	16000		FQ	0	100	
Temperature	C	03/24/2010	N001	27	- 47	16.22		FQ	0		
Turbidity	NTU	03/24/2010	N001	27	- 47	7.11		FQ	0		
Uranium	mg/L	03/24/2010	N001	27	- 47	0.57		FQ	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0603 WELL Just SE of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	25.9	- 35.9	830		F	0	20	
Calcium	mg/L	03/23/2010	N001	25.9	- 35.9	980		F	0	0.12	
Chloride	mg/L	03/23/2010	N001	25.9	- 35.9	180		F	0	40	
Magnesium	mg/L	03/23/2010	N001	25.9	- 35.9	660		F	0	0.13	
Manganese	mg/L	03/23/2010	N001	25.9	- 35.9	58		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	25.9	- 35.9	1700		F	0	10	
Oxidation Reduction Potential	mV	03/23/2010	N001	25.9	- 35.9	297		F	0		
pH	s.u.	03/23/2010	N001	25.9	- 35.9	6.26		F	0		
Potassium	mg/L	03/23/2010	N001	25.9	- 35.9	130		F	0	1.1	
Selenium	mg/L	03/23/2010	N001	25.9	- 35.9	0.097		F	0	0.00032	
Sodium	mg/L	03/23/2010	N001	25.9	- 35.9	640		F	0	0.066	
Specific Conductance	umhos/cm	03/23/2010	N001	25.9	- 35.9	16715		F	0		
Strontium	mg/L	03/23/2010	N001	25.9	- 35.9	4.4		F	0	0.00078	
Sulfate	mg/L	03/23/2010	N001	25.9	- 35.9	2600		F	0	100	
Temperature	C	03/23/2010	N001	25.9	- 35.9	14.8		F	0		
Turbidity	NTU	03/23/2010	N001	25.9	- 35.9	2.5		F	0		
Uranium	mg/L	03/23/2010	N001	25.9	- 35.9	0.006		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0604 WELL Just W of radon cover borrow pit

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	0001	62.7	- 72.7	0.13		FQ	0	0.1	
Calcium	mg/L	03/24/2010	0001	62.7	- 72.7	490		FQ	0	0.12	
Chloride	mg/L	03/24/2010	0001	62.7	- 72.7	2300		FQ	0	40	
Magnesium	mg/L	03/24/2010	0001	62.7	- 72.7	1600		FQ	0	0.13	
Manganese	mg/L	03/24/2010	0001	62.7	- 72.7	0.73		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	0001	62.7	- 72.7	1200		FQ	0	10	
Oxidation Reduction Potential	mV	03/24/2010	N001	62.7	- 72.7	157.5		FQ	0		
pH	s.u.	03/24/2010	N001	62.7	- 72.7	7.62		FQ	0		
Potassium	mg/L	03/24/2010	0001	62.7	- 72.7	62		FQ	0	1.1	
Selenium	mg/L	03/24/2010	0001	62.7	- 72.7	0.38		FQ	0	0.0016	
Sodium	mg/L	03/24/2010	0001	62.7	- 72.7	4400		FQ	0	0.66	
Specific Conductance	umhos/cm	03/24/2010	N001	62.7	- 72.7	28943		FQ	0		
Strontium	mg/L	03/24/2010	0001	62.7	- 72.7	17		FQ	0	0.00078	
Sulfate	mg/L	03/24/2010	0001	62.7	- 72.7	11000		FQ	0	100	
Temperature	C	03/24/2010	N001	62.7	- 72.7	16.19		FQ	0		
Turbidity	NTU	03/24/2010	N001	62.7	- 72.7	71.2		FQ	0		
Uranium	mg/L	03/24/2010	0001	62.7	- 72.7	0.077		FQ	0	0.00015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0725 WELL West side, lower Bob Lee Wash

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	7.5	- 17.5	0.1	U	FQ	0	0.1	
Ammonia Total as N	mg/L	03/24/2010	N002	7.5	- 17.5	0.1	U	FQ	0	0.1	
Calcium	mg/L	03/24/2010	N001	7.5	- 17.5	330		FQ	0	0.06	
Calcium	mg/L	03/24/2010	N002	7.5	- 17.5	330		FQ	0	0.06	
Chloride	mg/L	03/24/2010	N001	7.5	- 17.5	86		FQ	0	10	
Chloride	mg/L	03/24/2010	N002	7.5	- 17.5	87		FQ	0	10	
Magnesium	mg/L	03/24/2010	N001	7.5	- 17.5	73		FQ	0	0.065	
Magnesium	mg/L	03/24/2010	N002	7.5	- 17.5	73		FQ	0	0.065	
Manganese	mg/L	03/24/2010	N001	7.5	- 17.5	0.088		FQ	0	0.00057	
Manganese	mg/L	03/24/2010	N002	7.5	- 17.5	0.074		FQ	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	7.5	- 17.5	8		FQ	0	0.1	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N002	7.5	- 17.5	7.5		FQ	0	0.1	
Oxidation Reduction Potential	mV	03/24/2010	N001	7.5	- 17.5	107		FQ	0		
pH	s.u.	03/24/2010	N001	7.5	- 17.5	8.28		FQ	0		
Potassium	mg/L	03/24/2010	N001	7.5	- 17.5	10	N	FQJ	0	0.54	
Potassium	mg/L	03/24/2010	N002	7.5	- 17.5	9.7		FQ	0	0.54	
Selenium	mg/L	03/24/2010	N001	7.5	- 17.5	0.019		FQ	0	0.00032	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0725 WELL West side, lower Bob Lee Wash

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/24/2010	N002	7.5	- 17.5	0.018		FQ	0	0.00032	
Sodium	mg/L	03/24/2010	N001	7.5	- 17.5	1000		FQ	0	0.033	
Sodium	mg/L	03/24/2010	N002	7.5	- 17.5	1000		FQ	0	0.033	
Specific Conductance	umhos /cm	03/24/2010	N001	7.5	- 17.5	6578		FQ	0		
Strontium	mg/L	03/24/2010	N001	7.5	- 17.5	11		FQ	0	0.00039	
Strontium	mg/L	03/24/2010	N002	7.5	- 17.5	12		FQ	0	0.00039	
Sulfate	mg/L	03/24/2010	N001	7.5	- 17.5	3100		FQ	0	25	
Sulfate	mg/L	03/24/2010	N002	7.5	- 17.5	3100		FQ	0	25	
Temperature	C	03/24/2010	N001	7.5	- 17.5	10.83		FQ	0		
Turbidity	NTU	03/24/2010	N001	7.5	- 17.5	1.96		FQ	0		
Uranium	mg/L	03/24/2010	N001	7.5	- 17.5	0.056		FQ	0	0.000029	
Uranium	mg/L	03/24/2010	N002	7.5	- 17.5	0.054		FQ	0	0.000029	



**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0726 WELL West side, upper Bob Lee Wash

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	27.2	- 37.2	0.11		F	0	0.1	
Calcium	mg/L	03/24/2010	N001	27.2	- 37.2	400		F	0	0.06	
Chloride	mg/L	03/24/2010	N001	27.2	- 37.2	140		F	0	20	
Magnesium	mg/L	03/24/2010	N001	27.2	- 37.2	360		F	0	0.065	
Manganese	mg/L	03/24/2010	N001	27.2	- 37.2	0.59		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	27.2	- 37.2	6.6		F	0	0.1	
Oxidation Reduction Potential	mV	03/24/2010	N001	27.2	- 37.2	68.8		F	0		
pH	s.u.	03/24/2010	N001	27.2	- 37.2	7.47		F	0		
Potassium	mg/L	03/24/2010	N001	27.2	- 37.2	40		F	0	0.54	
Selenium	mg/L	03/24/2010	N001	27.2	- 37.2	0.025		F	0	0.00032	
Sodium	mg/L	03/24/2010	N001	27.2	- 37.2	1200		F	0	0.66	
Specific Conductance	umhos/cm	03/24/2010	N001	27.2	- 37.2	9020		F	0		
Strontium	mg/L	03/24/2010	N001	27.2	- 37.2	6.1		F	0	0.00039	
Sulfate	mg/L	03/24/2010	N001	27.2	- 37.2	4800		F	0	50	
Temperature	C	03/24/2010	N001	27.2	- 37.2	16.1		F	0		
Turbidity	NTU	03/24/2010	N001	27.2	- 37.2	2.98		F	0		
Uranium	mg/L	03/24/2010	N001	27.2	- 37.2	0.019		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0727 WELL West side, upper Bob Lee Wash

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	6.7	- 16.7	1.8		F	0	0.1	
Calcium	mg/L	03/24/2010	N001	6.7	- 16.7	410		F	0	0.12	
Chloride	mg/L	03/24/2010	N001	6.7	- 16.7	370		F	0	40	
Magnesium	mg/L	03/24/2010	N001	6.7	- 16.7	1800		F	0	0.13	
Manganese	mg/L	03/24/2010	N001	6.7	- 16.7	1.3		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	6.7	- 16.7	130		F	0	1	
Oxidation Reduction Potential	mV	03/24/2010	N001	6.7	- 16.7	194		F	0		
pH	s.u.	03/24/2010	N001	6.7	- 16.7	6.42		F	0		
Potassium	mg/L	03/24/2010	N001	6.7	- 16.7	77		F	0	1.1	
Selenium	mg/L	03/24/2010	N001	6.7	- 16.7	0.0017		F	0	0.00032	
Sodium	mg/L	03/24/2010	N001	6.7	- 16.7	2300		F	0	0.066	
Specific Conductance	umhos/cm	03/24/2010	N001	6.7	- 16.7	16685		F	0		
Strontium	mg/L	03/24/2010	N001	6.7	- 16.7	11		F	0	0.00078	
Sulfate	mg/L	03/24/2010	N001	6.7	- 16.7	11000		F	0	100	
Temperature	C	03/24/2010	N001	6.7	- 16.7	13.3		F	0		
Turbidity	NTU	03/24/2010	N001	6.7	- 16.7	3.13		F	0		
Uranium	mg/L	03/24/2010	N001	6.7	- 16.7	0.27		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0728 WELL W of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	17 - 27	74		F	0	10	
Calcium	mg/L	03/24/2010	N001	17 - 27	500		F	0	0.06	
Chloride	mg/L	03/24/2010	N001	17 - 27	56		F	0	10	
Magnesium	mg/L	03/24/2010	N001	17 - 27	560		F	0	0.065	
Manganese	mg/L	03/24/2010	N001	17 - 27	1		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	17 - 27	150		F	0	1	
Oxidation Reduction Potential	mV	03/24/2010	N001	17 - 27	220		F	0		
pH	s.u.	03/24/2010	N001	17 - 27	6.82		F	0		
Potassium	mg/L	03/24/2010	N001	17 - 27	68		F	0	0.54	
Selenium	mg/L	03/24/2010	N001	17 - 27	0.004		F	0	0.00032	
Sodium	mg/L	03/24/2010	N001	17 - 27	460		F	0	0.033	
Specific Conductance	umhos/cm	03/24/2010	N001	17 - 27	6350		F	0		
Strontium	mg/L	03/24/2010	N001	17 - 27	5.4		F	0	0.00039	
Sulfate	mg/L	03/24/2010	N001	17 - 27	3800		F	0	25	
Temperature	C	03/24/2010	N001	17 - 27	15.2		F	0		
Turbidity	NTU	03/24/2010	N001	17 - 27	1.53		F	0		
Uranium	mg/L	03/24/2010	N001	17 - 27	0.22		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0731 WELL SE of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	17 - 27	32		F	0	1	
Calcium	mg/L	03/24/2010	N001	17 - 27	480		F	0	0.06	
Chloride	mg/L	03/24/2010	N001	17 - 27	170		F	0	10	
Magnesium	mg/L	03/24/2010	N001	17 - 27	470		F	0	0.065	
Manganese	mg/L	03/24/2010	N001	17 - 27	0.089		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	17 - 27	170		F	0	1	
Oxidation Reduction Potential	mV	03/24/2010	N001	17 - 27	204		F	0		
pH	s.u.	03/24/2010	N001	17 - 27	7.19		F	0		
Potassium	mg/L	03/24/2010	N001	17 - 27	46		F	0	0.54	
Selenium	mg/L	03/24/2010	N001	17 - 27	0.075		F	0	0.00032	
Sodium	mg/L	03/24/2010	N001	17 - 27	840		F	0	0.033	
Specific Conductance	umhos/cm	03/24/2010	N001	17 - 27	7765		F	0		
Strontium	mg/L	03/24/2010	N001	17 - 27	7.7		F	0	0.00039	
Sulfate	mg/L	03/24/2010	N001	17 - 27	4000		F	0	25	
Temperature	C	03/24/2010	N001	17 - 27	13.4		F	0		
Turbidity	NTU	03/24/2010	N001	17 - 27	7.71		F	0		
Uranium	mg/L	03/24/2010	N001	17 - 27	0.03		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0812 WELL W of radon cover borrow pit

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	51.3	- 61.3	0.1	U		0	0.1	
Calcium	mg/L	03/24/2010	N001	51.3	- 61.3	460			0	0.12	
Chloride	mg/L	03/24/2010	N001	51.3	- 61.3	2400			0	40	
Magnesium	mg/L	03/24/2010	N001	51.3	- 61.3	2300			0	0.13	
Manganese	mg/L	03/24/2010	N001	51.3	- 61.3	0.23			0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	51.3	- 61.3	1500			0	10	
Oxidation Reduction Potential	mV	03/24/2010	N001	51.3	- 61.3	179			0		
pH	s.u.	03/24/2010	N001	51.3	- 61.3	7.1			0		
Potassium	mg/L	03/24/2010	N001	51.3	- 61.3	96			0	1.1	
Selenium	mg/L	03/24/2010	N001	51.3	- 61.3	5.6			0	0.0016	
Sodium	mg/L	03/24/2010	N001	51.3	- 61.3	7000			0	0.66	
Specific Conductance	umhos/cm	03/24/2010	N001	51.3	- 61.3	31005			0		
Strontium	mg/L	03/24/2010	N001	51.3	- 61.3	13			0	0.00078	
Sulfate	mg/L	03/24/2010	N001	51.3	- 61.3	16000			0	100	
Temperature	C	03/24/2010	N001	51.3	- 61.3	14.2			0		
Turbidity	NTU	03/24/2010	N001	51.3	- 61.3	8.32			0		
Uranium	mg/L	03/24/2010	N001	51.3	- 61.3	0.13			0	0.00015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0813 WELL W of radon cover borrow pit

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	40.8	- 50.8	76		FQ	0	2	
Calcium	mg/L	03/24/2010	N001	40.8	- 50.8	590		FQ	0	0.12	
Chloride	mg/L	03/24/2010	N001	40.8	- 50.8	730		FQ	0	40	
Magnesium	mg/L	03/24/2010	N001	40.8	- 50.8	3200		FQ	0	0.13	
Manganese	mg/L	03/24/2010	N001	40.8	- 50.8	0.71		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	40.8	- 50.8	2300		FQ	0	20	
Oxidation Reduction Potential	mV	03/24/2010	N001	40.8	- 50.8	172		FQ	0		
pH	s.u.	03/24/2010	N001	40.8	- 50.8	7.1		FQ	0		
Potassium	mg/L	03/24/2010	N001	40.8	- 50.8	140		FQ	0	1.1	
Selenium	mg/L	03/24/2010	N001	40.8	- 50.8	0.072		FQ	0	0.0016	
Sodium	mg/L	03/24/2010	N001	40.8	- 50.8	2700		FQ	0	0.66	
Specific Conductance	umhos/cm	03/24/2010	N001	40.8	- 50.8	28870		FQ	0		
Strontium	mg/L	03/24/2010	N001	40.8	- 50.8	17		FQ	0	0.00078	
Sulfate	mg/L	03/24/2010	N001	40.8	- 50.8	10000		FQ	0	100	
Temperature	C	03/24/2010	N001	40.8	- 50.8	15.54		FQ	0		
Turbidity	NTU	03/24/2010	N001	40.8	- 50.8	2.11		FQ	0		
Uranium	mg/L	03/24/2010	N001	40.8	- 50.8	0.11		FQ	0	0.00015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0814 WELL South edge of fairgrounds, flush mount.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	0001	23.8	- 33.8	140		FQ	0	5	
Calcium	mg/L	03/24/2010	0001	23.8	- 33.8	440		FQ	0	0.12	
Chloride	mg/L	03/24/2010	0001	23.8	- 33.8	980		FQ	0	40	
Magnesium	mg/L	03/24/2010	0001	23.8	- 33.8	2200		FQ	0	0.13	
Manganese	mg/L	03/24/2010	0001	23.8	- 33.8	1.4		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	0001	23.8	- 33.8	930		FQ	0	5	
Oxidation Reduction Potential	mV	03/24/2010	N001	23.8	- 33.8	170		FQ	0		
pH	s.u.	03/24/2010	N001	23.8	- 33.8	7.1		FQ	0		
Potassium	mg/L	03/24/2010	0001	23.8	- 33.8	140		FQ	0	1.1	
Selenium	mg/L	03/24/2010	0001	23.8	- 33.8	1.9		FQ	0	0.0016	
Sodium	mg/L	03/24/2010	0001	23.8	- 33.8	3200		FQ	0	0.66	
Specific Conductance	umhos/cm	03/24/2010	N001	23.8	- 33.8	22870		FQ	0		
Strontium	mg/L	03/24/2010	0001	23.8	- 33.8	12		FQ	0	0.00078	
Sulfate	mg/L	03/24/2010	0001	23.8	- 33.8	13000		FQ	0	100	
Temperature	C	03/24/2010	N001	23.8	- 33.8	15.9		FQ	0		
Turbidity	NTU	03/24/2010	N001	23.8	- 33.8	52.4		FQ	0		
Uranium	mg/L	03/24/2010	0001	23.8	- 33.8	0.082		FQ	0	0.00015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0815 WELL Fairgrounds, just N of Uranium Blvd., flush mount.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	22.3	- 32.3	0.1	U	F	0	0.1	
Ammonia Total as N	mg/L	03/24/2010	N002	22.3	- 32.3	0.1	U	F	0	0.1	
Calcium	mg/L	03/24/2010	N001	22.3	- 32.3	440		F	0	0.12	
Calcium	mg/L	03/24/2010	N002	22.3	- 32.3	430		F	0	0.12	
Chloride	mg/L	03/24/2010	N001	22.3	- 32.3	600		F	0	40	
Chloride	mg/L	03/24/2010	N002	22.3	- 32.3	590		F	0	40	
Magnesium	mg/L	03/24/2010	N001	22.3	- 32.3	2600		F	0	0.13	
Magnesium	mg/L	03/24/2010	N002	22.3	- 32.3	2500		F	0	0.13	
Manganese	mg/L	03/24/2010	N001	22.3	- 32.3	1.4		F	0	0.0011	
Manganese	mg/L	03/24/2010	N002	22.3	- 32.3	1.4		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	22.3	- 32.3	600		F	0	5	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N002	22.3	- 32.3	720		F	0	5	
Oxidation Reduction Potential	mV	03/24/2010	N001	22.3	- 32.3	190		F	0		
pH	s.u.	03/24/2010	N001	22.3	- 32.3	6.62		F	0		
Potassium	mg/L	03/24/2010	N001	22.3	- 32.3	100		F	0	1.1	
Potassium	mg/L	03/24/2010	N002	22.3	- 32.3	110		F	0	1.1	
Selenium	mg/L	03/24/2010	N001	22.3	- 32.3	0.039		F	0	0.0032	



**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0815 WELL Fairgrounds, just N of Uranium Blvd., flush mount.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/24/2010	N002	22.3	- 32.3	0.043		F	0	0.00065	
Sodium	mg/L	03/24/2010	N001	22.3	- 32.3	3400		F	0	0.66	
Sodium	mg/L	03/24/2010	N002	22.3	- 32.3	3000		F	0	0.66	
Specific Conductance	umhos /cm	03/24/2010	N001	22.3	- 32.3	22450		F	0		
Strontium	mg/L	03/24/2010	N001	22.3	- 32.3	12		F	0	0.00078	
Strontium	mg/L	03/24/2010	N002	22.3	- 32.3	12		F	0	0.00078	
Sulfate	mg/L	03/24/2010	N001	22.3	- 32.3	15000		F	0	100	
Sulfate	mg/L	03/24/2010	N002	22.3	- 32.3	14000		F	0	100	
Temperature	C	03/24/2010	N001	22.3	- 32.3	17.2		F	0		
Turbidity	NTU	03/24/2010	N001	22.3	- 32.3	6.32		F	0		
Uranium	mg/L	03/24/2010	N001	22.3	- 32.3	0.31		F	0	0.00029	
Uranium	mg/L	03/24/2010	N002	22.3	- 32.3	0.34		F	0	0.000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0816 WELL N of artesian well 648

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	20.1	- 25.1	0.1	U	FQ	0	0.1	
Calcium	mg/L	03/24/2010	N001	20.1	- 25.1	130		FQ	0	0.06	
Chloride	mg/L	03/24/2010	N001	20.1	- 25.1	71		FQ	0	10	
Magnesium	mg/L	03/24/2010	N001	20.1	- 25.1	190		FQ	0	0.065	
Manganese	mg/L	03/24/2010	N001	20.1	- 25.1	0.00086	B	FQ	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	20.1	- 25.1	36		FQ	0	0.2	
Oxidation Reduction Potential	mV	03/24/2010	N001	20.1	- 25.1	180		FQ	0		
pH	s.u.	03/24/2010	N001	20.1	- 25.1	7.95		FQ	0		
Potassium	mg/L	03/24/2010	N001	20.1	- 25.1	13		FQ	0	0.54	
Selenium	mg/L	03/24/2010	N001	20.1	- 25.1	0.022		FQ	0	0.00016	
Sodium	mg/L	03/24/2010	N001	20.1	- 25.1	630		FQ	0	0.033	
Specific Conductance	umhos/cm	03/24/2010	N001	20.1	- 25.1	5230		FQ	0		
Strontium	mg/L	03/24/2010	N001	20.1	- 25.1	2.7		FQ	0	0.00039	
Sulfate	mg/L	03/24/2010	N001	20.1	- 25.1	2200		FQ	0	25	
Temperature	C	03/24/2010	N001	20.1	- 25.1	16.5		FQ	0		
Turbidity	NTU	03/24/2010	N001	20.1	- 25.1	8.37		FQ	0		
Uranium	mg/L	03/24/2010	N001	20.1	- 25.1	0.021		FQ	0	0.000015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0817 WELL Just W of Disposal Cell, NECA yard

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	21.6	- 31.62	1400		FQ	0	100	
Calcium	mg/L	03/25/2010	N001	21.6	- 31.62	450		FQ	0	0.12	
Chloride	mg/L	03/25/2010	N001	21.6	- 31.62	480		FQ	0	40	
Magnesium	mg/L	03/25/2010	N001	21.6	- 31.62	1900		FQ	0	0.13	
Manganese	mg/L	03/25/2010	N001	21.6	- 31.62	2.3		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	21.6	- 31.62	500		FQ	0	5	
Oxidation Reduction Potential	mV	03/25/2010	N001	21.6	- 31.62	213		FQ	0		
pH	s.u.	03/25/2010	N001	21.6	- 31.62	6.63		FQ	0		
Potassium	mg/L	03/25/2010	N001	21.6	- 31.62	260		FQ	0	1.1	
Selenium	mg/L	03/25/2010	N001	21.6	- 31.62	0.0031		FQ	0	0.00032	
Sodium	mg/L	03/25/2010	N001	21.6	- 31.62	1500		FQ	0	0.066	
Specific Conductance	umhos/cm	03/25/2010	N001	21.6	- 31.62	19930		FQ	0		
Strontium	mg/L	03/25/2010	N001	21.6	- 31.62	11		FQ	0	0.00078	
Sulfate	mg/L	03/25/2010	N001	21.6	- 31.62	12000		FQ	0	100	
Temperature	C	03/25/2010	N001	21.6	- 31.62	15.2		FQ	0		
Turbidity	NTU	03/25/2010	N001	21.6	- 31.62	7.55		FQ	0		
Uranium	mg/L	03/25/2010	N001	21.6	- 31.62	7.5		FQ	0	0.00029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0818 WELL Just W of radon cover borrow pit

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	52	- 61.5	240			0	10	
Calcium	mg/L	03/24/2010	N001	52	- 61.5	460			0	0.12	
Chloride	mg/L	03/24/2010	N001	52	- 61.5	930			0	40	
Magnesium	mg/L	03/24/2010	N001	52	- 61.5	1900			0	0.13	
Manganese	mg/L	03/24/2010	N001	52	- 61.5	0.59			0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	52	- 61.5	850			0	5	
Oxidation Reduction Potential	mV	03/24/2010	N001	52	- 61.5	215			0		
pH	s.u.	03/24/2010	N001	52	- 61.5	7.01			0		
Potassium	mg/L	03/24/2010	N001	52	- 61.5	94			0	1.1	
Selenium	mg/L	03/24/2010	N001	52	- 61.5	2.1			0	0.0016	
Sodium	mg/L	03/24/2010	N001	52	- 61.5	3100			0	0.66	
Specific Conductance	umhos/cm	03/24/2010	N001	52	- 61.5	21530			0		
Strontium	mg/L	03/24/2010	N001	52	- 61.5	11			0	0.00078	
Sulfate	mg/L	03/24/2010	N001	52	- 61.5	12000			0	100	
Temperature	C	03/24/2010	N001	52	- 61.5	15.1			0		
Turbidity	NTU	03/24/2010	N001	52	- 61.5	5.21			0		
Uranium	mg/L	03/24/2010	N001	52	- 61.5	0.095			0	0.00015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0819 WELL Just W of Disposal Cell, NECA yard, flush mount.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	15.67 - 25.67	910		FQ	0	20	
Calcium	mg/L	03/24/2010	N001	15.67 - 25.67	430		FQ	0	0.12	
Chloride	mg/L	03/24/2010	N001	15.67 - 25.67	480		FQ	0	20	
Magnesium	mg/L	03/24/2010	N001	15.67 - 25.67	1300		FQ	0	0.13	
Manganese	mg/L	03/24/2010	N001	15.67 - 25.67	2.1		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	15.67 - 25.67	130		FQ	0	1	
Oxidation Reduction Potential	mV	03/24/2010	N001	15.67 - 25.67	158.6		FQ	0		
pH	s.u.	03/24/2010	N001	15.67 - 25.67	7.08		FQ	0		
Potassium	mg/L	03/24/2010	N001	15.67 - 25.67	190		FQ	0	1.1	
Selenium	mg/L	03/24/2010	N001	15.67 - 25.67	0.075		FQ	0	0.0016	
Sodium	mg/L	03/24/2010	N001	15.67 - 25.67	2200		FQ	0	0.066	
Specific Conductance	umhos/cm	03/24/2010	N001	15.67 - 25.67	21874		FQ	0		
Strontium	mg/L	03/24/2010	N001	15.67 - 25.67	8.1		FQ	0	0.00078	
Sulfate	mg/L	03/24/2010	N001	15.67 - 25.67	8000		FQ	0	50	
Temperature	C	03/24/2010	N001	15.67 - 25.67	16.24		FQ	0		
Turbidity	NTU	03/24/2010	N001	15.67 - 25.67	8.31		FQ	0		
Uranium	mg/L	03/24/2010	N001	15.67 - 25.67	0.87		FQ	0	0.00015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0820 WELL Just N of Disposal Cell, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	149	- 151.5	2.6		FQ	0	0.1	
Calcium	mg/L	03/23/2010	N001	149	- 151.5	200		FQ	0	0.12	
Chloride	mg/L	03/23/2010	N001	149	- 151.5	8400		FQ	0	100	
Magnesium	mg/L	03/23/2010	N001	149	- 151.5	85		FQ	0	0.13	
Manganese	mg/L	03/23/2010	N001	149	- 151.5	1.2		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	149	- 151.5	0.024		FQ	0	0.01	
Oxidation Reduction Potential	mV	03/23/2010	N001	149	- 151.5	-41		FQ	0		
pH	s.u.	03/23/2010	N001	149	- 151.5	7.63		FQ	0		
Potassium	mg/L	03/23/2010	N001	149	- 151.5	35		FQ	0	1.1	
Selenium	mg/L	03/23/2010	N001	149	- 151.5	0.00048	B	FQ	0	0.00032	
Sodium	mg/L	03/23/2010	N001	149	- 151.5	6000		FQ	0	0.66	
Specific Conductance	umhos/cm	03/23/2010	N001	149	- 151.5	30020		FQ	0		
Strontium	mg/L	03/23/2010	N001	149	- 151.5	19		FQ	0	0.00078	
Sulfate	mg/L	03/23/2010	N001	149	- 151.5	4700		FQ	0	100	
Temperature	C	03/23/2010	N001	149	- 151.5	15.4		FQ	0		
Turbidity	NTU	03/23/2010	N001	149	- 151.5	5.54		FQ	0		
Uranium	mg/L	03/23/2010	N001	149	- 151.5	0.09		FQ	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0822 WELL Just N of Disposal Cell, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	199 - 201.5	1.3		FQ	0	0.1	
Calcium	mg/L	03/23/2010	N001	199 - 201.5	160		FQ	0	0.12	
Chloride	mg/L	03/23/2010	N001	199 - 201.5	6200		FQ	0	100	
Magnesium	mg/L	03/23/2010	N001	199 - 201.5	71		FQ	0	0.13	
Manganese	mg/L	03/23/2010	N001	199 - 201.5	0.39		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	199 - 201.5	14		FQ	0	0.2	
Oxidation Reduction Potential	mV	03/23/2010	N001	199 - 201.5	-37		FQ	0		
pH	s.u.	03/23/2010	N001	199 - 201.5	7.51		FQ	0		
Potassium	mg/L	03/23/2010	N001	199 - 201.5	82		FQ	0	1.1	
Selenium	mg/L	03/23/2010	N001	199 - 201.5	0.00076	B	FQ	0	0.00032	
Sodium	mg/L	03/23/2010	N001	199 - 201.5	5100		FQ	0	0.66	
Specific Conductance	umhos/cm	03/23/2010	N001	199 - 201.5	24750		FQ	0		
Strontium	mg/L	03/23/2010	N001	199 - 201.5	16		FQ	0	0.00078	
Sulfate	mg/L	03/23/2010	N001	199 - 201.5	5900		FQ	0	100	
Temperature	C	03/23/2010	N001	199 - 201.5	14.8		FQ	0		
Turbidity	NTU	03/23/2010	N001	199 - 201.5	9.64		FQ	0		
Uranium	mg/L	03/23/2010	N001	199 - 201.5	0.083		FQ	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0824 WELL Just NE of Disposal Cell, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	198.5 - 201	5.4		FQ	0	0.5	
Calcium	mg/L	03/23/2010	N001	198.5 - 201	160		FQ	0	0.12	
Chloride	mg/L	03/23/2010	N001	198.5 - 201	4900		FQ	0	100	
Magnesium	mg/L	03/23/2010	N001	198.5 - 201	99		FQ	0	0.13	
Manganese	mg/L	03/23/2010	N001	198.5 - 201	0.18		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	198.5 - 201	260		FQ	0	2	
Oxidation Reduction Potential	mV	03/23/2010	N001	198.5 - 201	6		FQ	0		
pH	s.u.	03/23/2010	N001	198.5 - 201	7.22		FQ	0		
Potassium	mg/L	03/23/2010	N001	198.5 - 201	190		FQ	0	1.1	
Selenium	mg/L	03/23/2010	N001	198.5 - 201	0.003		FQ	0	0.00032	
Sodium	mg/L	03/23/2010	N001	198.5 - 201	4200		FQ	0	0.66	
Specific Conductance	umhos/cm	03/23/2010	N001	198.5 - 201	25095		FQ	0		
Strontium	mg/L	03/23/2010	N001	198.5 - 201	13		FQ	0	0.00078	
Sulfate	mg/L	03/23/2010	N001	198.5 - 201	5300		FQ	0	100	
Temperature	C	03/23/2010	N001	198.5 - 201	15		FQ	0		
Turbidity	NTU	03/23/2010	N001	198.5 - 201	7.75		FQ	0		
Uranium	mg/L	03/23/2010	N001	198.5 - 201	0.29		FQ	0	0.000029	



**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0825 WELL Just NE of Disposal Cell, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	147.79 - 150.23	7.3		FQ	0	0.5	
Calcium	mg/L	03/23/2010	N001	147.79 - 150.23	240		FQ	0	0.12	
Chloride	mg/L	03/23/2010	N001	147.79 - 150.23	8800		FQ	0	100	
Magnesium	mg/L	03/23/2010	N001	147.79 - 150.23	87		FQ	0	0.13	
Manganese	mg/L	03/23/2010	N001	147.79 - 150.23	0.7		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	147.79 - 150.23	11		FQ	0	0.2	
Oxidation Reduction Potential	mV	03/23/2010	N001	147.79 - 150.23	22		FQ	0		
pH	s.u.	03/23/2010	N001	147.79 - 150.23	7.39		FQ	0		
Potassium	mg/L	03/23/2010	N001	147.79 - 150.23	86		FQ	0	1.1	
Selenium	mg/L	03/23/2010	N001	147.79 - 150.23	0.00071	B	FQ	0	0.00032	
Sodium	mg/L	03/23/2010	N001	147.79 - 150.23	6000		FQ	0	0.66	
Specific Conductance	umhos/cm	03/23/2010	N001	147.79 - 150.23	30009		FQ	0		
Strontium	mg/L	03/23/2010	N001	147.79 - 150.23	20		FQ	0	0.00078	
Sulfate	mg/L	03/23/2010	N001	147.79 - 150.23	6400		FQ	0	100	
Temperature	C	03/23/2010	N001	147.79 - 150.23	14.7		FQ	0		
Turbidity	NTU	03/23/2010	N001	147.79 - 150.23	5.32		FQ	0		
Uranium	mg/L	03/23/2010	N001	147.79 - 150.23	0.049		FQ	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0826 WELL Just West of Disposal Cell, NECA yard, flush mount.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	10	- 20	99		FQ	0	5	
Calcium	mg/L	03/24/2010	N001	10	- 20	410		FQ	0	0.12	
Chloride	mg/L	03/24/2010	N001	10	- 20	570		FQ	0	40	
Magnesium	mg/L	03/24/2010	N001	10	- 20	2800		FQ	0	0.13	
Manganese	mg/L	03/24/2010	N001	10	- 20	2.8		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	10	- 20	47		FQ	0	0.5	
Oxidation Reduction Potential	mV	03/24/2010	N001	10	- 20	140.5		FQ	0		
pH	s.u.	03/24/2010	N001	10	- 20	7.05		FQ	0		
Potassium	mg/L	03/24/2010	N001	10	- 20	170		FQ	0	1.1	
Selenium	mg/L	03/24/2010	N001	10	- 20	0.0033		FQ	0	0.00065	
Sodium	mg/L	03/24/2010	N001	10	- 20	2300		FQ	0	0.066	
Specific Conductance	umhos/cm	03/24/2010	N001	10	- 20	21181		FQ	0		
Strontium	mg/L	03/24/2010	N001	10	- 20	12		FQ	0	0.00078	
Sulfate	mg/L	03/24/2010	N001	10	- 20	15000		FQ	0	100	
Temperature	C	03/24/2010	N001	10	- 20	14.36		FQ	0		
Turbidity	NTU	03/24/2010	N001	10	- 20	4.82		FQ	0		
Uranium	mg/L	03/24/2010	N001	10	- 20	3.3		FQ	0	0.00058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0827 WELL Just NW of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	19.9	- 29.9	2.7		FQ	0	0.1	
Calcium	mg/L	03/23/2010	N001	19.9	- 29.9	430		FQ	0	0.06	
Chloride	mg/L	03/23/2010	N001	19.9	- 29.9	400		FQ	0	20	
Magnesium	mg/L	03/23/2010	N001	19.9	- 29.9	1100		FQ	0	0.065	
Manganese	mg/L	03/23/2010	N001	19.9	- 29.9	0.33		FQ	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	19.9	- 29.9	22		FQ	0	0.2	
Oxidation Reduction Potential	mV	03/23/2010	N001	19.9	- 29.9	56		FQ	0		
pH	s.u.	03/23/2010	N001	19.9	- 29.9	6.82		FQ	0		
Potassium	mg/L	03/23/2010	N001	19.9	- 29.9	66		FQ	0	0.54	
Selenium	mg/L	03/23/2010	N001	19.9	- 29.9	0.048		FQ	0	0.00032	
Sodium	mg/L	03/23/2010	N001	19.9	- 29.9	1800		FQ	0	0.66	
Specific Conductance	umhos/cm	03/23/2010	N001	19.9	- 29.9	14580		FQ	0		
Strontium	mg/L	03/23/2010	N001	19.9	- 29.9	9.3		FQ	0	0.00039	
Sulfate	mg/L	03/23/2010	N001	19.9	- 29.9	8000		FQ	0	50	
Temperature	C	03/23/2010	N001	19.9	- 29.9	15.5		FQ	0		
Turbidity	NTU	03/23/2010	N001	19.9	- 29.9	7.66		FQ	0		
Uranium	mg/L	03/23/2010	N001	19.9	- 29.9	0.87		FQ	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0828 WELL Just E of upper Bob Lee Wash, NECA yard

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	5.3	- 15.3	0.1	U	F	0	0.1	
Calcium	mg/L	03/24/2010	N001	5.3	- 15.3	440		F	0	0.06	
Chloride	mg/L	03/24/2010	N001	5.3	- 15.3	260		F	0	10	
Magnesium	mg/L	03/24/2010	N001	5.3	- 15.3	290		F	0	0.065	
Manganese	mg/L	03/24/2010	N001	5.3	- 15.3	0.031		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	5.3	- 15.3	100		F	0	1	
Oxidation Reduction Potential	mV	03/24/2010	N001	5.3	- 15.3	175		F	0		
pH	s.u.	03/24/2010	N001	5.3	- 15.3	6.85		F	0		
Potassium	mg/L	03/24/2010	N001	5.3	- 15.3	17		F	0	0.54	
Selenium	mg/L	03/24/2010	N001	5.3	- 15.3	0.098		F	0	0.00032	
Sodium	mg/L	03/24/2010	N001	5.3	- 15.3	570		F	0	0.033	
Specific Conductance	umhos/cm	03/24/2010	N001	5.3	- 15.3	5500		F	0		
Strontium	mg/L	03/24/2010	N001	5.3	- 15.3	5.7		F	0	0.00039	
Sulfate	mg/L	03/24/2010	N001	5.3	- 15.3	2500		F	0	25	
Temperature	C	03/24/2010	N001	5.3	- 15.3	11.3		F	0		
Turbidity	NTU	03/24/2010	N001	5.3	- 15.3	5.76		F	0		
Uranium	mg/L	03/24/2010	N001	5.3	- 15.3	0.54		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0830 WELL Just SE of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	7.7	- 17.7	0.1		FQ	0	0.1	
Ammonia Total as N	mg/L	03/23/2010	N002	7.7	- 17.7	0.1	U	FQ	0	0.1	
Calcium	mg/L	03/23/2010	N001	7.7	- 17.7	520		FQ	0	0.12	
Calcium	mg/L	03/23/2010	N002	7.7	- 17.7	550		FQ	0	0.024	
Chloride	mg/L	03/23/2010	N001	7.7	- 17.7	51		FQ	0	4	
Chloride	mg/L	03/23/2010	N002	7.7	- 17.7	52		FQ	0	10	
Magnesium	mg/L	03/23/2010	N001	7.7	- 17.7	39		FQ	0	0.013	
Magnesium	mg/L	03/23/2010	N002	7.7	- 17.7	40		FQ	0	0.026	
Manganese	mg/L	03/23/2010	N001	7.7	- 17.7	2.1		FQ	0	0.00011	
Manganese	mg/L	03/23/2010	N002	7.7	- 17.7	2.1		FQ	0	0.00023	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	7.7	- 17.7	33		FQ	0	0.2	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N002	7.7	- 17.7	32		FQ	0	0.2	
Oxidation Reduction Potential	mV	03/23/2010	N001	7.7	- 17.7	172.6		FQ	0		
pH	s.u.	03/23/2010	N001	7.7	- 17.7	4.45		FQ	0		
Potassium	mg/L	03/23/2010	N001	7.7	- 17.7	3.5		FQ	0	0.11	
Potassium	mg/L	03/23/2010	N002	7.7	- 17.7	2.6		FQ	0	0.22	
Selenium	mg/L	03/23/2010	N001	7.7	- 17.7	0.024		FQ	0	0.000065	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0830 WELL Just SE of Disposal Cell

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/23/2010	N002	7.7	- 17.7	0.023		FQ	0	0.00032	
Sodium	mg/L	03/23/2010	N001	7.7	- 17.7	130		FQ	0	0.0066	
Sodium	mg/L	03/23/2010	N002	7.7	- 17.7	120		FQ	0	0.013	
Specific Conductance	umhos /cm	03/23/2010	N001	7.7	- 17.7	2771		FQ	0		
Strontium	mg/L	03/23/2010	N001	7.7	- 17.7	0.23		FQ	0	0.000078	
Strontium	mg/L	03/23/2010	N002	7.7	- 17.7	0.24		FQ	0	0.00016	
Sulfate	mg/L	03/23/2010	N001	7.7	- 17.7	1600		FQ	0	10	
Sulfate	mg/L	03/23/2010	N002	7.7	- 17.7	1500		FQ	0	25	
Temperature	C	03/23/2010	N001	7.7	- 17.7	10.58		FQ	0		
Turbidity	NTU	03/23/2010	N001	7.7	- 17.7	1.13		FQ	0		
Uranium	mg/L	03/23/2010	N001	7.7	- 17.7	0.0041		FQ	0	0.0000058	
Uranium	mg/L	03/23/2010	N002	7.7	- 17.7	0.0042		FQ	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0833 WELL Just NE of Dine College tract

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	24.9	- 34.9	0.1	U	F	0	0.1	
Calcium	mg/L	03/25/2010	N001	24.9	- 34.9	430		F	0	0.06	
Chloride	mg/L	03/25/2010	N001	24.9	- 34.9	470		F	0	20	
Magnesium	mg/L	03/25/2010	N001	24.9	- 34.9	1200		F	0	0.065	
Manganese	mg/L	03/25/2010	N001	24.9	- 34.9	0.031		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	24.9	- 34.9	370		F	0	2	
Oxidation Reduction Potential	mV	03/25/2010	N001	24.9	- 34.9	87		F	0		
pH	s.u.	03/25/2010	N001	24.9	- 34.9	6.82		F	0		
Potassium	mg/L	03/25/2010	N001	24.9	- 34.9	40		F	0	0.54	
Selenium	mg/L	03/25/2010	N001	24.9	- 34.9	0.31		F	0	0.00032	
Sodium	mg/L	03/25/2010	N001	24.9	- 34.9	1600		F	0	0.66	
Specific Conductance	umhos/cm	03/25/2010	N001	24.9	- 34.9	13060		F	0		
Strontium	mg/L	03/25/2010	N001	24.9	- 34.9	8.5		F	0	0.00039	
Sulfate	mg/L	03/25/2010	N001	24.9	- 34.9	7300		F	0	50	
Temperature	C	03/25/2010	N001	24.9	- 34.9	16		F	0		
Turbidity	NTU	03/25/2010	N001	24.9	- 34.9	2.95		F	0		
Uranium	mg/L	03/25/2010	N001	24.9	- 34.9	0.19		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0835 WELL Housing area between 2nd Wash and 3rd Wash

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	21.9	- 31.9	0.1	U	F	0	0.1	
Calcium	mg/L	03/24/2010	N001	21.9	- 31.9	460		F	0	0.06	
Chloride	mg/L	03/24/2010	N001	21.9	- 31.9	200		F	0	10	
Magnesium	mg/L	03/24/2010	N001	21.9	- 31.9	430		F	0	0.065	
Manganese	mg/L	03/24/2010	N001	21.9	- 31.9	0.0018	B	F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	21.9	- 31.9	81		F	0	0.5	
Oxidation Reduction Potential	mV	03/24/2010	N001	21.9	- 31.9	169		F	0		
pH	s.u.	03/24/2010	N001	21.9	- 31.9	6.97		F	0		
Potassium	mg/L	03/24/2010	N001	21.9	- 31.9	15		F	0	0.54	
Selenium	mg/L	03/24/2010	N001	21.9	- 31.9	0.32		F	0	0.00032	
Sodium	mg/L	03/24/2010	N001	21.9	- 31.9	870		F	0	0.033	
Specific Conductance	umhos/cm	03/24/2010	N001	21.9	- 31.9	7000		F	0		
Strontium	mg/L	03/24/2010	N001	21.9	- 31.9	5.5		F	0	0.00039	
Sulfate	mg/L	03/24/2010	N001	21.9	- 31.9	3900		F	0	25	
Temperature	C	03/24/2010	N001	21.9	- 31.9	16.8		F	0		
Turbidity	NTU	03/24/2010	N001	21.9	- 31.9	3.18		F	0		
Uranium	mg/L	03/24/2010	N001	21.9	- 31.9	0.073		F	0	0.000029	



**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0836 WELL SW part of Blueeyes Ranch, N of US Hwy 64

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/22/2010	N001	26.8	- 36.8	0.1	U	F	0	0.1	
Calcium	mg/L	03/22/2010	N001	26.8	- 36.8	490		F	0	0.06	
Chloride	mg/L	03/22/2010	N001	26.8	- 36.8	39		F	0	10	
Magnesium	mg/L	03/22/2010	N001	26.8	- 36.8	250		F	0	0.065	
Manganese	mg/L	03/22/2010	N001	26.8	- 36.8	2.5		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2010	N001	26.8	- 36.8	20		F	0	0.2	
Oxidation Reduction Potential	mV	03/22/2010	N001	26.8	- 36.8	235.2		F	0		
pH	s.u.	03/22/2010	N001	26.8	- 36.8	6.79		F	0		
Potassium	mg/L	03/22/2010	N001	26.8	- 36.8	4.3	B	F	0	0.54	
Selenium	mg/L	03/22/2010	N001	26.8	- 36.8	0.16		F	0	0.00032	
Sodium	mg/L	03/22/2010	N001	26.8	- 36.8	330		F	0	0.033	
Specific Conductance	umhos/cm	03/22/2010	N001	26.8	- 36.8	4290		F	0		
Strontium	mg/L	03/22/2010	N001	26.8	- 36.8	6.1		F	0	0.00039	
Sulfate	mg/L	03/22/2010	N001	26.8	- 36.8	2600		F	0	25	
Temperature	C	03/22/2010	N001	26.8	- 36.8	15.66		F	0		
Turbidity	NTU	03/22/2010	N001	26.8	- 36.8	7.23		F	0		
Uranium	mg/L	03/22/2010	N001	26.8	- 36.8	0.042		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0837 WELL Center of Blueeyes Ranch, N of US Hwy 64

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	17	- 27.1	0.1	U	F	0	0.1	
Calcium	mg/L	03/25/2010	N001	17	- 27.1	630		F	0	0.06	
Chloride	mg/L	03/25/2010	N001	17	- 27.1	68		F	0	10	
Magnesium	mg/L	03/25/2010	N001	17	- 27.1	240		F	0	0.065	
Manganese	mg/L	03/25/2010	N001	17	- 27.1	4.7		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	17	- 27.1	6.6		F	0	0.1	
Oxidation Reduction Potential	mV	03/25/2010	N001	17	- 27.1	-87		F	0		
pH	s.u.	03/25/2010	N001	17	- 27.1	6.6		F	0		
Potassium	mg/L	03/25/2010	N001	17	- 27.1	8.3		F	0	0.54	
Selenium	mg/L	03/25/2010	N001	17	- 27.1	0.25		F	0	0.00032	
Sodium	mg/L	03/25/2010	N001	17	- 27.1	340		F	0	0.033	
Specific Conductance	umhos/cm	03/25/2010	N001	17	- 27.1	4560		F	0		
Strontium	mg/L	03/25/2010	N001	17	- 27.1	6.3		F	0	0.00039	
Sulfate	mg/L	03/25/2010	N001	17	- 27.1	2600		F	0	25	
Temperature	C	03/25/2010	N001	17	- 27.1	14.5		F	0		
Turbidity	NTU	03/25/2010	N001	17	- 27.1	3.02		F	0		
Uranium	mg/L	03/25/2010	N001	17	- 27.1	0.048		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0838 WELL W part of Dine College tract

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	21.9	- 31.9	0.1	U	F	0	0.1	
Calcium	mg/L	03/25/2010	N001	21.9	- 31.9	880		F	0	0.06	
Chloride	mg/L	03/25/2010	N001	21.9	- 31.9	340		F	0	20	
Magnesium	mg/L	03/25/2010	N001	21.9	- 31.9	360		F	0	0.065	
Manganese	mg/L	03/25/2010	N001	21.9	- 31.9	0.048		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	21.9	- 31.9	310		F	0	2	
Oxidation Reduction Potential	mV	03/25/2010	N001	21.9	- 31.9	161		F	0		
pH	s.u.	03/25/2010	N001	21.9	- 31.9	7.04		F	0		
Potassium	mg/L	03/25/2010	N001	21.9	- 31.9	17		F	0	0.54	
Selenium	mg/L	03/25/2010	N001	21.9	- 31.9	0.64		F	0	0.00032	
Sodium	mg/L	03/25/2010	N001	21.9	- 31.9	900		F	0	0.033	
Specific Conductance	umhos/cm	03/25/2010	N001	21.9	- 31.9	8135		F	0		
Strontium	mg/L	03/25/2010	N001	21.9	- 31.9	10		F	0	0.00039	
Sulfate	mg/L	03/25/2010	N001	21.9	- 31.9	3700		F	0	50	
Temperature	C	03/25/2010	N001	21.9	- 31.9	14.1		F	0		
Turbidity	NTU	03/25/2010	N001	21.9	- 31.9	1.92		F	0		
Uranium	mg/L	03/25/2010	N001	21.9	- 31.9	0.068		F	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0841 WELL S of Multipurpose Center tract, W of US Hwy 666

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	42	- 52	0.1	U	F	0	0.1	
Ammonia Total as N	mg/L	03/24/2010	N002	42	- 52	0.1	U	F	0	0.1	
Calcium	mg/L	03/24/2010	N001	42	- 52	410		F	0	0.12	
Calcium	mg/L	03/24/2010	N002	42	- 52	400		F	0	0.12	
Chloride	mg/L	03/24/2010	N001	42	- 52	960		F	0	40	
Chloride	mg/L	03/24/2010	N002	42	- 52	980		F	0	40	
Magnesium	mg/L	03/24/2010	N001	42	- 52	950		F	0	0.13	
Magnesium	mg/L	03/24/2010	N002	42	- 52	910		F	0	0.13	
Manganese	mg/L	03/24/2010	N001	42	- 52	0.0096	B	F	0	0.0011	
Manganese	mg/L	03/24/2010	N002	42	- 52	0.018	B	F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	42	- 52	690		F	0	5	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N002	42	- 52	660		F	0	5	
Oxidation Reduction Potential	mV	03/24/2010	N001	42	- 52	130.9		F	0		
pH	s.u.	03/24/2010	N001	42	- 52	8.01		F	0		
Potassium	mg/L	03/24/2010	N001	42	- 52	87		F	0	1.1	
Potassium	mg/L	03/24/2010	N002	42	- 52	83		F	0	1.1	
Selenium	mg/L	03/24/2010	N001	42	- 52	3.4		F	0	0.00065	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0841 WELL S of Multipurpose Center tract, W of US Hwy 666

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/24/2010	N002	42	- 52	3.6		F	0	0.00065	
Sodium	mg/L	03/24/2010	N001	42	- 52	5800		F	0	0.66	
Sodium	mg/L	03/24/2010	N002	42	- 52	5500		F	0	0.66	
Specific Conductance	umhos /cm	03/24/2010	N001	42	- 52	29707		F	0		
Strontium	mg/L	03/24/2010	N001	42	- 52	9.1		F	0	0.00078	
Strontium	mg/L	03/24/2010	N002	42	- 52	8.8		F	0	0.00078	
Sulfate	mg/L	03/24/2010	N001	42	- 52	16000		F	0	100	
Sulfate	mg/L	03/24/2010	N002	42	- 52	16000		F	0	100	
Temperature	C	03/24/2010	N001	42	- 52	15.74		F	0		
Turbidity	NTU	03/24/2010	N001	42	- 52	4.63		F	0		
Uranium	mg/L	03/24/2010	N001	42	- 52	0.13		F	0	0.000058	
Uranium	mg/L	03/24/2010	N002	42	- 52	0.14		F	0	0.000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0843 WELL E part of Blueeyes Ranch, N of US Hwy 64

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	11.9	- 21.9	0.1	U	F	0	0.1	
Calcium	mg/L	03/25/2010	N001	11.9	- 21.9	430		F	0	0.024	
Chloride	mg/L	03/25/2010	N001	11.9	- 21.9	57		F	0	10	
Magnesium	mg/L	03/25/2010	N001	11.9	- 21.9	150		F	0	0.026	
Manganese	mg/L	03/25/2010	N001	11.9	- 21.9	1.7		F	0	0.00023	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	11.9	- 21.9	19		F	0	0.2	
Oxidation Reduction Potential	mV	03/25/2010	N001	11.9	- 21.9	86		F	0		
pH	s.u.	03/25/2010	N001	11.9	- 21.9	7.05		F	0		
Potassium	mg/L	03/25/2010	N001	11.9	- 21.9	12		F	0	0.22	
Selenium	mg/L	03/25/2010	N001	11.9	- 21.9	0.24		F	0	0.000065	
Sodium	mg/L	03/25/2010	N001	11.9	- 21.9	320		F	0	0.013	
Specific Conductance	umhos/cm	03/25/2010	N001	11.9	- 21.9	3605		F	0		
Strontium	mg/L	03/25/2010	N001	11.9	- 21.9	4.6		F	0	0.00016	
Sulfate	mg/L	03/25/2010	N001	11.9	- 21.9	1900		F	0	25	
Temperature	C	03/25/2010	N001	11.9	- 21.9	13.6		F	0		
Turbidity	NTU	03/25/2010	N001	11.9	- 21.9	1.73		F	0		
Uranium	mg/L	03/25/2010	N001	11.9	- 21.9	0.028		F	0	0.0000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0844 WELL W part of Multipurpose Center tract, W of US Hwy 666, flush mount.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	28.91	- 38.91	0.1		F	0	0.1	
Calcium	mg/L	03/25/2010	N001	28.91	- 38.91	490		F	0	0.12	
Chloride	mg/L	03/25/2010	N001	28.91	- 38.91	810		F	0	40	
Magnesium	mg/L	03/25/2010	N001	28.91	- 38.91	1700		F	0	0.13	
Manganese	mg/L	03/25/2010	N001	28.91	- 38.91	0.016	B	F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	28.91	- 38.91	700		F	0	5	
Oxidation Reduction Potential	mV	03/25/2010	N001	28.91	- 38.91	173		F	0		
pH	s.u.	03/25/2010	N001	28.91	- 38.91	7.6		F	0		
Potassium	mg/L	03/25/2010	N001	28.91	- 38.91	59		F	0	1.1	
Selenium	mg/L	03/25/2010	N001	28.91	- 38.91	1.9		F	0	0.00065	
Sodium	mg/L	03/25/2010	N001	28.91	- 38.91	2400		F	0	0.066	
Specific Conductance	umhos/cm	03/25/2010	N001	28.91	- 38.91	17470		F	0		
Strontium	mg/L	03/25/2010	N001	28.91	- 38.91	12		F	0	0.00078	
Sulfate	mg/L	03/25/2010	N001	28.91	- 38.91	9400		F	0	100	
Temperature	C	03/25/2010	N001	28.91	- 38.91	14.6		F	0		
Turbidity	NTU	03/25/2010	N001	28.91	- 38.91	4.1		F	0		
Uranium	mg/L	03/25/2010	N001	28.91	- 38.91	0.17		F	0	0.000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0846 WELL Just W of elementary school, S of US Hwy 64

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	0001	17.9	- 27.9	0.1	U	FQ	0	0.1	
Calcium	mg/L	03/25/2010	0001	17.9	- 27.9	520		FQ	0	0.06	
Chloride	mg/L	03/25/2010	0001	17.9	- 27.9	72		FQ	0	10	
Magnesium	mg/L	03/25/2010	0001	17.9	- 27.9	190		FQ	0	0.065	
Manganese	mg/L	03/25/2010	0001	17.9	- 27.9	0.0019	B	FQ	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	0001	17.9	- 27.9	22		FQ	0	0.2	
Oxidation Reduction Potential	mV	03/25/2010	N001	17.9	- 27.9	149		FQ	0		
pH	s.u.	03/25/2010	N001	17.9	- 27.9	7.09		FQ	0		
Potassium	mg/L	03/25/2010	0001	17.9	- 27.9	5.1		FQ	0	0.54	
Selenium	mg/L	03/25/2010	0001	17.9	- 27.9	0.21		FQ	0	0.00032	
Sodium	mg/L	03/25/2010	0001	17.9	- 27.9	260		FQ	0	0.033	
Specific Conductance	umhos/cm	03/25/2010	N001	17.9	- 27.9	3815		FQ	0		
Strontium	mg/L	03/25/2010	0001	17.9	- 27.9	4.7		FQ	0	0.00039	
Sulfate	mg/L	03/25/2010	0001	17.9	- 27.9	2200		FQ	0	25	
Temperature	C	03/25/2010	N001	17.9	- 27.9	15.4		FQ	0		
Turbidity	NTU	03/25/2010	N001	17.9	- 27.9	124		FQ	0		
Uranium	mg/L	03/25/2010	0001	17.9	- 27.9	0.029		FQ	0	0.000029	



**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0848 WELL Just W of Shiprock High School track, S of US Hwy 64

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	45 - 142.58	3.4		F	0	0.1	
Calcium	mg/L	03/25/2010	N001	45 - 142.58	390		F	0	0.12	
Chloride	mg/L	03/25/2010	N001	45 - 142.58	1100		F	0	40	
Magnesium	mg/L	03/25/2010	N001	45 - 142.58	570		F	0	0.13	
Manganese	mg/L	03/25/2010	N001	45 - 142.58	3.3		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	45 - 142.58	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/25/2010	N001	45 - 142.58	-19		F	0		
pH	s.u.	03/25/2010	N001	45 - 142.58	6.65		F	0		
Potassium	mg/L	03/25/2010	N001	45 - 142.58	47		F	0	1.1	
Selenium	mg/L	03/25/2010	N001	45 - 142.58	0.052		F	0	0.00065	
Sodium	mg/L	03/25/2010	N001	45 - 142.58	6500		F	0	0.66	
Specific Conductance	umhos/cm	03/25/2010	N001	45 - 142.58	25880		F	0		
Strontium	mg/L	03/25/2010	N001	45 - 142.58	20		F	0	0.00078	
Sulfate	mg/L	03/25/2010	N001	45 - 142.58	16000		F	0	100	
Temperature	C	03/25/2010	N001	45 - 142.58	16.1		F	0		
Turbidity	NTU	03/25/2010	N001	45 - 142.58	8.7		F	0		
Uranium	mg/L	03/25/2010	N001	45 - 142.58	0.023		F	0	0.000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1007 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	36.8	- 46.3	19		FQ	0	0.5	
Calcium	mg/L	03/23/2010	N001	36.8	- 46.3	450		FQ	0	0.12	
Chloride	mg/L	03/23/2010	N001	36.8	- 46.3	560		FQ	0	40	
Magnesium	mg/L	03/23/2010	N001	36.8	- 46.3	2400		FQ	0	0.13	
Manganese	mg/L	03/23/2010	N001	36.8	- 46.3	1.8		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	36.8	- 46.3	540		FQ	0	5	
Oxidation Reduction Potential	mV	03/23/2010	N001	36.8	- 46.3	19		FQ	0		
pH	s.u.	03/23/2010	N001	36.8	- 46.3	6.76		FQ	0		
Potassium	mg/L	03/23/2010	N001	36.8	- 46.3	140		FQ	0	1.1	
Selenium	mg/L	03/23/2010	N001	36.8	- 46.3	0.068		FQ	0	0.0032	
Sodium	mg/L	03/23/2010	N001	36.8	- 46.3	2300		FQ	0	0.66	
Specific Conductance	umhos/cm	03/23/2010	N001	36.8	- 46.3	19740		FQ	0		
Strontium	mg/L	03/23/2010	N001	36.8	- 46.3	11		FQ	0	0.00078	
Sulfate	mg/L	03/23/2010	N001	36.8	- 46.3	13000		FQ	0	100	
Temperature	C	03/23/2010	N001	36.8	- 46.3	15.9		FQ	0		
Turbidity	NTU	03/23/2010	N001	36.8	- 46.3	9.67		FQ	0		
Uranium	mg/L	03/23/2010	N001	36.8	- 46.3	2.2		FQ	0	0.00029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1048 WELL Many Devils Wash, just E of knickpoint, flush mount.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	3.6	- 8.6	0.1	U	F	0	0.1	
Calcium	mg/L	03/25/2010	N001	3.6	- 8.6	380		F	0	0.12	
Chloride	mg/L	03/25/2010	N001	3.6	- 8.6	1500		F	0	40	
Magnesium	mg/L	03/25/2010	N001	3.6	- 8.6	1300		F	0	0.13	
Manganese	mg/L	03/25/2010	N001	3.6	- 8.6	0.016	B	F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	3.6	- 8.6	640		F	0	5	
Oxidation Reduction Potential	mV	03/25/2010	N001	3.6	- 8.6	172.1		F	0		
pH	s.u.	03/25/2010	N001	3.6	- 8.6	8.28		F	0		
Potassium	mg/L	03/25/2010	N001	3.6	- 8.6	52		F	0	1.1	
Selenium	mg/L	03/25/2010	N001	3.6	- 8.6	1.2		F	0	0.00065	
Sodium	mg/L	03/25/2010	N001	3.6	- 8.6	5500		F	0	0.66	
Specific Conductance	umhos/cm	03/25/2010	N001	3.6	- 8.6	31430		F	0		
Strontium	mg/L	03/25/2010	N001	3.6	- 8.6	9		F	0	0.00078	
Sulfate	mg/L	03/25/2010	N001	3.6	- 8.6	17000		F	0	100	
Temperature	C	03/25/2010	N001	3.6	- 8.6	12.15		F	0		
Turbidity	NTU	03/25/2010	N001	3.6	- 8.6	5		F	0		
Uranium	mg/L	03/25/2010	N001	3.6	- 8.6	0.16		F	0	0.000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1049 WELL Many Devils Wash, just E of knickpoint, flush mount.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	4.3	- 9.3	0.1	U	FQ	0	0.1	
Calcium	mg/L	03/25/2010	N001	4.3	- 9.3	380		FQ	0	0.12	
Chloride	mg/L	03/25/2010	N001	4.3	- 9.3	1500		FQ	0	40	
Magnesium	mg/L	03/25/2010	N001	4.3	- 9.3	1300		FQ	0	0.13	
Manganese	mg/L	03/25/2010	N001	4.3	- 9.3	0.0064	B	FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	4.3	- 9.3	340	N	FQJ	0	5	
Oxidation Reduction Potential	mV	03/25/2010	N001	4.3	- 9.3	174.8		FQ	0		
pH	s.u.	03/25/2010	N001	4.3	- 9.3	8.44		FQ	0		
Potassium	mg/L	03/25/2010	N001	4.3	- 9.3	50		FQ	0	1.1	
Selenium	mg/L	03/25/2010	N001	4.3	- 9.3	1.2		FQ	0	0.00065	
Sodium	mg/L	03/25/2010	N001	4.3	- 9.3	6400		FQ	0	0.66	
Specific Conductance	umhos/cm	03/25/2010	N001	4.3	- 9.3	31637		FQ	0		
Strontium	mg/L	03/25/2010	N001	4.3	- 9.3	8.9		FQ	0	0.00078	
Sulfate	mg/L	03/25/2010	N001	4.3	- 9.3	17000		FQ	0	100	
Temperature	C	03/25/2010	N001	4.3	- 9.3	13.96		FQ	0		
Turbidity	NTU	03/25/2010	N001	4.3	- 9.3	574		FQ	0		
Uranium	mg/L	03/25/2010	N001	4.3	- 9.3	0.16		FQ	0	0.000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1058 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	41.7	- 51.2	2.8		FQ	0	0.1	
Calcium	mg/L	03/23/2010	N001	41.7	- 51.2	230		FQ	0	0.12	
Chloride	mg/L	03/23/2010	N001	41.7	- 51.2	1100		FQ	0	20	
Magnesium	mg/L	03/23/2010	N001	41.7	- 51.2	140		FQ	0	0.13	
Manganese	mg/L	03/23/2010	N001	41.7	- 51.2	0.21		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	41.7	- 51.2	0.023		FQ	0	0.01	
Oxidation Reduction Potential	mV	03/23/2010	N001	41.7	- 51.2	1		FQ	0		
pH	s.u.	03/23/2010	N001	41.7	- 51.2	7.4		FQ	0		
Potassium	mg/L	03/23/2010	N001	41.7	- 51.2	15		FQ	0	1.1	
Selenium	mg/L	03/23/2010	N001	41.7	- 51.2	0.0003	B	FQ	0	0.00016	
Sodium	mg/L	03/23/2010	N001	41.7	- 51.2	2400		FQ	0	0.66	
Specific Conductance	umhos/cm	03/23/2010	N001	41.7	- 51.2	12760		FQ	0		
Strontium	mg/L	03/23/2010	N001	41.7	- 51.2	10		FQ	0	0.00078	
Sulfate	mg/L	03/23/2010	N001	41.7	- 51.2	5200		FQ	0	50	
Temperature	C	03/23/2010	N001	41.7	- 51.2	14.3		FQ	0		
Turbidity	NTU	03/23/2010	N001	41.7	- 51.2	7.02		FQ	0		
Uranium	mg/L	03/23/2010	N001	41.7	- 51.2	0.0064		FQ	0	0.000015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1059 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	39.5	- 49	3.1		FQ	0	0.1	
Calcium	mg/L	03/23/2010	N001	39.5	- 49	340		FQ	0	0.12	
Chloride	mg/L	03/23/2010	N001	39.5	- 49	700		FQ	0	40	
Magnesium	mg/L	03/23/2010	N001	39.5	- 49	410		FQ	0	0.13	
Manganese	mg/L	03/23/2010	N001	39.5	- 49	0.094		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	39.5	- 49	380		FQ	0	2	
Oxidation Reduction Potential	mV	03/23/2010	N001	39.5	- 49	234		FQ	0		
pH	s.u.	03/23/2010	N001	39.5	- 49	7.24		FQ	0		
Potassium	mg/L	03/23/2010	N001	39.5	- 49	30		FQ	0	1.1	
Selenium	mg/L	03/23/2010	N001	39.5	- 49	0.006		FQ	0	0.00065	
Sodium	mg/L	03/23/2010	N001	39.5	- 49	3500		FQ	0	0.66	
Specific Conductance	umhos/cm	03/23/2010	N001	39.5	- 49	18000		FQ	0		
Strontium	mg/L	03/23/2010	N001	39.5	- 49	17		FQ	0	0.00078	
Sulfate	mg/L	03/23/2010	N001	39.5	- 49	9400		FQ	0	100	
Temperature	C	03/23/2010	N001	39.5	- 49	15		FQ	0		
Turbidity	NTU	03/23/2010	N001	39.5	- 49	5.95		FQ	0		
Uranium	mg/L	03/23/2010	N001	39.5	- 49	0.063		FQ	0	0.000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1068 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	0001	6.95	- 8.95	40		FQ	0	2	
Calcium	mg/L	03/24/2010	0001	6.95	- 8.95	400		FQ	0	0.06	
Chloride	mg/L	03/24/2010	0001	6.95	- 8.95	220		FQ	0	20	
Magnesium	mg/L	03/24/2010	0001	6.95	- 8.95	690		FQ	0	0.065	
Manganese	mg/L	03/24/2010	0001	6.95	- 8.95	0.92		FQ	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	0001	6.95	- 8.95	200		FQ	0	1	
Oxidation Reduction Potential	mV	03/24/2010	N001	6.95	- 8.95	183		FQ	0		
pH	s.u.	03/24/2010	N001	6.95	- 8.95	6.96		FQ	0		
Potassium	mg/L	03/24/2010	0001	6.95	- 8.95	50		FQ	0	0.54	
Selenium	mg/L	03/24/2010	0001	6.95	- 8.95	0.041		FQ	0	0.00032	
Sodium	mg/L	03/24/2010	0001	6.95	- 8.95	890		FQ	0	0.033	
Specific Conductance	umhos/cm	03/24/2010	N001	6.95	- 8.95	8950		FQ	0		
Strontium	mg/L	03/24/2010	0001	6.95	- 8.95	7.5		FQ	0	0.00039	
Sulfate	mg/L	03/24/2010	0001	6.95	- 8.95	4400		FQ	0	50	
Temperature	C	03/24/2010	N001	6.95	- 8.95	13.1		FQ	0		
Turbidity	NTU	03/24/2010	N001	6.95	- 8.95	275		FQ	0		
Uranium	mg/L	03/24/2010	0001	6.95	- 8.95	0.58		FQ	0	0.000029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1070 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	52.5	- 62	8.3			0	0.5	
Calcium	mg/L	03/24/2010	N001	52.5	- 62	400			0	0.12	
Chloride	mg/L	03/24/2010	N001	52.5	- 62	1300			0	40	
Magnesium	mg/L	03/24/2010	N001	52.5	- 62	1300			0	0.13	
Manganese	mg/L	03/24/2010	N001	52.5	- 62	0.31			0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	52.5	- 62	750			0	5	
Oxidation Reduction Potential	mV	03/24/2010	N001	52.5	- 62	221			0		
pH	s.u.	03/24/2010	N001	52.5	- 62	7.13			0		
Potassium	mg/L	03/24/2010	N001	52.5	- 62	92			0	1.1	
Selenium	mg/L	03/24/2010	N001	52.5	- 62	2.9			0	0.00065	
Sodium	mg/L	03/24/2010	N001	52.5	- 62	5500			0	0.66	
Specific Conductance	umhos/cm	03/24/2010	N001	52.5	- 62	27740			0		
Strontium	mg/L	03/24/2010	N001	52.5	- 62	10			0	0.00078	
Sulfate	mg/L	03/24/2010	N001	52.5	- 62	16000			0	100	
Temperature	C	03/24/2010	N001	52.5	- 62	13.3			0		
Turbidity	NTU	03/24/2010	N001	52.5	- 62	8.9			0		
Uranium	mg/L	03/24/2010	N001	52.5	- 62	0.096			0	0.000058	



**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1071 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	36.5	- 46	260			0	10	
Calcium	mg/L	03/24/2010	N001	36.5	- 46	930			0	0.12	
Chloride	mg/L	03/24/2010	N001	36.5	- 46	1100			0	40	
Magnesium	mg/L	03/24/2010	N001	36.5	- 46	1000			0	0.13	
Manganese	mg/L	03/24/2010	N001	36.5	- 46	60			0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	36.5	- 46	1100			0	10	
Oxidation Reduction Potential	mV	03/24/2010	N001	36.5	- 46	146			0		
pH	s.u.	03/24/2010	N001	36.5	- 46	8.02			0		
Potassium	mg/L	03/24/2010	N001	36.5	- 46	170			0	1.1	
Selenium	mg/L	03/24/2010	N001	36.5	- 46	2			0	0.00065	
Sodium	mg/L	03/24/2010	N001	36.5	- 46	3600			0	0.66	
Specific Conductance	umhos/cm	03/24/2010	N001	36.5	- 46	22360			0		
Strontium	mg/L	03/24/2010	N001	36.5	- 46	6.7			0	0.00078	
Sulfate	mg/L	03/24/2010	N001	36.5	- 46	6800			0	100	
Temperature	C	03/24/2010	N001	36.5	- 46	7.7			0		
Turbidity	NTU	03/24/2010	N001	36.5	- 46	9.98			0		
Uranium	mg/L	03/24/2010	N001	36.5	- 46	0.13			0	0.000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1073 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	0001	40.5	- 50	200		FQ	0	10	
Calcium	mg/L	03/25/2010	0001	40.5	- 50	540		FQ	0	0.12	
Chloride	mg/L	03/25/2010	0001	40.5	- 50	1000		FQ	0	40	
Magnesium	mg/L	03/25/2010	0001	40.5	- 50	1800		FQ	0	0.13	
Manganese	mg/L	03/25/2010	0001	40.5	- 50	1.3		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	0001	40.5	- 50	1300		FQ	0	10	
Oxidation Reduction Potential	mV	03/25/2010	N001	40.5	- 50	90		FQ	0		
pH	s.u.	03/25/2010	N001	40.5	- 50	7.01		FQ	0		
Potassium	mg/L	03/25/2010	0001	40.5	- 50	140		FQ	0	1.1	
Selenium	mg/L	03/25/2010	0001	40.5	- 50	2.3		FQ	0	0.0016	
Sodium	mg/L	03/25/2010	0001	40.5	- 50	2600		FQ	0	0.66	
Specific Conductance	umhos/cm	03/25/2010	N001	40.5	- 50	21410		FQ	0		
Strontium	mg/L	03/25/2010	0001	40.5	- 50	10		FQ	0	0.00078	
Sulfate	mg/L	03/25/2010	0001	40.5	- 50	8900		FQ	0	100	
Temperature	C	03/25/2010	N001	40.5	- 50	15.7		FQ	0		
Turbidity	NTU	03/25/2010	N001	40.5	- 50	21.3		FQ	0		
Uranium	mg/L	03/25/2010	0001	40.5	- 50	0.058		FQ	0	0.00015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1074 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	27	- 36.5	9.4		FQ	0	0.5	
Calcium	mg/L	03/23/2010	N001	27	- 36.5	560		FQ	0	0.12	
Chloride	mg/L	03/23/2010	N001	27	- 36.5	1000		FQ	0	40	
Magnesium	mg/L	03/23/2010	N001	27	- 36.5	2300		FQ	0	0.13	
Manganese	mg/L	03/23/2010	N001	27	- 36.5	2		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	27	- 36.5	1400		FQ	0	10	
Oxidation Reduction Potential	mV	03/23/2010	N001	27	- 36.5	50		FQ	0		
pH	s.u.	03/23/2010	N001	27	- 36.5	6.84		FQ	0		
Potassium	mg/L	03/23/2010	N001	27	- 36.5	61		FQ	0	1.1	
Selenium	mg/L	03/23/2010	N001	27	- 36.5	0.27		FQ	0	0.0032	
Sodium	mg/L	03/23/2010	N001	27	- 36.5	2300		FQ	0	0.066	
Specific Conductance	umhos/cm	03/23/2010	N001	27	- 36.5	21025		FQ	0		
Strontium	mg/L	03/23/2010	N001	27	- 36.5	11		FQ	0	0.00078	
Sulfate	mg/L	03/23/2010	N001	27	- 36.5	8600		FQ	0	100	
Temperature	C	03/23/2010	N001	27	- 36.5	14.8		FQ	0		
Turbidity	NTU	03/23/2010	N001	27	- 36.5	8.21		FQ	0		
Uranium	mg/L	03/23/2010	N001	27	- 36.5	1.9		FQ	0	0.00029	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1078 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	35.5	- 45	2.7			0	0.1	
Calcium	mg/L	03/24/2010	N001	35.5	- 45	400			0	0.12	
Chloride	mg/L	03/24/2010	N001	35.5	- 45	1100			0	40	
Magnesium	mg/L	03/24/2010	N001	35.5	- 45	1100			0	0.13	
Manganese	mg/L	03/24/2010	N001	35.5	- 45	0.12			0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	35.5	- 45	620			0	5	
Oxidation Reduction Potential	mV	03/24/2010	N001	35.5	- 45	165			0		
pH	s.u.	03/24/2010	N001	35.5	- 45	7.65			0		
Potassium	mg/L	03/24/2010	N001	35.5	- 45	75			0	1.1	
Selenium	mg/L	03/24/2010	N001	35.5	- 45	3			0	0.00065	
Sodium	mg/L	03/24/2010	N001	35.5	- 45	5100			0	0.66	
Specific Conductance	umhos/cm	03/24/2010	N001	35.5	- 45	24750			0		
Strontium	mg/L	03/24/2010	N001	35.5	- 45	9.7			0	0.00078	
Sulfate	mg/L	03/24/2010	N001	35.5	- 45	14000			0	100	
Temperature	C	03/24/2010	N001	35.5	- 45	15.6			0		
Turbidity	NTU	03/24/2010	N001	35.5	- 45	9.44			0		
Uranium	mg/L	03/24/2010	N001	35.5	- 45	0.15			0	0.000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1079 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/22/2010	N001	10.5	- 20	0.1	U	F	0	0.1	
Calcium	mg/L	03/22/2010	N001	10.5	- 20	540		F	0	0.024	
Chloride	mg/L	03/22/2010	N001	10.5	- 20	71		F	0	10	
Magnesium	mg/L	03/22/2010	N001	10.5	- 20	120		F	0	0.026	
Manganese	mg/L	03/22/2010	N001	10.5	- 20	0.0046	B	F	0	0.00023	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2010	N001	10.5	- 20	51		F	0	0.5	
Oxidation Reduction Potential	mV	03/22/2010	N001	10.5	- 20	215.2		F	0		
pH	s.u.	03/22/2010	N001	10.5	- 20	6.67		F	0		
Potassium	mg/L	03/22/2010	N001	10.5	- 20	7.9		F	0	0.22	
Selenium	mg/L	03/22/2010	N001	10.5	- 20	0.21		F	0	0.00032	
Sodium	mg/L	03/22/2010	N001	10.5	- 20	260		F	0	0.013	
Specific Conductance	umhos/cm	03/22/2010	N001	10.5	- 20	3658		F	0		
Strontium	mg/L	03/22/2010	N001	10.5	- 20	4.8		F	0	0.00016	
Sulfate	mg/L	03/22/2010	N001	10.5	- 20	1800		F	0	25	
Temperature	C	03/22/2010	N001	10.5	- 20	14.73		F	0		
Turbidity	NTU	03/22/2010	N001	10.5	- 20	8.65		F	0		
Uranium	mg/L	03/22/2010	N001	10.5	- 20	0.031		F	0	0.000029	

**General Water Quality Data by Location (USEE105) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

**REPORT DATE: 5/20/2010**

**Location: 1087 TREATMENT SYSTEM Sump from interceptor trenches in Bob Lee Wash**

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Ammonia Total as N	mg/L	03/24/2010	N001	0	-	0	190			0	10	
Calcium	mg/L	03/24/2010	N001	0	-	0	380			0	0.06	
Chloride	mg/L	03/24/2010	N001	0	-	0	240			0	20	
Magnesium	mg/L	03/24/2010	N001	0	-	0	960			0	0.065	
Manganese	mg/L	03/24/2010	N001	0	-	0	0.81			0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	0	-	0	190			0	1	
Oxidation Reduction Potential	mV	03/24/2010	N001	0	-	0	178			0		
pH	s.u.	03/24/2010	N001	0	-	0	6.97			0		
Potassium	mg/L	03/24/2010	N001	0	-	0	97			0	0.54	
Selenium	mg/L	03/24/2010	N001	0	-	0	0.056			0	0.00032	
Sodium	mg/L	03/24/2010	N001	0	-	0	1000			0	0.033	
Specific Conductance	umhos/cm	03/24/2010	N001	0	-	0	10200			0		
Strontium	mg/L	03/24/2010	N001	0	-	0	7.1			0	0.00039	
Sulfate	mg/L	03/24/2010	N001	0	-	0	5900			0	50	
Temperature	C	03/24/2010	N001	0	-	0	13.4			0		
Turbidity	NTU	03/24/2010	N001	0	-	0	5.43			0		
Uranium	mg/L	03/24/2010	N001	0	-	0	0.47			0	0.000029	

**General Water Quality Data by Location (USEE105) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

**REPORT DATE: 5/20/2010**

**Location: 1088 TREATMENT SYSTEM Sump from interceptor trenches in Many Devils Wash**

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Ammonia Total as N	mg/L	03/23/2010	N001	0	-	0	0.1	U		0	0.1	
Calcium	mg/L	03/23/2010	N001	0	-	0	430			0	0.3	
Chloride	mg/L	03/23/2010	N001	0	-	0	1700			0	100	
Magnesium	mg/L	03/23/2010	N001	0	-	0	1600			0	0.32	
Manganese	mg/L	03/23/2010	N001	0	-	0	0.014	B		0	0.0028	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	0	-	0	680			0	5	
Oxidation Reduction Potential	mV	03/23/2010	N001	0	-	0	262			0		
pH	s.u.	03/23/2010	N001	0	-	0	7.89			0		
Potassium	mg/L	03/23/2010	N001	0	-	0	60			0	2.7	
Selenium	mg/L	03/23/2010	N001	0	-	0	1.5			0	0.0016	
Sodium	mg/L	03/23/2010	N001	0	-	0	8600			0	0.66	
Specific Conductance	umhos/cm	03/23/2010	N001	0	-	0	33090			0		
Strontium	mg/L	03/23/2010	N001	0	-	0	10			0	0.0019	
Sulfate	mg/L	03/23/2010	N001	0	-	0	20000			0	250	
Temperature	C	03/23/2010	N001	0	-	0	7.92			0		
Turbidity	NTU	03/23/2010	N001	0	-	0	9.42			0		
Uranium	mg/L	03/23/2010	N001	0	-	0	0.17			0	0.00015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1091 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	33	- 43	0.32			0	0.1	
Calcium	mg/L	03/23/2010	N001	33	- 43	440			0	0.12	
Chloride	mg/L	03/23/2010	N001	33	- 43	1300			0	40	
Magnesium	mg/L	03/23/2010	N001	33	- 43	2400			0	0.13	
Manganese	mg/L	03/23/2010	N001	33	- 43	1.2			0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	33	- 43	1000			0	10	
Oxidation Reduction Potential	mV	03/23/2010	N001	33	- 43	72			0		
pH	s.u.	03/23/2010	N001	33	- 43	6.9			0		
Potassium	mg/L	03/23/2010	N001	33	- 43	86			0	1.1	
Selenium	mg/L	03/23/2010	N001	33	- 43	0.99			0	0.00065	
Sodium	mg/L	03/23/2010	N001	33	- 43	3500			0	0.66	
Specific Conductance	umhos/cm	03/23/2010	N001	33	- 43	25700			0		
Strontium	mg/L	03/23/2010	N001	33	- 43	13			0	0.00078	
Sulfate	mg/L	03/23/2010	N001	33	- 43	13000			0	100	
Temperature	C	03/23/2010	N001	33	- 43	12.1			0		
Turbidity	NTU	03/23/2010	N001	33	- 43	8.31			0		
Uranium	mg/L	03/23/2010	N001	33	- 43	0.11			0	0.000058	



**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1092 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	0001	33	- 43	290			0	10	
Calcium	mg/L	03/23/2010	0001	33	- 43	570			0	0.12	
Chloride	mg/L	03/23/2010	0001	33	- 43	950			0	40	
Magnesium	mg/L	03/23/2010	0001	33	- 43	1700			0	0.13	
Manganese	mg/L	03/23/2010	0001	33	- 43	8.9			0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	0001	33	- 43	1500			0	10	
Oxidation Reduction Potential	mV	03/23/2010	N001	33	- 43	72			0		
pH	s.u.	03/23/2010	N001	33	- 43	6.9			0		
Potassium	mg/L	03/23/2010	0001	33	- 43	130			0	1.1	
Selenium	mg/L	03/23/2010	0001	33	- 43	0.48			0	0.0016	
Sodium	mg/L	03/23/2010	0001	33	- 43	2900			0	0.66	
Specific Conductance	umhos/cm	03/23/2010	N001	33	- 43	23550			0		
Strontium	mg/L	03/23/2010	0001	33	- 43	11			0	0.00078	
Sulfate	mg/L	03/23/2010	0001	33	- 43	8200			0	100	
Temperature	C	03/23/2010	N001	33	- 43	8.7			0		
Turbidity	NTU	03/23/2010	N001	33	- 43	33.1			0		
Uranium	mg/L	03/23/2010	0001	33	- 43	0.057			0	0.00015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1093R WELL a replacement extraction well for 1093

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	34	- 38	680			0	100	
Calcium	mg/L	03/23/2010	N001	34	- 38	840			0	0.12	
Chloride	mg/L	03/23/2010	N001	34	- 38	690			0	40	
Magnesium	mg/L	03/23/2010	N001	34	- 38	2000			0	0.13	
Manganese	mg/L	03/23/2010	N001	34	- 38	35			0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	34	- 38	2300			0	20	
Oxidation Reduction Potential	mV	03/23/2010	N001	34	- 38	69			0		
pH	s.u.	03/23/2010	N001	34	- 38	6.65			0		
Potassium	mg/L	03/23/2010	N001	34	- 38	240			0	1.1	
Selenium	mg/L	03/23/2010	N001	34	- 38	0.67			0	0.00065	
Sodium	mg/L	03/23/2010	N001	34	- 38	1900			0	0.066	
Specific Conductance	umhos/cm	03/23/2010	N001	34	- 38	25770			0		
Strontium	mg/L	03/23/2010	N001	34	- 38	11			0	0.00078	
Sulfate	mg/L	03/23/2010	N001	34	- 38	6700			0	100	
Temperature	C	03/23/2010	N001	34	- 38	7.8			0		
Turbidity	NTU	03/23/2010	N001	34	- 38	9.34			0		
Uranium	mg/L	03/23/2010	N001	34	- 38	0.13			0	0.000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1095 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	39	- 49	980			0	100	
Calcium	mg/L	03/23/2010	N001	39	- 49	740			0	0.12	
Chloride	mg/L	03/23/2010	N001	39	- 49	340			0	40	
Magnesium	mg/L	03/23/2010	N001	39	- 49	1200			0	0.13	
Manganese	mg/L	03/23/2010	N001	39	- 49	32			0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	39	- 49	1500			0	10	
Oxidation Reduction Potential	mV	03/23/2010	N001	39	- 49	96			0		
pH	s.u.	03/23/2010	N001	39	- 49	6.73			0		
Potassium	mg/L	03/23/2010	N001	39	- 49	150			0	1.1	
Selenium	mg/L	03/23/2010	N001	39	- 49	0.21			0	0.00065	
Sodium	mg/L	03/23/2010	N001	39	- 49	980			0	0.066	
Specific Conductance	umhos/cm	03/23/2010	N001	39	- 49	17750			0		
Strontium	mg/L	03/23/2010	N001	39	- 49	7.4			0	0.00078	
Sulfate	mg/L	03/23/2010	N001	39	- 49	5500			0	100	
Temperature	C	03/23/2010	N001	39	- 49	15.2			0		
Turbidity	NTU	03/23/2010	N001	39	- 49	4.48			0		
Uranium	mg/L	03/23/2010	N001	39	- 49	0.047			0	0.000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1096 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	N001	57.5	- 66.5	2.7			0	0.1	
Calcium	mg/L	03/24/2010	N001	57.5	- 66.5	400			0	0.12	
Chloride	mg/L	03/24/2010	N001	57.5	- 66.5	1000			0	40	
Magnesium	mg/L	03/24/2010	N001	57.5	- 66.5	1100			0	0.13	
Manganese	mg/L	03/24/2010	N001	57.5	- 66.5	0.47			0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	57.5	- 66.5	640			0	5	
Oxidation Reduction Potential	mV	03/24/2010	N001	57.5	- 66.5	216			0		
pH	s.u.	03/24/2010	N001	57.5	- 66.5	7.11			0		
Potassium	mg/L	03/24/2010	N001	57.5	- 66.5	80			0	1.1	
Selenium	mg/L	03/24/2010	N001	57.5	- 66.5	2.8			0	0.00065	
Sodium	mg/L	03/24/2010	N001	57.5	- 66.5	4600			0	0.66	
Specific Conductance	umhos/cm	03/24/2010	N001	57.5	- 66.5	24660			0		
Strontium	mg/L	03/24/2010	N001	57.5	- 66.5	9.4			0	0.00078	
Sulfate	mg/L	03/24/2010	N001	57.5	- 66.5	14000			0	100	
Temperature	C	03/24/2010	N001	57.5	- 66.5	16.3			0		
Turbidity	NTU	03/24/2010	N001	57.5	- 66.5	7.28			0		
Uranium	mg/L	03/24/2010	N001	57.5	- 66.5	0.1			0	0.000058	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: DM7 WELL Just SW of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	0001	38	- 53	0.29		FQ	0	0.1	
Calcium	mg/L	03/24/2010	0001	38	- 53	400		FQ	0	0.12	
Chloride	mg/L	03/24/2010	0001	38	- 53	1600		FQ	0	40	
Magnesium	mg/L	03/24/2010	0001	38	- 53	310		FQ	0	0.13	
Manganese	mg/L	03/24/2010	0001	38	- 53	0.12		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	0001	38	- 53	290		FQ	0	2	
Oxidation Reduction Potential	mV	03/24/2010	N001	38	- 53	207		FQ	0		
pH	s.u.	03/24/2010	N001	38	- 53	7.48		FQ	0		
Potassium	mg/L	03/24/2010	0001	38	- 53	29		FQ	0	1.1	
Selenium	mg/L	03/24/2010	0001	38	- 53	0.05		FQ	0	0.0016	
Sodium	mg/L	03/24/2010	0001	38	- 53	4100		FQ	0	0.66	
Specific Conductance	umhos/cm	03/24/2010	N001	38	- 53	19560		FQ	0		
Strontium	mg/L	03/24/2010	0001	38	- 53	15		FQ	0	0.00078	
Sulfate	mg/L	03/24/2010	0001	38	- 53	9400		FQ	0	100	
Temperature	C	03/24/2010	N001	38	- 53	11.4		FQ	0		
Turbidity	NTU	03/24/2010	N001	38	- 53	31.4		FQ	0		
Uranium	mg/L	03/24/2010	0001	38	- 53	0.04		FQ	0	0.00015	

**Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: MW1 WELL Just N of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	-	0.62		FQ	0	0.1	
Calcium	mg/L	03/25/2010	N001	-	67		FQ	0	0.12	
Chloride	mg/L	03/25/2010	N001	-	4500		FQ	0	100	
Magnesium	mg/L	03/25/2010	N001	-	45		FQ	0	0.13	
Manganese	mg/L	03/25/2010	N001	-	0.088		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	-	0.49		FQ	0	0.01	
Oxidation Reduction Potential	mV	03/25/2010	N001	-	88		FQ	0		
pH	s.u.	03/25/2010	N001	-	6.94		FQ	0		
Potassium	mg/L	03/25/2010	N001	-	20		FQ	0	1.1	
Selenium	mg/L	03/25/2010	N001	-	0.00065	U	FQ	0	0.00065	
Sodium	mg/L	03/25/2010	N001	-	3600		FQ	0	0.66	
Specific Conductance	umhos/cm	03/25/2010	N001	-	18140		FQ	0		
Strontium	mg/L	03/25/2010	N001	-	7.3		FQ	0	0.00078	
Sulfate	mg/L	03/25/2010	N001	-	2000		FQ	0	100	
Temperature	C	03/25/2010	N001	-	16.4		FQ	0		
Turbidity	NTU	03/25/2010	N001	-	7.35		FQ	0		
Uranium	mg/L	03/25/2010	N001	-	0.0004		FQ	0	0.000058	

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: 5/20/2010

Location: 0501 SURFACE LOCATION S. bank San Juan River just E of Disposal Cell

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	0001	0.1	U		0	0.1	
Calcium	mg/L	03/23/2010	0001	69			0	0.012	
Chloride	mg/L	03/23/2010	0001	20			0	1	
Magnesium	mg/L	03/23/2010	0001	13	N	J	0	0.013	
Manganese	mg/L	03/23/2010	0001	0.011	E		0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	0001	0.71			0	0.01	
Potassium	mg/L	03/23/2010	0001	4.6	N	J	0	0.11	
Selenium	mg/L	03/23/2010	0001	0.001			0	0.000032	
Sodium	mg/L	03/23/2010	0001	42	E	J	0	0.0066	
Strontium	mg/L	03/23/2010	0001	0.87			0	0.000078	
Sulfate	mg/L	03/23/2010	0001	160			0	2.5	
Uranium	mg/L	03/23/2010	0001	0.0019			0	0.0000029	
Ammonia Total as N	mg/L	03/23/2010	N001	0.1	U		0	0.1	
Calcium	mg/L	03/23/2010	N001	75			0	0.012	
Chloride	mg/L	03/23/2010	N001	14			0	1	
Magnesium	mg/L	03/23/2010	N001	16			0	0.013	
Manganese	mg/L	03/23/2010	N001	0.29			0	0.00011	

**Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0501 SURFACE LOCATION S. bank San Juan River just E of Disposal Cell

Parameter	Units	Sample		Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID		Lab	Data		
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	0.58		0	0.01	
Oxidation Reduction Potential	mV	03/23/2010	N001	205.9		0		
pH	s.u.	03/23/2010	N001	7.7		0		
Potassium	mg/L	03/23/2010	N001	5.4		0	0.11	
Selenium	mg/L	03/23/2010	N001	0.0018		0	0.000032	
Sodium	mg/L	03/23/2010	N001	41		0	0.0066	
Specific Conductance	umhos/cm	03/23/2010	N001	597		0		
Strontium	mg/L	03/23/2010	N001	0.95		0	0.000078	
Sulfate	mg/L	03/23/2010	N001	150		0	2.5	
Temperature	C	03/23/2010	N001	6.68		0		
Turbidity	NTU	03/23/2010	N001	751		0		
Uranium	mg/L	03/23/2010	N001	0.0025		0	0.0000029	

**Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0655 SURFACE LOCATION Ditch in NW end of floodplain

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/26/2010	N001	0.1	U		0	0.1	
Calcium	mg/L	03/26/2010	N001	330			0	0.06	
Chloride	mg/L	03/26/2010	N001	99			0	20	
Magnesium	mg/L	03/26/2010	N001	91			0	0.065	
Manganese	mg/L	03/26/2010	N001	0.2			0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2010	N001	0.9			0	0.01	
Oxidation Reduction Potential	mV	03/26/2010	N001	195			0		
pH	s.u.	03/26/2010	N001	7.58			0		
Potassium	mg/L	03/26/2010	N001	16			0	0.54	
Selenium	mg/L	03/26/2010	N001	0.0023			0	0.00032	
Sodium	mg/L	03/26/2010	N001	1300			0	0.66	
Specific Conductance	umhos/cm	03/26/2010	N001	7090			0		
Strontium	mg/L	03/26/2010	N001	13			0	0.00039	
Sulfate	mg/L	03/26/2010	N001	3900			0	50	
Temperature	C	03/26/2010	N001	7.6			0		
Turbidity	NTU	03/26/2010	N001	4.21			0		
Uranium	mg/L	03/26/2010	N001	0.069			0	0.000029	

**Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0897 SURFACE LOCATION S. bank San Juan River, just below Many Devils Wash confluence

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/26/2010	0001	0.1	U		0	0.1	
Calcium	mg/L	03/26/2010	0001	67			0	0.012	
Chloride	mg/L	03/26/2010	0001	14			0	2	
Magnesium	mg/L	03/26/2010	0001	13			0	0.013	
Manganese	mg/L	03/26/2010	0001	0.0067			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2010	0001	0.62			0	0.01	
Potassium	mg/L	03/26/2010	0001	2.8			0	0.11	
Selenium	mg/L	03/26/2010	0001	0.0012			0	0.000032	
Sodium	mg/L	03/26/2010	0001	41			0	0.0066	
Strontium	mg/L	03/26/2010	0001	0.87			0	0.000078	
Sulfate	mg/L	03/26/2010	0001	150			0	5	
Uranium	mg/L	03/26/2010	0001	0.0018			0	0.0000029	
Ammonia Total as N	mg/L	03/26/2010	N001	0.1	U		0	0.1	
Calcium	mg/L	03/26/2010	N001	81			0	0.012	
Chloride	mg/L	03/26/2010	N001	14			0	2	
Magnesium	mg/L	03/26/2010	N001	15			0	0.013	
Manganese	mg/L	03/26/2010	N001	0.47			0	0.00011	

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**Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0897 SURFACE LOCATION S. bank San Juan River, just below Many Devils Wash confluence

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2010	N001	0.55			0	0.01	
Oxidation Reduction Potential	mV	03/26/2010	N001	126.1			0		
pH	s.u.	03/26/2010	N001	7.12			0		
Potassium	mg/L	03/26/2010	N001	3.2			0	0.11	
Selenium	mg/L	03/26/2010	N001	0.0013			0	0.000032	
Sodium	mg/L	03/26/2010	N001	39			0	0.0066	
Specific Conductance	umhos/cm	03/26/2010	N001	659			0		
Strontium	mg/L	03/26/2010	N001	0.97			0	0.000078	
Sulfate	mg/L	03/26/2010	N001	150			0	5	
Temperature	C	03/26/2010	N001	8.38			0		
Uranium	mg/L	03/26/2010	N001	0.0024			0	0.0000029	

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**Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0898 SURFACE LOCATION S. bank San Juan River, N of floodplain background area

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	0001	0.1	U		0	0.1	
Calcium	mg/L	03/25/2010	0001	67			0	0.012	
Chloride	mg/L	03/25/2010	0001	15			0	1	
Magnesium	mg/L	03/25/2010	0001	12			0	0.013	
Manganese	mg/L	03/25/2010	0001	0.0087			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	0001	0.53			0	0.01	
Potassium	mg/L	03/25/2010	0001	3			0	0.11	
Selenium	mg/L	03/25/2010	0001	0.001			0	0.000032	
Sodium	mg/L	03/25/2010	0001	43			0	0.0066	
Strontium	mg/L	03/25/2010	0001	0.88			0	0.000078	
Sulfate	mg/L	03/25/2010	0001	160			0	2.5	
Uranium	mg/L	03/25/2010	0001	0.0019			0	0.0000029	
Ammonia Total as N	mg/L	03/25/2010	N001	0.1	U		0	0.1	
Calcium	mg/L	03/25/2010	N001	89			0	0.012	
Chloride	mg/L	03/25/2010	N001	14			0	2	
Magnesium	mg/L	03/25/2010	N001	16			0	0.013	
Manganese	mg/L	03/25/2010	N001	0.8			0	0.00011	



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**Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0898 SURFACE LOCATION S. bank San Juan River, N of floodplain background area

Parameter	Units	Sample		Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID		Lab	Data QA		
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	0.53		0	0.01	
Oxidation Reduction Potential	mV	03/25/2010	N001	37.2		0		
pH	s.u.	03/25/2010	N001	8.95		0		
Potassium	mg/L	03/25/2010	N001	3.8		0	0.11	
Selenium	mg/L	03/25/2010	N001	0.0015		0	0.000032	
Sodium	mg/L	03/25/2010	N001	42		0	0.0066	
Specific Conductance	umhos/cm	03/25/2010	N001	687		0		
Strontium	mg/L	03/25/2010	N001	1		0	0.000078	
Sulfate	mg/L	03/25/2010	N001	150		0	5	
Temperature	C	03/25/2010	N001	8.39		0		
Turbidity	NTU	03/25/2010	N001	1000		0		
Uranium	mg/L	03/25/2010	N001	0.0028		0	0.0000029	

**Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0899 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/24/2010	0001	0.1	U		0	0.1	
Calcium	mg/L	03/24/2010	0001	65			0	0.012	
Chloride	mg/L	03/24/2010	0001	14			0	1	
Magnesium	mg/L	03/24/2010	0001	13			0	0.013	
Manganese	mg/L	03/24/2010	0001	0.007			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	0001	0.54			0	0.01	
Potassium	mg/L	03/24/2010	0001	2.9			0	0.11	
Selenium	mg/L	03/24/2010	0001	0.0016			0	0.000032	
Sodium	mg/L	03/24/2010	0001	40			0	0.0066	
Strontium	mg/L	03/24/2010	0001	0.85			0	0.000078	
Sulfate	mg/L	03/24/2010	0001	140			0	2.5	
Uranium	mg/L	03/24/2010	0001	0.0024			0	0.0000029	
Ammonia Total as N	mg/L	03/24/2010	N001	0.1	U		0	0.1	
Calcium	mg/L	03/24/2010	N001	69			0	0.012	
Chloride	mg/L	03/24/2010	N001	14			0	1	
Magnesium	mg/L	03/24/2010	N001	13			0	0.013	
Manganese	mg/L	03/24/2010	N001	0.23			0	0.00011	

**Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0899 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID		Lab	Data		
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	0.51		0	0.01	
Oxidation Reduction Potential	mV	03/24/2010	N001	114.7		0		
pH	s.u.	03/24/2010	N001	8.26		0		
Potassium	mg/L	03/24/2010	N001	2.7		0	0.11	
Selenium	mg/L	03/24/2010	N001	0.0016		0	0.000032	
Sodium	mg/L	03/24/2010	N001	39		0	0.0066	
Specific Conductance	umhos/cm	03/24/2010	N001	617		0		
Strontium	mg/L	03/24/2010	N001	0.83		0	0.000078	
Sulfate	mg/L	03/24/2010	N001	140		0	2.5	
Temperature	C	03/24/2010	N001	9.82		0		
Turbidity	NTU	03/24/2010	N001	584		0		
Uranium	mg/L	03/24/2010	N001	0.0028		0	0.0000029	

**Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0940 SURFACE LOCATION S. bank San Juan River about 2500 ft E of US Hwy 666 bridge

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	0001	0.1	U		0	0.1	
Calcium	mg/L	03/25/2010	0001	67			0	0.012	
Chloride	mg/L	03/25/2010	0001	14			0	1	
Magnesium	mg/L	03/25/2010	0001	12			0	0.013	
Manganese	mg/L	03/25/2010	0001	0.0055			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	0001	0.55			0	0.01	
Potassium	mg/L	03/25/2010	0001	2.9			0	0.11	
Selenium	mg/L	03/25/2010	0001	0.0011			0	0.000032	
Sodium	mg/L	03/25/2010	0001	41			0	0.0066	
Strontium	mg/L	03/25/2010	0001	0.86			0	0.000078	
Sulfate	mg/L	03/25/2010	0001	150			0	2.5	
Uranium	mg/L	03/25/2010	0001	0.0019			0	0.0000029	
Ammonia Total as N	mg/L	03/25/2010	N001	0.1	U		0	0.1	
Calcium	mg/L	03/25/2010	N001	86			0	0.012	
Chloride	mg/L	03/25/2010	N001	14			0	1	
Magnesium	mg/L	03/25/2010	N001	15			0	0.013	
Manganese	mg/L	03/25/2010	N001	0.64			0	0.00011	

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**Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0940 SURFACE LOCATION S. bank San Juan River about 2500 ft E of US Hwy 666 bridge

Parameter	Units	Sample		Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID		Lab	Data		
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	0.53		0	0.01	
Oxidation Reduction Potential	mV	03/25/2010	N001	90.7		0		
pH	s.u.	03/25/2010	N001	8.21		0		
Potassium	mg/L	03/25/2010	N001	3.4		0	0.11	
Selenium	mg/L	03/25/2010	N001	0.0014		0	0.000032	
Sodium	mg/L	03/25/2010	N001	40		0	0.0066	
Specific Conductance	umhos/cm	03/25/2010	N001	612		0		
Strontium	mg/L	03/25/2010	N001	0.96		0	0.000078	
Sulfate	mg/L	03/25/2010	N001	150		0	2.5	
Temperature	C	03/25/2010	N001	12.39		0		
Turbidity	NTU	03/25/2010	N001	1000	>	0		
Uranium	mg/L	03/25/2010	N001	0.0027		0	0.0000029	

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**Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0956 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/26/2010	0001	0.1	U		0	0.1	
Calcium	mg/L	03/26/2010	0001	66			0	0.012	
Chloride	mg/L	03/26/2010	0001	14			0	1	
Magnesium	mg/L	03/26/2010	0001	12			0	0.013	
Manganese	mg/L	03/26/2010	0001	0.01			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2010	0001	0.49			0	0.01	
Potassium	mg/L	03/26/2010	0001	2.7			0	0.11	
Selenium	mg/L	03/26/2010	0001	0.00098			0	0.000032	
Sodium	mg/L	03/26/2010	0001	38			0	0.0066	
Strontium	mg/L	03/26/2010	0001	0.84			0	0.000078	
Sulfate	mg/L	03/26/2010	0001	140			0	2.5	
Uranium	mg/L	03/26/2010	0001	0.0017			0	0.0000029	
Ammonia Total as N	mg/L	03/26/2010	N001	0.1	U		0	0.1	
Calcium	mg/L	03/26/2010	N001	73			0	0.012	
Chloride	mg/L	03/26/2010	N001	14			0	1	
Magnesium	mg/L	03/26/2010	N001	13			0	0.013	
Manganese	mg/L	03/26/2010	N001	0.29			0	0.00011	

**Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0956 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2010	N001	0.47			0	0.01	
Oxidation Reduction Potential	mV	03/26/2010	N001	90.2			0		
pH	s.u.	03/26/2010	N001	6.86			0		
Potassium	mg/L	03/26/2010	N001	2.7			0	0.11	
Selenium	mg/L	03/26/2010	N001	0.0011			0	0.000032	
Sodium	mg/L	03/26/2010	N001	37			0	0.0066	
Specific Conductance	umhos/cm	03/26/2010	N001	723			0		
Strontium	mg/L	03/26/2010	N001	0.86			0	0.000078	
Sulfate	mg/L	03/26/2010	N001	140			0	2.5	
Temperature	C	03/26/2010	N001	7.92			0		
Turbidity	NTU	03/26/2010	N001	1000			0		
Uranium	mg/L	03/26/2010	N001	0.0021			0	0.0000029	

**Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0965 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/26/2010	0001	0.1	U		0	0.1	
Calcium	mg/L	03/26/2010	0001	67			0	0.012	
Chloride	mg/L	03/26/2010	0001	14			0	1	
Magnesium	mg/L	03/26/2010	0001	12			0	0.013	
Manganese	mg/L	03/26/2010	0001	0.01			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2010	0001	0.49			0	0.01	
Potassium	mg/L	03/26/2010	0001	2.8			0	0.11	
Selenium	mg/L	03/26/2010	0001	0.0011			0	0.000032	
Sodium	mg/L	03/26/2010	0001	40			0	0.0066	
Strontium	mg/L	03/26/2010	0001	0.85			0	0.000078	
Sulfate	mg/L	03/26/2010	0001	150			0	2.5	
Uranium	mg/L	03/26/2010	0001	0.0018			0	0.0000029	
Ammonia Total as N	mg/L	03/26/2010	N001	0.1	U		0	0.1	
Calcium	mg/L	03/26/2010	N001	80			0	0.012	
Chloride	mg/L	03/26/2010	N001	14			0	1	
Magnesium	mg/L	03/26/2010	N001	15			0	0.013	
Manganese	mg/L	03/26/2010	N001	0.46			0	0.00011	



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**Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 0965 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID		Lab	Data		
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2010	N001	0.57		0	0.01	
Oxidation Reduction Potential	mV	03/26/2010	N001	181.1		0		
pH	s.u.	03/26/2010	N001	5.88		0		
Potassium	mg/L	03/26/2010	N001	3		0	0.11	
Selenium	mg/L	03/26/2010	N001	0.0012		0	0.000032	
Sodium	mg/L	03/26/2010	N001	38		0	0.0066	
Specific Conductance	umhos/cm	03/26/2010	N001	741		0		
Strontium	mg/L	03/26/2010	N001	0.93		0	0.000078	
Sulfate	mg/L	03/26/2010	N001	150		0	2.5	
Temperature	C	03/26/2010	N001	8.02		0		
Turbidity	NTU	03/26/2010	N001	1000		0		
Uranium	mg/L	03/26/2010	N001	0.0024		0	0.0000029	

**General Water Quality Data by Location (USEE105) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

**REPORT DATE: 5/20/2010**

**Location: 1118 TREATMENT SYSTEM Sump - seep vault**

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/26/2010	N001	0	-	0	0.1	U		0	0.1	
Calcium	mg/L	03/26/2010	N001	0	-	0	390			0	0.06	
Chloride	mg/L	03/26/2010	N001	0	-	0	360			0	20	
Magnesium	mg/L	03/26/2010	N001	0	-	0	930			0	0.065	
Manganese	mg/L	03/26/2010	N001	0	-	0	0.018	B		0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2010	N001	0	-	0	38			0	0.5	
Oxidation Reduction Potential	mV	03/26/2010	N001	0	-	0	65.7			0		
pH	s.u.	03/26/2010	N001	0	-	0	7.67			0		
Potassium	mg/L	03/26/2010	N001	0	-	0	58			0	0.54	
Selenium	mg/L	03/26/2010	N001	0	-	0	0.1			0	0.00032	
Sodium	mg/L	03/26/2010	N001	0	-	0	1500			0	0.66	
Specific Conductance	umhos/cm	03/26/2010	N001	0	-	0	11030			0		
Strontium	mg/L	03/26/2010	N001	0	-	0	8.2			0	0.00039	
Sulfate	mg/L	03/26/2010	N001	0	-	0	7100			0	50	
Temperature	C	03/26/2010	N001	0	-	0	7.15			0		
Turbidity	NTU	03/26/2010	N001	0	-	0	4.89			0		
Uranium	mg/L	03/26/2010	N001	0	-	0	0.67			0	0.000029	

**Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1203 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	0001	0.1	U		0	0.1	
Calcium	mg/L	03/23/2010	0001	69			0	0.012	
Chloride	mg/L	03/23/2010	0001	15			0	1	
Magnesium	mg/L	03/23/2010	0001	13			0	0.013	
Manganese	mg/L	03/23/2010	0001	0.017			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	0001	0.53			0	0.01	
Potassium	mg/L	03/23/2010	0001	3			0	0.11	
Selenium	mg/L	03/23/2010	0001	0.0011			0	0.000032	
Sodium	mg/L	03/23/2010	0001	41			0	0.0066	
Strontium	mg/L	03/23/2010	0001	0.89			0	0.000078	
Sulfate	mg/L	03/23/2010	0001	160			0	2.5	
Uranium	mg/L	03/23/2010	0001	0.002			0	0.0000029	
Ammonia Total as N	mg/L	03/23/2010	N001	0.1	U		0	0.1	
Calcium	mg/L	03/23/2010	N001	73			0	0.012	
Chloride	mg/L	03/23/2010	N001	15			0	1	
Magnesium	mg/L	03/23/2010	N001	15			0	0.013	
Manganese	mg/L	03/23/2010	N001	0.28			0	0.00011	

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**Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1203 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID		Lab	Data		
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	0.66		0	0.01	
Oxidation Reduction Potential	mV	03/23/2010	N001	105.3		0		
pH	s.u.	03/23/2010	N001	8.25		0		
Potassium	mg/L	03/23/2010	N001	4.8		0	0.11	
Selenium	mg/L	03/23/2010	N001	0.0017		0	0.000032	
Sodium	mg/L	03/23/2010	N001	41		0	0.0066	
Specific Conductance	umhos/cm	03/23/2010	N001	588		0		
Strontium	mg/L	03/23/2010	N001	0.91		0	0.000078	
Sulfate	mg/L	03/23/2010	N001	160		0	2.5	
Temperature	C	03/23/2010	N001	9.91		0		
Turbidity	NTU	03/23/2010	N001	547		0		
Uranium	mg/L	03/23/2010	N001	0.0024		0	0.0000029	

**Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1205 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Ammonia Total as N	mg/L	03/24/2010	0001	0.1	U		0	0.1	
Calcium	mg/L	03/24/2010	0001	66			0	0.012	
Chloride	mg/L	03/24/2010	0001	15			0	1	
Magnesium	mg/L	03/24/2010	0001	12			0	0.013	
Manganese	mg/L	03/24/2010	0001	0.0086			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	0001	0.47			0	0.01	
Potassium	mg/L	03/24/2010	0001	2.8			0	0.11	
Selenium	mg/L	03/24/2010	0001	0.0011			0	0.000032	
Sodium	mg/L	03/24/2010	0001	39			0	0.0066	
Strontium	mg/L	03/24/2010	0001	0.85			0	0.000078	
Sulfate	mg/L	03/24/2010	0001	140			0	2.5	
Uranium	mg/L	03/24/2010	0001	0.0019			0	0.0000029	
Ammonia Total as N	mg/L	03/24/2010	N001	0.1	U		0	0.1	
Calcium	mg/L	03/24/2010	N001	70			0	0.012	
Chloride	mg/L	03/24/2010	N001	15			0	1	
Magnesium	mg/L	03/24/2010	N001	14			0	0.013	
Manganese	mg/L	03/24/2010	N001	0.27			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2010	N001	0.54			0	0.01	
Oxidation Reduction Potential	mV	03/24/2010	N001	163.8			0		
pH	s.u.	03/24/2010	N001	8.22			0		
Potassium	mg/L	03/24/2010	N001	4.4			0	0.11	
Selenium	mg/L	03/24/2010	N001	0.0023			0	0.000032	

**Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)**

REPORT DATE: 5/20/2010

Location: 1205 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Sodium	mg/L	03/24/2010	N001	38			0	0.0066	
Specific Conductance	umhos/cm	03/24/2010	N001	566			0		
Strontium	mg/L	03/24/2010	N001	0.84			0	0.000078	
Sulfate	mg/L	03/24/2010	N001	150			0	2.5	
Temperature	C	03/24/2010	N001	5.32			0		
Turbidity	NTU	03/24/2010	N001	578			0		
Uranium	mg/L	03/24/2010	N001	0.0023			0	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.
- L Less than 3 bore volumes purged prior to sampling.
- U Parameter analyzed for but was not detected.
- G Possible grout contamination, pH > 9.
- Q Qualitative result due to sampling technique.
- X Location is undefined.
- J Estimated value.
- R Unusable result.

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: 5/20/2010

Location: 0662 SURFACE LOCATION Bob Lee Wash, just below outflow ditch confluence

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	0001	0.1	U		0	0.1	
Calcium	mg/L	03/25/2010	0001	110			0	0.06	
Chloride	mg/L	03/25/2010	0001	56			0	10	
Magnesium	mg/L	03/25/2010	0001	14			0	0.065	
Manganese	mg/L	03/25/2010	0001	0.0065	B		0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	0001	0.32			0	0.01	
Potassium	mg/L	03/25/2010	0001	8.1			0	0.54	
Selenium	mg/L	03/25/2010	0001	0.00009	B		0	0.000065	
Sodium	mg/L	03/25/2010	0001	740			0	0.033	
Strontium	mg/L	03/25/2010	0001	11			0	0.00039	
Sulfate	mg/L	03/25/2010	0001	1900			0	25	
Uranium	mg/L	03/25/2010	0001	0.00051			0	0.000058	
Oxidation Reduction Potential	mV	03/25/2010	N001	77			0		
pH	s.u.	03/25/2010	N001	8.1			0		
Specific Conductance	umhos/cm	03/25/2010	N001	3950			0		
Temperature	C	03/25/2010	N001	20.4			0		
Turbidity	NTU	03/25/2010	N001	14.2			0		

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**Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0889 SURFACE LOCATION Many Devils Wash, just below knickpoint

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	0001	0.1	U		0	0.1	
Calcium	mg/L	03/25/2010	0001	380			0	0.3	
Chloride	mg/L	03/25/2010	0001	2200			0	100	
Magnesium	mg/L	03/25/2010	0001	2000			0	0.32	
Manganese	mg/L	03/25/2010	0001	0.0028	U		0	0.0028	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	0001	890			0	5	
Potassium	mg/L	03/25/2010	0001	75			0	2.7	
Selenium	mg/L	03/25/2010	0001	2			0	0.0016	
Sodium	mg/L	03/25/2010	0001	9600			0	0.66	
Strontium	mg/L	03/25/2010	0001	8.9			0	0.0019	
Sulfate	mg/L	03/25/2010	0001	26000			0	250	
Uranium	mg/L	03/25/2010	0001	0.2			0	0.00015	
Oxidation Reduction Potential	mV	03/25/2010	N001	136.2			0		
pH	s.u.	03/25/2010	N001	9.09			0		
Specific Conductance	umhos/cm	03/25/2010	N001	43920			0		
Temperature	C	03/25/2010	N001	16.24			0		
Turbidity	NTU	03/25/2010	N001	15.2			0		

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**Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0949 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	0001	0.1	U		0	0.1	
Calcium	mg/L	03/25/2010	0001	500			0	0.06	
Chloride	mg/L	03/25/2010	0001	100			0	10	
Magnesium	mg/L	03/25/2010	0001	200			0	0.065	
Manganese	mg/L	03/25/2010	0001	0.016	B		0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	0001	53			0	0.5	
Potassium	mg/L	03/25/2010	0001	9.2	N	J	0	0.54	
Selenium	mg/L	03/25/2010	0001	0.37			0	0.00032	
Sodium	mg/L	03/25/2010	0001	490			0	0.033	
Strontium	mg/L	03/25/2010	0001	5.5			0	0.00039	
Sulfate	mg/L	03/25/2010	0001	2700			0	25	
Uranium	mg/L	03/25/2010	0001	0.039			0	0.000029	
Ammonia Total as N	mg/L	03/25/2010	0002	0.1	U		0	0.1	
Calcium	mg/L	03/25/2010	0002	500			0	0.06	
Chloride	mg/L	03/25/2010	0002	100			0	10	
Magnesium	mg/L	03/25/2010	0002	200			0	0.065	
Manganese	mg/L	03/25/2010	0002	0.012	B		0	0.00057	

**Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 0949 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID		Lab	Data		
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	0002	45		0	0.5	
Potassium	mg/L	03/25/2010	0002	8.4		0	0.54	
Selenium	mg/L	03/25/2010	0002	0.35		0	0.00032	
Sodium	mg/L	03/25/2010	0002	470		0	0.033	
Strontium	mg/L	03/25/2010	0002	5.7		0	0.00039	
Sulfate	mg/L	03/25/2010	0002	2600		0	25	
Uranium	mg/L	03/25/2010	0002	0.035		0	0.000029	
Oxidation Reduction Potential	mV	03/25/2010	N001	8		0		
pH	s.u.	03/25/2010	N001	7.58		0		
Specific Conductance	umhos/cm	03/25/2010	N001	4870		0		
Temperature	C	03/25/2010	N001	12		0		
Turbidity	NTU	03/25/2010	N001	13.3		0		

**Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1215 SURFACE LOCATION Evaporation Pond

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/23/2010	N001	32			0	2	
Calcium	mg/L	03/23/2010	N001	450			0	0.3	
Chloride	mg/L	03/23/2010	N001	1500			0	100	
Magnesium	mg/L	03/23/2010	N001	3800			0	0.32	
Manganese	mg/L	03/23/2010	N001	0.74			0	0.0028	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2010	N001	880			0	10	
Oxidation Reduction Potential	mV	03/23/2010	N001	17			0		
pH	s.u.	03/23/2010	N001	8.45			0		
Potassium	mg/L	03/23/2010	N001	360			0	2.7	
Selenium	mg/L	03/23/2010	N001	1.4			0	0.0016	
Sodium	mg/L	03/23/2010	N001	7600			0	0.66	
Specific Conductance	umhos/cm	03/23/2010	N001	36900			0		
Strontium	mg/L	03/23/2010	N001	10			0	0.0019	
Sulfate	mg/L	03/23/2010	N001	27000			0	250	
Temperature	C	03/23/2010	N001	8.7			0		
Turbidity	NTU	03/23/2010	N001	9.43			0		
Uranium	mg/L	03/23/2010	N001	2.1			0	0.00015	

**Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1218 SURFACE LOCATION Seep in Washing Machine Draw

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	03/25/2010	N001	0.1	U		0	0.1	
Calcium	mg/L	03/25/2010	N001	400			0	0.12	
Chloride	mg/L	03/25/2010	N001	170			0	20	
Magnesium	mg/L	03/25/2010	N001	720			0	0.13	
Manganese	mg/L	03/25/2010	N001	0.02	B		0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	N001	120			0	1	
Oxidation Reduction Potential	mV	03/25/2010	N001	153.9			0		
pH	s.u.	03/25/2010	N001	8.65			0		
Potassium	mg/L	03/25/2010	N001	25			0	1.1	
Selenium	mg/L	03/25/2010	N001	0.085			0	0.00032	
Sodium	mg/L	03/25/2010	N001	2300			0	0.066	
Specific Conductance	umhos/cm	03/25/2010	N001	14488			0		
Strontium	mg/L	03/25/2010	N001	7.8			0	0.00078	
Sulfate	mg/L	03/25/2010	N001	8800			0	50	
Temperature	C	03/25/2010	N001	14.95			0		
Turbidity	NTU	03/25/2010	N001	9.7			0		
Uranium	mg/L	03/25/2010	N001	0.079			0	0.000029	

**Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1220 SURFACE LOCATION Seep at the Eagles Nest Arroyo east of town

Parameter	Units	Sample		Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID		Lab	Data		
Ammonia Total as N	mg/L	03/25/2010	0001	0.1	U	0	0.1	
Calcium	mg/L	03/25/2010	0001	270		0	0.024	
Chloride	mg/L	03/25/2010	0001	22		0	4	
Magnesium	mg/L	03/25/2010	0001	76		0	0.026	
Manganese	mg/L	03/25/2010	0001	0.18		0	0.00023	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2010	0001	0.035		0	0.01	
Potassium	mg/L	03/25/2010	0001	1.8	BN	J	0	0.22
Selenium	mg/L	03/25/2010	0001	0.0076		0	0.00032	
Sodium	mg/L	03/25/2010	0001	84		0	0.013	
Strontium	mg/L	03/25/2010	0001	2.8		0	0.00016	
Sulfate	mg/L	03/25/2010	0001	760		0	10	
Uranium	mg/L	03/25/2010	0001	0.017		0	0.000029	
Oxidation Reduction Potential	mV	03/25/2010	N001	125		0		
pH	s.u.	03/25/2010	N001	9.54		0		
Specific Conductance	umhos/cm	03/25/2010	N001	1898		0		
Temperature	C	03/25/2010	N001	10.44		0		
Turbidity	NTU	03/25/2010	N001	1000		0		

---

**Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)**

REPORT DATE: 5/20/2010

Location: 1221 SURFACE LOCATION Many Devils Wash, 10 feet up from the river.

Parameter	Units	Sample		Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID		Lab	Data QA		
Ammonia Total as N	mg/L	03/26/2010	0001	0.1	U	0	0.1	
Calcium	mg/L	03/26/2010	0001	430		0	0.3	
Chloride	mg/L	03/26/2010	0001	2300		0	100	
Magnesium	mg/L	03/26/2010	0001	2100		0	0.32	
Manganese	mg/L	03/26/2010	0001	0.019	B	0	0.0028	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2010	0001	760		0	5	
Potassium	mg/L	03/26/2010	0001	76		0	2.7	
Selenium	mg/L	03/26/2010	0001	1.9		0	0.0016	
Sodium	mg/L	03/26/2010	0001	8700		0	0.66	
Strontium	mg/L	03/26/2010	0001	9.6		0	0.0019	
Sulfate	mg/L	03/26/2010	0001	26000		0	250	
Uranium	mg/L	03/26/2010	0001	0.21		0	0.00015	
Oxidation Reduction Potential	mV	03/26/2010	N001	201.8		0		
pH	s.u.	03/26/2010	N001	8.65		0		
Specific Conductance	umhos/cm	03/26/2010	N001	43699		0		
Temperature	C	03/26/2010	N001	7.67		0		
Turbidity	NTU	03/26/2010	N001	223		0		

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: 10032912

Report Date: 5/20/2010

Parameter	Site Code	Location ID	Sample Date	Sample ID	Units	Result	Qualifiers Lab Data	Detection Limit	Uncertainty	Sample Type
Ammonia Total as N	SHP01	0999	03/26/2010	N001	mg/L	0.1	U	0.1		E
Calcium	SHP01	0999	03/26/2010	N001	mg/L	0.11	B	0.012		E
Chloride	SHP01	0999	03/26/2010	N001	mg/L	0.2	U	0.2		E
Magnesium	SHP01	0999	03/26/2010	N001	mg/L	0.013	U	0.013		E
Manganese	SHP01	0999	03/26/2010	N001	mg/L	0.00011	U	0.00011		E
Nitrate + Nitrite as Nitrogen	SHP01	0999	03/26/2010	N001	mg/L	0.01	U	0.01		E
Potassium	SHP01	0999	03/26/2010	N001	mg/L	0.11	U	0.11		E
Selenium	SHP01	0999	03/26/2010	N001	mg/L	0.000095	B	0.000032		E
Sodium	SHP01	0999	03/26/2010	N001	mg/L	0.0066	U	0.0066		E
Strontium	SHP01	0999	03/26/2010	N001	mg/L	0.000078	U	0.000078		E
Sulfate	SHP01	0999	03/26/2010	N001	mg/L	0.5	U	0.5		E
Uranium	SHP01	0999	03/26/2010	N001	mg/L	0.000003	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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Location Code	Top of Casing Elevation (Ft)	Measurement Date	Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0608	4893.35	03/23/2010	15:00:28	6	4887.35	
0610	4895.7	03/23/2010	16:05:03	8.85	4886.85	
0611	4895.62	03/23/2010	16:25:00	8.7	4886.92	
0612	4893.35	03/23/2010	17:55:04	6.99	4886.36	
0614	4892.79	03/23/2010	17:25:23	7.33	4885.46	
0615	4892.23	03/24/2010	11:55:15	8.44	4883.79	
0618	4891.51	03/24/2010	16:35:34	7.26	4884.25	
0619	4892.19	03/25/2010	11:10:21	7.46	4884.73	
0622	4890.06	03/24/2010	17:35:30	4.99	4885.07	
0623	4891.19	03/25/2010	10:55:34	6.15	4885.04	
0625	4891.23	03/25/2010	10:40:40	6.15	4885.08	
0626	4891.4	03/26/2010	10:35:13	5.72	4885.68	
0628	4889.87	03/26/2010	10:30:44	3.66	4886.21	
0630	4887.62	03/26/2010	10:50:59	1.63	4885.99	
0734	4886.55	03/26/2010	08:45:36	6.18	4880.37	
0735	4895.85	03/22/2010	19:40:23	6.33	4889.52	
0736	4887.99	03/26/2010	08:55:38	5.96	4882.03	
0766	4892.55	03/25/2010	16:05:39	11.08	4881.47	
0768	4892.33	03/25/2010	10:00:29	7.42	4884.91	
0773	4894.87	03/23/2010	16:45:34	8.18	4886.69	
0775	4892.2	03/25/2010	12:00:36	8.23	4883.97	
0779	4893.86	03/25/2010	08:40:50	10.15	4883.71	
0782R		03/25/2010	11:45:30	6.93		*
0783R		03/25/2010	11:15:21	7.1		*
0792	4891.52	03/24/2010	17:05:39	7.01	4884.51	
0793	4891.05	03/24/2010	15:15:42	6.82	4884.23	
0797	4908.04	03/25/2010	11:15:58	9.03	4899.01	
0798	4891.55	03/25/2010	11:35:20	7.46	4884.09	
0850	4907.51	03/25/2010	10:55:17	8.64	4898.87	
0853	4891.41	03/24/2010	10:30:48	7.15	4884.26	

Location Code	Top of Casing Elevation (Ft)	Measurement Date	Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0854	4890.09	03/25/2010	14:10:05	8.2	4881.89	
0855	4888.18	03/26/2010	09:55:12	5.03	4883.15	
0856	4887.57	03/26/2010	09:30:53	6.32	4881.25	
0857	4894.02	03/24/2010	16:10:29	10.01	4884.01	
0862	4893.83	03/23/2010	16:14:00	92.2	4801.63	
0863	4893	03/23/2010	16:17:00	83.34	4809.66	
1000	4892.17	03/23/2010	18:02:00	7.56	4884.61	
1001	4892.44	03/23/2010	18:09:00	21.81	4870.63	
1008	4890.8	03/25/2010	13:50:55	8.34	4882.46	
1009	4892.1	03/24/2010	11:00:50	7.84	4884.26	
1062	4892.51	03/22/2010	11:24:00	8.32	4884.19	
1089						E
1104						E
1105	4892.18	03/24/2010	11:25:39	8.41	4883.77	
1109						E
1110						E
1111	4889.85	03/24/2010	14:15:14	7.9	4881.95	
1112	4890.01	03/26/2010	09:55:42	7.32	4882.69	
1113	4892	03/23/2010	15:35:57	5.05	4886.95	
1114	4892.86	03/23/2010	14:35:03	5.05	4887.81	
1115	4895.59	03/23/2010	11:30:54	8.4	4887.19	
1117	4896.7	03/23/2010	10:10:10	9.2	4887.5	
1128	4897.63	03/23/2010	09:40:13	10.25	4887.38	
1132	4894.5	03/23/2010	10:50:16	7.16	4887.34	
1134	4895.88	03/23/2010	12:30:25	8.62	4887.26	
1135		03/25/2010	17:25:53	8.25		*
1136		03/25/2010	09:25:43	9.11		*
1137	4891.12	03/25/2010	14:35:49	9.11	4882.01	
1138	4891.32	03/25/2010	15:20:46	9.41	4881.91	
1139	4890.26	03/25/2010	15:35:35	8.63	4881.63	

Location Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
1140	4891.36	03/24/2010	13:45:39	8.85	4882.51	
1141	4892.26	03/24/2010	14:45:19	8.9	4883.36	
1142		03/24/2010	09:20:04	9.29		*
1143		03/26/2010	09:30:44	6.12		*

WATER LEVEL FLAGS:

- \* Top of casing elevation not available because the lack of survey data. Location survey is planned in 2010
- E Extraction well, water level not measured

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## **Static Water Level Data Terrace Locations**

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Location Code	Top of Casing Elevation (Ft)	Measurement Date	Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0600	4955.87	03/23/2010	13:25:08	34.05	4921.82	
0602	4956.89	03/24/2010	14:25:25	20.83	4936.06	
0603	4978.62	03/23/2010	17:25:23	31.64	4946.98	
0604	4995.87	03/24/2010	15:00:51	56.34	4939.53	
0648	4943.8	03/24/2010	18:10:00			D
0725	4908.58	03/24/2010	16:35:06	13.26	4895.32	
0726	4939.95	03/24/2010	10:55:01	26.2	4913.75	
0727	4940.65	03/24/2010	14:30:39	7.05	4933.6	
0728	4964.46	03/24/2010	16:21:58	25.22	4939.24	
0730	4977.75	03/24/2010	10:38:00			D
0731	4972.15	03/24/2010	08:55:52	25.09	4947.06	
0800	4995.76	03/24/2010	10:14:00			D
0801	4995.29	03/24/2010	10:18:00			D
0802	4996.01	03/24/2010	10:20:00			D
0803	4994.4	03/24/2010	10:18:00			D
0812	5004.98	03/24/2010	12:45:49	61.33	4943.65	
0813	4984.37	03/24/2010	13:45:25	44.14	4940.23	
0814	4968.12	03/24/2010	13:15:24	32.76	4935.36	
0815	4953.67	03/24/2010	13:45:53	26.62	4927.05	
0816	4937.92	03/24/2010	17:00:34	25.43	4912.49	
0817	4957.34	03/25/2010	08:50:51	19.67	4937.67	
0818						E
0819	4955.76	03/24/2010	12:20:39	20.7	4935.06	
0820	4954.95	03/23/2010	12:10:33	144.7	4810.25	
0821	4955.46	03/23/2010	12:22:00			D
0822	4954.42	03/23/2010	12:45:46	146.2	4808.22	
0823	4957.65	03/23/2010	15:52:00			D
0824	4958.21	03/23/2010	15:20:18	161.13	4797.08	
0825	4958.68	03/23/2010	15:45:11	129.8	4828.88	
0826	4950.73	03/24/2010	12:00:52	18.52	4932.21	

Location Code	Top of Casing Elevation (Ft)	Measurement Date	Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0827	4946.92	03/23/2010	11:35:42	26.63	4920.29	
0828	4957.36	03/24/2010	18:00:47	22.38	4934.98	
0829	4941.94	03/24/2010	14:47:00			D
0830	4960.77	03/23/2010	16:50:29	16.78	4943.99	
0832	4964.65	03/25/2010	09:36:00			D
0833	4940.52	03/25/2010	16:13:06	31.67	4908.85	
0835	4930.48	03/24/2010	17:35:38	21.88	4908.6	
0836	4901.74	03/22/2010	17:45:45	29.11	4872.63	
0837	4889.54	03/25/2010	14:45:55	20.87	4868.67	
0838	4937.7	03/25/2010	10:10:29	29.62	4908.08	
0839						D
0841	4984.05	03/24/2010	15:35:48	46.07	4937.98	
0843	4883.56	03/25/2010	12:15:10	14.24	4869.32	
0844	4948.46	03/25/2010	09:25:32	32.23	4916.23	
0846	4934.57	03/25/2010	10:35:51	28.93	4905.64	
0848	4949.91	03/25/2010	14:09:00	42.83	4907.08	
1002	4957.63	03/23/2010	14:53:00			D
1003	4957.84	03/23/2010	14:54:00			D
1004	4957.61	03/23/2010	14:55:00			D
1007	4962.01	03/23/2010	16:05:15	44.72	4917.29	
1011	4945.96	03/23/2010	11:45:00			D
1048	4921.35	03/25/2010	16:00:08	5.35	4916	
1049	4923.89	03/25/2010	15:10:03	6.54	4917.35	
1057						D
1058	4973.58	03/23/2010	09:40:18	30.18	4943.4	
1059	4970.52	03/23/2010	09:20:17	23.71	4946.81	
1060	4970.62	03/25/2010	09:44:00			D
1067	4930.77	03/24/2010	10:14:00			D
1068	4927.97	03/24/2010	15:30:08	7.28	4920.69	
1069	4922.62	03/24/2010	15:09:00			D



Location Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
1070						E
1071						E
1073	4991.43	03/25/2010	17:15:30	50.47	4940.96	
1074	4959.52	03/23/2010	16:25:36	34.92	4924.6	
1078						E
1079	4925.22	03/22/2010	17:05:47	19.1	4906.12	
1087						T
1088						T
1091						E
1092						E
1093R						E
1095						E
1096						E
1120		03/25/2010	15:34:00			D
1122		03/25/2010	15:46:00			D
DM7	4974.44	03/24/2010	10:00:13	52.57	4921.87	
MW1	4955.64	03/25/2010	16:45:49	52.49	4903.15	

WATER LEVEL FLAGS:

- D Dry
- E Extraction well, water level not measured
- T Treatment system well, water level not measured

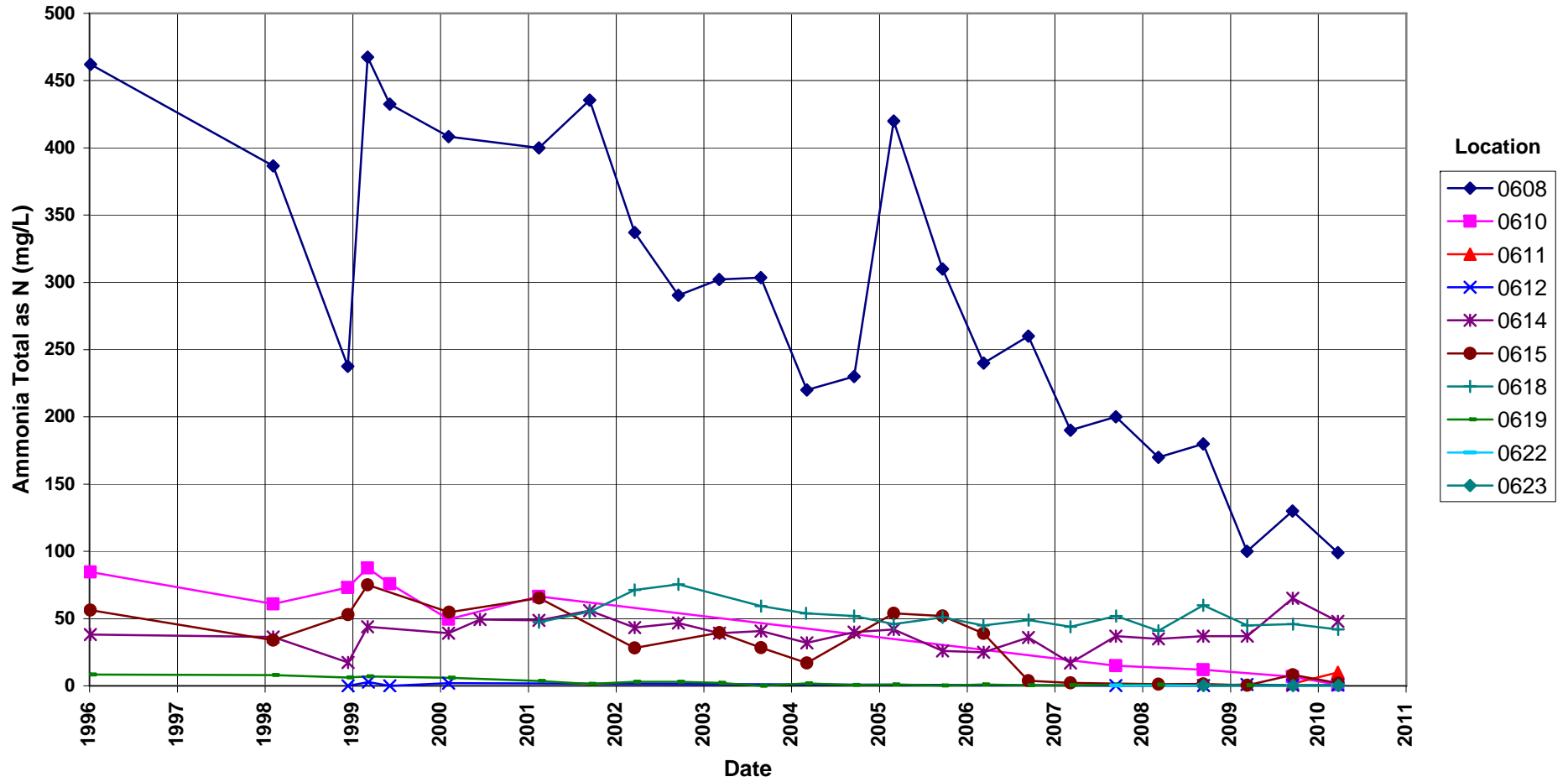
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**Time-Concentration Graphs  
Floodplain Groundwater Locations**

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# Shiprock Disposal Site (Floodplain) Ammonia Total as N Concentration

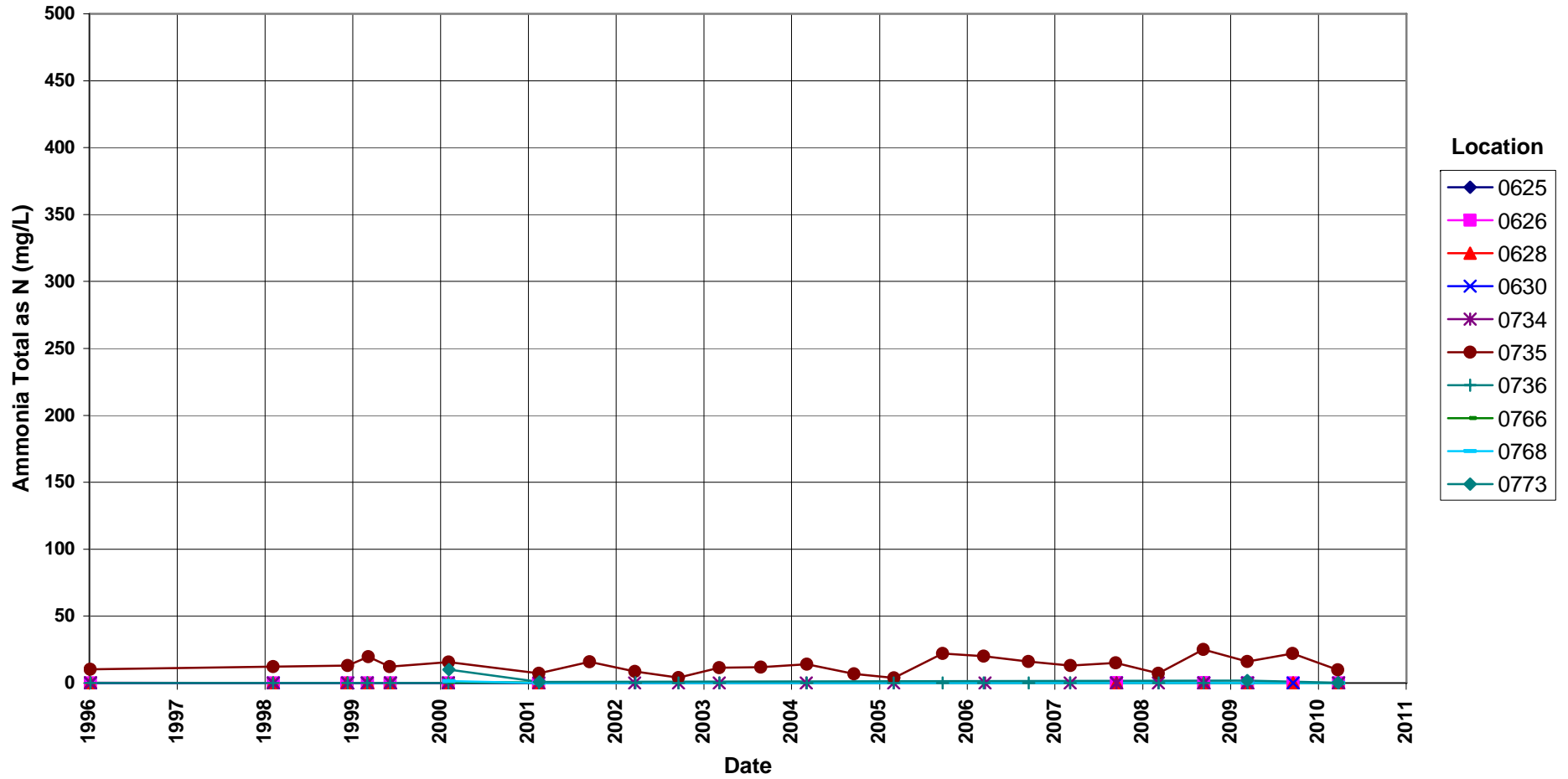
No established groundwater standard



# Shiprock Disposal Site (Floodplain)

## Ammonia Total as N Concentration

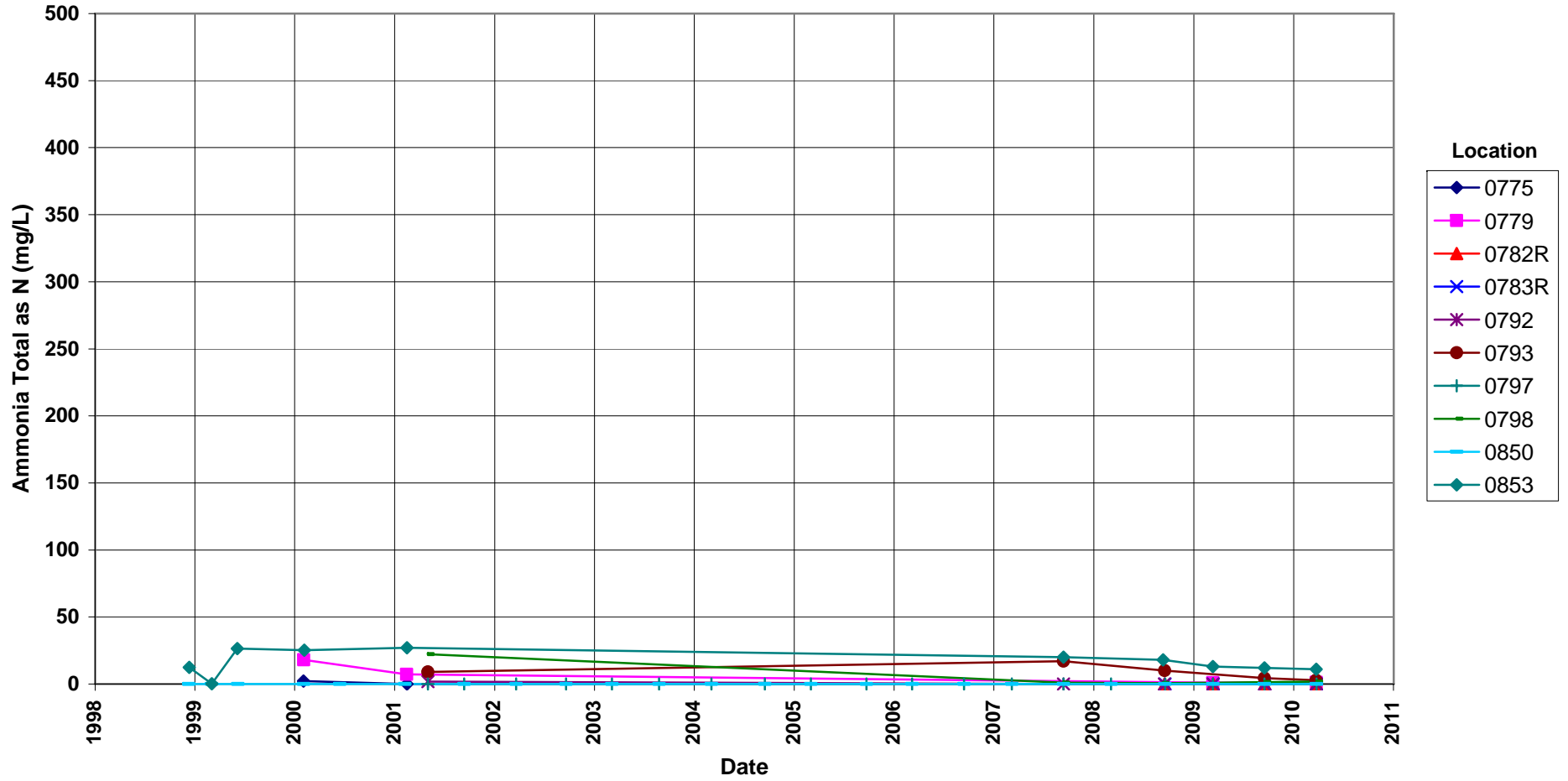
No established groundwater standard



# Shiprock Disposal Site (Floodplain)

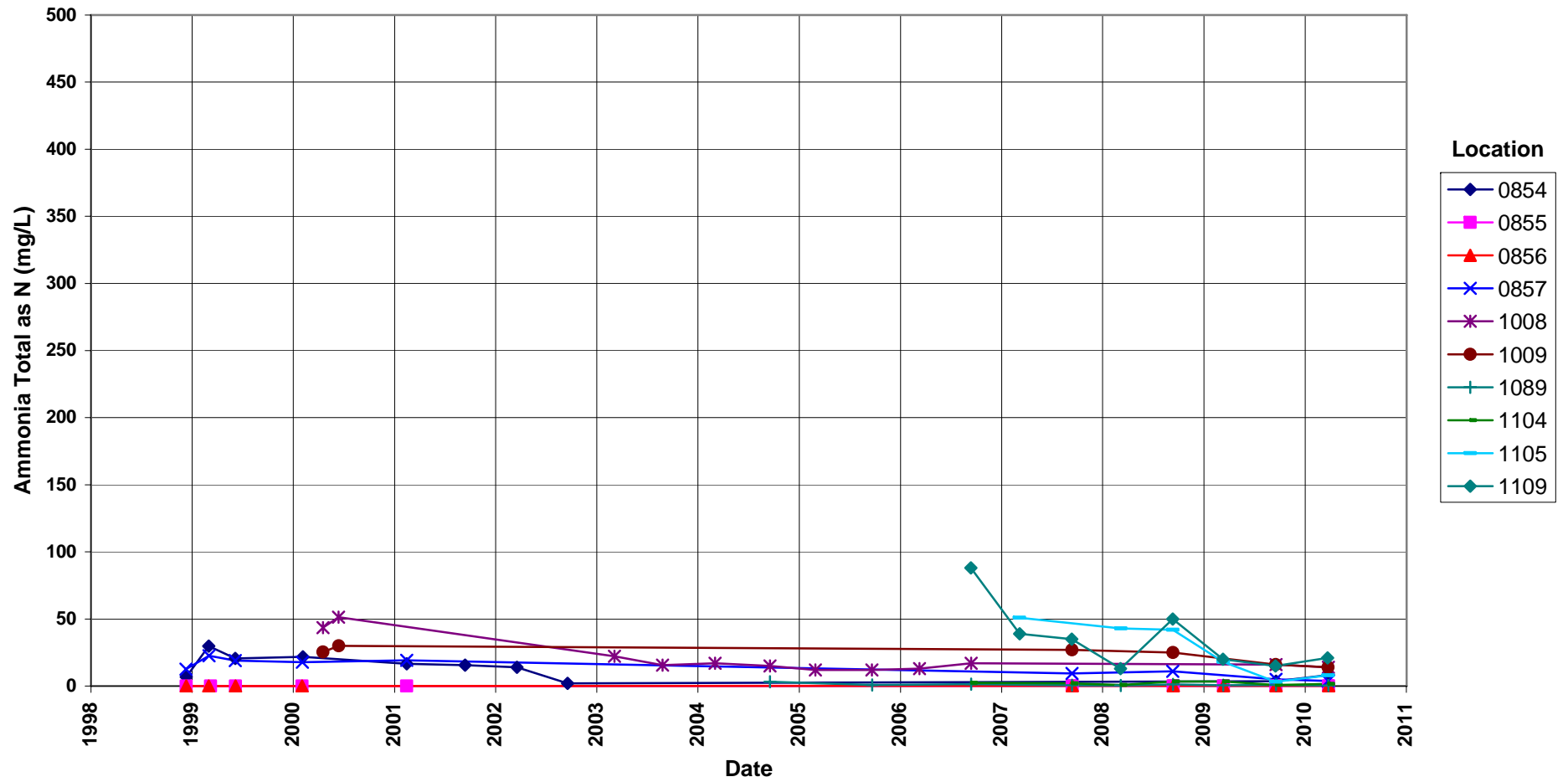
## Ammonia Total as N Concentration

No established groundwater standard



# Shiprock Disposal Site (Floodplain) Ammonia Total as N Concentration

No established groundwater standard

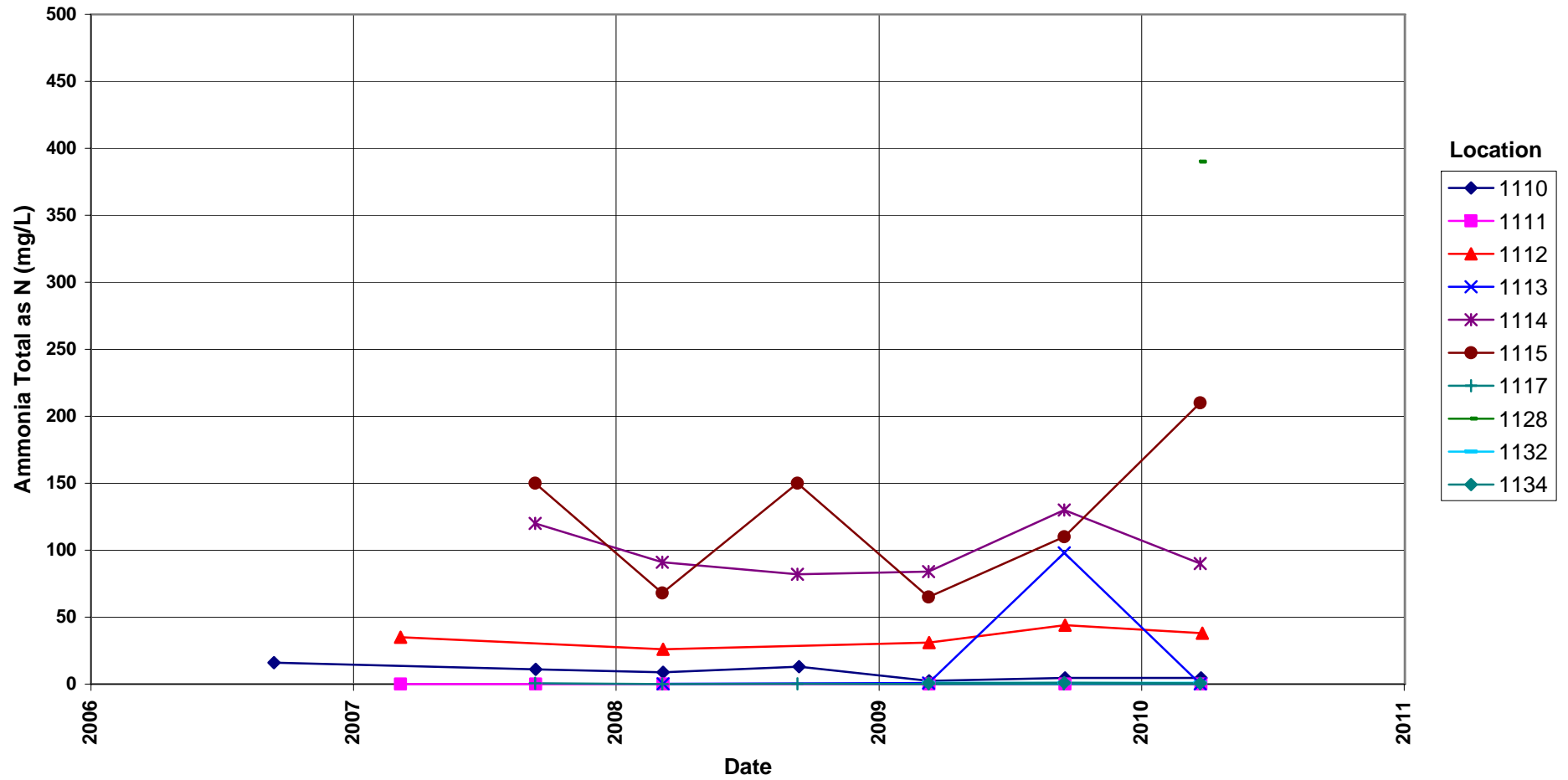




# Shiprock Disposal Site (Floodplain)

## Ammonia Total as N Concentration

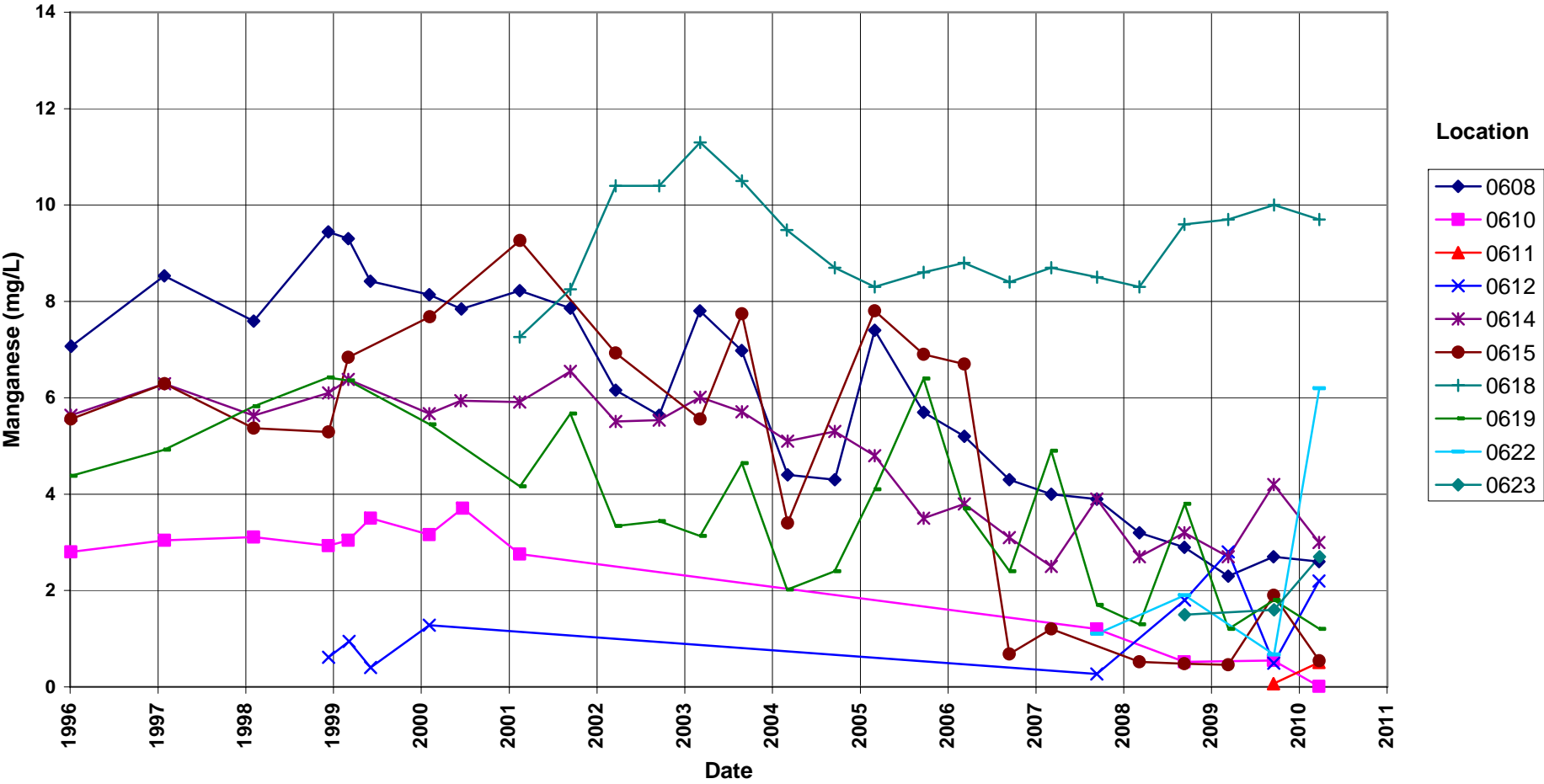
No established groundwater standard



# Shiprock Disposal Site (Floodplain)

## Manganese Concentration

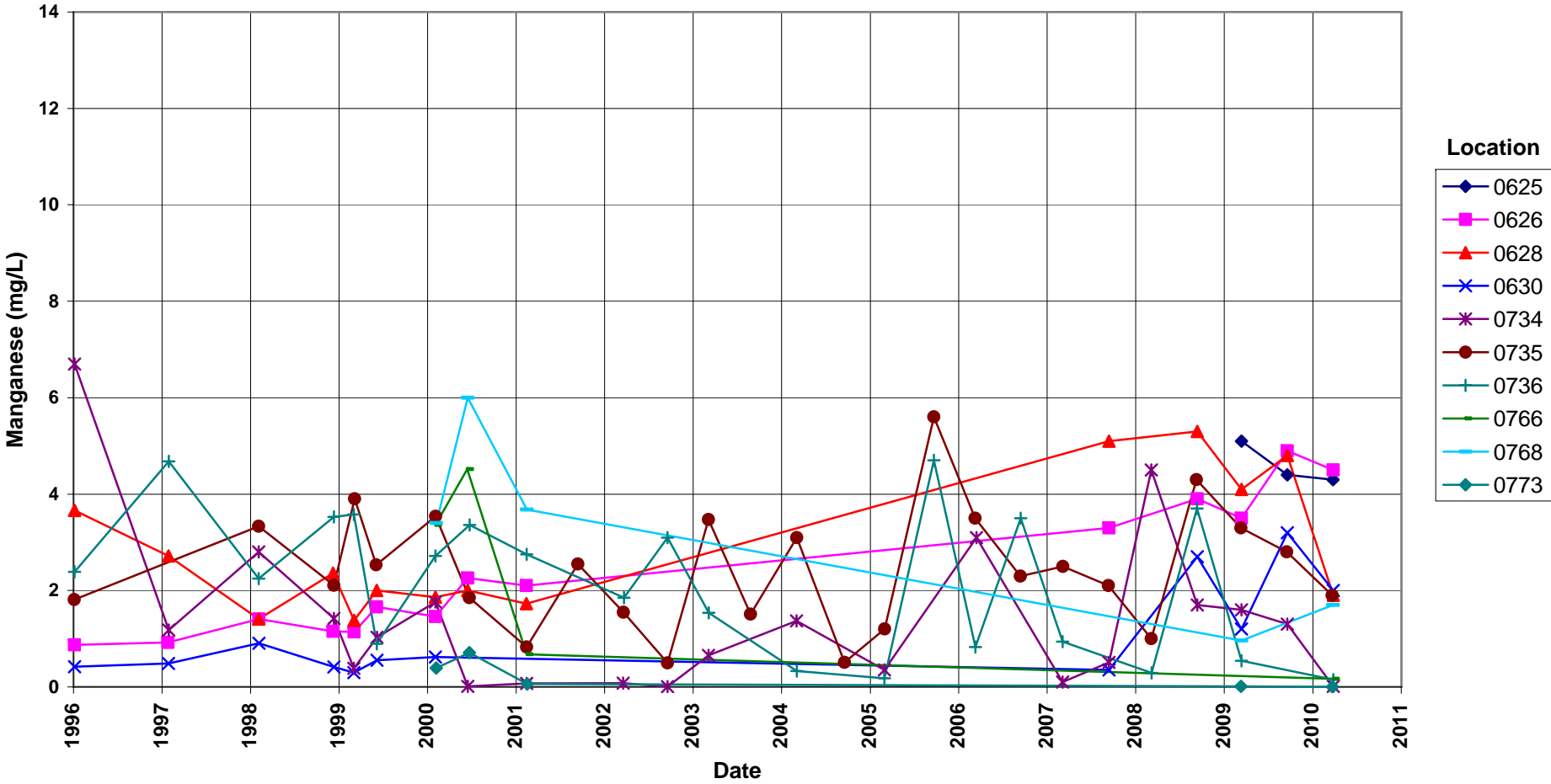
No established groundwater standard



# Shiprock Disposal Site (Floodplain)

## Manganese Concentration

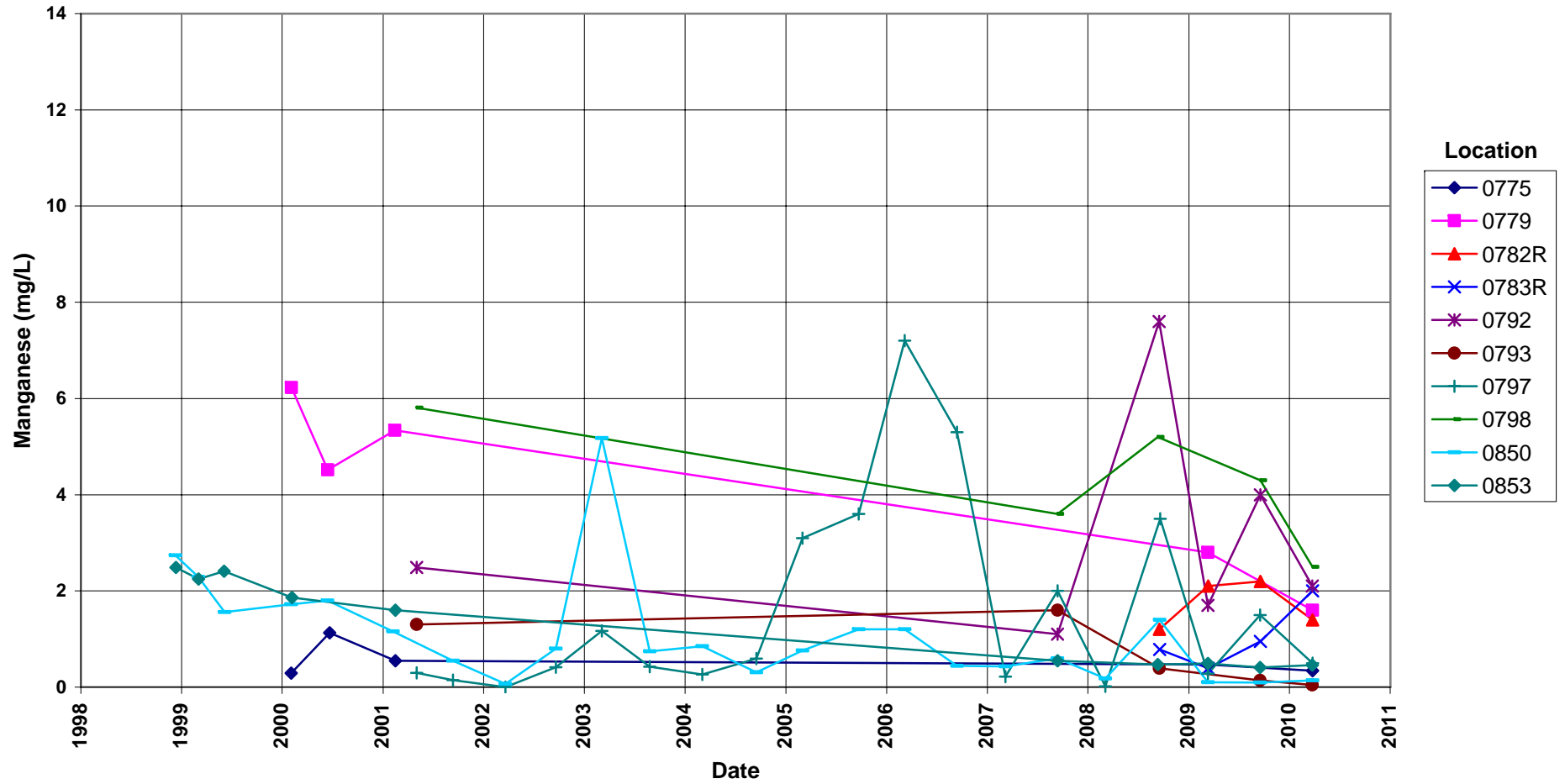
No established groundwater standard



# Shiprock Disposal Site (Floodplain)

## Manganese Concentration

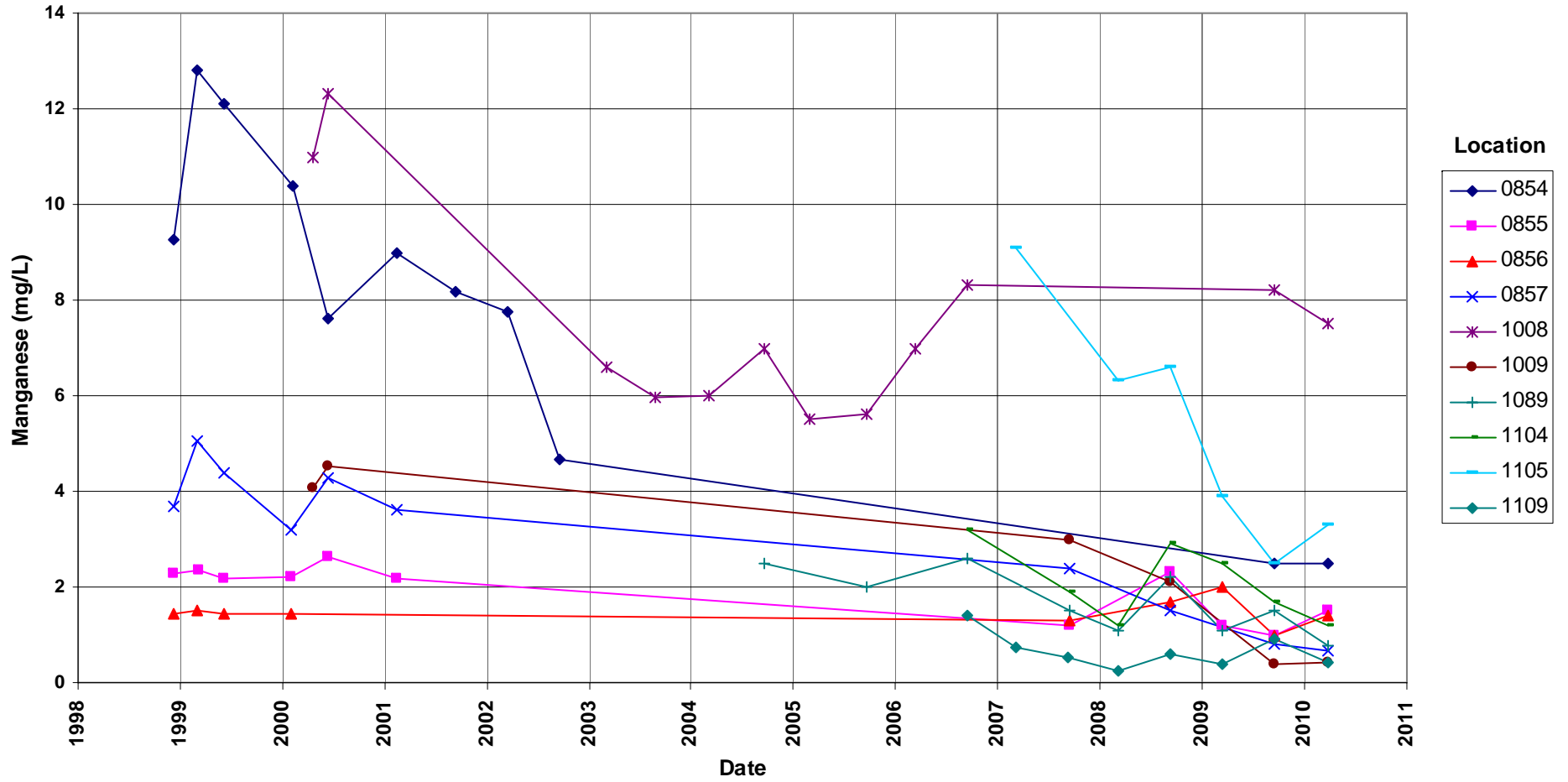
No established groundwater standard



# Shiprock Disposal Site (Floodplain)

## Manganese Concentration

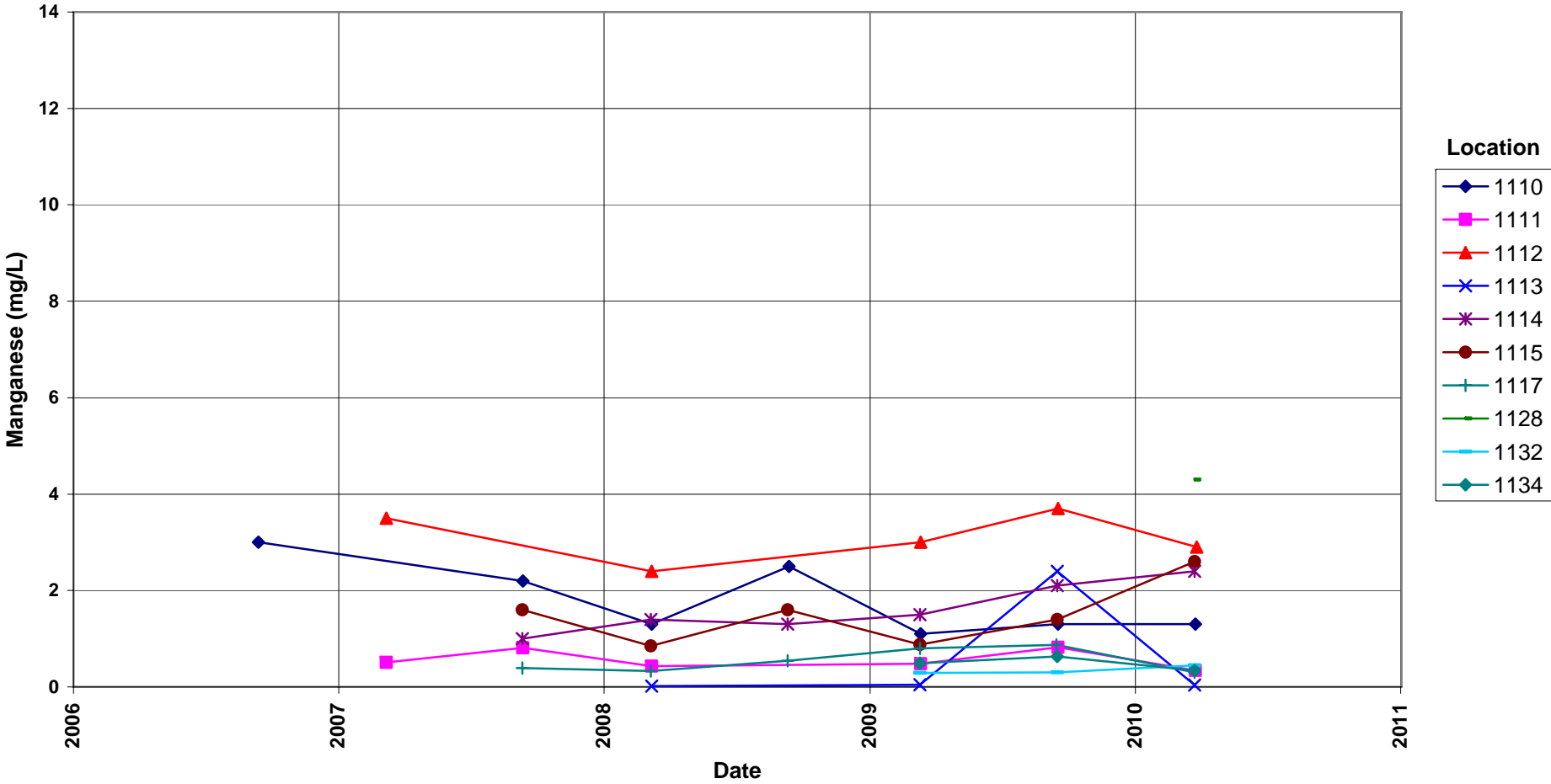
No established groundwater standard



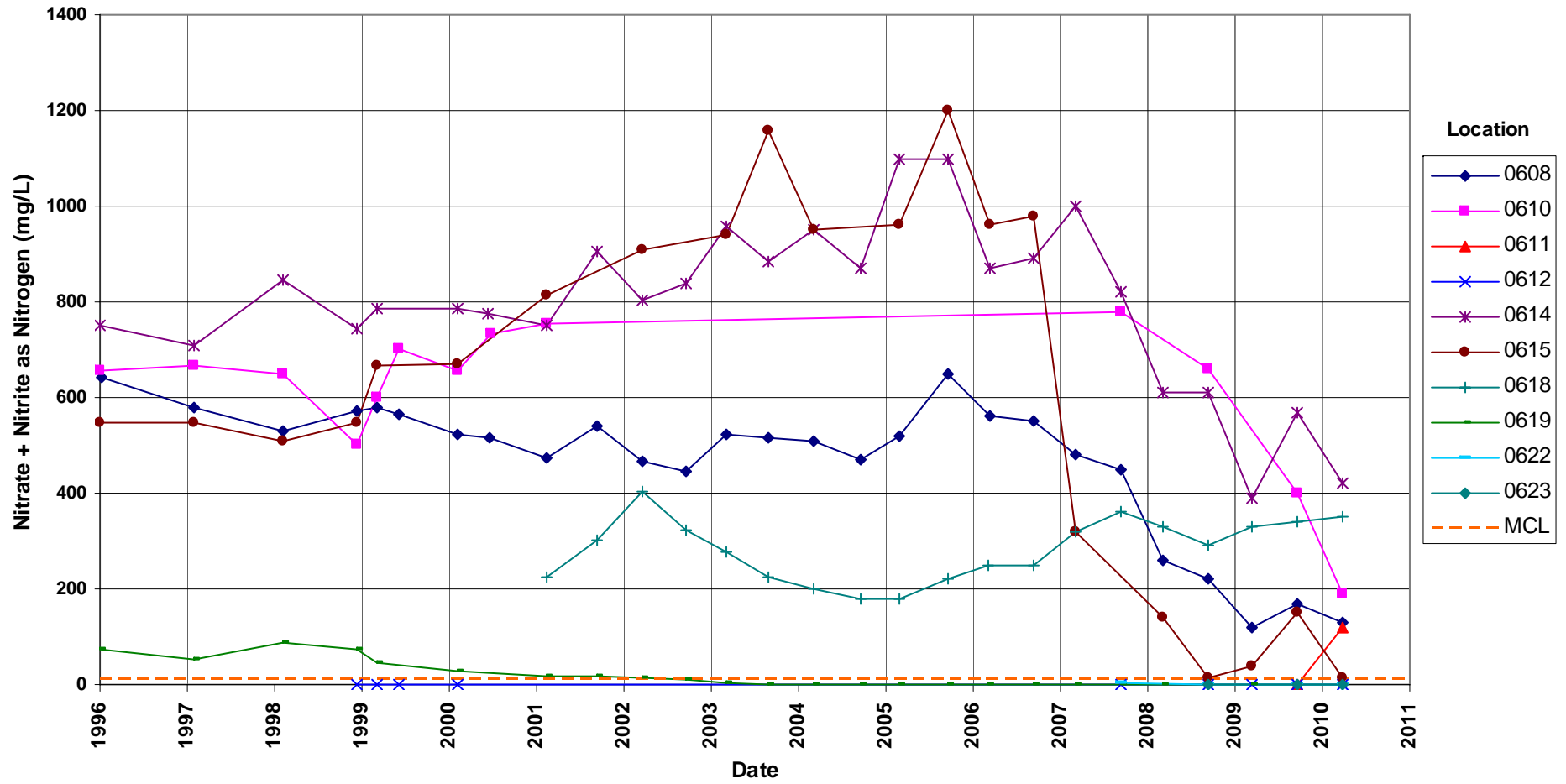
# Shiprock Disposal Site (Floodplain)

## Manganese Concentration

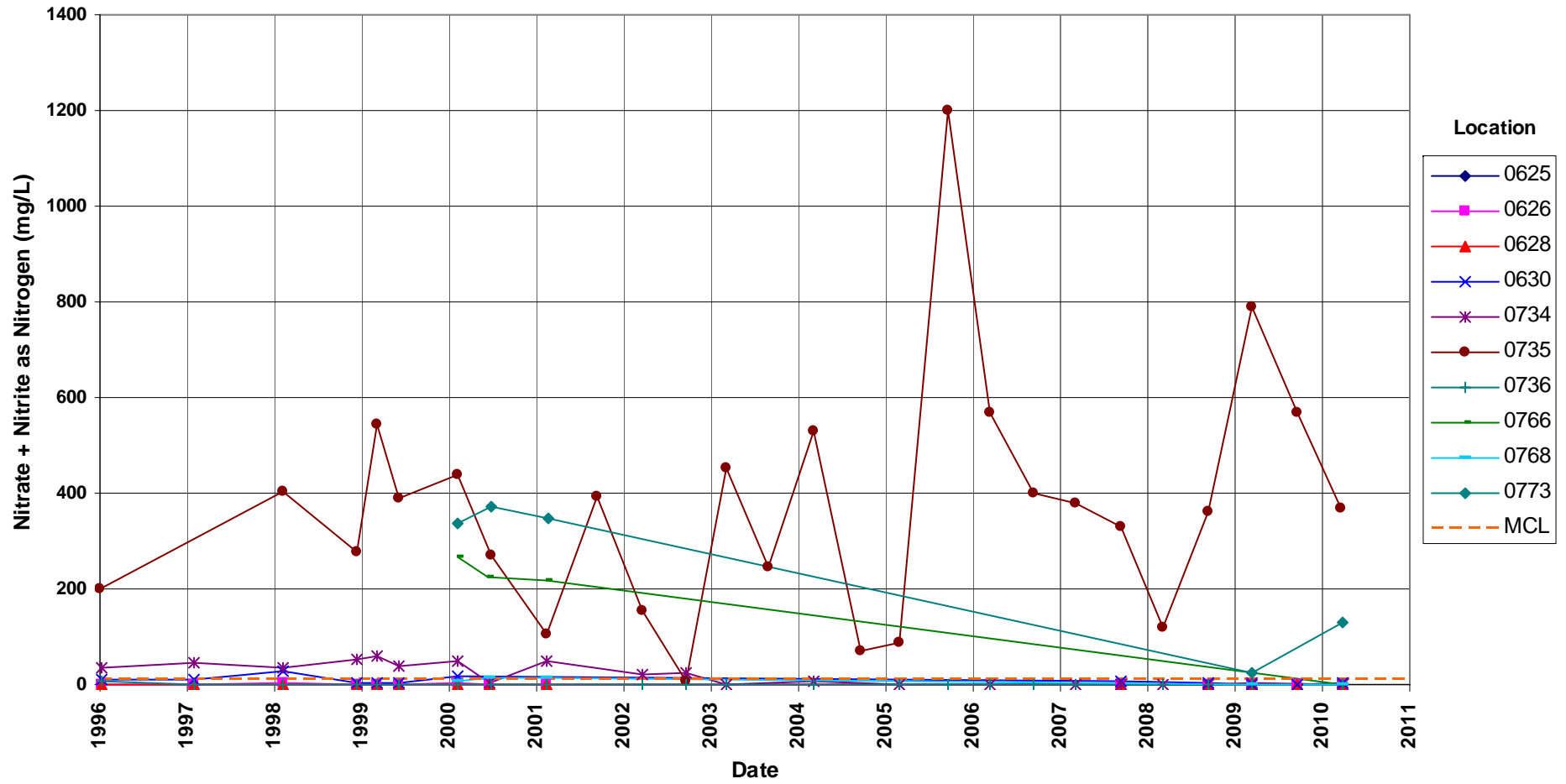
No established groundwater standard



**Shiprock Disposal Site (Floodplain)**  
**Nitrate + Nitrite as Nitrogen Concentration**  
 40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L

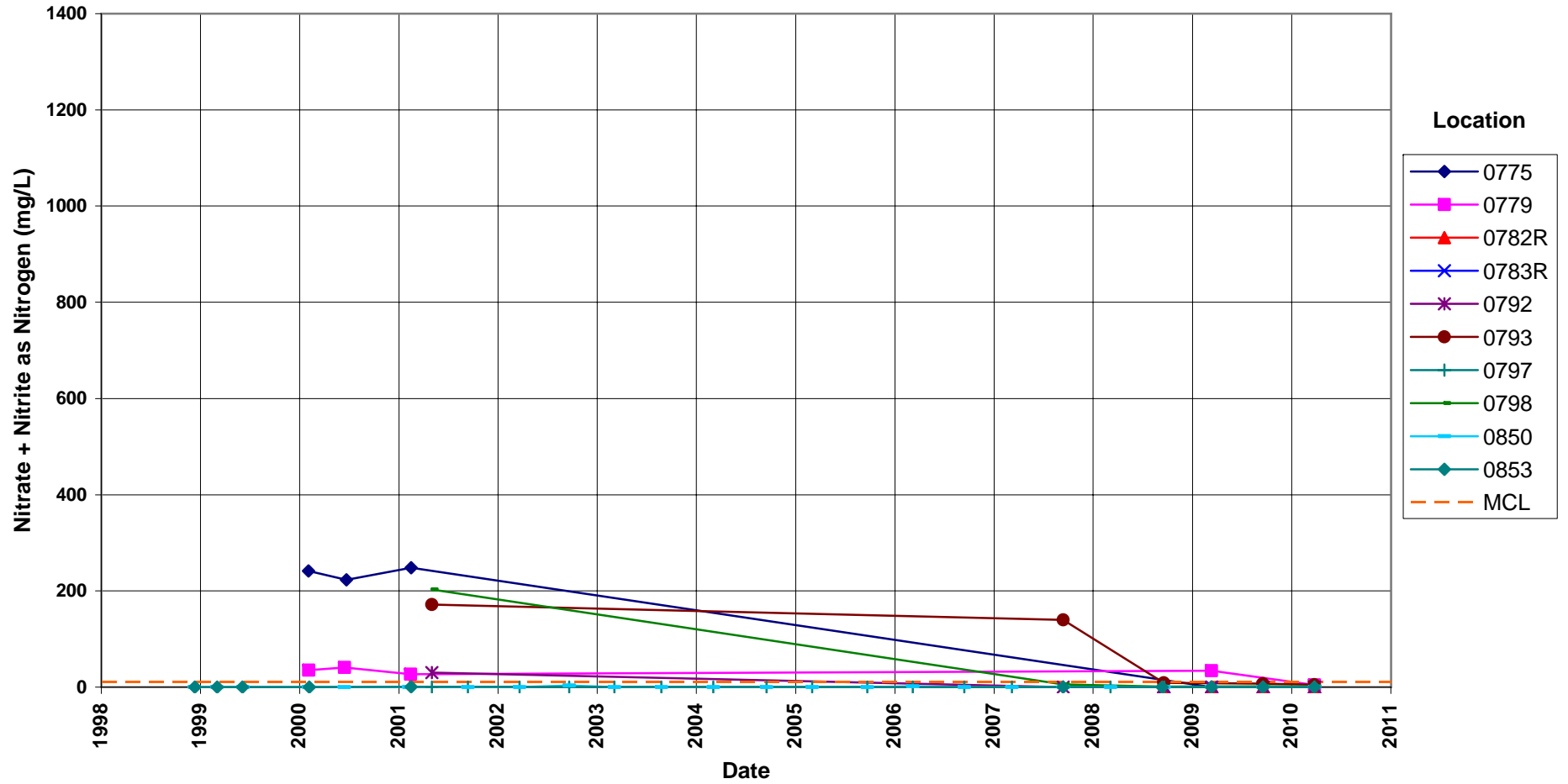


**Shiprock Disposal Site (Floodplain)**  
**Nitrate + Nitrite as Nitrogen Concentration**  
 40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L

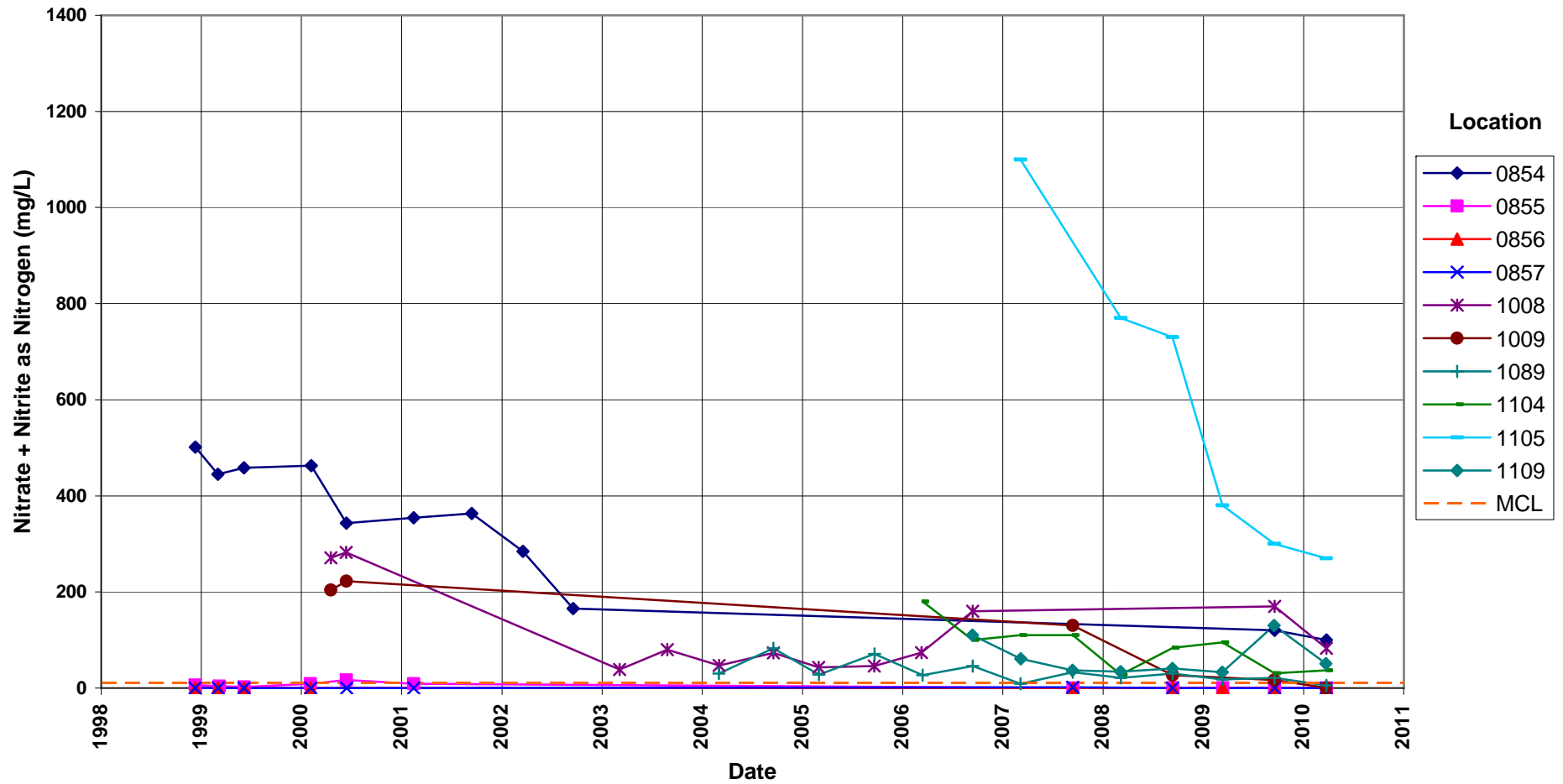




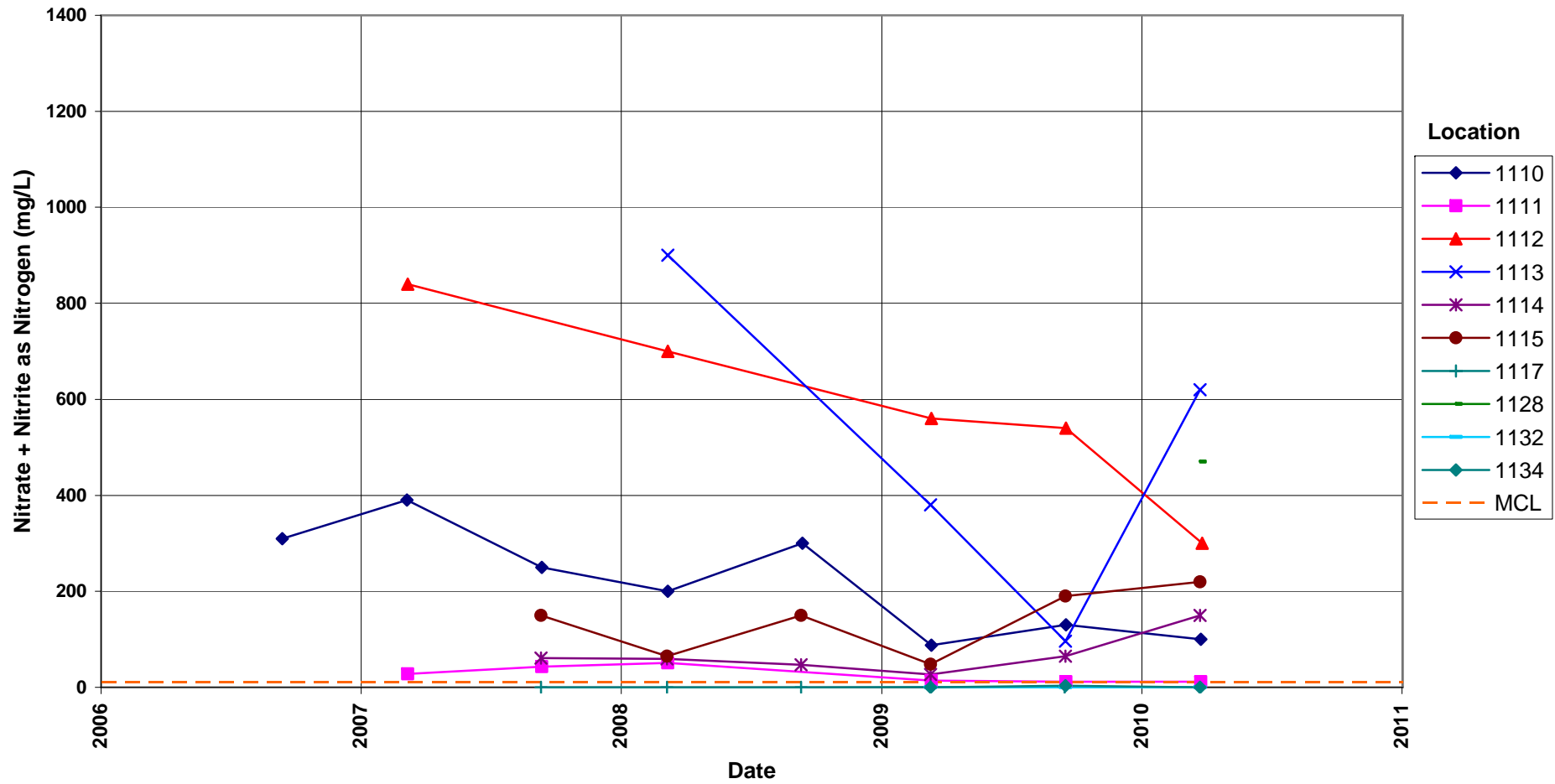
**Shiprock Disposal Site (Floodplain)**  
**Nitrate + Nitrite as Nitrogen Concentration**  
 40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L



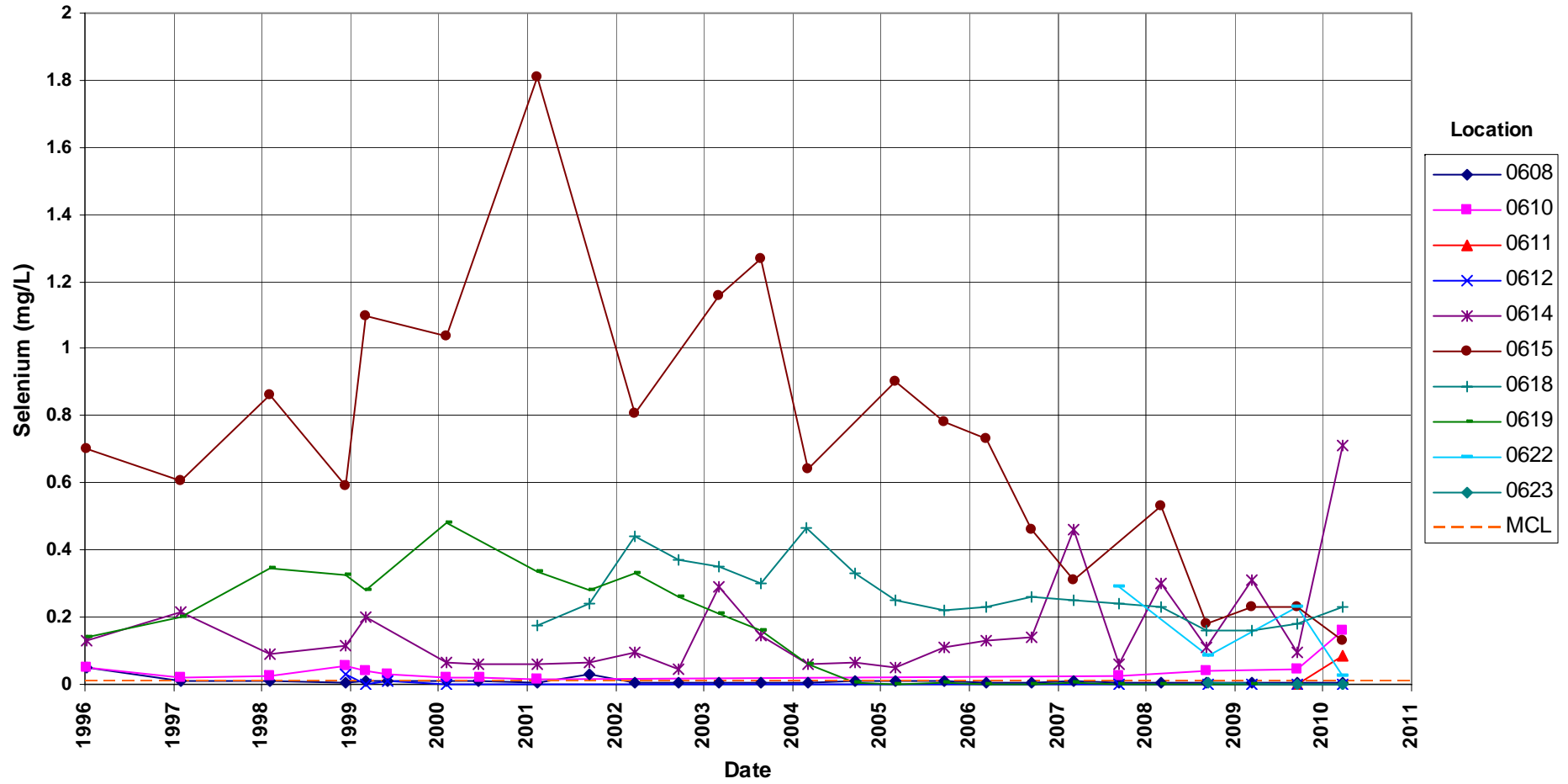
**Shiprock Disposal Site (Floodplain)**  
**Nitrate + Nitrite as Nitrogen Concentration**  
 40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L



**Shiprock Disposal Site (Floodplain)**  
**Nitrate + Nitrite as Nitrogen Concentration**  
 40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L



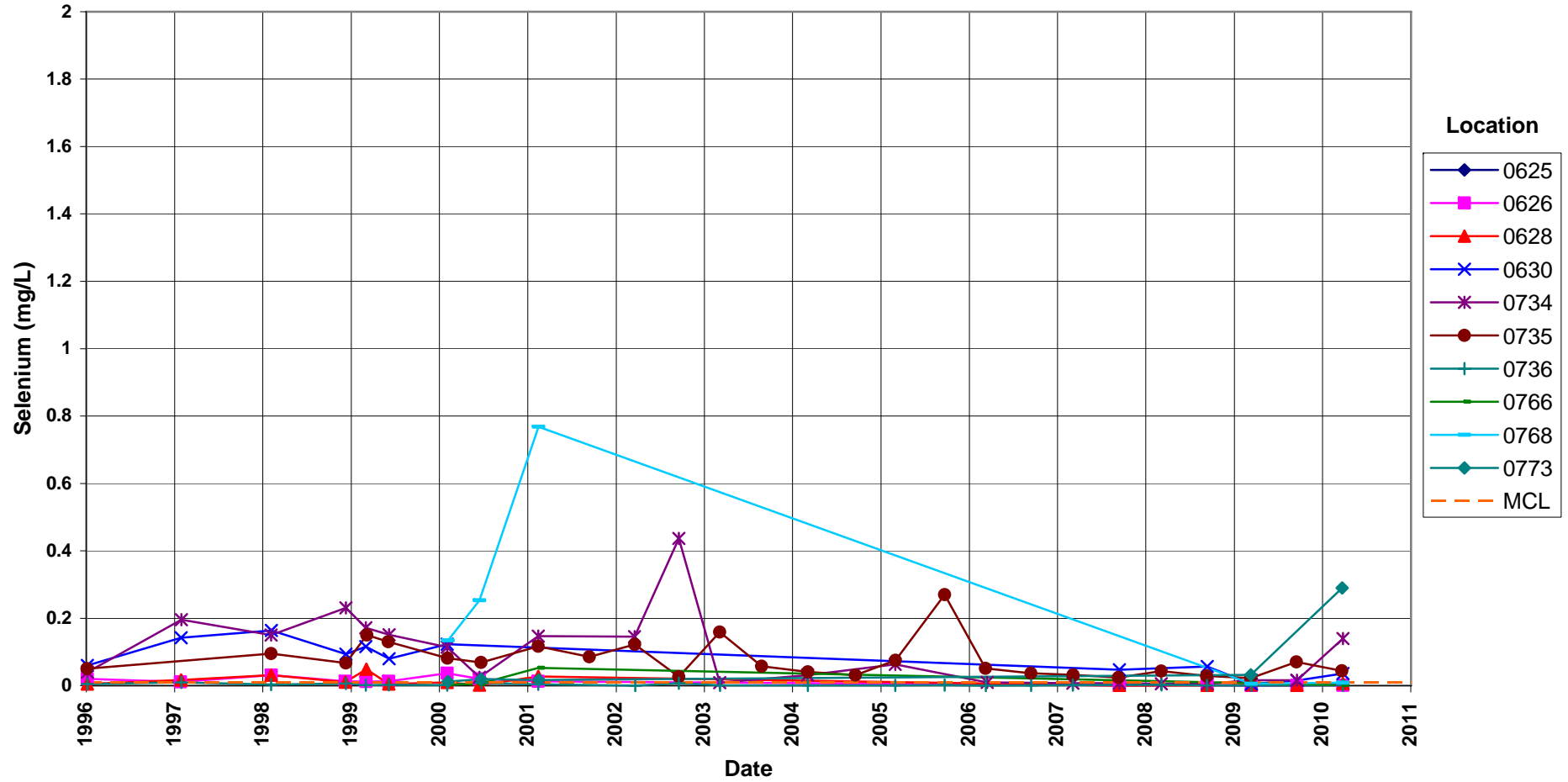
**Shiprock Disposal Site (Floodplain)**  
**Selenium Concentration**  
 40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L



# Shiprock Disposal Site (Floodplain)

## Selenium Concentration

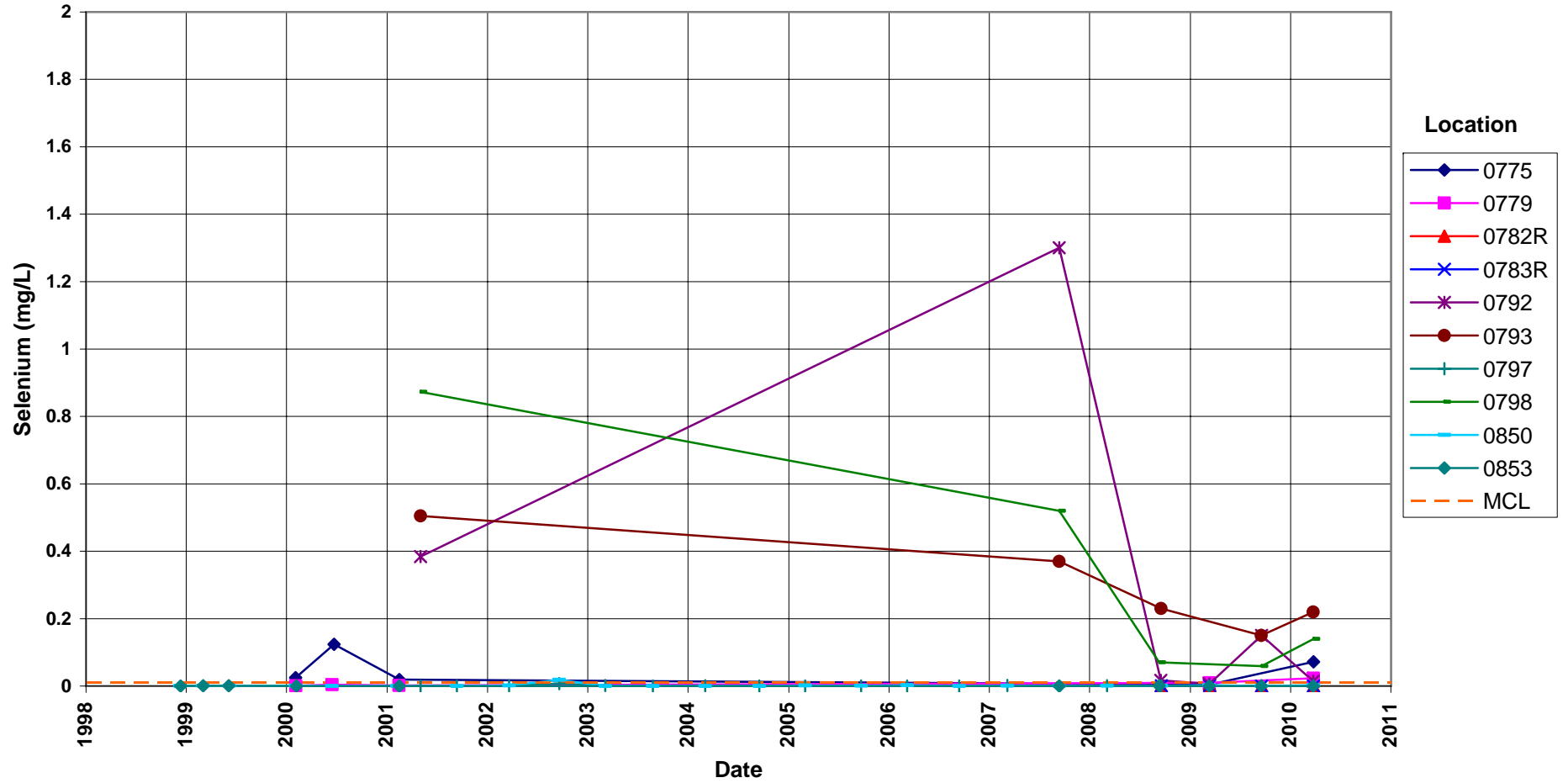
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L



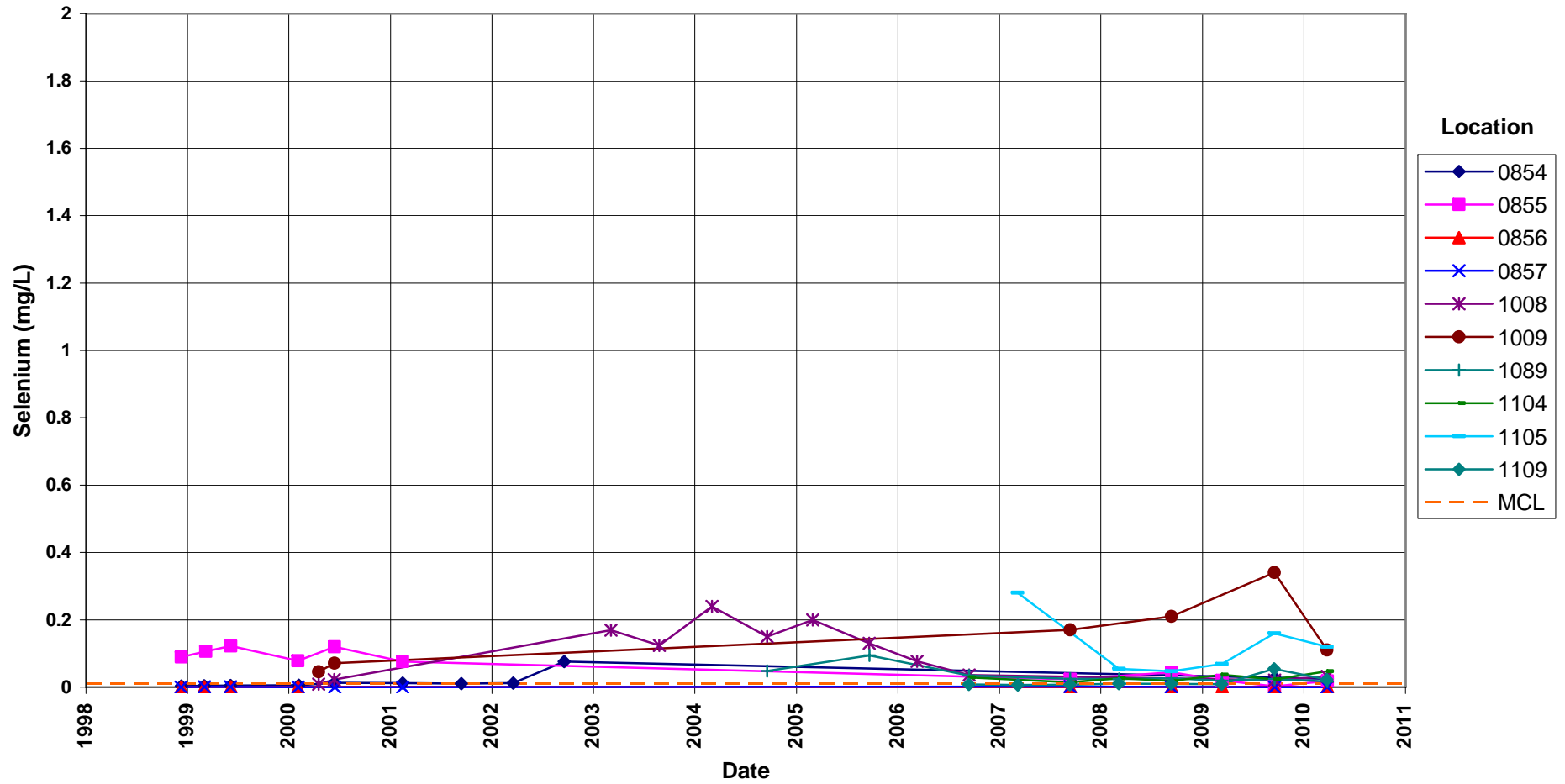
# Shiprock Disposal Site (Floodplain)

## Selenium Concentration

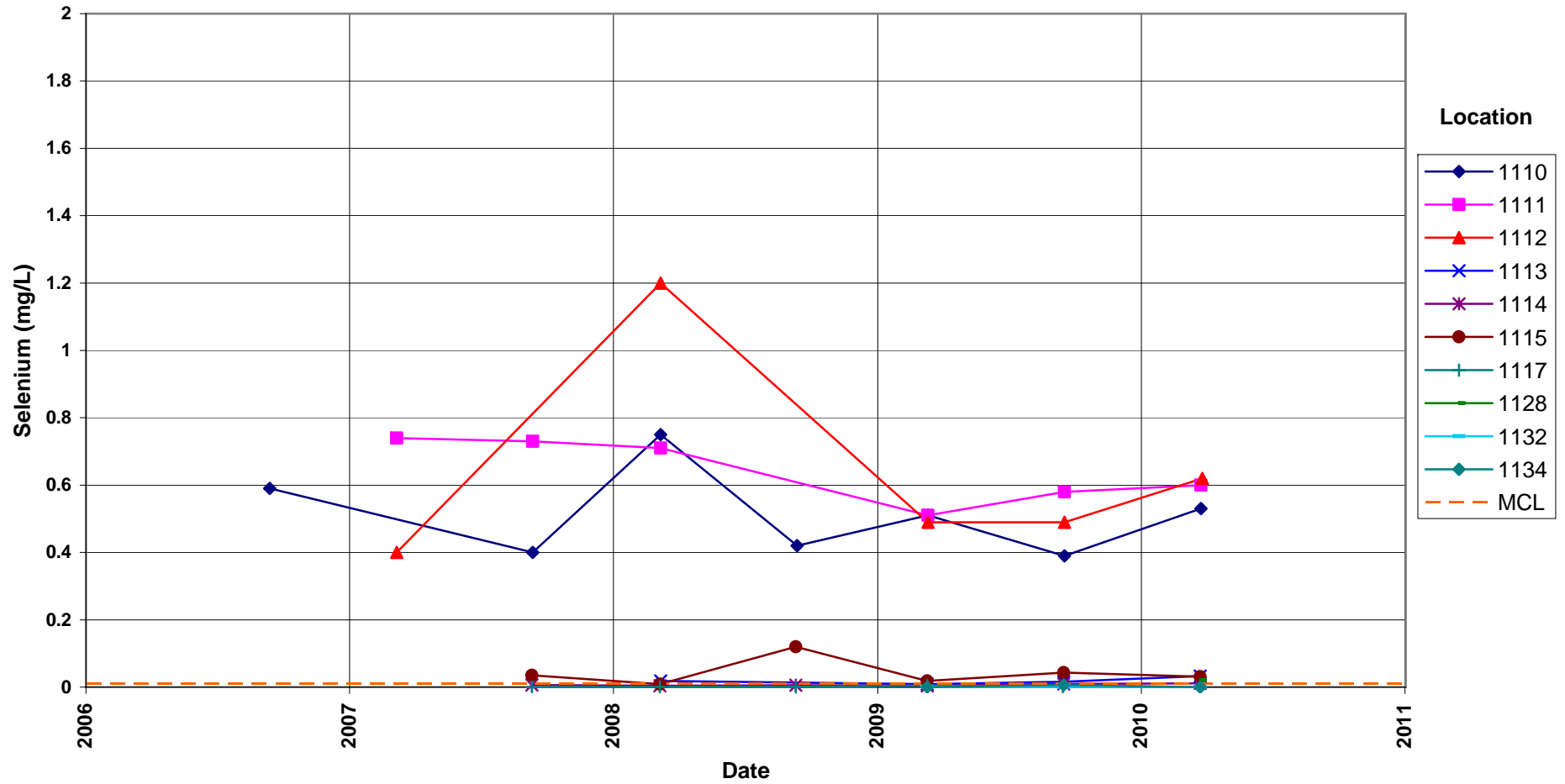
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L



**Shiprock Disposal Site (Floodplain)**  
**Selenium Concentration**  
 40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L



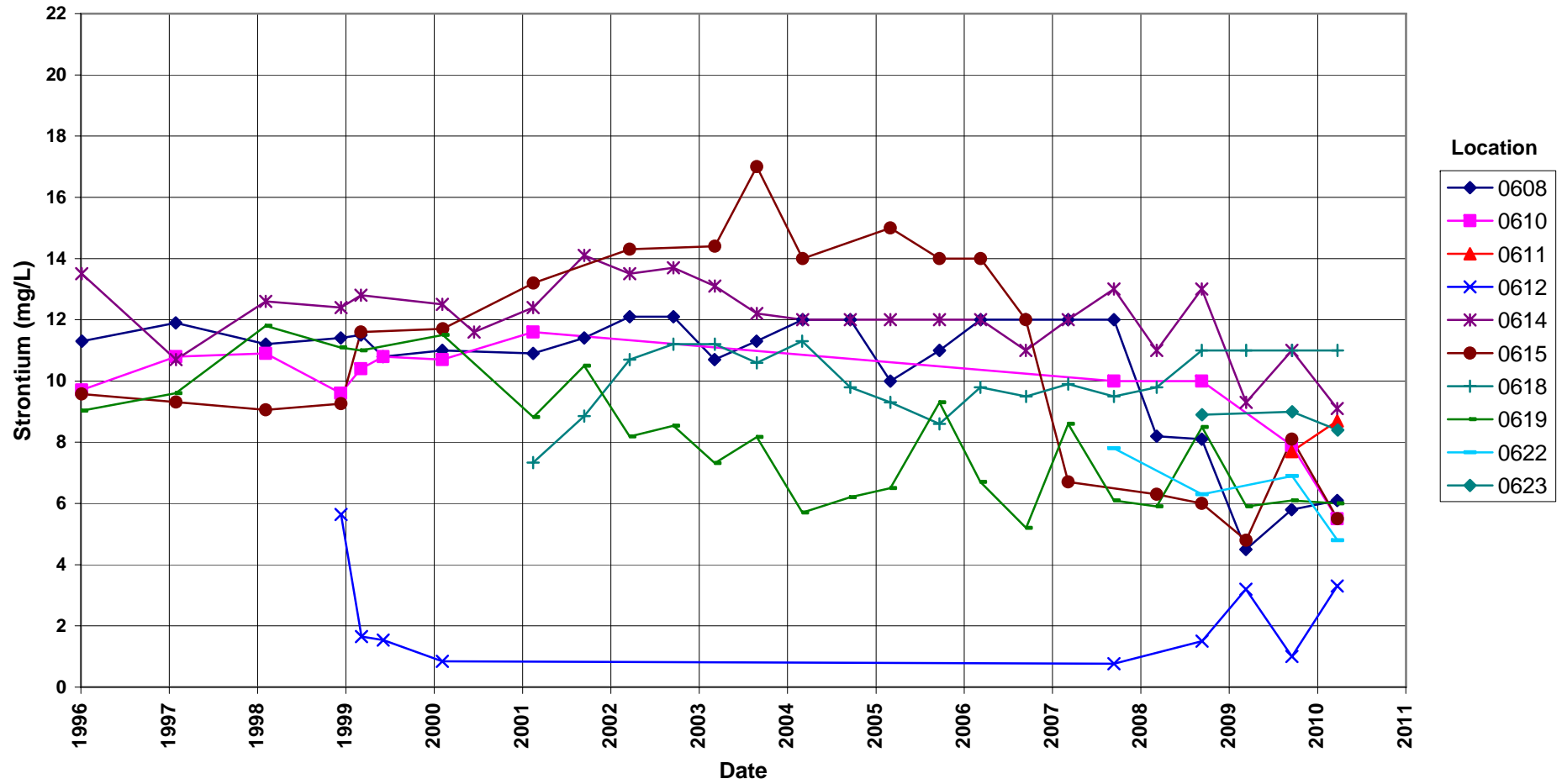
**Shiprock Disposal Site (Floodplain)**  
**Selenium Concentration**  
 40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L





# Shiprock Disposal Site (Floodplain) Strontium Concentration

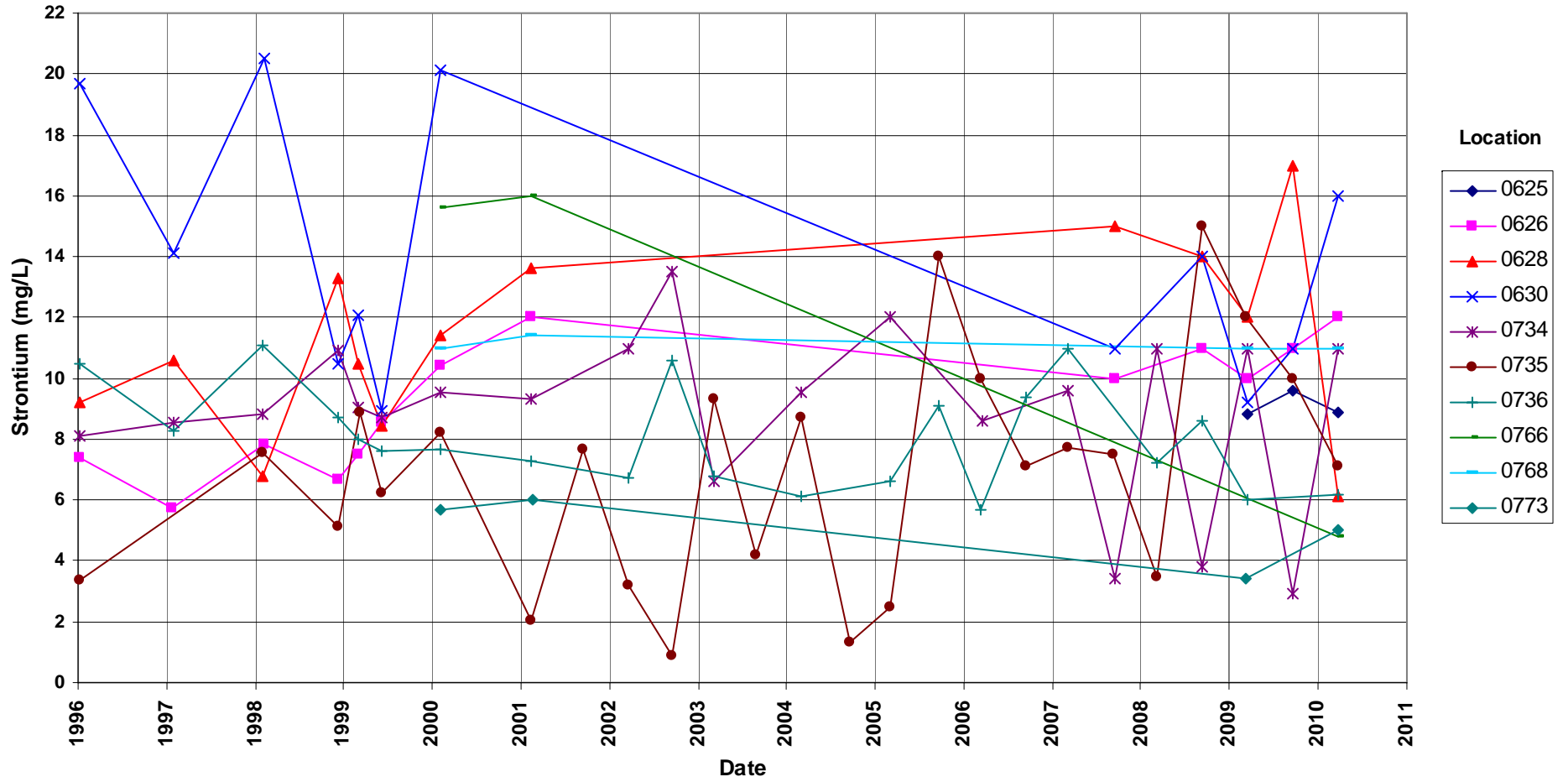
No established groundwater standard



# Shiprock Disposal Site (Floodplain)

## Strontium Concentration

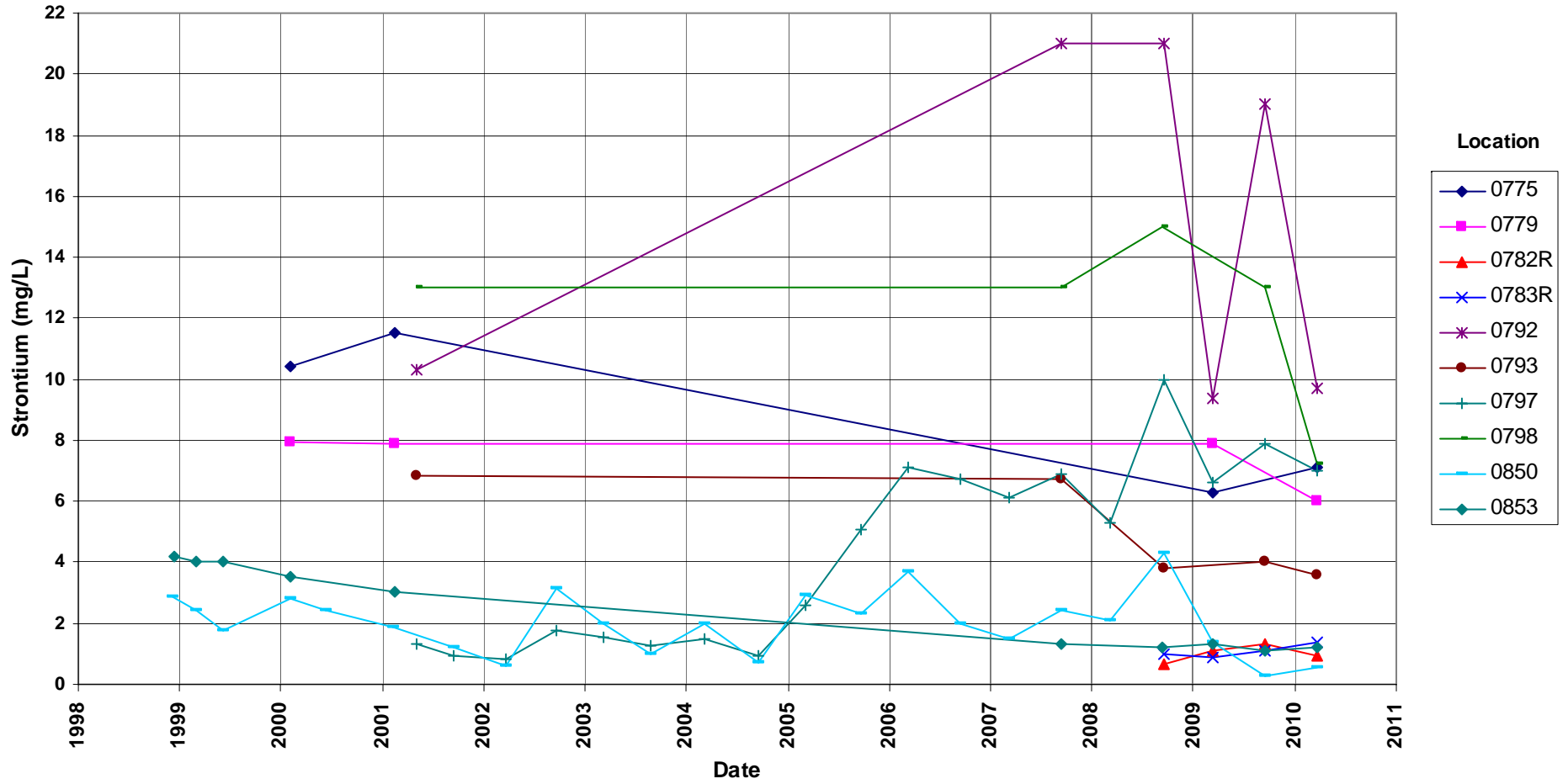
No established groundwater standard



# Shiprock Disposal Site (Floodplain)

## Strontium Concentration

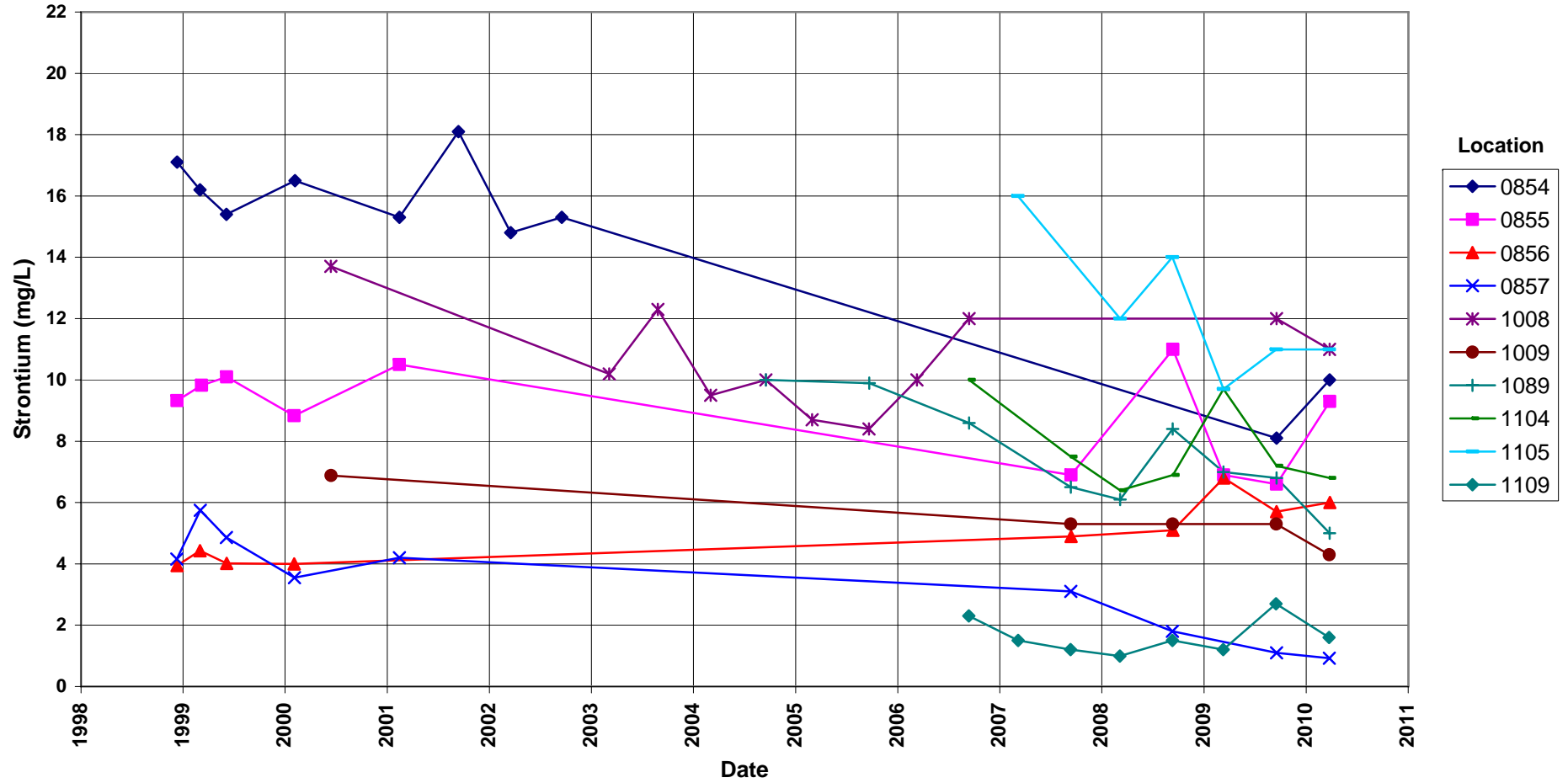
No established ground water standard



# Shiprock Disposal Site (Floodplain)

## Strontium Concentration

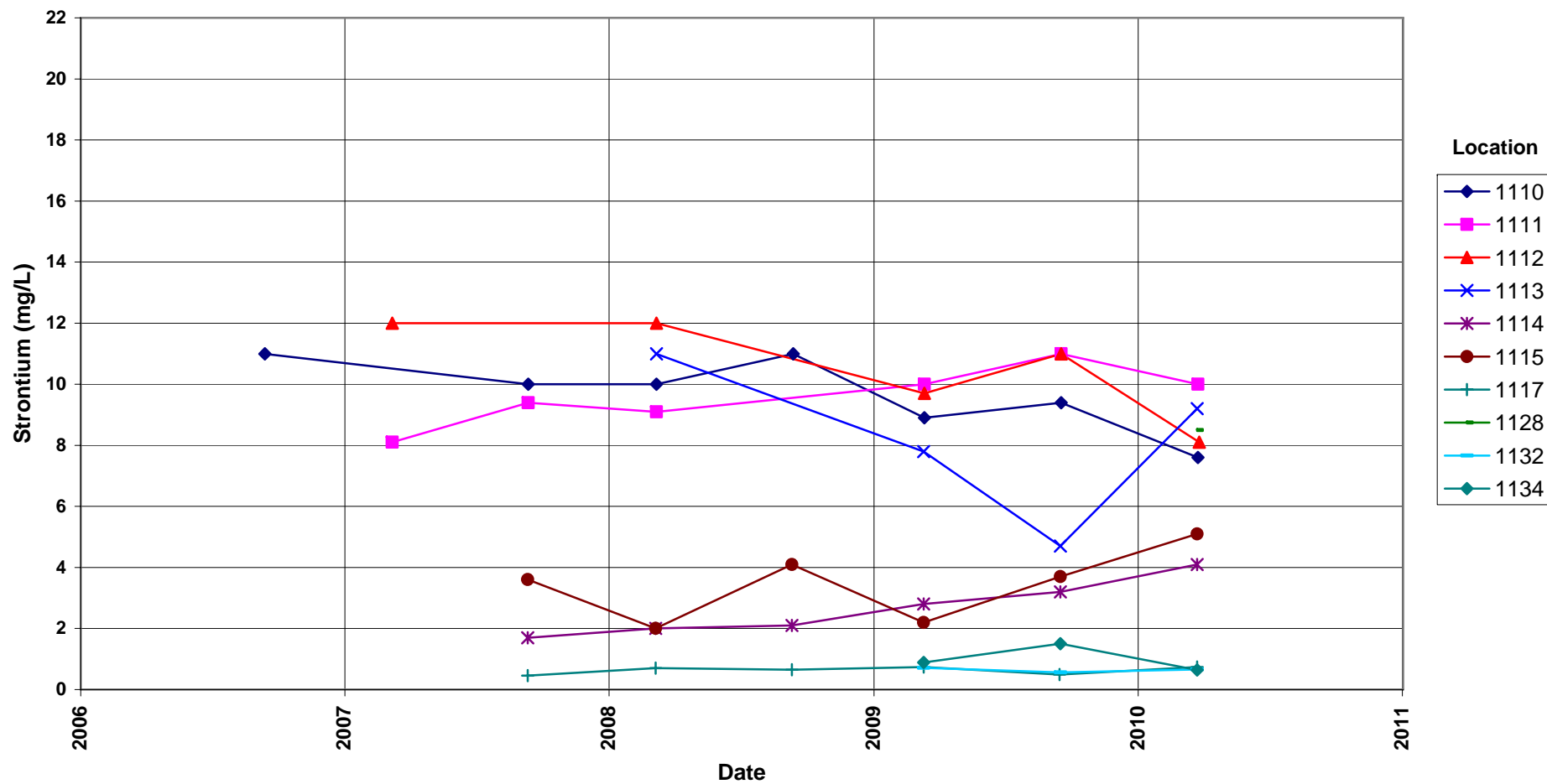
No established groundwater standard



# Shiprock Disposal Site (Floodplain)

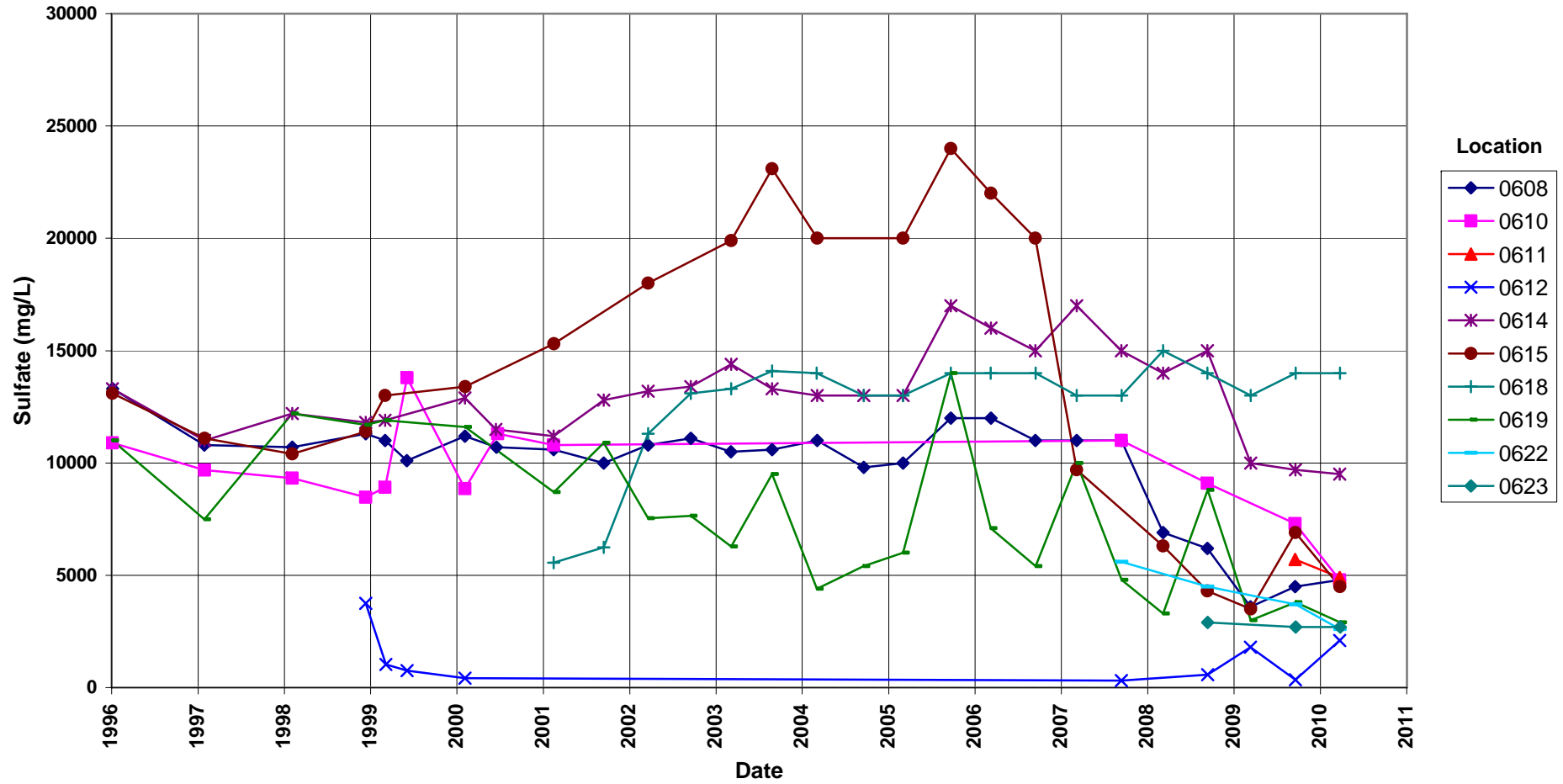
## Strontium Concentration

No established groundwater standard



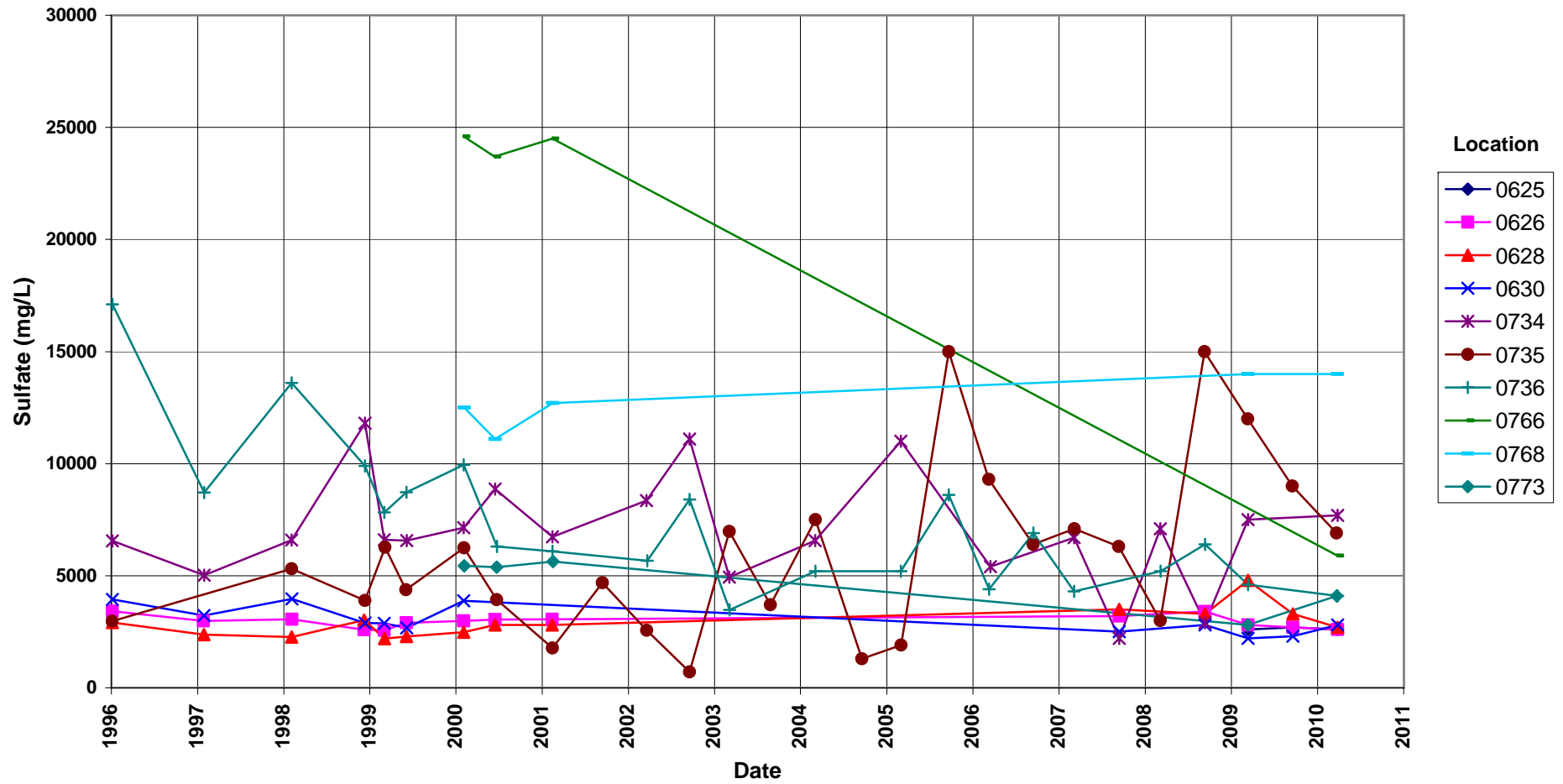
# Shiprock Disposal Site (Floodplain) Sulfate Concentration

No established groundwater standard



# Shiprock Disposal Site (Floodplain) Sulfate Concentration

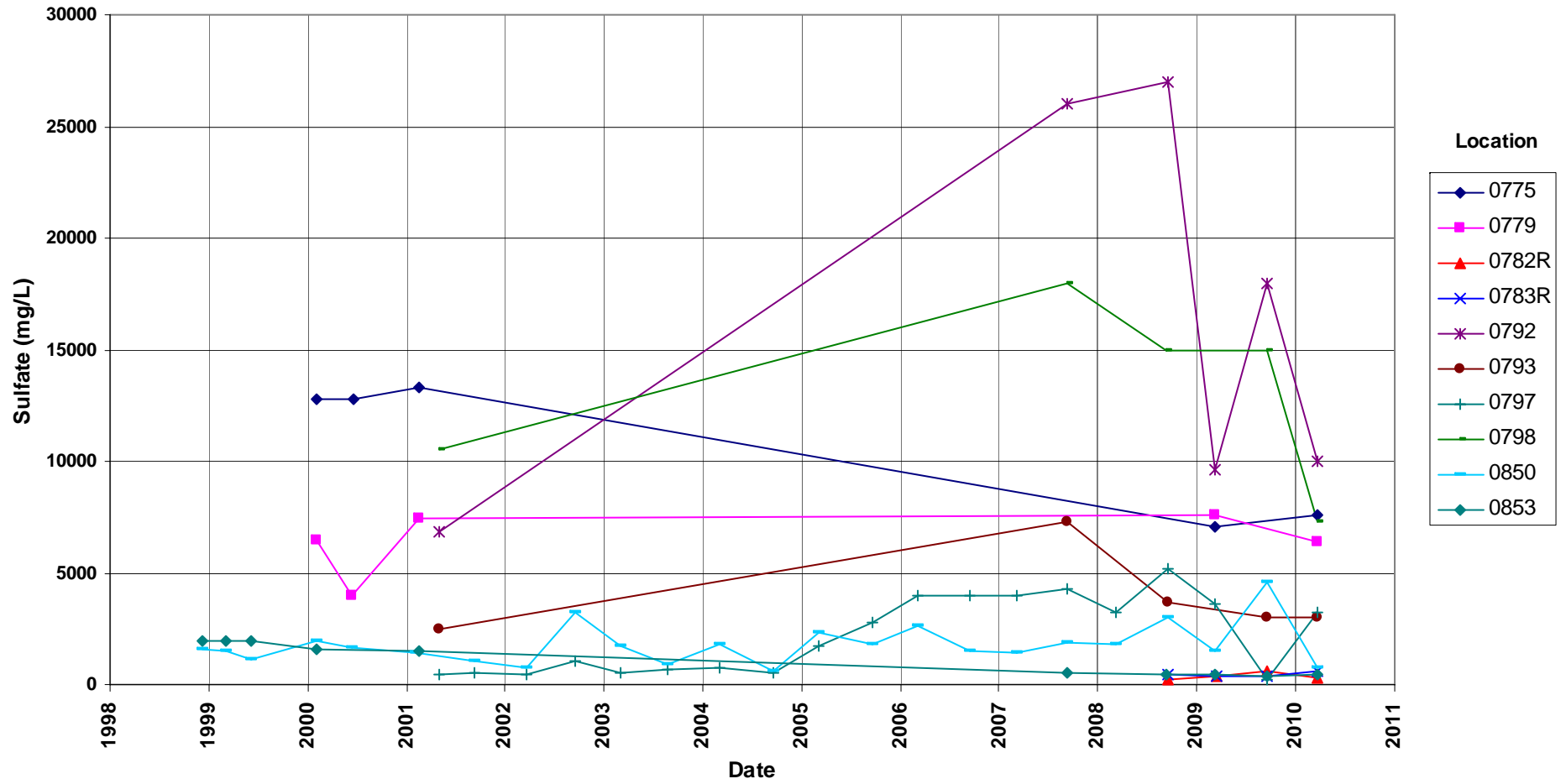
No established groundwater standard



# Shiprock Disposal Site (Floodplain)

## Sulfate Concentration

No established groundwater standard

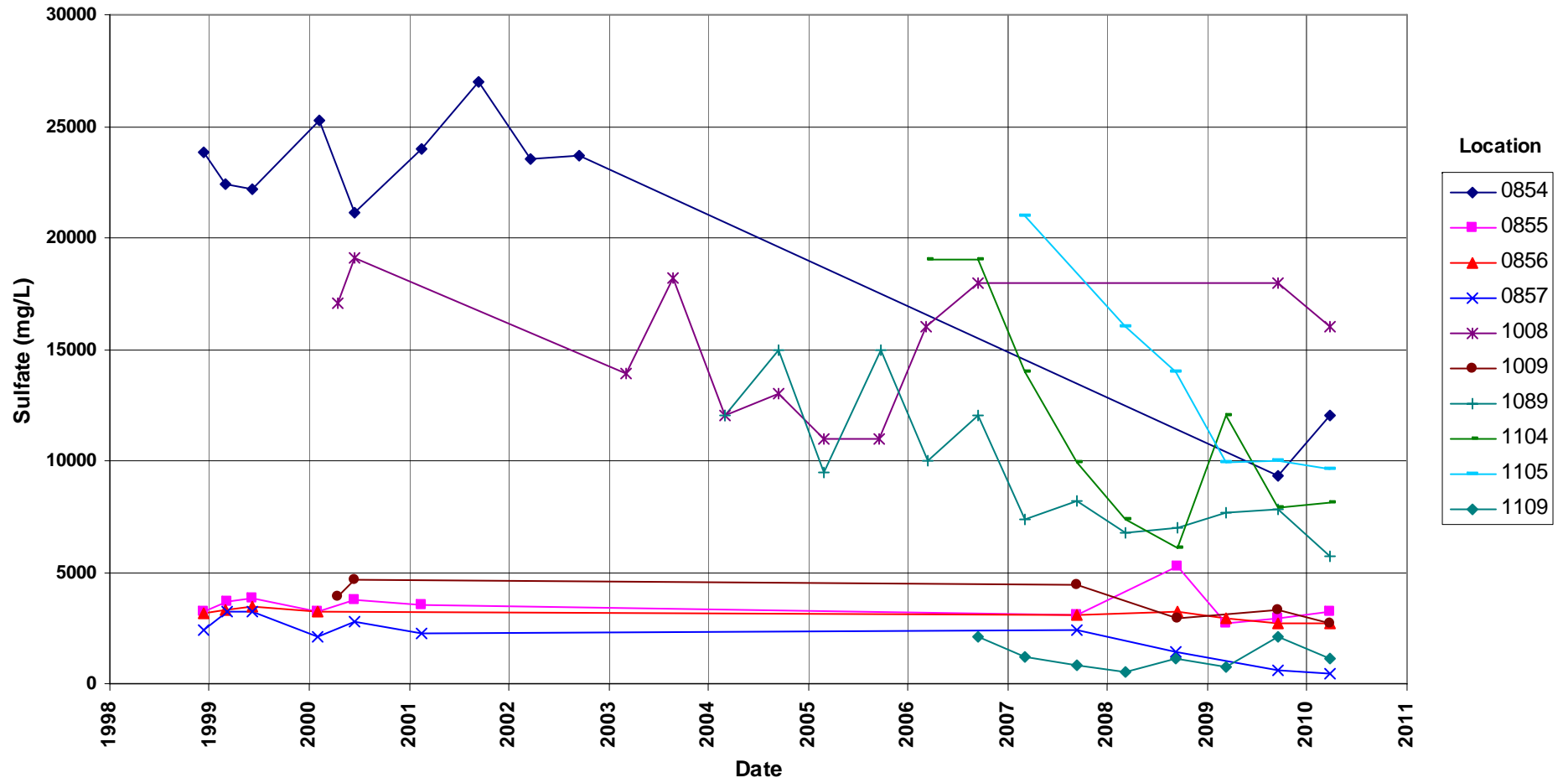




# Shiprock Disposal Site (Floodplain)

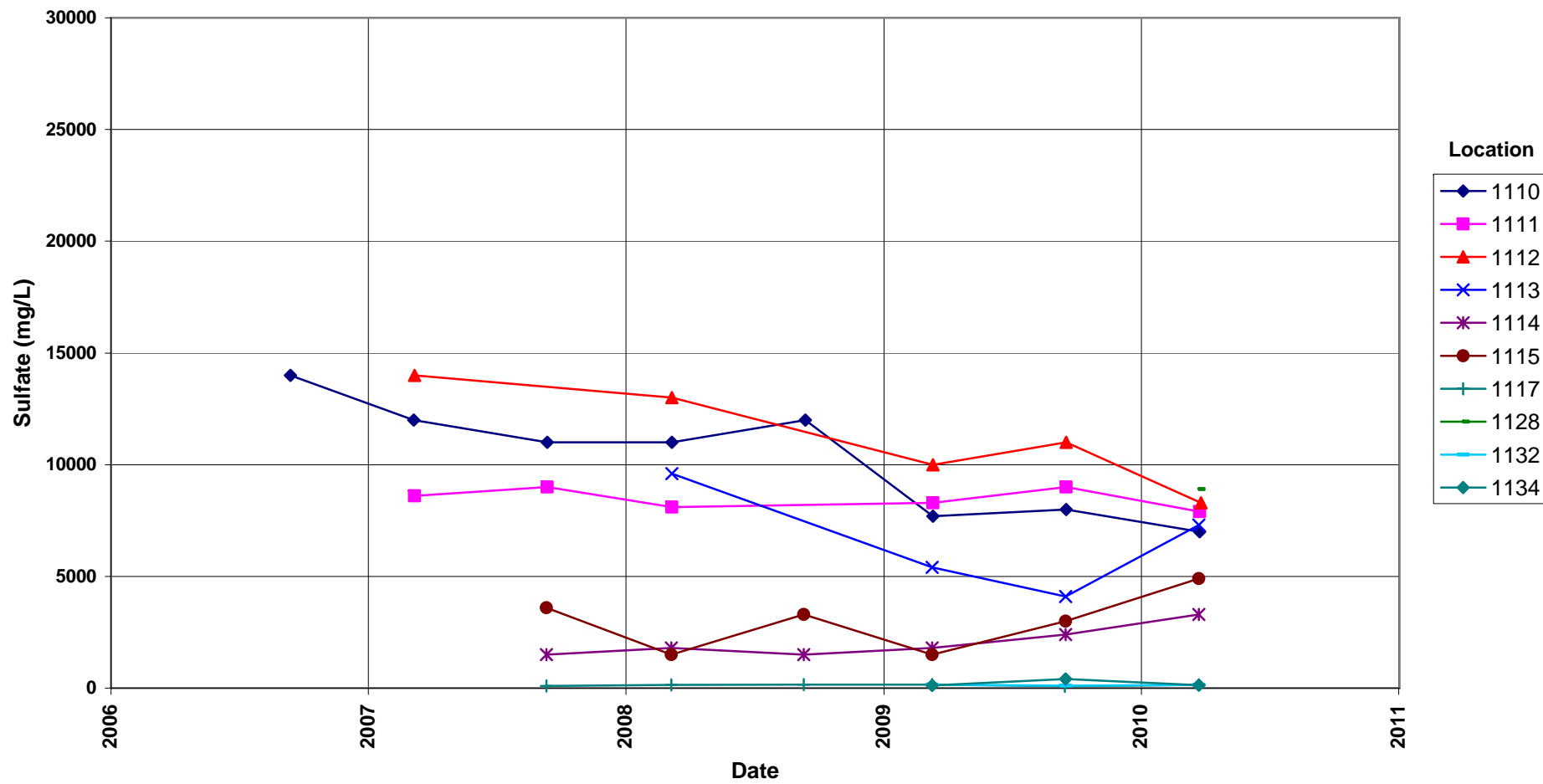
## Sulfate Concentration

No established groundwater standard



# Shiprock Disposal Site (Floodplain) Sulfate Concentration

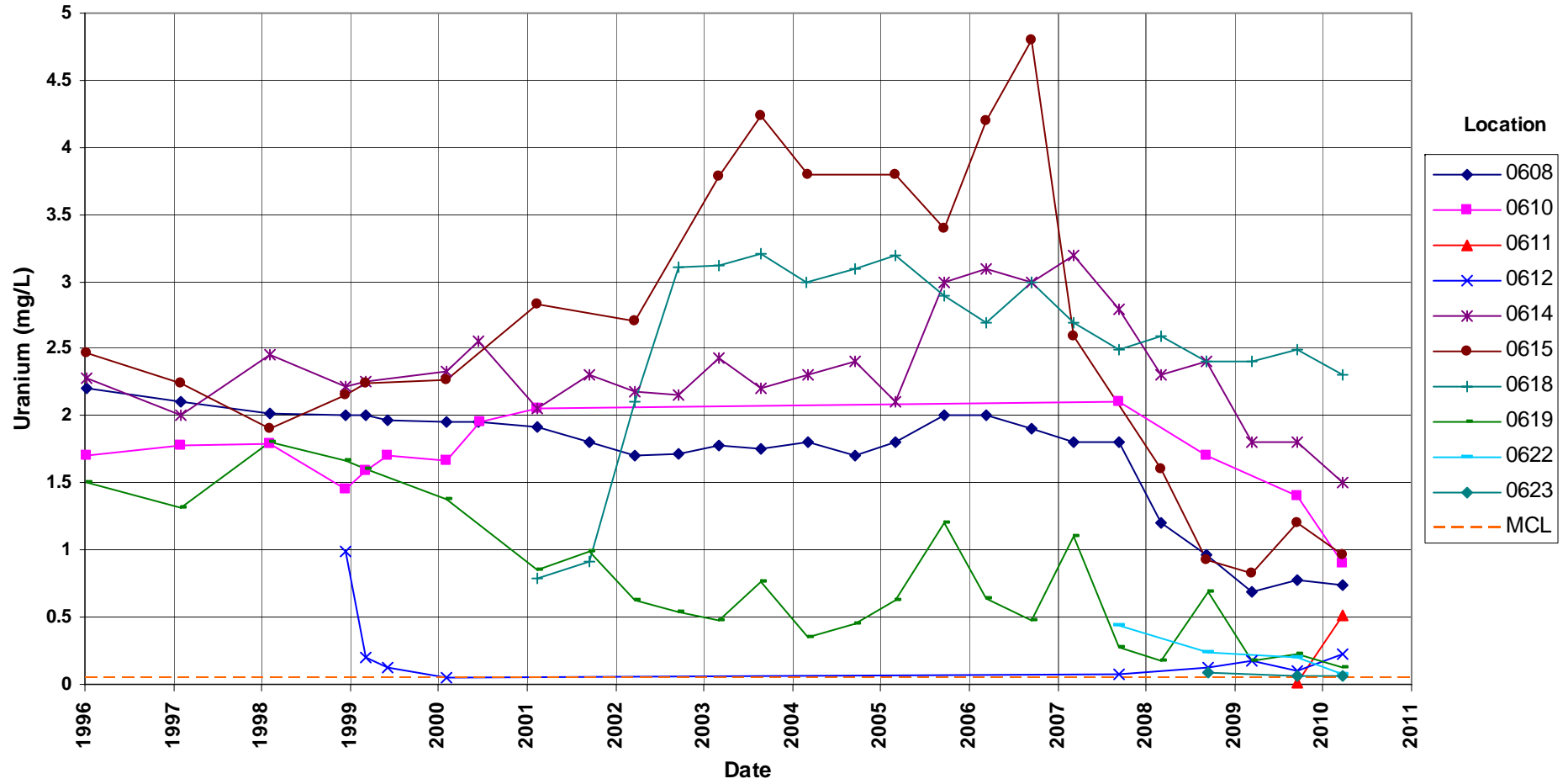
No established groundwater standard



# Shiprock Disposal Site (Floodplain)

## Uranium Concentration

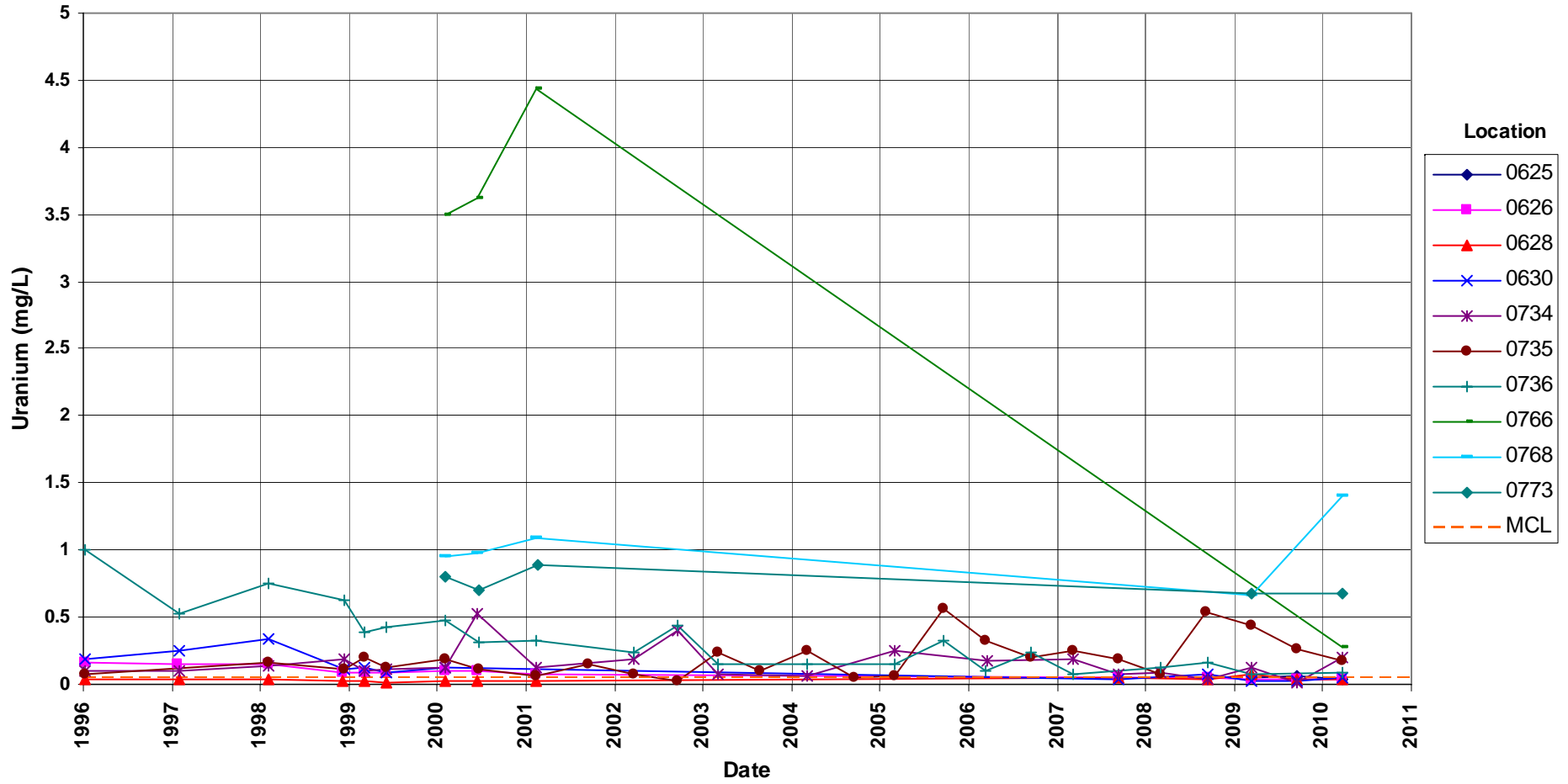
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



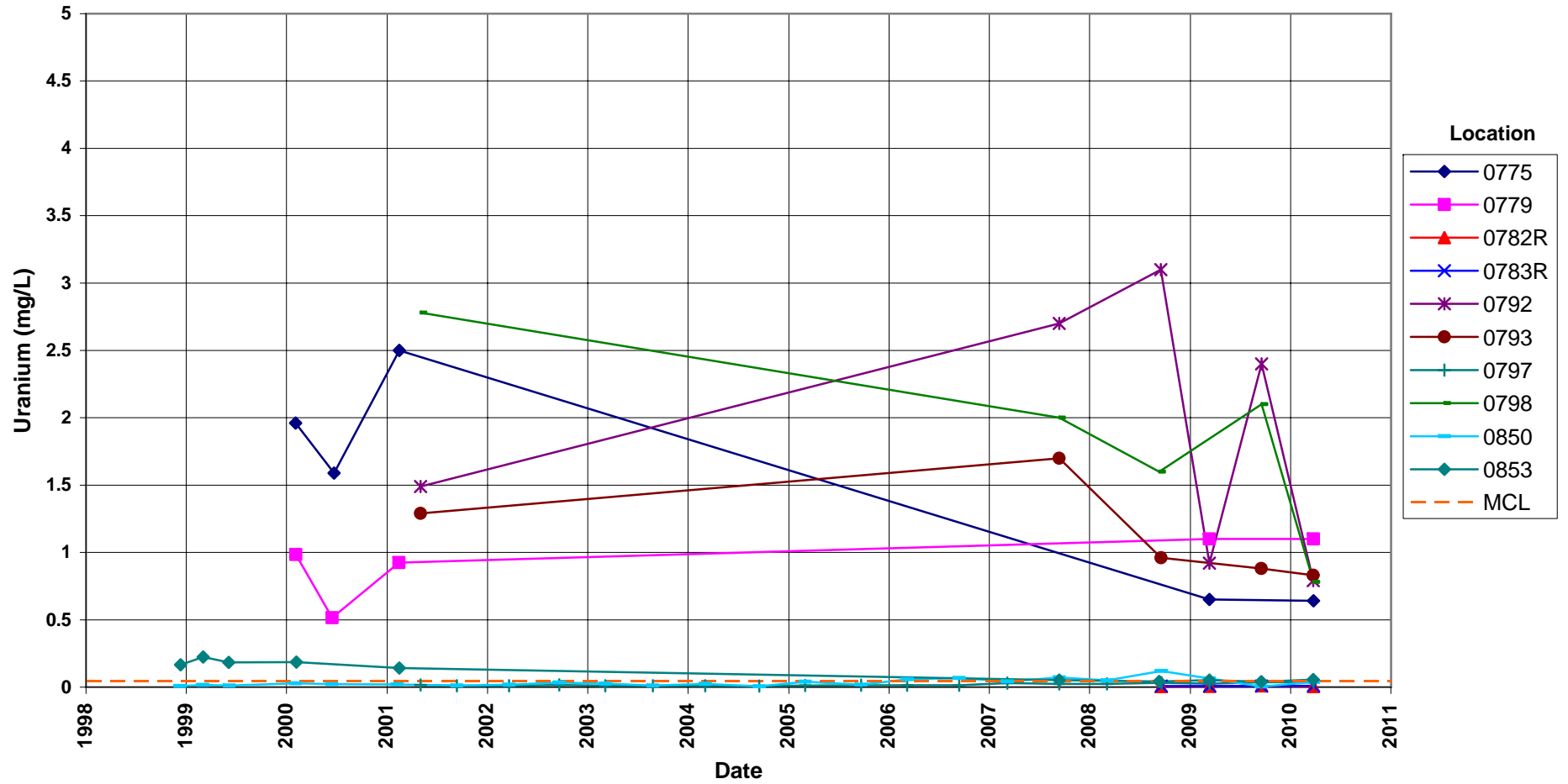
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## Uranium Concentration

40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



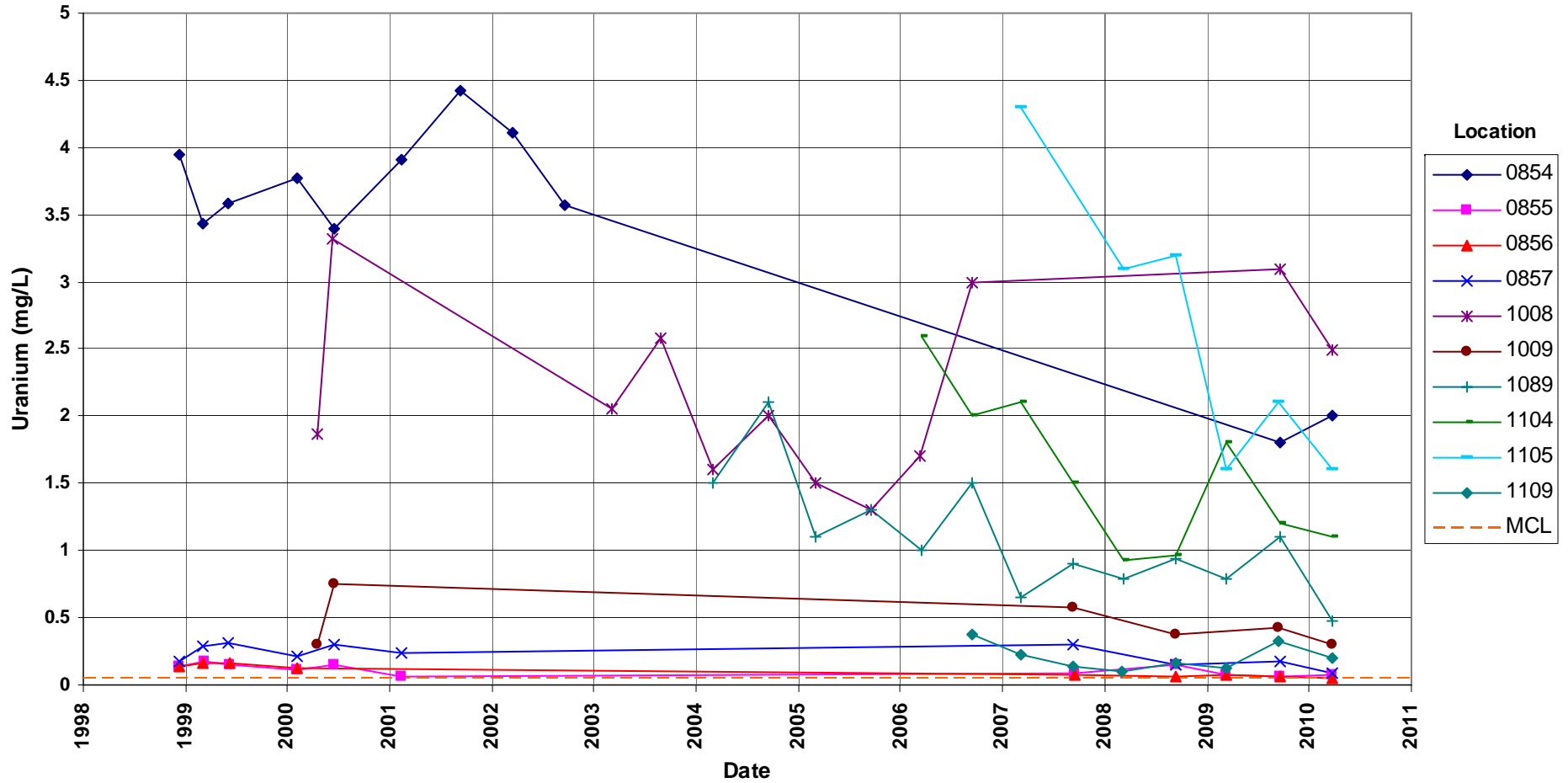
**Shiprock Disposal Site (Floodplain)**  
**Uranium Concentration**  
 40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



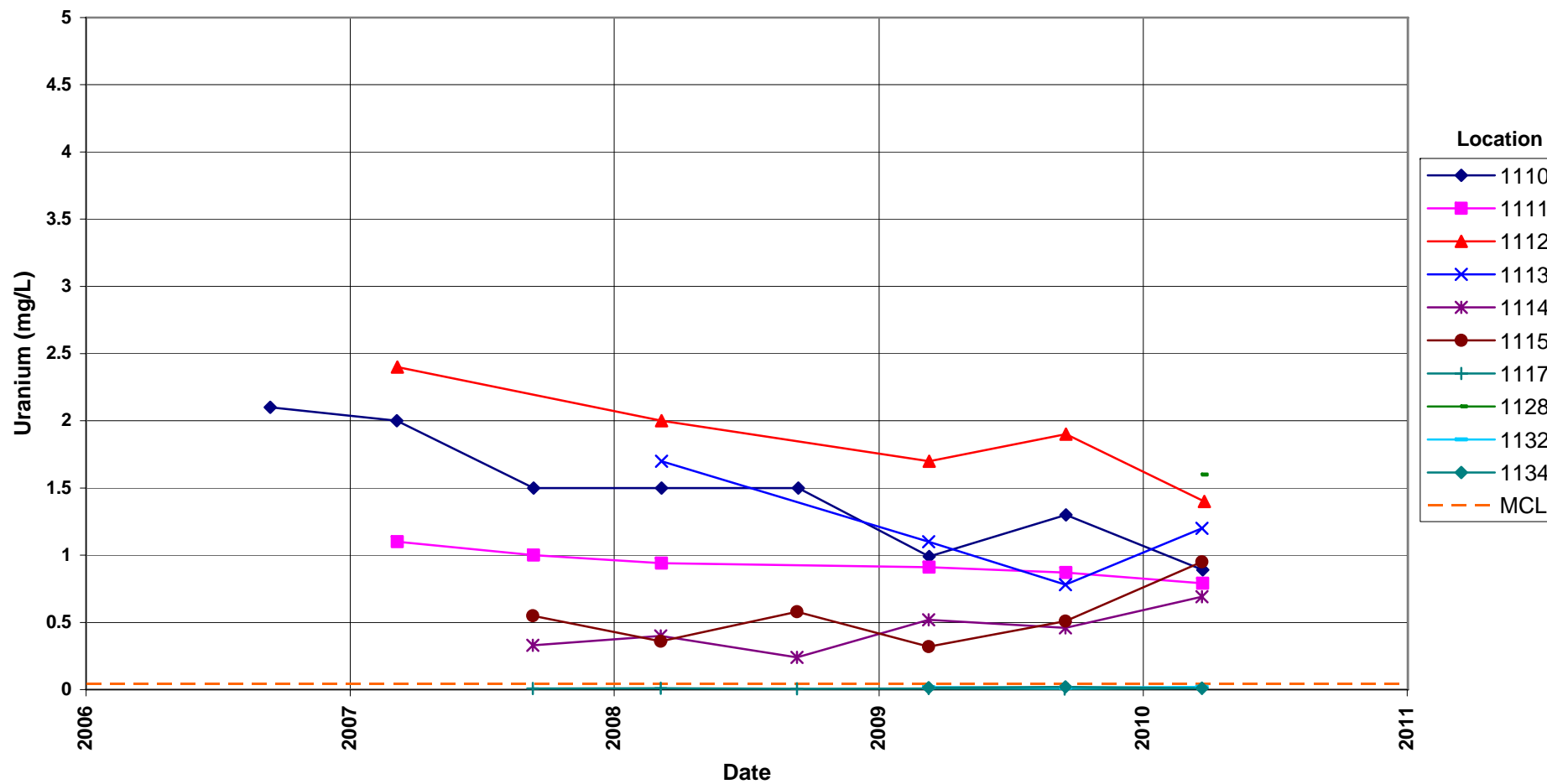
# Shiprock Disposal Site (Floodplain)

## Uranium Concentration

40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



**Shiprock Disposal Site (Floodplain)**  
**Uranium Concentration**  
 40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



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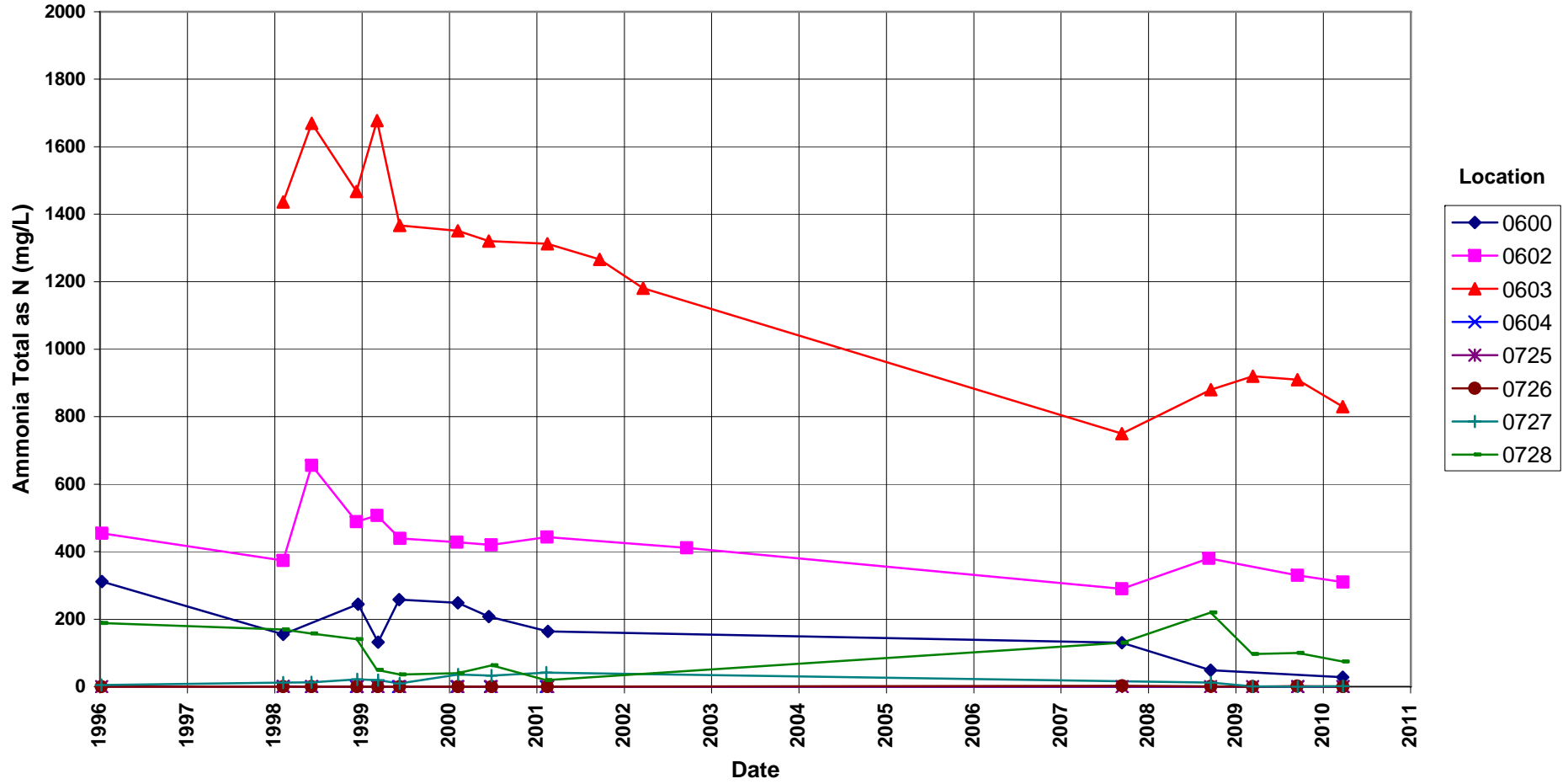


**Time-Concentration Graphs  
Terrace Groundwater Locations**

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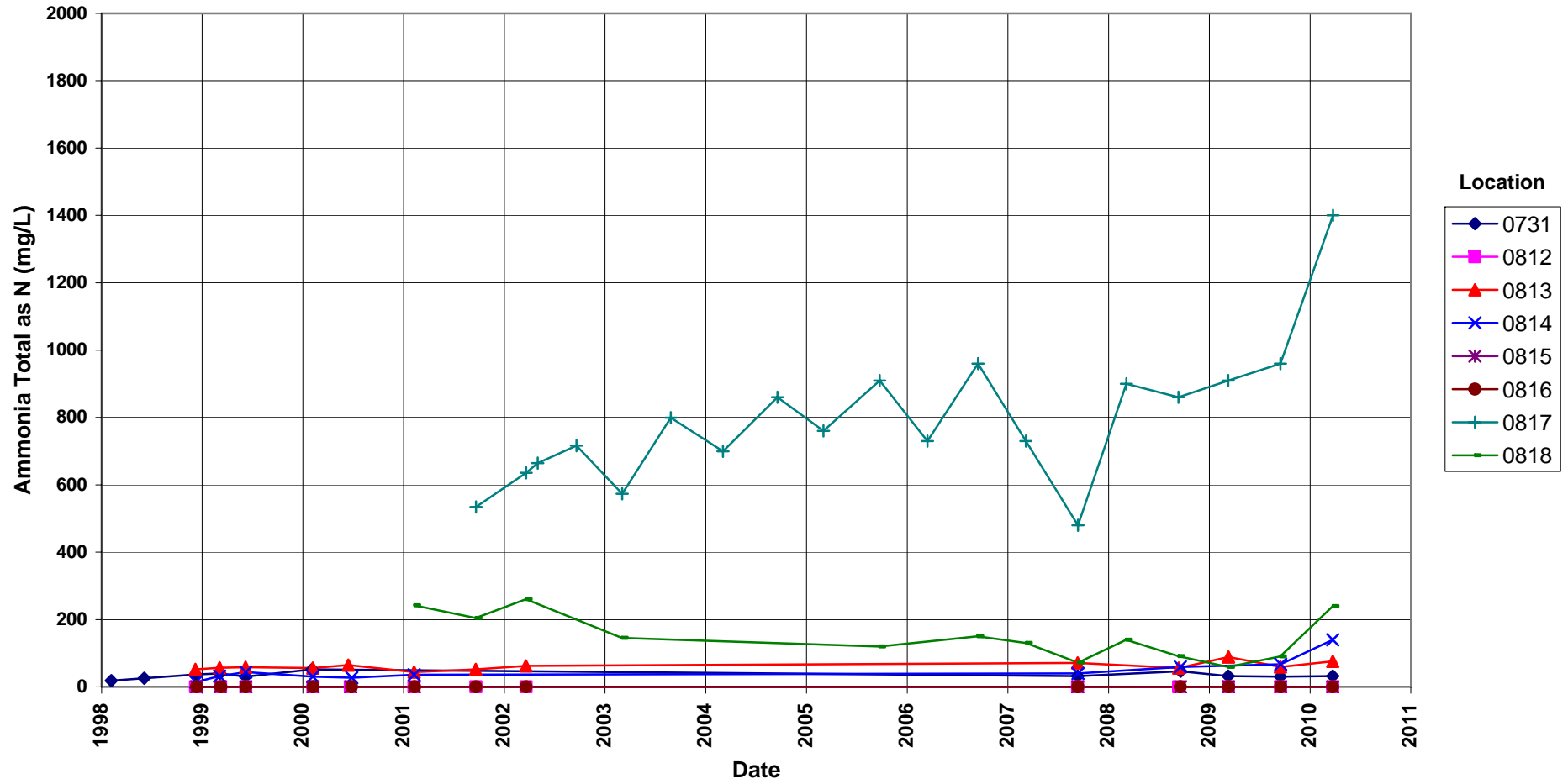
# Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration

No established groundwater standard



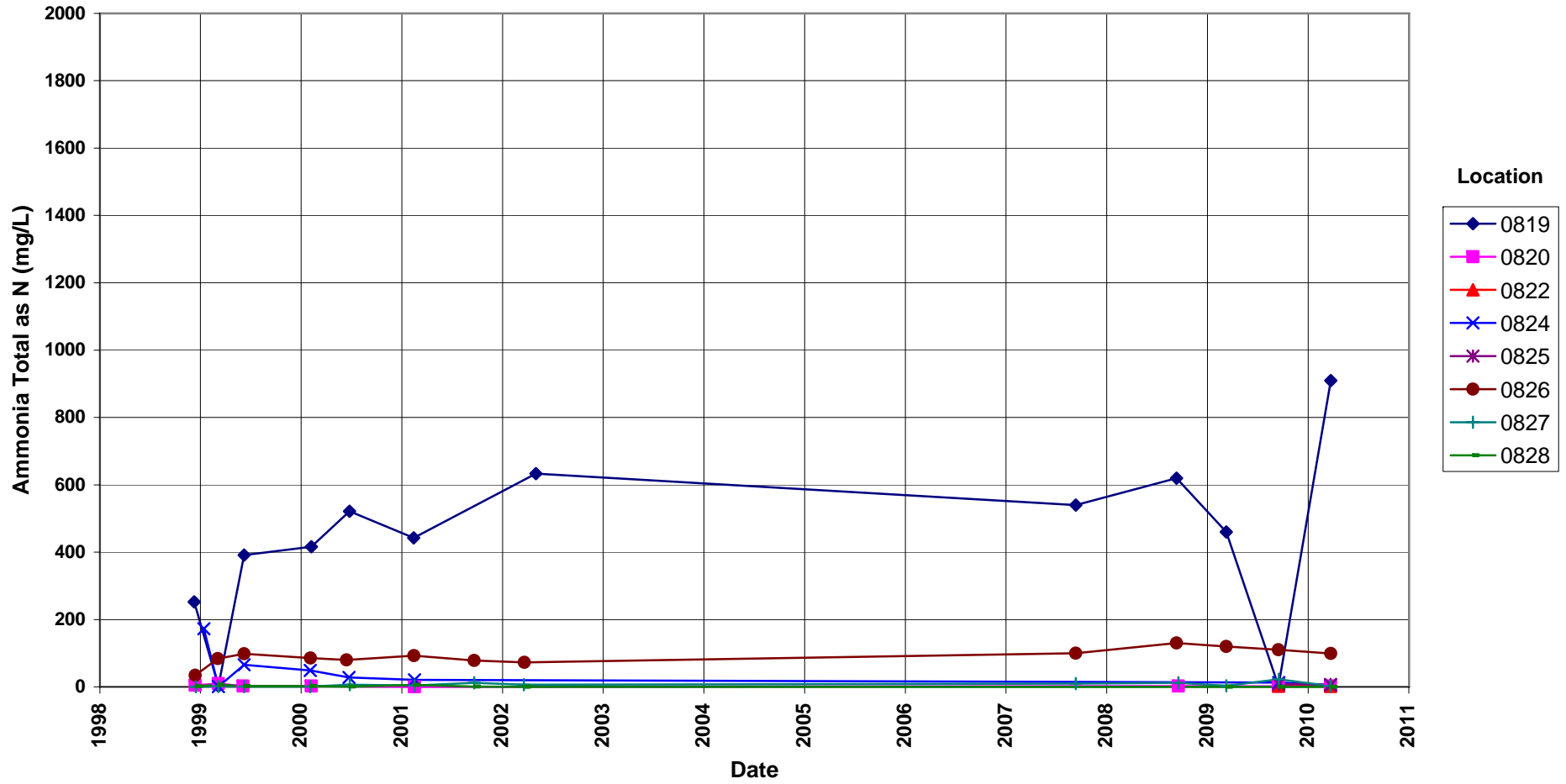
# Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration

No established groundwater standard



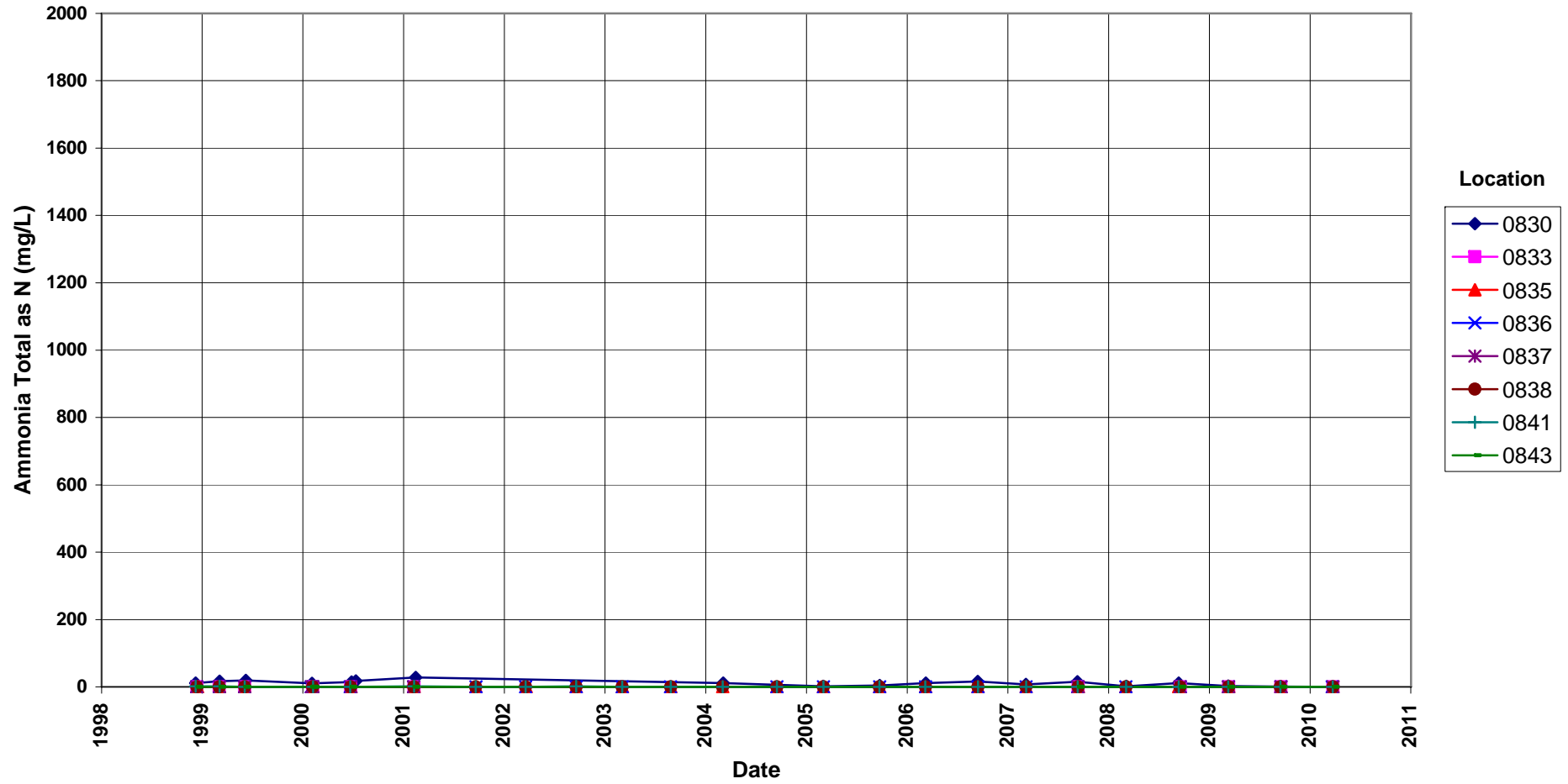
# Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration

No established groundwater standard



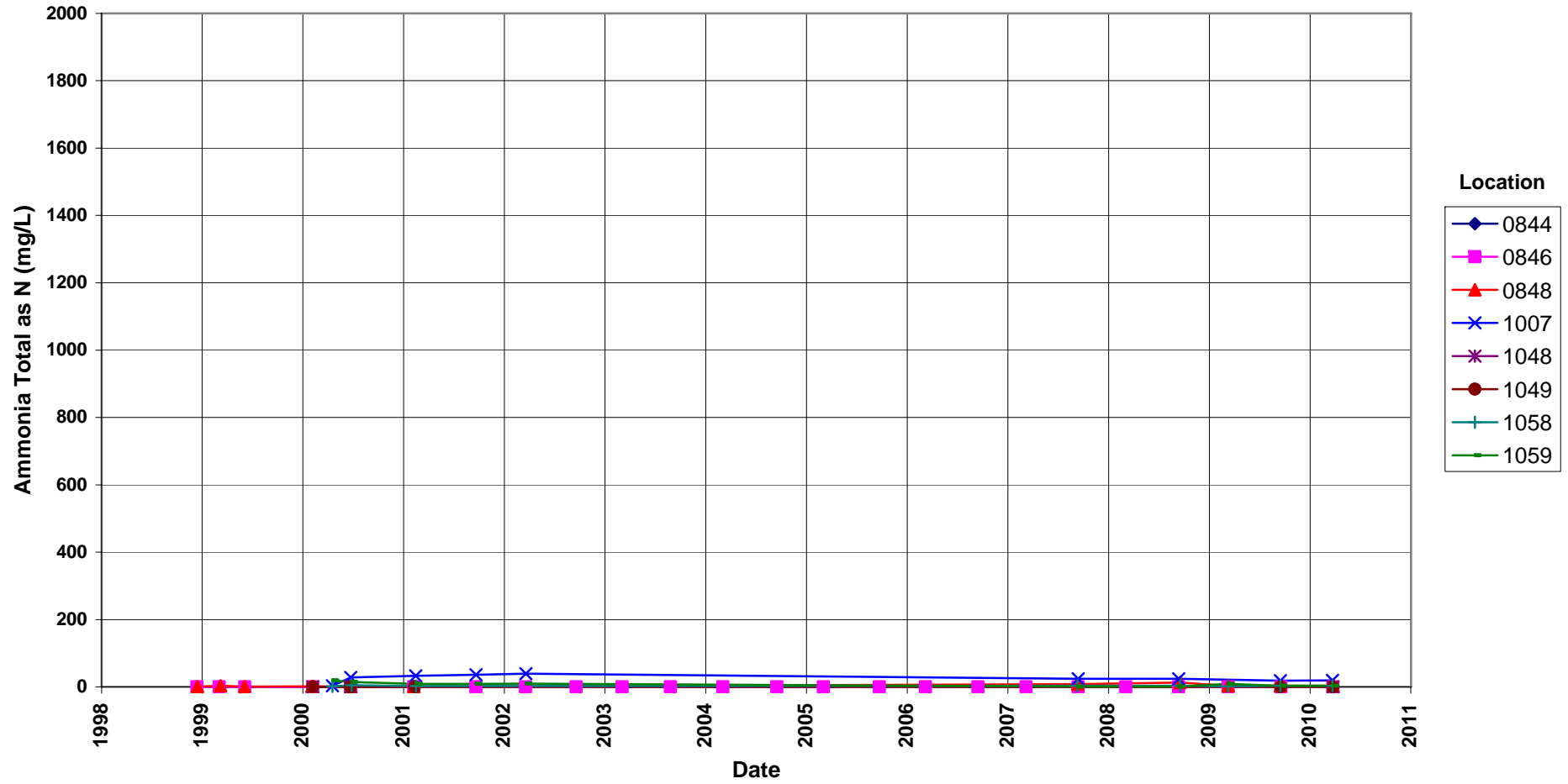
# Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration

No established groundwater standard



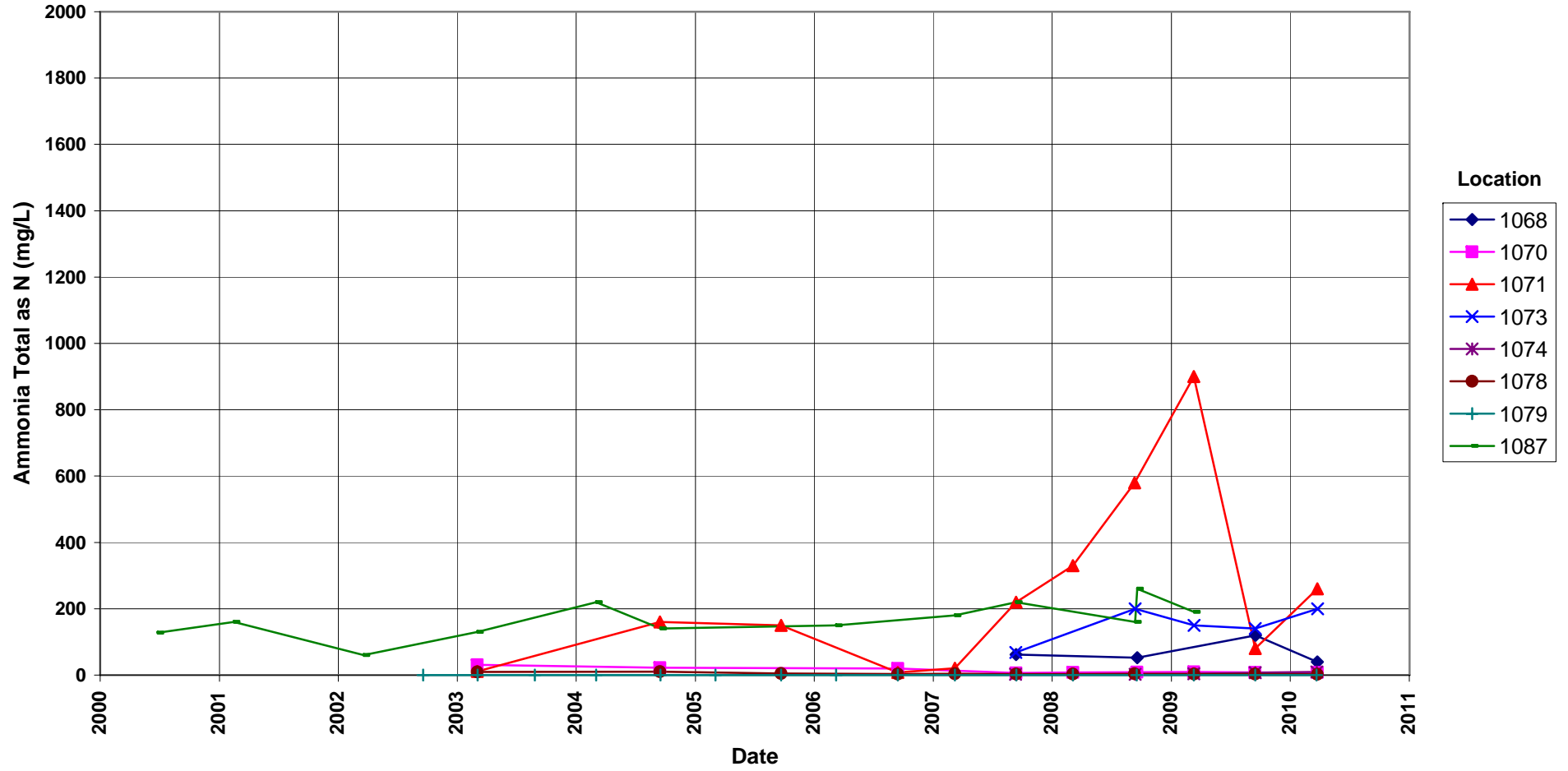
# Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration

No established groundwater standard



### Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration

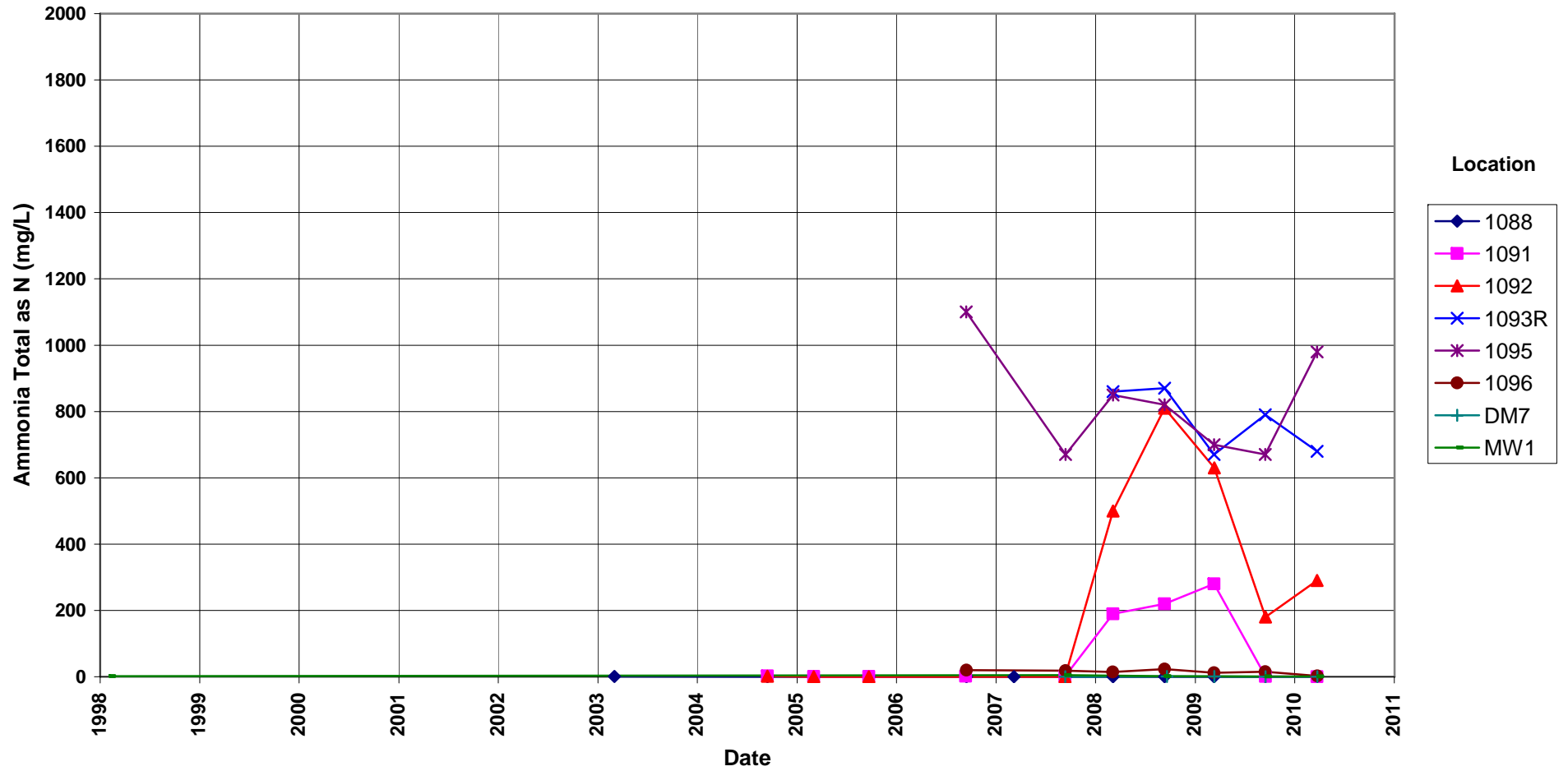
No established groundwater standard





# Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration

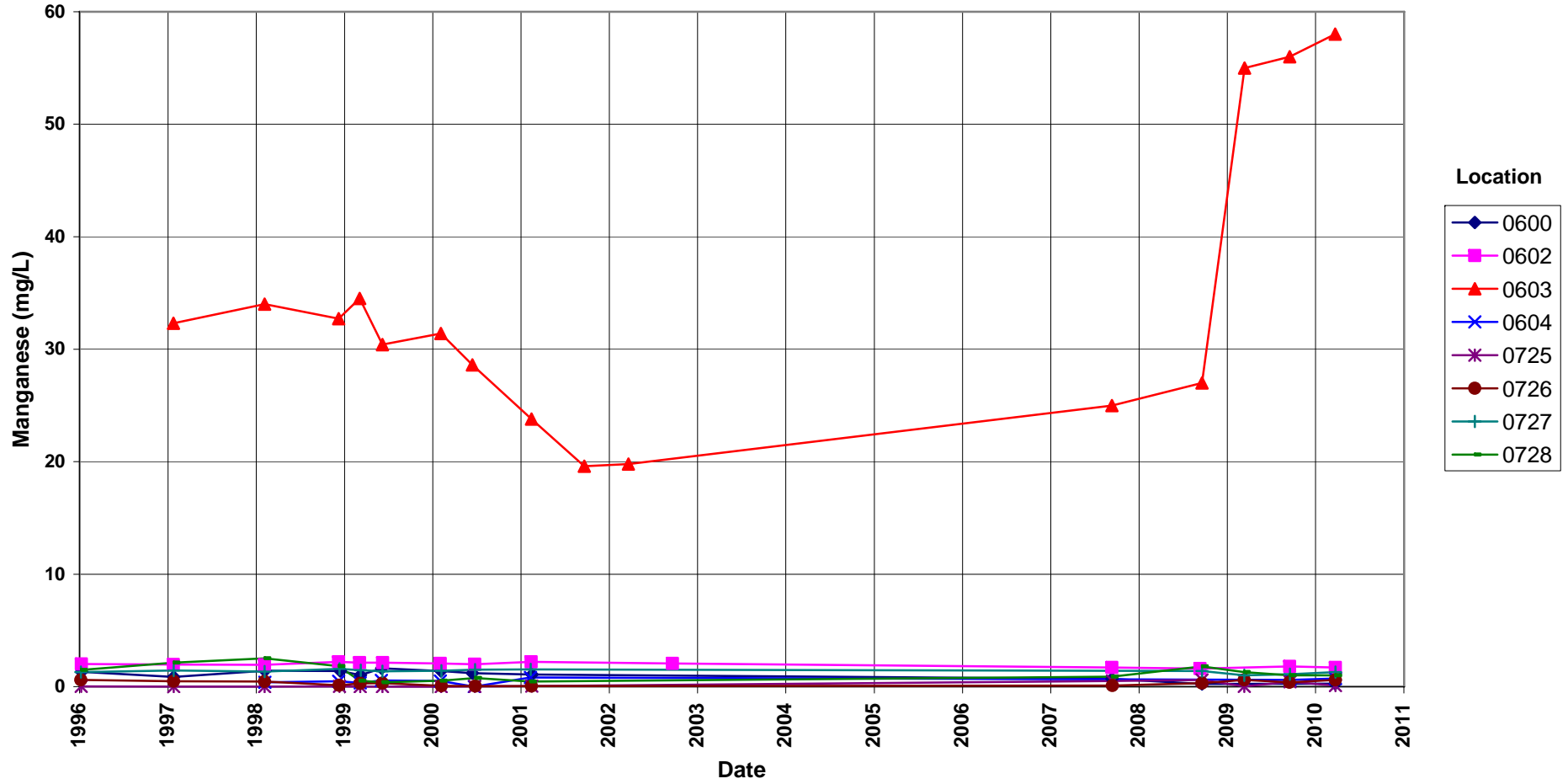
No established groundwater standard



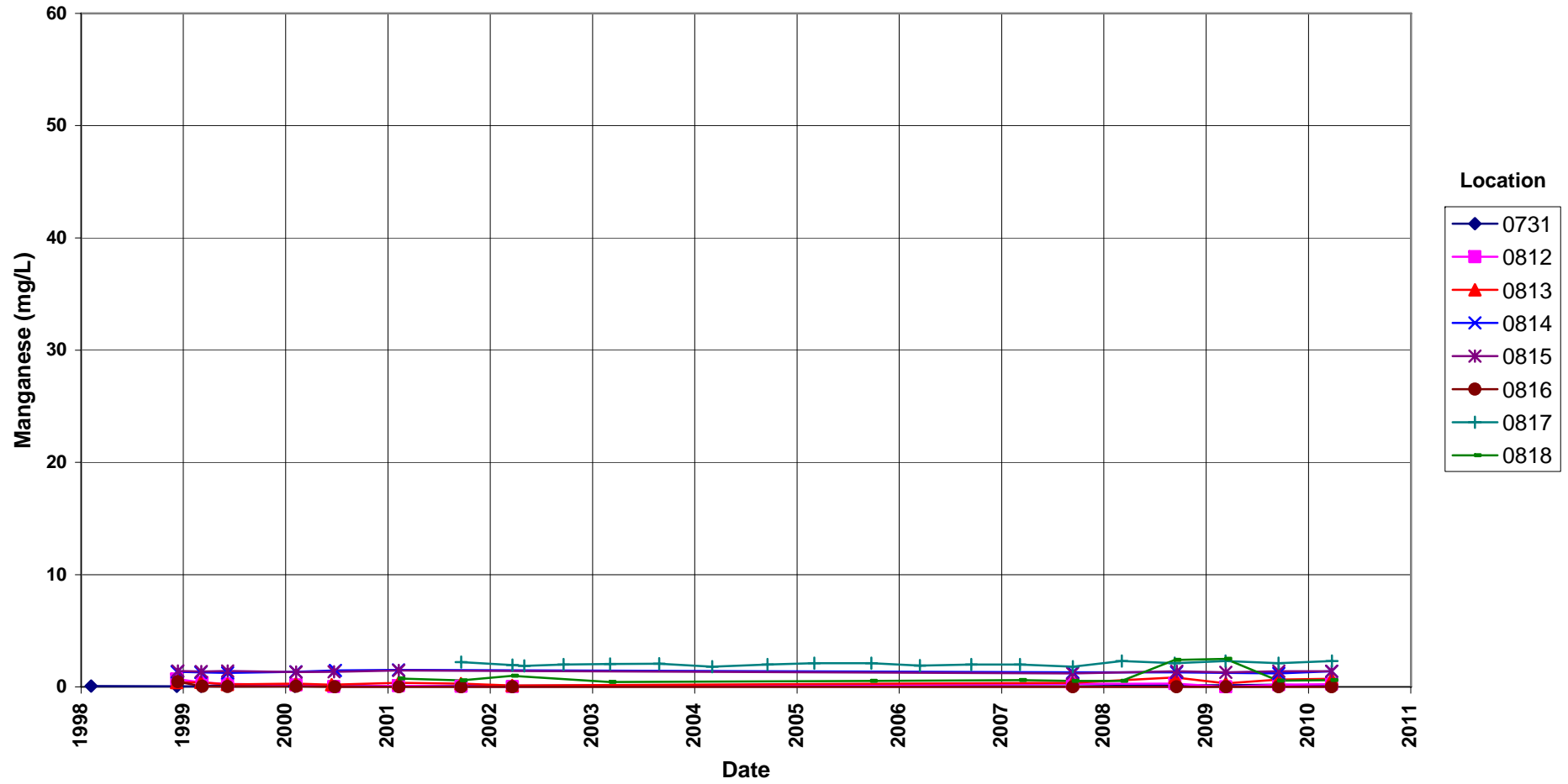
# Shiprock Disposal Site (Terrace)

## Manganese Concentration

No established groundwater standard



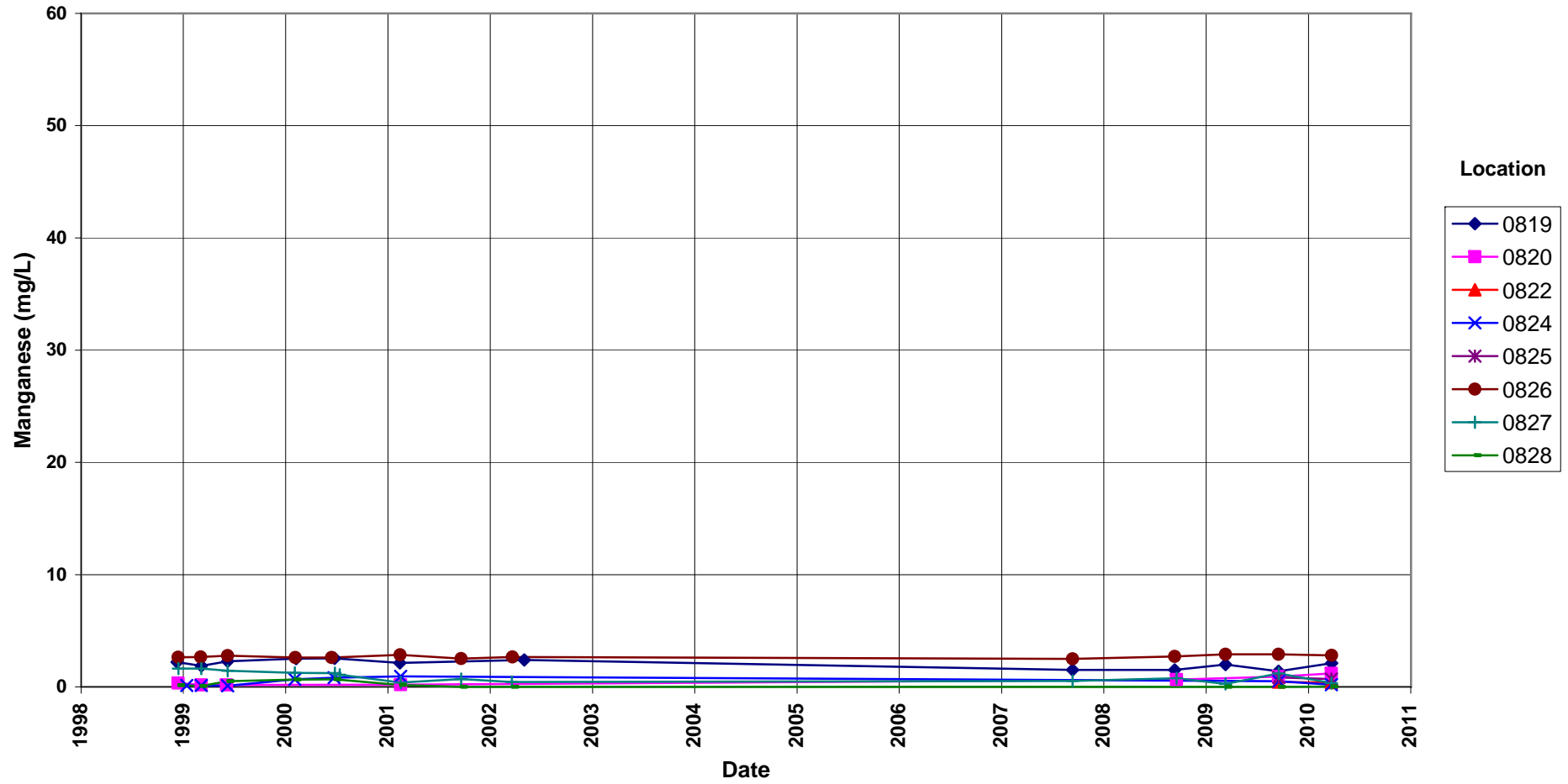
**Shiprock Disposal Site (Terrace)**  
**Manganese Concentration**  
No established groundwater standard



# Shiprock Disposal Site (Terrace)

## Manganese Concentration

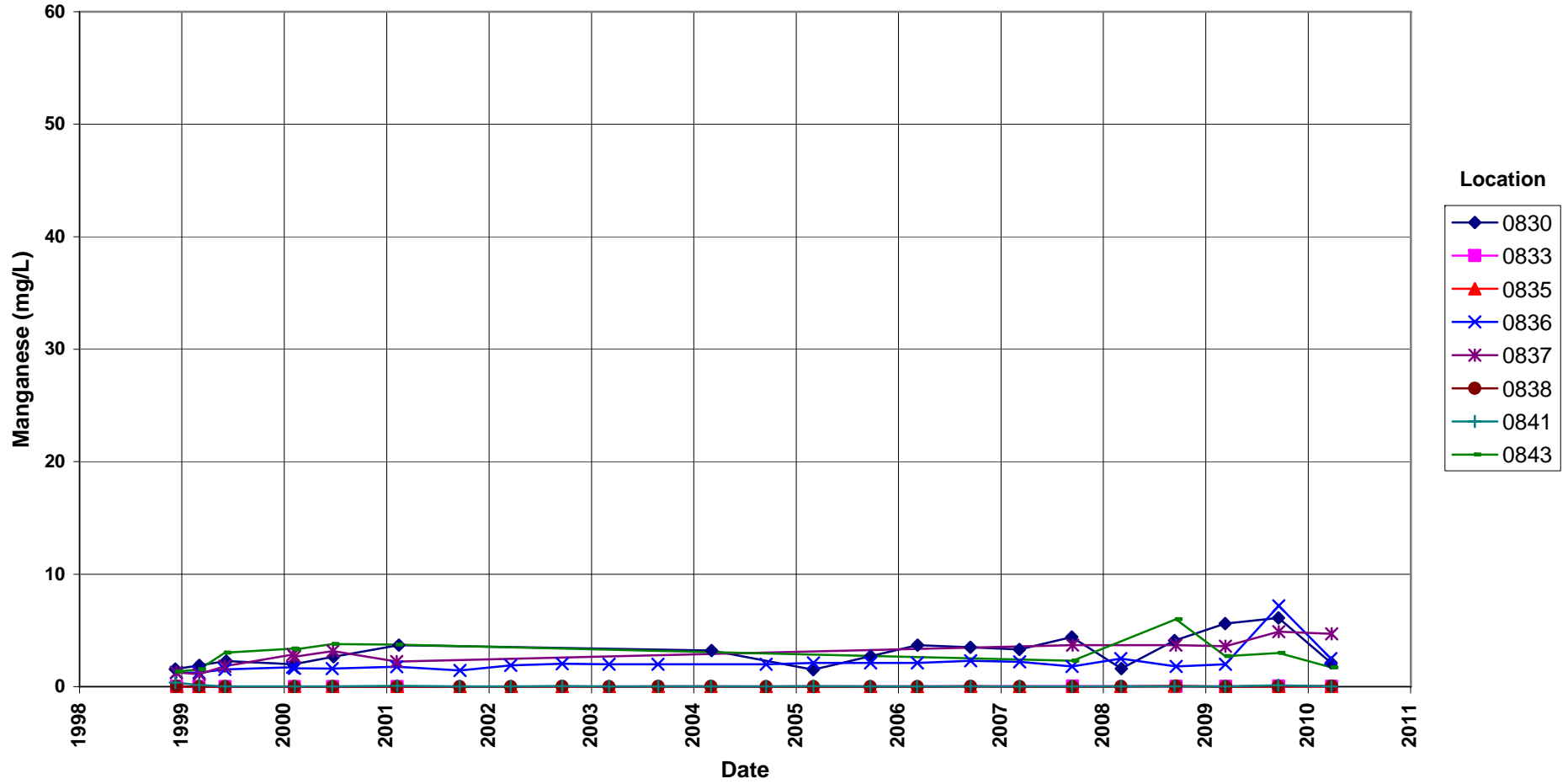
No established groundwater standard



# Shiprock Disposal Site (Terrace)

## Manganese Concentration

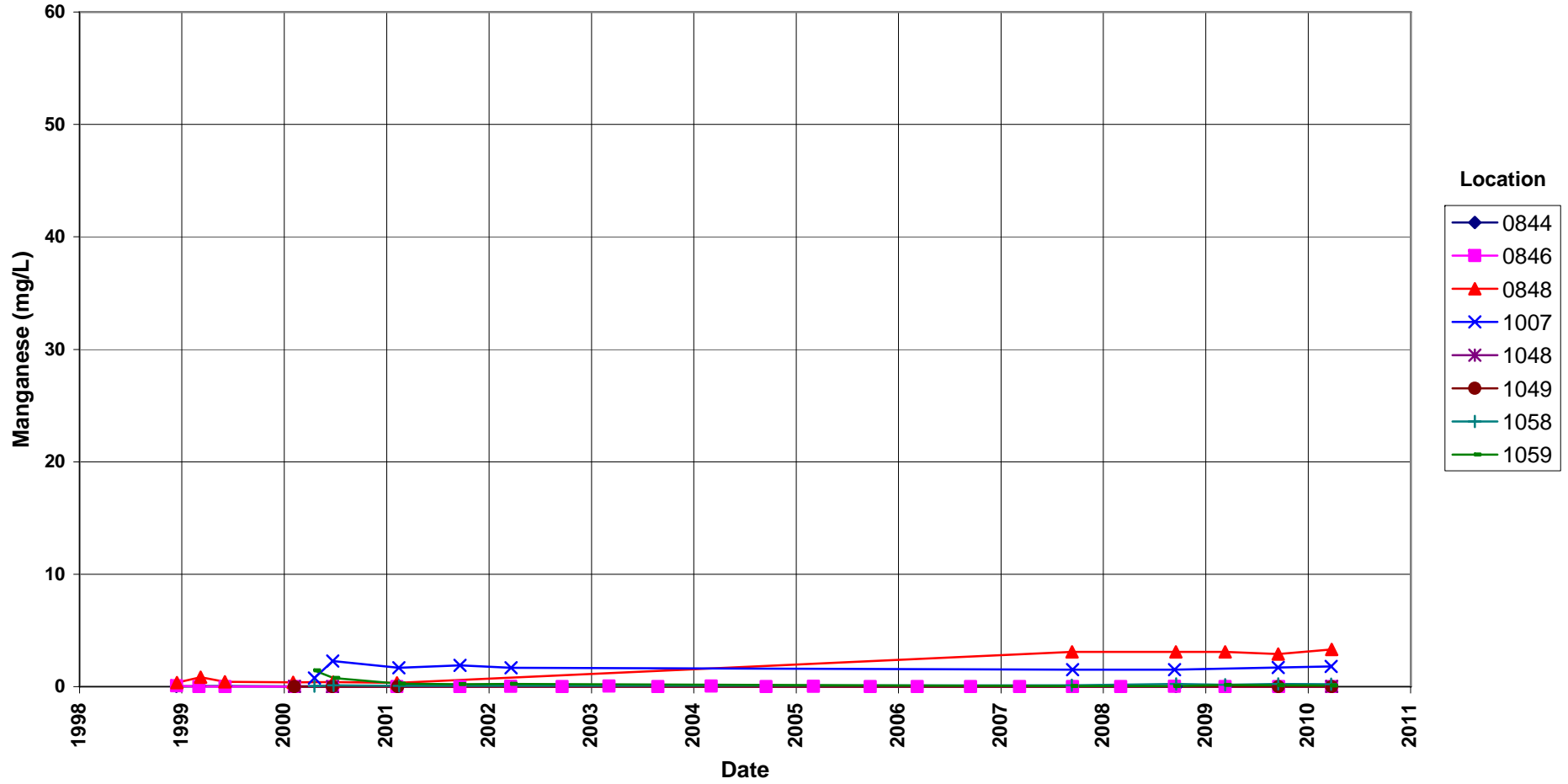
No established groundwater standard



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## Manganese Concentration

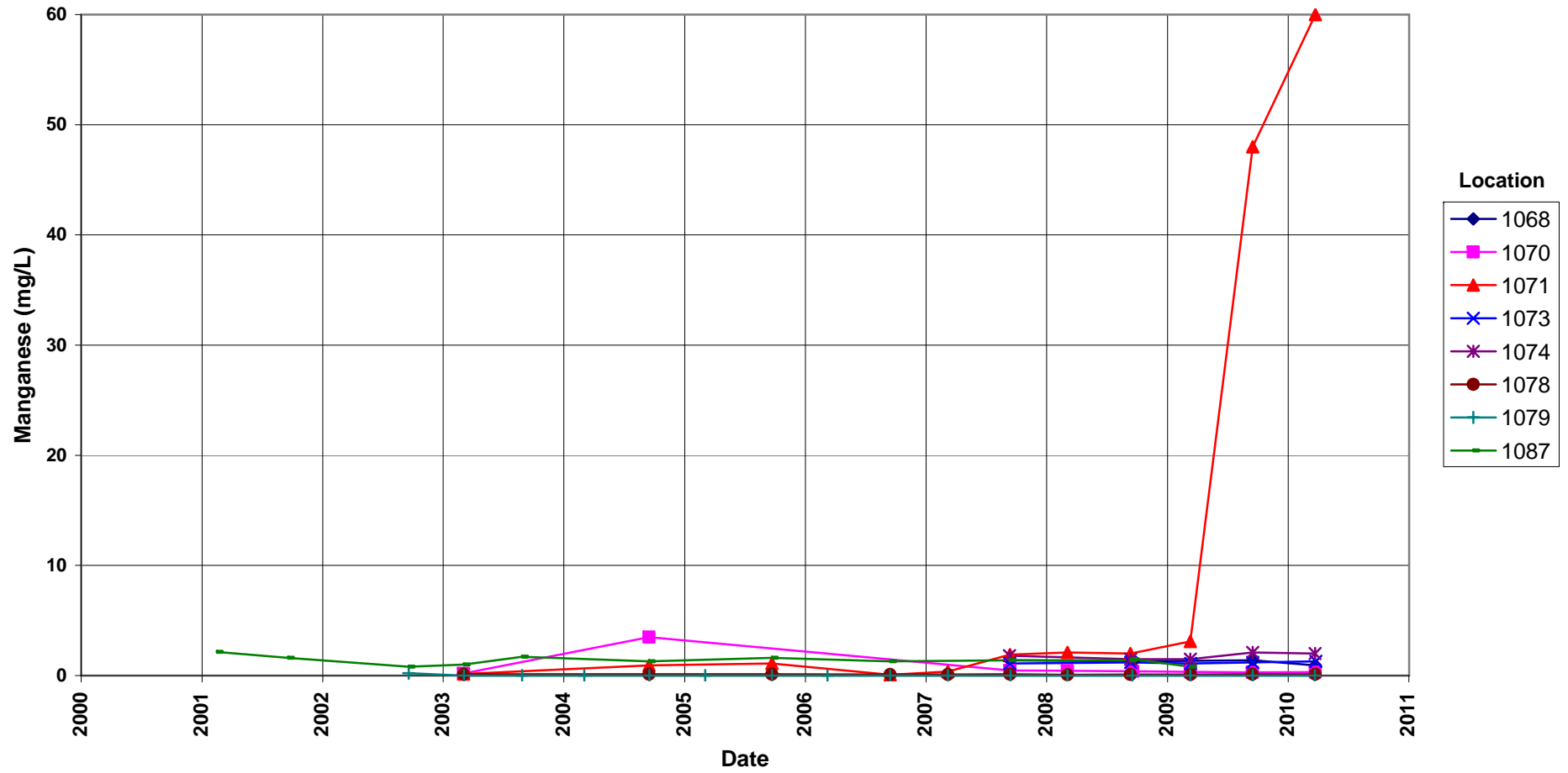
No established groundwater standard



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## Manganese Concentration

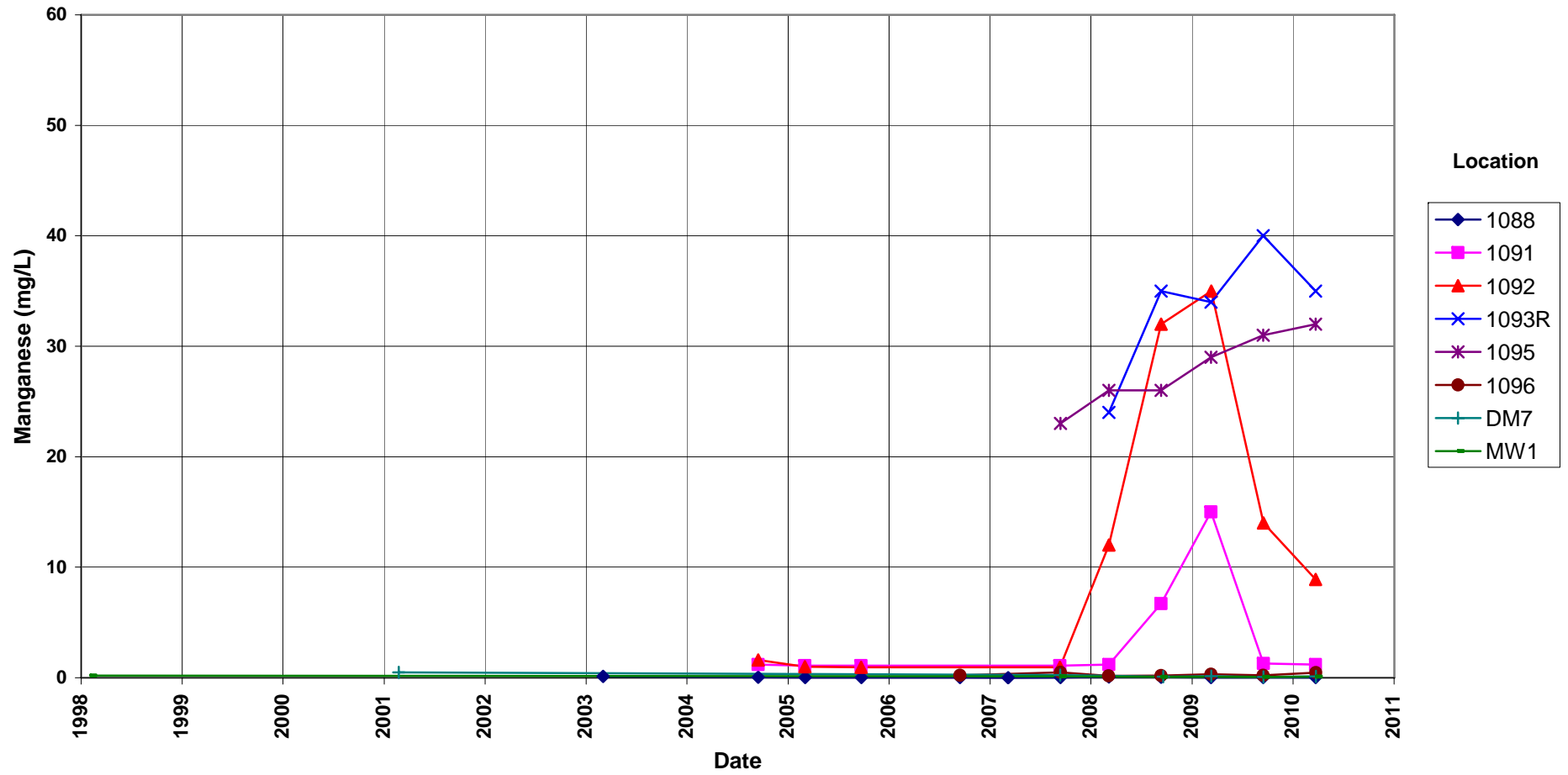
No established groundwater standard



# Shiprock Disposal Site (Terrace)

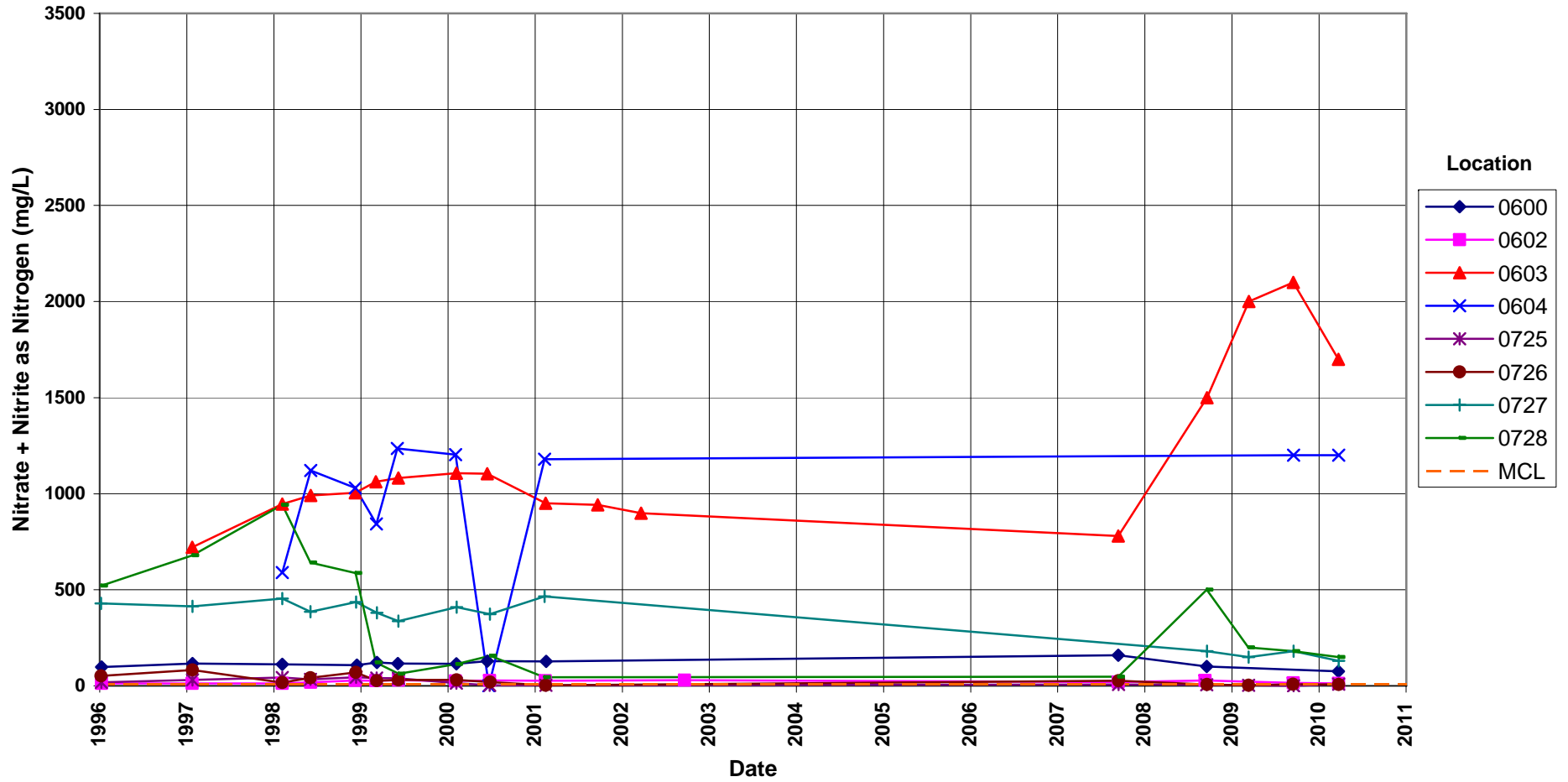
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No established groundwater standard

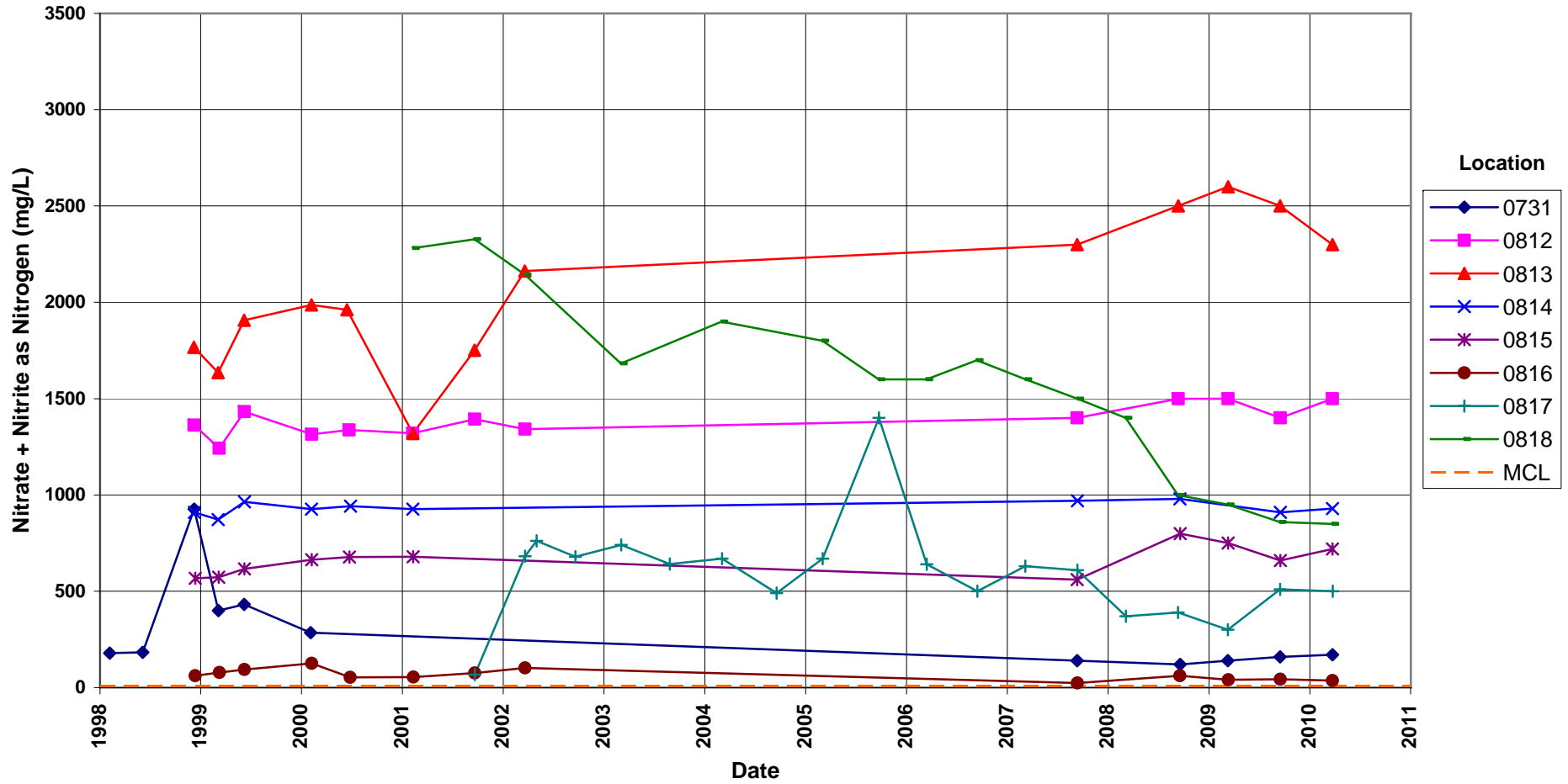




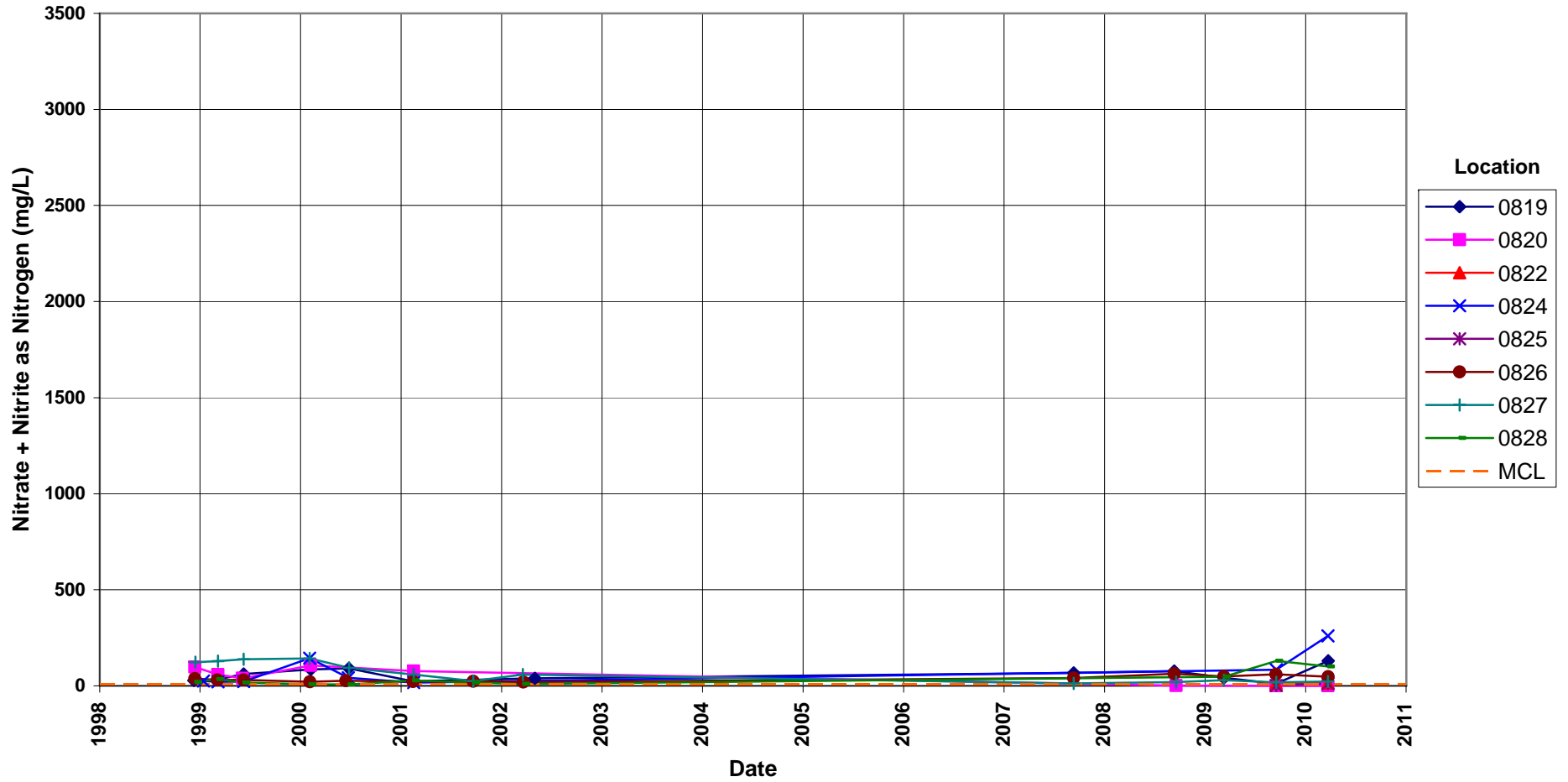
**Shiprock Disposal Site (Terrace)**  
**Nitrate + Nitrite as Nitrogen Concentration**  
 40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L



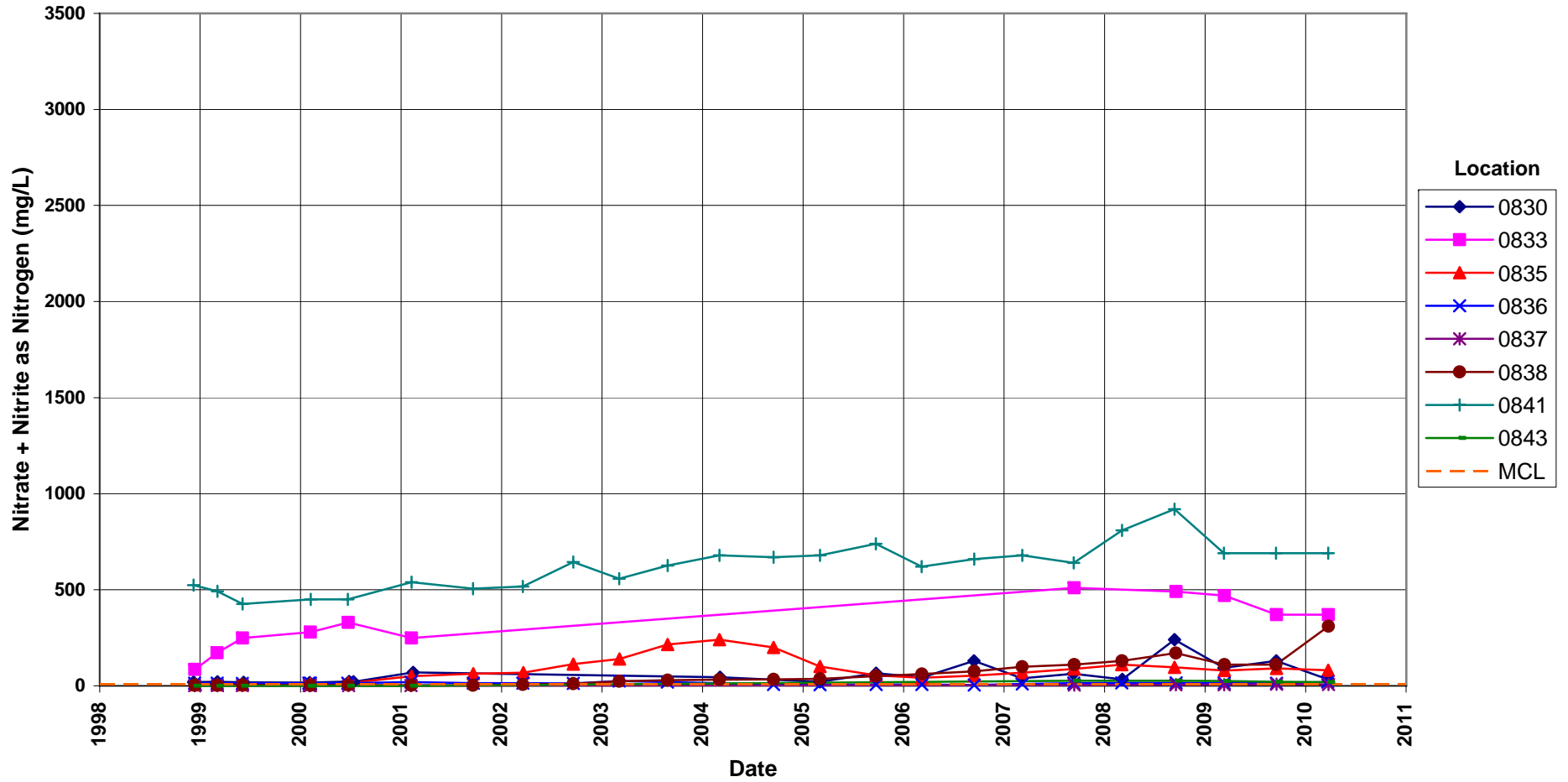
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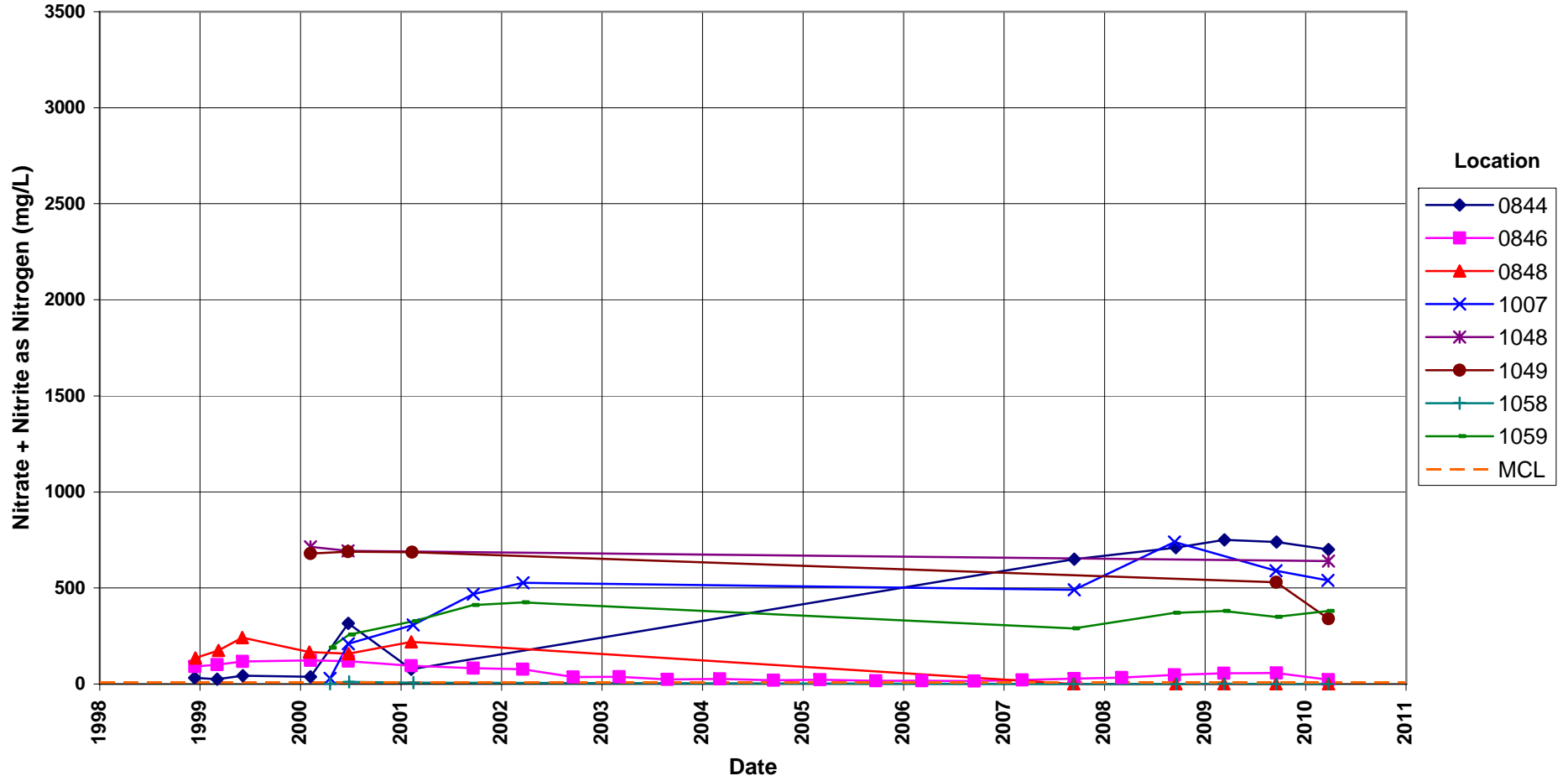
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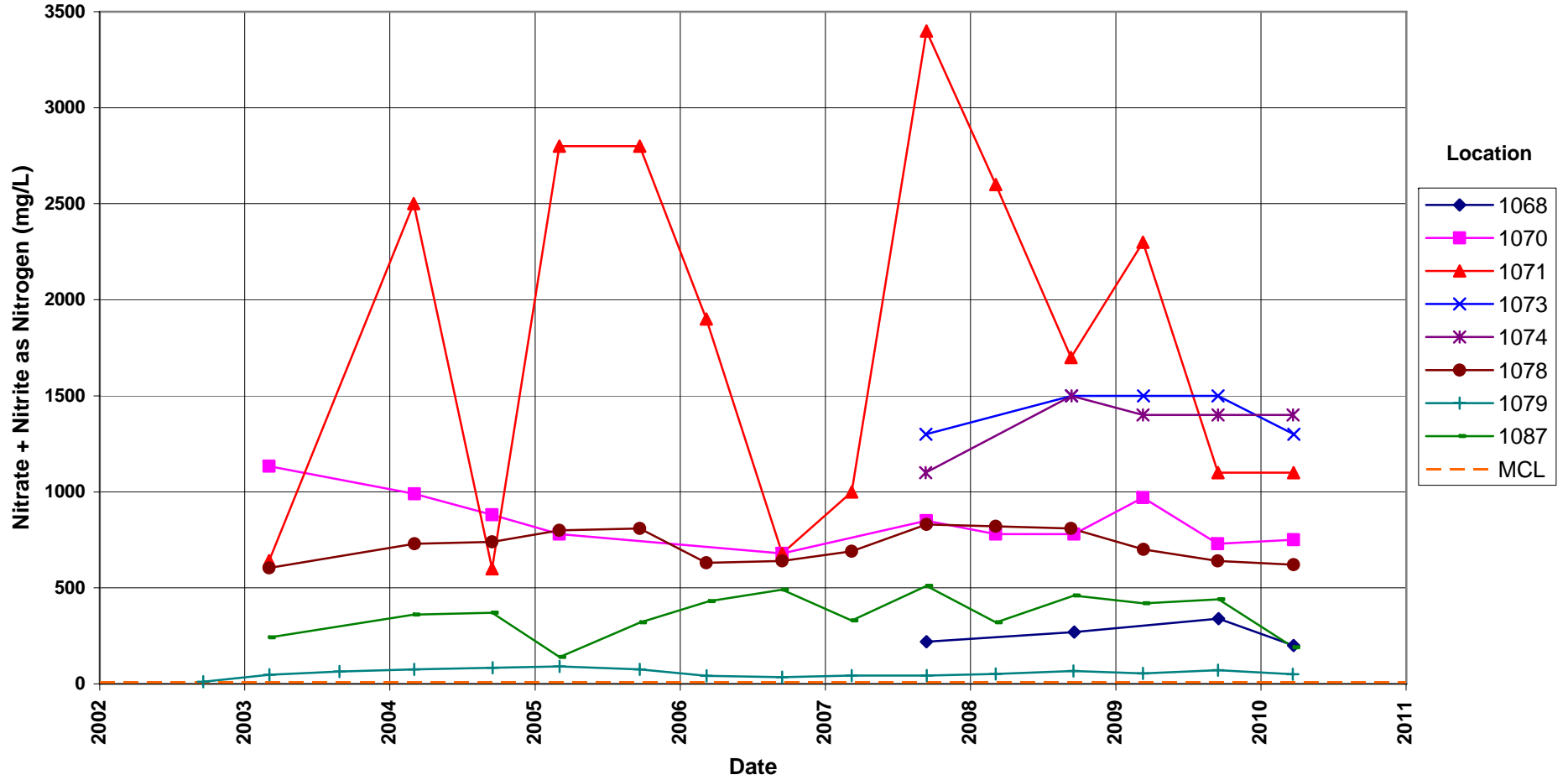
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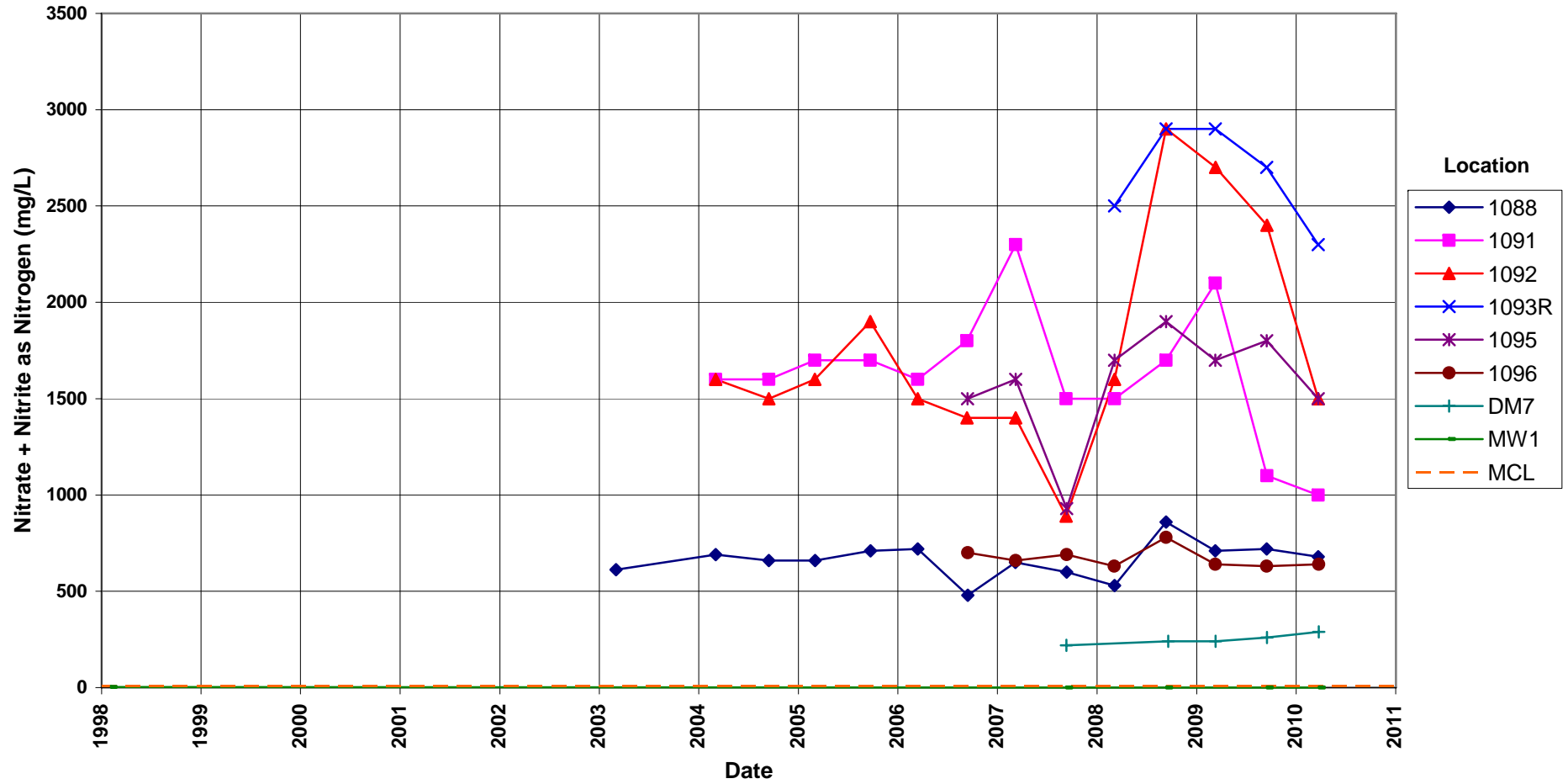
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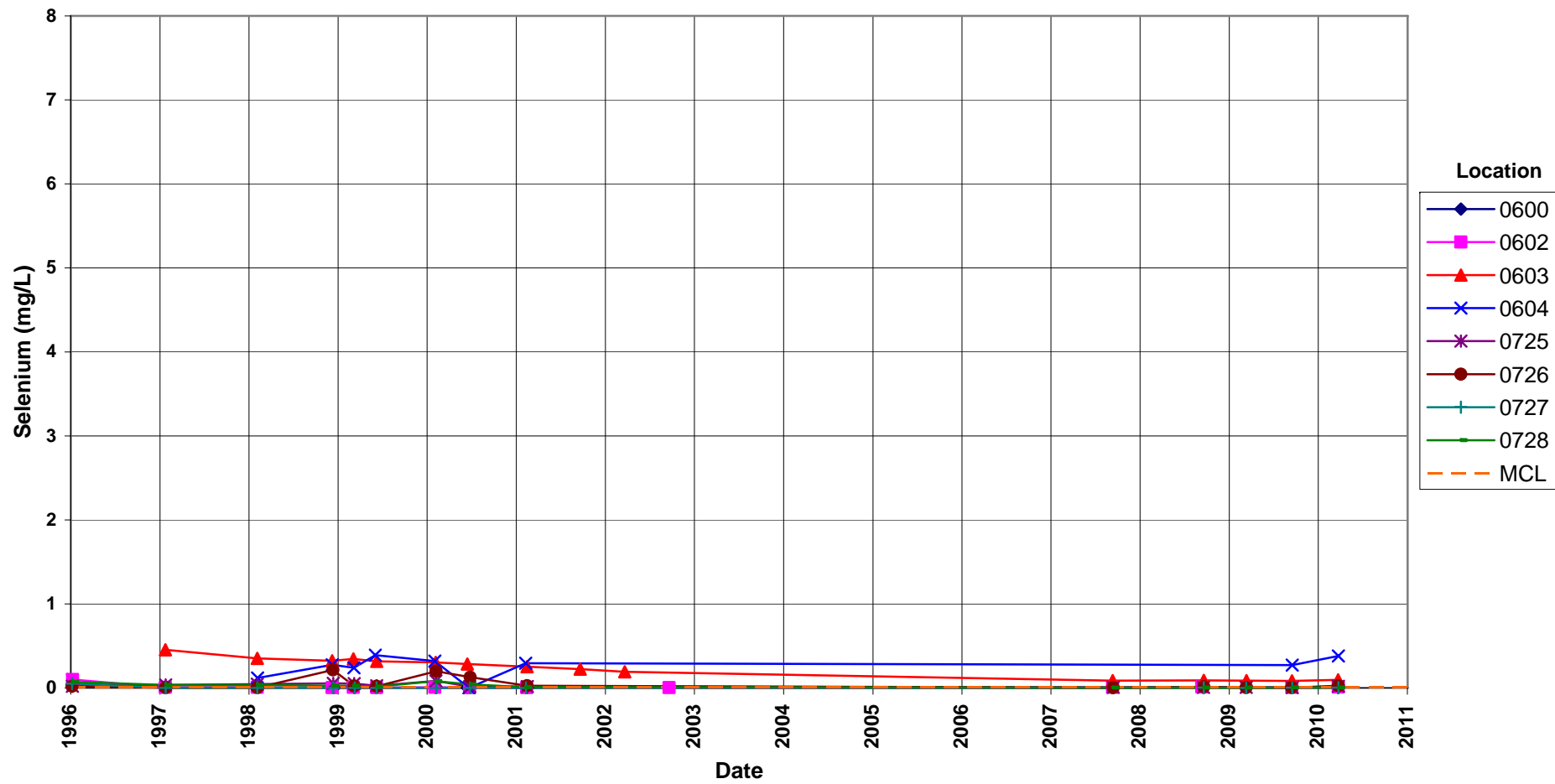
**Shiprock Disposal Site (Terrace)**  
**Nitrate + Nitrite as Nitrogen Concentration**  
 40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L



**Shiprock Disposal Site (Terrace)**  
**Nitrate + Nitrite as Nitrogen Concentration**  
 40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L



**Shiprock Disposal Site (Terrace)**  
**Selenium Concentration**  
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L

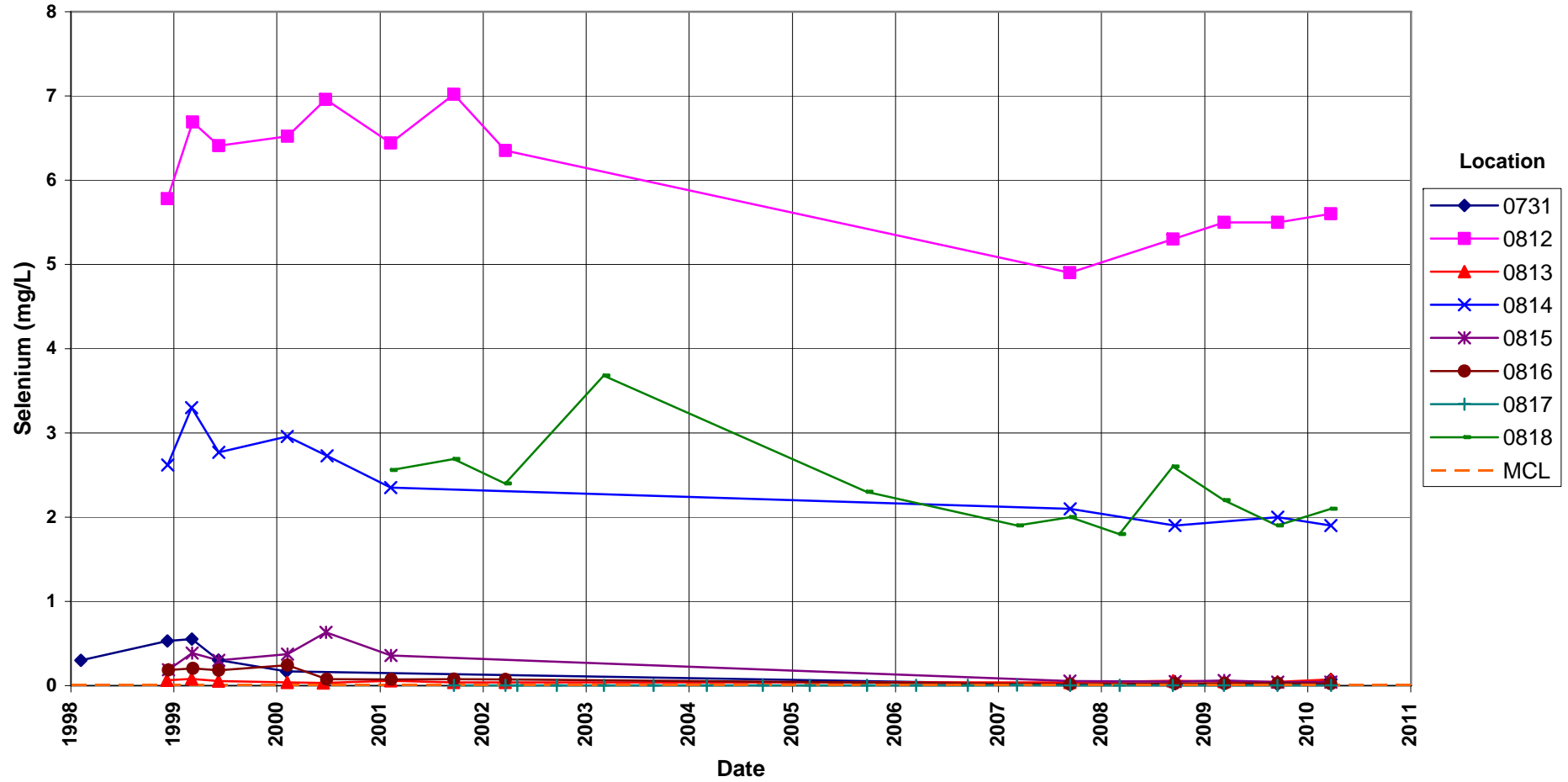




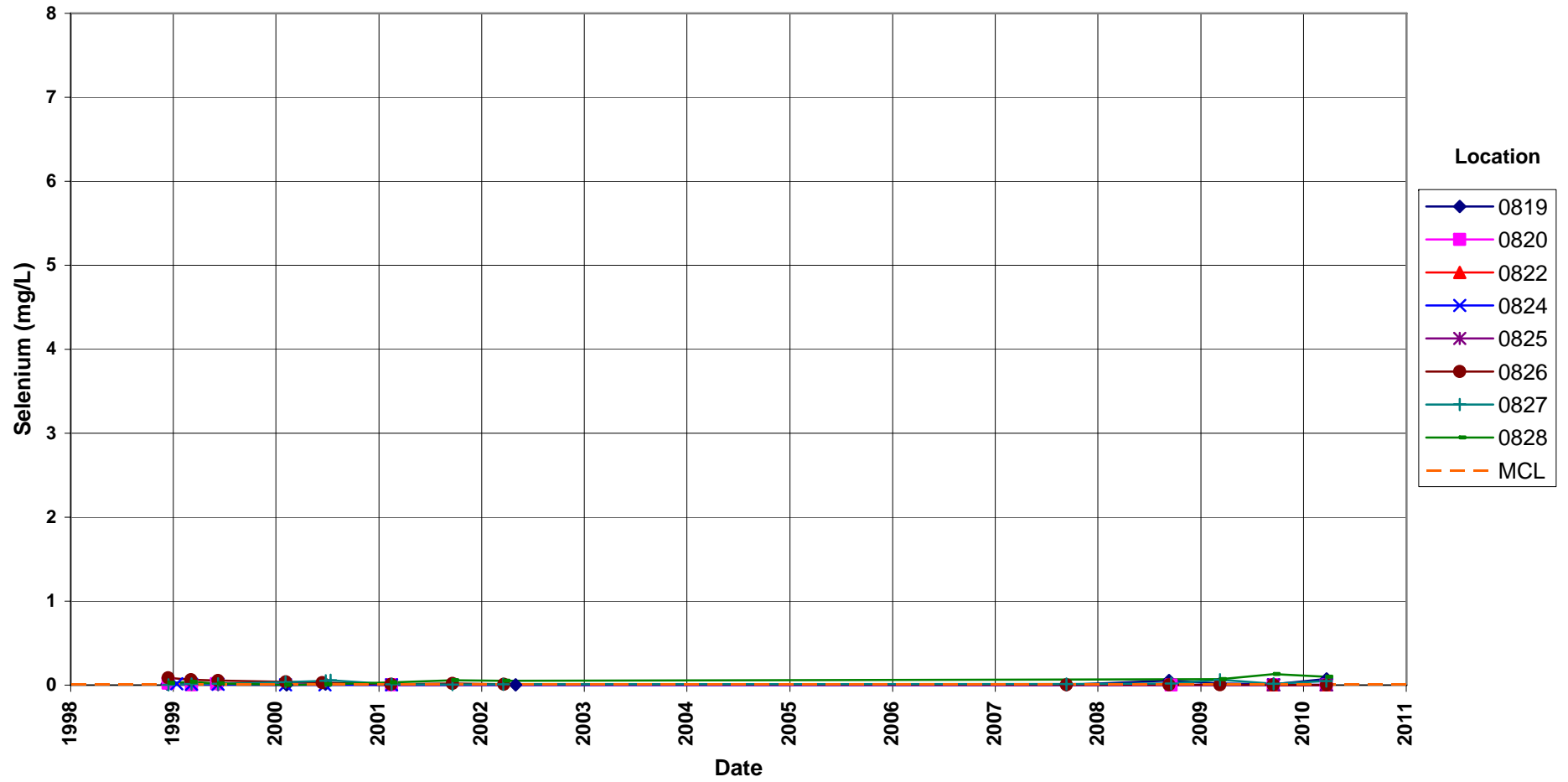
# Shiprock Disposal Site (Terrace)

## Selenium Concentration

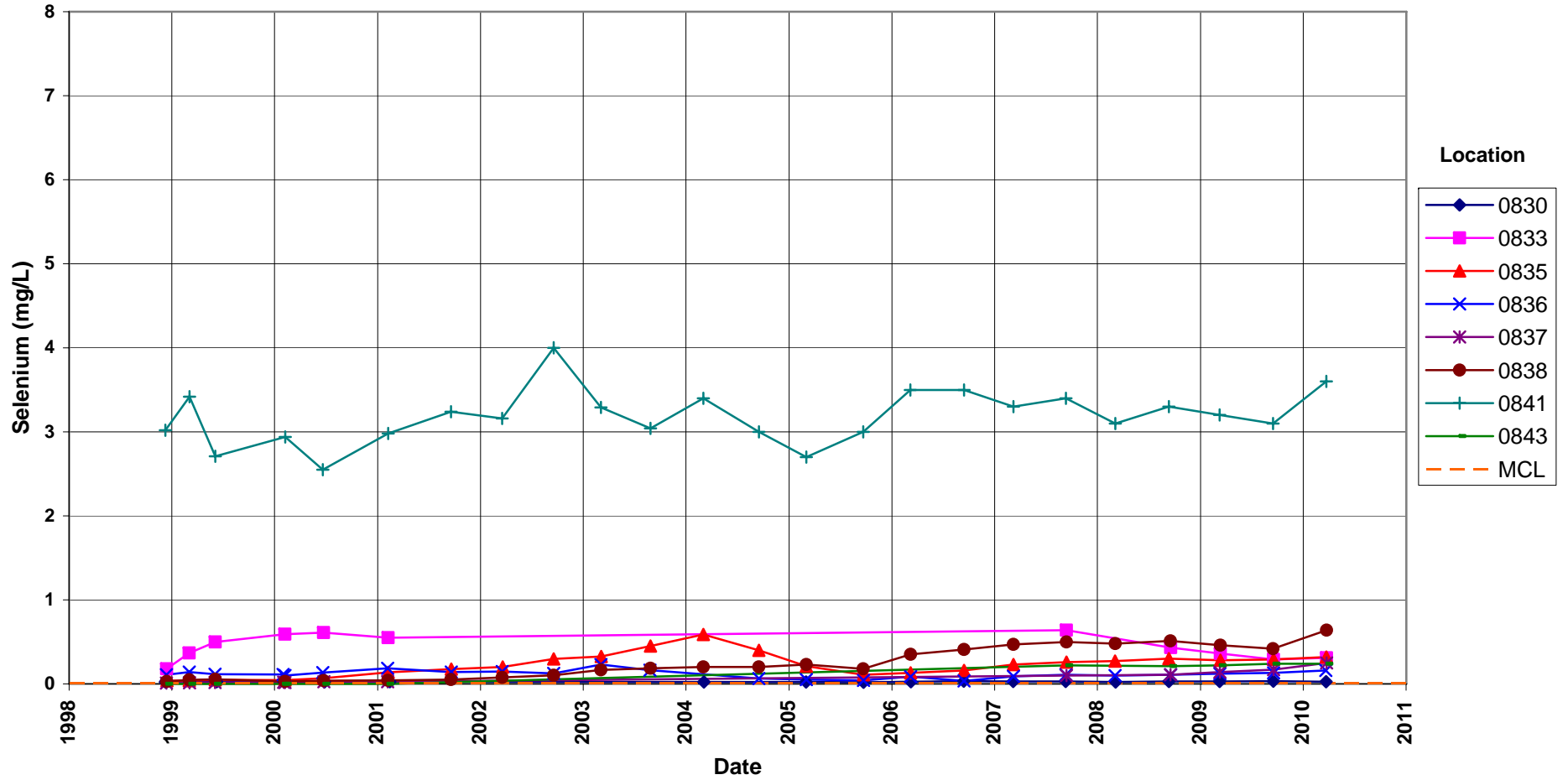
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L



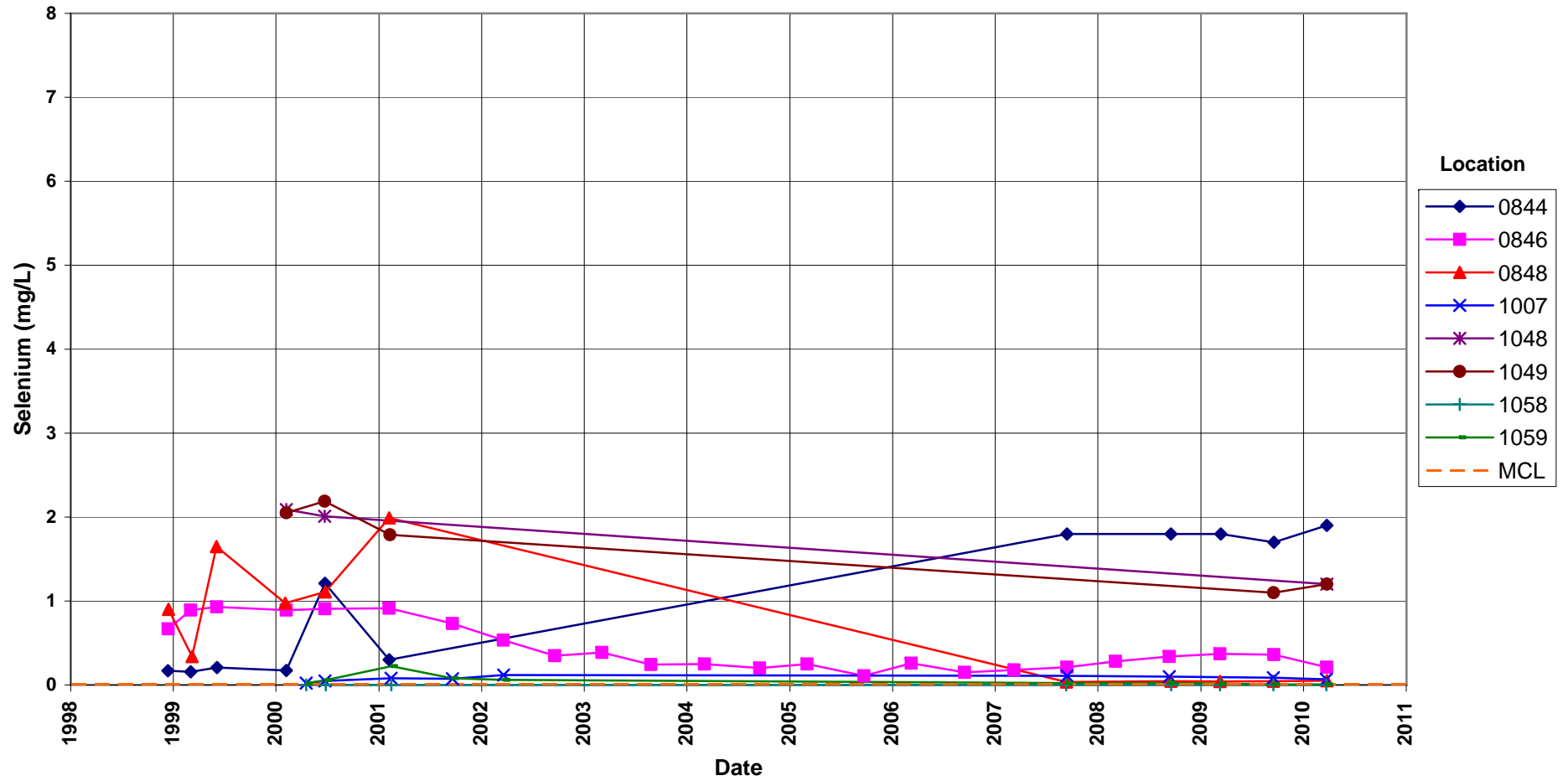
**Shiprock Disposal Site (Terrace)**  
**Selenium Concentration**  
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L



**Shiprock Disposal Site (Terrace)  
Selenium Concentration**  
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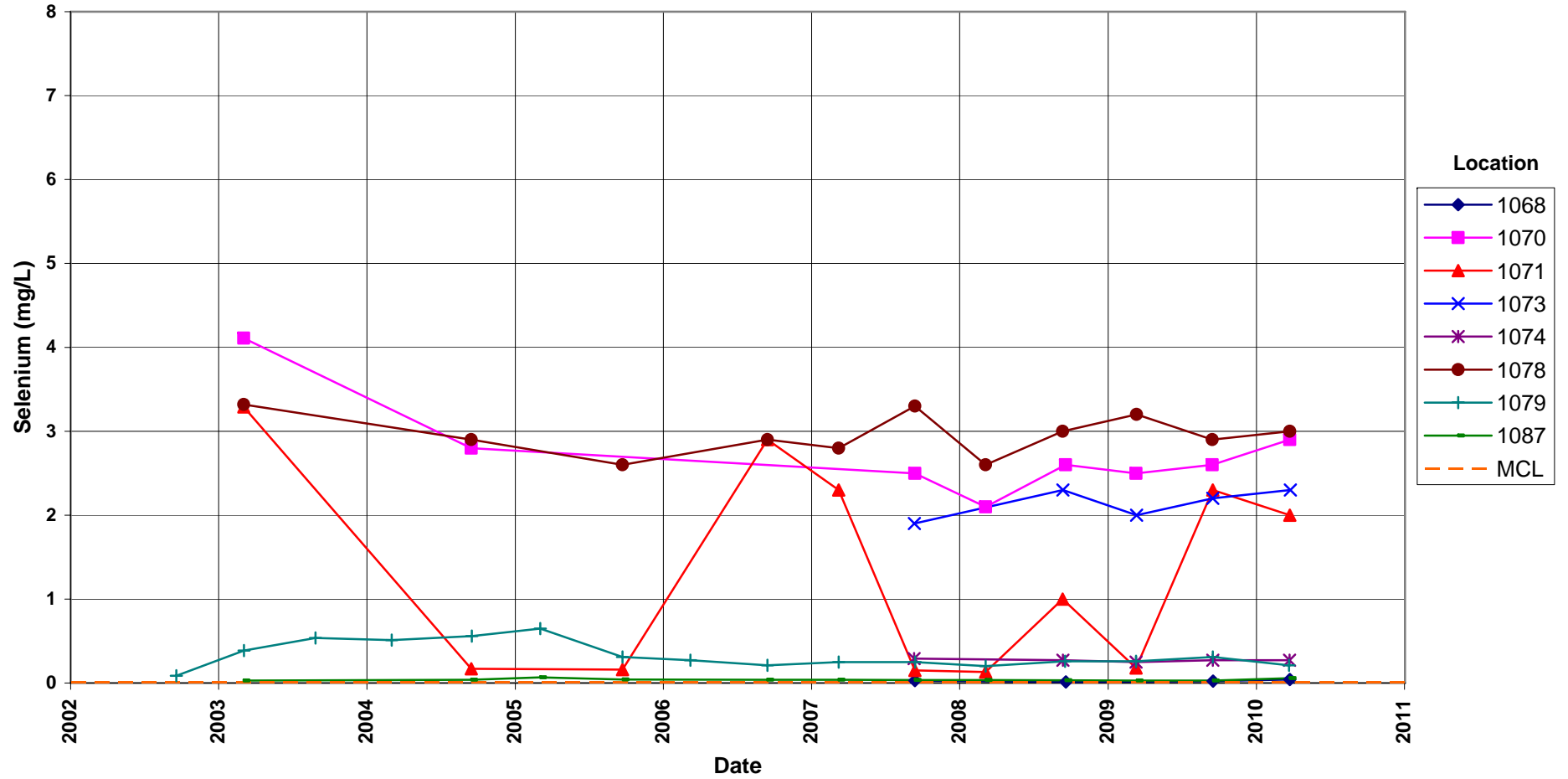
**Shiprock Disposal Site (Terrace)  
Selenium Concentration**  
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L



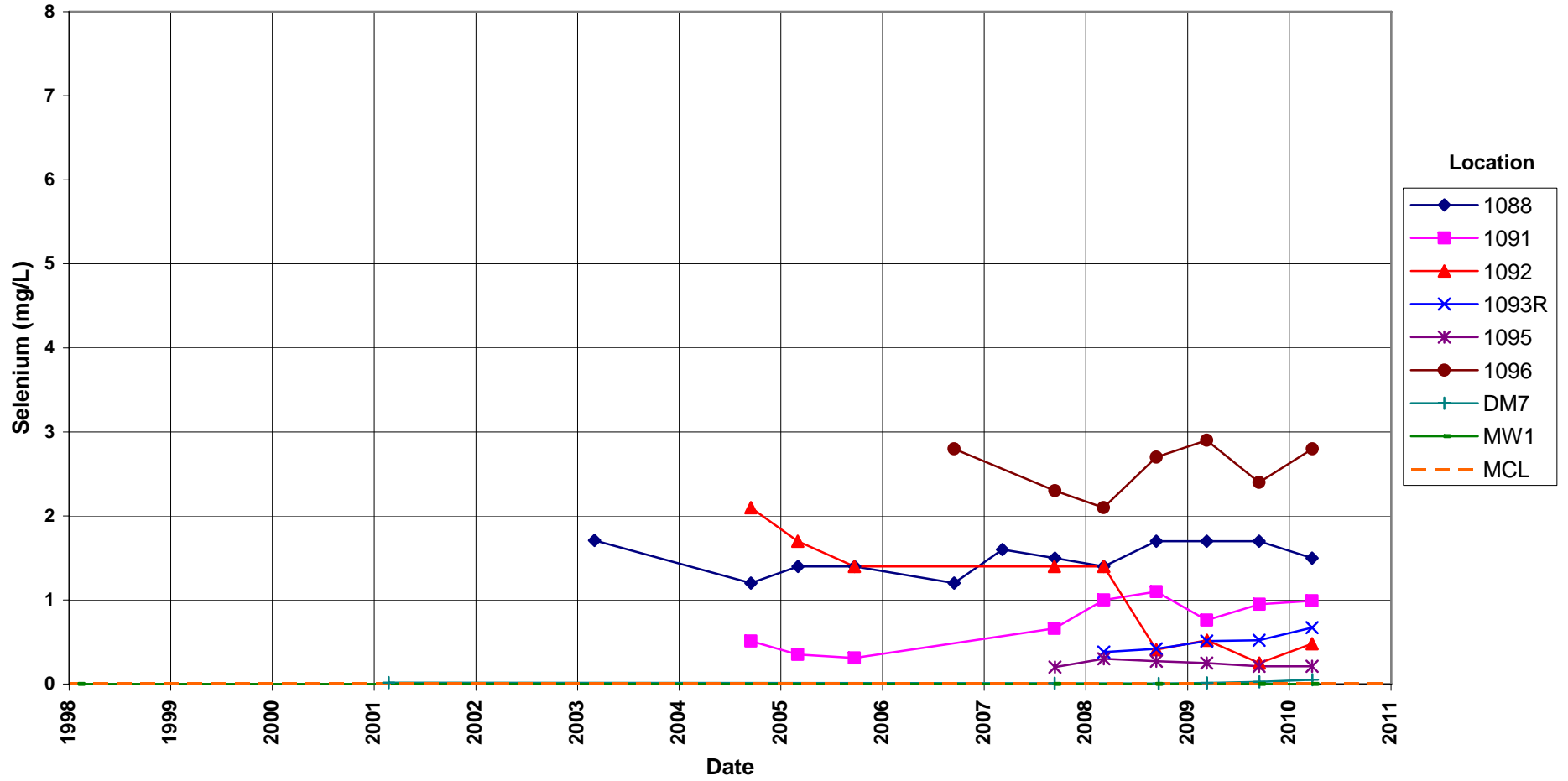
# Shiprock Disposal Site (Terrace)

## Selenium Concentration

40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L

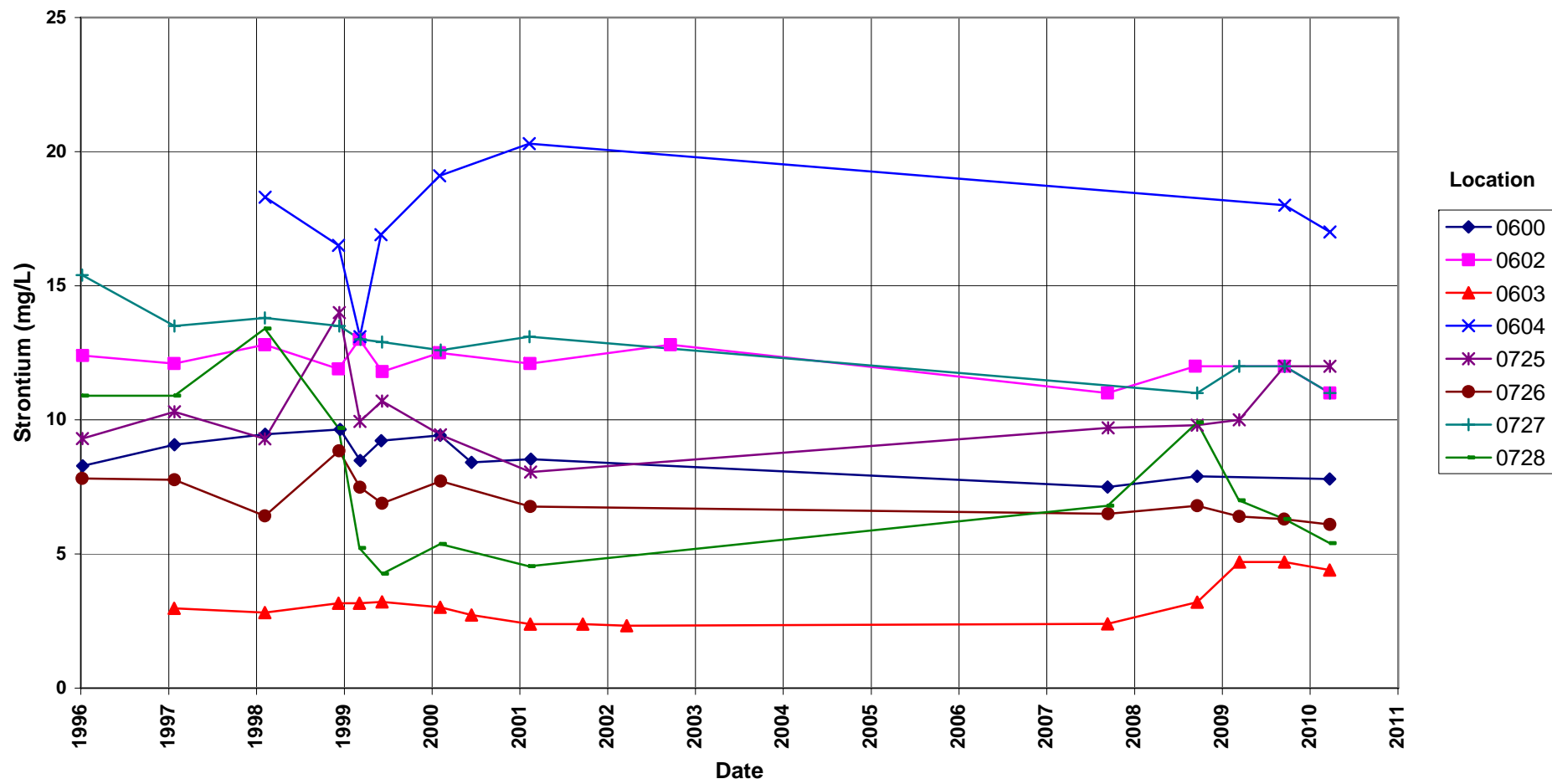


**Shiprock Disposal Site (Terrace)  
Selenium Concentration**  
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L



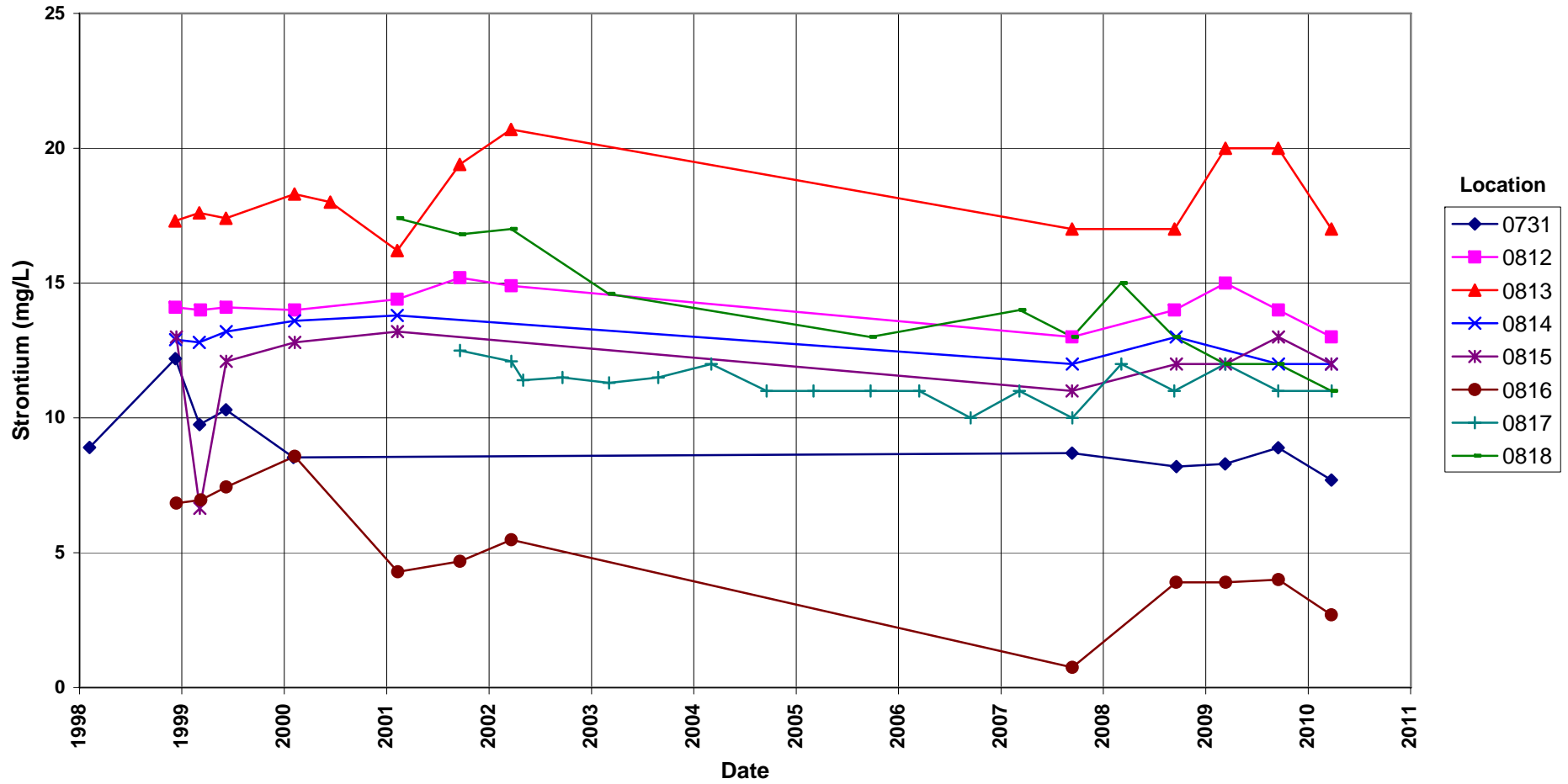
# Shiprock Disposal Site (Terrace) Strontium Concentration

No established groundwater standard



# Shiprock Disposal Site (Terrace) Strontium Concentration

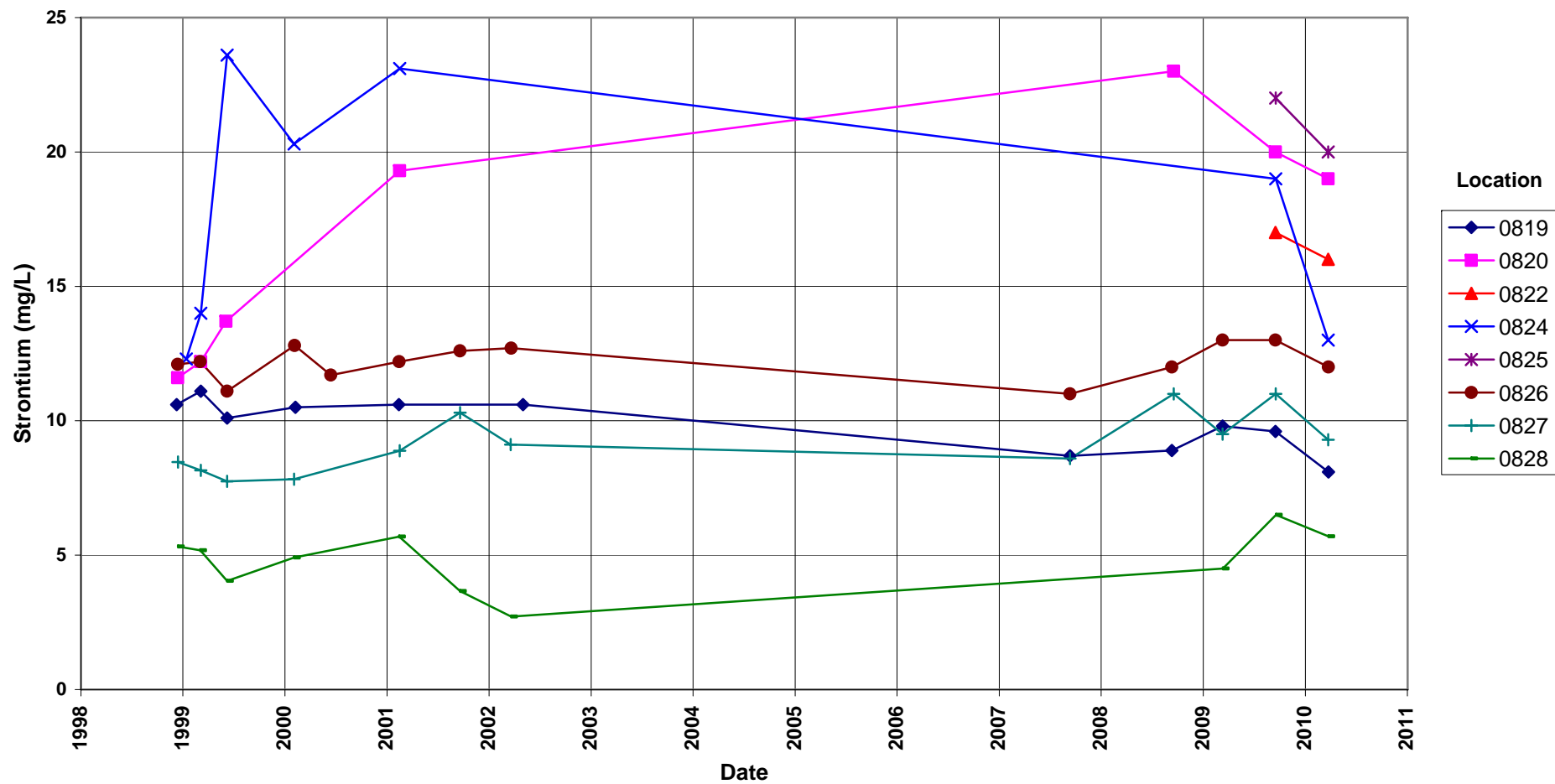
No established groundwater standard





# Shiprock Disposal Site (Terrace) Strontium Concentration

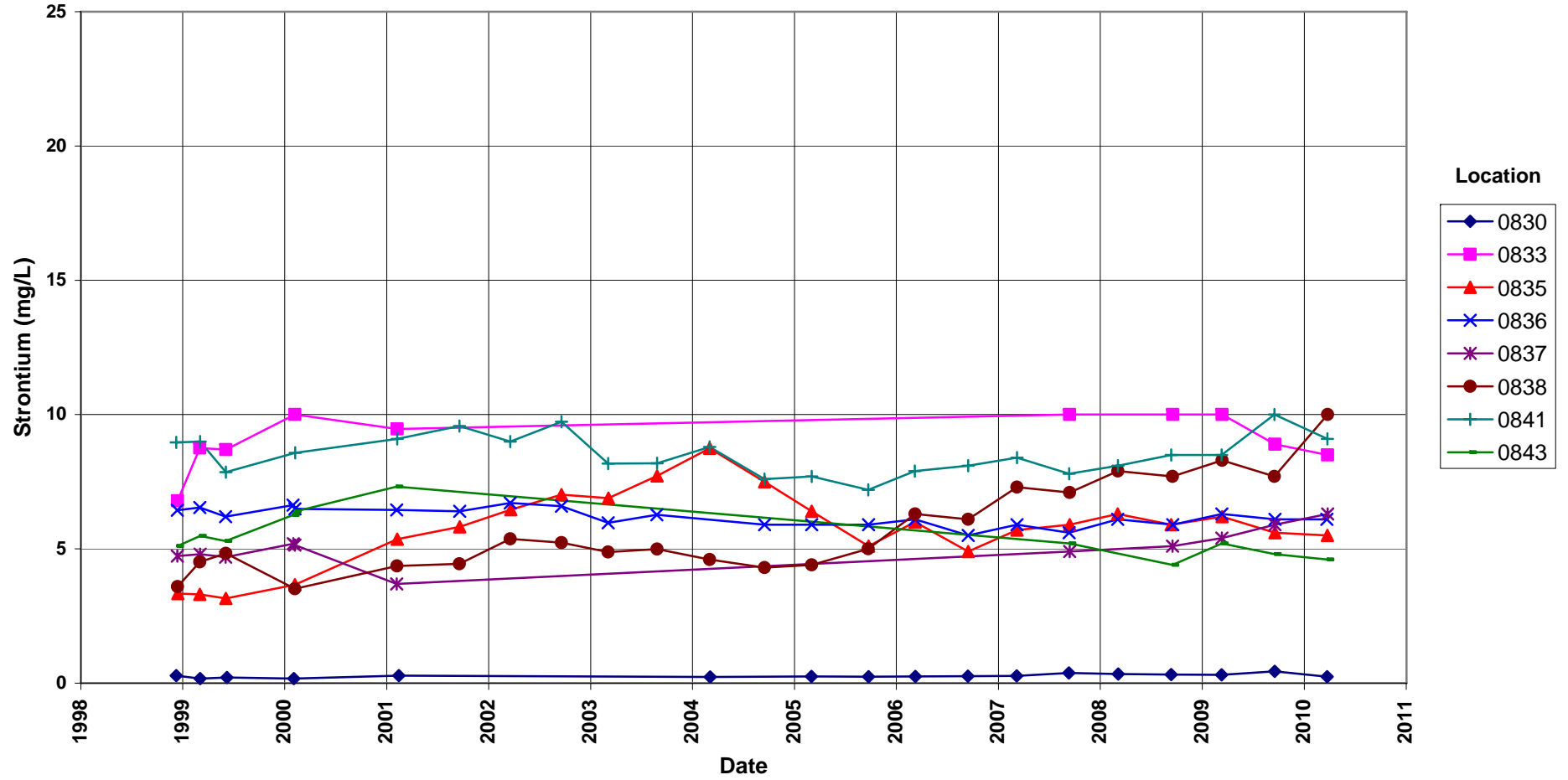
No established groundwater standard



# Shiprock Disposal Site (Terrace)

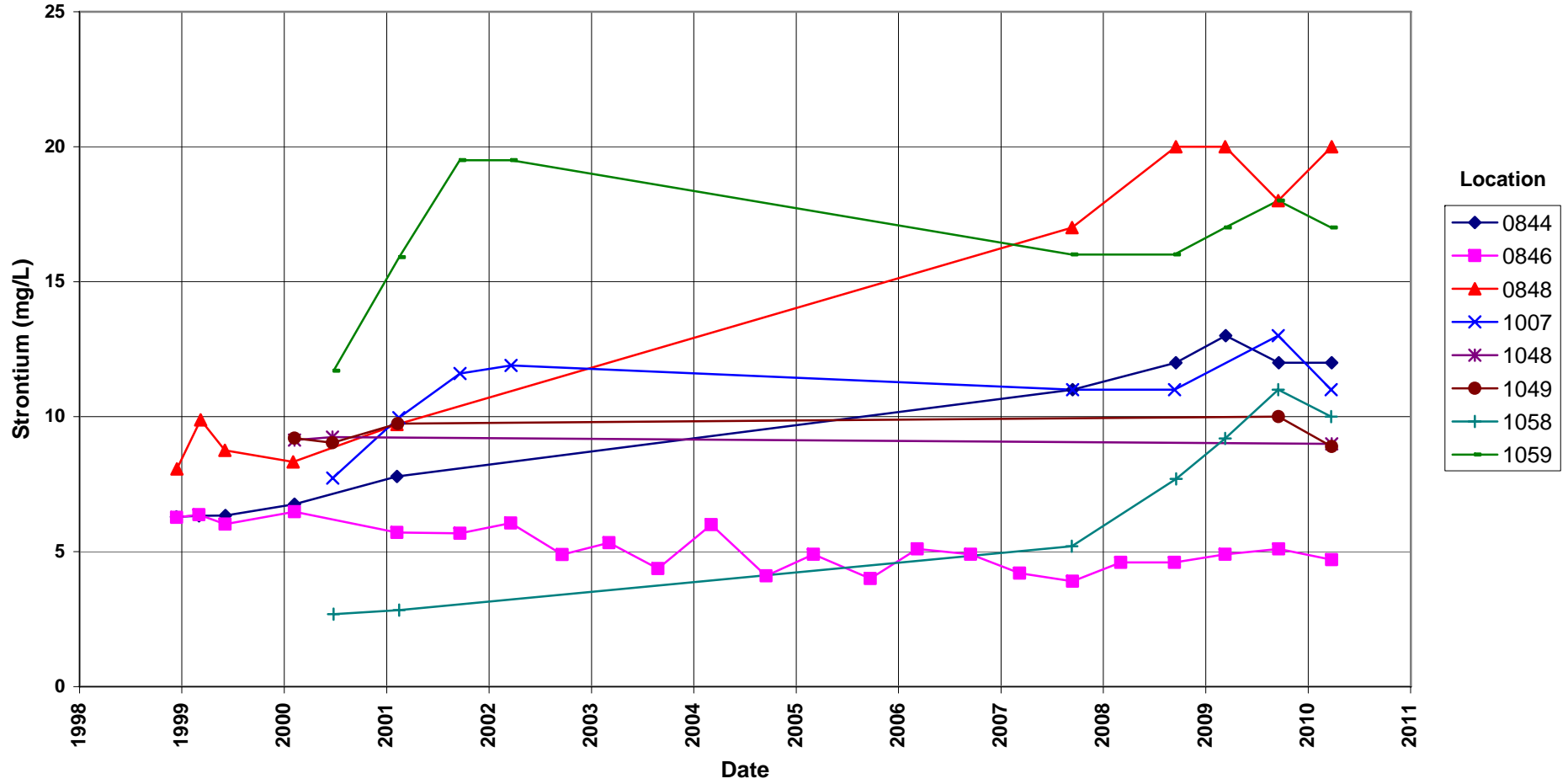
## Strontium Concentration

No established groundwater standard



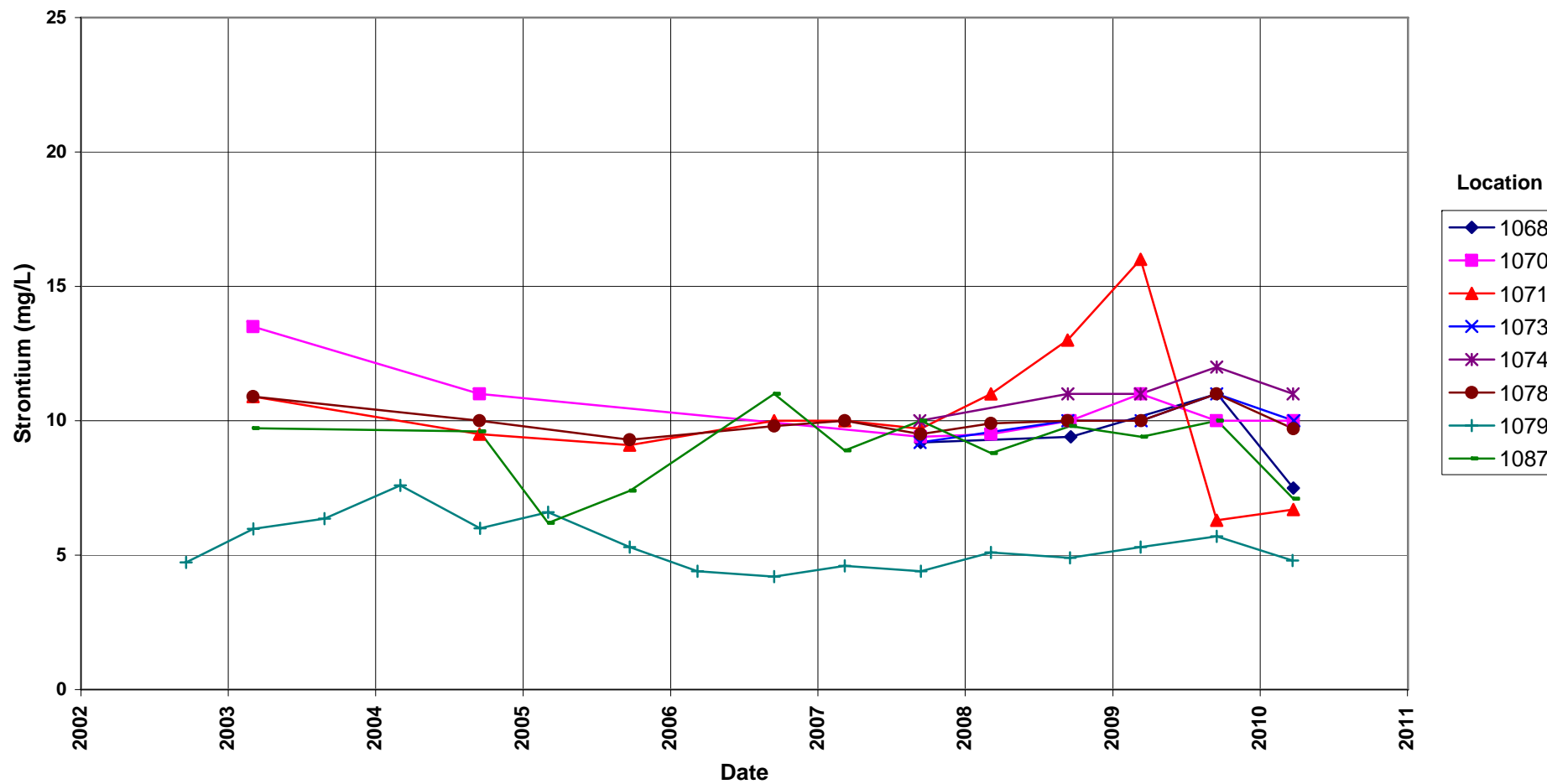
# Shiprock Disposal Site (Terrace) Strontium Concentration

No established groundwater standard



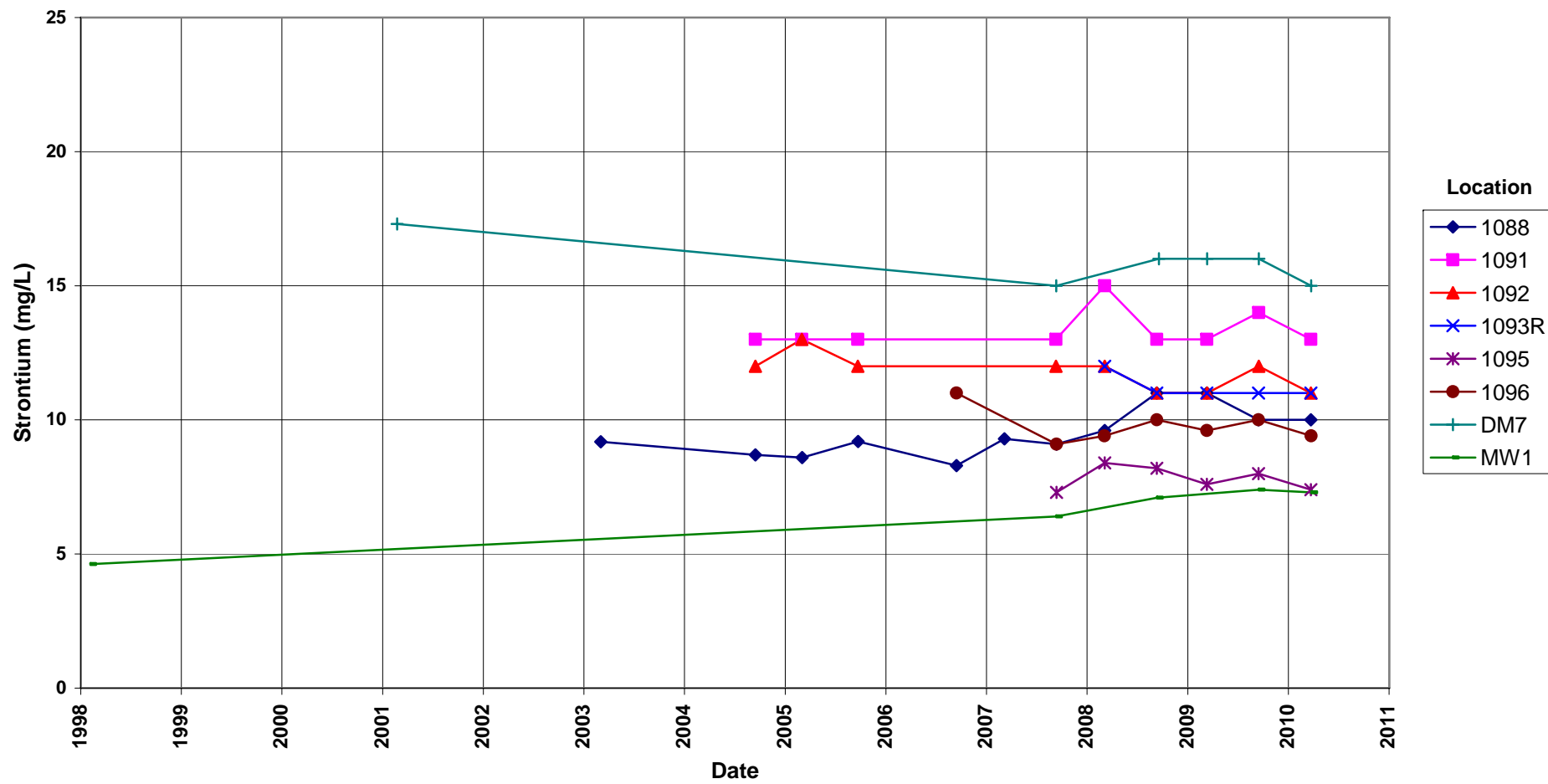
# Shiprock Disposal Site (Terrace) Strontium Concentration

No established groundwater standard



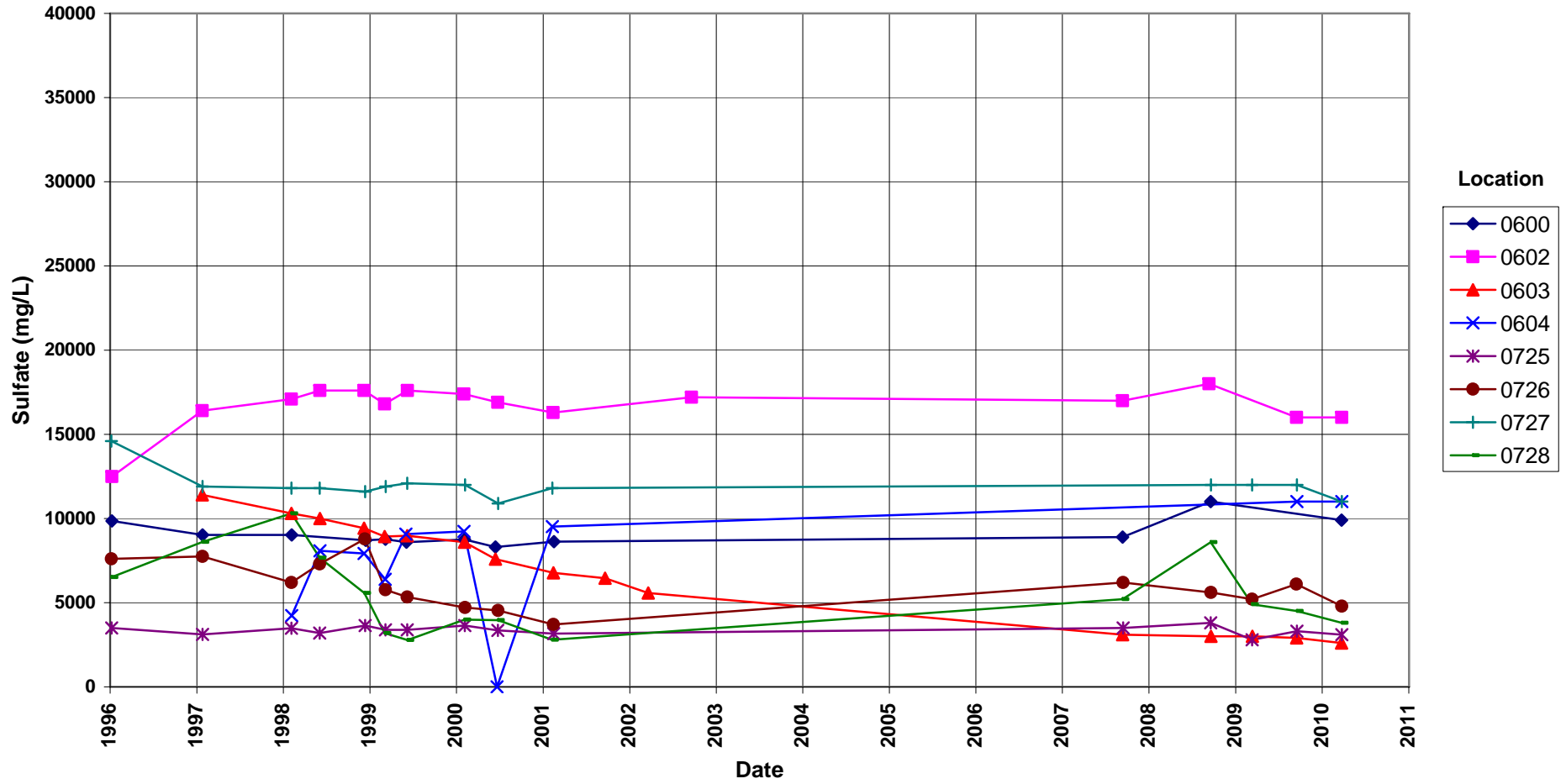
# Shiprock Disposal Site (Terrace) Strontium Concentration

No established groundwater standard



# Shiprock Disposal Site (Terrace) Sulfate Concentration

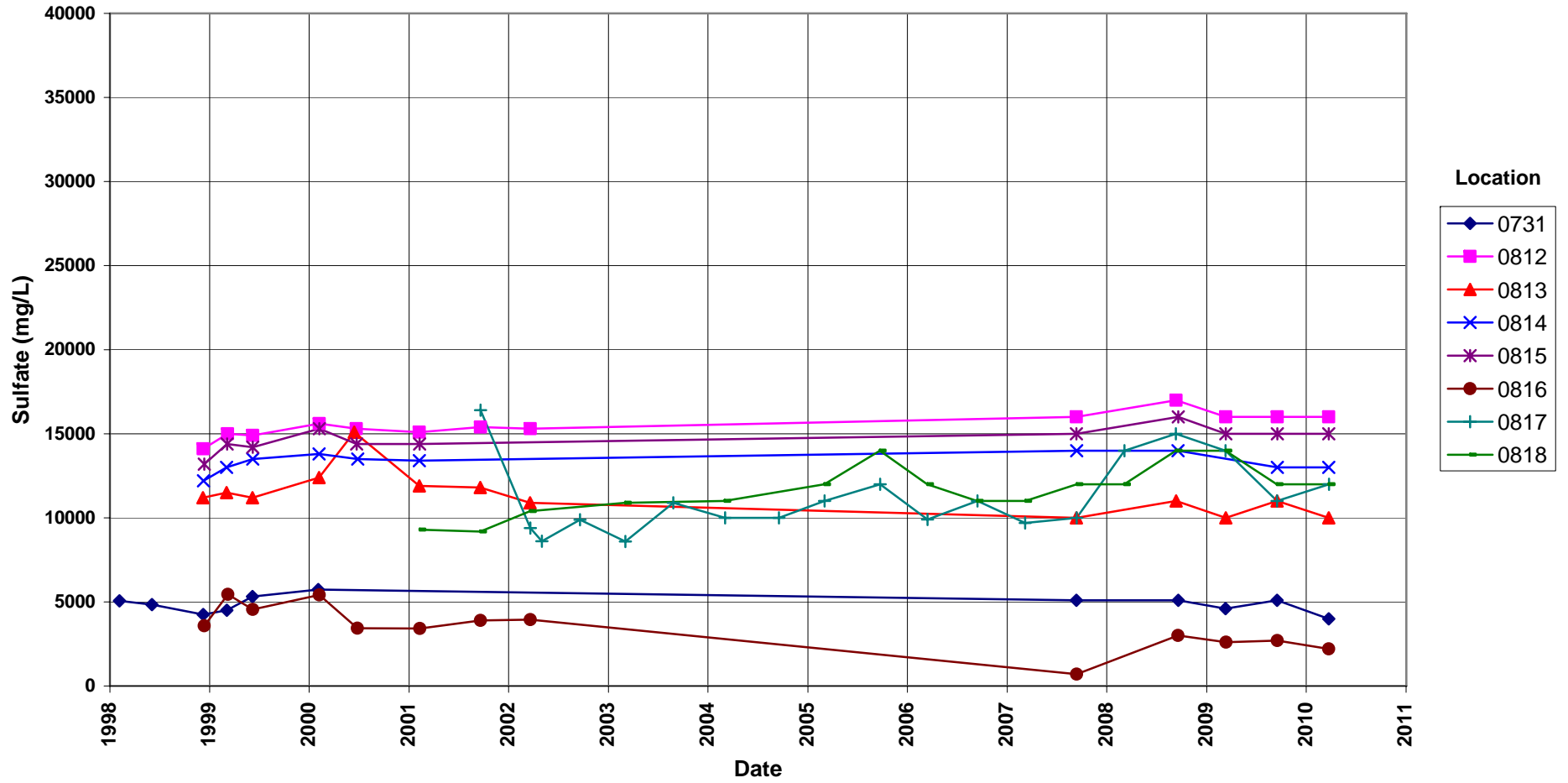
No established groundwater standard



# Shiprock Disposal Site (Terrace)

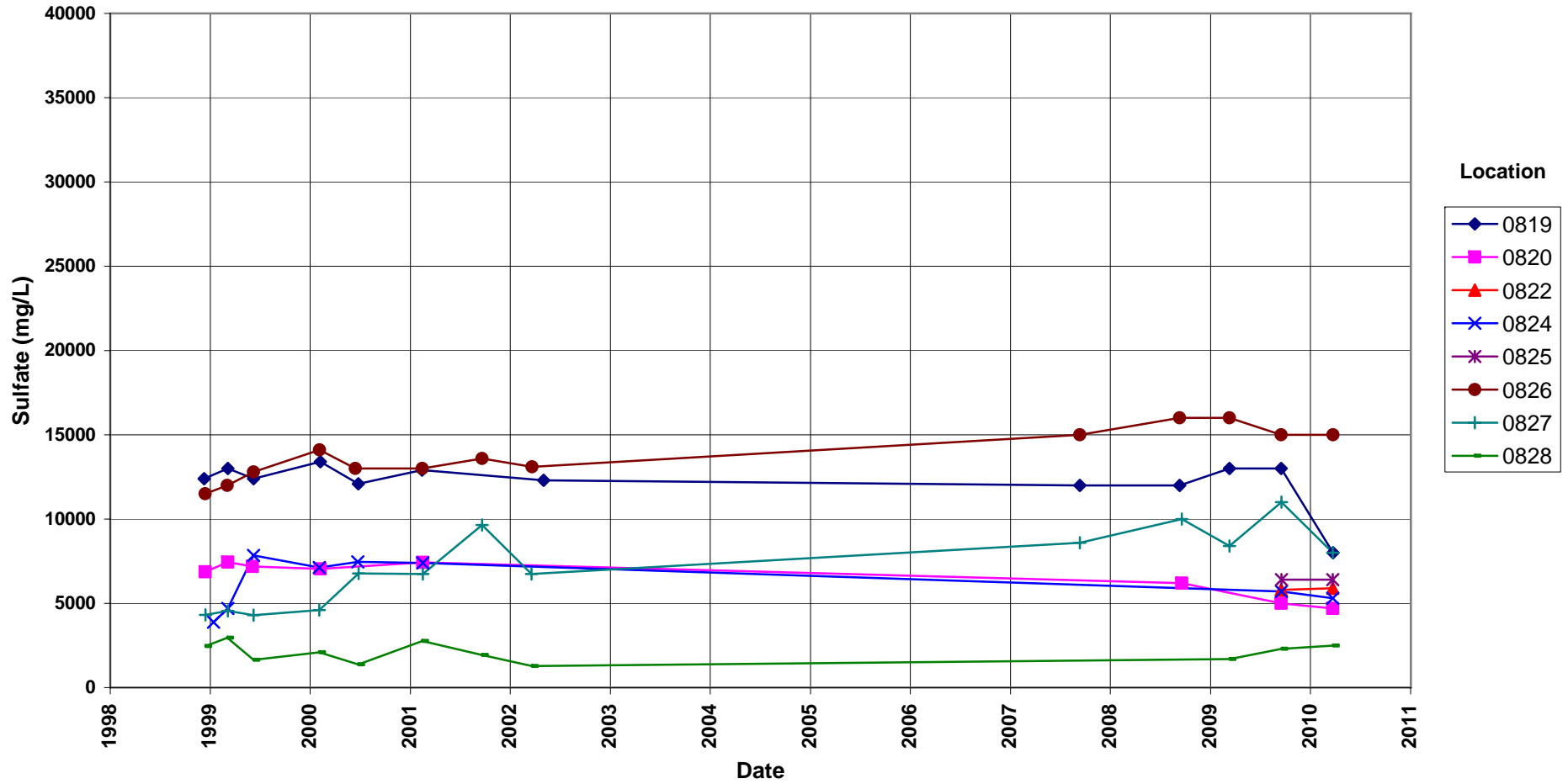
## Sulfate Concentration

No established groundwater standard



# Shiprock Disposal Site (Terrace) Sulfate Concentration

No established groundwater standard

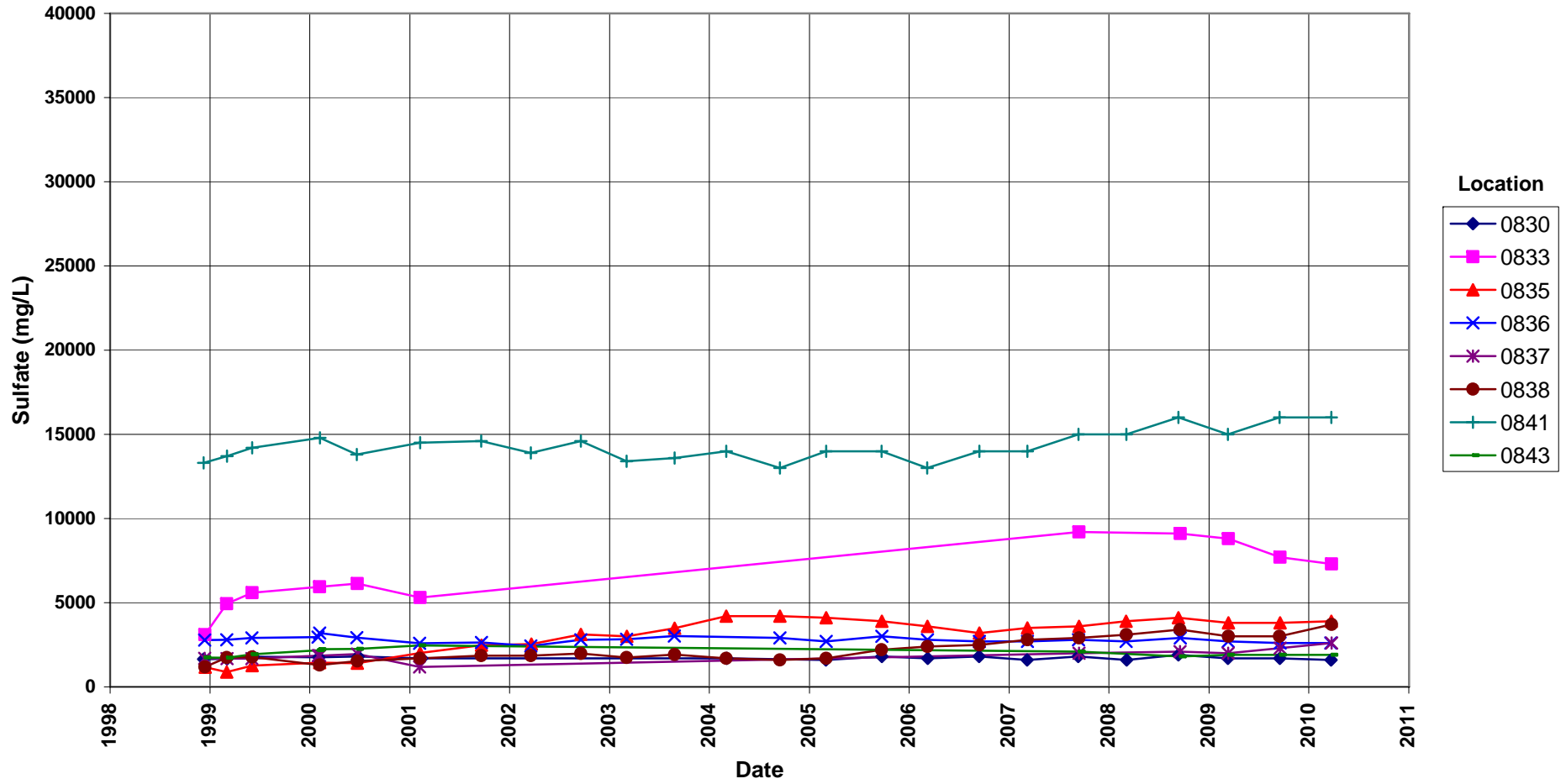




# Shiprock Disposal Site (Terrace)

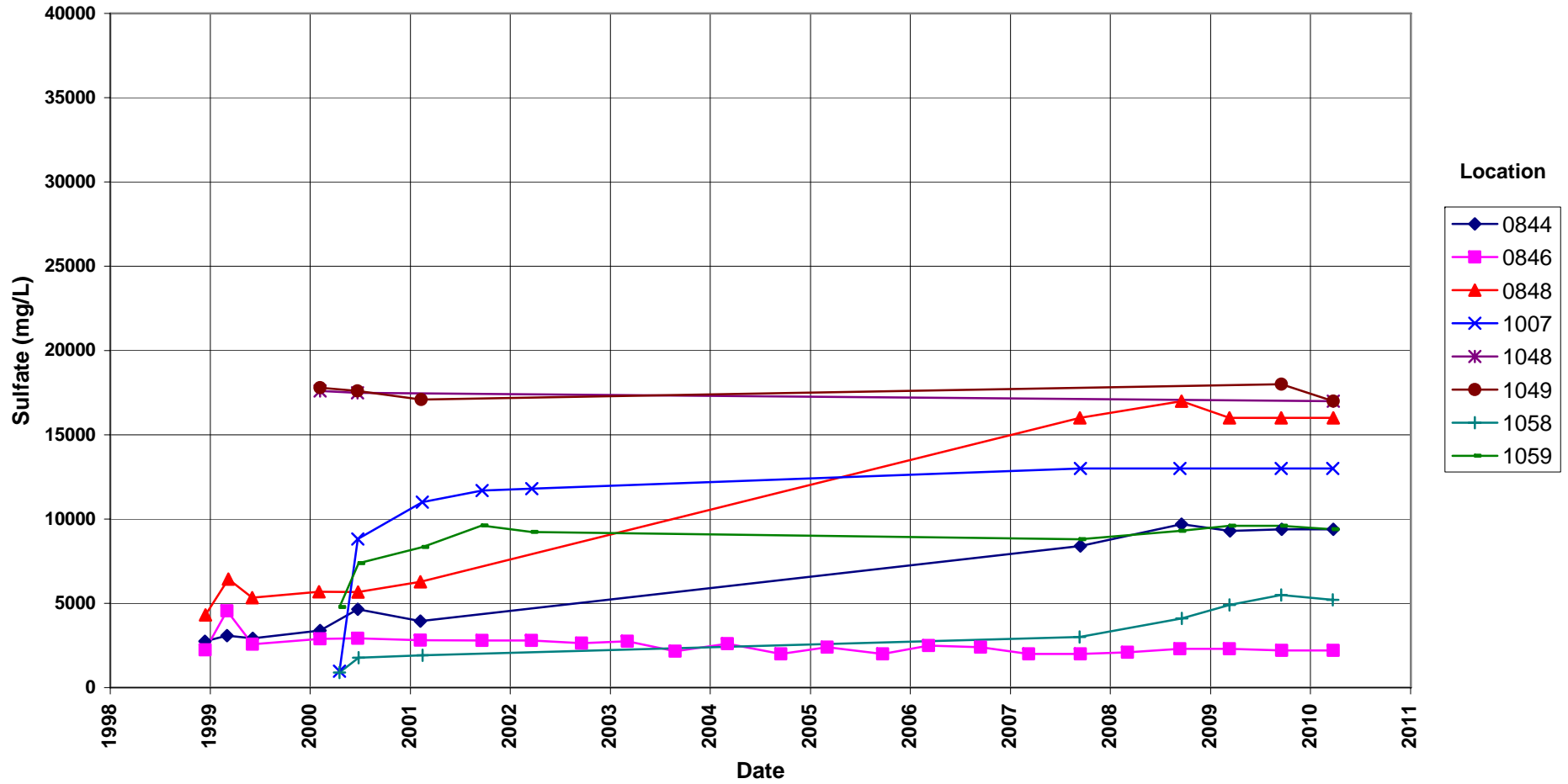
## Sulfate Concentration

No established groundwater standard



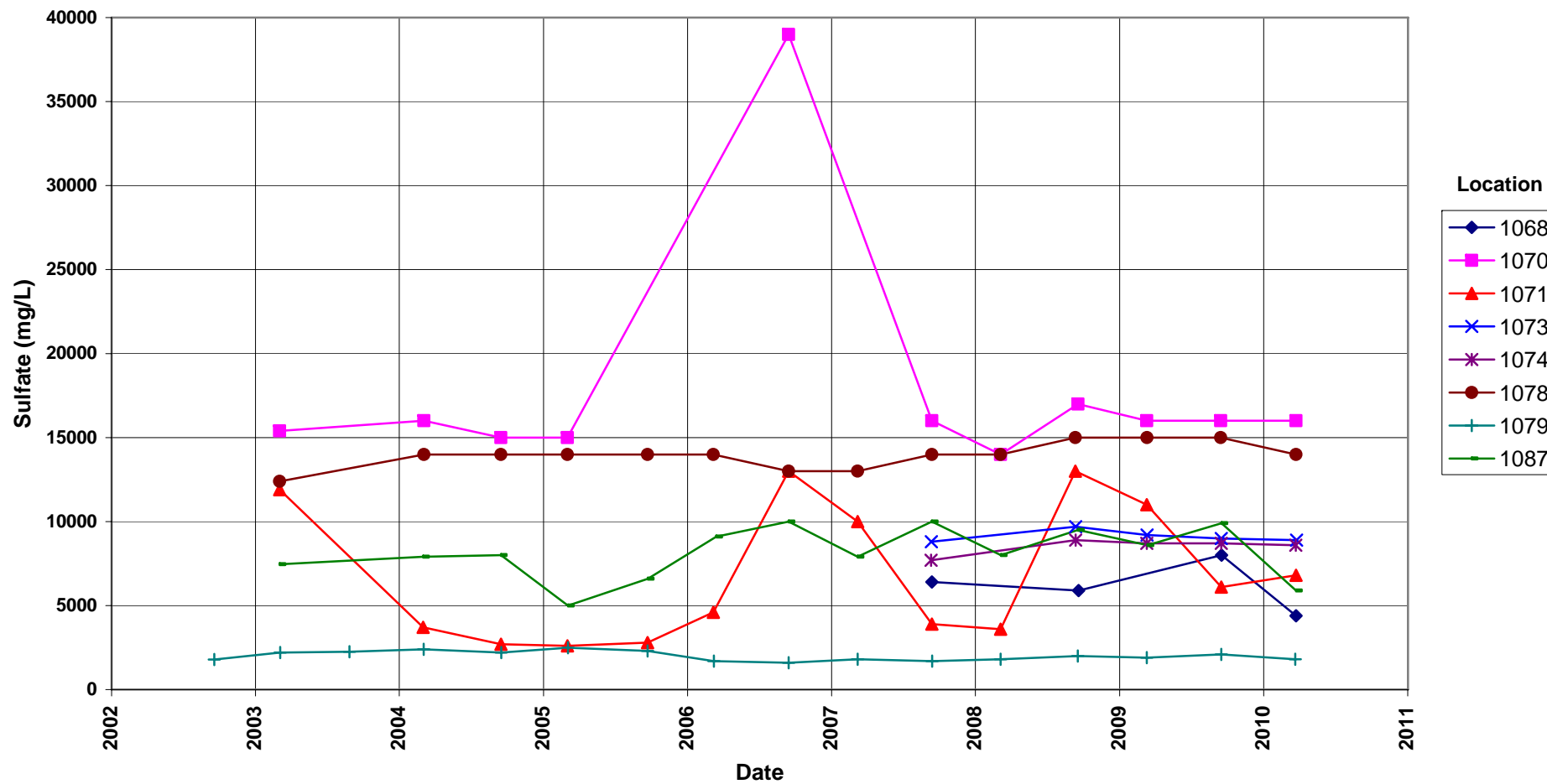
# Shiprock Disposal Site (Terrace) Sulfate Concentration

No established groundwater standard



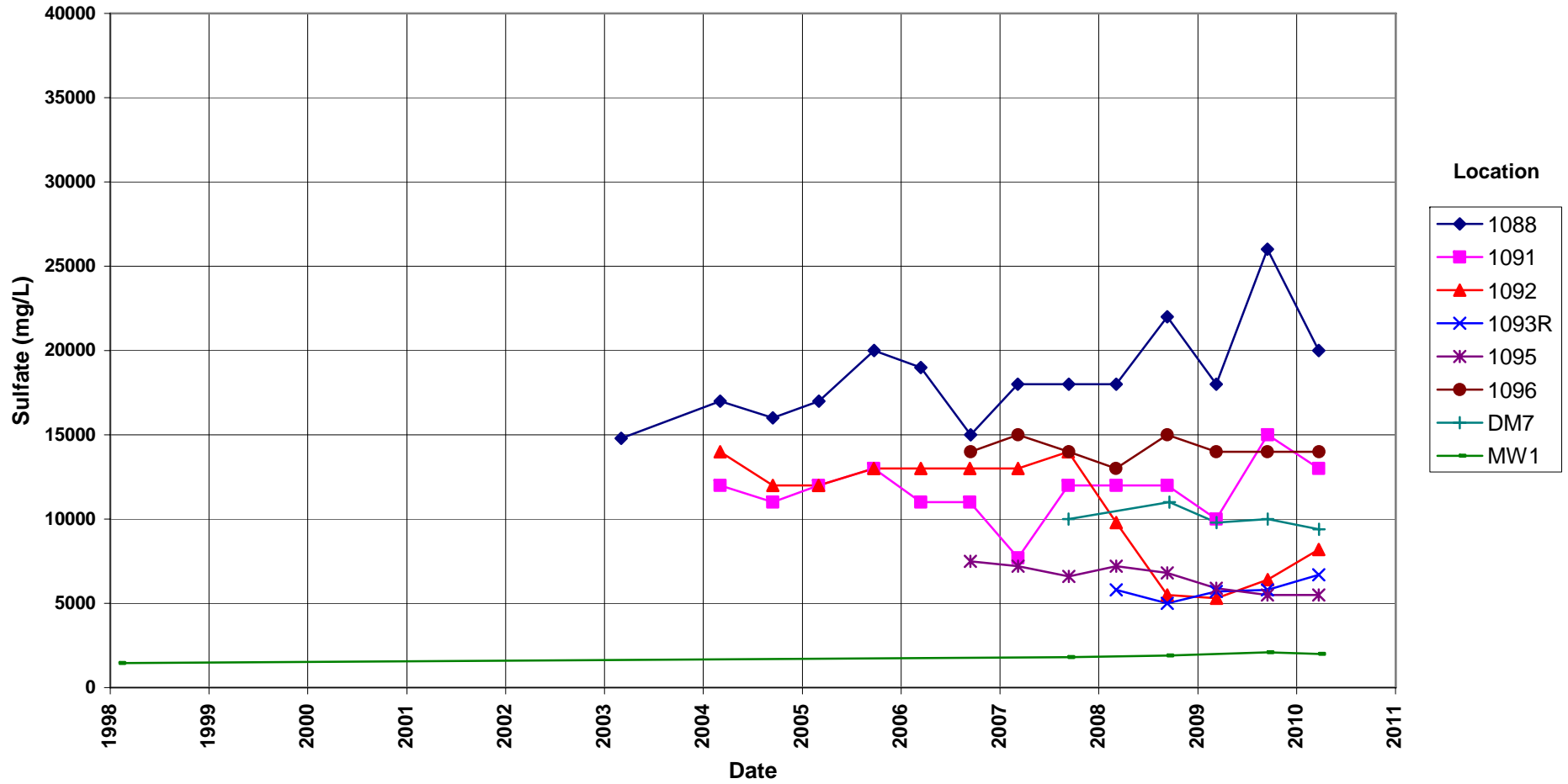
# Shiprock Disposal Site (Terrace) Sulfate Concentration

No established groundwater standard



# Shiprock Disposal Site (Terrace) Sulfate Concentration

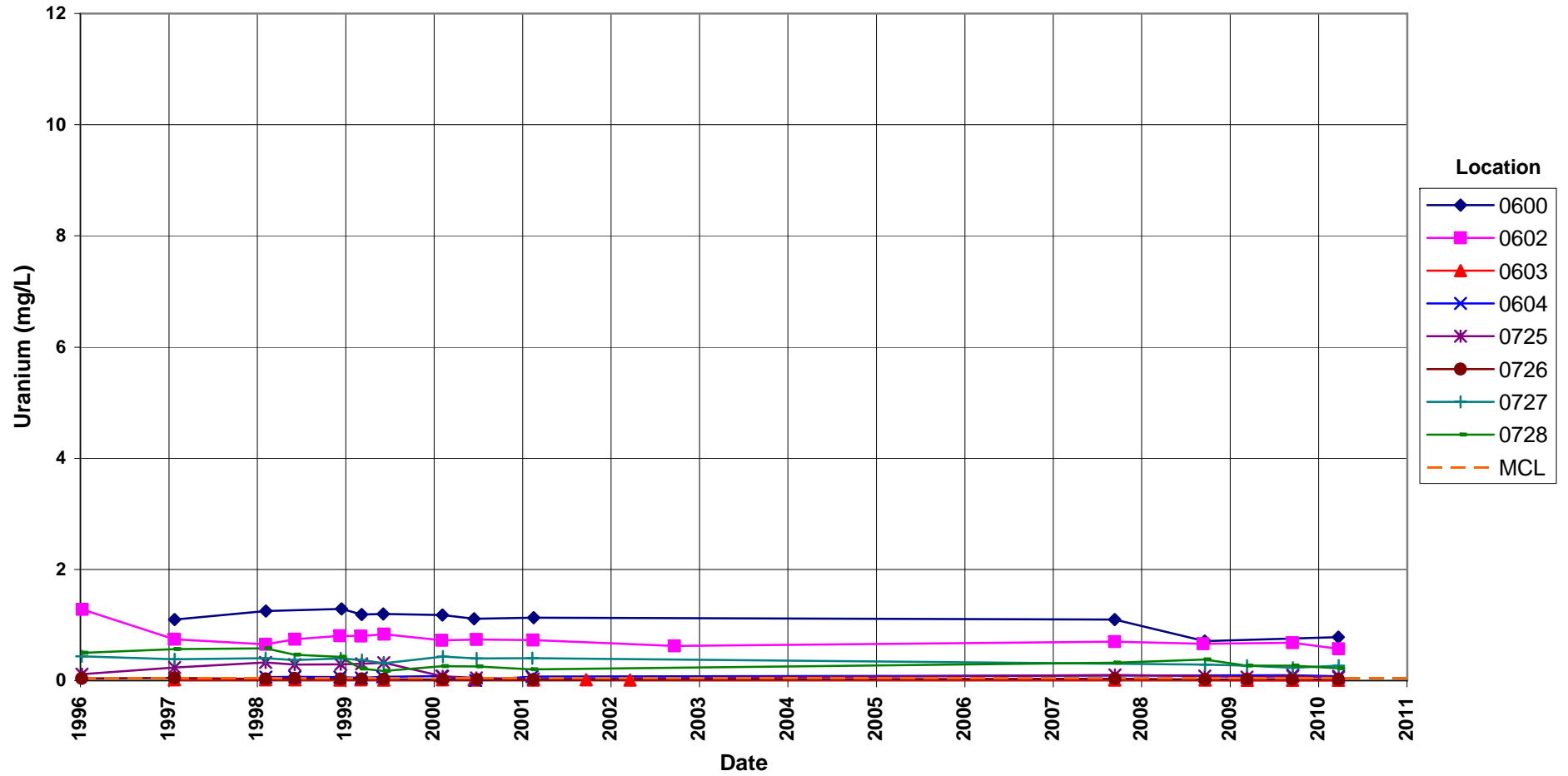
No established groundwater standard



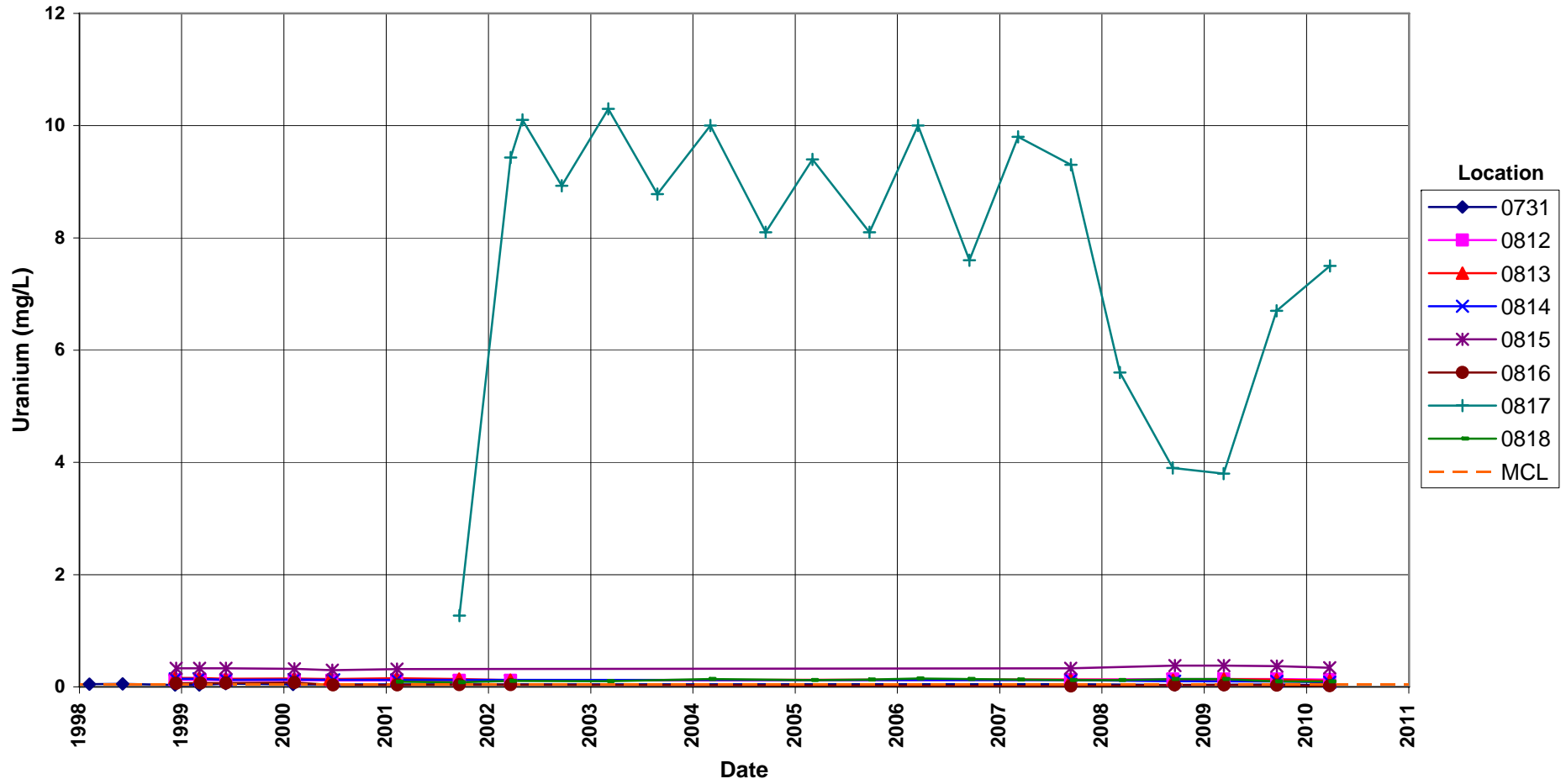
# Shiprock Disposal Site (Terrace)

## Uranium Concentration

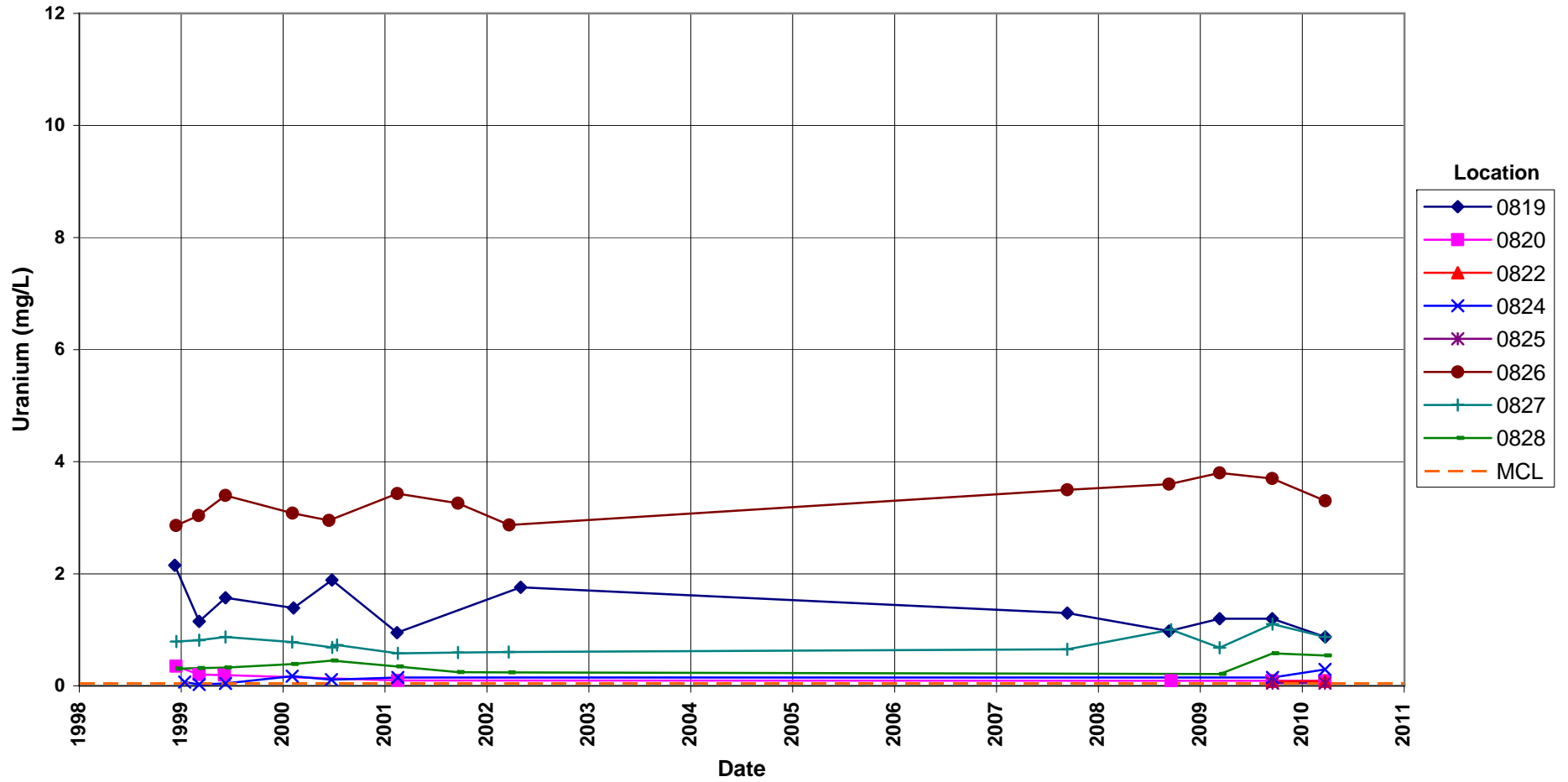
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



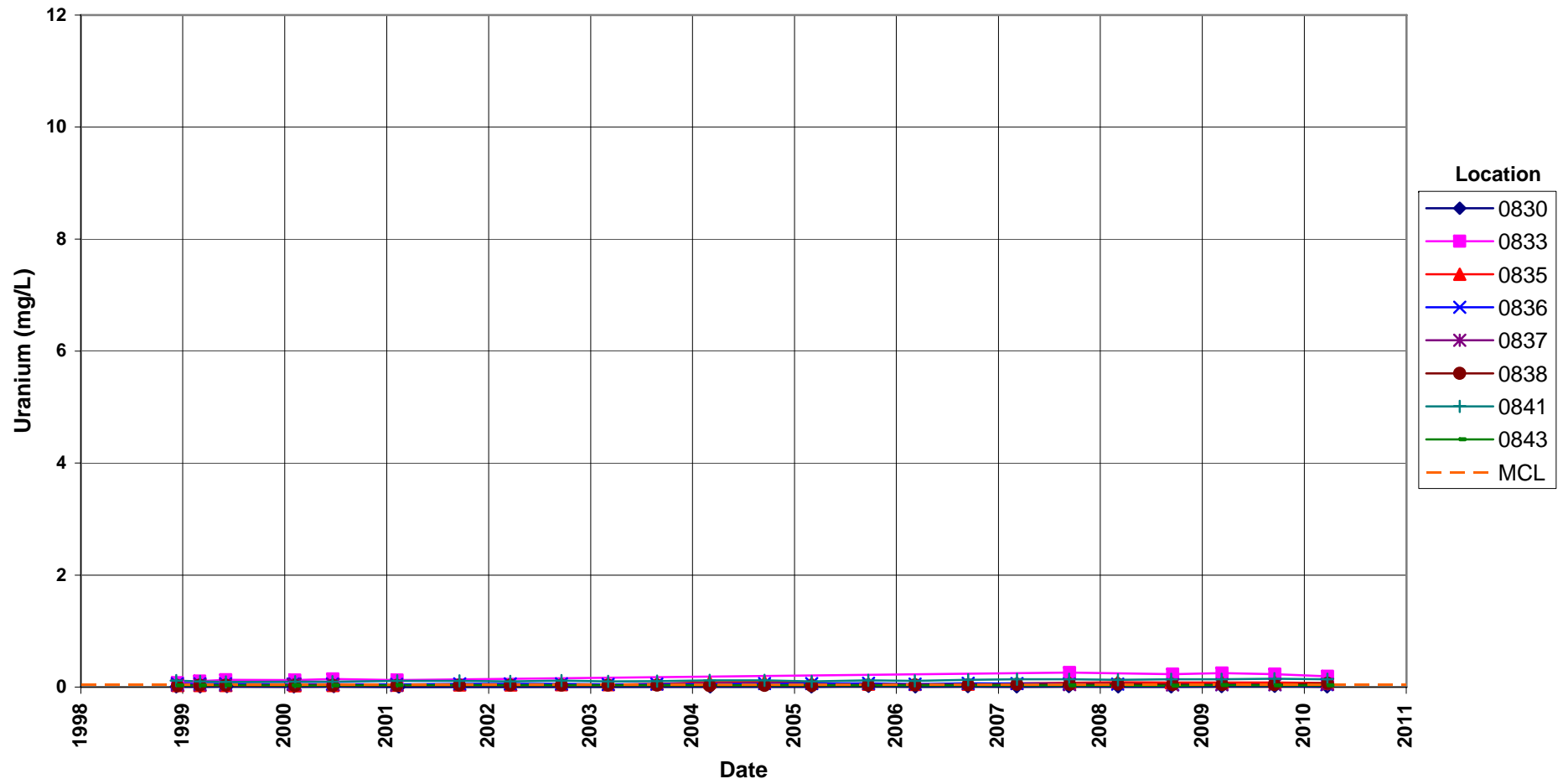
**Shiprock Disposal Site (Terrace)  
Uranium Concentration**  
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



**Shiprock Disposal Site (Terrace)**  
**Uranium Concentration**  
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L

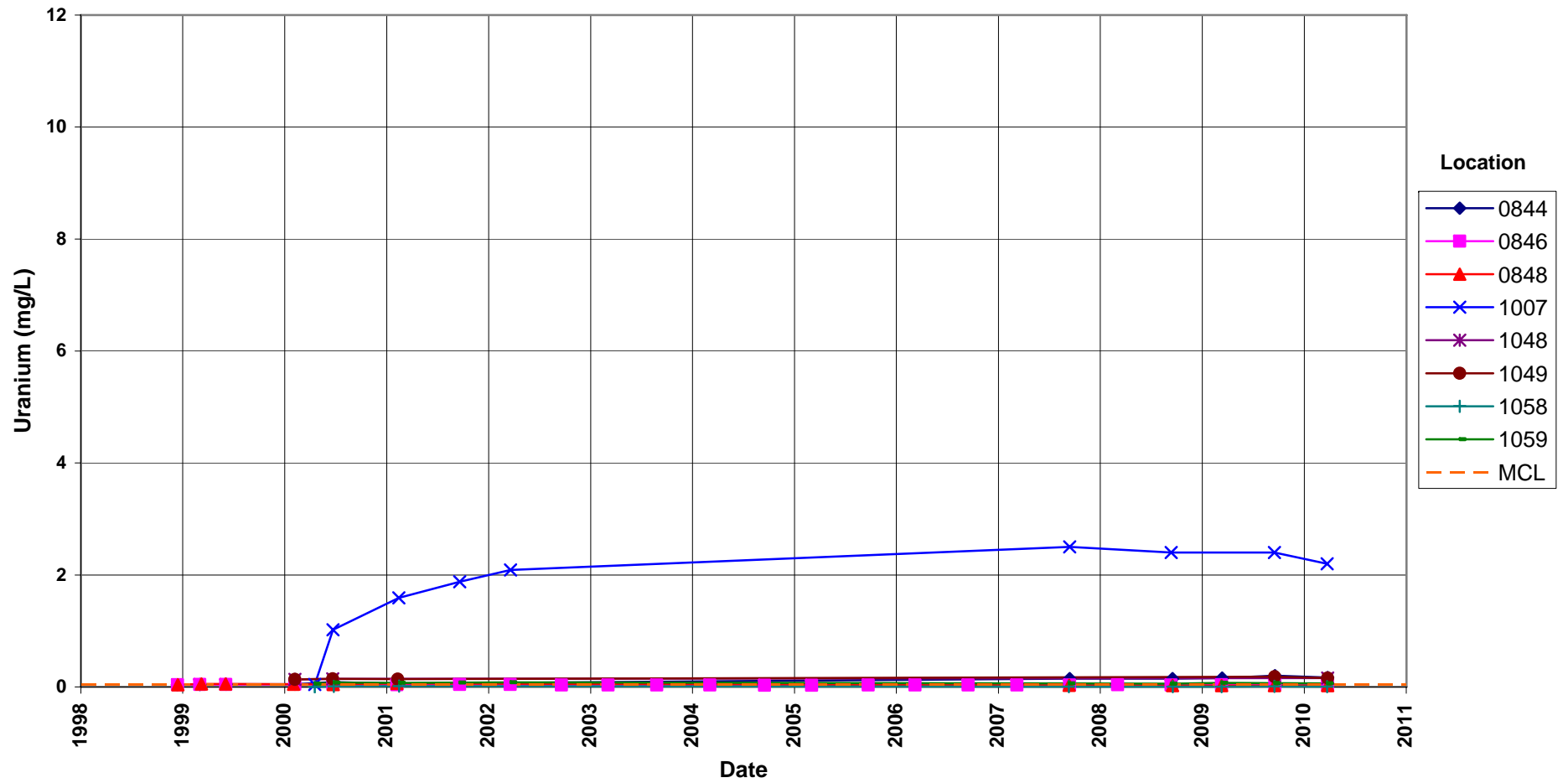


**Shiprock Disposal Site (Terrace)**  
**Uranium Concentration**  
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L

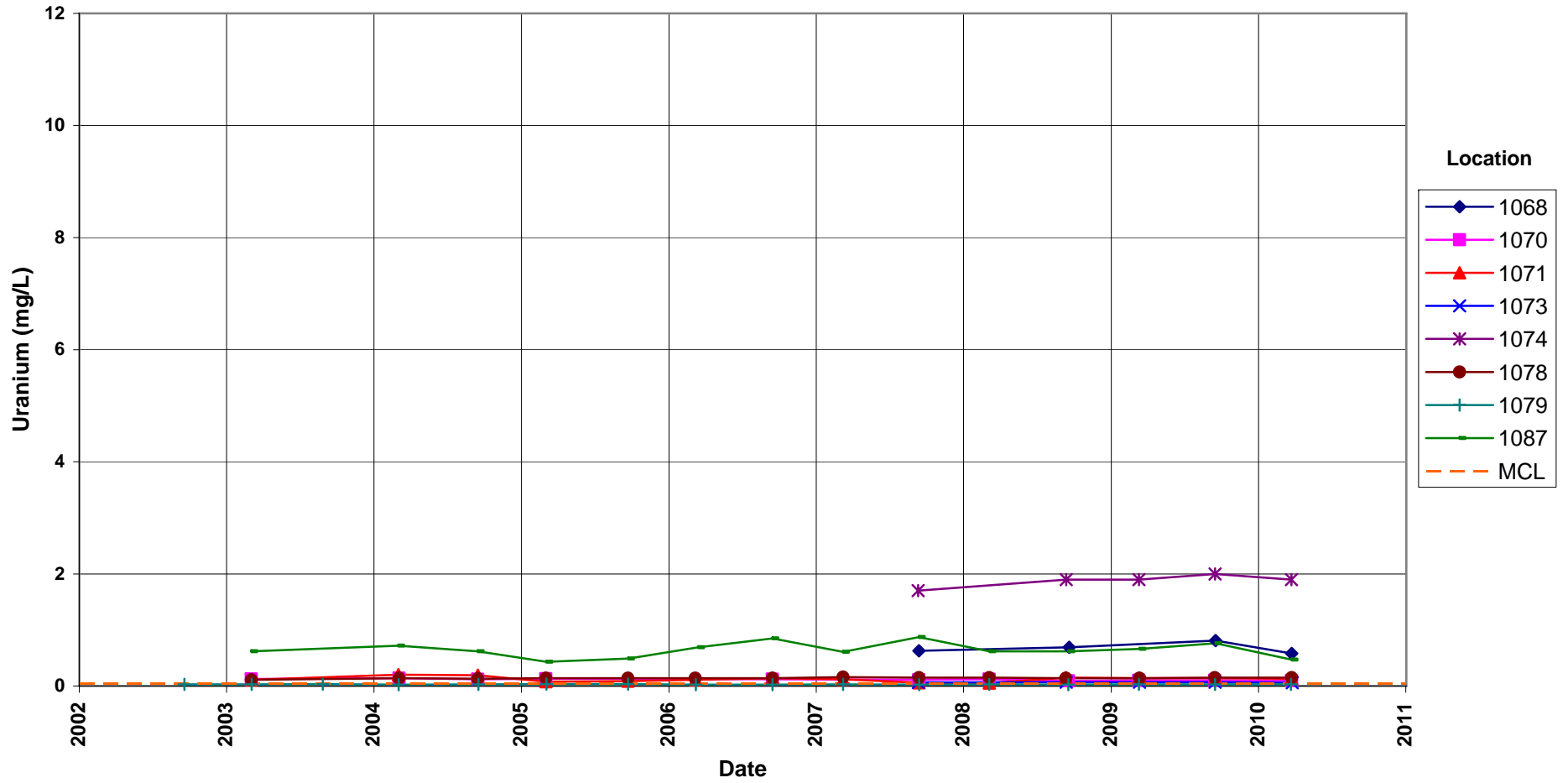




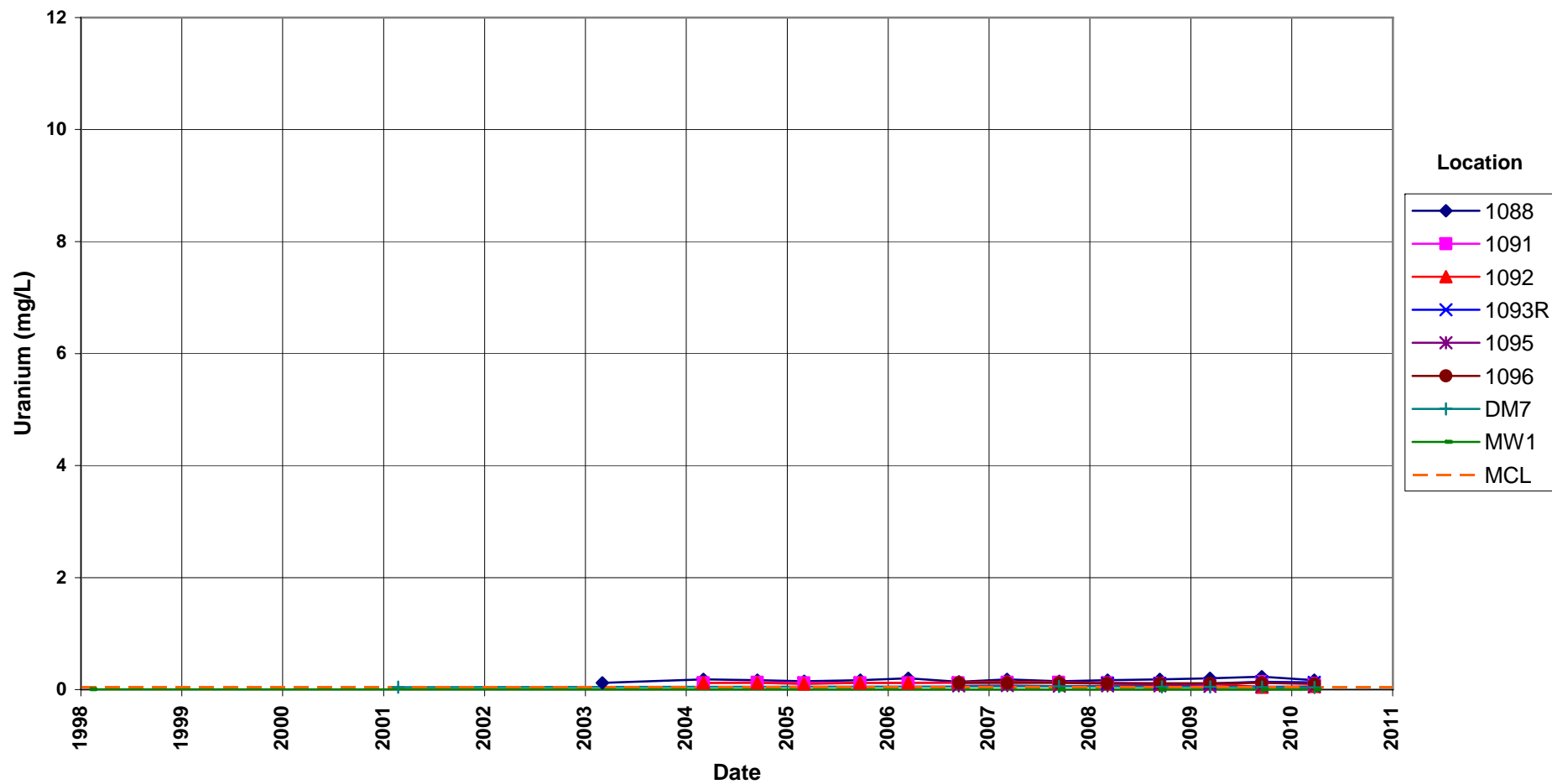
**Shiprock Disposal Site (Terrace)**  
**Uranium Concentration**  
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



**Shiprock Disposal Site (Terrace)**  
**Uranium Concentration**  
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



**Shiprock Disposal Site (Terrace)**  
**Uranium Concentration**  
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



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**Attachment 3**  
**Sampling and Analysis Work Order**

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established 1959

Task Order LM00-501  
Control Number 10-0423

March 4, 2010

U.S. Department of Energy  
Office of Legacy Management  
ATTN: Tracy Ribeiro  
Site Manager  
2597 B 3/4 Road  
Grand Junction, CO 81503

SUBJECT: Contract No. DE-AM01-07LM00060, Stoller  
March 2010 Environmental Sampling at the Shiprock, New Mexico,  
Disposal Site - Revised

REFERENCE: Task Order LM00-501-02-119-402, Shiprock, NM, Site

Dear Ms. Ribeiro:

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 March 22, 2010.

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

**MONITORING WELLS**

**Floodplain**

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

**Terrace**

600 Km	813 Al/Km	823 Km	835 Al	1002 Km	1060 Al	1088 Nr
602 Km	814 Al/Km	824 Km	836 Al	1003 Km	1068 Al	1091 Al
603 Al/Km	815 Al/Km	825 Km	837 Al	1004 Km	1069 Al/Km	1092 Al
604 Km	816 Al/Km	826 Al/Km	838 Al	1007 Al/Km	1070 Al/Km	1093R Al
725 Al/Km	817 Km	827 Al/Km	839 Al	1011 Al/Km	1071 Al/Km	1095 Nr

Tracy Ribeiro  
Control Number 10-0423  
Page 2

**Terrace**

726 Km	818 Al	828 Al/Km	841 Al	1048 Al/Km	1073 Al/Km	1096 Nr
727 Km	819 Km	829 Km	843 Al	1049 Al/Km	1074 Al/Km	1120 Nr
728 Al/Km	820 Km	830 Km	844 Al/Km	1057 Al/Km	1078 Al/Km	1122 Nr
730 Al	821 Km	832 Al	846 Al	1058 Km	1079 Al	DM7 Km
731 Al/Km	822 Km	833 Al	848 Al/Km	1059 Km	1087 Nr	MW1 Km
812 Al/Km						

\*NOTE: Al = Alluvium; Km = Mancos Shale; Nr = No recovery of data for classifying; a well number followed by an 'R' indicates a replacement well (i.e., 782R is a replacement for well 782)

**SURFACE LOCATIONS** (NOTE: All San Juan River samples will be collected filtered and unfiltered.)

**Floodplain**

501	897	937	939	956	965	1203
655	898	938	940	959	1118	1205
887	899					

**Terrace**

662	885	934	942	958	1218	1220
786	889	936	949	1215	1219	1221
884	933					

All samples will be collected as directed in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management*. Water levels will be collected from additional (non-sampled) wells as shown in the enclosure.

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

Sincerely,



David Miller  
Site Lead

DM/lcg/lb

Enclosures (3)

cc: (electronic)  
Steve Donovan, Stoller  
Lauren Goodknight, Stoller  
David Miller, Stoller  
EDD Delivery  
rc-grand.junction



## Constituent Sampling Breakdown

Site	Shiprock		Required Detection Limit (mg/L)	Analytical Method	Line Item Code
Analyte	Groundwater	Surface Water			
<b>Approx. No. Samples/yr</b>	244	56			
<i>Field Measurements</i>					
Alkalinity					
Dissolved Oxygen					
Redox Potential	X	X			
pH	X	X			
Specific Conductance	X	X			
Turbidity	X	X			
Temperature	X	X			
<i>Laboratory Measurements</i>					
Aluminum					
Ammonia as N (NH3-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					
Iron					
Lead					
Magnesium	X	X	5	SW-846 6010	LMM-01
Manganese	X	X	0.005	SW-846 6010	LMM-01
Molybdenum					
Nickel					
Nitrate + Nitrite as N (NO3+NO2)-N	X	X	0.05	EPA 353.1	WCH-A-022
Potassium	X	X	1	SW-846 6010	LMM-01
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
Total Dissolved Solids					
Total Organic Carbon					
Uranium	X	X	0.0001	SW-846 6020	LMM-02
Vanadium					
Zinc					
<b>Total No. of Analytes</b>	12	12			

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

## Sampling Frequencies for Locations at Shiprock, New Mexico

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
<b>Monitoring Wells</b>						
<b>SHP01</b>						
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
1008		X				Data logger
1009		X				
1062					X	WLs only
1089		X				U, SO4, N as NO3 only at vault
1104		X				U, SO4, N as NO3 only at vault

### Sampling Frequencies for Locations at Shiprock, New Mexico

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
1105		X				
1109		X				Trench 2; U, SO4, N as NO3 only at vault
1110		X				Trench 1; U, SO4, N as NO3 only at vault
<b>SHP01</b>						
1111		X				Well point; U, SO4, N as NO3 only. Purge 1 casing vol then sample
1112		X				Well point; U, SO4, N as NO3 only. Purge 1 casing vol then sample
1113		X				Well point; U, SO4, N as NO3 only. Purge 1 casing vol then sample
1114		X				Well point; U, SO4, N as NO3 only. Purge 1 casing vol then sample
1115		X				Well point; U, SO4, N as NO3 only. Purge 1 casing vol then sample
1117		X				Well point; U, SO4, N as NO3 only. Purge 1 casing vol then sample
1128		X				
1132		X				
1134		X				
1135		X				
1136		X				
1137		X				
1138		X				
1139		X				
1142		X				
1143		X				
1140		X				
1141		X				
<b>SHP02</b>						
600		X				
602		X				Data logger
603		X				
604		X				Data logger
648				Odd year		Measure flow rate semiannually; sample biennially; next in 2011
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

## Sampling Frequencies for Locations at Shiprock, New Mexico

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
803					X	WLs only
812		X				
813		X				Data logger
814		X				
815		X				
816		X				
817		X				Low flow
818		X				Ext. well; U, SO4, N as NO3 only at vault
819		X				Data logger
820		X				
<b>SHP02</b>						
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				Low flow
833		X				
835		X				Low flow; data logger
836		X				Low flow; data logger
837		X				Data logger
838		X				Low flow
839		X				Low flow
841		X				Low flow; data logger
843		X				Data logger
844		X				
846		X				Low flow; data logger
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				Low flow; data logger
1067					X	WL only; Bob Lee Wash
1068		X				Bob Lee Wash
1069		X				Bob Lee Wash; data

## Sampling Frequencies for Locations at Shiprock, New Mexico

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
						logger
1070		X				Ext. well; U, SO4, N as NO3 only at vault
1071		X				Ext. well; U, SO4, N as NO3 only at vault
1073		X				Data logger
1074		X				
1078		X				Ext. well; U, SO4, N as NO3 only at vault
1079		X				Low flow
1087		X				SUMP-Bob Lee Wash
1088		X				SUMP-Many Devils Wash
1091		X				Ext. well; U, SO4, N as NO3 only at vault
1092		X				Ext. well; U, SO4, N as NO3 only at vault
1093R		X				Ext. well; U, SO4, N as NO3 only at vault
1095		X				Ext. well; U, SO4, N as NO3 only at vault
<b>SHP02</b>						
1096		X				Ext. well; U, SO4, N as NO3 only at vault
1120		X				
1122		X				
MW1		X				
DM7		X				
<b>Surface Locations</b>						
<b>SHP01</b>						
501		X				East of disposal cell
655		X				Drainage channel
887		X				Distributary channel
897		X				Just below mouth of Many Devils Wash
898		X				San Juan River upgradient
899		X				
937		X				
938		X				
939		X				
940		X				Just NE of 1004, San Juan River
956		X				San Juan River at intake
959		X				Distributary channel just below 1st wash
965		X				San Juan River about 1500' below dist. Channel
1118		X				Seep sump (423/426) U, SO4, N as NO3 only at vault
1203		X				East of disposal cell
1205		X				San Juan River E of well 853

## Sampling Frequencies for Locations at Shiprock, New Mexico

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
<b>SHP02</b>						
662		X				Lower Bob Lee Wash
786		X				Seep below US Hwy 491 bridge; FLOW RATE
884		X				Irrigation return flow
885		X				Upper Bob Lee Wash; water level
889		X				Many Devils Wash
933		X				1st wash W of Highway 491
934		X				2nd wash W of Highway 491
936		X				Seep between 1st & 2nd washes
942		X				Pond NW of 847
949		X				
958		X				Helium lateral canal where water comes into canal at pump station
1215		X				
1218		X				Not shown on map
1219		X				Not shown on map
1220		X				Not shown on map
1221		X				Not shown on map

Sampling conducted in March and September

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

# **Attachment 4**

## **Trip Report**

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*Memorandum*

DATE: April 6, 2010  
TO: David Miller  
FROM: Sam Campbell  
SUBJECT: Sampling Trip Report

**Site:** Shiprock, NM

**Dates of Sampling Event:** March 22 -26, 2010

**Team Members:** David Atkinson, Sam Campbell, Cassie Gauthier, Jeff Price, Dan Sellers, and Joe Trevino.

**Number of Locations Sampled:** Samples were collected from 133 of the 162 locations identified on the sampling notification letter.

**Locations Not Sampled/Reason:** A total of 29 locations were not sampled for the following reasons:

- 12 surface water locations (0884, 0885, 0887, 0933, 0934, 0936, 0937, 0938, 0939, 0942, 0958, and 0959) were dry.
- 13 wells (0730, 0821, 0823, 0829, 0832, 1002, 1003, 1004, 1011, 1060, 1069, 1120, and 1122) were dry.
- Surface water location 0786 was moist, but did not have enough water to sample.
- Well 0839 has been destroyed.
- Well 1057 had a dedicated pump that was not functioning.
- The location of seep 1219 (requested by the Navajos) was not known at the time of sampling.

**Location Specific Information:**

- A fire recently burned portions of the floodplain. No DOE wells, SOARS, or treatment system infrastructure appeared damaged. The netting around the seep at the base of Bob Lee Wash was destroyed.
- Two new seep locations (1218 and 1220) and one surface location (1221) were identified and sampled. GPS coordinates were collected at each new location.
- Filtered and unfiltered samples were collected at 9 locations on the San Juan River.

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

False Id	True Id	Sample Type	Associated Matrix	Ticket Number
2814	0841	Duplicate	Groundwater	IEX-363
2813	0725	Duplicate	Groundwater	IEX-362
2810	0830	Duplicate	Groundwater	IEX-359
2811	0815	Duplicate	Groundwater	IEX-360
2812	0949	Duplicate	Groundwater	IEX-361
2604	1117	Duplicate	Groundwater	IEX-242
2729	0853	Duplicate	Groundwater	IEX-258
2731	1135	Duplicate	Groundwater	IEX-298
2899	N/A	Equipment Blank	N/A	IEX-386

**RIN Number Assigned:** Samples were assigned to RIN 10032912 (SHP01-Floodplain) and 10032913 (SHP02-Terrace).

**Sample Shipment:** Samples were shipped from Grand Junction to ALS Laboratory Group on March 2, 2010.

**Well Inspection Summary:** Numerous wells were noted as needing protective casing and locks, one well needed a locking mechanism installed, one well (0839) has been destroyed. Refer to the Water Sampling Field Data sheets for a well-specific list.

**Equipment:** All equipment functioned properly. New multi-gas meters were used to verify the air quality in the vaults.

**Water Level Measurements:** Water levels were measured in all sampled wells and in 11 additional wells. Water level data in the additional 11 wells was collected with the Water Level Recorder program on a PDA.

**Field Variance:** None.

**Institutional Controls:**

**Fences, Gates, and Locks:** All gates were locked and in good condition.

**Signs:** The warning signs on the electrical substation fence in Many Devils Wash were destroyed. The damaged signs were removed and new signs were installed.

**Trespassing/Site Disturbances:** N/A

**Site Issues:**

**Disposal Cell/Drainage Structure Integrity:** N/A

**Vegetation/Noxious Weed Concerns:** None.

**Maintenance Requirements:** The netting to keep birds out of the seep at the base of Bob Lee Wash was destroyed during the fire on the floodplain.

**Safety Issues:** None.

**Corrective Action Required/Taken:** Numerous well maintenance issues were identified that required action. The netting in Bob Lee Wash needs fixing.

(SC/lcg)

cc: (electronic)  
Tracy Ribeiro, DOE  
Steve Donovan, Stoller  
EDD Delivery, Stoller

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